

LOCAL FOOD  
PROJECT

STRATEGIES FOR INCREASING FOOD SECURITY ON  
VANCOUVER ISLAND



# The Local Food Project: Strategies for Increasing Food Security on Vancouver Island

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Publisher: Office of Community Based Research  
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## EXECUTIVE SUMMARY

The purpose of this report is to highlight the results of Vancouver Island Community Research Alliance's (VICRA) Local Food Project. The project goal is to provide current evidence, drawn from community expertise and peer-reviewed research related to food security on Vancouver Island, to engage in strategic collaborative work, and inform opportunities for future action. The report summarizes research carried out by student interns from post-secondary institutions on Vancouver Island, with oversight provided by advisory committees comprised of both community members and academics. Each strategy area had its own unique approach and process and this is reflected in the findings presented here. The information gleaned from the Local Food Project is presented in six chapters.

Chapter one provides an **overview of some of the food security and food sovereignty issues facing Vancouver Island**. The impact of the current dominant food system on future food security is outlined, together with a description of the economic and environmental context for the decreasing food production on Vancouver Island. Specific areas of research to address food security on Vancouver Island are described followed by the steps leading to implementation of the Local Food Project. The information created through this project is designed to provide opportunities for academics, policy makers and the various communities of interest involved in the food system on Vancouver Island to collectively identify and engage in identified opportunities for action.

Chapter two provides a summary of the research carried out by Vancouver Island University students on **climate change and food security**. The relationship between climate change and food security is explored with the physical changes resulting from climate change, specific to Vancouver Island, being described. The resulting impacts on food production are outlined; followed by opportunities for building awareness, capacity and strategies to address the impacts of climate change on food security on Vancouver Island.

Chapter three, drawn from research carried out by Camosun College students, focuses on the **potential of urban agriculture**, in particular land inventories, to increase Vancouver Island's food self-sufficiency. The various forms of urban agriculture are outlined, from boulevard gardens to large community farms. The benefits of land inventories are described, together with examples from a range of North American cities, with a specific focus on Portland and

Vancouver. A guide for Vancouver Island communities is presented, drawing from experiences in other communities, together with local knowledge and experience from Vancouver Island.

Chapter four describes the historical **Indigenous food systems**, including trading networks, of First Nations people on Vancouver Island. These traditional practices led to thousands of years of food security. Two students from North Island College gathered information about the sustainability of the local traditional societies, the impact of colonization and the current revival of traditional practices, with information being gathered from First Nations community food organizations and relevant academic literature. Strategies and actions to support increased food security for First Nations people as well as their non-Indigenous neighbours on Vancouver Island are outlined.

Chapter five, on **Institutional purchasing**, contains the local food purchasing experiences of several academic public institutions on Vancouver Island. Two students from the University of Victoria interviewed representatives from the institutions, held a workshop in which they gathered further information and reviewed relevant documents. The resulting stories of successes and challenges highlight opportunities for leveraging the purchasing power of large public institutions and identify systemic barriers that need addressing.

Chapter six provides a **summary of the findings and opportunities for action** that flow from the literature and the research carried out for each of the four strategies. Specific actions focus on 1) increased access to local food, 2) increased supply of local food, 3) increased knowledge to support food security, and 4) changes to the food system to support local producers. This summary provides opportunities for governments, citizens, academics and community organizations to play a role in implementing these actions.

The focus areas and results of this project are not all encompassing but rather reflect a collaborative contribution towards some of the important issues and actions that are taking place on Vancouver Island to address food security and food sovereignty.

To learn more about the Local Food Project, to access this summary report and each of the Strategy Area Reports, as well as a number of digital stories and other resources created through the Local Food Project please go to the Vancouver Community Research Alliance website at <http://mapping.uvic.ca/vicra/>

## **ACKNOWLEDGEMENTS**

The following report provides a summary of the reports created by the students, concluding with a range of potential actions flowing from the knowledge gathered from both academic and community sources. The broad range of perspectives and experiences brought together for this project has made it a rich and powerful exchange. Many thanks to all of those who contributed to the process, reports and digital stories.

The funding was provided by the Social Science and Humanities Research Council of Canada and the project coordinated by the Office of Community Based Research at the University of Victoria (OBCR-UVic). Special thanks to Linda Geggie for her development and coordination of the project and Aleck Ostry, Maeve Lyndon and John Lutz for their guidance and oversight. Thanks to both Ken Josephson and Christopher Hawkins in developing a website that reflects the spirit of the project and supports both the digital stories and reports.

Thanks to the student authors for their commitment to producing accurate and relevant information: Julia Davis and Emma Twidale from North Island College; Liz Clements, Leslie Puska and Kelsey Chandler from Vancouver Island University; Chloe Donatelli and Geneva List from the University of Victoria; and Chloe Markgraf and Chris Kay from Camosun College. Thanks to Laura Leigh McKenzie (University of Victoria) and Kelsey Chandler (Vancouver Island University) for pulling the digital stories together. Thanks also to all the students who provided photographs for the project. Graduate students Veronica Aguilar and Fay Weller must also be recognized for their supporting roles in event planning, communications and writing and editing of the products.

Acknowledgement and appreciation for the time and support provided by the advisors for each of the strategies: Jenny Horn and Jennifer Mullett for the Climate Change and Food Security Strategy; Lorenzo Magzul and Linda Geggie for the Urban Agriculture Strategy; John Rampanen, and John Marton for the Indigenous Food Systems Strategy and Ken Babich and Sandra Mark for the Institutional Purchasing Strategy.

We also thank the academics from the five institutions that contributed to, and provided comments and feedback on the final results, and finally thanks to the Steering Committee for their role in advising and guiding the Local Food Project. This project could not have been possible without participation from the following people and organizations.

### **Grants Team:**

Budd Hall, Maeve Lyndon, Analisa Blake, Jennifer Mullett, Jennifer Horne, Alex Ostry, Linda Geggie

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*Food security “exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food which meets their dietary needs and food preferences for an active and healthy life.” (Food and Agricultural Organization [FAO], 2006)*

Food is a basic necessity of life. How our food is gathered or grown, processed, distributed, consumed and then either recycled or disposed of is called our food system. Vancouver Island once supported its inhabitants with a bounty of foods from the land and sea. Over the last 50 or 60 years there has been a movement away from meeting Vancouver Island food needs through local food production; and a corresponding shift towards increased imports (85%) from off the island (McNair, 2004). In light of climate change impacts on both local and global agriculture, and the economic fragility of our island farm and food processing and distribution sector, the sustainability of our current food system is in question.

Food Security and Food Sovereignty are terms used throughout this report. The definition for **Food security** is found in the introductory quote. Increasing the agricultural productive capacity of Vancouver Island, through methods which are sustainable as well as economically and socially beneficial to local communities, helps further define this concept as one more closely related to **food sovereignty**, defined as “The peoples’ right to define their own policies and strategies for the sustainable production, distribution and consumption of food that guarantee the right to food for the entire population, on the basis of small and medium-sized production, respecting their own cultures and ... diversity” (World Forum on Food Sovereignty, 2001). Since this definition was created there have been numerous forums and writings on food sovereignty, highlighting the complexity of this concept.

## **DOMINANT FOOD SYSTEM AND FOOD SECURITY**



Sourcing good quality food closer to home is a key theme on Vancouver Island and a major topic of sustainability and adaptation to climate change debates in local communities and around the globe.

The dominant food system has been shaped by many factors including international and national government research and policy alongside the proliferation of a profit driven global food industry and economy. While



the current food system has provided benefits to some of the world's population the sustainability of this dominant system is currently in question. The results include far-reaching environmental effects: significant greenhouse gas emissions through heavy use of fossil fuels and nitrogen based fertilizers (McMichael et al., 2007; Carlsson-Kanyama & Gonzalez, 2009); polluted lands and waters from extensive agrochemical use (Moss, 2008; Kurtz, 2005); contamination of crops with genetically modified organisms (Belcher et al. 2005); loss of biodiversity on and off farm resulting from reliance on single species crops and intensive agricultural practices (Francis, 2004; Goland and Bauer, 2004; Thrupp, 2000); and business development and marketing challenges.

In addition to negative environmental impacts the current global food system is not adequately meeting our global food needs with over one billion people in the world going hungry (FAO, 2009). Access to food is also a national issue in Canada. "In March 2010, 867,948 people were assisted by food banks in Canada. This is a 9% increase over 2009 - and the highest level of food bank use on record" (Food Banks Canada, 2010, p. 2). A report submitted to the UN by the Special Rapporteur on the right to food, Olivier De Schutter (2010), calls for an overhaul of the global food system with a focus on 'scaling up' a system based on diversified ecological small to medium size farms. An extensive study of over 12.6 million farms reveals that the utilization of agro-ecological principles in farming, yields could be increased by 79% (De Schutter, 2010). The report recommends that investment in the global food system should be focused on building this capacity and appropriate distribution systems as key to feeding the world over the long-term.

The reinvestment in agriculture, triggered by the 2008 food price crisis, is essential to the concrete realization of the right to food. However, in a context of ecological, food and energy crises, the most pressing issue regarding reinvestment is not how much, but how. This report explores how States can and must achieve a reorientation of their agricultural systems towards modes of production that are highly productive, highly sustainable and that contribute to the progressive realization of the human right to adequate food (De Schutter, 2010, Summary).

These findings are in line with what we heard through the Local Food Project as strategies for increasing food security on Vancouver Island.

Geographically, Vancouver Island is blessed with a temperate climate and fertile soils, which make it a prime location for food production. However, high land values, increasing labour and input costs, and loss of processing and distribution infrastructure, coupled with a shrinking farming population has threatened the viability of the local food system on the island and

consequently threatens food security of the local people (Scott, 2004). The Island's many communities are also vulnerable to transportation interruptions as a result of conflict(s), natural disaster(s), or fuel shortages. Food sustainability and security are very real concerns for many residents of Vancouver Island.

## VANCOUVER ISLAND FOOD PRODUCTION

Food on Vancouver Island is produced and gathered in a diversity of ways for both personal and commercial uses across the island, in urban, rural and wilderness areas, from lands, freshwater and the seas. Less than one hundred and fifty years ago there was an abundance of food available for Vancouver Island inhabitants through fishing, hunting, gathering and managed clam and root vegetable sites (Turner and Turner, 2008). From the late 1800's to mid 1900's agricultural development increased and Vancouver Island farms provided most of the food required by residents. In the last 50 years there has been a decrease in the proportion of food that is produced on the island. However, in the last few years, there has been a recent resurgence of small farms (VIU, 2009), urban agriculture (Keiser, 2011) and traditional First Nations foods and practices (Turner and Turner, 2008).

The island has a rich history of food abundance that sustained and was sustained by First Nations (Turner and Turner, 2008). Key foods included salmon, seal, octopus, herring, cod, deer, ducks, shellfish, greens, root vegetables and a multitude of berries. Many of these foods are still gathered and traded today (Turner and Loewen, 1998). Food production practices in First Nation communities changed radically with the influx of the settler populations. Many of the practices have been lost or limited, but we are currently seeing a revival of interest in better understanding traditional foods and practices (Turner and Turner).

Currently the majority of locally produced food comes from Vancouver Island Farms. In 2006 there were 2855 farms reported on Vancouver Island, with 1280 primarily producing livestock and 1575 primarily producing crops (British Columbia Ministry of Agriculture and Lands [MAL], 2006). Estimated expenditures on food on Vancouver Island in 2006 were \$5.369 billion, while gross farm receipts of \$163.7 million represent only 3 percent of the \$5.369 billion expenditures (MAL).



Vancouver Island does not produce enough food to be self sufficient. A recent analysis of the situation in the Cowichan Valley (Rolston, Limousin, and Harasymchuk, 2010) describes how the number of livestock produced for food in the Cowichan Valley is decreasing and at the same time an increasing percentage of

those being produced is being shipped off island for processing not available on Vancouver Island. British Columbia and Vancouver Island are both net importers of fruits and vegetables. California currently supplies about 70% of all of British Columbia's imported fruits and vegetables yet over the last few years; California's main agricultural region has faced a number of significant climate-related challenges; including an increase in average temperatures, a decrease in rainfall, and unexpected occurrences of flooding. The region's capacity and ability to produce food will be impacted if these conditions continue into the future (Ostry, 2010; Ostry in Press).

Vancouver Island's available food supply is further compromised due to the Island's loss of its food processing and storage facilities (Stovel, 2008, p. 33). Having these facilities would enable farmers to store the surplus from their summer and fall harvests, which could be drawn from as needed during less productive seasons. Instead, much of the Island's seasonal surplus either goes to waste or is exported. Because of this lack of storage and processing facilities to secure the food produced locally, available stocks are predicted to only sustain the population for two to three days in the winter season (Mark, Moorland and Gage, 2007).

In 2006, the MAL estimated that BC farmers produced 48 per cent of all foods consumed in BC and produced 56 percent of foods consumed that can be economically grown in BC. To maintain the current level of self-reliance through to the year 2025, farmers will need to increase production by 30 percent over 2001 levels (MAL, 2006).

While there has been a decrease in farming operations there has been a growing trend towards growing food in urban environments. Community gardens, backyard vegetable plots and urban farms are becoming significant sources of food for city dwellers (Keiser, 2011). In urban centers on Vancouver Island, neighbours are sharing their yards to allow people who would otherwise not have access to land a space to garden (Lifecycles, 2011), boulevards are being converted to garden space, while community groups are advocating for more space to grow food (Keiser, 2011). Land inventories have been developed in a range of North American communities, including Portland and Vancouver, in order to identify underused land that could be used to grow food; although none have been created on Vancouver Island yet.

## **WHAT IS NEEDED TO INCREASE VANCOUVER ISLAND FOOD SECURITY?**

The fundamental goals of a regional food system approach are: 1) to maximize the potential for *regional self-reliance* with regard to food; 2) to achieve a high minimum standard of quality

food provision for all of the region's residents; and 3) to sustain and develop the resources upon which the whole system depends.

Vancouver Island University (VIU) conducted a feasibility study for an Agriculture Resource and Innovation Centre that was concluded in June 2009, and was funded in part by the Investment Agriculture Foundation of BC (VIU, 2009). In contrast to the overall decline of agriculture on Vancouver Island, the study reports that small and medium-scale agriculture is expanding in the Vancouver Island region due to the growing demand for local food production and processing and the desire to seek food production and processing methods that are environmentally sustainable.



In addition, there is a growing interest in reviving First Nation's traditional food practices across the Island's region. The study also identified a growing demand for education, enabling legislation, removal of barriers, coordination, research and resource services in order to advance: economic viability, local food production, socially-responsible and environmentally-sustainable practices, agriculture business management, value-added processing, and direct farm marketing, as well as culinary arts and agri-tourism, consumer and health education, home-based food production, processing and preserving, and food safety, bio-security, and food security knowledge.

We also know that local food producers may focus on food production, and may have little access to support for entrepreneurial business development. This means that attention must turn to better access to information on operational challenges (McDonagh & Commins, 1999; Siemens, 2009a; Siemens, 2010); marketing advantages of local food producers – such as place (Dawe, 2004; Siemens, 2009b) or family (Habbershon & Williams, 1999; Siemens, 2010); cooperation in marketing (Murray & Haraldsdottir, 2004; Siemens, 2009b); opportunities for diversification of income (Alsos & Carter, 2006; Murray & Haraldsdottir, 2004; Siemens, 2009a); training needs (Bergeroet & Van Woerkum, 2006); and policy frameworks.

## **STRATEGIC ACTION: VICRA'S LOCAL FOOD PROJECT**

Although there is a large body of research focused on the local food system from both academic and community initiatives, there are rarely opportunities for the formal (or informal)



*Climate Change and Food Security: Discussion Paper*, written by Leslie Puska, Liz Clements and Kelsey Chandler from Vancouver Island University, was generated by a literature search of relevant academic peer-reviewed sources, government publications, work produced by community-based organizations, and consultations with key academic experts and key community stakeholders. The following chapter is a summary of their discussion paper; describing the relationship between climate change and food security, the physical impacts of climate change, and some opportunities for action related to Vancouver Island.

## CLIMATE CHANGE AND FOOD SECURITY

Research focused on the impacts of climate change is expanding with greater global awareness. Increasing attention is being paid to the impacts of climate change on food production and agriculture, as these areas are particularly vulnerable to variations in temperature and precipitation.

**Climate change** is caused by the emission of greenhouse gases (GHGs) into the earth's atmosphere through both natural processes and human activities; though growing evidence demonstrates the largest contribution is from the latter (IPCC 2007, 5). The burning of fossil fuels, largely as a result of transportation, is the primary contributor to the emission of carbon dioxide.

Policies at the federal and provincial government levels in conjunction with the way in which corporate food chains have evolved has effectively meant that access to food for British Columbians increasingly depends on consuming cheap foods in international markets. With the potential of climate change induced weather instability disrupting these long distance food chains, there is an increasing demand by academics (Ostry, 2010), local farmers and community organizations (Edible Strategies, 2007b) to give greater consideration to local food production in order to secure a sustainable food supply for the population. Because of the nature of climate change impacts, regional responses are integral to the success of local strategies (Richardson, 2010). Pressure from local interest groups and increased awareness among voter populations will continue to be instrumental in pushing regional governments into more effective action on climate change (MacNair, 2004).

One challenge in reducing agriculture related GHG emissions lies in the ability to accurately assess the relationship between agriculture and GHG emissions. The Province of BC estimates that in 2007, agriculture contributed to 3.5% of BC's total GHG emissions; however, the calculation failed to account for on-farm energy consumption, food processing, and food transportation, which were included in other industry outputs (Province of British Columbia, Fraser Basin Council and Union of BC Municipalities, 2011).

## PHYSICAL IMPACTS OF CLIMATE CHANGE

In recent decades we have seen a significant warming of British Columbia's climate. According to data from the Ministry of Environment (2006) changes in temperature and precipitation in southern BC exceed global average changes. Even if we significantly reduce our GHG emissions over the next decade, these trends are expected to continue. In BC, the predicted changes in temperature and precipitation will mean wetter conditions during winter and spring and drier conditions during summer, especially in the southern coastal region, including Vancouver Island (Walker and Sydneysmith, 2008).

**Temperature Rise:** between 1976 and 2005 average temperatures have increased in the coastal regions of BC by 0.7 degrees (Celsius) in the winter season and 1.6 degrees in the summer season. By 2055 it has been projected that winters will be 2-4 degrees warmer and summers will be 2-3 degrees warmer<sup>1</sup> (BCMoE 2007).

**Snowpack:** Current climate models are consistently predicting a future of warmer and wetter winters on Vancouver Island<sup>2</sup>, meaning that there will likely be a reduction of average accumulated snowpack over the next few decades.

**Flooding:** Over the past few years, many areas have experienced incidences of severe flooding and have been hit by more extreme and unpredictable storm events (i.e. Comox Valley 2006 and 2009; Cowichan Valley 2009; Port Hardy 2010).



**Sea Level Rise:** Rising sea-levels will undoubtedly pose a threat to coastal communities around the globe in the future, resulting in saltwater intrusion into coastal freshwater aquifers that will impact the quality and quantity of groundwater supplies used for both drinking and irrigation (Walker and Sydneysmith, 2008).

Ultimately, changing and less predictable seasons and climactic conditions on Vancouver Island and in other areas of the province have foreseeable, adverse, and direct impacts on agriculture and food security. The most significant of these will likely be reduced availability and/or the physical degradation of land and water, which is currently used for agriculture.

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<sup>1</sup> Output from CRCM4, A2 scenario

<sup>2</sup> A2 scenario from the Canadian GCM3 and the CRCM4

## HOW WILL AGRICULTURE AND FOOD SECURITY BE IMPACTED ON VANCOUVER ISLAND?

**Water Resources:** Water supplies on the Island are facing increasing pressures from development and urban population growth, particularly in the southern region where the majority of fertile agriculture is located (Walker and Sydneysmith, 2008). Water supplies have also been subject to contamination by a variety of sources including development projects, run-off from agricultural activities, industrial pollution, and other human activity (MacArthur, 2010).

Increasing occurrences of drought on Vancouver Island are significant and, indeed, foreboding, especially given that a predicted outcome of climate change for BC's south coast region is "increasing requirements for irrigation...with possible water shortages caused by reduced precipitation, limited water storage capacity and competition from burgeoning urban populations" (Walker and Sydneysmith, 2008, 348).

Groundwater systems will also be impacted by climate change as "even small changes in temperature and precipitation alter groundwater recharge rates and water table depths" (Walker and Sydneysmith 2008, 341).

**Land Resources:** While the quality and quantity of our water supply is being affected by climate-related changes, the same is true of our most fertile agricultural land. Over the last two decades climatic changes and urban developments have put increasing pressures on land in the Agricultural Land Reserve (ALR) (BCMoA 2008, 32).

**Risk to Production:** On Vancouver Island production may be affected by more frequent and intense "extreme" weather events such as windstorms, forest fires, snow, hail and droughts and flood. In addition due to changes in temperature risks related to winter survival of pest and disease may increase (BC Agriculture & Climate Change Initiative, 2009).

**Rural Isolation:** On Vancouver Island, coastal communities and less populated regions of the North are particularly isolated, and thus, especially vulnerable. The BC Agricultural Plan recommends managing this disconnect by increasing public awareness surrounding the integral role of rural farming communities

**Poverty:** Due to the economic and social implications predicted from climate change, the poor are anticipated to be most at risk (IPCC 2007, 19). For those living in poverty in British Columbia there is a higher level of vulnerability than the general population as a result of climate changes (MacArthur, 2010, 26).



## OPPORTUNITIES FOR ACTION

Global climate change will continue to have implications at the local level; affecting our communities, local environments and human health. Because food production is especially vulnerable to even small variations in temperature and precipitation, this an area of study that requires more serious attention and action by municipalities and Island communities, particularly as Vancouver Island's continued reliance on imported food will only further continue to compromise food security for its population. The following themes of *awareness, capacity and strategy* reflect some of the opportunities for action as well as local responses to climate change and food insecurity.

### Build Awareness

**Policy:** Consolidate existing publications on climate change for the use of local governments, community groups and producers; Provide consistent update reports on achievements related to existing climate action, and best practices in agriculture policy across jurisdictions related to supporting mitigation and adaptation to climate change.

**Academic:** Increase the quantity, quality and accessibility of information that focuses on Vancouver Island's food production system and climate change, specifically work with agriculture producers to better understand what adaptive technologies and practices are being employed or needed.

**Consumer:** Participate in local food security organizations; Demand access to locally sourced, seasonal and nutritious foods from your local MP, city council and supermarkets.

**Producer:** Label what is locally grown and organic; provide information about how to access local produce and increase convenience of purchase. Become informed in on-farm climate change adaptation and mitigation strategies.

### Build Capacity

**Policy:** Help enable farmers to increase and diversify production through extension services and the establishment of cooperative processing facility(s) on Vancouver Island.

**Consumer:** Shop at farmers markets, and food outlets to source local organic products while reducing GHG emissions from transport of imported food.

**Producer:** Support consumer interest in buying local by increasing accessibility to local food products in local markets. Utilize techniques and strategies for reduction of on-farm CO2 emissions.

### Build Strategy

**Policy:** Explore the role of agriculture in supplying carbon credits.

**Community:** Develop community farm plans that integrate climate change strategies; Share tools to help local governments and communities work together to protect land and water resources.

*Cultivating Food Security: Creating a Land Inventory and Food Landscape on Vancouver Island*, written by Chloe Markgraf and Chris Kay (Camosun College) for the Local Food Project, focuses on increasing food sovereignty in communities across Vancouver Island through access to land for growing food through the creation of land inventories. The research methods for this component included a literature review and interviews with community members involved in urban agriculture and land inventory processes. The goal of the research was to provide information relevant to local governments and community organizations interested in pro-actively addressing food sovereignty in their community.

## URBAN AGRICULTURE

As the urban areas on Vancouver Island continue to grow, food security needs will increase. Underused or vacant land, rights of way, schools and parks are all examples of urban land that could be producing food for the local community. These parcels represent what could be a portion of the local food pie on Vancouver Island. There are a range of models<sup>3</sup> for developing a food landscape in an urban area. Some of the common practices in urban agriculture include:

- ❖ **Community allotment gardens:** An area of land where plots are assigned to individuals or families for their gardening pleasure
- ❖ **Urban Farm:** Typically larger scale growing operations managed by an individual or a small group of individuals often for entrepreneurial purposes.
- ❖ **Edible permaculture gardens:** Food-bearing gardens designed to mimic natural ecosystems.
- ❖ **Commons:** Community managed gardens located on public land. Maintained by volunteers, where the harvest is typically shared.
- ❖ **Educational:** Garden facility whose focus is capacity building.
- ❖ **Mixed Garden Model:** Combination of two or more models

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*The term Urban Agriculture is defined as the production of food within an urban environment. (Wikipedia, 2011)*

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## WHY A LAND INVENTORY?

A Land Inventory is the identification, assessment and categorization of land with potential for urban agriculture (Chaney, Taggart, & Meaney, 2009). On Vancouver Island many communities may have vacant or under-utilized land with the potential for urban agriculture and a land inventory may increase both access and knowledge about a community's urban growing capacity.




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<sup>3</sup> The list of models was developed through interviews with Vancouver Island community members engaged in urban agriculture activities.

The following **benefits** of creating a land inventory have been identified by Hynes (1996), Henning (1997), Ostry (2010) and community members active in urban agriculture on Vancouver Island:

- ❖ Identifies land appropriate for urban agriculture within a community
- ❖ Increases awareness about the potential of urban agriculture
- ❖ Aids in developing policy and by-laws supportive to urban agriculture
- ❖ Supports the incorporation of urban agriculture into Official Community Plans
- ❖ Creates a benchmark to monitor land use changes with respect to agriculture
- ❖ Facilitates connections between urban agriculture and municipal priorities such as sustainable communities and capacity building
- ❖ Generates data with which to create targets to implement effective urban agriculture policies
- ❖ Capitalizes and supports emerging opportunities in urban agriculture
- ❖ Enhances information base to assist land use decision-making

## LAND INVENTORY EXAMPLES

Vancouver Island communities can draw from cities like Portland, Vancouver, Seattle, Oakland, and Cleveland to provide comprehensive analysis and varied methodologies for creating land inventories. Both Portland and Vancouver’s urban agriculture land inventory projects were guided by an advisory group and followed three main steps:

**Partnerships were created to guide the process.** Vancouver’s project included people from diverse backgrounds in their land inventory working group; including individuals from the Social Planning Department, city staff, Food Policy Council representatives, stakeholders and community members.

**Step 1: A list of potential sites was compiled from relevant municipal departments and community consultation.** In Portland, city departments provided property data in GIS format. The GIS files were analyzed and cropped to remove environmental zones, developed areas of parks and parcels with a size of less than 1000 ft<sup>2</sup>.

**Step 2: The sites were analyzed using digital technology and maps.** Both Portland and Vancouver used GIS and aerial photos, initially dividing parcels of land into four general categories based on size. These categories were a) Large Scale Urban Farm, b) Small Scale Urban Farm, c) Community Gardens, and d) growing on impervious or poor soil.

**Step 3: Priority sites were evaluated by visits and set criteria** In Vancouver, thirty priority sites were selected for visits and of those, five were selected as “pilot projects”.

*\* Oakland also created an online “Land Locator” for use by non-profit organizations and individuals to help explore, find and analyze potential urban agriculture land parcels.*

## CREATING A LAND INVENTORY FOR YOUR COMMUNITY

The following is a guide and some recommended methodologies for undertaking an inventory of land suitable for urban agriculture within any community on Vancouver Island based on the experience of other North American communities. It attempts to provide a thorough summary that local governments or organizations can use as a template, adapting it to suit the specific circumstances of their region.

### PHASE 1: GETTING STARTED “SOWING THE SEEDS”



The initial phase of the project includes the establishment of partnerships between diverse groups with the common objective of developing an inventory of land suitable for urban agriculture. This includes the development of a committee comprised of staff, community organizations, planners, businesses, restaurants and grocery stores to direct the project. Mendes, Balmer, Kaethler, and Rhoads (2008) identified the breadth of Portland’s advisory committee as the reason for buy-in by Portland residents.

### PHASE 2: MAKING IT HAPPEN “CULTIVATING THE LAND”

**1. Define parcels to be included in the plan based on the priorities identified by the advisory group.** Other communities have used:

- ❖ Local, provincial or federal government owned properties (vacant/underused)
- ❖ Rights of Way
- ❖ Parks
- ❖ Public School Land, or Land leased by community groups

**2. Find sites using available maps and resources.** Vancouver and Portland used a combination of:

- a) Geographic Information Systems, b) Google maps & Google Earth,
- c) Aerial Photos, and d) Community Consultation

**3. Categorize sites based on size.**

- ❖ Larger sites may be more conducive to an urban farm model, while smaller plots may be ideal for community gardens, permaculture gardens or commons models.

**4. Develop criteria for site assessment** (See sidebars for examples of physical and social criteria). Both Portland and Vancouver consulted with their advisory group to develop criteria for land selection. The criteria will vary depending on the scope of the project and what type of urban agriculture is supported by the local government.

#### Step 4:

##### Physical Criteria

- ❖ Zoning and by-laws
- ❖ Current and future land use plans
- ❖ Sun Exposure
- ❖ Land Surface
- ❖ Maximum slope
- ❖ Existing infrastructure

## 5. Assess sites

Use set of developed criteria to analyze and evaluate suitability of located sites. An example of quantitative analysis of sun exposure used by Portland's Diggable Cities project:

A site with:                      25% or less shade Ranking: 1  
    35-50% shade Ranking: 2  
    50-75% shade Ranking: 3

## 6. Rank sites.

Use information gathered in assessment to determine the priority sites. Ranking system can be as detailed as needed. Large municipalities with many identified sites may require a detailed ranking system. Ranking can be done using a point system, priority sequence or by listing available sites.

## 7. In depth assessment of top-ranked sites:

Visit priority sites to gather relevant supplementary information such as soil samples and use of site by wildlife.

### Step 4:

#### Social Criteria:

- ❖ Existing Infrastructure (Water, fencing, buildings)
- ❖ Accessibility (transport, buses, parking, bike racks, sidewalks; wheelchair access, etc.)
- ❖ Socio-economic demographic
- ❖ Proximity to schools & community facilities
- ❖ Proximity to other urban agriculture projects
- ❖ Existence of active community groups

## PHASE 3: PRESENTATION AND FOLLOW-UP "HARVEST"

The product of the land inventory should be an accessible document compiling the information and data collected on potential sites into priority sequence for access and use by community members, local organizations, city planners, policy maker and farmers.

## OPPORTUNITIES FOR ACTION

The next step is for organizations and local governments to initiate the process of creating land inventories for their communities, and in the process unleashing the potential of urban agriculture. Other opportunities identified through the project were:

**Build Awareness:** Increase awareness about the potential and importance of urban agriculture within all jurisdictions of governments, neighborhood associations, and in residents.

**Build Capacity:** Support initiatives and organizations to increase the growing skills of residents

**Build Strategy:** Create urban agriculture strategies that bring resources and partners and align policy to support urban agriculture (neighborhood, municipal and regional government levels).

*Cultivating Food Sovereignty: Indigenous Food Systems on Vancouver Island* was created by Julia Davis and Emma Twidale from North Island College. They explored the history of Indigenous food systems on Vancouver Island, highlighting Indigenous trading networks past, present and future. Information was gathered by reviewing both academic and community based research. The focus of their paper was to gain an understanding of how a previous way of living sustainably, in which both food security and food sovereignty were present, can be applied within today’s context. The focus of their work was generated from a discussion with members of the Vancouver Island and Coastal Communities and Indigenous Food Systems Network (VICCIFN), and informed by the work of Dr. Nancy Turner, University of Victoria.

## WHAT WAS

For thousands of years indigenous people lived throughout Vancouver Island and surrounding islands. Oral history and archaeology describe an abundance of food (See Table 1). Techniques used in harvest, preparation and cultivation of local resources reflected a strong relationship with the environment and a philosophy of stewardship rather than ownership of land. Fish weirs, root gardens, duck nets, berry tending techniques met the needs of the inhabitants and for generations provided variety, utility and a sense of cultural uniqueness. During the winter season, mask dances and rhythmic songs filled the evenings and brought people together. Goods were distributed to guests at potlatches and elaborate naming ceremonies honoured members of the communities (K’ómoks First Nation, 2011).

TABLE 1: TRADITIONAL FOODS ON VANCOUVER ISLAND

Herring	Berries
Small Mammals (Rabbit, Beaver)	Eulachon
Birds (Ducks, Seagull eggs, Goose eggs)	Seaweed
General Seafood (Crab, Scallops, Shrimp, Abalone, Sea Cucumber, Octopus, Clams, Prawns)	Fish (Large variety of fish from lakes, ocean, and ponds – meat and eggs)
Deer	Roots
Salmon	Bivalves (Clams, Mussels, Oysters)
Moose	

Source: First Nations Health Council (2009). For information on each of the foods listed above: Traditional Foods Fact Sheets at [http://www.fnhc.ca/pdf/Traditional\\_Food\\_Facts\\_Sheets.pdf](http://www.fnhc.ca/pdf/Traditional_Food_Facts_Sheets.pdf)

Food has always been a cultural keystone of First Nations communities. Not only was it a major component of the gifts given and traded among groups at potlatch ceremonies, but food-producing trees and other plants, and harvesting sites were also passed down family lines, and cared for, similar to historical farms in the European tradition (Turner and Turner, 2008). Food sources were also shared between groups during hard times (Bell & Napoleon, 2008).

## PRE-EUROPEAN INDIGENOUS TRADE NETWORKS

Evidence from obsidian, dentalia shells and other mineral materials indicates that “**trade networks are at least 2000-3000 years old, and have extended over distances up to 1000 kilometres**” (Turner and Loewen, 1998, p. 51). Goods were exchanged by sharing, bartering, or trading gifts.

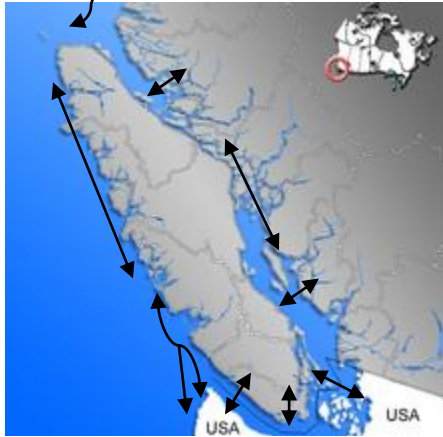


Figure 1: Trade Patterns of the Nuu-Chah-nulth, Coast Salish, and Kwa'kwaka'wakw (Turner and Loewen, 1998)

**Local food trade:** Many food products were commonly traded among Vancouver Island communities as well as between those of Vancouver Island and the mainland (including the Olympic Peninsula): eulachon oil, dried edible seaweed, blueberries, dried cakes of salal and other berries, edible camas, springbank clover rhizomes, and thimbleberry shoots.

**Trade in wood and grasses:** Yellow cedar wood, western red cedar, sweetgrass, beargrass and Oregon ash were traded for use as tools, bowls, basketry and building material (Turner and Loewen, 1998).

**Coastal and inland trade:** In the case of coastal and inland trade, visits by groups of people travelling for trade were, of necessity, lengthy. As there was an abundance of seafood on the coast, and similarly, an excess of meat and berries among the Gitksans in the interior, an exchange offered a variety in diet (Watts, 1997).

**Knowledge and skills** related to the materials traded, skills were also exchanged together with the vocabulary used to describe both the material and techniques (Decosse, 1980 cited by Turner and Loewen, 1998). **Songs and ceremonies** from other nations were as valued as the trade in material goods (Greer, 1995).

**Sharing of Resources** was another common practice. The Straits and Halq'emeylem people giving permission for the Ditidaht people to dig for Camas bulbs in their territory is just one example (Turner and Loewen, 1998).

## INDIGENOUS TRADE WITH EARLY EUROPEANS

Early trade between Indigenous and non-Indigenous people provided learning on both sides. Some coastal indigenous people “began to salt and pickle the stipes of the native bull kelp” (Turner and Loewen, 1998, p. 62) after seeing this practiced by Japanese people. The trade of native plant resources as well transfer of knowledge from Indigenous people to newcomers was important to newcomers, who did not have the knowledge of the local environment and/or the time to collect locally available subsistence items (Turner and Loewen)

## WHAT IS

The food practices of today's First Nations People's is a mixture of colonization impacts and a revival of traditional knowledge and practices.

**COLONIZATION** policies of the 19<sup>th</sup> and 20<sup>th</sup> century, in particular the Indian Acts' residential school and reserve programs, reduced the size of traditional hunting and fishing grounds and the transfer of traditional food knowledge between generations. The wage economy finally sealed the fate of most Indigenous people, taking them away from their known areas of food collection, and taking up all of their time (Turner and Turner, 2008).

**LAND PRIVATIZATION** changed historical practices. Many gathering sites were privatized or turned into parkland, and access to plant removal was denied or made illegal. Often, when these sites, and the medicinal and other traditional plants within them, were disturbed or destroyed, no notice was given to the affected First Nation community (Bell and Napoleon, 2008).

**DIETS:** Today many individuals continue to use traditional foods (Table 1), however, present day life styles and availability of alternative food sources (i.e. Grocery stores, fast food outlets, and restaurants) have changed indigenous peoples' diets:

*Since the coming of the White man, we have put aside many of our ways, and forgotten the teachings of Mother Earth. We no longer eat the natural foods we were meant to - we eat White man's food, full of sugar and chemicals (Malloch, 1989, p. 106).*

The change in diet from traditional foods has led to serious health concerns amongst First Nations peoples. "Although B.C. has the lowest rate of obesity in Canada at just under 11 per cent, the overall obesity rate for first nations people in the province is 32 per cent and averages 36 per cent for those living on reserve" (Assembly of First Nations, 2011).

**CULTURAL SHIFT:** However, British Columbia is at the forefront of a cultural shift in which First Nation people are reviving their traditional food harvesting, history, and culture. Four principles guide the present day food security and food sovereignty movements in Indigenous communities: Sacred or divine sovereignty, participatory, self-determination and policy changes. There are numerous **food sovereignty initiatives and activities underway on Vancouver Island**, including:

- ✓ VICCIFN has developed a **rotating regional meeting** approach across Vancouver Island. On a quarterly basis gatherings are hosted in each of the four island regions.
- ✓ The annual **Vancouver Island Traditional Food Conference** is collaboratively hosted at alternating locations across Vancouver Island. At these events there are opportunities to share teachings, highlight key issues pertaining to traditional foods (VICCIFN, 2011).



- ✓ Establishing food businesses, such as Pentlatch Seafoods Ltd., a company wholly owned and operated by the K'ómoks First Nation.
- ✓ Projects such as Feasting for Change, where communities are connecting youth and elders in traditional harvesting and food preparation activities and creating feasts where the communities share stories and reconnect around their foods.

## WHAT CAN BE (OPPORTUNITIES FOR ACTION)

Trosper (2003) recommends that First Nations' societies "be studied carefully for insights that may be useful in today's consideration of the characteristics of resilient social ecological systems" (p. 2) and their applicability today. Drawing from the information gathered from this project, what actions can be taken today that recognize the potential of traditional Indigenous food practices and systems for increasing food security and food sovereignty for both Indigenous and non-Indigenous peoples on Vancouver Island?

### **INCREASE KNOWLEDGE AND APPLICATION OF TRADITIONAL FOOD PRACTICES FOR FIRST NATIONS PEOPLE:**

- A. Continued support for current initiatives underway through VICCIFN to increase knowledge and practice in First Nation communities about traditional foods, practices, health benefits, medicinal plants and uses, together with activities supported by the Island Campuses working with partners in First Nation communities.
- B. Initiatives being carried out by the Ktunaxa Nation applied to Vancouver Island context:
  - Ethnobotany studies program that focus on land management, resource protection, education, economic development consistent with maintaining cultural practices.
  - Creation of a herbarium for research, comparative work, and education in schools.
  - Gathering knowledge of plants from elders and other specialists, the publication of a book on traditional plant uses, and the opening of an indigenous plant nursery.

### **INCREASE KNOWLEDGE OF TRADITIONAL FIRST NATIONS PRACTICES IN NON-INDIGENOUS COMMUNITIES:**

Information about Indigenous food systems and current applicability to food security on Vancouver Island: taught in schools; available in museums; included in sustainability events, and; incorporated into strategies to increase local food production and access.

**PROTECT TRADITIONAL HUNTING AND FISHING TERRITORY OF VANCOUVER ISLAND FIRST NATIONS:** Increase long-term access to traditional foods through protection of traditional hunting and fishing territory of Vancouver Island First Nations; implementing the type of stewardship of land that First Nations communities practiced before Europeans and the concept of private land ownership arrived.

**ESTABLISH PROCESS FOR PROTECTION OF MEDICINAL PLANTS:** To address concerns regarding medicinal plants being destroyed it has been suggested that a designated group of people of knowledge could come into the development site to see if there is anything of value there, and if it is possible to save or move it (Bell & McCuaig, 2008).

*Cultivating Food Security: Institutional Purchasing* provides a path forward for increased institutional procurement of local Vancouver Island products. Research carried out by Chloe Donatelli and Geneva List (University of Victoria) for the Local Food Project draws on information gathered through surveys and interviews with distributors, farmers, and representatives from post-secondary institutions. Reported benefits and local examples provide the groundwork for recommending steps to shift the underlying systems through actions taken by institutions, working in partnership with farmers and distributors.

**BENEFITS**



The benefits of institutional local food purchasing include benefits to institutions, farmers, and the general public. The increase in local food production, procurement and consumption can assist in supporting increased local food procurement infrastructure, a crucial component of Vancouver Island’s food security.

<b>Institutions</b>	Seen as socially and environmentally responsible: Increases public trust and respect resulting in increased clients.
<b>Farmers</b>	Guaranteed buyers increases viability and stability of farming as lifestyle. Increased investment in infrastructure can result in improved consistency and dependability for purchasers.
<b>General public</b>	Increased access to local food can result in improved health benefits.
<b>Rural economies</b>	Increased economic opportunities may result for rural areas.
<b>The environment</b>	Reduced greenhouse gas emissions and pollutants from decrease in food transportation.
<b>Vancouver Island Food Security</b>	Increased percentage of food consumed grown on Vancouver Island, which can result in decreased reliance on imported food.

## POST-SECONDARY INSTITUTIONS & LOCAL FOOD PROCUREMENT

The following examples of local food purchasing practices by post-secondary institutions provide an understanding of both the shift that is already occurring as well as the challenges faced by institutions in purchasing local products:

### **ROYAL ROADS UNIVERSITY (RRU)**

The managers and the chef at the Habitat Café at Royal Roads University make every effort to purchase local food. However, similar to most institutions, those at the small café in Royal Roads University must ensure their requests comply with the contract developed by the Purchasing Department of the University, which has inhibited local food purchase.

### **CAMOSUN COLLEGE**

Gilbert Noussitou, head of the Culinary Arts Program at Camosun College's Interurban campus, has moved away from contracts to provide increased flexibility in food purchase, thus increasing purchase of local food and reducing the number of deliveries for the program. He stresses the need for a central Vancouver Island distribution and production system that is consistently reliable and with a reasonable, accessible price structure in order to increase institutional purchasing of local food.

### **UNIVERSITY OF VICTORIA GRADUATES STUDENT SOCIETY**

One of the ways the Grad House has shifted to sourcing more local food centres around their choice in distributors. Two of their main distributors are Ambrosio and Islands West, local distributors who source large portions of their food products from farmers on Vancouver Island. The two substantive barriers the Grad House experiences in trying to purchase more local food are product availability and price.

## UNIVERSITY OF VICTORIA CASE STUDY

University of Victoria's (UVic) Food Services is one of the largest purchasing powers on Vancouver Island, with current spending of approximately 5.6 million dollars a year. They have just finalized a contract that commits their distributor to provide at least 29.7% of the line items produced and supplied by Vancouver Island (VI) farmers and 36% of the line items produced in BC outside of Vancouver Island. The context for UVic's local food purchasing success includes the University's commitment to sustainability and the incorporation of environmental and social considerations into purchasing decisions. The leadership, demonstrated by Ken Babich, Director of Purchasing Services and Rita Fromholt, Sustainability Coordinator, has been instrumental in achieving results.

The preceding contextual factors created the following changes to procurement processes, which have resulted in a substantial increase in local food procurement:

#### PRODUCE RFPs THAT INCORPORATE GHG EMISSION IMPACT

Like other public institutions in British Columbia, 2010 has brought provincially enforced carbon requirements to UVic. As a result, they have created a mandate to reduce their carbon on certain Request for Proposals (RFP). For example, they changed their produce RFPs to factor in green house gas emissions into the ranking for contract competitions.

#### QUADRUPLE BOTTOM-LINE (4BL) ACQUISITION

The 4BL methods and practices in best value-analysis and evaluation take into account 4BL factors and considerations. The four main factors within this analysis are People, Planet, Profit and Socio-Cultural considerations. These 4BL factors are calculated by examining changes in indirect and direct costs and savings, considering impacts on environmental quality, social well-being and economic prosperity.

#### UVIC 'S FP PROCESS

- ✓ **Clear descriptions from Suppliers** including:
  - Exact place of origin*
  - Directly or secondarily sourced*
- ✓ **Multi-Sourcing**
  - Stagger contracts*
  - De-bundle tenders*
  - Smaller contracts so local distributors can bid*
  - Food service managers and chefs purchase food under \$2500 on their own accord*

## OVERCOMING CHALLENGES

The key challenges facing institutions as they attempt to increase procurement of local food are cost, quality, seasonality, consistency, quantity and dependability. Food regulations, Food Safe requirements and delivery are barriers facing local farmers when supplying institutions. Actions to address the challenges identified by both farmers and institutions include revised institutional procurement processes, and collaborative actions between institutions, farmers and distributors aimed at changing the systems and improving the infrastructure.



Guaranteed large buyers, such as institutions, provide the incentive for farmers to invest in infrastructure that will result in increased dependability, consistency and lower cost. Processing and distribution services will become viable once the preceding factors are in place, with their viability increasing if local processed products with a longer shelf life are also available. The result is an infrastructure that can support institutional procurement of local food products.

## **OPPORTUNITIES FOR ACTION**

Institutions are key players in the re-building of local food economies because of the large-scale volume and frequency in which they purchase food. As a result, if local food producers can secure agreements to supply food to institutions, they gain huge security in their operation. Because of institutional purchasing power, institutions hold the potential to dramatically reshape the food chain on the Island. They can provide large-scale sustainable markets and can influence food service companies and distributors to shift their purchases to incorporate more local food. Here are suggested opportunities to strengthen Vancouver Island Food Systems:

- 1.** To change the systemic challenges to our food system institutions can:
  - ✓ Change RFPs to incorporate GHG emissions
  - ✓ Reduce contract size and stagger contracts
  - ✓ Require clear sourcing information from suppliers
  - ✓ Use Vancouver Island local food distributors
  - ✓ Ensure Food Managers and Chefs are committed to local food purchase
  - ✓ Create a system where farmers can be directly under contract with Institutions
  - ✓ Use local food procurement processes already developed by other institutions
  - ✓ Implement an academic program about local food production.
  - ✓ Work with other purchasers as a collective, entering into long-term co-operative purchasing agreements that would support local farmers and meet institutional food needs on a much great scale.
- 2.** A Vancouver Island distribution and production system (shared services model) developed through collaborative efforts between governments, institutions and businesses.
- 3.** Develop a full carbon accounting system for local agriculture.
- 4.** Build a detailed inventory of local food capacity in relation to local food demand.
- 5.** Increase demand for local food through food commercialization and a Vancouver Island Local Food Centre of Excellence.
- 6.** Engage public institutions in shaping a new food system.

The Local Food Project has provided opportunities for academics, policy makers, and the various communities of interest involved in the food system, to synthesize and build on current knowledge and experience to identify further actions and research that will increase Vancouver Island's food self-sufficiency in the four strategy areas. There have already been actions taken and initiatives underway that have arisen from this Local Food Project. A summary of some of the opportunities identified in the four Local Food Strategy reports, outlining actions we can all take, both individually and collectively, in shaping the new food system and corresponding food security here on Vancouver Island follows these early results.

## EARLY IMPACTS

### Institutional Purchasing

- ✓ Learnings from the Institutional Purchasing study will be presented to the Cascadia Purchasers Group to build awareness of policy and practice that can be implemented within institutions
- ✓ Representatives from the Municipality of Saanich participated in the Institutional Purchasing Workshop and Council subsequently passed a "Buy Local" procurement policy. The Office of Community Based Research has offered the reports as materials to inform the implementation of this policy.
- ✓ The Institutional Purchasing report was provided to the Chief Nutritionist within Vancouver Island Health Authority and was deemed very helpful in supporting work to establish more local procurement within the Health Authority.

### Urban Agriculture

- ✓ The Digital story produced is being utilized by community organizations to inform local governments on the potential for urban agriculture
- ✓ Preliminary discussions have been held with City of Victoria planner and interest expressed in the potential for implementing a land inventory with the City of Victoria.
- ✓ Gorge Tillicum Urban Farmers have indicated they will "pilot" the toolkit for land inventories and site assessment in the Municipality of Saanich
- ✓ Three community organizations have expressed interest in undertaking a joint community based research and engagement project in three urban centers (Nanaimo, Duncan, and Victoria) and are currently seeking partners and funding for this initiative.

## Indigenous Food systems

- ✓ Interest has been expressed by the community partners in continuing to engage in “next steps” research inspired by this project, alongside the development of a digital story of the project findings.

## Climate Change

- ✓ The Capital Region Food and Agriculture Initiatives Roundtable will utilize the Climate Change report to inform the development of the Capital Region District Sustainability Plan and specifically for the development of the Regional Food Strategy.
- ✓ Students created a module looking at Climate Change and Food and Agriculture for science educators and this was presented to 60 educators at the Climate Change Symposia, 2011.
- ✓ Indications through the project that there is much work to be done in developing specialized knowledge and strategies for climate change mitigation and adaptation on Vancouver Island has garnered the notice of community organizations and academics, and there is interest in continuing to work in this area.

## OPPORTUNITIES FOR ACTION IDENTIFIED THROUGH THE PROJECT

### Increase access to local foods

### Who?

✓ Increase commitment from the local MP, local governments and supermarkets to access locally-sourced, seasonal and nutritious foods;	All
✓ Shop farmers markets and other local retailers to source local products while reducing GHG emissions from transport of imported food;	All
✓ Increase provision of local food in institutions; see specific actions institutions can take to support this under <i>Change food system to support local producers</i> ;	Institutional food purchasers
✓ Bring attention to what is locally grown, where and when to increase consumer interest and convenience of purchase;	Producers and Retailers
✓ Support consumer interest in buying local by increasing accessibility of local food products in local markets;	Producers and Retailers
✓ Protect traditional hunting and fishing territories of Vancouver Island First Nations;	Local, Federal and Provincial gov'ts
✓ Establish processes for protection of sacred sites; and	First Nations and governments
✓ Develop long term planning for agriculture on Vancouver Island that integrates climate change strategies.	Farmers, com. orgs., local gov'ts

## Increase supply of local foods

Who?

✓ Create a Land Inventory for your community and turn potential sites into urban agriculture;	Local gov'ts, com. orgs.
✓ Grow food – participate in urban agriculture initiatives in your community;	All
✓ Increase provision of local food in institutions;	Institutional food purchasers
✓ Change large food purchases Request for Proposals (RFPs): a. incorporate GHG emissions; b. Reduce contract size and stagger contracts; c. Require clear sourcing information from suppliers; and,	Institutional food purchasers
✓ Provide opportunities for increasing capacity in new and established growers through extension, training programs and learning events.	Province, farmer organizations

## Change food system to support local producers

Who?

✓ Develop Vancouver Island distribution and production system – shared services model.	Prov. and Federal gov'ts, public institutions, relevant businesses
✓ Change policies to support local processing of livestock	Prov. and fed. Gov'ts
✓ Increase access to land available for farming- utilization of public lands, pilot to explore the potential use of turning clear-cuts into agricultural land;	Prov. and Federal gov'ts
✓ Use Vancouver Island local food distributors;	Institutional food purchasers
✓ Ensure Food Managers and Chefs are committed to local food purchase;	Institutional food purchasers, restaurants
✓ Create a system where farmers can be directly under contract with Institutions;	Institutional food purchasers
✓ Use local food procurement processes already developed by other institutions;	Institutional food purchasers
✓ Large purchasers work together as a collective, entering into long-term co-operative purchasing agreements that would support local farmers and meet institutional food needs on a much greater scale; and	Institutional food purchasers
✓ Develop a full carbon accounting system for local agriculture: make available to farmers; incorporate into government decision-making, and; explore potential for local farmers to access carbon credits.	Government, academics, farmers, community organizations



## Increase knowledge to support food security on Vancouver Island

Who?

✓ Increase knowledge and application of traditional Indigenous practices for VI Indigenous people;	First Nations, community orgs., gov't
✓ Increase knowledge of traditional Indigenous practices in non-Indigenous communities;	First Nations, community orgs., gov't
✓ Increase quantity, quality and accessibility of information focused on Vancouver Island's food production system and climate change;	Academic, community organizations, local government
✓ Build a detailed inventory of local food capacity in relation to local food demand;	Academic, community organizations, food and farm sector
✓ Consolidate existing publications on climate change for the use of regional governments, community groups and producers;	Government
✓ Provide consistent update reports on achievements related to existing climate action and local agriculture plans;	Government
✓ Creation of a centre(s) of excellence for food at the post-secondary institutions with potential focuses on increasing food commercialization; and food systems, food security and health	Academic Institutions
✓ Share tools to help local governments and community members work together to protect land and water resources.	Gov'ts, community orgs., academics

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This research is funded by:



Social Sciences and Humanities  
Research Council of Canada

Conseil de recherches en  
sciences humaines du Canada

**Canada**