"Shipping is a terrible thing to do to vegetables. They probably get jet-lagged, just like people."

Elizabeth Berry

Food

Sustainability by Design Research Roundtable

by Lindsay Raftis and Emily Keller

Introduction

Food, including fresh produce, meat, dairy and whole grains, as well as processed products prepared from these raw materials, is a key resource for sustaining life. While historically many societies hunted and foraged food, today most cultures obtain subsistence primarily through farming and ranching. Over the last century, mechanization and the use of agrochemicals have dramatically increased agricultural yields, but at a high cost to environmental and human health. Economic globalization has brought dramatic changes to food production and consumption patterns, lengthening commodity chains and eroding local and regional food security.

The Sustainability by Design Research Roundtable Working Group on Food will investigate food production, transport, and security in the Metro Vancouver region. The group will identify the driving forces propelling regional food production and consumption trends, and explore key indicators that help to define the relationship between food and urban form. The group will also propose recommendations on how the regional food system can contribute to the provincial target of an 80% reduction in greenhouse gas emissions by 2050.

History

Food needs have long-shaped our regional development pattern. British Columbia's First Nations relied heavily on fish and shellfish as a food source, and villages were often located on shorelines and riverbanks to ensure access to these resources. Prior to European arrival, the areas around Burrard Inlet and the Fraser River were heavily populated by the Coast Salish people. During European settlement, the Fraser Valley offered the lure of fertile farmland, and early trading posts and later industrial activities were strategically located in the region in large part to capitalize on this agricultural food source.

Following World War II, the region experienced a rapid population growth, resulting in extensive suburbanization. As the region's cities sprawled outwards, the farmland that had attracted European settlers just a century before was rapidly consumed by urban development. By the early 1970s, the province as a whole was averaging an annual loss of 6,000 hectares of prime agricultural land.

In response to these alarming statistics, the 1973 provincial Land Commission Act established the Agricultural Land Reserve (ALR) – a land use zone that prioritizes agricultural activities – and appointed the Agricultural Land Commission to oversee and administer the preservation of agricultural land through the ALR (Haid and Smith 2004). Within the Metro Vancouver region 66, 839, 233 hectares of land were originally designated as ALR. Just over thirty years later, this number has been reduced by a total of 60, 914 hectares -- primarily due to rezoning applications by private landowners and developers.

Regional geography: Metro Vancouver's opportunity

Due to mountainous terrain and rocky coastline, much of BC's land base is unable to support productive, year-round agricultural activities. In contrast, nestled on the rich alluvial soils of the Fraser Delta, the Metro Vancouver region encompasses and adjoins some of the most productive farmland within provincial boundaries, as well as the broader Cascadia bioregion. Unlike most areas of the province, the region's temperate climate facilitates a productive winter-growing season. These geographic attributes create both an opportunity and a challenge for Metro Vancouver to maintain, restore, and expand agricultural production to help meet the food needs of surrounding areas that lack productive food growing capacity.

Public support: the local food movement

As the birthplace of the 100-mile diet concept made famous by local Vancouver residents Alisa Smith and J.B. MacKinnon, Metro Vancouver is at the heart of the regional movement to rebuild food security. Even before the Smith and MacKinnon's highly publicized year of local eating, support for regionally-produced food was gaining ground amongst Metro Vancouver consumers. In just four years – from 2002 to 2006 – British Columbia witnessed roughly a 70% increase in farmer's markets from 60 to over 100 (BC Association of Farmer's Markets 2006). The four farmer's markets located within the City of Vancouver alone currently average between 7,000 to 10,000 visitors each week. Community garden membership is also on the rise, and agri-tourism and slow food events are gaining popularity.

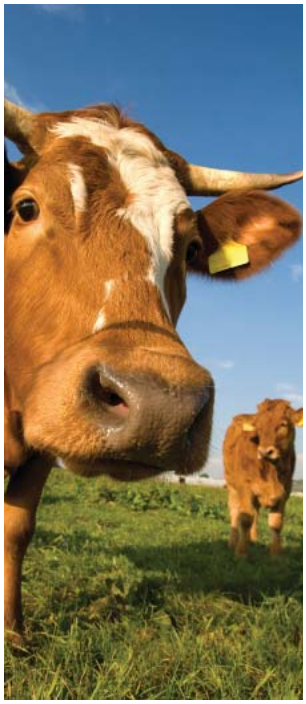
Local Food Security

Despite rising consumer demand for locally grown food and regional and municipal-level initiatives, regional food production remains low. When an average British Columbian sits down to eat, roughly half of the ingredients are produced outside provincial boundaries – and Metro Vancouver residents are no exception. Estimates of the amount of food consumed in the Lower Mainland that is locally produced vary from 20 to 60 percent (Vancouver Food Assessment Report 2007). Taking into consideration population projections, provincial farmers will need to expand production by approximately 60% by 2056 simply to maintain current levels of food security (BC Ministry of Agriculture and Lands 2006).

Political action: regional and municipal initiatives

Political action in regional agricultural issues has both been prompted by, and supportive of, expanding public awareness of the benefits of local food resiliency. Over the past few decades, regional and municipal governments within Metro Vancouver have launched several important initiatives and plans that aim to protect and promote local agriculture.

Composed of representatives from diverse regional agricultural commodity groups, food-related groups and municipalities, the Agriculture Advisory Committee was established in 1992. The Committee provides advice to Metro Vancouver on regional agricultural matters, acts as a liaison between government and agricultural produces, and works to raise public awareness of regional agriculture. In 2006, Metro Vancouver created the Agricultural Standing Committee to monitor the Agriculture Work Program, review reports on agricultural policies, projects and programs, and hear public delegations on related matters (Metro Vancouver 2009).



As one of four key strategies of the Livable Region Strategic Plan adopted by Metro Vancouver in 1996, the Green Zone is intended to protect the region's natural assets and resource lands -- including farmland -- and establish a long-term growth boundary. The Green Zone is comprised of 199, 500 ha, or approximately 70 percent of the region, of which 46,000 ha, or approximately 30 percent, is agricultural land (see Figure 4) (Metro Vancouver 2005).

In 2002, the Economic Strategy for Agriculture in the Lower Mainland was established by Metro Vancouver in partnership with the Fraser Valley Regional District, the Land Reserve Commission, and the Ministry of Agriculture, Food and Fisheries. The strategy is intended to encourage the actions, plans, and policies necessary to maintain and enhance the viability of agriculture in the region.

In 2003, the City of Vancouver established the multi-stakeholder Food Policy Task Force to lead the way in creating a just and sustainable food system for the City. The Task Force resulted in two important milestones for regional food security: 1) development of a Food Action Plan, approved by Council in 2004, that included a feasibility study on rooftop gardens and recommendations on the creation of community gardens and farmer's markets on under-utilized city land and private developments; and 2) establishment of a Food Policy Council to develop strategies to implement the Action Plan, for example the creation of a Food Charter (Metro Vancouver 2009).

Following the "Future of the Region Sustainability Dialogues: Agriculture Growing Pains" meeting held May 2nd, 2007, Metro Vancouver released a report detailing a strategy for an improved local food system. The report recommended new infrastructure for production, processing, distribution and development; exploring new local market opportunities; increasing economic development and security for farmers; and improving supply management systems (Metro Vancouver 2009).

Future Trends

While current statistics paint a gloomy picture, the Metro Vancouver region is well-positioned to reverse the erosion of local food security and re-build a strong, diverse, and resilient regional food system due to its geography, climate, and public support. The 2007 Vancouver Food Assessment Report indicates that when it comes to producing its own food, the Metro Vancouver region far exceeds the provincial average of 60%. According to recent assessments, the Lower Mainland has the potential to grow and raise up to 85% of the food consumed by its residents (Get Local 2008).

In addition to growing public interest, local food issues are experiencing increased attention from local government policy makers and planners. Re-localizing the food supply offers an opportunity to reduce the carbon footprint of Metro Vancouver, and recent provincial climate change initiatives – in particular the 2007 Greenhouse Gas Reduction Targets Act mandating an 80% reduction in emissions by 2050 – have placed the issue of food transportation squarely in the political spotlight.

Synergies with other themes

Economy

Agriculture is an important sector of the regional economy. Strengthening regional food production presents an opportunity to enhance the viability of farming as a livelihood and create new employment opportunities directly in the farming industry, as well as in value-added food industries. A diverse and vibrant local food system could also serve to attract visitors through farmer's markets and local farm-based accommodation and tours.

Mobility

Agriculture intersects with regional mobility systems during the transportation of food from farm to fork. Urban agriculture presents an opportunity to reduce pressure on shipping routes by reducing volume of food transported from outlying agricultural lands to grocery stores, as well as reduce vehicle trips made to purchase food.

Water

High agricultural productivity requires high water inputs. Despite the region's high annual precipitation levels, water tables are falling as a result of growing industrial demand and household use, resulting in reduced productivity on agricultural lands. Strategies such as mulching and cover-cropping reduce evaporation, and collecting and storing water in barrels for irrigation, can be effectively applied in small-scale farming or urban agriculture activities.

Natural Habitat

Agriculture and natural habitat are closely interlinked. Regional agricultural lands provide important habitat – particularly when organic

and agroecology techniques are employed. Urban agriculture initiatives help to create new habitat, as well as link existing habitat to enhance connectivity.

Energy

Agriculture both demands and produces energy. While food production requires large energy inputs – particularly during colder winter months – the waste heat produced by greenhouses also represents an opportunity for energy generation and recycling. Furthermore, greenhouses and gardens can be designed to capture waste heat from roofs and heating ducts of residential and commercial buildings, lowering energy input demands. Locally-produced food also reduces transportation-related energy consumption.

Questions

How should a regional food system for Metro Vancouver be geographically defined? At what scale(s) should food be produced and distributed?

Are there optimal urban forms or patterns for supporting a strong and resilient local food system?

What opportunities does Metro Vancouver's urban design offer for development of a strong regional food system? How does Metro Vancouver's urban design constrain expansion of local food production and distribution?

What regulatory/political/social/economic/technological barriers exist to creating optimal conditions for increasing regional food production?

How does development that supports regional and urban agriculture conflict with or support other sustainability goals?

Which approaches to food production are most feasible for the region, and what urban forms or patterns support or limit these approaches?

Are there synergies between food supply and demand (or production and consumption) that should be developed?

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