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edited by:

Dr. Jutta Gutberlet

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Sustainable Food Production, Consumption, and the Generation of Waste
Analisa Blake, Crystal Tremblay and Gerry Watson

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University of Victoria, Department of Geography

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Sustainable Food Production, Consumption, and the Generation of Waste:

Consumer perception and public policy in the Capital Regional District of Victoria, BC, Canada

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CLOSE THE LOOP

BUY RECYCLED!

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1.0 Sustainable food production, consumption, and waste generation:

1.1 Introduction

The quality of our food, the way it is produced and the impacts it generates on our environment are pressing issues, putting at risk the health of our society. Severe social and environmental concerns are linked to the increasing commodification and the industrialization of modern food production. The application of footprint analysis confirms the fact that food travels longer distances from the production site to our table nowadays (Jones, 2002; Pretty et al., 2005). More of our food is produced with agrotoxics (from pesticides and synthetic fertilizers, to defoliants, etc.), heavy machines and other inputs like plastic coverage and irrigation schemes (O'Hara & Stagl, 2001). Finally, with an increase in mechanization less people are involved in fresh food production today (Renting & Marsden, 2003). In many regions family farming has become difficult and often impossible to sustain livelihoods. Urban sprawl and land speculation often take over the most productive and fertile land transforming the rural landscape into a sub-urban 'monocultural landuse' like: predominantly single family housing or typical box store (Ackerman, 1999; Maxwell et al., 1999; Mariola, 2005).

All of these facts take their toll on the quality of the products we eat and drink, on the quality of the surrounding environment and finally on our own health. With life style changes and under the influence of advertisements we also see a growth in the consumption of processed products, which increases the consumption of less nutritious food and products with more additives (conservants, artificial colours or flavours, etc.). Changes in our food habits also generate more waste, since most of the processed food products come in mostly non-biodegradable wrapping and packaging. There are also possible health risks related to packaging; firstly, through the contact between food and wrapping and secondly, through the disposal and dumping of packaging in the environment, where it releases toxic elements into the ground and atmosphere while degrading.

In opposition to these developments related to our food chain we find alternatives in organic and biodynamic agriculture, community gardening, or changes in consumer attitudes such as conscious shopping avoiding packaging and plastic bags or following the principle of

‘consuming less and consequently wasting less’. Particularly in our local community in Victoria these alternatives gain more and more attention and an increasing number of people are becoming involved in new ways of accessing food and consuming more healthy products. The Community Green mapping with specific focus on fruit trees and community gardens is just one example.

The present document is the result of a collaborative empirical study on food production, consumption, and waste; undertaken by three Geography Graduate Students (Analisa Blake, Crystal Tremblay and Gerry Watson) at the University of Victoria during the spring and summer semesters in 2005, in fulfilment of the course requirements for *Qualitative Methods* (GEOG 523). The students were provided with a theoretical and practical foundation in a range of qualitative methodologies used in contemporary human geography. In a participatory and collaborative fashion we defined the research topic based on our interests and societal relevance and designed the field component based on a multi-method approach. We held regular meetings and electronically exchanged information to constantly update us about findings in the literature and to coordinate the field activities. This innovative and creative approach towards teaching, learning and social engagement was only possible due to the highly committed and motivated students. This research project proposal has received approval by the University’s Ethics Committee.

The primary focus of this project was to look at sustainable food production and consumption in Victoria, the generation of food packaging waste and the current policies in place to minimize waste and encourage more healthy food production. The literature search and analysis as well as the empirical data collection are based on the following three major research topics; of course without being able to cover in depth all relevant aspects of these themes:

1. What are the public’s perceptions and behaviours related to local production and what is the potential for local food production?

2. How do consumers perceive packaging waste generated by their food consumption and what ecologically conscious practices are adopted by consumers to reduce this waste?

3. What are the policies in place to implement sustainable food chain issues and what are their limitations?

The research was conducted in May 2005 in the Capital District Region of Victoria. After the conclusion of the research and the editorial process, the students presented their findings during a seminar at UVIC, open to the general public. I herewith want to thank everybody who has collaborated with this study and would like to reiterate the importance of the University reaching out to the community by conducting local studies and disseminating the findings.

1.2 Questionnaire design

The design of the questionnaire for all three sections; local production, consumption and packaging waste; was based primarily on previous qualitative research found in the literature on each specific topic, and drew heavily from the overall objectives of the group research project. A combination of open and close-ended questions were developed for each section of the questionnaire and compiled into a three-page survey, each consisting of between 10-15 questions (see Appendix A for sample of questionnaire). A pre-test was applied to the questionnaire to determine the variance and clarity of the questions, and later revised based on this input. The length of the questionnaire was influenced by the time duration required from each respondent, which was approximately 10 minutes.

1.3 Questionnaire administration

The questionnaires were administered at four different food retailers in the CRD. The retailers were located in four distinctive areas: a mid-scale store in a downtown location, a small-scale store suburban location with a large seniors population, a mid to large-scale store in a higher income suburban area, and a small-scale year-round farmers market on the rural-urban fringe. The administration of the questionnaire was timed such that data would be collected in the morning, afternoon and evening at each location during weekdays. No demographic information was collected however information on the gender and approximate age of each participant was noted after their completion of the questionnaire. At one location five-dollar gift cards were given after completion of the survey for use inside the grocery store.

1.4 Questionnaire analysis

The questionnaires were separated into sections (food waste, packaging waste, food production) and a different member of the research team analyzed one section each. Results for each question were tabulated and entered into Microsoft Excel. Open-ended responses were tabulated and then coded into broader themed categories. Some responses were included in more than one category. Further analysis consisted of simple operations to calculate averages and percentages. Results are presented numerically and in tables throughout the report.

1.5 Key informant interview design

The key informant interviews were designed through a highly collaborative process between the project researchers and supervisor. Each researcher designed questions based upon their own research area that were aimed at store managers, non-governmental organizations, and policy-makers. One set of questions was designed for specific interviews with store managers, while other, more focused interviews were aimed at specific key informants. A semi-structured interview format was implemented in each case, with questions that were carefully revised to suit the topic and interviewees. A carefully chosen mix of open and close-ended questions allowed for interviewee opinions to be clearly and openly stated. The design of the interviews allowed for complete anonymity of the subject and was revised heavily with a point to remove, as much as possible, researcher bias. The end result was a compilation of focused questions aimed at unearthing the interviewees' knowledge and revealing their opinions without causing discomfort or confusion.

1.6 Key informant interview administration

The administration of the semi-structured interviews required that the researchers agree upon a uniform procedure prior to going into the field. It was necessary to consider that separate researchers might approach and question the interviewees in different ways that could potentially hinder or drastically alter informer response. With a mind to creating a standard of objectivity, introductions were scripted and a uniform oral consent form was used (see appendix B for example of consent form). By using these standards it was felt that the individual biases of the interviewer would be kept under check, while allowing for an open and unhindered response from the subject. A tape recorder was used with consent of the interviewee for playback and transcription purposes. In cases where interviews could not be arranged face-to-face, questions were supplied in hard and electronic copies and answered similarly.

1.7 Key informant interviews analysis

The key informant interviews were analyzed using a theme coding method. Common themes were identified and codified under specific themes that were later extracted and used within each research section as direct and indirect quotes. Key informants included policy makers with the CRD, store managers and food distributors in Victoria, non-governmental organization and community education centres. Interviews were recorded using a tape recorder and later transcribed. Interview transcriptions were analyzed using the aforementioned theme coding method and sent to each key informant for verification.

1.8 Government document and policy analysis

A number of government documents and policies were referred to and referenced through the course of the research. Every attempt was made to understand the nature and contexts of these documents in order to avoid misrepresenting or misinterpreting government institutions and policy-makers. Guided by examples from previous studies (McRae 1997, 1999; Lang 1997, 1999), these documents were examined with a mind to objectively report their policy implications and disseminate the facts, not opinions, regarding policy and legislation. The documents were accessed electronically through public government websites.

2.0 Local food production in Victoria:

Challenges, opportunities and Visions for Victoria's food system

Analisa Blake

Abstract: The question of local food production is at the centre of a complex web of social economic and environmental issues. Local food production can improve the sustainability of

food systems by reducing fossil fuel emissions, supporting local economies, building community and preserving biodiversity. With a virtually year round growing season, Victoria should have the potential to be largely self sufficient with its food production. However, a number of constraints around policy issues, available land and farmers and personal attitudes and behaviours make the move towards greater local production a challenge. This chapter addresses the issue of local food production in Victoria, and looks at possibilities for the future of the local food system.

Key Words: food system, food shed, local food production, sustainability, consumer perception, urban agriculture, food miles.

2.1 Introduction: The case for local production, why worry?

The question of local food production is at the center of a complex web of social, economic and environmental issues. Increasing globalization of the mainstream food system has brought rise to concerns over how food is grown, who grows it and how far it travels from 'plough to plate'. Heavy reliance on oil products, extensive use of agrochemicals, unchecked use of genetically modified organisms (GMOs), loss of biodiversity and continued exploitation of land and people in developing countries are just a few of the traits of the mainstream global food system (Francis, 2004; Goland and Bauer, 2004).

Oil is a key factor in the issue of local food. It is tied to virtually every aspect of our food system: from production, to processing, transportation and consumption. Moreover, much of the transport involved in the global food system is unnecessary; as a result of trade agreements and monoculture crops, many countries import as much food as they export, needlessly wasting vast amounts of energy (Millstone and Lang, 2003; Garcia, 2004). As oil prices rise so too does the cost of growing and delivering food, and as supply dwindles so does the security and sustainability of the global food system. These issues affect both human health and the health of the environment. The global food system will continue to degrade the planet and its populations if it continues on its current track. Local food production is one way to improve the sustainability of the food system by reducing fossil fuel emissions, supporting local economies, building community and preserving biodiversity.

This chapter will explore the role of local food production in Victoria's food system. Data collected for the present study and a series of brief, focused literature reviews were based around the following research questions:

1.) Why is local food production a positive thing?

2.) What is the state of the art of local food production in Victoria?

3.) What are the public's perceptions and behaviours related to local production?

4.) What is the potential of local food production in Victoria?

The chapter will begin with an overview of how Victoria residents feel about local food production. Following this, will be a discussion of the past and present of Victoria's food system, with particular attention given to the state of the art in local food production in Victoria today. The chapter closes with a vision for the future of Victoria's food system, with reference to the literature and to projections and vision statements provided by local key informants.

2.2 Why Victorian residents care about local food?

Blessed with a mild climate and a year-round growing season Victoria holds an advantage matched by few places in Canada: the potential to be largely self sufficient with food production. However, at present Victoria is far from being self sufficient, importing nearly 90 percent of its food from locations off island, as far away as China and New Zealand (MacNair, 2004; Ewanchuk, 2005). The present survey on food system sustainability in Victoria collected data from 60 consumers at three grocery stores in the Capital Regional District (CRD). The data shows that the vast majority of people (98 percent) feel it is important to buy locally grown produce. Among the reasons cited, supporting the local economy was the most common, followed by a belief that local food was fresher, of better quality, or better tasting. Concerns for the environment and for farmers and farmland were also significant among the responses. Other explanations related to a.) the health, safety and security of food, based on how things are grown, b) the benefits to the community and improved self sufficiency from increased local food production, c.) the cost and affordability of local food, and d.) concerns around characteristics of the globalized food system such as corporate control and exploitation of people and resources in developing countries (see figure 1). With such strong support for local food products, one wonders how local food

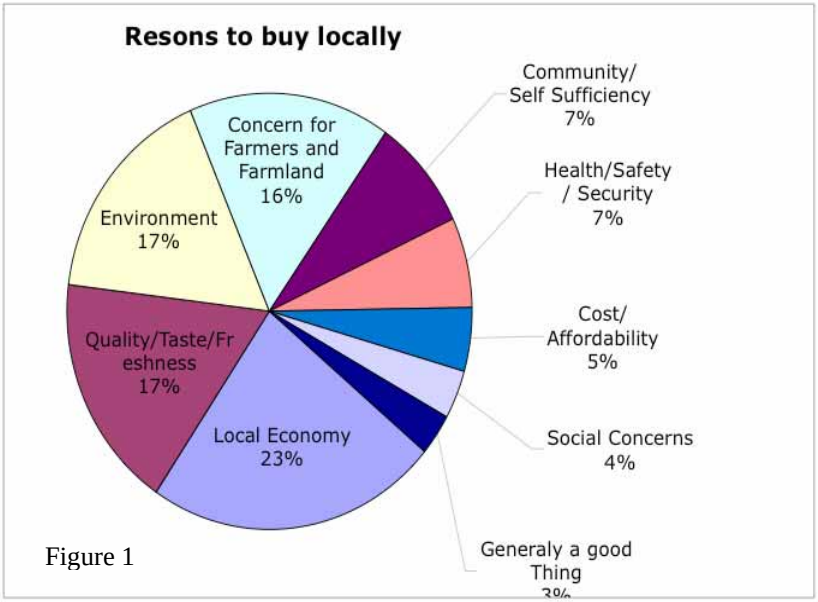


Figure 1

production in Victoria could really be an issue. This chapter will discuss sustainable food systems in the context of local food production in Victoria.

2.3 The history of food production in Victoria

As a point of settlement at a time when transportation from the mainland was not such a simple matter and when refrigeration was non-existent, Victoria had to produce most of its own food locally. Just fifty years ago it is estimated that Vancouver Island farmers produced as much as 85 percent of the food supply for the Island (MacNair, 2004). In war times, the concept of victory gardens spread across the Atlantic from Britain to Canada and the US; "in England 1,300,000 urban gardeners saved their nation from malnutrition, if not starvation," while the country was blockaded by submarines (Warner, 1987:17). After the war, technological innovations from earlier in the century began to take hold resulting in the expansion of mechanization in the production of many commodities, including food (Millstone and Lang, 2003). In Victoria and across North America, the connection that once existed between people, communities and food gave way to the connection between individuals, automobile and grocery stores, and between farms, freight trains and factories.

The last half century has seen many changes in the way food is produced including the industrialization of farming, extensive loss of employment in the agricultural sector and massive growth of the food processing and distribution industries (Parrott *et al.*, 2002). Today, Victoria imports nearly all of its food and farmers and agricultural land are becoming scarce (MacNair, 2004). Is Victoria on the road to complete dependence on the mainland and abroad for its food supply? Or, is it possible for the pattern to shift, for Victoria to rebuild the connection between its inhabitants and its food?

2.4 Victoria's food system today

From standard grocery stores, to farmers markets, to backyard gardens, Victoria's population has a range of options when it comes to food choices. This section will discuss how personal attitudes, consumer choices and agricultural practices in Victoria come together to form a complex, multi-layered food system. Conventional agriculture, grocery store buying, alternative food distribution/access options, and alternative modes of production will be addressed. The goal is to give an overview of local food production options available in Victoria, and also to highlight obstacles faced by consumers, producers and retailers in building Victoria's capacity for sustainable, local food production.

2.4.1 Conventional agriculture

As mentioned above, Victoria imports a significant proportion of its food from off Island. This means, in theory at least, that local farmers could be producing and selling significantly more food than they are today. But is this possible in reality? In order for Victoria to be truly self sufficient in its food production there are some key ingredients needed: available arable land, knowledgeable farmers to work the land and consumers that support a local supply of food. Does this recipe add up for Victoria's food system?

Much of the arable land in Victoria and the CRD has been set aside in what is called the Agricultural Land Reserve (ALR). As the name suggests, this land has been designated specifically for agricultural development; however, only about half of the land in Vancouver Island's ALR is actually being used for agriculture (Junger, 2000). While it would appear from this scenario that there is plenty of land for farming, the land in the ALR is not as well protected as it could be. Of the 19,595 hectares of land in its ALR, the Capital Region lost almost 2000 hectares between 1974 and 1999 (MacNair, 2004). This pattern continues as municipalities fail to take a strong stand on the ALR allowing development projects to slowly take over some of the best agricultural land in the region (MacNair, 2004).

A second issue related to available arable land in the CRD relates to the cost of the land. As is the trend across North America (Kaufman, 2004; Vallianatos *et al.*, 2004) urban sprawl is taking its toll on Victoria's agricultural land. A growing population together with a preference for single-family suburban style housing has increased the demand for land suitable for development (Awai, 2005). This in turn has led to rising land values. The result is that would-be farmers simply can not afford to purchase land for farming and agricultural land owners have more incentive to sell land to developers (Kaufman, 2004; MacNair, 2004). Compounding the issue is the low income earned by most farmers, which makes land purchases less of a reality (MacNair, 2004). While there may not necessarily be a shortage of agricultural land, it is not easily available

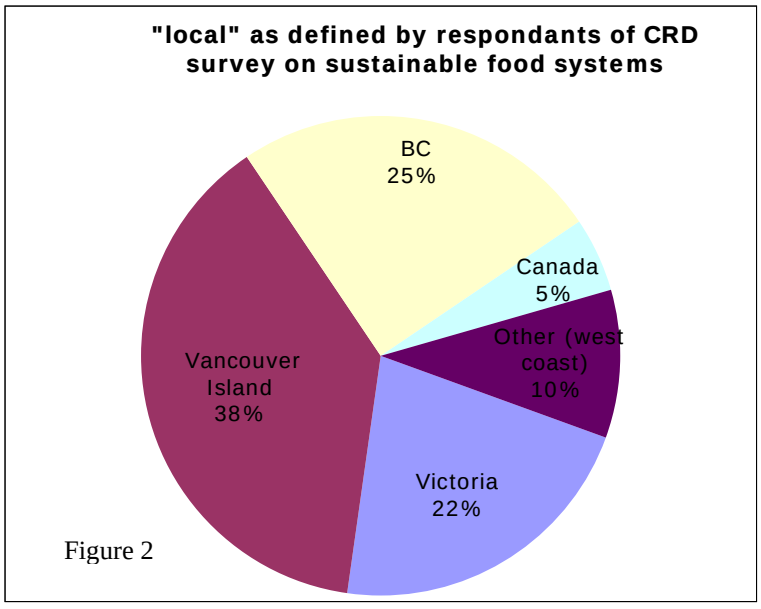


Figure 2

to farmers. If this process continues, Victoria's agricultural land will no doubt continue to be reduced for years to come.

The third element of the recipe for local production is consumer support. As discussed earlier, virtually all those surveyed in the present survey on food system sustainability felt that buying locally was important. This corresponds with similar studies done throughout the United States and Canada that show a general preference for locally grown food (Wilkins *et al.*, 2000; 2002; Stephenson and Lev, 2004). However, as Stephenson and Lev (2004) point out, despite a significant sentiment of support for local products among consumers, few actually make a marked effort to buy locally. In addition, the lack of consensus and consistency on a meaningful definition of 'local' creates challenges for producers and retailers to build support for local markets (Wilkins *et al.*, 2002). This problem was clear in the range of areas defined as local by participants in the survey for present research on sustainable food production in Victoria. Of the 60 respondents, 25 percent identified BC as local, 38 percent identified Vancouver Island, and 21 percent felt Victoria was local. Many respondents gave a range of answers from their first choice to their last in terms of how far away a local food could come from and some identified more specific boundaries (for example as far away as Oregon, or as close as Saanich). Consumers from this study also indicated that local produce often was not consistently available where they did their shopping. This points to another link in the equation for a local food system, which is related to retailer support for local producers.

A common comment among food retailers surveyed for this research was that local producers did not have sufficient quantities of a product to supply conventional retail outfits. Retailers favour bigger producers for the majority of their local stock. If they cannot get sufficient supply in BC they look elsewhere for their products. A potential solution suggested by one retailer is for local producers to form cooperatives that are capable of supplying retail outlets with larger volumes of stock. It was noted that some producers in Victoria have begun to do this but not extensively. The problems of consumer access to and retailer support for local products seem integrally connected; however, past studies have suggested that the best solution is for consumers to go directly to the producers for their local products (Stephenson and Lev, 2004). Further to this claim, it has been shown that it is not necessarily the local product that consumers are interested in, but the experience of buying local in a locally oriented environment, such as a farmers market (Lockeretz, 1986). Although this is a somewhat dated study, as discussed in the following section, there is certainly some appeal to such alternative buying options.

2.4.2 Alternative food distribution/access options.

With mounting concern over an increasingly globalized food system, consumers are turning to alternative food distribution options such as Farmers Markets, Organic Box Delivery Programs (OBDP) and Community Supported Agriculture (CSA). Such programs benefit both farmers and consumers by allowing consumers to actively choose where their food comes from, while farmers see a greater share of the profits than they would by supplying retail food outlets. Victoria has a handful of these programs that operate on both a yearly and seasonal basis.

Of the three-food distribution alternatives, OBDPs are the most similar to a grocery store. Box delivery companies often have a basic order that clients can customize (within limits) according to their preference but, depending on the size of the company, substitutions may be limited (MacNair, 2004). Companies that offer a completely local selection often limit substitutions because of a lack of availability mainly due to seasonal restrictions. However, these box programs do not necessarily sell local produce. Because of the scarcity of many local organic crops, companies may import their products from wherever possible, thought they claim as close as possible (MacNair, 2004; Hunter, 2005). MacNair (2004) reports that box delivery programs are rapidly gaining popularity in Victoria and although they may still import a significant proportion of food, they are contributing to a more sustainable food system by reducing the need for a growing number of consumers to travel to the grocery store. Further more, OBDPs often use alternative modes of transportation, such as bicycles, to deliver their produce. A manger at a popular box delivery interviewed for the present research indicated that OBDPs may be more community minded, favouring local over imported produce, encouraging their customers to choose local items by reducing costs and paying farmers above market prices for their products. However, there are other alternative food distribution options known as direct agricultural markets that eliminate the “middle-man” in food distribution, where profits go straight to the farmers; Community Supported Agriculture, and Farmers Markets are two examples of these direct agricultural markets (Hinrichs, 2000).

Community Supported Agriculture (CSA) is a way of linking consumers to farmers and all aspects of the farming livelihood (Kolodinsky and Pelch, 1997; Cone and Myhre, 2000; O'Hara and Stagl, 2001). CSAs are intended “to provide consumers with healthy, locally grown food while revitalizing local food markets and preserving small-scale, family farms” (O'Hara and Stagl, 2001:545). The concept originated in Europe and Japan and spread to North America in 1985 where it has gained popularity (Cone and Myhre, 2000). By 1999 there were as many as

1000 known CSAs in the United States alone (Cone and Myhre, 2000). The farmer-consumer link begins when consumers buy into a share of the farm early in the growing season. The share provides farmers with a guaranteed income throughout the year and an ability to accurately plan for the growing season, while consumers are guaranteed an equal share of what the farm produces and sometimes even a say in the growing practices (Cone and Myhre, 2000; O'Hara and Stagl, 2001; Worden, 2004). As a result, the risk of poor production that always exists for the farmer is partially transferred to the consumer; if there is a drought or crop disease, the shareholders will see the results in their weekly food box. CSAs allow varying degrees of shareholder involvement, and within each, there may be a choice of how involved a shareholder can become (Cone and Myhre, 2000). Participation may range from simply picking up or receiving their weekly box, to helping on the farm on a casual basis, to taking part in and organizing farm celebrations and work parties (Cone and Myhre, 2000). CSA shareholders have the opportunity to gain a better understanding of what is involved in producing food, and help to raise awareness of issues related to the food system as a whole (O'Hara and Stagl, 2001). Currently Victoria has approximately 6 farms or cooperatives offering services similar to the standard CSA model, some of which involve multiple local farms in a box delivery like program (Lifecycles, 2005a). CSA's are a promising solution in the effort for a more sustainable food system in Victoria and certainly there is room to grow, but this is not the only initiative with benefits to local farmers. For consumers who enjoy the experience of going out and choosing their produce there are other options available.

Farmers markets are yet another way to directly support local producers in the effort to create a more sustainable food system. Farmers markets are actually a return to the way produce was sold before supermarket shopping became the norm (Atkinson, 1994). As Wilkins (2002) points out, much of the appeal in shopping at farmers markets is the opportunity to buy directly from farmers. Wilkins further notes that the atmosphere of farmers markets is seen by consumers to be more pleasant than in supermarkets. Also consumers tend to view the prices more favourably at farmers markets compared to supermarkets (Govindasamy *et al.*, 2003). These markets allow consumers to make connections with the people who produce their food, while farmers are able to set their own prices "according to the real costs of production" (MacNair, 2004:19). Victoria has ten farmers markets, most of which run only in the summer season (MacNair, 2004). Some of Victoria's farmers markets attract up to 1000 customers each week even when open for only few hours in a single day (MacNair, 2004). These markets provide a venue for well-established local farmers as well as those just starting out.

This research revealed that awareness for these types of programs was high in Victoria with an overall 83 percent awareness rate. In particular, Farmers Markets had a 100 percent awareness rate with OBDPs and CSAs close behind at 73 percent and 77 percent respectively. But although many may have heard of these programs, a much smaller proportion of respondents actually participate or have previously participated in them. However, because of where the sample was taken, grocery stores (75%) and farmers markets (25%) it is possible that there is a bias in this measure (i.e. OBDP and CSA participants are less likely to be found at such locations). As noted by MacNair (2004), there are several barriers that exist for people in accessing such programs including cost, timing, and availability. In the consumer questionnaire for this research project it was noted among single people that although the idea of box delivery programs and CSA appeal to them, they choose not to participate because, living alone, they are not able to consume all the food before it spoiled. In addition, for people without vehicles, it was felt that getting to farmers markets was not a viable option. Others were aware of the program ideas more generally but were unaware of their availability in the Victoria area. This points to a need for more marketing of these programs as well as a greater diversity of options available for single persons and for persons without vehicles.

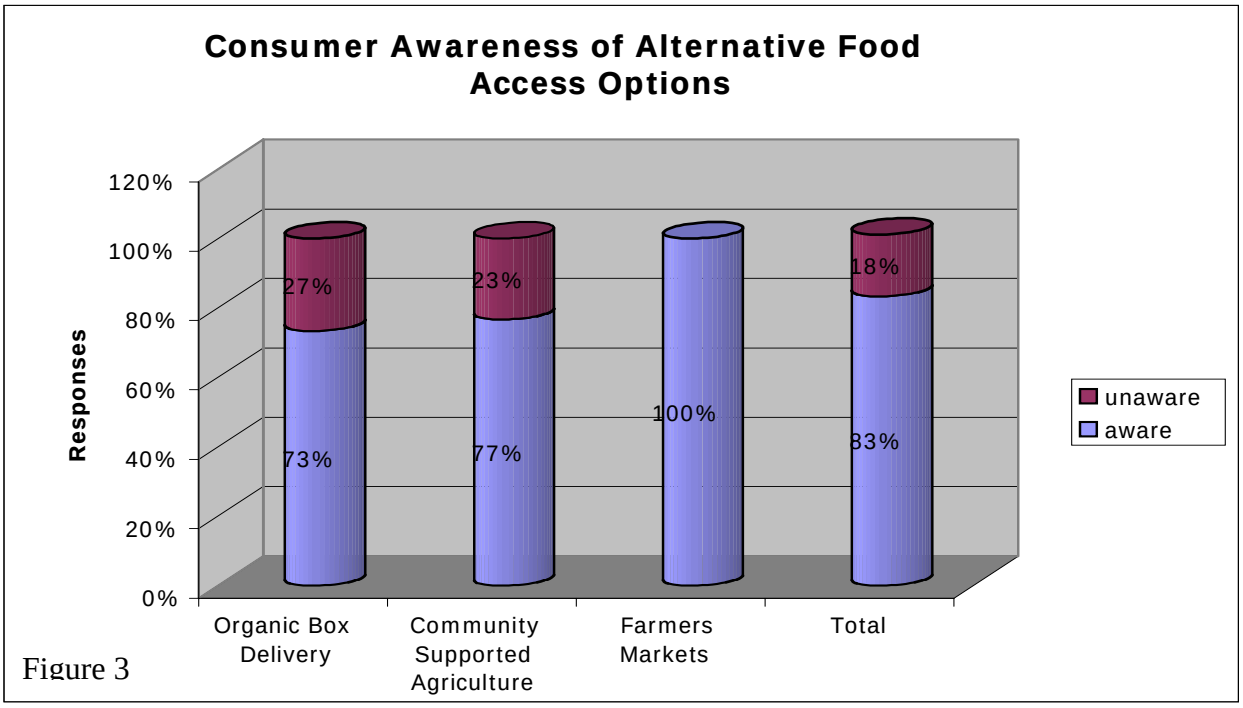


Figure 3

The alternatives discussed above are just a few of the alternative food distribution/access options available to farmers and consumers in the CRD and around the globe. They echo principals and practices of bygone community-oriented food systems (Atkinson, 1994) and offer positive alternatives to the hegemony of globalization that characterizes our food system today (Allen *et*

al., 2003). These options are works in progress with room for change and improvement (Allen *et al.*, 2003), but they are by no means the only route to sustainable food systems. There are ways to bring food even closer to the city and the people who live there, making efficient use of virtually every urban surface. These initiatives fall under the umbrella term of urban agriculture.

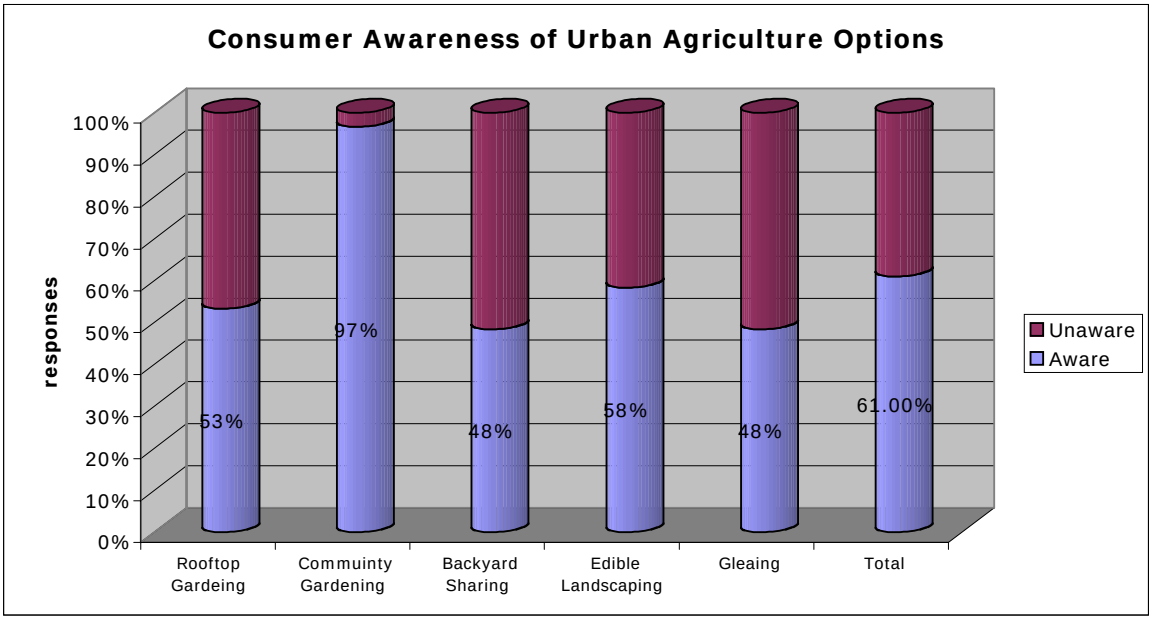
2.4.3 Urban agriculture: do it yourself food production

The concept of growing food in urban areas is not new. As mentioned earlier, people have been gardening in their own backyards throughout history and still do today. Urban growing plays a significant role in curbing hunger in developing countries (Millstone and Lang, 2003; Holland, 2004). In Shanghai, China urban agriculture provides 60 percent of the population's fruit and vegetable needs. In Havana, Cuba that number is 58 percent. Considering that these are both large, dense, well populated cities, there is no question Victoria, with its sprawling suburbs and prime arable lawn space, could do just as well.

Urban agriculture comes in many different shapes and sizes. From basic backyard gardens to large-scale community allotment gardens, to a multitude of grassroots initiatives, Victoria has its fair share of variety. Lifecycles is one of the key organizations involved in sustainable food production and food security in Victoria (Ewanchuk, 2005). They have several programs that support urban agriculture including garden creation programs, a backyard sharing board, a demonstration garden, school and public education programs and gleaning programs [1](Lifecycles, 2005b). Respondents for the present study in Victoria were asked about their awareness and knowledge of particular urban agriculture programs including rooftop gardening, community gardening, backyard sharing, edible landscaping and gleaning. Respondents were also asked for any comments they might have on each of these programs. The survey revealed that there is a good awareness of urban agricultural options with an overall average awareness of 60 percent. This percentage was skewed by a 97 percent awareness rate for community gardens (see figure 4). There were few specific comments about these programs. One respondent felt that such initiatives sounded good, but in reality would not catch on in a big way. Another noted that these programs would have to be slowly integrated into peoples lives, rather than making a sudden shift.

Figure 4

[1] A program where unused fruits and vegetables are harvested from people's gardens and fruit trees.



The importance of gradual adoption of these and other strategies for sustainable production was echoed by Tim Ewanchuk, Lifecylcles' Co-Director. Ewanchuk notes that rather than "pushing people" to change immediately, it is important to have people realize the options available to them (Ewanchuk, 2005). This awareness comes through education says Ewanchuk, "You need to first get people excited and interested about the issue and then you need to get them educated about the decisions related to that issue." If Victoria is to meet the performance of Shanghai and Havana in urban agriculture, and if the region is going to succeed in creating a more sustainable more local food system overall, favourable government policies and a motivated population must both be present. Does Victoria have what it takes to realize a sustainable, local food system in the future?

2.5 What the future holds

The move toward a sustainable food system will be marked by slow and subtle change (Ewanchuk, 2005). Ewanchuk envisions moving local production from the current rate of about 10 percent to as high as 20 or 25 percent in the next decade, and possibly as

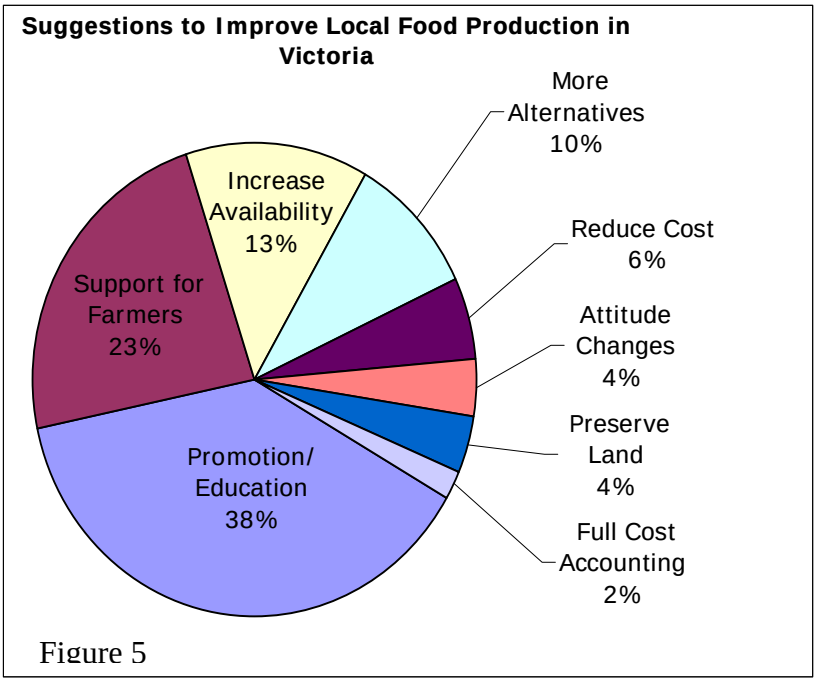


Figure 5

high as 50 percent in the next 30 or 40 years. This is a rosy picture; however if things do not change the future will not be so positive. According to Ewanchuk "if we have an earthquake or a huge ferry strike or planes couldn't come, we only have enough food on the Island, especially Victoria for two, maybe three days maximum. So it's clearly an issue. We have this amazing climate in place and yet we only have enough food on our shelves here for two days and I know with the available land we have, we could be growing probably 50 to 70 percent of our food locally." In Ewnachuk's vision, with more favourable government policy, backyards could be used 50 to 70 percent more and a small percentage of park space could also be devoted to food production.

For Lorie Hrycuik (2005), Food Security Consultant with the Vancouver Island Health Authority, a sustainable food future involves rebuilding the connection between food and people: "in order for us to get to that sustainable local food system we have to change our values around food and so that's my mission – that we will actually come to acknowledge that food is an important part of our community and it is an important part of health and it is an important part of our [way of] thinking." Respondents of the questionnaire for the present study echoed this sentiment calling for both attitude changes and more promotion and education around local food and sustainability. But there is a limit to what the general population can do in this matter. It was noted by respondents in the present study, that consumers need more alternatives that give them the opportunity to support local production and grow food on their own. Of the people surveyed only 47 percent grew their own food and of those that did not, 55 percent cited restrictions in space and 27 percent had a lack of time. Furthermore, consumers can only buy as much local produce as is grown. Another common response was that there needed to be more support for farmers from both government and retailers. As Hrycuik points out, even though there may be plenty of arable land in the Victoria region there are not enough people to work that land as the current generation of farmers ages and retires. Hrycuik suggests tackling this multifaceted problem with subsidies for local farmers and more local markets accessible to consumers.

These suggestions mirror the representation of the food system as a "marketscape" as proposed by Lyson and Green (1999). The marketscape is an understanding of food systems as geographic landscapes of production and consumption. This is compared to the idea of a "food shed" which considers the flow of food to consumers. "Marketscapes encompass all of the institutions and organizations that produce, process, distribute and consume food in an area"(Lyson and Green, 1999:134). Both local and global food systems can be described as marketscapes. Lyson and Green describe the typical local marketscape as including "farms,

farmers markets, processors community kitchens, community gardens, wholesalers and retailers, restaurants, consumer and producer cooperatives, institutional food buyers and the like" (Lyson and Green, 1999:134). This description is a reminder of just how vast a local food system can be, how many niches there are to fill within it and how many people there are to involve in that process.

Victoria has the potential to work its way toward a sustainable local food system; wheels here are turning. The effort of the Capital Region Food and Agriculture Initiatives Roundtable (CR-FAIR) to develop a regional food charter is the grease for those wheels: an organized attempt to fill each and every niche within Victoria's food system. CR-FAIR is a collective of representatives with expertise in food issue from various organizations in Capital Regional Distirict including the Vancouver Island Health Authority, Groundworks Learning Centre, The Community Social Planning Council, Lifecycles and the Ministry of Agriculture, Fisheries, and Food. The vision of CR-FAIR "is a sustainable and secure local food and agriculture system that provides safe, culturally acceptable, sufficient, nutritious food accessible to everyone in the Capital Region through dignified means" (CR-FAIR, 2001). This is a large mandate to fill, but it is a practical and well-rounded effort towards bettering Victoria's food system. With the help of initiatives like CR-FAIR and organizations like Lifecycles, Victoria is slowly laying the foundation to turn the vision of a local food system into a reality.

3.0 Food Packaging Waste:

Consumer Perception and Ecological Consumerism in Victoria, BC.

Crystal Tremblay

Abstract: The amount of packaging sent to landfill sites for disposal has gained considerable prominence as an environmental issue in Canada as a result of the 1990 National Protocol on Packaging. Policies aimed at changing consumer awareness of and attitudes towards the environmental impact of consumption are becoming more prevalent in Canada's waste management goals. This research presents an overview of packaging waste in the food industry, with a particular focus on the Capital Regional District. Consumer perception of food packaging waste and recycling behaviour is analyzed in an attempt to highlight consumer awareness of the urgency for reducing food packaging in the waste stream. Recommendations from consumers, industry and local government are presented for reducing food packaging waste in the Capital Regional District. This research provides an overview of consumer perception aimed for the purpose of influencing policy discussions.

Key words: food packaging waste, ecological consumerism, recycling, waste management, consumer perception.

3.1. Introduction

As a result of increased packaging in the waste stream, measures to reduce the amount and toxicity of packaging and to encourage its reduction and recycling are a major environmental concern for many countries (McCarthy, 1993). Of all the manufacturing industries, the food industry generates the largest demand on packaging (Henningsson et al., 2004). Minimizing the packaging of food products presents an opportunity as well as a challenge to the food industry as the main concern in the supply-chain is for food safety. In order to maintain food hygiene and

product quality, driven by consumer demands and food safety regulations, the minimization of raw material used for packaging is a challenge. Due to the inherent advantages of packaging, specifically for food safety, there is no doubt that the amount of food packaging has grown dramatically in the waste stream in many countries. For example, since 1948, paper, glass, metal, and plastic have increased their combined share of the municipal waste stream in Paris from 13.5 percent to 61.8 percent. In the United States, since 1960, packaging has increased by nearly 30 million tones (108 percent). Packaging represents about one-third of municipal solid waste in many countries, including Canada (McCarthy, 1993).

It is widely recognized that consumers play a critical role in promoting environmentally friendly food products by making ecologically conscious decisions of where and what to buy, and how to properly dispose of the packaging. Consumer awareness and perception of food packaging waste is therefore an important initial step to move towards more sustainable urban waste management and resource conservation.

Given the increasing concern over food packaging contribution to the solid waste stream, this research attempts to present an overview of consumer perception and awareness of packaging waste in the Capital Regional District (CRD). Suggestions and packaging waste reduction strategies used in the CRD are also presented, followed by a brief discussion of some initiatives that are working to reduce packaging waste

This research paper presents an overview of packaging waste in the food industry in Canada, followed by a literature review of ecologically conscious consumerism, a case study of consumer perception in the CRD, and a discussion for future recommendations. The following research questions are central to the literature review on ecologically conscious consumerism and are discussed and analyzed based on qualitative field research collected in the CRD.

1. How do consumers perceive the generation of packaging waste in their food consumption in the CRD?
2. What ecologically conscious practices are adopted by consumers to reduce food packaging waste in the CRD?

3.2 Packaging waste in the food industry

The amount of packaging waste sent to landfills has gained considerable prominence as an environmental issue in Canada as a result of the 1990 National Protocol on Packaging (Labatt, 2004). This protocol recommended specific packaging waste reduction targets for manufacturing sectors and was further extended in 1995 to include regulations to enforce compliance with these regulations. The goals outlined in the protocol include reducing packaging waste by 50 percent by 2000 through source reduction and expanded reuse (25 percent) and recycling (25 percent). The National Task Force on Packaging, appointed by the Canadian Council of Ministers of the Environment, indicates that packaging stewardship is the "principle by which industries assume responsibility for the environmental impacts caused by the packaging that they introduce to the marketplace" (Sinclair & Fenton, 1996). The protocol and its principles have not yet been formalized in Canadian legislation that creates obligations on businesses, and mandatory take-back provisions at the national level do not exist under the protocol. Emphasis has been to require packaging stewards to contribute to the cost of municipal recycling programs (Hall, 2004), and in some provinces mandatory deposits on beverage containers has encouraged the take-back of containers (Sinclair & Fenton, 1996). The protocol does not impose specific waste-prevention performance obligations, but does focus on waste-reduction as a primary goal. A Canadian Code of Packaging Practice has been developed as a guideline, ranging from no packaging, to reusable and recyclable packaging. Life cycle analysis is also included in the protocol, developed to identify the environmental impacts of packaging at all stages and to prepare action plans to minimize environmental impacts of the packaging. The Code of Preferred Canadian Packaging Practices was published in 1994 as a guide for industry in the design of products and the selection of packaging (Sinclair & Fenton, 1996). Despite these guidelines and goals the National Packaging Protocol lacks the necessary stewardship policy of industry obligation to reduce the impact of packaging on the environment.

Since adopting the waste reduction goal of 50 percent, the Capital Regional District has commissioned four studies to assess the composition of the waste stream to the Hartland Landfill. The objectives of the landfill study are to determine the overall waste composition by material type, characterizing the waste by sector, and reviewing trends from different areas of the CRD. The most recent study, conducted in May 2005, revealed that approximately 30 percent of the waste stream is composed of paper and plastic products (paper and paperboard 15.8 percent; plastics 13.8 percent). Although these materials have not been identified to be solely coming from food products, it is highly suggestive that a significant amount derives from food packaging (Sperling, 2005). The composition study also identified waste disposal rates, revealing that each person within the CRD was responsible for 429 kg of landfilled waste in 2004 (CRD, 2005). A

comparison of these rates from 2001 to 2004 shows an increase in waste of 30.7 kg per person per year.

With the current waste diversion strategies within the CRD, namely the household residential recycling program, there is opportunity to reduce the amount of paper and plastic material in the waste stream. Consumer awareness of purchasing food products and disposing of the packaging waste responsibly is an important element in reaching this target. Possibilities for reducing food packaging in the waste stream are to recycle waste products in order to re-use them by other users, for other purposes or as secondary materials, and by preventing the origination of waste (Thogersen, 1997). These strategies depend on active consumer involvement and participation to be successful.

Currently, the CRD has not adopted any municipal by-laws that push for reduced food packaging. There are however a number of services that are available to consumers to make environmentally responsible choices, including the implementation of a landfill ban on specific recyclable materials, the residential recycling program, the bottle deposit centers, and programs for waste reduction education and awareness. Tom Watkins, a CRD city planner within the solid waste programs, commented on a move towards more stewardship programs in British Columbia, similar to the bottle deposit refund program, of which he says, are the "most effective waste diversion strategy". The stewardship bottle deposit program obtains upwards of 85 percent capture of beverage containers in the CRD. "The general principles of the industry are to continue to adopt more stewardship programs specific to food packaging, particularly certain plastics" (Watkins, 2005).

3.3 Ecologically conscious consumerism

There is growing recognition that environmental awareness on the part of consumers has created an increased demand for more environmentally acceptable products (Labatt, 1997). Analyzing the ecologically conscious consumer has gained research attention for both the urgency of reducing food packaging in the waste stream and for adapting market research to changing consumer behaviours (Van Dam, 1996). Recent surveys indicate that the availability of more environmentally compatible packaging does affect consumer decision to buy one product over another (Schwepker & Cornwell, 1991; Van Dam, 1996; Labatt, 1997). Analyzing consumer perception of waste and their intentions to purchase ecologically packaged products

have implications for environmental policy. Policies aimed at changing consumer awareness of and attitudes towards the environmental impact of consumption are becoming more prevalent in Canada's waste management goals.

The current over-consumption patterns in many industrialized countries coupled with industry's production of one way packaging has created an urgency to adopt more ecologically conscious consumerism. In 1988, a model of ecologically conscious consumer behaviour was developed in which personality variables and environmental attitudes were used to predict ecologically responsible consumption patterns (Schwepker & Cornwall, 1991). Ebrero et al. (1999) have defined this model as the purchase of products that benefit or cause less harm to the environment than do more conventional consumer goods. The analysis of consumption patterns that focus on packaging is a particularly important issue in the recent literature. Biswas et al. (2000) found that waste recycling behaviour as well as 'recycling shopping behaviour' (purchasing products that have limited or recyclable packaging) were significantly affected by attitudes towards recycling. This study also revealed the significance of the path from waste recycling behaviour to recycling shopping behaviour demonstrating a potential affect of recycling behaviour on other related behaviours such as shopping for recyclables. These behaviours are directly related, in that consumers purchase the product because it has a particular environmental benefit (e.g., the products packaging is recyclable) and can later choose to recycle the package (Ebrero et al., 1999). As Berger (1997) suggests, recycling may be an initial step in adopting other related behaviours.

Attempts have also been made to predict environmentally friendly behaviour and in particular recycling behaviour from socio-demographic variables (Ebrero & Vining, 1990; Bratt, 1999; Ebrero & Vining, 2001). This research however, has produced conflicting results. In some studies, socio-demographic variables have not been shown to be related to recycling behaviour (Derkson & Gartrell, 1993); whereas in others pro recycling behaviour has been associated with being young, female, liberal, highly educated, wealthy and from urban residence (Mohai, 1991; Steel, 1996; Bratt, 1999; Ebrero et al., 1999). Despite some consistency within the research, marketing researchers have found that to identify or predict environmentally friendly behaviour from demographic variables was unreliable (Minton & Rose, 1997).

Consumers can contribute to waste prevention by prolonging the use of products and by demanding products and packaging that are recyclable and/or have a low waste and a high recycling content (Thogersen, 1997). Consumers can also contribute to waste minimization in a

variety of ways such as buying beverages in refillable bottles, reusing plastic bags, or source separating their waste (Minton & Rose, 1997).

A variety of categories have been used within the research to identify consumer motivations for participating in waste reduction behaviour. Ebrero et al. (1999) have classified these motivations as environmental altruism, social factors, nuisance factors, household factors, and economic factors. This comprehensive study found that recycling of almost all the materials presented to respondents was related to conservation attributes. These results show that recyclers believe that shopping in an ecologically conscious manner is important for conserving natural resources. It was found that the more concerned a person is for the environment, the more likely he/she was to purchase a product because it can be recycled or is made with recycled ingredients, to search for information about environmentally friendly products, and to recycle (Minton & Rose, 1997).

Consumers' belief that they, as individuals, can help solve environmental problems was found to be an effective indicator of predicting ecologically conscious consumer behaviour (Roberts, 1996). Alternatively, a similar study found that respondent's efforts to reduce waste were not affected by feelings of responsibility for generating waste (Minto & Rose, 1997).

Overall, major finding's from the literature show high awareness and participation among consumers to source separate and recycle their household waste. Although consumers, government, and industry acknowledge the growing urgency to reduce the current consumption and waste of packaged food products, ecologically conscious behaviour has not been as successful. Research has shown that despite the lower occurrence and awareness of other waste diversion strategies, consumers pre-existing perceptions and behaviour towards recycling can be a positive influence to adopt more ecologically conscious behaviour. As more consumers take an active role and responsibility for the production and consumption of food packaging waste, industry will be forced to comply with the consumer demands of producing more environmentally friendly packaging. Consumer behavioural changes can only be positively influenced with awareness and education of ecologically conscious alternatives to conventional consumptive patterns.

3.4 Food packaging waste - Case study in Victoria, BC

Consumer awareness of packaged food products and the resultant ecological impacts is an important strategy to reduce the current consumption patterns. Through monitoring consumer behaviour and consumer perceptions regarding food packaging waste, valuable information regarding environmental awareness and education can be identified. In order to understand consumer perception of food packaging waste, their intentions to purchase ecologically friendly packaging, and their waste minimization strategies in the Capital Regional District, a survey was conducted.

Limitations within the study that should be mentioned are time constraints, rejection rates among potential participants, and bias of store location. Approximately 100 consumers were approached to participate in the research, of which only 15 agreed to participate. The length of the survey (approximately 10 min) was a major inhibiting factor for the low participation rate as many consumers showed interest in the research but could not participate due to time constraints. The location and clientele of the store chosen might have also influenced the consumer sample. The store is located downtown Victoria and is known for its environmentally friendly policies, which include supporting local organic produce, a large bulk section, a bottle return program and cloth bags available for purchase. The location of the store may have also been an influencing factor in the overall positive feedback from consumers that regular shop there.

3.4.1. Consumer perception

A little over half of the participants (36 out of 60) in the research responded that they take into consideration the packaging of a product when they purchase food. The majority of the remaining participants (21 out of 60) responded that they sometimes take packaging into consideration. Consumer awareness was also very positive when discussing re-usable containers, where the majority (39 out of 60) of the participants reported that they purchase re-usable containers as a strategy to reduce their waste.

The majority of the participants (56 out of 60) recycle their household waste. When asked why, the overwhelming response was related to environmental concern, with a particular mention of reducing landfill waste (11 out of 23 in that category), and the remaining responses related to social responsibility and feeling of guilt. Only 13 out of 60 respondents reported that they recycled less than 50 percent of their household waste. When asked if participants purchased products in packaging that can be recycled, the overwhelming response was yes, with 14 out of the 60 reporting that they purchase recycled products sometimes. Consumer

motivations to purchase food products that can be recycled were primarily based on social and environmental responsibility. The awareness and concern for landfill space and resource conservation was a common response.

When asked if the participant was willing to spend more for a product that has environmentally friendly packaging, approximately half (27 out of 60) of the respondents reported yes, and just under half (25 out of 60) reported sometimes. Ten percent (6 out of 60) of the participants reported that would not be willing to spend more for environmentally friendly packaging. Only 3 of the participants purchase the lowest priced food product, regardless of its impact on the environment, with 17 reporting that economic incentives were sometimes a factor in the decision to purchase food products. Research indicates that although consumer beliefs about the consequences of recycling and waste prevention are mediated through attitudes, perceived personal costs still have a direct influence on behaviour (Togersen, 1997).

The majority of respondents expressed environmental concern as the incentive to reduce or avoid food packaging waste. The most common responses were to avoid products that use excessive packaging, buy bulk foods, bring own bags, purchase products that are made with recyclable/re-usable packaging, and recycle packaging. Economic motivations were also a common response as an active method of reducing food packaging waste. Social responsibility was expressed as a motivation to reduce food packaging waste for some participants by choosing products responsibly, and purchasing fresh produce from local farmers to avoid excessive packaging.

Almost all participants (50 out of 60) believe that recycling as a waste reduction strategy is not enough to reduce food packaging waste. The most frequent suggestions included increased producer responsibility and consumer awareness. A few (5 out of 60) responded that they did not know if recycling alone is an effective strategy to reduce packaging waste. Only 2 respondents believed that recycling was sufficient for reducing food packaging waste.

Most respondents (43 out of 60) feel responsible for the waste they generate, while 3 respondents felt in no way responsible. Respondents who didn't feel responsible for their waste hold the manufactures and producers accountable for creating the products in the first place.

Numerous strategies were given as suggestions to reduce food packaging waste commonly falling into environmental, economic and social categories respectively. Many

suggestions were related to simple changes that consumers can adopt to become more environmentally friendly, particularly when choosing and purchasing food products. Frequent suggestions included reducing packaging, avoiding over packaged products, re-using containers/bags, buying bulk and fresh when possible. Suggestions within an economic focus included greater consumer pressure on food companies to reduce waste, financial incentives to businesses in the form of tax credits, increase the amount consumers must pay per garbage bag collected by the city, and increasing stewardship. Socially minded suggestions included eating less, greater consumer awareness and education, and keeping landfills in places that people can see them.

3.4.2. Industry perception

Store managers that participated in the research seemed to be quite positive in regards to the improvements that are happening in the food industry in terms of packaging waste reduction and are finding innovative ways to reduce this waste in their stores. A store manager in Victoria, says that the "industry is trying to change itself as well.it is good business". It is recognized that there is a growing shift in the food industry on the part of consumer and industry to reduce or eliminate unnecessary packaging. Movements towards waste reduction are for example to recycle shrink wrap from skids (palettes) that were previously not recycled, this, the manager comments "is one way we are trying to reduce waste.we have come a long way just through education and through young people working here". Another store manager in Royal Oak is finding innovative ways to reduce the stores packaging waste and also to educate customers by providing alternatives. Buying fresh local produce can significantly reduce packaging waste in the store, as this manager suggests "it's fresh, it comes locally, and so there is not a lot of it to start with in the first place". This Royal Oak store sells and promotes their own re-usable bags, and has tried to introduce a program where customers bring their egg cartons back and refill them with the store's free range eggs. The manager notes that "a lot of the focus needs to be on the awareness of the consumer...the majority of people still want plastic bags even if they have an option".

Alternatives to the conventional food store exist with home delivery box programs, providing organic local produce with limited or no food packaging delivered in re-usable containers. A floor manager with Small Potato Urban Delivery (SPUD), a box delivery program, comments on the various ways to reduce packaging, such as "using local suppliers that can re-

use a lot of their containers...buying in bulk...and having customers return invoice bags with the containers".

Overall, there seems to be awareness of packaging waste on the part of food distributors in the CRD. Recycling what is possible, re-using boxes and skids, promoting consumer awareness, and supporting local produce that has limited or no packaging are some of the ways that store managers in the CRD are achieving packaging waste reduction. Consumers have options to shop at stores that are more environmentally conscious and aware of food packaging waste, to participate in home delivery box programs, and to purchase fresh produce from local farms and markets surrounding the CRD.

3.5 Discussion

The dominant waste reduction strategy for consumers in the CRD is recycling. In general, consumer awareness concerning recycling was high, with almost every participant actively recycling, and the majority recycling more than 75 percent of their household waste. Motivations for recycling are primarily based on environmental concerns, such as landfill space, and conservation of natural resources. A high percentage of the participants reported that they purchase products that can be recycled, and over half purchase re-usable containers. Consistent with research showing that there is a high awareness in general to recycle, primarily due to the introduction of residential recycling programs, the amount of participants that actively seek products that can be recycled or made with recyclable products diminishes. Surprisingly, almost all the respondents reported that they felt recycling was not enough to reduce food packaging waste yet when asked if they participate in further ecologically conscious behaviours such as buying recyclables, or using re-usable containers the percentage of participation dropped. It has been suggested that although recycling has become normative (i.e. commonplace and expected among persons living in a community), ecologically conscious consumer behaviour is still an innovative, infrequent behaviour (Ebrero et al., 1999). Furthermore, although the psychological processes underlying recycling and ecologically conscious consumer behaviour may be similar, the environmental attitudes that have been found to predict recycling are less likely to be related to consumption, because that behaviour has not been widely accepted (Ebrero et al., 1999).

Despite inconsistencies in predicting ecologically conscious consumer behaviour, it is noted that there is a growth and diffusion of green marketing and consumption. In the United States, the number of green product introductions has grown dramatically from 0.5 percent of all

new product introductions in 1985 to 13.4 percent of all new product introductions in 1991 (Roberts, 1996). Despite the limited research on growth and diffusion of green products, particularly with regards to packaging in Canada, it remains a concern and will ideally promote the continued focus on local initiatives to reduce the production and consumption of food packaging and increase consumer awareness of ecologically conscious consumption.

There are a number of strategies that consumers can adopt to reduce or eliminate food packaging waste. Simple behavioural changes can be applied to reduce the consumption and waste of packaging, while at the same time influencing industry to provide more ecologically conscious packaging. Specific marketing techniques can be used to bring awareness to the public about the connection between ecologically conscious consumerism and waste reduction, perhaps by bringing attention to the public's existing beliefs about the role consumption plays in conserving resources (Ebrero et al., 1999). It was found that the National Packaging Protocol indirectly influenced firms' marketing policies, since companies that were aware of the policy were more likely to see packaging waste reduction as a good marketing tool (Labatt, 1997). In addition, it was found that consumers played a critical role in influencing manufactures to comply with environmental initiatives. Manufacturers are sensitive to consumer acceptance of changed products and packaging and are aware of consumer demand for the safety, convenience, and labelling that packaged goods must meet. This could be an effective method to influence industry for reduction of waste at source, the most effective waste diversion option, rather than end-of-pipe solutions.

In the meantime, consumers in the CRD have options to move towards more ecologically conscious behaviours, industry is aware that the shift in waste reduction is important for maintaining social responsibility and future marketing goals, and the CRD will continue to provide services, awareness and education through the various avenues.

4.0 The Impact of Canada's Food Policy:
A Case study of Victoria, BC.

Abstract: In Canada policy is directed at the agricultural sector from multiple levels of government and tends to favour the industry. There are signs that perceptions of food are changing from a focus on the economic value of the agriculture industry to a concern for food security and sustainability. Policy should play an integral role in the restructuring of Canada's food systems. This research examines policy at the federal provincial and municipal level, focusing on Victoria, British Columbia. This exploration of policy as it relates to food security, sustainable food development and food waste management will show the present state of food policy and policy developments of the near future. This overview will demonstrate the importance of policy at the local level.

Keywords: food policy, food wastes management, food security, and food systems.

4.1 Introduction

There is growing concern across Canada regarding the transnational origins of food supplies, the disappearance of local producers and the rampant waste generation that coincides with the food system, as we have seen in the previous chapters. Of further concern is the back seat role that policy is playing in confronting these issues, though there are numerous and diverse initiatives from Non Governmental Organizations working towards a more sustainable food system in the Victoria Capital Regional District (CRD) and across Canada, the need for supportive public policies has not yet been met. The policy that does exist is mostly regulatory in nature and economic in focus, and in some cases out dated. With new policy implementation forming at all levels of government it becomes important to understand how policy can hinder or promote food security, sustainable food production and food waste management at the local level. Though it is not possible to make a comprehensive evaluation of all food policy in Canada in the space allotted here, this chapter will attempt to illustrate how certain policy at all levels of government can play a role in support of sustainable food systems at the local level, with a specific focus on its impact within the CRD of Victoria, British Columbia.

This chapter will proceed with a brief overview of scholarship on food policy and waste management, especially that which focuses on Canada. Once embedded in such an academic framework, the chapter will turn to an exploration of policies from the federal, provincial and municipal levels, concluding with a discussion of waste management policy and final remarks. The aim of such an outline is to pursue the following research question:

1. How does policy hinder or promote food security, food production and food waste management at a local level?

4.2 Policy Concerns from Global to Local

Policy implementation in Canada has yet to play an active role in creating a strategy to address the growing concern regarding food security, sustainable food production and food waste management in Canada (McRae, 1997; 1999). While the focus of this chapter is most specifically on the impact policy has at the local level in the CRD, it must be recognized that these issues extend to the global scale. The globalization of food has become an increasingly serious issue as people have begun to realize the role international relations has to play in complicating food systems (Lang, 1999). Lang points out that the food system has long been a part of international trade, but it is only recently that it has taken on "a new pace and scale of change" (1999: 169). This 'new pace' has been spurred on by transnational corporations' focus on the developing world, the progression of agricultural technology and the control of the food market resting with a handful of multinational companies (Harriss-White, 1994). However, this pace of development has not been matched by policies and regulation on a global level. "The right to food" is still unattainable to many across the globe and, though there is a need for strict policies enforcing food security as a basic human right, there are many obstacles to overcome in the pursuit of such a goal (Alston, 1994; O'Neill, 1994; Pottier, 1999). Though there are international organizations such as the Food and Agriculture Organization whose mandate includes "providing food security for all" and international agreements like the General Agreement on Tariffs and Trade, which provides some guidelines for exchange of agricultural goods, the major focus of international food systems is making a profit (FAO, 2004; Lang, 1997; Friedman, 1994). The economics of food is a booming industry worldwide, which is perhaps why food security takes a back seat to the bottom line in global food policy issues (Lang, 1997).

Though a global food security policy may be elusive, there seems to be more opportunity for progress on the national scale. In Canada a growing awareness of food security issues has culminated in a need for new policy reactions to present day problems (McRae, 1997: Koc and Dahlberg, 1999). Mirroring the global food system in its focus on profit, policy at the federal level has been primarily regulatory up to this point. There is concern that the federal government should be playing a more cohesive and unifying role in food security issues on the national level, but at present the various arms of the Canadian government are bent towards issues of food and health standards, drug and modified food regulations and labelling and packaging concerns (McRae, 1999; Koc and Dahlberg, 1999).

This focus on profit is strongly supported by the major lobby groups involved in policy development. Agribusinesses and their associations play a large role in policy formation and their influence is largely profit-oriented (McRae, 1999). Symptomatic of such involvement is the general nature of the relationship between policy and consumer, which should be more protective of Canadians and less supportive of industry (Lang, 1997; McRae, 1999). Even so, policy at the national level is not specifically designed to address problems of food security or social justice within the food system, but is instead narrowly focused upon specific commodities, highly flexible labelling regulations or drug laws (McRae, 1997; 1999; Lang, 1997). While it is necessary to be explicit about specific standards of production and nutrition, it should also be a priority of institutions such as Health Canada and Agriculture and Agri-Food Canada to encourage more socially responsible agribusiness activity through policy implementation (McRae, 1999).

These same issues and criticisms are mirrored at the provincial level, albeit provincial ministries have a different mandate than does the federal government. The provincial ministries are focused more upon agricultural development, production and trade within and between provinces, but still with the goal of optimizing the economic value of the sector (McRae, 1999). The British Columbia Ministry of Agriculture, Food and Forestry (MAFF) states that it "is committed to providing the business climate for a competitive and profitable industry providing safe, high quality food for consumers and export markets" (MAFF, 2005).

Similar to the federal government, the focus of provincial ministries has been on agricultural production and the economic value of the industry. Therefore, lately there has been an interest in restructuring federal and provincial ministries to create new policy frameworks and mandates that would allocate more policy attention to food security issues (Koc and Dahlberg, 1999). McRae and the Toronto Food Policy Council (1999) offer a model for restructuring provincial ministries to create a new ministry of food and food security that would switch the focus of provincial agricultural policy away from agribusiness towards food security and sustainable development. Though their plan proceeds with "an evolutionary transition to the new approach," they acknowledge that such change would take time and patience to implement (McRae, 1999: 198).

In the mean time, one of the most effective ways to create positive change in food security issues seems to be at the local and urban levels. There is an increasing amount of work being done on policy implementation and sustainable development that is aimed at improvements on the municipal scale (Ellis and Sumberg, 1998; Berke, 2002). Various strategies

have been developed to encourage and direct sustainable urban development and many believe that sustainable food production and urban agriculture have a crucial role to play in that process (Pacione, 2001; Dernbach and Bernstein, 2003; Botelho, 1997). Although urban agriculture cannot solve Canada's food security problems, it is recognized as an important step towards ensuring access to food (Jolly, 1997). Many initiatives and projects have proven to be effective, but they need more policy support from municipal government. Should municipal governments begin to take a more active stance on food-security through policy and program implementation there would be noticeable improvement in urban food systems (Pothukuchi and Kaufman, 1999; Halweil, 2004). Part of this policy must recognize a person's right to have access to nutritional food, an essential part of food-security (Jolly, 1997; Riches, 1997). Though there is much debate over the best implementation strategies, it is certain that there is a need for policy at the local level to encourage sustainable agricultural practices and initiatives (Jolly, 1997; Pothukuchi and Kaufman, 1999; Riches, 1997)

4.2.1 Food Waste Management Policy

A necessary part of any discussion of food policy and sustainable food production is an exploration of food waste management. One responsibility of sustainable agriculture is to employ more effective waste management and reduction procedures and minimize resource use, thus any policy implementation must give treatment to those issues (McRae, 1999). To meet these goals, there are a variety of strategies that focus on reducing packaging and waste at the product source, implementing producer or consumer stewardship programs, and offering various incentives, both social-psychological and economic, that reinforce environmentally conscientious decisions (Sinclair and Fenton, 1997; Taylor, 2000). Another strategy to help enforce environmentally friendly decision making is legislation enacting bans and fines on certain activities such as private incinerators, landfills, and littering (Taylor, 2000). These strategies depend upon legislation and policy to keep them in place and increase their effectiveness. Some strategies, like bottle-return depots and other economic incentives have proven quite successful; the more stringent strategies depend on government or public support for their success. Waste management strategies have been devised that focus on division of waste in households with organized pickup schedules, incentives for industrial stewardship, reduction at source, and more. These strategies all need to be implemented at some level of government in order for citizens and especially industry to expend the time and money required for success (Henningsson *et al.*, 2004; Fehr *et al.*, 2002; Taylor, 2000). In Canada the framework for developing such policy is hindered by the fact that the federal government cannot put through policy or legislation regarding such

incentives as it falls under provincial jurisdiction (Sinclair and Fenton, 1997). Policy creation thus becomes subject to differing variables and stakeholders nation-wide, causing severe detriment to any effort towards a comprehensive national waste management policy. Therefore, much waste management remains in the hands of municipal governments that are responsible for their own disposal and pickup at the mercy of often-narrow political and fiscal restraints.

4.3 Government, Policy, and Victoria

The trouble inherent to the discussion of food policy is understanding how policy from the multiple layers of government can impact upon a small area such as the Victoria CRD. Like every other community, Victoria is subject to policies from federal, provincial and municipal governments. And, while agriculture lies primarily within the provincial mandate, there are federal institutions creating policy that affects aspects of provincial agriculture. Similarly, municipal governments have a certain amount of local authority and the advantage of being closer to the food system; however they are often bound by policy decisions coming out of the provincial and national governments. While governments at all levels attempt to make informed decisions through strategic data collection and open dialogues with stakeholders, the dominant focus of the process remains profit oriented policy (McRae, 1999). At the bottom of this food chain are small producers and local markets and initiatives, which have little say in policy at any level, but could potentially play a major role in resolving food security issues (Halweil, 2004). To understand how the various levels of government can influence local food security, sustainable food production and food waste management it is necessary to examine federal, provincial, and municipal food policy. Such an examination, though in no way comprehensive, can lend to an understanding of the ways policy can hinder or promote local food initiatives and sustainable food production.

4.3.1 Federal Food Policy

Though federal policy may seem far removed from local growers it does play an increasingly important role in how and where Canadians get their food. Spread over several branches of the federal government, food policy at the national level tends to focus on regulating such things as product labelling, health and food standards, and general waste management practices. The importance of these policy decisions becomes obvious when one examines local production and the limitations that some policies place on small farmers and local markets.

Federal policy towards food has been largely based on the formation of the industry after World War II when larger farms and farmer associations overtook smaller farms and organized around specific commodities (McRae, 1999). The result is volumes of policy directed towards specific produce, typified by the Canadian Food Inspection Agency's (CFIA) various manuals on carrots, potatoes, beef, poultry, etc. While Canada's food inspection policy is recognized as leading edge, there are those who criticize the present policy framework as being too focused on specifics, while ignoring a more systems-oriented approach (CFIA, 2004; McRae, 1999). Working in concert with Health Canada and the Ministry of Agriculture and Agri-Business, the CFIA ensures quality and nutritional standards through the various acts it represents and enforces. The proposed Canadian Food Inspection Agency Enforcement Act will modernize and consolidate some of the agency's legislature, making it even more effective. And though the CFIA can do little in the policy arena to promote local agriculture and sustainable food systems within the present framework, it does ensure that Canada's food supply is safe and of high quality.

However, despite close inter-departmental cooperation regarding food safety and quality control, there has been no federal policy put forth to address Canadian food security. The recent attempt to create an Agricultural Policy Framework through the Ministry of Agriculture and Agri-Foods Canada (AAFC) is an attempt to bring together the provincial and federal governments in a comprehensive implementation strategy (AAFC, 2005). While still in the works, all provinces and territories have agreed to the framework. However, the agreement does not focus in any way on food security or food systems theory.

There have been steps in the direction of a national food security policy. Canada's Action Plan for Food Security (also developed through AAFC) was a response to the World Food Summit in Rome in 1996 and gives hope for action from the federal government on food security issues. Though it is only a short-term plan, it does recognize Canada's internal food security problems. It was created with the goal of informing discussion and strategy surrounding issues such as sustainable agriculture and Canadians' rights to food and makes recommendations for policy solutions. The plan also sets a firm foundation for Canada's international efforts in fighting for food security.

Here in Canada, however, federal policy has done little in the way of specific and regionalized policy improvements, though it does hinder local growers at times. For example,

some local produce cannot be bought or sold by retail markets due to the provisions of the Food and Drug Act and the Consumer Packaging and Labelling Act. While these acts are indeed set in place to ensure food safety they also exclude small local growers' products from the shelves in supermarkets if the labelling or packaging standards cannot be met. Local value-added products such as confections and preservatives are banned from stores that would welcome such local products, says one local Victoria farm market owner. Though it would be difficult to make exceptions for such cases at the national level, there should be some mechanism for these local goods to reach consumers, perhaps at a level of government more suited to the task.

4.3.2 British Columbia's Agriculture Policy

Provincial agricultural policy makers have the regional proximity and jurisdictional power that the federal government lacks. Within British Columbia food policy is largely directed by the Ministry of Agriculture, Food and Fisheries (MAFF) and focused on the economic well being of the province's agriculture industry. Through policy implementation and cooperation with other provincial institutions, MAFF works to maintain a healthy, growing industry. To focus on how these policies hinder or promote the growth of food security, sustainable food production and food waste management will entail an exploration of the policy put forth from the ministry and several of its initiatives.

An important arm of MAFF is the Strengthening Farming initiative that is designed with two major policy foci. The first is directed at protecting the rights of farmers to farm within the appropriately zoned areas. Through the Farm Practices Protection Act, farmers are safe from complaints due to the "odour, dust, noise," etc. that cannot be avoided so long as they maintain 'normal farm practices' within appropriately zoned land (MAFF: Strengthening Farming, 2001). The second policy focus of the Strengthening Farming initiative is designed to encourage the growth of British Columbia's agricultural sector by implementing policy that ensures the consideration of farmers' issues in planning processes and promotes cooperation between local stakeholders and government. The legislation that supports this growth strategy includes the Land Title Act, which subjects subdivision applications to an impact assessment regarding farmland, and the Agricultural Land Commission Act that brought the Agricultural Land Reserve into being. While the Strengthening Farming initiative has implemented much policy that protects B.C.'s agricultural industry and encourages local cooperation and agricultural production, it does so within a wholly market-oriented framework.

The Agricultural Land Commission (ALC) is similar in its economic objectives, but differs from Strengthening Farming as an independent Crown agency. “The Commission’s mission is to preserve agricultural land and encourage and enable farm businesses throughout British Columbia” (ALC, 2005). At the year-end of 2003 the land reserve contained nearly five million hectares of land, though only 17, 578 hectares of this were within the CRD. The main objectives of the ALC are the retention of farmland and governing how this land is used. The Agricultural Land Commission Act, which was passed on November 1, 2002, consolidated land zoning, subdivision and protection policy under the jurisdiction of the ALC, giving the commission the tools it needed to regulate the land reserve.

The ALC and Strengthening Farming initiative are B.C.’s major policy and regulatory bodies on farming activities, but, though they are effective in protecting the agriculture industry, they do little to encourage a movement towards food security. In 1998 MAFF compiled a document entitled *Choosing our Future: Options for the Agri-Food Industry* that summarized the concerns of over 200 stakeholders into a guide for a special committee to build policy recommendations (MAFF, 1999). The committee was to consult with the industry and table their report by spring of 2000. *Choosing our Future* had high ideals demonstrated in a statement of the fundamental beliefs of those it brought together:

“We believe that a strong and healthy agri-food sector is vital to the economy, the environment and the future of British Columbia We envision a future in which industry, consumers and government are committed to ensuring secure, safe, and high-quality agri-food products for British Columbians”. (MAFF 1998: 8)

Despite its promise of a new and progressive stance on agriculture, the committee’s report was never used to support policy decisions, as it seems to have failed with the NDP provincial government in 2001.

A provincial program that has produced many positive results is the ‘Buy BC’ campaign that was undertaken in concert with the BC Agricultural Council in 1993. The program has proven to be extraordinarily successful in boosting sales of British Columbian products, boasting such statistics as having “over 1200 companies and associations using the Buy BC logo” which has achieved a consumer recognition rate of over 75%. This mix of provincial public policy and industry support is a hint of what could be accomplished with more proactive food policy implementation.

Beyond the programs mentioned above, the provincial government does not seem willing to take any further or more extensive steps towards developing food security policy. The majority of food policy legislation is, just like the federal government, focused on specific commodity regulations and supporting the industry (McRae, 1999). Though there had been some movement towards developing a food system approach and an active awareness of food security issues, this died out in the policy arena after the Liberal win in 2001. Provincial policy activity surrounding the issues of food security, and sustainable food production in British Columbia seems limited to protecting the Agricultural Land Reserve and maintaining the current agricultural framework.

4.3.3 The CRD and Local Food Production

Within the CRD there appears to be more in the way of local initiatives aimed at improving food security and local food production, than actual food policy at the municipal level. There is no department of food or food security or specific food policy office within the planning department. This is not to point fingers or lay blame for truly such policy implementation should be initiated at the provincial level and supported at the municipal. However, the CRD, to its credit, has taken agricultural development into consideration in its *Greater Victoria Economic Development Opportunities Blueprint* (CRD, 2003). Within the *Blueprint* is the recommendation to implement a five year Regional Growth Strategy that lists, alongside other development opportunities, the expansion of agriculture as a priority. More specifically, the blueprint calls for Victoria policy makers to begin formulating policy to ensure the protection of rural lifestyles, to create "links between agriculture and tourism," and to think about instituting a 'buy local' campaign similar to the provincial government's encouragement to 'buy BC' (CRD, 2003: 97). With such support in the works the Victoria CRD is on the way to developing the municipal policy needed to support local food production and sustainable food systems.

4.4 Waste Management Policy in the CRD

The CRD has undertaken policy implementation to create a more sustainable local food system, but it is focused on recycling and composting services, rather than food production. Victoria's original Blue Box program began in 1993 and is responsible for impressive amounts of food packaging waste being diverted from the local Hartland Landfill. This municipal service is extended throughout the CRD and is made convenient by weekly roadside pickup. Though no

policy is in place that forces people to recycle, there are incentives in the form of the bottle deposit-refund program enacted through the provincial government. This form of stewardship transfers responsibility for food wastes to the consumers and producers of the products and has resulted in high capture rates on applicable materials. The policy was created in response to the Litter Act of 1970 to give an incentive for people to return their beverage containers instead of throwing them away, creating a highly successful stewardship program that evolved into the Beverage Container Stewardship Program Regulation in 1997. This newest policy incorporates all ready-to-drink beverage containers aside from milk products and has culminated in an 85% return rate (MWLAP, 2004).

Another part of the local food waste reduction effort is the development of composting facilities and services in the CRD. At the moment the major effort in the area consists of the Greater Victoria Compost Education Center, a local not for profit organization, but the CRD is in the process of implementing a new composting bylaw. The CRD has recognized "that over 30% of the material entering the landfill is organic material that could be composted," and this new bylaw will be designed to divert this organic waste from the Hartland landfill. The bylaw will govern the licensing of composting facilities and regulate how composting is conducted. It will not implement a pickup service, but is a step in the right direction. The Bylaw will supplement provincial policy enacted in the Organic Matter Recycling Regulation and work to improve enforcement of the policy and support for local initiatives (CRD: Compost Bylaw, 2004; MWLAP: OMRR, 2002).

4.5 Conclusions

The preceding discussion, while in no way comprehensive, outlined parts of the present policy framework as it relates to food security, sustainable food production and waste management in Canada. The creation of food policy is rife with difficulties and intricacies that permeate all levels of government. The aim of this chapter was not to criticize government at any level, but to objectively outline present legislation and future policy that is in the works in an attempt to illustrate the role policy from all levels of government can play in local food systems. At present it seems that much of Canada's food policy is focused on optimizing the economic value of the agriculture sector, but there is a sense that change is in the air as more people become concerned with issues of food security and sustainable agriculture. As they build policy frameworks for the food systems of tomorrow, policy makers must realize that legislation from all levels of government has an important role to play at the municipal scale.

5.0 Conclusion

The reader provides a first glimpse of a local perspective on questions arising from reflections over food production, consumption and the generation of waste. Food production is clearly at the center of complex social economic and environmental enquiries. The way we produce food can improve the sustainability of our food systems by reducing fossil fuel emissions, avoiding environmental contamination, preserving biodiversity, building community and supporting local economies. Victoria has the potential to be largely self sufficient with its food production. However, there are still several hurdles to overcome. Current policies need to provide incentives for alternative and sustainable forms of production and restrict food production, which is resource intense and does not take sustainability principles into account. Among the constraints are also the limited availability of land and farmers. Changes also need to happen in personal attitudes and consumer behaviours, not only with respect to food production, but also with the wasting of resources through packaging. There is still far too much wrapping and packaging involved in the daily consumption of food and a significant proportion of our waste is still deposited at landfills. However, the level of consumer awareness is slowly increasing and there is hope that the potential for change through the consumers vote on products

might change the wastefulness of consumption towards less wrapping and more biodegradable packaging.

Several questions have emerged from this debate and are still unanswered. The discussion suggested that the term 'local production' needed to be better defined, since the term can also mean local monocultural, large-scale or corporation-owned production and not necessarily does local suggest production that contributes to the local economy. In the case of corporate owned local production, e.g. little benefits might stay in the local community. What makes consumers change their attitudes? How can the introduction of new, sustainable approaches in the food chain be more successful? How can community gardens and other locally owned and small-scale food production flourish in our fast-food and consumer-oriented society?

The survey and literature analysis certainly does not answer all pertinent questions but it can contribute to the necessary process of change in policy framing and in awareness building on the individual level. It is important to bring these issues to the attention of the general public and of the decision taking and policy-making bodies, so that we can achieve healthier food production systems.

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Appendix A

Sustainable Food Production and Consumption in Victoria

Public Perceptions of Local/Urban Food Production

1a) Here is a list of initiatives relating to local food production: Have you heard of any of the following?

	INITIATIVE		
1	Organic Box Delivery Programs: organic produce delivered to you	yes □ no □	
2	Community Supported Agriculture: buying food direct from a local farmer	yes □ no □	
3	Rooftop Gardening: vegetable gardens incorporated into roofs	yes □ no □	
4	Community Gardening: a shared piece of land for gardening	yes □ no □	
5	Backyard Sharing: lending your backyard to someone for growing food	yes □ no □	
6	Edible Landscaping: fruit trees and edible plants in backyards, public space	yes □ no □	
7	Farmers Markets: locally grown produce in a small market setting	yes □ no □	
8	Gleaning: harvesting extra produce from local farms or backyards	yes □ no □	

1b) Have you or would you participate in any of the above programs or do you have any comments regarding any of them? (please specify which ones)

2) When you think of "locally grown" produce – where is local for you?

3) Do you think it is important to buy locally grown produce? Yes □ No □
If Yes: Can you state some specific reasons why this is important to you?
If No: Can you state some specific reasons why not?

4) Are you willing to pay more for a product that is grown locally? Yes □ Sometimes □ No □

5) Is locally grown produce readily available where you shop? Yes □ Sometimes □ No □

6) Do you feel it is important to grown your own food? Yes □ No □
Why or Why not?

7) Do you grow your own food? Yes □ No □
If not, why not?

8) Do you have any suggestions to encourage local food production and consumption?

Sustainable Food Production and Consumption in Victoria
Public Perceptions of Food Waste

1) What type of residence do you live in? _____

2) How many people live in your household? _____

3) How often do you dispose of leftover or spoiled food? (Does not include vegetable peelings, bones or similar non-edible food.) (Dispose of means throw away or compost.)
a. □ Never
b. □ Less than once week
c. □ 1-2 times a week
d. □ More than twice a week

4) Estimate the value of leftover or spoiled food you dispose of each month.
a. □ $5.00 or less
b. □ $5.01 to $10.00
c. □ $10.01 to $15.00
d. □ $15.01 or more

5) Do you try to minimize food waste and spoilage at home? Yes □ No □
If so, what do you do to reduce food waste?

6) Do you compost at home? Yes □ No □

7) If yes, why do you compost? If no, what keeps you from composting?

8) Have you ever visited or phoned the Greater Victoria Compost Education Centre?
Yes □ No □

9) Would you be willing to separate your organic food waste for collection by a large scale composting program?
Yes □ No □

10) What is the maximum you would be willing to pay **per month** for this service?

Sustainable Food Production and Consumption in Victoria
Public Perceptions of Packaging Waste in the Food Industry

1. Do you take into consideration the packaging of a product when you purchase food?
Yes □ Sometimes □ No □

2. Do you recycle your household waste? Yes □ Sometimes □ No □
Why or why not?_____

3. What percentage of your food packaging waste is recycled? _____%

4. Does the availability of more environmentally friendly packaging affect your decision to buy one food product rather than another?
Yes □ Sometimes □ No □

5. Are you willing to spend more $ for a food product that has environmentally friendly packaging?
Yes □ Sometimes □ No □

6. Do you purchase food products in packaging that can be recycled?
Yes □ Sometimes □ No □

7. Do you purchase products in reusable containers?
Yes □ Sometimes □ No □

8. Do you purchase the lowest priced food product, regardless of its impact on the environment?
Yes □ Sometimes □ No □

9. Do you think food packaging could be reduced?
Yes □ Sometimes □ No □

10. What do you do to avoid food packaging waste?

11. Do you think recycling is enough to reduce food packaging waste?

12. Do you feel responsible for the waste you generate?

13. Do you have any suggestions to reduce food packaging waste?

Appendix B

Oral Consent Form to Participate in Research

Title of Research Project:
Sustainable food production, consumption, and waste generation: consumer perception and public policy in the Capital Regional District (CRD), BC.

This is to state that you agree to participate in a graduate research project being conducted by a group of graduate students under the guidance Dr. Jutta Gutberlet of the Geography Department of the University of Victoria. The researcher may be contacted by email at (email), or by phone at the University of Victoria at (250)721-7345 (office).

Purpose

You have been informed that the purpose of this research is to collect information on consumer perception and public policy of food production, consumption, and waste generation in the CRD.

Procedures

This research will be conducted at various food markets in the CRD during the last week of May 2005. Your participation in this research is voluntary. You are encouraged to respond to a written questionnaire concerning your perception of local and organic food production, food consumption and waste, and environmental conscious consumerism concerning food packaging waste. The questionnaire will take between 10-15 minutes to complete and is based on your oral consent to participate. All information collected in this research will be confidential, and used in statistical analysis.

Conditions for Participating:

- You understand that you are free to withdraw your consent and discontinue your participation at anytime without negative consequences.
- You understand that your participation in this study is confidential.
- You understand that the data from this study may be published.
- You understand the purpose of this study and know that there is no hidden motive of which you have not been informed.

YOU HAVE CAREFULLY READ THE ABOVE AND UNDERSTAND THIS AGREEMENT. YOU FREELY CONSENT AND VOLUNTARILY AGREE TO PARTICIPATE IN THIS RESEARCH.