

What Can the North Learn from the South? An Examination of Applications for Cuban Food Security Models in the Canadian Context

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To counter a growing food shortage in 1989, Cuban governmental, NGO and community efforts transformed the structure of food production by finding ecological ways to cultivate and expand urban gardens and by constructing unique systems to support and educate food producers. By 1995 the food shortage was largely overcome and Cuba is now perceived to be a global leader in achieving food security (Cruz & Medina, 2003; Funes et al, 2002; Murphy, 1999; Rosset, 2000; Warwick, 1999).

Although a rich country, many Canadian households experience food insecurity on a daily basis. Furthermore, Canadian farmers battle to support themselves, as witnessed by a waning farming population (Koc and MacRae, 2001). The decline in the number of small-scale farms, the distance between food sources and consumers, and the increase in poverty in Canada alongside rising food costs pose difficult challenges to fostering food-secure communities.

What can the North learn from the South? Drawing from approximately 20 semi-structured interviews with project coordinators from 11 Cuban NGOs, governmental organizations and foreign NGOs, this paper examines Cuban models of food production and Canadian trends in food insecurity. Using Cuban food security experiences as a framework for analysis and focusing on ‘access to food,’ ‘access to land,’ ‘farmer’s wages,’ and ‘skills provision,’ this paper offers recommendations for enhancing food security in Canada.

An overview of food security in Canada

Even though we live in one of the wealthiest countries with one of the most efficient food systems in the world, farmers and fishers live in a constant state of crisis while a significant percentage of Canadian households live in a chronic state of food insecurity (Koc and MacRae, 2001:10).

This section examines **the problem of food security in Canada**. Using Lezberg’s (1999) framework, food security is scrutinized **through** three different lenses: Food

security as a production problem; Entitlements and food; and Alternative food systems: food security as ‘environmental sustainability.’

Food Security as a Production Problem

Examining food security as a production problem has produced different and contradictory diagnostic approaches. One school of thought stipulates that food insecurity stems from a lack of advanced technologies to bridge the gap between population growth and food production “The framing stands on the belief that agricultural science benefits the public good by increasing food production through yield improvements,” (Lezberg, 1999:3). This rationale was offered in the past to justify the adoption of Green Revolution technologies including synthetic pesticides, fertilizers and high yielding seeds. This same rationale is now being used to justify the incorporation of biotechnology into agricultural practices. Many studies examining the hazardous effects of both these solutions have been conducted (See Altieri, 2000) and will be discussed under the focus of ‘Alternative Food Systems: Food Security as ‘Environmental Sustainability.’

One facet that Lezberg (1999) does not discuss under this framework is the labor involved in food production. In Canada, the farming sector, which serves as the foundation for food production, is facing acute challenges. Data from Statistics Canada (2001) indicate that the total number of farms declined by 10.7% between 1996 and 2001, while the total farm population was reduced by 14.6%. These figures pale in comparison to the overall decrease that has occurred over the past 50 years: From 1941 to 1996 the number of farms in Canada has dropped from 732,800 to roughly 276,500 (Koc and MacRae, 2001:14). These figures indicate an overall reduction in the number of people involved in food production and also show that the ownership of the means of production is increasingly concentrated in the hands of a small group of people (Krakow, 2003:viii). As the overall number of farms in Ontario has been declining, farm sizes have been increasing. In 2001 the average Ontario farm size was 226 acres. Since 1981, the average farm size in Ontario has increased 24.9% from averages of 181-acre plots (Statistics Canada, 2001). Concentration of the agriculture sector into large scale farming units poses social and environmental challenges that will be discussed in Alternative Food Systems: Food Security as ‘Environmental Sustainability.

The sharp decline in the farming population can be explained by farmers’ waning incomes over the past few decades. “Farmers across Canada have been devastated by some of the most difficult years ever faced by the industry,” (Government of Canada, 2005). As MacRae (2001) notes, the input and marketing sectors have taken over substantial portions of farmers’ incomes, to the point where their ‘net-incomes’ have reached “depression-era levels” (Koc and MacRae, 2001:29). Only a small portion of

the cost of food returns to farmers. In 1998, the retail price for 675 grams of processed corn (\$3.03) was 3030% greater than a farmer's selling price (\$0.10) (Koc and MacRae, 2001:28).¹

Food insecurity and entitlement

According to Sen (1996) and Lezberg (1999) entitlements can be understood as factors that determine the extent of an individual's power within economic and political systems. This power then determines individuals' access to resources and the **range** of options they have at their disposal. "The diagnostic framing of the 'entitlement' approach posits that who gets to eat and who doesn't eat are ultimately questions of power, and in particular, economic power," (Lezberg, 1999).

In stark contrast to countries where food is inaccessible due to a lack of supplies or the lack of the capacity to cultivate it, food in Canada - both nationally produced or imported - is abundant. Indeed in North America the average household wastes roughly 14% of the food they purchase (Harper's, 2005:11).

Koc and MacRae (2001) **suggest** that food insecurity **occurs mostly** at the household or community level, **and is the result of an inability to access food because of low income**. In other words, food insecurity in Canada stems from a lack of economic power. This hypothesis has been validated in two recent surveys. Dachner and Tarasuk's (2002) study of homeless youth found that young people's ability to find nutritionally adequate food depended on their health conditions, access to shelter and their income. Che and Chen (2001) found that the prevalence of food insecurity was greatest among single mothers with children. Furthermore, individuals and families who experienced a decline in their income and relied on social assistance were more likely to experience food insecurity (Che and Chen, 2001).

Studies show that poverty increased throughout Canada in the early 1990s, especially in metropolitan areas (Lee, 2000). This rise in poverty correlates with a rise in food insecurity. Between 1989 and 2004, food bank use in Canada increased by 122.7% (Hyman, MacIsaac & Richardson, 2004:3). To summarize, the rise in poverty and subsequent growth in food insecurity in Canada has been attributed to the economic recessions in the 1980s and 1990s. **At the same time, both the federal and provincial governments were significantly reducing their social expenditures, thus weakening social safety nets** (McIntyre and Tarasuk, 2002).

¹ Other studies show that for every dollar a consumer spends on food the farmer receives 10 cents or less (Spector, 2002:351).

Alternative Food Systems: Food Security as ‘Environmental Sustainability’

Rather than focusing on the individual’s ability to access food, the sustainability frame focuses on the dominant agriculture production system. This frame argues that the dominant food production system is unsustainable and speculates that if left uninterrupted, it will result in even greater levels of food insecurity regardless of individual or national purchasing power. Two characteristics of Canada’s food system will be discussed under this theme: the environmental implications of industrial farming and the environmental-health implications of food distancing. Many scholars have examined the socio-environmental risks linked with the concentration of food production. Increased corporate concentration of the food sector and the replacement of family farms with industrial farms is associated with an increased corporate control of market prices; an increased capacity to influence legislation; and an increased reliance on the use of environmentally degrading fertilizers and pesticides (Kneen, 2002; Kroese, 2002).

As noted previously, large-scale food cultivations are quickly replacing smaller-scale operations in Canada. Large-scale operations are frequently associated with the production of specialized crops and many small farms that were once devoted to cultivating an array of different crops are now focused on a single crop. **This happens because farmers need** to compete on a global level. As Altieri notes, “there are political and economic forces influencing the trend to devote large areas to monoculture,” (Altieri, 2000:79).

Large-scale operations that focus on one crop from season to season deplete the soil and are often required to rely on the intensified use of fertilizers to replenish the soils. Furthermore, the simplification of crop diversity fosters an environment that is more susceptible to pest outbreaks and necessitates a high use of external inputs such as pesticides and fertilizers in order to combat infestation (Altieri, 2000:79). However, despite the increase in the use of pesticides there is still a substantial loss of crops. Altieri (2000) estimates that **20% to 30% of crops succumb to pests**, despite the increased use of pesticides. The environmental implications of pesticide use have **been thoroughly** documented and it is beyond the scope of this paper to fully cover this topic. Altieri (2000) **further** estimates that the environmental costs of pesticide use – including their impact on wildlife, natural predators, fisheries, water – and the social costs of pesticide use – including the poisonings and illness that are associated with their use – totals \$8 billion in North America each year (Altieri, 2000:81).

A growing number of scholars argue that more sustainable methods of production are required in order to reduce these social and environmental costs and also to improve land productivity. Such methods of production include integrating crop diversification strategies and focusing on building soil quality. These modes of production are more

conducive to smaller scale farming, which according to the data from Statistics Canada (2002) is quickly disappearing in this country.

Kneen (1989:31) discusses the concept of distancing, which is a central feature of the Canadian food system and one with repercussions both for national and individual levels of food security. Distancing in the context of food production and consumption has two meanings: it can refer to the physical distance between the points at which food is grown and consumed, and it also refers to the extent to which food has been processed from its raw state.

The extent to which food is distanced from the consumer geographically as well as materially impacts human health on two levels. First, fresh fruits and vegetables lose their nutritional value over time (MacNair, 2004:7).

A freshly picked tomato from the home garden is not the same entity as the one designed and genetically engineered for mechanical harvesting and days and thousands of miles of transportation. Anything picked fresh, and virtually still alive when eaten, is going to be of different nutritive value than something that has been dead or dying for days, or gassed into or out of a coma (Kneen, 1989:38).

Second, transporting food across long distances requires fuel, and for this reason food distancing can also be linked to the health risks that are associated with fuel emissions and global warming.

The decline in the number of small-scale farms, the distance between the food source and consumers and the increase in poverty in Canada alongside rising food costs, pose difficult challenges to fostering food-secure communities. Solutions to these problems will require an approach that integrates stakeholders from both the private, public and nonprofit sectors. At present, there are numerous NGOs in Canada that are attempting to address these issues in different ways (Fairholm, 1998). In the face of all the challenges to quality and access to our food, an understanding of programs for developing sustainable organic cultivation skills in both urban and rural areas and enhancing the capacity to cultivate food locally, is particularly timely for Northern based Canadian NGOs (Van Bers and Robinson, 1993: passim). The following section examines what some scholars see as a functioning model in sustainable agriculture on a national level (Rosset, 2000).

An overview of food security in Cuba

The Cuban experience in community food security shows interesting examples of what can be achieved. In 1989 with the collapse of the Soviet Union, Cuba lost a major trading partner. Until then, Cuba had imported 2/3 of its food needs from abroad, **however**, with the Soviet Union's demise, Cuba's purchasing power was substantially reduced. Thus Cuba was unable to obtain imported food supplies. This severe economic situation coupled with a grave scarcity in both imported and nationally produced food was termed "the special period in peacetime" (Alvarez and Mattar, 2004). Families had difficulty meeting their immediate food needs and the average caloric intake per inhabitant decreased to 1,863 calories and 46 grams of protein daily, which represents 74% and 61% of recognized basic needs (Cruz and Sánchez, 2001). To combat this food shortage, Cuban governmental, NGO and community efforts transformed the structure of food production by cultivating and expanding urban gardens, and constructing unique systems to support and educate food producers. The Cuban government's role has been especially vital in the achievements of urban agriculture in Havana (Cruz and Sánchez, 2002: 24; Enriquez, 1994). Here lies one of the central differences between Canada and Cuba regarding the way food security is viewed. Whereas in Cuba food security projects are prioritized by government and organized in a top-down manner, in Canada food security projects are conducted largely by the nonprofit sector at the grassroots level, from the bottom-up.

To provide effective support, the Ministry of Agriculture created the world's first coordinated urban agriculture program that facilitated: 1) access to land, 2) extension services, 3) research and development, 4) new supply stores with tools and agricultural inputs for small farmers, 5) sale points for growers, and 6) new marketing schemes (Murphy, 1999:11; Rojas and Vila, 1998:83). An urban agriculture department was created with the goal of putting all of the city's land into production. The department's first priority was to connect land with anyone willing to cultivate it; city by-laws were changed so that gardeners would have legal rights to cultivate unused land. Furthermore, laws banning the use of chemical pesticides for agriculture within city limits were **repealed** (Murphy, 1999:27). By 1995 the food shortage was largely overcome and Cuba is now perceived to be a global leader in the field of urban agriculture (Cruz and Sánchez, 2002; Food First, 2003; Murphy, 1999; Rosset, 2000; Warwick, 1999).

Using the proffered political and NGO support, thousands of gardens sprang up, as vacant lots in Havana were transformed into small farms. **A recent study found, that among** the many benefits associated with these initiatives, **was the increased** availability of fresh vegetables (grown for the most part without agro-chemicals) to provide 215 grams of vegetables per day per person throughout Cuba (Sinclair and Thompson, 2001:24). These urban gardens, farms occupying more than 1000 hectares inside the city (Cruz, 2001:24), produce 60% of all the vegetables that are

consumed in Cuba (ibid.) and have created roughly 100,000 jobs in the city (Cruz and Sánchez, 2002:49). Finally, researchers also note that due to the creation of urban farms, Havana residents now have access to a more nutritious and diverse diet than before the “special period” (Cruz and Sánchez, 2002:49).

Although Cuba has made huge advances, **this progress should not be romanticized. Many of its citizens still face dire economic hardships.** Every Cuban is entitled to monthly portions of certain foods at heavily subsidized prices.² Through this ration system (also known as the *libreta*) each resident receives 6 pounds of rice, one pound of beans, 8 eggs, 1 chicken, 250 milliliters of oil, toothpaste, sugar, coffee. Those over 50 years of age also receive rations of cigarettes and cigars (personal communication, 2004). These rations last for roughly 10-14 days of the month and must be supplemented from incomes. Supplementary food purchases can consume up to 66% of the average Cuban income (Sinclair, 2001:28) as opposed to 11.9%, which is what the average Canadian family spends on food (Macnair, 2004:29).

An urban **farmer discusses** the challenges of stretching his salary:

I now work for a state run farm that pays \$8 US a month. This farm seems to be moving towards the process of connecting the workers with the profits. I hope this happens because \$8 is not enough. It gives you enough to eat and keep working and that's it. Its not enough for clothes and other things that only sell in dollar stores³ (015C⁴).

Second, although urban organic cultivation is presently widespread in Havana, there is a growing concern that when chemicals are once more available, farmers will revert to conventional agricultural practices (Funes, 2002:24). An urban farmer in Cuba discusses the costs and benefits of organic versus conventional cultivation:

Here everything we cultivate is organic and that's not because I want it to be. I was a senior administrator for hydroponics. I'm a chemical person. In my head I think of pesticides. If it is easier to use fertilizers and

² See Dieste (2002) for a more extensive overview of food distribution in Cuba.

³ At the time of this research imported goods were sold in US dollars in “dollar stores,” whereas nationally produced products, when available, were frequently sold in pesos stores at significantly less costly prices. Since the time of this writing, using US dollars in Cuba has been made illegal.

⁴ This study categorizes respondents based on their organizations' country of origin. Respondents from Cuban organizations are identified with a C, while the European and North American organizations are distinguished with an F.

there's no difference in the sales price of organic produce and there is access to pesticides, it would be hard not to use them. It's a simple economic calculation. If I get more produce with chemicals than with organic produce and there's no difference in price, I'll use chemicals, I'll do what's cheaper and more profitable. Look at my tee shirt (A Bayer pharmaceuticals tee shirt) - I'm a chemical man (013C).

Finally, with regards to program replication for countries outside of Cuba McKibben (2005) notes that since Cuba's farming industry is highly labour intensive, it isn't competitive with food producers outside. Foreign governments may be hesitant to encourage Cuban food security approaches for this reason. Furthermore, "Cuba is a one-party police state filled with political prisons, which may have some slight effect on its ability to mobilize its people...hardly an "advantage" one would want to emulate elsewhere," (McKibben, 2005:62).

However, Cuban models for cultivating food represent a near sustainable model that holds implications for countries still struggling to reach sustainability. "They have created what may be the world's largest working model of a semi-sustainable agriculture, one that doesn't rely nearly as heavily as the rest of the world does on oil, on chemicals, on shipping vast quantities of food back and forth," (McKibben, 2005:62). As oil supplies are not everlasting there is good reason to think ahead about how to enhance local capacities for ensuring food security (Hartman, 1999).

Sample

The sample consisted of senior practitioners from 12 Cuban NGOs, governmental organizations and foreign NGOs. Specifically, the sample represents four North American and European NGOs, 5 Cuban NGOs and three Cuban governmental organizations who are involved in food security-related initiatives.⁵ The initial semi-structured questionnaire was formulated and pre-tested with the assistance of program coordinators from two NGOs. With their support, further contacts were made with additional organizations. The study's objectives were explained to new respondents. The research focus centred on: 1) examining practitioners' experiences when engaging in partnerships with nonprofit organizations in Cuba and in Northern countries; 2) developing indicators for evaluating and building collaborative relationships between nonprofit organizations; and 3) identifying Cuban models for enhancing food security that can be replicated in Canada. For the purpose of this paper only the third focus will be discussed.

⁵ To ensure confidentiality names of individuals and organizations have been masked.

After conducting the semi-structured interviews, each respondent was asked for additional contacts. In this way, many of the interviewees were located through a snowball approach. The resulting sample of 20 respondents includes NGO executive directors; regional, national and international program coordinators; field technicians; urban food producers; government officials and front-line supervisors.

The interviews were transcribed, coded and content analyzed according to guidelines set by Rubin and Rubin (1995). First, answers to the specific questions asked in the interview were recorded, summarized and categorized. Next, emergent themes cutting across all interviews were identified based on several readings of the data.

Perspectives on Replicable Cuban Food Security Projects

While there were varying opinions offered regarding the types of Cuban food security models Canadian practitioners might replicate, most interviewees mentioned replicable experiences that fall into three categories. These categories can be summarized as: transfers of technical knowledge; transfers of organizational knowledge, i.e. ways of organizing the production of food in cities; and finally, conceptual transfers of UA and small-scale agriculture as an ecologically and economically sustainable strategy for urban living.

Although there are many facets of Cuban UA experiences that can be brought to a developed country such as Canada, many interviewees noted that Cuban achievements arose out of the extreme hunger experienced during the special period and the governmental support and legislative frameworks created to facilitate urban agriculture.⁶ Furthermore, differences in weather, culture, tastes and landscape may pose further challenges to reaching similar achievements.

Transfers of technical knowledge

Ecological techniques for food cultivation developed in Cuba were most frequently noted by the interviewees as technologies that had a high potential for replicability in developing countries. These technologies include non-synthetic pesticides and fertilizers developed in Cuba. Furthermore, 'old fashioned' ecological cultivation techniques frequently used in Cuba such as crop rotation, companion planting and worm composting have been identified as desirable for replication.

⁶ This finding was also discussed in Sinclair (2002).

I think that not just from a model perspective but also technically, they have some very advanced techniques in organic agriculture production, that are not just about how you organize yourself, they are scientific technologies that are quite advanced and that I think really could be used here. These are tremendous lessons for our sakes (006F).

Many Cuban interviewees noted that technical knowledge exchanges about these types of cultivation techniques have been occurring, not only with Northern-based organizations but also with other Latin American countries over the past years.

Transfers of organizational knowledge

A number of interviewees noted the significance for Canada of the different models used in Cuba to organize food production. One coordinator from a Cuban NGO noted that a number of South American organizations are making attempts at replicating Cuban cooperative models of food production. The most significant interest in organization centred on the role of Cuban governmental support for urban agriculture. It is noteworthy that urban agriculture is mainly designed by the government and its various departments and branches. Community and civil society organizations participate principally in carrying out the activities that are planned by government institutions (Cruz, 2001:24). As one respondent notes, the national framework set in place to support urban food cultivation provides the foundation for the magnitude of urban food production in Cuba.

Some of the success with urban agriculture here (in Cuba) has to do with legislation. For example, one of the laws states that you can't use water from the aqueduct system, you have to have a separate source of water. You can't use chemical products if you are within the city limits. But in other countries who knows if it would be applied that way or not. If you have a framework and policies, urban agriculture could work on a larger level rather than just anyone deciding to set up urban gardens (005F).

Conceptual transfers

The strength of Cuban agriculture models was also noted among participants for its conceptual importance, one that debunks the myth that small-scale agriculture is not

productive. This theme has also been extensively discussed in scholarly literature. As Rosset (2000) notes, Cuban experiences with food security have turned conventional wisdom on its head. “We are told small countries cannot feed themselves, that they need imports to cover the deficiency of their local agriculture... We hear that a country cannot feed its people without synthetic farm chemicals... We are told that we need the efficiency of large-scale corporate or state farms in order to produce enough food... We hear time and time again that international aid is the answer to food shortages – yet Cuba has found an alternative in local production.” (Rosset, 2000:213).

As this foreign respondent notes, the Cuban model has been used as a source of inspiration back home to mobilize activists, motivate people to become more involved in food production as well as to lobby governments to create policies to support a more sustainable food system.

I really felt that we were benefiting tremendously from Cuba, using them for their great story to bring back here to motivate and use for our cause here...motivating people here to make changes around their food systems and to lobby...to stimulate change (006F).

Improbability

A number of interviewees from both the North and the South remained uncertain about the possibility of replicating Cuban initiatives in other countries. As Cuba’s internal political system is completely distinct to most countries, replicating projects at the governmental level might be unfeasible.

I think that it is a challenge to try to replicate things from here. Many people have that intention...Urban agriculture started here because of the crisis and the lack of food. The majority of the land here is state owned and so, if the local municipality here decides to provide people with access to this land in undeveloped areas, it is a decision that can be implemented. Outside of Cuba the state or municipality does not own the majority of the land. More precisely, it is privately owned. That in itself is a huge difference (003C).

While hunger in Canada does exist (Hyman, 2004; Tarasuk, 2001), interviewees and studies both note that Cuba's urban agriculture achievements arose from the extreme food shortage of the special period. "Without the food crisis of the mid-1990's urban agriculture in Cuba most likely never would have occurred" (Sinclair and Thompson, 2001:25). Furthermore, many farmers noted that the US blockade has indirectly catalyzed the agricultural discoveries in Cuba.

We have already developed the vision of what can happen 10, 15, 20 years down in the future and what we can do if it happens...Our own enemy (the US), by pushing us to seek alternative ways of making do with what we have, has forced us to develop. (C014)

Two interviewees noted that urban agriculture in developing countries is viewed more popularly as a cultural, philosophical and leisurely activity.

In Germany urban agriculture barely exists, it is something for recreation, for sport, for vacation and so forth. Here (in Cuba) it is a strategy for providing the population with basic needs (009F).

The concept of gardens and recreation poses challenges in Canadian cities that stem from uniquely North American cultural preferences. Given the North American practices associated with recreational lawn cultivation, it is plausible to speculate that urban agriculture initiatives could extend current lawn-care practices that have often incorporated the widespread use of cosmetic pesticides. Although there are numerous local and national initiatives underway to limit the use of lawn pesticides in the urban areas of developed countries such as Canada and the US, homeowners often use them while maintaining their gardens. Thus promoting urban agriculture initiatives in North American cities without adequate supporting policy frameworks could extend cosmetic pesticide along with the associated health risks (See Basrur 2002a; Basrur 2002b).

Transitional Strategies for Sustainable Cities

Drawing on the qualitative interviews and food security theory, this section provides recommendations for enhancing food security strategies and promoting urban agriculture in Canadian cities to policymakers and nongovernmental practitioners. Given the complexity of urban sustainability and food security my central recommendation is for organizations and interest groups in all sectors to work together to find comprehensive

solutions. Approaches to enhancing food security do not rest in urban agriculture alone and this realization is reflected in the recommendations detailed. Four central areas are covered with regards to transitional strategies for enhancing food security and building urban agriculture in Canada. First, drawing from McIntyre and Tarasuk (2002), recommendations are provided at the municipal policy level to improve the economic condition of the most vulnerable populations. Second, recommendations to connect potential food cultivators with land are offered. Third, recommendations at the federal level, to facilitate both rural and urban agro-ecological cultivation as a viable livelihood, are discussed.

With respect to policy I raise four issues: governmental involvement in social services; sustainable and urban agriculture; access to land; farmer's wages and skills provision. The recommendations lack specificity. It is beyond the scope of this paper to examine the intricacies of bi-lateral trade agreements. These issues must ultimately be addressed and fine-tuned through initiatives that join stakeholders with government, the nonprofit, farming and corporate sectors. Finally, as the bulk of scholarly literature in Canada on the topic of urban agriculture centres on Canada's most populated cities, a disproportionate amount of material concentrates on Toronto and Vancouver.

Governmental Involvement in Food Security

The most significant questions concerning the food economy must also be approached by confronting the question of power: who has it, what are they attempting to achieve by it, how are they going about it, and how are social actors, groups, and classes affected by the exercise of the power of other social actors, groups, and classes? (Winson, 1993:9)

As noted by Sinclair (2001) Cruz (2001) and a number of the interviewees, a key strength of Cuban food security models rests in the centrality of governmental prioritization and involvement. Whereas in Cuba, civil society organizations accompany the food-security related activities that are planned by government institutions, in Canada the central actors in building food security are frequently nongovernmental organizations whose missions, at times, conflict with governmental approaches (Cruz, 2001:24; Fairholm, 1998). As previously mentioned, whereas food security projects are organized from the top down in Cuba, in Canada they are organized from the bottom up. As Mbiba and Veenhuizen (2001) note, the change from prohibitive to facilitating approaches and the integration of urban agriculture into planning and legislation requires, and is dependent upon, structural

changes in institutional establishments that manage cities, and in their social values relating to local food production and consumption.

However, at present, Canadian policy and planning vis a vis food cultivation has failed to integrate a framework for supporting sustainability and food security in methods of food production (MacRae, 1999:187). Canadian governmental planning for food production is based on a narrow paradigm that ignores social and environmental costs (ibid.). “Policy-makers still treat the main food domains as separate, and continue to accord agriculture the highest priority; consideration of yields still comes before consideration of nutritional benefits,” (Pottier, 1999:26). With specific regards to urban agriculture, Wekerle (2002) notes that although the municipality of Toronto has approved a food charter it does not fully recognize all the social benefits associated with urban agriculture.

Given the rapidly growing number of people in Canada who are experiencing inadequate access to nutritional foods (Hyman et al, 2004) and the inadequacy of current policies in providing solutions, the central recommendation here is for all levels of Canadian government to be more actively involved in building food security. The following four recommendations are more specific, however ultimately, an integrated participatory approach that is more inclusive to complex problem-solving will be required.

Access to food

Studies in Canada show a strong correlation between an individual’s income and level of food security (Dachner and Tarasuk, 2002). McIntyre and Tarasuk (2002) emphasize that people with low incomes are less likely to have a healthy diet and thus obtain the nutrients required for good health. They offer inclusive recommendations:

- increasing social assistance to a level that covers basic needs and short-term additional costs for illness or other circumstances that drive up household costs
- protecting employment insurance policies, especially for Canadians in insecure jobs
- protecting and enhancing prescription drug coverage, especially for Canadians with low wages and fixed incomes (e.g., seniors, people on social assistance)
- protecting the affordability of healthy foods, particularly food staples
- increased access to affordable housing so that more money is left for food

- increased access to day care, education and training opportunities, and employment support programs, especially for lone parents (McIntyre and Tarasuk, 2002).

Access to land

Dobyns (2004:32) found that established urban residents owning property or garden plots have more access to land than those without the means to own or use the scarce land available in Toronto. What this means is that urban residents who stand to gain the most from urban agriculture do not have access to land. As small farmers and gardeners produce proportionately more than larger farms (Rosset, 2000:212), local municipalities must determine which public lands can be allocated for food cultivation, and work with private landowners to determine which lands ought to be purchased and used for urban agriculture initiatives. This second recommendation, a long-term goal, will most likely necessitate offering incentives to landowners to relinquish their areas for food production.

Farmers Wages

Since the 1950s, farmers' incomes in North America, have decreased by 32% (Spector, 2002:351). At the same time, North American and other governments continue to subsidize large-scale food production directly, through energy infrastructures, transportation networks and research and development funding (Norberg, 2002:70). The indirect, hidden costs of industrial food cultivation methods that take their toll on the environment, human health and associated supportive services, are not reflected in the cost of food. At the same time, local organic producers, who provide environmental-health services, do not benefit from the subsidized food system. Studies in Cuba show that reconnecting farmers to the incentives of food production results in increased production (Rosset, 2000:211). The main recommendation here is for policymakers to recalculate the hidden costs and benefits of food production associated with different cultivation methods and reward or tax producers accordingly, in a way that aligns environmentally sound cultivation techniques with both farmers' and consumers' interests. Furthermore, at the local level it is recommended that municipalities make use of tools already in their possession to foster local food cultivation. Such tools include reducing land rents, facilitating access to water and linkages to potential markets. Incorporating such an approach into policy will help enhance food security as sustainable food cultivation becomes more a viable livelihood and more people become drawn to farming in both rural and urban areas.

Skills provisions

Unlike Cuba, Canadian food producers face harsh winters, which limit the growing season and pose unique climatic challenges. Still, there are people extending the growing season using innovative approaches such as greenhouses. The Inuvik Community Greenhouse, situated at 200 kilometers above the Arctic Circle, has been coined the world's most northerly commercial operation and Canada's only community hothouse (Mahoney, 2004). With open access to community members and a waiting list due to demand, this greenhouse growing season runs from roughly the second week of May until early October. According to Mahoney (2004) the greenhouse enables residents with little access to land to cultivate their own food and supplement their household supplies. The greenhouse also serves as a recreational outlet for community members.

With respect to cultivating food in cold climates, Kircher, (2000) notes that there is a lack of academic material food cultivators can access. However, as evidenced in Inuvik, Alaska, and Winnipeg food cultivation in cold climates is both possible and energy efficient (Hall, 2000; Kircher, 2000; Mahoney, 2004). The first recommendation for this section is for federal and national governments in Canada to prioritize research into urban food cultivation in cold climates and work to disseminate this material so as to foster cultivation in cities and towns.

As discussed previously in this chapter, synthetic pesticides are frequently used in Canada to beautify gardens. Given this widespread use, it is recommended that municipalities form legislation to prohibit this. Secondly, it is recommended that municipalities work to support and educate urban food cultivators by making available up-to-date information and consultation to them about sustainable practices for food cultivation. In this last aspect there is much opportunity for nonprofit-corporate partnerships. With the recent growing trend in the establishment of Canadian by-laws towards banning lawn pesticides (Basrur 2002a; Basrur 2002b), there is a growing window of opportunity for lawn-care companies and urban agriculture-related nonprofit organizations to collaborate and offer organic food cultivation packages to homeowners. Such initiatives could provide a substitute for previously offered lawn-care company services that are now prohibited.

Conclusion

Food security is a complex social phenomenon that is influenced by health conditions, income, access to shelter, international trade, environmental conditions, political climates, and so forth. While the form of food insecurity differs in characteristics across regions, it is still found in different forms in both developed and developing countries.

Furthermore, effective approaches to resolving such problems are not limited to any specific region. Many scholars note that collaboration, program sharing and multi-party problem solving between organizations can, not only provide important insights to organizational practitioners, but can also serve as a vital approach to effectively addressing multi-faceted social and environmental concerns.

Cuban models for enhancing urban food security were discussed throughout the paper in different ways. By building on the data generated from the qualitative interviews and using Cuban models of food security as a framework for analysis, the final section critically reviewed Canadian shortcomings in food security and areas for improvement. Although completely replicating Cuban food security models in Canada might not be realistic, there are many areas that Canada can improve by drawing inspiration from Cuban food security models. A good start would be for governments to prioritize food security; enhance social services; enable people to access land for food cultivation in urban and peri-urban areas; improve farmers' wages and facilitate sustainable cultivation skills among urban residents. Since many factors influence community and national food security, a broader group of stakeholders and a multi-part problem solving approach are necessary.

Areas for Further Research

As discussed in this paper, many studies note an increasing concentration of the agriculture and food-processing sector in the hands of a limited number of corporations (Kneen, 2002; Krakow 2003). Many scholars blame certain facets of food insecurity on actors within the corporate sector. At the same time the corporate sector seems to be playing a more central role in working alongside nonprofit organizations to address social and environmental concerns (Rondinelli and London, 2001). For their part, in an era of shrinking government funding, many nonprofit organizations welcome the opportunities that the corporate sector can offer to advance their mission (Berger, Cunningham, & Drumwright, 2004; Phillips and Graham, 2000). Studies note that while some corporations are seeking to become more socially responsible, they are not always sure of the precise approach to take (Meinhard, Foster & Berger, 2004). Further action research is required to identify and implement ways in which the corporate sector **can enhance food security in Canada.**

References

Altieri, M. A. Ecological impacts of industrial agriculture and the possibilities for truly sustainable farming. In F. Magdoff., J. B. Foster., F. H. Buttel. (Eds.) *Hungry for profit: The agribusiness threat to farmers, food and the environment* (pp. 203-213). New York: Monthly Review Press.

Alvarez, E., Mattar, J. (2004). *Politica social y reformas estructurales: Cuba a principios del siglo XXI*. UNDP.

Basrur, S. (2002a). Lawn and Garden Pesticides: A Review of Human Exposure and Health Effects Research *Toronto: Public Health*. Available at:
<http://pestinfo.ca/documents/Torontopublichealth-research-2002.pdf>

Basrur, S. (2002b). Playing it Safe: Healthy Choices About Lawn Care Pesticides. *Toronto: Public Health*. Available at:
<http://www.torontoenvironment.org/pesticides/playingitsafe.pdf>

Berger, I., Cunningham, P., Drumwright, M. (2004). Social alliances: Company/nonprofit collaboration. *California Management Review* Vol. 47, No 1. Fall 2004, 1-33.

Che J. and Chen J. (2001). *Food insecurity in Canadian households*. Health Reports, 12, 11-22.

Cruz, M.C. (2001). Participatory planning in the city of Havana, Cuba. *Urban Agriculture Magazine*. Num 5 Dec 2001.

Cruz, M. C., Sánchez, R. M. (2003). *Agriculture in the city: A key to sustainability in Havana, Cuba*. Kingston: Ian Randle.

Dachner, N., Tarasuk, V. (2002). Homeless “squeegee kids”: Food insecurity and daily survival. *Social Science and Medicine* 54, 1039-1049.

Dieste, C. P. (2002). Entre frijoles, papa y aji: La distribución de alimentos en Cuba. Mexico: Universidad de Guadalajara.

Dobyns, J. (2004). Reconstruction of urban space: Urban agriculture initiatives in Toronto and Kampala. *Undercurrent* Volume I, No 1.

Enriquez, L. J. (1994). The question of food security in Cuban socialism. USA: University of California.

Fairholm, J. (1998). Urban agriculture and food security initiatives in Canada: A survey of Canadian NGOs. *IDRC Report # 25*. Ottawa: International Development Research Centre.

Food First. (2003). Food First: Institute for Food and Development Policy. Accessed on (14/4/04). Available at: <http://www.foodfirst.org/cuba/events/2000/2-2000-cuba1.html>

Funes, F., Garcia, L., Bourque, M., Perez, N., Rosset, P. (Eds.). (2002). *Sustainable agriculture and resistance: Transforming food production in Cuba*. Oakland, California: Food First Books.

Government of Canada. (2005). Government of Canada announces \$1 billion for Canadian farmers to ease cash-flow pressures, set stage for transforming industry. Accessed on 06/4/05. Available at: <http://www.nouvelles.gc.ca/cfm/CCP/view/en/index.cfm?articleid=134919&>

Harpers. (2005). Harper's Index. *Harper's Magazine*, April, 2005.

Hartman, T. (1999). *The last hours of ancient sunlight*. New York: Harmony Books.

Hyman, V. E., MacIsaac, S., Richardson, K. (2004). *Hunger Count 2004, Poverty in a land of plenty: Towards a Hunger-Free Canada*. Canada: Canadian Association of Food Banks.

Kneen, B. (1989). *From land to mouth: Understanding the food system*. Toronto: NC Press Limited.

Kneen, B. (2002). *Invisible giant: Cargil and its transnational strategies*. 2nd Ed. England: Pluto Press.

Koc, M., Macrae, R. (2001). *Working together: Civil society working for food security in Canada*. Toronto: Media Studies Working Group.

Krakow, E. (2003). *An overview of the Canadian agriculture and agri-food industry*. Canada: Agriculture and Agri-food Canada

Kroese, R. (2002). Industrial agricultures' war against nature. In Kumbreal A (ed). *Fatal Harvest*. Washington: Island Press.

Lee, K. K. (2000). *Urban poverty in Canada: A statistical profile*. Ottawa: Canadian Council on Social Development.

Lezberg, S. (1999). Finding common ground between food security and sustainable food systems. Presented at the 1999 Joint Meetings of the Agriculture, Food and Human Values Society (AFHVS) and the Association for the Study of Food and Society (ASFS). June 5, 1999

MacRae, R. (1999). Not just what, but how: Creating agricultural sustainability and food security by changing Canada's agricultural policy making process. *Agriculture and Human Values* 16: 187-201. The Netherlands: Kluwer Academic Publishers.

Mahoney, J. (2004). Hothouse flourishes as rink turns over new leaf. *The Globe and Mail*. Monday, July 12th, 2004. Available at: <http://www.cityfarmer.org/inuvik.html#inuvik>

Mbiba, B. Veenhuizen, R.V. (2001). The integration of urban and peri-urban agriculture into planning. *Urban Agriculture Magazine*. Number 4 July, 2001.

McIntyre, L. and Tarasuk, V. (2002). Food security as a determinant of health. *Public Health Canada*. Available at: http://www.phac-aspc.gc.ca/ph-sp/phdd/overview_implications/08_food.html

McKibben, B. (2005). The Cuba diet: What will you be eating when the revolution comes? *Harper's Magazine*, April, 2005.

Meinhard, A., Foster, M., Berger, I. (2004). The emerging role of corporations in assuring civil society. Presented at the sixth biennial meeting of the *International Society for Third Sector Research*, Toronto, July, 2004.

Murphy, C. (1999). Cultivating Havana: Urban agriculture and food security in the years of crisis. *Food First Institute for Food and Development Policy*. No 12, pp 1– 49.

Norberg, H. (2002). *Bringing the food economy home: Local alternatives to global agribusiness*. London: Zed Books.

Phillips, S., Graham, K. A. (2000). Hand in hand: When accountability meets collaboration in the voluntary sector. In K.G. Banting (Ed.). (2000) *The nonprofit sector in Canada: Roles and relationships*. Kingston: Queens University.

Pottier, J. (1999). *Anthropology of food: the social dynamics of food security*. Great Britain: Blackwell Publishers.

Rojas, N. P., Vila, C. T. (1998). Las unidades basicas de produccion cooperativa (UBPC): hacia un nuevo proyecto de participacion. In M Arango. (1998). *Cuba periodo especial: perspectives*. Habana: Editorial de Ciencias Sociales.

Rondinelli, D., London, T. (2001). Nonprofit-Corporate alliances: Risks, opportunities and guidelines. Washington: The Aspen Institute.

Rosset, P. M. (2000). Cuba: A successful case study of sustainable agriculture. In F. Magdoff., J. B. Foster., F. H. Buttel. (Eds.) *Hungry for profit: The agribusiness threat to farmers, food and the environment* (pp. 203-213). New York: Monthly Review Press.

Rubin, H and Rubin, I. (1995). *Qualitative interviewing: The art of hearing data*. Thousand Oaks, CA: Sage Publications.

Sen, A. (1996). Economic Interdependence and the World Food Summit In *Development. Food Security and Development*. December, 1996: The Society for International Development. pp. 5-10

Sinclair, M. (2000). NGOs in Cuba: Principles for cooperation. *Working paper #3*. USA: Oxfam.

Sinclair, M., Thompson, M. (2001). *Cuba going against the grain: Agricultural crisis and transformation*. USA: Oxfam.

Spector, R. (2002). Fully integrated food systems: Regaining connections between farmers and consumers. In Kumbreal A (ed). *Fatal Harvest*. Washington: Island Press.

Statistics Canada. (2001). *Census of Agriculture in Canada*. Statistics Canada. Available at: <http://www40.statcan.ca/101/cst01/agrc42a.htm>

Statistics Canada (2002). The daily. Statistics Canada. Available at: <http://www.statcan.ca/Daily/English/020312/td020312.htm>

Tarasuk, V. (2001). A critical examination of community-based responses to household food insecurity in Canada. *Health, Education and Behavior*. 2001 Aug;28(4):487-99.

Van Bers, C., Robinson, J. B. (1993). Farming in 2031: A scenario of sustainable agriculture in Canada. *Journal of Sustainable Agriculture*. Vol. 31 (1)

Warwick, H. (1999). Cuba's organic revolution. *The Ecologist*, Vol. 29:8; 457-460.

Wekerle, G. (2002). Toronto's official plan from the perspective of community gardening and urban agriculture. *Ontario Planning Journal*, July/August vol. 17, Number 4.

Wilson, B., Tsoa, E. (2002). Eating their words: Government failure on food security. *Hunger Count 2002*. Toronto: Canadian Association of Food Banks.

Winson, A. (1993). *The intimate commodity: Food and the development of the agro-industrial complex in Canada*. Canada: Garamond Press.