

MORE THAN SUBSISTENCE: SMALL-SCALE URBAN
AGRICULTURE AND HOUSEHOLD LIVELIHOODS
IN HAVANA, CUBA

by

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for the degree of Master of Arts

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DALHOUSIE UNIVERSITY
SCHOOL OF HEALTH AND HUMAN PERFORMANCE

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Abstract

In the past 20 years, Cuba has emerged as a world leader in urban agriculture and sustainable development, having shifted its policies and practices toward local, organic food production and self-sufficiency. This collective case study explored small-scale, unwaged urban agriculture and household livelihoods in Havana, Cuba. Data were collected from three case households through participant observation, in-depth interviews, and photos. Two of the families produce fruits, vegetables and animal products, and the third produces organic fertilizers. For these families, agricultural production requires time and labour, but produces multiple material and non-material benefits at the individual, household, and community level. The findings demand a more nuanced view of household livelihoods and agency in the Cuban context, and the notion of agriculture as work vs. leisure. As global concerns about resource depletion and social justice in food systems increase, much can be learned from families and countries that have successfully implemented alternatives.

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CHAPTER 1: INTRODUCTION

Background

Globally, interest in small-scale, local and sustainable food production has been growing at a rapid pace (Weis, 2007a; Wright, 2009). As the world copes with staggering health and social inequalities and rapidly depleting natural resources, the need to explore alternative ways of producing and distributing food has been identified and seized by researchers, farmers, citizens, corporations and some governments (Weis; Wright). The calls for sustainable development are particularly urgent for the world's poor, who suffer environmentally, socially *and* economically under the current global regime (Altieri, 2002). Much of the research on sustainability and food focuses on micro-level initiatives (individual or community-based, grass-roots initiatives and projects) in communities or cities experimenting with alternative technologies or approaches (Stricker, 2007). In the past decade, the small nation of Cuba has emerged as a leader in sustainable agriculture and development, and provides an ideal setting to examine the macro- and micro-level impacts of alternative measures, when implemented on a national scale (Rosset, 2000; Stricker; Wright). An important part of Cuba's sustainable agriculture has consisted of small agricultural projects undertaken by individuals and families, in backyards, on balconies, and on community plots. This research explored small-scale, urban agriculture and household livelihoods in Cuba's capital, Havana.

From a health promotion perspective, Cuba is a fascinating country. Like many countries in Latin America, Cuba has scarce resources, a low gross domestic product [GDP] and a tumultuous history of colonization, slavery, and dependence on wealthier countries for both export markets and imports of basic goods including food (Bell Lara, 2005; Weis, 2007a). However, unlike many of its neighbours, Cuba boasts health and social indicators often near or better than those of developed countries (Evans, 2008; Franco, Kenelly, Cooper & Ordúñez-García, 2007; Oficina Nacional de Estadísticas [ONE], 2007). Life expectancy in Cuba is 77 years, which is within the range of most high-income countries (Evans). Cuba's rate of infant mortality is 5.8 per 1000 live births (Franco et al., 2007), and the rate of mortality in children under five years is 7 per 1000 (World Health Organization [WHO], 2006). On both of these measures Cuba falls

directly between Canada and the United States (Franco et al., 2007; WHO). Among countries with income levels similar to Cuba, the most successful achieve under-five mortality rates that are twice that of Cuba's, while most are three to five times as high (Evans). This phenomenon has been referred to as the "Cuban paradox" (Birch & Norlander, 2007; Evans, 2008; Spiegel & Yassi, 2004). It presents a fundamental challenge to the notion that economic growth is the only route to development and improved population health. Part of Cuba's success owes to its first-rate health care system, which is free and accessible to all citizens, has the highest doctor-patient ratio in the world (Bell Lara, 2005; Evans), and emphasizes preventative and community-focused care (Offredy, 2008). Beyond this system, however, Cuba's government has simultaneously acted on many of the key social determinants of health, with impressive results that show how health disparities can be tackled and overcome even with scarce resources.

Cuba's remarkable social achievements are generally attributed to the socialist model implemented following the victory of the Cuban Revolution in 1959, which declared access to education, health care and food as basic human rights, and undertook enormous measures to extend these entitlements to every citizen (Evans, 2008; Spiegel & Yassi, 2004). All Cubans are guaranteed free education and health care, essentially everyone is housed, and all citizens are entitled to basic necessities including food rations and social security. The Cuban Revolution has also emphasized community participation, gender and racial equality, social support and solidarity. For thirty years following the victory of the Revolution, the country made extraordinary developmental strides in terms of literacy, education, nutrition, life expectancy and eradication of infectious diseases (Bell Lara, 2005; Evans; Franco et al., 2007).

Perhaps just as impressive as Cuba's transformation in the first thirty years of the Revolution was its ability to maintain that progress despite a devastating economic and food crisis brought about by the collapse of socialism in Europe in 1990. The crisis demanded a radical shift toward self-sufficiency and low-input, local production. During the crisis, Cuban citizens and the Cuban government recognized that food production within cities would be necessary for survival. Since that time, urban agriculture has dramatically increased the food supply in cities across Cuba, and has been a cornerstone in Cuba's pursuit of food security and self-sufficiency (Altieri et al., 1999; Koont, 2009). Cuba has developed one of the most impressive examples of urban

agriculture in the world (Koont; Weis, 2007a). Although its successes at the population level are impressive, the impacts on food-growers' households are understudied.

Urban Agriculture

Urban agriculture is not a new phenomenon; it has likely existed as long as people have settled in concentrated areas (Jolly, 1999; Murphy, 1999). In recent decades, however, urban food production has expanded worldwide, and interest in its potential for improving household livelihoods has been steadily increasing in both low- and high-income countries (Henn & Henning, 2002; Egal, Valstar & Meershoek, 2001; Jolly; McCullum et al., 2005; Redwood, 2009). Baumgartner and Belevi (2001) provide a short definition of urban agriculture:

Urban agriculture comprises the production, processing and distribution of a diversity of foods, including vegetables and animal products within (intra-urban) or on the fringe (peri-urban) of an urban area. Its main motivation is food production (for personal consumption or sale) and/or higher income (p. 5).

Worldwide in 2001, 800 million people were involved in urban agriculture, 200 million of them producing food for the market and 150 million working in agriculture as full time employees (TUAN cited in Baumgartner & Belevi, 2001). Urban food production around the world is very diverse. It is highly dependent on climate and the availability of local resources and infrastructure. It also depends on local incentives to produce food (i.e. economic need or food shortages, opportunities for selling produce), and the local culture or social norms related to food preferences and production (Nugent, 1999; McCullum et al., 2005).

Urban agriculture is distinct from rural and industrial, large-scale agriculture in several ways. Most cities around the world, by nature of their population density, face at least some limitations to the availability of arable land and water (Baumgartner & Belevi, 2001; Nugent, 1999). As urban sprawl progresses, densely packed buildings take over green spaces and natural coastlines, and primary sector jobs within those areas such as agriculture, forestry and fisheries are gradually replaced with industrial and service sector jobs (Nugent, p. 69). The shortage of land and resources, coupled with modern urban lifestyles where the supermarket is the primary source of food (Patel, 2007), has in most cases discouraged urban food production to the extent that globally, it is not a major contributor to GDP, typical household diets, or community food security (Nugent; Redwood, 2009).

However, in select areas around the world, urban agriculture has flourished and taken on a significant role in the local food supply. Some of these cities have long-standing urban farming traditions (e.g., Cairo, Nairobi) (Nugent, 1999), or face ongoing political or economic circumstances that create incentives for citizens to grow food. In other cases, cities have faced civil, natural/weather or economic emergencies that suddenly rendered local food production very important (Nugent, 1999). In Cuba, urban agriculture existed on a very small scale prior to the 1990s. As will be described in the next section, an economic and food crisis brought about a dramatic increase in urban food production beginning in the early 1990s, and despite gradual economic recovery since that time, urban agriculture in Cuba has continued to expand (Akram-Lodhi, 2007; Altieri, 2002; Murphy, 2006; Rosset, 2000; Weis, 2007b).

The Setting: History of Development and Agriculture in Cuba

Pre-colonial and Colonial Cuba

Cuba is an island nation in the Caribbean, comprised of one main island (Isla de Cuba), a smaller island (Isla de la Juventud) and a series of archipelagos. Situated 145km south of Florida, Cuba is positioned at the key approaches to the Atlantic Ocean, the Gulf of Mexico, and the Caribbean Sea (Pérez, 1988). Cuba has a relatively uniform climate which is highly favourable to growing many crops, including coffee, sugar, cocoa, and a wide variety of fruits and vegetables (Benjamin, Collins & Scott, 1986; Pérez). Prior to the arrival of the Spanish colonists, several waves of migration had brought various aboriginal peoples to settle on the island, including the Ciboney, Arawak (Taíno), and Mayarí (Brenner, Jiménez, Kirk & LeoGrande, 2008; Pérez).

When Columbus reached Cuba in 1492, he was struck by its natural beauty and the rich bounty of natural resources that he thought could be exploited (Pérez). After initial searches for gold bore no fruit, the Spanish colonists focused their attention on the neighbouring island of Hispaniola (currently Haiti and the Dominican Republic), returning to Cuba beginning in 1508 and taking over occupancy of the island in 1511 (Pérez). For almost 400 years, Cuba existed as a Spanish colony (Brenner et al., 2008). The aboriginal peoples mostly fled, were massacred, or were put into slavery, and the Spanish established settlements across the island (Pérez). Infectious disease also took a dramatic toll on the indigenous population, and these groups were effectively wiped out as more Spanish settlers arrived. For the first few centuries Spain was mostly

interested in Cuba for its geographic location, but by the mid-1700s the colonists had begun to intensively transform Cuba's agriculture toward sugar production to meet growing demand in Europe (Brenner et al.) Vast numbers of African slaves were brought in to work on the sugar plantations over the next hundred years, and by 1862 Cuba produced one-third of the world's supply of sugar (Brenner et al.).

Achieving Independence from Spain

In the late 1800s, Cuba's significant resources and geographic position put it at the centre of the growing struggle for power between Europe and the United States. Several unsuccessful bids for independence were launched by Cuban rebels, but it remained a Spanish colony until 1898, when Spain and the United States went to war in what is known in Cuba as Cuba's War for Independence, and elsewhere as the Spanish-American War (Brenner et al., 2008). Within months Spain had ceded Cuba to American control (Brenner et al.). In 1901 Cuba finally achieved its status as an independent republic, although the United States still retained power over Cuba's domestic and foreign affairs through restrictive policies such as the Platt Amendment, forced into Cuba's constitution during an American military occupation. The Platt Amendment, in effect from 1903 to 1934, granted legal rights to the US to maintain certain economic assets and military lands (including Guantánamo Bay) on the island (Benjamin et al., 1986). Thus despite its nominal independence, until 1959 Cuba existed as a neo-colony or "de facto colony" (Brenner et al.; Hutton, 2006) of the United States, meaning it was still dependent upon and controlled by an imperialist force, though through economic and political means, rather than by official dominion or settlement.

Cuba in the first half of the twentieth century was characterized by inequality (Benjamin et al., 1984; Pérez, 1988). A handful of upper-class Cubans and American landowners controlled the vast majority of land, resources, industry and public services (including transportation), while smallholders and the landless majority struggled to find sufficient employment and food (Benjamin et al.). The middle and upper classes lived well, while most Cubans suffered from extreme poverty, hunger and infectious disease, with further inequities and disadvantage seen among women and rural communities (Benjamin et al.). Most of the food produced was exported, and Cuba's dependent relationship with the United States "gave it little opportunity to overcome its dependence on sugar" (Brenner et al., 2008, p. 6).

The Cuban Revolution: 1959-

In the 1950s a revolutionary army led by Fidel Castro gained popular support, and in 1959 it overthrew the Batista dictatorship that had been in power for much of the previous 25 years. The new regime, based on ideals of equality, sovereignty, solidarity and justice, would dramatically overhaul essentially every facet of life in Cuba (Pérez, 1988). A drastic agrarian reform law dramatically limited the size of productive units, breaking up large private farms and plantations into cooperatives and smaller farms, and nationalizing them. Private businesses and institutions, including universities, were also taken over by the state, which strove to redistribute wealth from the upper-class Cuban and foreign property-owners, instead directing these resources toward ensuring that the basic needs of all citizens were met (Pérez). By the end of the 1960s, Cuba was one of the most socialized societies in the world, and over the first thirty years of the Revolution, the Castro government promised and delivered a higher standard of living and instilled a sense of national pride and dignity for the majority of Cubans (Bell Lara, 2005; Pérez).

A significant result of the socialist model was greater access to food, and strategies were implemented to enhance Cuba's self-sufficiency in terms of food and to reduce its reliance on sugar production (Funes, García, Bourque, Pérez & Rosset, 2002; Pérez, 1998). However, the dominant agricultural model in Cuba following the Revolution was heavily industrialized and export-driven (still primarily sugar), facilitated by favourable trade relations with Soviet Union and the socialist bloc in Eastern Europe (Funes et al., 2002; Premat, 2003; Sinclair & Thompson, 2008). By the mid-1980s, over 50% of food consumed in Cuba was still being imported (Murphy, 1999).

Years of Crisis: the 1990s.

With the collapse of socialism in the former Soviet Union and the dissolution of the socialist bloc in 1989-90, Cuba's primary trading partners disappeared. The country was thrown into a devastating economic crisis, as export markets dried up and along with them, the source of Cuba's imported food and fuel. Between 1989 and 1993, Cuba's capacity to import goods dropped by 75%. Its GDP dropped by more than one-third, and industrial production declined by approximately 80% (Bell Lara, 2005). The Cuban government christened the economic crisis of the 1990s 'the Special Period in Time of Peace', referring to the fact that conditions were so dire that the necessary restrictions and rationing resembled war-time measures (Bell Lara; Murphy, 1999). Food

security was one of the most serious problems; per capita caloric intake in the early 1990s fell below the level maintained for the previous thirty years, with a 45% drop in the consumption of animal products (Franco, Ordúñez, Caballero, & Cooper, 2008). The average Cuban lost 10 to 20 pounds in body weight (Weis, 2007). More than 50,000 Cubans lost some or all of their sight in an epidemic of optic neuropathy thought to be caused by a vitamin B deficiency (Franco et al., 2008; Pérez, 1988). There was also a reversal in the trend of the infant mortality rate, which had been improving since the victory of the Revolution (Franco et al., 2008). The crisis was worsened by an intensifying of the trade embargo the US had imposed since 1962, which continues to severely limit Cuba's international trade options by penalizing other countries for doing business with Cuba (Bell Lara, 2005; De Vos, Ceukelaire, Bonet & Van der Stuyft, 2008).

In an effort to preserve the achievements of the previous thirty years, the state took swift and dramatic action, undertaking creative approaches to maximize self-sufficiency and equal access to basic necessities for all citizens within the country (Bell Lara, 2005; Franco et al., 2007; Díaz Tenorio, 2000). Food security for all Cubans was declared the first priority (Chaplowe, 1996). Extensive food rationing measures were implemented to ensure equitable and sustainable distribution (Murphy, 1999). A National Nutritional Action Plan was implemented by the state in 1994, with three objectives: 1) to increase and diversify food production with the dual aim of maximizing food self-sufficiency and maximizing cost-effectiveness and nutrition; 2) to import foods needed to complement national production and meet the population's needs; and 3) to incorporate people as activists, promoting self-provisioning and raising cultural awareness of food production and systems (Wright, 2009, p. 96).

New agricultural policies recognized the efficiency of the small-scale¹ producer and dramatically re-shaped resource and land distribution, facilitating small, decentralized farms, gardens and cooperative units as described in the next section. Shortages in fuel and chemicals required a return to less industrialized farming – using oxen rather than tractors, emphasizing organic inputs and self-sufficiency, and using the available biotechnology expertise within the well-educated population to develop

¹ The term “small-scale” referring to agriculture could mean very different things depending on contextual factors, e.g., land availability, local farming traditions or practices. Throughout this thesis I use the term to refer to non-industrial agricultural production, where the farmer/gardener has at least some control over the land he/she works and the products of his/her labour. In Cuba, home and community gardens, cooperatives, and some self-provision gardens would meet this description.

alternatives to chemicals (Auld, 1999; Bas, 2005; Gonzáles Novo & Murphy, 1999; Weis, 2007b). Due to Cuba's large urban population and the salience of the food challenges within cities, urban agriculture was a key element in surviving the food crisis of the Special Period.

The Emergence of Urban Agriculture in Cuba

Prior to the 1990s, urban agriculture existed in Cuba on a small scale, with relatively few people producing food for their own household consumption (Companiononi & Hernández, 2002). During the first thirty years of the Revolution, the state distribution system provided essentially everyone with the basic necessities; therefore there was no need for families to grow their own food (Murphy, 1999). Further, as in many low-income countries, growing food was not seen as a leisure activity but a sign of poverty (Murphy). Food security in Cuban cities was especially precarious during the Special Period, due to shortages of transport fuel and means to produce and store sufficient food for the large urban populations (Gonzáles Novo & Murphy, 1999; Koont, 2009; Murphy, 1999; Murphy 2006). At the beginning of the Special Period, these shortages meant extremely limited access to nutritious foods in urban areas, which motivated some individuals and families to begin producing food on whatever land was available, in an effort to feed themselves (Gonzáles Novo & Murphy; Altieri et al., 1999). The Cuban government quickly recognized the under-exploited production potential of urban lands, and undertook steps to officially recognize the emerging farms and gardens, and to promote urban agriculture. "With a renewed emphasis on urban farming relatively high levels of production in small areas were made possible by paying close attention to existing local resources, and the potential for selling goods locally" (Companiononi & Hernández, p. 221). In 1991 the Ministry of Agriculture began a program called "linking people with the land", which gave workers on state farms more responsibility for the land they worked and the produce they harvested (Rosset, 2000). These efforts culminated in 1993, when the state officially dissolved state farms and handed over control of the land to workers in the form of small cooperative units known as *Unidades Básicas de Producción Cooperativa* (UBPCs) (Rosset). The Ministry even started a garden on the lawn of its office building to feed the workers (Auld, 1999). In 1994 the state created an Urban Agriculture Department in Havana, whose goal was "to put all of the city's open land into cultivation and provide a wide range of extension services and resources such as

agricultural specialists, short courses, seed banks, biological controls, compost, and tools” (Pinderhughes, Murphy & Gonzáles, 2000, para. 6).

Tremendous effort was put into securing land-use rights for would-be food producers (Altieri et al., 1999; Gonzáles Novo & Murphy, 1999). As petro-chemical inputs such as pesticides and fertilizers had disappeared with the collapse of the Soviet Union, large state-run farms (called *organopónicos*) were established that linked biotechnology and research with food production, through the development of organic or biological fertilizers and pest controls. Laws restricting the sales of produce in Cuba were relaxed, and farmers’ markets were opened throughout the city, allowing food producers to sell produce directly from their land to consumers (Gonzáles Novo & Murphy; Killoran-McKibbin, 2006). The government’s comprehensive promotion and support accelerated a popular movement that was already underway (Murphy, 1999).

Urban agriculture in Cuba takes several forms, including private gardens on patios and rooftops (*huertos privados*), community plots on public land (*huertos populares*), gardens supplying institutions or workers’ cafeterias (*áreas de autoconsumo*), as well as the larger state-run *organopónicos*. These various forms are briefly described in Appendix A. The urban agriculture movement developed quickly thanks to its simplicity and accessibility – virtually anyone could participate, whether on a small private patio, a vacant lot, or as a worker at a larger *organopónico* (Murphy, 2006). By the year 2000, 160,000 paid jobs in urban agriculture had been created across Cuba; among the workers were farmers but also housewives, retired people, and professionals (López, 2000, cited in Companioni & Hernández, 2002).

Urban agriculture rapidly became a significant source of fresh foodstuffs for the urban and suburban populations of Havana, (Altieri et al., 1999; Rosset, 2000) and was “central to mitigating the food crisis” of the Special Period (Gonzáles Novo & Murphy, 1999, p. 344; Murphy, 2006). The food is consumed in producers’ households, donated to community institutions, and/or sold in a variety of outlets throughout the city (Companioni & Hernández, 2002; Sinclair & Thompson, 2008). This diverse urban production dramatically increased the food supply and food security in cities across Cuba (Koont, 2009; Altieri et al., 1999), but its impacts on food-growers’ households have not been well-explored. Available information suggests that participating households have increased access to a variety of healthy foods, and that they also save money that would otherwise be spent on food (Koont, 2009; Moskow, 1999). Because

producers are now allowed to sell their surplus directly to consumers, urban agriculture can contribute to household needs not only through production for household consumption and cost savings, but also through supplementary income generation (Bryld, 2003; Gonzales Novo & Murphy, 1999; Marsh, 1998).

Cuba After the Special Period

By the end of the 1990s, the crisis in Cuba was receding and the trends of nationwide shortages and economic isolation were beginning to reverse (Wright, 2009). As the new century began, Cuba experienced growth in many sectors including mining, tourism, construction, and the export of health professionals, and was trading with more countries (Wright). Between 2000 and 2006, Cuba's international trade doubled in value and its GDP rose from US\$1.6 million to US\$2.8 million (Wright). Food security for Cubans was stabilizing, but agriculture was still operating with insufficient inputs (Wright). The previous decade's shift toward low-input, sustainable agriculture and self-sufficiency had produced dramatic results, and the Cuban state continued to invest in agriculture – these investments rose by 44 percent from 2001 to 2006 (Wright). Production and employment in agriculture remained steady overall, though during this period sugarcane production (for local use and export) decreased to one-third of previous levels (Wright). By 2009, the paid workforce in urban agriculture across Cuba had grown to over 300,000 people (González Novo, Castellanos Quintero & Price Masalías, 2009; Rodríguez Nodals, 2010). Urban production underwent a decrease in government investment during the 2000s as food security improved (Wright). In the past 3 years, however, extensive efforts have been made to expand and encourage urban food production, mostly in suburban areas, which are seen as holding great potential for meeting urban food needs on a more long-term basis (Wright).

In 2006, the ailing Fidel Castro transferred his presidential responsibilities to his younger brother Raúl Castro, who officially took over as President in early 2008. A series of agricultural reforms implemented since that time have increased prices paid to producers, and have led to further decentralization of production through an increased emphasis on local, participatory decision-making at the municipal or community level; more agricultural supply shops where producers can purchase their own inputs at subsidized prices; direct contracts between producers and institutions such as daycares, hospitals and schools; and higher potential bonuses for salaried workers who produce more than expected (González Novo et al. 2009; Padgett, 2008; Wright, 2009).

The new reforms have also revitalized efforts begun during the Special Period to allocate under-used lands to aspiring or existing farmers. Under these efforts, the state has distributed nearly 2.5 million acres of suburban farmland to 110,000 individual farmers, as well as 1,715 cooperatives and agricultural organizations (Rodriguez, 2010). People who are given land under these agreements are generally required to contribute an agreed-upon portion of their harvest to the state, but are allowed to keep the surplus for their own use or sale (Padgett, 2008; Rodriguez).

Collective Case Study of Small-scale Urban Agriculture

Research on livelihoods in low-income settings has shown that families or households combine various *assets* or resources (including natural, social, human, and economic capital), within the limitations of their context, to pursue a number of *livelihood strategies* (Frankenberger, Drinkwater and Maxwell, 2000). This research explored small-scale, unwaged agricultural production as a livelihood strategy in Havana, Cuba, using a collective case study approach. In a collective case study (also known as multiple case study), the ultimate objective is to understand some 'whole': a phenomenon, activity, or condition (Stake, 2006). Cases are selected because they represent sites or manifestations that can provide insight into the broader topic. This study used three case households in Havana to explore how unwaged production in home gardens and community plots works as a household livelihood strategy in this setting.

The higher incomes and enhanced food security of employees on *organopónicos* and state-run cooperatives have been demonstrated to some extent in the literature (Koont, 2009; Sinclair & Thompson, 2008). However, I was unable to find any studies looking specifically at family or household-centred, unwaged agriculture, although this is a very popular form of food production in Havana (Companiononi & Hernández, 2002). According to Marsh (1998), "family food production systems are found in most regions of most countries worldwide. They may be the oldest production system known and their very persistence is proof of their intrinsic economic and nutritional merit" (p. 4). There is also scarce information focused on the households or families of urban gardeners in Havana, including how the family combines livelihood strategies and how different members of the home may experience those strategies and the benefits differently.

This research employed a collective case study methodology to examine the *household* or *family* experiences of small-scale urban agriculture (or gardening). Three households or families were selected as cases; these are families who produce food and organic fertilizers for consumption and/or sale through unwaged work in home gardens or community plots. Through multiple methods of data collection (participant observation, in-depth interviews, and photographs) conducted in the field, this study aimed to address the following questions:

- How does unwaged *small-scale urban agriculture* operate as a livelihood strategy for households and families in Havana, Cuba?
 - From the perspectives of household members:
 - How does the household make use of natural, social, human, and economic assets or resources in small-scale agriculture?
 - How do contextual, institutional, and infrastructure factors (e.g. policy, culture, climate) support or hinder the household's ability to use this strategy to achieve the desired livelihood outcomes?
 - How do the households and families organize their labour and resources? Are there within-home differences (e.g., between genders or generations)?
 - What are the challenges of small-scale agriculture when used as a livelihood strategy?
 - What are the impacts on their personal and their household's health (e.g. physical, mental, social), and the security of their livelihood? How sustainable are these impacts?

CHAPTER 2: REVIEW OF KEY CONCEPTS AND RELEVANT LITERATURE

Agriculture and Development

Agriculture is not only the source of food (e.g., vegetables, fruits, grains, meat) and fibre (e.g., cotton, sisal) for communities around the world; it also plays a critical role in development. Agriculture is the largest employment sector in most developing countries (WHO, 2009), and it is commonly viewed as a key pathway out of poverty for many nations in the Global South (Norton & Alwang, 2003). The World Bank (2007) contends that “agriculture alone will not be enough to massively reduce poverty, but it has proven uniquely powerful for that task” (p. 1). The agreements and policies that dictate the international trade of agricultural products are key determining factors in any country’s development and food security circumstances (Patel, 2007; Weis, 2007a; WHO 2009).

Over the past few decades, the dominant neo-liberal ‘globalization’ regime increased pressure on poor countries to reduce subsidies and compete “freely” in the world food market. According to this view, agriculture’s role in development is based on the key pillars of increasing productivity and enhancing global competitiveness (World Bank, 2007). Structural Adjustment Programs (SAPs) implemented by the International Monetary Fund (IMF) in the 1990s provided poor countries with much-needed loans that came with multiple strings attached (Patel, 2007). These programs obliged low income countries to import goods from donor nations, and comply with conditions designed to advance the neo-liberal world order (e.g., privatization of schools, hospitals and other institutions; reducing subsidies and tariffs). The programs essentially worked to solidify Latin America’s role as an import-dependent supply of cheap labour that could furnish Europe and North America’s demand for products grown in the Global South² (Weis 2007a). Due to its isolated political position, Cuba was not part of the SAPs. Fidel Castro has been quoted as attributing much of Cuba’s developmental success to its status as a non-member of the IMF (cited in Spiegel & Yassi, 2004). However, agriculture has played a significant role in Cuba’s development since the arrival of the Spanish in the 15th Century, and in the past two decades Cuba has completely reformed its production

² In international development studies, the terms Global North and Global South are often used to describe wealthy (or ‘developed’ countries) and poor (or ‘developing countries’), respectively. The ‘North’ generally includes Canada, the US and Europe, among others, and the ‘South’ includes much of Latin American and Asia, and most of Africa. These are not perfect or complete categories, but they provide a means of generalizing about global inequities (McMichael, 2000; Weis, 2007a).

and trade into a model that has benefited its citizens, economy, and environment (Koont, 2009; Sinclair & Thompson, 2008).

A number of theoretical concepts related to development and inequity have applications for Cuba's agriculture and global political-economic position. Cuba was one of many countries where Marxism flourished in the 20th century, both as an ideology and a political model (Glaser & Walker, 2007). To greatly oversimplify, Marx theorized that all social change is a product of the conflict between *forces of production* (materials, tools, workers) and the *relations of production* (relationships between classes of people through production, trade and distribution) (Blomström & Hettne, 1987). Development is thought to slow down when the social relations do not correspond to the available resources; class struggles emerge as those reaping the benefits of the imbalance attempt to hold on to power and those at the bottom attempt to seize it. As in Cuba's predominant ideology and political system, Marxism is sharply critical of capitalism and generally favours equality and collective rights over individual freedoms (Vaillancourt, 1986).

With roots partly based in Marxism and neo-Marxism, Dependency Theory emerged in the 1960s, in response to the worsening development conditions in Latin America, and as a critique of the growing modernization paradigm (Blomström & Hettne, 1987; Schulz, 1999), which had been the dominant model directing and measuring development since the end of World War II (Lanz, 2002). The modernization paradigm emphasized capital formation, industrialization, state-building, urbanization and consumerism as key components of development; by the 1980s these principles had come under sharp criticism from academics and development practitioners (Lanz). According to Dependency Theory, underdevelopment is no longer seen as resulting from endogenous causes (i.e., that developing countries are more primitive and simply have yet to modernize or 'catch up' with wealthy nations), but as caused by external forces, including colonialism, the world market, and the destructive power of transnational corporations. According to Schulz: "A radical consequence of dependency theory is the proposal for some sort of dissociation from the world market or at least protection from its supposed detrimental influences. The attempted goal is to attain self-reliant and self-controlled development" (p. 14). This scenario is generally dismissed as unrealistic, and dependency theory has been subject to extensive debate in the past few decades (Blomström & Hettne; Schulz). Odell (2001) uses pre-and post-Revolutionary

Cuba as a “most-likely” scenario for (analytically) testing or assessing the validity of dependency theory: Cuba’s break with the global capitalist system in 1959 would seem likely, if any example could, to support the theory that dependency retards development and breaking dependency improves it. Odell concludes that Cuba’s development has been mostly a failure, and thus contradicts dependency theory. However, Cuba essentially remained dependent (in terms of trade) on the USSR until 1990 (a fact which Odell only notes in a footnote); a more significant break from the global system occurred when that relationship disappeared. Even today Cuba is not fully dissociated and self-determining – imports and exports remain significant (Mesa-Lago & Pérez-López, 2005; Wright, 2009), even as the restrictive policies enforced by the United States limit Cuba’s options for trade and international relations. Ironically, despite the embargo, Cuba is a major market for US grain exports (USDA Foreign Agriculture Service, 2005). Further, Odell’s (2001) conclusion that Cuba has failed to develop is based solely on an economic perspective. Cuba’s achievements in literacy, education, public health, food security, life expectancy, and environmental sustainability are remarkably better than the outcomes seen in countries with similarly low levels of economic development (Spiegel & Yassi, 2004), and as highlighted in Chapter 1: Introduction, more like the outcomes in highly economically developed countries. The Cuban example is unique, and points to the need for a different, broader definition of development than the typical economic measures entail.

Cuba’s achievements do not reflect a complete severing of ties with the global market or pure self-sufficiency, which would indeed be unrealistic or at least incredibly unlikely. However, a political and agrarian shift toward maximizing the use of resources to meet local needs has created a level of self-sufficiency and independence not seen in many other low-income settings (Rosset, 2000; Wright, 2009). Although Cuba is not self-sufficient or completely isolated from the world market, it represents an example of a growing movement known as *food sovereignty*. Largely spearheaded by one of the world’s largest independent social movement³ organizations, *La Vía Campesina* (translated as “The Peasant Way”, though without the pejorative connotation of peasant in English) (Patel, 2007), food sovereignty strives to redress the power imbalances in food systems, emphasizing rights of farmers (and specifically women farmers),

³ Social movements have been defined in numerous ways; I use the term here to refer to efforts by groups of individuals sharing a common interest and working to bring about or prevent change in their political or social realities.

consumers and nations to make decisions about agriculture and food systems (Miller, 2008). This approach calls attention to the shortcomings of food security, namely that although it accounts for *access* to food, it does not address the sources of food or local control over those sources. According to Weis (2007a), this concept “does not romanticize the democratic character of nation-states, but emphasizes that decision-making and regulatory authority should be moving closer to farmers and farming systems, not farther from them” (p. 181).

Sustainable development is a relatively recent concept that emerged in response to the decline in natural resources (i.e. clean water, arable land, and fertile soil) related to modern (typically large-scale, industrial) farming, which generally relies on intensive use of resources as well as machinery and chemicals (Auld, 1999; B. Díaz Gonzáles, 2005). The perceived decline in the potential for future productivity “prompted a great deal of discussion about the need to make major adjustments to conventional agriculture” (Altieri, 2002, p. xi). However, sustainable development is not only about the natural environment. Various stakeholders and perspectives emphasize distinct elements, including the need for physical/environmental sustainability, but also economic viability, and the need for human development, social justice and global equity (Altieri, 2002; B. Díaz Gonzáles; Tripp & Longley, 2006). The World Commission on Environment and Development set forth broad foundational principles of sustainable development, which include meeting the basic needs of people (particularly the poor), recognizing limits to providing for the needs of current and future generations, developing the intellectual and creative energies of humanity, and ensuring equity between current and future generations (cited in Stricker, 2007).

Cuba in the Context of Global Food Security

In 1996, heads of State and Government of more than 180 nations met at the World Food Summit (WFS), and “pledged to eradicate one of the worst scourges weighing on society’s collective conscience: hunger” (FAO, 2006, p. 4). The members committed to cut in half, by 2015, the number of undernourished people in the world, compared to the number in 1990. Ten years later, virtually no progress had been made towards that objective; the absolute number of hungry people had been reduced by only 3 million, which was within the range of statistical error (FAO).

According to the WFS' 1996 definition, food security exists "when all people at all times have access to sufficient, safe, nutritious food to maintain a healthy and active life" (Overseas Development Institute, 1997, p.2). Current definitions of food security typically refer to both physical and economic access to foods that meet people's dietary needs and personal food preferences (WHO, 2009). According to the World Health Organization, food security is built on three pillars: 1) availability of sufficient food on a consistent basis; 2) access to (or sufficient resources to obtain) appropriate, nutritious foods; and 3) appropriate use of foods based on knowledge and adequate water and sanitation (WHO, 2009).

The global food crisis of the past few years has been the subject of much international debate and dissent. Food security is a complex issue closely tied to environmental sustainability, health and nutrition, economic development and international trade. Critics of the current global trade system argue that the problem of hunger is not due to a shortage of food but the inequitable distribution of food. It has been broadly argued that the simultaneous crises of hunger in the Global South and obesity in the Global North are the two sides of the same coin; a product of a global food system which fosters inequitable distribution of and access to nutritious food (McMichael, 2000; Patel, 2007; WHO, 2009).

Amidst widespread malnutrition, high inequality, and generally poor health and social indicators in the Global South (and specifically in Latin America), Cuba stands out as one country that has achieved "first-world" health status despite its low income (Evans, 2008; Franco et al., 2007; Rosset, 2000). Due to its political isolation – most significantly the disappearance of its primary trading partners in Europe and Asia, and the US trade Embargo – Cuba has remained on the sidelines of globalization since the early 1990s. Moved by ideology and necessity, Cuba dramatically shifted its production, trade and consumption patterns toward fulfilment of its own needs, striving for self-sufficiency. It is now in a unique position: a nation that has achieved a high level of food security and remarkable health outcomes (such as maternal and infant mortality, life expectancy, eradication of infectious diseases) and social outcomes (including literacy and education levels better than many developed countries) while remaining a low-income country.

Cuba is one of only three countries in Latin America (along with Guyana and Peru) to have met (or in Cuba's case, exceeded) the WFS's target of cutting in half the number of undernourished people from 1990 to 2015 (FAO, 2006). Various national programs

guarantee a minimal standard of nutrition for all Cubans. Extensive supports for urban and rural agriculture have dramatically increased small-scale productivity and thus the food supply (Rosset, 2000; Weis, 2007b). A rationing system called *la canasta básica* (basic food basket) ensures that everyone has access to basic foods, such as milk, sugar, meat and vegetables at greatly subsidized prices (Koont, 2005; Spiegel & Yassi, 2004) – this system is described in more detail in the forthcoming section “Household livelihoods in Cuba”. In times of shortage, priority has been given to pregnant and nursing women, children and the elderly (Franco et al., 2008; Spiegel & Yassi). The state also distributes significant quantities of food to hospitals, daycare centres, and schools (González Novo & Murphy, 1999; Koont, 2005; Premat, 2003). By the end of 2000, food availability in Cuba reached daily per capita figures of 2,600 calories and more than 68 grams of protein; according to the UN’s Food and Agriculture Organization, an adequate diet consists of 2,400 calories and 72 grams protein per day (Koont, 2005).

Resources in Cuba are still extremely limited, and many challenges remain in the nation’s effort to sustainably meet the population’s nutrition needs. For example, Koont (2005) reported problems related to milk, meat, and eggs, which require imported animal feed that Cuba cannot afford (Koont; Mesa-Lago & Pérez-López, 2005). In addition, due to its geographic position, Cuba frequently suffers natural disasters, with sometimes devastating impacts on the productivity and food security of a nation where a high proportion of food is grown at home. In 2008 three fierce hurricanes hit the island in the span of a few weeks, creating nationwide shocks and shortages as crops were lost (International Federation of Red Cross and Red Crescent Societies, 2008). The damages were estimated at almost USD \$10 Billion (World Meteorological Organization, 2009). Despite these persistent challenges, in the past decade Cuba has been lauded around the world for its success in declaring and enacting its citizens’ human right to food, and in its remarkable achievements in approaching self-sufficiency (Weis, 1007b).

Cuba’s Urban Agriculture

Since the Special Period, “Cuba has developed one of the most successful examples of urban agriculture in the world” (Koont, 2009, n.p.). The goal of the urban agriculture movement in Cuban cities is “to maximize the production of diverse, fresh, and safe crops from every patch of previously unused urban land” (Companioni & Hernández, 2002, p. 220). Planning for urban agriculture in Cuba emphasizes its

uniform distribution throughout the country, and is based on three principles: organic methods that do not contaminate the environment; the rational use of local resources; and the direct marketing of produce to consumers (Companiononi & Hernández). Because its resurgence during the Special Period coincided with the disappearance of petrochemical inputs (such as fertilizers and pesticides) from Cuban markets, urban production is essentially all organic, generally using only biological fertilizers such as those produced through vermicomposting, and biological pest control techniques (Altieri et al., 1999; Koont, 2009; Weis, 2007b). These include wasps, flies, bacteria and fungi specially developed and used for their ability to target selected agricultural pests (Auld, 1999).

Urban agriculture in Cuba is managed and supported through a complex decentralized decision-making and extension system overseen by the Ministry of Agriculture (Koont, 2009). The National Urban Agriculture Group (GNAU) is complemented by 14 corresponding provincial organizations and 169 municipal organizations; these organizations are responsible for setting policies and promoting and supervising local farming efforts (Koont). State “Urban Farm” enterprises, of which there are roughly one per municipality (and sometimes more in larger cities) oversee and participate in training for farmers and gardeners; ensure transfer of information regarding, for example, new varieties or technologies; provide access to needed inputs (such as seeds and tools); and oversee marketing activities (Koont). Urban agriculture’s continued expansion and government support demonstrate that it was not only a survival strategy to weather the economic crisis of the 1990s; urban agriculture has become a key pillar in Cuba’s strategy to enhance food security and development throughout the country.

Urban food producers donate substantial amounts of food to the state and its service providers, including local community institutions such as schools, daycare centres and hospitals. These donations extend the benefits of this food production model to some of the most vulnerable members of the population, who might otherwise have little access to nutritious fruits and vegetables (González Novo & Murphy, 1999; Killoran-McKibbin, 2006; Premat, 2003). Some of these donations are spontaneous, and productive gardeners also share their produce with friends, family and neighbours (Koont, 2005; Moskow, 1999). In other cases local governments “more or less insist on ‘voluntary’ contributions to local schools and hospitals, as a kind of social rent they feel

justified in charging, because the use of land was given at no charge” (Koont, 2005, n.p.). The amounts donated vary with respect to the amounts produced and the inputs provided by the state. Urban gardening is widely promoted by the Cuban government, whose calls for participation and production are visible throughout Havana through social marketing (e.g., murals, billboards) and in past public appeals by Fidel Castro himself, and more recently, Raúl Castro (Auld, 1999; Castro Medel & Carballo, 2009; Premat, 2003).

Small-scale, Unwaged Urban Agriculture in Cuba

This research focused on the small-scale, unwaged production that takes place on private patios (*huertos privados*), or on community lands (*huertos populares*) (Altieri et al., 1999; Gonzáles Novo & Murphy, 1999). In general these plots and patios are necessarily quite small, though suburban plots generally have more space to work with than those in urban centres. Despite their small size, the popularity of these gardens led them to be a significant source of fresh produce for Cuban households and local food supplies during the 1990s. By 2000 there were 104, 087 small plots and patios under production in Cuba’s cities, producing more food than the organopónicos and intensive gardens combined (Companiononi & Hernández, 2002). Ten years later, this type of small-scale production remains an incredibly popular activity and a significant source of food for urban populations (González Novo et al., 2009). The benefits at the population level also include public participation and awareness, beautification, and improved public health:

These small plots, patios and popular gardens have made it possible to feed the urban population; have promoted the development of an urban culture favourable to agriculture, have eliminated [many of] the abandoned spaces which in the past may have been breeding grounds for disease vectors and rodents; and have provided socially useful and productive employment opportunities” (Companiononi & Hernández, p. 227).

Small-scale producers in Cuba typically grow vegetables, but some also raise animals for meat, milk or eggs, and others cultivate species or grow medicinal plants (Altieri et al., 1999). Many produce compost and organic fertilizers for use at home, and a handful of others produce these products for sale to other producers (González Novo et al., 2009). The food from home and community gardens typically goes mostly to the family, neighbours, and donations to daycare centres or hospitals (Altieri et al.; Killoran-

McKibbin, 2006; Koont, 2009). The remainder is often sold at markets or roadside stands (Altieri et al.; Killoran-McKibbin).

Urban Agriculture in Havana

Havana is home to approximately 20% of Cuba's population (ONE, 2009), but comprises only 0.67% of the total land area of Cuba (Koont, 2009). During the Special Period, Havana's Urban Agriculture Department was created, and hundreds of vacant lots were converted and officially sanctioned as urban gardens and farms (Companiononi & Hernández, 2002; Murphy, 1999; Premat, 2003). Generally people's rights to use the land are under usufruct agreements (which grant free and indefinite rights of use) rather than transfer of ownership from the state (Murphy). As land is limited in the densely populated neighbourhoods of Centro Habana and Habana Vieja, many residents of these areas have been given plots in neighbouring districts (Murphy). Recently, the state has been actively promoting agriculture in the more spacious suburban and peri-urban areas surrounding Havana, granting new and larger plots of land to aspiring producers (Pérez, 2010).

Urban agriculture in Havana has been widely adopted and highly successful, as the state-supported infrastructure has allowed thousands of people to become involved in food production (Pinderhughes, Murphy & Gonzáles, 2000). According to Koont (2009), more than 35,000 hectares of land in Havana are being used for urban agriculture; 10,000 hectares for cultivating crops and the rest for animal husbandry, forestry, and fruit production. With paid and unpaid workers, state-run and private farms/gardens, and a wide range of animal, fruit and vegetable products, urban agriculture in Havana is very diverse and therefore estimates of the amount produced vary. According to some reports, as much as 90% of the produce consumed in Havana is produced in Havana (Companiononi & Hernández, 2002; Koont, 2009; Lamb, 2005).

This study focused on small-scale urban agriculture, the type practiced in back yards, on rooftops and in community lots or *parcelas*. A 2009 book by ACTAF (the Cuban Association of Agricultural and Forestry Technicians) reported that in Havana there are currently 34,970 recognized home/backyard gardens or patios, 7,848 producers working on *parcelas* of 800m² or smaller, and three centres producing organic material for fertilizers (González Novo, Castellanos Quintero & Price Masalías, 2009). Many small-scale gardeners in Havana are organized into voluntary *Grupos de Horticultores* (horticultural groups) that share information between gardeners in a given

neighbourhood and facilitate distribution of information and inputs such as seeds and tools (Murphy, 1999).

Produce from Havana's urban agriculture is distributed in several ways. In the first years of the crisis, the vast majority of the urban harvest went directly to the families, close friends and neighbours of the producers. As the laws regarding direct sales relaxed, production increased and more was available for sale (Altieri et al., 1999; González Novo & Murphy, 1999). In general, food in Havana is sold/distributed at free farmers' markets (*"por la libre"*) where producers set their own prices; at state markets (where prices are regulated), at Dollar stores (Western-style shops that sell higher-end goods for convertible pesos [CUC]) and at Peso stores (a lower-end version of the Dollar stores where basic goods can be bought in national currency [MN]); and through direct sales from urban gardens (Sinclair & Thompson, 2008). The direct sale of produce from urban gardens takes place, as approved by local governments, at hundreds of sites of production and roadside stands belonging to various gardens and farms. Across Cuba, about 60 percent of urban agriculture produce is distributed through these direct sales; roughly 11 percent is sold at the free and state markets (Koont, 2009). Some producers make contracts with the state to sell, at fixed prices, some portion of their produce to the state marketing board, Acopio, which then distributes the food through the state markets and donations. With the re-introduction of free farmers' markets and the option of selling produce directly at roadside stands, farmers are motivated to produce in excess of their state commitments to gain extra income (Sinclair & Thompson, 2008, p. 164). Through these diverse mechanisms, urban agriculture increased access to a wide variety of nutritious foods for producers and consumers throughout Havana (Altieri et al., 1999; Companioni & Hernández, 2001).

The population-level benefits of urban agriculture in Havana go beyond the increased food supply. The restoration of vacant lots that were eyesores or informal garbage dumps has both aesthetic and public health value (Chaplowe, 1996; Koont, 2009; Murphy, 2006). Social and economic benefits include the creation of sizeable sources of urban employment and the incorporation of a diverse workforce, including women, young workers, and retirees (Koont, 2009). The large number of people employed in Cuba's urban agriculture is cited as one of the greatest social impacts of the movement (Companioni & Hernández, 2002, p. 221; González Novo et al., 2009). The urban agricultural workforce in Havana grew from 9,000 in 1999 to more than 44,000 in 2006 (Koont). Across Cuba there were 300,000 employees in urban

agriculture by 2009 (González Novo et al., 2009). Koont (2009) explains the broad social impacts of the movement:

A key point about urban agriculture as it is being practiced in Havana and in Cuba generally: it is not just about economics, i.e., about producing food, or even just about producing food and creating employment. It is also about community development and preserving and improving the environment, bringing a healthier and saner way of life to the cities. (n.p., conclusion)

Household Livelihoods

Household livelihood security is a concept that evolved in the 1990s out of a growing understanding of the complexities surrounding food and nutrition security. This approach understands food as only one of many priorities that low-income families pursue to maintain survival; it must be constantly weighed against other basic material and non-material needs (Frankenberger & McCaston, 1998). Frankenberger and McCaston cite numerous examples of situations where people or communities may go hungry up to a point to meet another objective, such as preserving seeds for the future or feeding more vulnerable individuals first. According to Frankenberger & McCaston (1998), “a broadened perspective emphasizing livelihood systems as key determinants of food and nutritional security reveals *households* as dynamic institutions, where power, control over resources, gender and culture all influence the households’ ability to meet basic needs and negotiate survival” (p. 33, italics added).

Household livelihood security is defined as “adequate and sustainable access to income and resources to meet basic needs” (Frankenberger & McCaston, 1998, p. 31). A household’s livelihood is considered *secure* when it has ownership or consistent access to resources and earning activities to offset risks, ease shocks, and meet changing needs (Chambers, 1989). A livelihood is considered *sustainable* when it “can cope with and recover from the stress and shocks, maintain its capacity and assets, and provide sustainable livelihood opportunities for the next generation” (Chambers and Conway, 1992, cited in Frankenberger & McCaston, p. 31). According to Frankenberger and colleagues (2000), households facing poverty combine their resources or assets, within the limitations of their context, and use institutional connections to pursue a number of different *livelihood strategies*. The household livelihood security concept provides part of the conceptual framework for the proposed study; this model is further discussed in Chapter 3. Growing and/or selling food is a common livelihood strategy worldwide, especially in rural areas (Berti, Krasavec & FitzGerald, 2007; Landon-Lane,

2004; Marsh, 1998). However, the support and infrastructure provided by the Cuban administration make Cuban cities, and specifically Havana, particularly hospitable contexts for this particular strategy.

Unwaged Agriculture and Household Livelihoods

Various terms are used in the literature to describe small-scale, unwaged agricultural production, including that in urban areas. Terms for production of food, medicinal and ornamental plants include 'home gardening' and 'homestead gardening' (*huertos privados* would be Cuba's version of these); and 'community gardening' or 'communal farming/gardening' for production on public or shared land (as in Cuba's *huertos populares*). One of the families who took part in this study does not produce food, but uses worm composting, or *vermicomposting*, to produce organic fertilizers – this would not be described as gardening, but is still a form of unwaged agricultural production. Unlike larger modes of urban agricultural production which are generally considered part of a country's agricultural sector, small-scale urban agriculture often goes undocumented and its benefits under-studied (Henn, 2001; Redwood, 2009).

Promotion of home gardening as a nutrition-enhancing or community development strategy has strong advocates and opponents (Marsh, 1998, p. 4). Critics point to poor project design and management, unrealistic or unrealized expectations and questionable sustainability as urban populations worldwide continue their rapid growth (Marsh; Jolly, 1999; Redwood, 2009). Household gardening has also been criticized on the grounds that it may not be cost-effective or feasible for families without access to resources including land, and that it may be an unreliable source of food or income for poor households. Further, urban agriculture has been 'marginalized' in urban planning due to arguments that the land could be used for more profitable activities (Henn & Henning, 2002). Advocates of small-scale food production point out that in fact "this type of gardening is accessible to the poorest people since it relies on low-cost, low-risk technology and may be adapted to hostile environments" (Marsh, 1998, p. 5). Proponents of family gardening projects also point to the narrow definitions of success espoused by critics, which may not account for the full array of benefits or capture the interrelated nature of economic security, food security, and nutrition (Landon-Lane, 2004; Marsh).

Home gardening is described as an “inherently strong intervention” in terms of increasing household nutrition, due to its immediate access to nutritious foods and the fact that most families can successfully adopt it (Berti et al., 2007, p. 607). Even families with little in terms of resources and land can produce food on rooftops, in containers, on small patches of land, or on vacant lots. Small-scale farmers most typically grow vegetables (Nichols & Hilmi, 2009), but also raise animals for meat, eggs and milk (Altieri et al., 1999). The fresh food grown in this way provides a diversity of healthy foods that can improve the quality and quantity of nutrients consumed in the home (Baumgartner & Belevi, 2001). Various studies during the past 20 years have demonstrated that very small plots of land can improve household nutrition, and provide a significant percentage of daily recommended intakes for protein, and various vitamins and minerals (Marsh, 1998; Berti et al., 2007; Gautam, Suwal & Sthapit, 2009; Landon-Lane, 2004). A case study in Nairobi found that households who produced food consumed more vegetables and had better mean energy consumption than their non-farming neighbours (Mwangi, 1995, cited in Baumgartner & Belevi).

It has been argued that food production controlled by households is more reliable and sustainable than reliance on charity or financial support (Marsh, 1998). Because home gardens typically allow for planting diverse crops at different points throughout the year, they are also subject to less risk of crop failure (e.g., due to pests, natural disaster) than the mono-crop production that is typical in larger farms (Landon-Lane, 2004). Recall that Baumgartner & Belevi’s (2001) definition of urban agriculture emphasized that “the main driving forces for farmers to become engaged with urban agriculture are food security and income generation” (p. 4). Among farmers surveyed in 17 cities around the world, the most frequently reported reasons for engaging in urban food production were: 1) production for home consumption; 2) income enhancement; 3) local economic crisis; and 4) high price of market food (Nugent, 1999). These responses speak to both economics and food security. Globally, urban farmers (even those who are not low-income) commonly report that they see themselves as at risk of food insecurity (Nugent, 1999; Seeth, Chachnov, Surinov & Von Braun., 1998).

Urban agriculture in the form of home or community gardens contributes to household food security through direct access to nutritious foods that can be harvested and fed to families (Landon-Lane, 2004; Marsh, 1998). It is not only the improved access to food that motivates families; it is also the security and sustainability of that

access, and its role in meeting other basic needs. Home- or community-based food production is also an important source of supplementary income for poor households:

The combined value of garden production, including the sale of surplus vegetable produce and animal products combined with savings in food and medical expenses, varies seasonally but constitutes a significant proportion of total income (upwards of 20 percent) for many households. (Marsh, 1998, p. 6).

Estimates of the amount of money earned or saved vary widely (Nugent, 1999; Marsh), and it is difficult to generalize, as the great diversity of urban agriculture models, practices and consumption patterns around the globe cannot be captured by any one example (Nugent, 1999; Redwood, 2009). The distinction between production-for-consumption versus production-to-enhance-income is not clear-cut, especially in the resource-poor Global South, where a very high percentage of household income is spent on food (Baumgartner & Belevi, 2001; Frazo, Meade & Regmi, 2008). Food production can generate what is known as “fungible income”; that is, the substitution of goods or labour for money that would have to be earned to acquire those or equivalent goods (Baumgartner & Belevi). Urban farming provides food for eating, or money that will most likely be spent on food or other basic necessities. Either yield has value for the farmer and the household (Baumgartner & Belevi, 2001; Nugent).

Although vermicomposting does not directly generate fungible income in the form of food, it does contribute an important input to local (and sometimes household) food production, and it has potential for generating household income. Organic fertilizers produced through this practice have been shown to improve soil quality and increase crop growth and yields for a variety of fruits, vegetables, and ornamental plants (Nagavallema et al., 2004). Like home gardening, the vermicomposting process is described as relatively simple and easy to teach and learn. Because it requires low-technology equipment and low-cost inputs, it is seen as a very accessible livelihood strategy for families or individuals in low-income settings (Nagavallema et al.). Various studies have shown that worm composting, as a stand-alone “micro-enterprise” or as part of a larger family farming operation, can generate valuable income with little land or resources, and can increase yields (and therefore food and earnings) for people who also produce food or other crops (Adorada, 2007; Nagavallema et al., Patterson et al., 2008).

The potential for income generation (cash or in-kind) from agriculture depends on the effort put into farming/gardening, the availability and cost of inputs, crop yields, access to markets/buyers, ability to store and transport products, and prices (Nugent, 1999). Agriculture is generally not a household's only source of income (Frankenberger & McCaston, 1998; Nugent, 1999; Maldonado Villavicencio, 2009). The effort devoted to agriculture therefore tends to fluctuate in response to needs and other opportunities for earning (Nugent); thus urban agriculture income has been described as "residual" – meaning dependent on external markets or events (Nugent). This could also include natural disasters such as hurricanes, flooding or droughts. The poor are less likely to scale-back farming efforts in response to external forces, as they are more reliant on the insurance that farming provides them in terms of household food security (Nugent). Nonetheless, agricultural production often fluctuates with the seasons and as a result of natural disasters; some reductions in productivity cannot be avoided. However, improving livelihoods through small-scale agriculture is not only based on increasing yields. To create sustainable livelihoods these strategies must be met with "parallel improvements in associated infrastructure, post-harvest and marketing activities" (Nichols & Hilmi, 2009, p. 2).

In terms of the household workload, producing in a home garden or a plot close to home can be an efficient form of production, saving time and effort that many larger-scale farmers expend in getting to and from their fields (Landon-Lane, 2004). Further, home production is generally less physically demanding than field preparation and crop weeding, due to the smaller scale and better working conditions (Landon-Lane).

Research has shown that globally, women tend to carry a disproportionate share of the burden of work centred around the home, including childcare, meal preparation, cleaning, and in rural areas, livestock care and fetching water and firewood (Landon-Lane, 2004; Maldonado Villavicencio, 2009; Safa, 2002). Women who work outside of the home (in agriculture or other work) often face a "double work day" as they must put in many hours of domestic work before and/or after their paid employment (Maldonado Villavicencio; Pagés, 2008). A publication by the Food and Agriculture Organization of the United Nations (FAO) presents information about the potential benefits of home gardening (Landon-Lane, 2004), and acknowledges women's often imbalanced domestic workload. Although this document claims that it is not promoting home gardening as women's work only; it "makes the point that work in the home garden is readily integrated into the daily household chores and can help women to earn an

income while doing so” (p.14). This seems to suggest that women should be able or willing to take on additional work in food production. However efficient that production might be, this suggestion implies that already overburdened women could still do more. This study explored the work and activities related to urban food production, sale and preparation, and revealed a somewhat gendered division of labour in the selected food-producing households. The gendered context of agriculture in Havana and the Cuban culture are discussed in the forthcoming section entitled “Gender and Division of Labour in Cuba’s Urban Agriculture”.

Household Livelihoods in Cuba

Although Cuba remains a low-income country, the socialist model provides a basic standard of living and access to healthcare, education and social security for all citizens (E. Díaz Gonzáles, 2005; United Nations [UN] & Economic Commission for Latin America and the Caribbean [ECLAC], 2005). Although the majority of Cubans are still poor and have very limited access to most consumer goods, extreme poverty does not exist in Cuba as it does in most countries in the Global South, and even in the Global North (E. Díaz Gonzáles). Cuban scholars argue that although inequality and poverty persist in Cuba, these have not intensified over the past 20 years as they have in most poor countries under the neo-liberal ideology that currently predominates (E. Díaz Gonzáles, 2005). Others have argued that reforms made during the Special Period (such as the increased focus on tourism and foreign investment, as well as allowing Cubans to receive remittances from family living abroad) have eroded the state’s emphasis on equality, as citizens now have unequal access to wealth (Mesa-Lago & Pérez-López, 2005).

There are two currencies in circulation in Cuba. Working Cubans earn their salaries in Cuban pesos (*moneda nacional* or MN), which can be used to buy very basic goods and services such as unprocessed foods and local transportation. These salaries are very low, with even the most highly-skilled professionals earning the equivalent of approximately CAD \$35 per month. In 2005, the average monthly wage was 334 pesos MN (approximately CAD \$14.00) and the minimum wage was 225 pesos MN (approximately CAD \$10.00). Pensioners receive considerably less, with approximately half of retirees receiving the minimum pension of 150 pesos (CAD \$6.50); the average pension was 180 pesos (CAD \$8.00) (Mesa-Lago, 2006). A second currency, convertible pesos (or CUC), was introduced in 2004 to replace the American dollar,

which had been in circulation (essentially for tourists) since the economic crisis of the 1990s. To buy most consumer goods, including prepared/package and restaurant foods, clothing, toiletries, and most household items, Cubans must convert their *moneda nacional* to CUC, at a paltry exchange rate of approximately 25MN:1CUC.

The low state salaries supplement the wide range of entitlements guaranteed by the socialist state. The extensive rationing system guarantees individuals access to given quantities of basic foods at greatly subsidized prices. The rations include most of the foods that comprise the typical Cuban diet: rice, beans, root vegetables, white bread, meats, eggs, coffee and sugar (Wright, 2009). To provide a few examples, during my field work a typical adult was entitled to the following (among other things) every month: five pounds of rice at 0.25MN (approximately CAD\$0.01) per pound, an additional two pounds of rice at 0.50MN (CAD\$0.02), 2 pounds of beans at 1MN (CAD\$0.04) per pound, 5 pounds of sugar at 0.15MN (CAD\$0.005) each, 1lb of chicken, 0.5lb of ground beef mixed with soy, 8 eggs, and 30 white bread rolls (one for each day) (Mesa-Lago, 2006). These foods are purchased at local “bodegas” or rations shops as well as local bakeries and butchers through the use of a *libreta* or ration book. There is one *libreta* for each household, listing all household members and the goods they are entitled to. The exact amounts and items in a household’s *libreta* differ by region as well as family makeup – certain individuals are entitled to additional rations; for example children under 7 are guaranteed 1L of liquid milk daily, and individuals with chronic health conditions have rations that reflect their dietary needs.

It is important to note, however, that the foods and basic household goods provided through the rationing system are not sufficient to meet individual or household needs (Wright, 2009). According to Mesa-Lago (2006), monthly food rations provide 7-10 days worth of food; the household’s needs for the remaining 20-23 days of the month must be purchased, along with all items that are not included in the rationing system. Given the low average salaries, a significant portion of the money Cubans earn is spent on food. Koont (2010) estimates that 75% of household income is spent on food. As he explains:

Although this seems extremely high, one has to realize that education and healthcare are free in Cuba. Cultural goods such as books and entertainment are highly subsidized. About 85 % of all Cubans own their own homes and pay no rent or property taxes. Utilities such as telephone service, gas, electricity and water are heavily subsidized. (n.p., Chapter 5)

Because the state provides guaranteed access to free, subsidized education, health care, social security and social assistance, poverty in Cuba cannot be classified in the same way as other countries, i.e. based solely on income (UN & ECLAC, 2005). In Cuba, poverty is measured according to the concept of “population at risk”, which refers to the segment of the population that does not have sufficient income to obtain a basic food basket and other basic necessities (UN & ECLAC). Zabala Argüelles (2005) conducted a collective case study with selected families “living in conditions of poverty in Havana”. These families were characterized by insecure or substandard housing, incomes below Cuba’s poverty line, and low levels of employment. Many lived in female-led, restructured family and extended-family households. These families identified daily challenges including the precarious economic situation of the household, problems with the water supply, insufficient food availability, the well-being of the children, and trouble obtaining shoes, clothes and other basic necessities (p. 194). According to Zabala, “families generally developed a set of strategies for the solution of these problems” (p. 194); these included finding private paid work or additional employment, sale of food products, prioritizing food spending, changing household food consumption patterns, tapping social support networks and appealing for help to various official institutions.

Cubans’ options for enhancing their low government salaries are extremely limited. Wages are low for all types of work at all skill levels. Higher incomes are generally only enjoyed by Cubans who earn or receive money in CUC or foreign currencies through tips, gifts or remittances from abroad (Mesa-Lago & Pérez-López, 2005). Since the 1990s tourism has been expanding dramatically in Cuba, and work in the hospitality industry can be very lucrative, with a single \$1 tip on a beer providing the equivalent of several days’ wages. Aside from work in large hotels, resorts and tourist-oriented restaurants, another popular option is for a family to become licensed as a *casa particular* and rent rooms in their home to tourists and foreign students or professionals. People in Cuba also use a variety of less formal strategies to tap into CUC, such as unlicensed *casas particulares*, touts and hustles aimed at tourists, and the informal sale of goods including cigars and handicrafts. Across Cuba, the informal economy has been an important source of livelihood for many people since the Special Period (Auld, 1999; Jenkins, 2008). Informal economic strategies do not always involve tourists; they also include the in-kind trade of goods or service, or negotiating private deals outside of the state system. For example Auld (1999) gives the example of a telephone worker who might charge \$20 to fix a phone right away, rather than next month.

Urban Agriculture and Household Livelihoods in Cuba

Cuba's socialist state has always emphasized collective benefits and moral incentives for its workers. However, individuals and families in Cuba are also motivated by material incentives, much as they are throughout most of the world. Urban agriculture is one of the very few state-sanctioned types of work in Cuba, outside of the tourism sector, that has the potential to be 'lucrative'. In almost all types of urban production, income is connected to output (Koont, 2010). Producers working in state-run farms or cooperative produce a given amount for the state, but can produce more and use the surplus for their own consumption or for private sale (Koont, 2009). Access to food saves their households money as they need to buy less food, and producers are able to increase their salaries by producing more food and therefore more surplus. Unwaged, independent production in home or community gardens can provide the same benefits – in these cases all of the net gains of production (monetary and in-kind income) go to the individual or household (Koont, 2010). Urban food production is one of the few areas where private or family enterprise, and therefore enhanced income opportunities, is available to ordinary people in Cuba (Killoran-McKibbin, 2006).

This study explored the broad range of impacts for households who grow food or other agricultural products as a livelihood strategy. These benefits were not restricted to monetary income; I also inquired about fungible (i.e. in-kind) income, health, social and environmental benefits. Recent literature on the economic, health, and social impacts of food production on households in Havana is limited. There has been little qualitative study conducted since the 1990s, even though Cuba's stability and political position have changed dramatically since that time. Moskow (1999) conducted a mixed-methods study involving interviews with 42 gardeners in Havana (38 of them men) in 1995, in the midst of the Special Period. The producers reported that their gardening (both waged and unwaged) reduced their food bills and provided extra income from sales of produce. Although these figures cannot be generalized due to the small sample, the average weekly savings was estimated at 40% of their average household salaries (Moskow, 1999). Beyond these savings, the gardeners reported increased food security and feelings of control over their lives. Gardening also has therapeutic effects and positive implications for community building and social interactions (Baumgartner & Belevi, 2001; Moskow, 1999). In Moskow's study, older gardeners in particular reported improvements in their health and social lives.

Participants in Moskow's (1999) study also spoke of contributing to the greater good in their communities and country, with some connecting their participation to their role in upholding the vision of the Cuban Revolution (Moskow, 1999). Premat (2003) highlights the role of government 'propaganda' (including the Ministry of Agriculture's slogan that urban agriculture is production 'of the neighbourhood, by the neighbourhood, and for the neighbourhood,') in fostering a moral imperative or social duty to participate. Premat argues that messages and practices like using stickers to mark participating properties "publicly label the sites (and, by extension, the private households and citizens associated with them) as fulfilling a social rather than a private function" (Premat, p. 91). Koont's (2009) description of the "moral incentives" for participation emphasizes how social marketing and honouring productive units serves to dignify the profession of smallholder farming, linking it to advanced science and technology, and motivating communities to produce efficiently and share knowledge.

Gender and Division of Labour in Havana's Urban Agriculture

In recent decades, significant progress toward gender equality has been made across Latin America and the Caribbean (UNIFEM, 2009), especially in terms of education (UN & ECLAC, 2005). Formally, gender equality and civil rights for women have been instituted across the region. However, gender discrimination persists and women are still unable to reap the same economic and social rewards as men, largely due to their disproportionate share in household work and child care (United Nations, 2005). Cuba in particular has made dramatic achievements in protecting women's rights and promoting equality since the Revolution of 1959. Cuban women have constitutional rights guaranteeing them equal opportunity and pay, and Cuba has been a world leader in terms of gender equity in education and technical/professional employment (Luciak, 2005). Currently women fill more than two-thirds of technical, scientific and professional positions across the country (García Sampedro & Legañoa Martínez, 2006). Cuba is also the 3rd-highest-ranked country in the world in terms of women's representation in politics, at 43% (CBC News, 2009). The average proportion of women in parliament across Latin America and the Caribbean is only 18% (UNIFEM).

High levels of education and technical/professional employment have positioned Cuban women with more authority in the home than they enjoyed prior to the Revolution: a 1995 article reported that more than half of Cuban women interviewed made household decisions jointly with their husbands (reprinted as Safa, 2002). The

Family Code, incorporated into the Cuban constitution in 1975, set the official goal of shared responsibility within the household (Safa, 2002; Stoltz Chinchilla, 1977), and was generally aimed at strengthening the family, which is seen as the primary unit of social reproduction (Safa, 2002).

Despite the Family Code and women's increasing decision-making authority in the workforce (Luciak, 2005) and reportedly in the home (Safa, 2002), changes in the gendered household division of labour have seemingly been much slower to materialize – childcare and household tasks are generally still viewed as “women's work” (Caram, 2005; Díaz, 2007; Safa, 2002). “While men accept the idea that their wives work and probably also welcome the added income, most of them do not share in the housework or child care, nor do their wives seem to encourage them to do so” (Safa, 2002 p. 55). It has been argued that although women's social and public lives changed significantly in the years following the Revolution, patriarchy was never fully eradicated in the home (Pagés, 2008; Toro-Morn, Roschelle & Facio, 2002). Attempts to legislate gender equality have been incredibly effective in women's education, employment and representation in positions of power, including parliament. However these changes have not yet been reflected in domestic “practices and identities... that remain strongly associated with femininity or womanhood” (Pertierra, 2008, p.744; Caram León, 2005; Safa, 2002). Female-led households are also increasing in Cuba in recent decades, leaving more women with the full responsibility of providing economic, nutritional, and emotional sustenance for children and/or seniors (Zabala Argüelles, 2005). As in many countries, Cuban women frequently face a “double work day” as they complete many hours of both paid employment and unpaid domestic work (Maldonado Villavicencio, 2009; Pagés).

Nationally, women comprise 49.9% of the overall Cuban workforce, but only 17% of the paid agricultural workforce (García Sampedro & Legañoa Martínez, 2006). Because of the diversity of participation, i.e. the prevalence of informal or unwaged work, “it is difficult to obtain statistics on the number of women engaged specifically in urban agriculture” (Killoran-McKibbin, 2006, p. 57). According to Killoran-McKibbin, women represent approximately 55% of urban agriculture employees in Havana. Koont (2009) puts the overall figure at about 25%. The difference may be in the distinction between waged and unwaged unemployment; neither author specifies which types of work are included in these statistics. However, women's role in urban agriculture in Havana is increasing as traditional notions of agriculture as “men's work” gradually

change (Murphy, 1999). Nonetheless, most of the producers in Havana's community gardens are men (Chaplowe, 1996; Murphy, 1999); women in Havana fill only 16-21% of positions related to food production (González Novo, 2003). Women are more highly represented among technical, scientific and administrative roles; they are estimated to fill 35-66% of these positions (Koont, 2009; González Novo, 2003). Across Cuba, women fill 70% of technical positions in grassroots government bodies of the Ministry of Agriculture, working as inspectors, extension agents, coordinators and educators (Killoran-McKibbin, 2006). Therefore in Havana and other Cuban cities, while most producers are men, women are the primary promoters and educators for urban agriculture (González Novo, 2003; Pinderhughes et al., 2000).

Although women do not represent the majority of food producers in Havana, according to Killoran-McKibbin (2006), urban agriculture has had a definite impact on the lives of women and their families. The Special Period was particularly challenging for women: as the traditional household food providers, they struggled to put food on the table and their workload increased as state services such as child care were drastically cut back (Pagés, 2008). The state's provision of food and support for urban agriculture as a means of accessing both food and income opportunities during and following the Special Period was a *societal* response to a food crisis, "rather than simply placing an additional burden on women, the traditional caregivers, to face their hungry families" (Killoran-McKibbin, p. 57). Now through state organization, women's role in promoting food security has expanded beyond their families to entire neighbourhoods and regions through their work as extension agents and educators (González Novo, 2003; Killoran-McKibbin; Pinderhughes, 2000).

CHAPTER 3: METHODOLOGY

Rationale

Cuba's unique position with respect to food security, self-sufficiency, and sustainable development presents a contemporary alternative to the dominant model of global food production and distribution. Urban agriculture, as a key feature of Cuba's successful development, is a specific strategy that could have applications in other settings and contexts. Cuba's achievements in terms of increasing national and community food security, creating employment, and producing environmental benefits are well documented, as highlighted in Chapter 2. Although the literature highlights these population-level impacts of urban agriculture in Havana, there is little in the academic literature that reflects the voices of ordinary citizens who grow food and other agricultural products there.

Research has highlighted motivations and experiences of people producing food in various types of agriculture in Havana (Koont, 2009; Moskow, 1999; Murphy, 2006; Sinclair & Thompson, 2008; Taboulchanas, 2001). Various motivations identified include increased access to food, increased household income, and perceived social and environmental benefits for themselves and the community. The emergence of urban agriculture in Havana during the Special Period has been described as both a grass-roots movement and a survival strategy (Altieri et al., 1999; González Novo & Murphy, 1999; Henn & Henning, 2002). Moskow's data, collected in 1995, provided a qualitative description of diverse forms of participation in urban agriculture (i.e., including waged and unwaged work) in the midst of the Special Period. However, little information is available about small-scale, unwaged agricultural production in Havana over the past 10 years. The literature does not describe the experiences that continue to motivate people to produce food in community gardens, backyards and patios, and the relationship between these experiences and the Cuban context as the urgency of the Special Period faded.

The literature also includes little in-depth study of the household or family experiences with small-scale urban gardens, including the impacts of this production on the household's workload (or that of certain household members), the challenges of this production, and the perceived outcomes or contributions to the household's health, well-being and the security and sustainability of their livelihood. These outcomes have also

not been closely examined in relation to the contextual factors that influence the livelihood outcomes of this strategy in Havana. In consultations with local researchers during a preliminary field visit to Havana, they reported that they were unaware of any research having been conducted related specifically to unwaged, small-scale agriculture in Havana, though they confirmed that it is a popular and highly accessible livelihood strategy. This study set out to fill this gap in the literature by exploring the household experiences of small-scale home or community agriculture, in an effort to understand and contextualize the benefits, motivations, challenges and meanings that selected households currently associate with this activity in Havana.

Purpose

This research applied a collective case study approach to answer the following questions:

- How does unwaged *small-scale urban agriculture* operate as a livelihood strategy for households and families in Havana, Cuba?
 - From the perspectives of household members:
 - How does the household make use of natural, social, human, and economic assets or resources in small-scale agriculture?
 - How do contextual, institutional, and infrastructure factors (e.g. policy, culture, climate) support or hinder the household's ability to use this strategy to achieve the desired livelihood outcomes?
 - How do the households and families organize their labour and resources? Are there within-home differences (e.g., between genders or generations)?
 - What are the challenges of small-scale agriculture when used as a livelihood strategy?
 - What are the impacts on their personal and their household's health (e.g. physical, mental, social), and the security of their livelihood? How sustainable are these impacts?

Approach

This research is based on a constructivist paradigm, meaning it assumes that there is no one "truth", but that realities are subjective – they are socially constructed by the people who experience them (Guba & Lincoln, 1994). This means that the knowledge generated by this study was subjectively created through my interactions with the participants; it reflects both my and their interpretations of their experiences with

respect to the research questions I developed and the questions I asked them. The constructivist paradigm is well-suited to case study research (Lincoln & Guba, 1979/2000; Stake, 2006). The case study approach focuses intensively on studying real-life, specific and context-dependent experiences (Tellis, 1997; Yin, 2008). It emphasizes understanding complex interactions between social actors and their environments, and the method is partly based on the principle that social life can only be understood if the meanings assigned to it by its own actors are incorporated into the analysis (Hamel, Dufour & Fortin, 1993).

Recognizing that Cuba is a unique country with respect to culture, ideology and politics, this research was undertaken with the expectation that participants would likely have very different worldviews and understandings of their experiences than a Canadian researcher might expect. The method was designed to elicit understanding of what unwaged agricultural production means to individuals and households in Havana, based on the lived realities of the case families. I set out to establish comfortable relationships and frequent interactions with the families at their homes and gardens, with the intention of facilitating the open exchange of ideas and conversation with participants, while immersed in their daily realities. In this way I aimed to better understand their experiences and realities related to agricultural production through observation and ongoing discussion, which was important in terms of understanding the relative importance of various themes, and remaining open to unexpected and emerging themes.

Case Study Methodology

The intention of this research was to gain an in-depth understanding of the experiences of households producing food on a small scale in Havana, Cuba. Given this purpose, a qualitative, inductive approach seemed most appropriate to sufficiently capture the activities and meanings associated with home and community gardening in this unique context. According to Patton (2002) “studying information-rich cases yields insights and in-depth understanding rather than empirical generalizations” (p. 230). Given the uniqueness of Cuba’s urban agriculture, a *collective case study* (also known as multiple case study) methodology was employed in the pursuit of these insights and in-depth understanding.

A case study is both a process (a specific way of collecting, organizing and analyzing data) and a product (the resulting presentation of the rich description and

analysis) (Patton, 2002). Case studies can be qualitative or quantitative, though in social science research they are generally holistic analyses (i.e. studying the case as a whole, rather than based on selected variables), relying on multiple sources of data that are primarily qualitative (Verschuren, 2003). A case study is an intensive exploration of a 'bounded system' or a case, which can be any 'thing' or entity: an individual, a family, a classroom, an event, a community, a country (Creswell, 1998; Gerring, 2007; Stake, 2006). A collective (or multiple) case study explores a collection of cases that exhibit the phenomenon of interest – the ultimate objective is to understand some 'whole': a phenomenon, activity, or condition (Stake, 2006). The cases are selected because they represent sites or manifestations that can provide insight into the broader topic. Despite the collective target, the first goal is still to understand each case as a unique 'bounded system', before proceeding to cross-case analysis (Stake, 2006). This study aimed to first understand each household and how its experiences relate to the research questions. After identifying and triangulating key themes within each case, I began to compare and contrast themes between the selected cases.

Yin (2008) provides one of the most descriptive definitions of the case study, in two parts. First,

- 1) A case study is an empirical inquiry that
 - investigates a contemporary phenomenon in depth and within its real-life context, especially when
 - the boundaries between phenomenon and context are not clearly evident (p. 18).

In referring to unclear boundaries, Yin means that the (social, geographic, political) context in which the case exists is particularly pertinent to the phenomenon under study. For example, the phenomenon of urban agriculture in Havana is inextricably linked to contextual factors such as climate, the Cuban economy, local agricultural and land-use policies, the availability of resources (land, seeds, fertilizer and water), the availability of markets for the sale of agricultural products, and social norms with respect to food preferences and food production (Moskow, 1999; Koont, 2009). Because the case study is meant to explore the case *within its context*, a commonly identified feature of case study research is that it involves direct observation and/or participation in the studied activities (Creswell, 1998; Stake, 2006; Verschuren, 2003; Yin).

Yin (2008) goes on to explain that

2) The case study inquiry:

- copes with the distinctive situation where there are many more variables of interest than data points, and [therefore],
- relies on multiple sources of evidence that must converge in a triangulating fashion, and [therefore also],
- benefits from prior development of theoretical propositions to guide data collection and analysis. (p. 18).

According to Denzin and Lincoln (cited in Weis & Fine, 2000) qualitative research is inherently multi-method in focus, meaning it emphasizes multiple sources and types of data (including observation, interviews, field notes, etc.), rather than one source as in the case of a quantitative survey. Case studies, in particular, tend to rely on a number of sources or types of data related to the phenomenon of interest. This “triangulation is not a tool or strategy of validation, but an alternative to validation”; one that adds rigor, breadth and depth to any investigation (Weis & Fine, p. 52). This study used multiple types and sources of data (including observation and in-depth interviews with multiple family members), collected across three case households, in an effort to broaden the scope of the data and increase the likelihood of achieving some confirmation or triangulation of ideas or themes. Secondary sources (e.g., academic literature, local documents and materials, media reports, discussions with key informants and other producers) were also incorporated. These provided important contextual information and helped to triangulate and make sense of emerging themes. A final strategy for triangulation was the use of member-checking, which is described in the section entitled “Reflexivity and Member-checking”.

With respect to theoretical frameworks, many investigations combine elements of various traditions and are directly and indirectly guided by theory and previously identified concepts. However the use of existing theory and the development of new or better theories are particularly important in case studies, where without such a framework, the researcher runs the risk of “providing description without meaning” (Hartley, cited in Meyer, 2001, p. 331). Case study researchers generally aim to learn both what is specific about a case, but also what is general about it (Gerring, 2007; Clyde Mitchel, 1983/2000). Chima (2005) notes that a common purpose implied in most definitions of case study research is “to both learn *about* a specific social situation and also to learn *from* it” (p. 6). Rather than relying on statistical inference to describe or predict variables for a larger population, case studies are rather aimed at exploring complex processes and mechanisms in real-life contexts. The theoretical or conceptual

framework provides structure to the inquiry and analysis, and it is through these constructs that the experiences of the case(s) studied can be connected to broader experiences of the phenomenon of interest, i.e., small-scale urban agriculture as a livelihood strategy. The conceptual framework for this study is described in the next section. In all types of case studies, the ability to produce findings that have implications beyond the case itself can be enhanced through strategic case selection and sampling, which are based on previous theoretical propositions or concepts (Flyvbjerg, 2006; Gerring, 2007; Odell, 2001). The process of strategic case selection and sampling are described in the section entitled “Defining and Selecting Case Households”.

This study explored the lived experiences of strategically selected households in Havana, in an effort to understand how the successes and challenges of this livelihood strategy are influenced both by the household members themselves and the context in which their activities take place. Urban agriculture, like most areas of interest, could be (and has been) studied using any number of research traditions or designs. As Yin (2008) explains, in certain circumstances a particular method has a ‘distinct advantage’: a case study approach is useful for in-depth explorations of ‘how’ or ‘why’ a contemporary social phenomenon works. This research used a collective case study approach to determine how and why small-scale, unwaged urban agriculture works as a livelihood strategy for households in Havana.

Conceptual Framework

This study, although based in homes and gardens, must be considered in the broader global context of farming, food, and social justice. The fact that global hunger and malnutrition remain staggeringly high in many food-exporting countries in the global South highlights the inequities of the current global pattern of food distribution. The growing calls for socially and environmentally sustainable and ethical practices concerning agriculture and food trade demonstrate the need to explore examples that have *succeeded* in untangling the inequitable mechanisms of production and distribution. Miller (2008) emphasizes the duty to “study the real workings of alternatives instead of imagining capitalism as a monstrous beast that the alternatives nibble away at like parasites” (p. 97).

Cuba is a unique example of a country that has shifted its production, trade and consumption patterns toward self-sufficiency, based on ideology as well as political factors beyond Cuba’s control. Cuba’s success in the pursuit of sustainable

development and national food security, or *food sovereignty*, represents a contemporary alternative to the predominant international order, an alternative that merits closer investigation via a broad range of research traditions. Schofield (2000) argues that qualitative research

...can be used not only to study *what is* and *what may be*, but also to explore possible visions of *what could be*. By studying what could be, I mean locating situations that we know or expect to be ideal or exceptional on some *a priori* basis and then studying them to see what is actually going on there. (p. 84)

The complex and sometimes conflicting views of what (sustainable) development means and how it may be achieved are consistent with the constructivist paradigm. The broad theories of development discussed in Chapter 2 situated Havana's food producers in the global scheme of food sovereignty and sustainability. Cuba represents an alternative path to development, based on a different understanding of what development means. Its successes in health, social development and environmental protection, highlighted earlier, make it a unique setting in which to study household livelihoods, agricultural production, and sustainable development. This study aimed to study *what is* and *what may be* happening for Cuban families who grow food on a small scale. Beyond that, although Cuba's circumstances are unique, Havana's urban agriculture represents *what could be* in other settings: a sustainable, healthier way of feeding ever-growing urban populations. I selected Havana as the setting for this in-depth qualitative study because its progressive approach to sustainable development makes it interesting on an *a priori* basis, and holds real promise for other nations as the threat of oil scarcity looms worldwide. Studying how and why urban agriculture works in this particular context, which is presented as very supportive of urban food production, has revealed important information about how small-scale agriculture could be better promoted and supported in other contexts.

Household Livelihood Security

In the context of limited resources, households must carefully allocate their resources and labour in an effort to meet basic needs and enhance or secure their ongoing household welfare (Kracht & Schulz, 1999; Nugent, 1999; Maxwell & Frankenberger, 1992). As Nugent points out, these decisions are rendered even more complex when a household is both a consumer and producer of food. A simple economic perspective would predict that households engage in behaviours that maximize their income, and thus that the decision to undertake an activity involves

weighing the income-generating potential against the costs of participation, including time and labour (Nugent). In this model, families would produce food if it yields higher return (in money or in-kind) for their effort than other activities. However, Nugent highlights case studies from around the world that demonstrate how other factors such as social expectations, family and gender relationships, risk perceptions and cultural mores may be as important as economic considerations.

As described in Chapter 2, the concept of *household livelihood security* evolved in the 1990s out of a growing understanding of the complexities surrounding food security and the understanding that households are dynamic units that work together to ensure survival of the group and its members. This approach understands food as only one of many priorities that people pursue to maintain this survival; it must be constantly weighed against other basic material and non-material needs (Frankenberger & McCaston, 1998). A key concept in this framework is the idea that low-income households maintain a fragile equilibrium along a continuum ranging from *relief* (e.g. in times of crisis or natural disaster) to *rehabilitation* (recovering and rebuilding livelihoods) to *development* (making some type of progress toward livelihood security) (Lindenberg, 2002). Research has shown that development along this continuum is not linear – households frequently oscillate between livelihood improvements and setbacks based on changes in weather, disease and economic shocks (Lindenberg). The household livelihood security framework has been refined, modified and operationalized by a number of scholars and development agencies, including Cooperative for Assistance and Relief (CARE) USA, the International Food Policy Research Institute (FPRI), the United Kingdom Department for International Development (DFID), the Oxford Committee for Famine Relief (Oxfam) and the United Nations Development Programme (UNDP) (Carney et al., 2009). These agencies have implemented various adaptations of the household livelihood security concept as the basis for context-specific assessments and tailored development or social programming (Frankenberger, Drinkwater & Maxwell, 2000; Lindenberg).

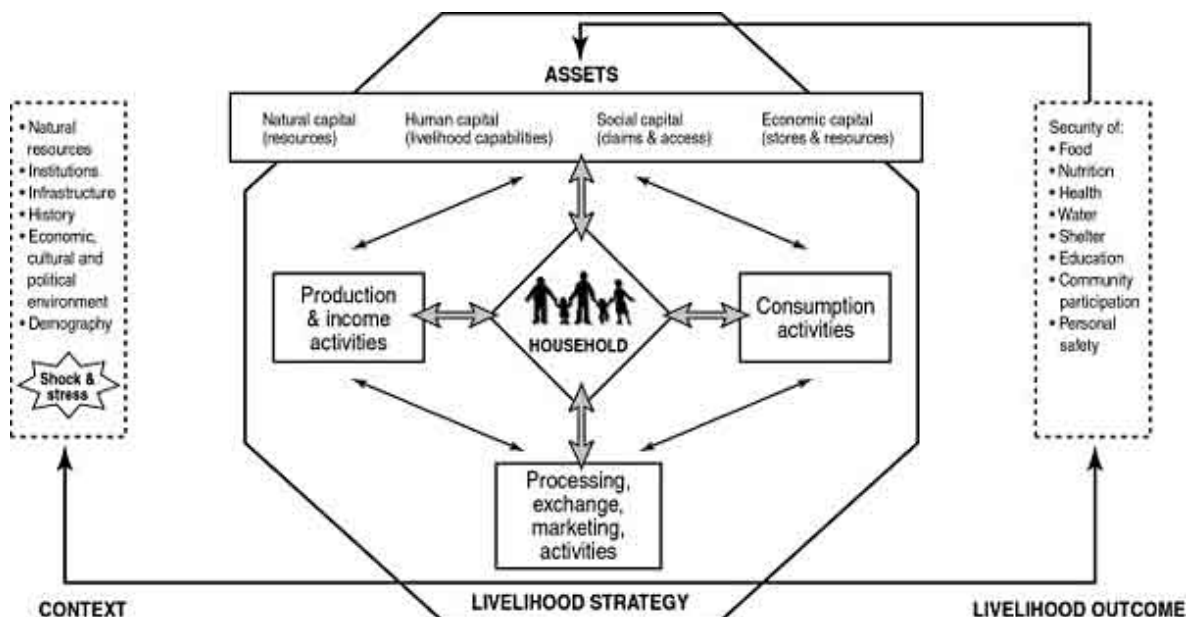


Figure 1: The Household Livelihood Security Model (as adapted by CARE). Source: Frankenberger, Drinkwater & Maxwell, 2000.

The household livelihood security model (Figure 1; as adapted by CARE) centres around the family or household, which is situated between its context and its livelihood outcomes. The model shows how the family/household is a dynamic unit, combining assets and activities related to production to maximize secure household outcomes. The framework emphasizes household actions, perceptions and choices, situated within their context.

A holistic analysis of livelihood security begins with understanding the context for any given population. To understand the macro-level factors that influence the range of possibilities for livelihood systems, we must consider the social, economic, political, environmental, demographic, historical and infrastructural information. It is this information that sets the parameters within which livelihood strategies operate. (Frankenberger et al., 2000, p.71)

Information about the livelihood context is generally gathered through secondary data (Frankenberger et al., 2000), and I have continued to build on the literature review and explore additional documents and resources that describe the context and administration of urban agriculture in Havana. However, time in the field and intensive observation of the participants and the context were key to developing an understanding of how participating households interact with their environment and how this strategy “works” for members of those households.

The household livelihood security framework assumes that many households are dependent on a diversity of strategies to survive urban poverty (Frankenberger et al., 2000); these strategies are based on available ‘assets’ or resources, including natural capital (e.g., land, water), social capital (e.g., networks, social relations, access to wider social institutions), human capital (e.g., skills, health and ability to do labour), and economic capital (e.g., productive resources or stores such as income, savings and remittances, as well as basic infrastructure such as shelter, energy and water systems) (Frankenberger et al.). Livelihoods are also influenced by contextual factors including the natural, social and economic environment, as well as local institutional processes, structures and public policies (Frankenberger et al.).

The *household livelihood security* concept and CARE’s adapted model informed the thrust of my research questions, which explored how households make decisions and choices with respect to their food production, labour and livelihoods. This study explored whether, how and why unwaged food production works as a strategy for household livelihood security in Havana; how the households may combine this work with other strategies; and which (household and contextual) factors seem to determine how successful or useful this strategy is in terms of producing the desired outcomes for participating households. As in the framework, the research questions and interview guides for this study were shaped around household activities and assets, the context which shapes those activities and assets, and the livelihood outcomes that the household achieves. Although the model views the household as a unit, I was also interested in the within-household dynamics and allocation of labour and/or resources between different members of the case households.

Defining the Case

Defining and selecting the case (or cases) is a critical and sometimes challenging process in a case study (Creswell; Gerring). According to Burgess (2000), “For many writers, the situation is not so much one of defining what constitutes a case study, but rather *what constitutes the case* as it is the unit of analysis that is crucial to case study” (p. 44, italics added). The specific unit of study (e.g., the individual, the family, the neighbourhood, the company) is the foundation of the methodological decisions: what processes or activities will be observed, what conceptual framework will be applied, what data sources will be available and will likely provide rich information, what questions to ask, and how the findings may relate to other cases that share some

characteristics with the one(s) studied (Creswell, 1998; Gerring, 2007). The strategic guidance offered by a pre-existing conceptual framework helps to ensure that case study research has meaning beyond its specific case(s).

The act of producing food as a livelihood strategy is not only relevant to individuals. Moskow's (1999) study of 42 gardeners in Havana found that an average of 5.8 people ate in each gardener's household and 9.8 people in their extended families received food from their gardens. Home gardens are associated with households or families, rather than individuals, in most of the available literature. According to Altieri and colleagues (1999), production in Havana's community gardens is also usually organized around a household. Although the literature on unwaged food production in Havana is limited, my contacts in Havana have suggested that it is common for multiple members of a given family or household to work in a garden or in the sale of produce from that garden. The family is often described as the basic unit of social and biological production and reproduction (Gerring, 2007; Hamel et al., 1993; Zabala Argüelles, 2001). Moreover, theoretical concepts related to food security and livelihoods are often framed in terms of families or households (e.g., household food security, household livelihood security), recognizing that socially connected groups of people share resources and labour, and that the well-being and/or survival of the individual is often bound to that of the group (Frankenberger & McCaston, 1998).

Although the nuclear family still predominates in Cuba, there is great diversity in terms of who may live in a given house: single-parent, multi-generational, blended families, and multi-family shared living arrangements are all common, but due to shortages of housing, single-person living arrangements are not (Zabala Argüelles, 2005). This idea initially led me to focus on *households* as the unit of analysis. However, the word *household* is also a complex concept to define⁴ and there is no word in Spanish that is its exact equivalent. Further, "the Cuban notion of family includes aunts, uncles, cousins, grandparents, nieces, nephews, and in-laws—and often close neighbours and friends as well" (Murphy, 1999, p. 16). Based on these ideas and discussions with my advisors in Havana, I elected to use the words "*familia*" [family] and

⁴ There is extensive debate on the issue of defining the word 'household'; different views emphasize its role as a productive unit, a decision-making unit, a residential unit, a consumption unit, or a social unit (Schulz, 1999).

“*núcleo familiar*” [family nucleus] to refer to this unit of analysis in Spanish. The terms household and family are used interchangeably in this text; precise descriptions of the composition of each case are provided in the Chapter 4. The decision to make the household/family the case of this study is also supported by the theoretical framework that guides this inquiry: the concept of *household livelihood security*, which in its translated summary is called *seguridad para la subsistencia familiar* [literally “security for family subsistence”], demonstrating that I am not the first researcher to use the term “family” in Spanish to refer to what might be called a “household” in English (Frankenberger & McCaston, 1998).

I considered a family/household to comprise all of the individuals who eat and/or sleep in the house on a regular basis, based on the assumption that these people share in the household work and/or resources and/or decisions, referring back to the household livelihood security model. I excluded households where those producing agriculturally are paid (in wages) for that work, as this study focused on unwaged production as a strategy for supplementary income or livelihood enhancement, rather than as formal (state) employment. Case study researchers generally suggest selecting three to four cases (Creswell, 1998; Stake, 2006); this study included three families, as described in more detail below.

Field Work

Case study research emphasizes studying a phenomenon within its context; therefore it generally relies on an ethnographic approach, including lengthy engagement in the field of research (Creswell, 1998; Punch, 1986). This often results in a sustained, close relationship between the investigator and the participants being observed. Punch argues that *access* and *acceptance* are integral to the development of these relationships, which are “of vital significance, because the development of [this] relationship is subtly intertwined with both the outcome of the project and the nature of the data” (p. 12). Given my position as an outsider to Cuban culture and the realities of daily life in Havana, time spent in the field was crucial to building relationships with key informants and participating household members, and in situating the current research and findings within their political, cultural and social context.

Preliminary Field Visit

From May 29 to June 8, 2009 I conducted a preliminary visit to Havana, during which I met with academics from FLACSO Cuba at the University of Havana to discuss my proposed research before finalizing my proposal and presenting my methods to my thesis committee. I met with Dr. Reynaldo Jiménez, Director of FLACSO Cuba, and Dr. Mireya Sanz, a faculty member who has extensive expertise in urban agriculture and who has supervised other Canadian students conducting local studies on related topics. Dr. Jiménez also conducts research related to urban agriculture in Havana. Drs. Jiménez and Sanz had read a draft of my thesis proposal (which I had translated into Spanish) and were very welcoming and enthusiastic about my proposed study. They agreed to act as my local academic advisors and to assist me in obtaining the necessary student visa. We discussed practical and conceptual issues related to my proposed research; they were incredibly supportive of the content of the draft, and their feedback was incorporated into the methodology. I also met other faculty members at FLACSO who have expertise in related areas. During this initial visit it was not possible to meet with stakeholders outside of the university. However Dr. Jiménez and Dr. Sanz assured me that they would be able to connect me to various stakeholders upon my return, including local gardening groups, and individual food producers who could be potential participants.

This visit also improved my level of comfort with respect to living and conducting research in Havana. I gained a good understanding of the layout of the city and local transportation. I also interacted with many locals in formal and informal settings; I felt safe and I had no trouble communicating in Spanish. Much of what I observed in Havana reflected what I have learned about Cuba from books and in the Cuban Society and Development (INTD 5000) course I took at Dalhousie in 2008. However, seeing the context first-hand brought these learnings to life, and shed light on the everyday experiences that make up the complex reality of life in Havana.

Data Collection in the Field

On November 17, 2009, I returned to Havana and spent 4.5 months arranging the logistics of the study with my advisors, recruiting participants and collecting data. Time in the field was crucial to building relationships, as well as developing my understanding of the social, cultural, economic and political context, and to becoming

familiar with the local Cuban⁵ dialect and lexicon related to gardening and daily life. This length of time was also necessary to ensure a reflexive, dialectic pattern of data collection, interpretation and analysis, with extensive member-checking throughout the research process.

Ethical Considerations

This study involved observing individuals and families and gathering interview data from and about them. As with all research involving human subjects, the study required approval from a Research Ethics Board (REB) to ensure it has followed the Tri-Council Policy Statement on ethical treatment of research participants. Because this study was conducted with academic support from two separate institutions, it required ethical approval from both Dalhousie University's REB and FLACSO Cuba, which has an internal ethical review process for student research. During my initial field visit, my local advisors and I discussed the ethical considerations for the project in detail, and their feedback and advice were incorporated into the final proposal as well as my submission to Dalhousie University's REB. For example, they advised me that participants in my study should not receive any monetary compensation for their participation, and that an oral consent process was most appropriate. I received ethical approval from Dalhousie University on October 9, 2009. Upon my arrival in Havana in November, my local advisors, Dr. Jiménez and Dr. Sanz, reviewed the final translated version of my proposal as well as the submission to Dalhousie University's REB. We discussed the details and they approved the study and the ethics protocol as they were written for Dalhousie University.

Informed Consent Process

Based on discussions with committee member Dr. John Kirk and my advisors at FLACSO Cuba, I developed an oral process for informed consent – these experts advised me that written consent is not the norm in Cuban culture and that verbal consent would be more appropriate. I prepared a script for the conversation, outlining the study, what would be involved, and the potential risks for participants. The script was

⁵ Prior to this fieldwork, I was functionally fluent in Spanish after a combination of university study and living/working/traveling in Spain, Central America, the Caribbean and South America. Time in the field in Havana was useful in terms of new vocabulary related to urban agriculture, as well as adapting to 'slang' and dialectical intricacies. This in turn enhanced my confidence in terms of data interpretation and analysis.

approved by Dalhousie's REB before I translated it to Spanish. FLACSO Cuba reviewed and approved the Spanish version of the script – we worked together to ensure that it was clear and appropriate for the local dialect and context. Following recruitment, I arranged to visit each family when all members of the household would be at home. In each case I brought some chocolate and something to drink, and the visits began as social gatherings, before I eventually moved into the relative formality of the consent conversation. The three families all commented on the formality of this process, which they felt was unnecessary as they had nothing to hide and trusted my intentions. I explained the rationale for this process and how it is a standard procedure in many research projects, and a requirement for my thesis research. They seemed to find the formality amusing, but they were all good-natured and obliging, and happily listened to and agreed to the conditions and potential risks of the study.

Confidentiality

The close observation and rich description of households produced by this study do not provide anonymity to participating households. I initially proposed to disguise participants' identities with the use of pseudonyms. However, during the informed consent conversations, each family insisted that they preferred to be named in the resulting documents and publications. Thus I have used their real first names (omitting surnames), as well as photos and identifying details in this thesis. As described above, all interview participants were provided a copy of the transcript from their interviews and had the opportunity to review it for accuracy and to ensure they were comfortable with the content. They were shown the photos I had taken, and all agreed with my use of them in this and other publications. Any information that was shared with me "off the record" was not recorded or included in this document.

Compensation

Despite Cuba's high achievements in health and social outcomes, it remains a very poor country. I asked a significant amount of time from participating households, and I felt it was appropriate to respect that time with some form of compensation. Based on discussions with my key informants at FLACSO-Cuba, I gave each family a small care package of household items and foods from Canada.

Recruitment

All participants were recruited with the assistance of my local advisor Dr. Mireya Sanz, who is very active in local urban agriculture and knew of a number of small-scale projects that might be suitable for this study. In all instances she made the initial contact. She contacted a number of families and gardeners in Havana, briefly explained my study, and asked if they would be interested in meeting me and showing me their agricultural projects. She generated a list of individuals or families who agreed; I contacted them and arranged to visit their homes or gardens. Dr. Sanz accompanied me on the first two visits, and for the remainder I went alone. Between November 23 and December 30, 2009 I visited eight different patios and *parcelas* (lots on public land) in Havana, before selecting three of those cases for intensive study. I first identified the three cases I thought were best suited for this study; the rationale for selecting these cases is provided below. I approached these three families about formally participating in the research, and in all three instances the entire families agreed to participate and took part in the informed consent process described above in the section entitled Ethical Considerations. I maintained contact with several of the other individuals, and in some cases returned to visit their homes, but I did not formally include them as cases or conduct interviews with members of those households.

Selecting Case Households (Sampling)

Due to the large target population and the broad geographic spread of urban gardens in Havana, as well as the logistics of recruitment, this study combined theoretical sampling with convenience sampling. The three cases were strategically selected based on the rationale described below. However, they were selected from within a convenience sample of individuals and families who were accessible (i.e. known to my advisor Dr. Sanz) and interested in at least meeting me, if not taking part more formally in the study.

The collective case study method allowed in-depth exploration of unwaged urban food production (the whole) through the unique lived experiences of distinct households, allowing emerging themes and observations from one case to be compared and contrasted with other cases. This approach was intended to enhance the quality and depth of understanding as well as to allow data triangulation and the emergence of shared and different themes between households. I did not select multiple cases with

the intention of producing generalizations (though some generalization across cases is inevitable in case study research [Stake, 2006]), but rather to develop a deeper understanding of the context of Havana's small-scale urban agriculture and the specific factors that unite and separate each case household's experience.

The three cases were selected based on Stake's (2006) three criteria: 1) their relevance to the phenomenon of interest; 2) their provision of diversity across contexts; and 3) their provision of good opportunities to learn about complexities and contexts. The strategic selection of cases based on pre-understanding, including existing conceptual frameworks, helps to ensure that case study research has meaning and does not simply describe the cases studied (Meyer, 2001; Stake; Verschuren, 2003). Strategic theoretical sampling is important to ensuring that the cases provide rich data with respect to conceptual framework and the broader topic.

Drawing from the convenience sample of eight projects, the three cases were selected through a process of *intensity sampling*, which seeks cases that manifest the phenomenon of interest intensely, thus providing rich data, but that are not unusual cases (Patton, 2002). I selected three cases that appeared to offer rich data on the phenomenon of interest (i.e., family or household use of small-scale agriculture as a strategy to maintain or enhance household livelihoods). Several of the gardens I visited were excluded because the agricultural production did not appear to be a livelihood strategy (i.e. it provided little or no monetary or in-kind income), because individuals who were not part of the household also worked on the project and were paid for that labour, or because only one individual from the household had any major connection to the project. In order to expand the scope and richness of the data, the three cases were selected from the remaining non-excluded cases because they provided variety in terms of some of the factors identified in the household livelihood security concept, and exemplified the diverse nature of urban agriculture in Havana. For example, of the three cases selected, two produce for household consumption *and* sale, while one case produces only for sale. The families in Cases 1 and 2 both produce food – one primarily produces animal products (rabbits and eggs), while the other primarily produces a range of vegetables and medicinal plants. Case 3 does not produce any food – they make compost and organic fertilizers, products which have played an important role in Havana's urban agriculture. The families also differ with respect to the number and type of incomes in the home and in terms of the household's composition; the smallest has

three members (2 generations) and the largest has five members (3 generations). Each family is described in more detail in Chapter 4.

Data Collection

Participant Observation

Unlike non-reactive observational studies where the investigator is an unobtrusive 'outsider' (or where subjects may not realize they are being studied), participant observation studies bring the observer in direct contact with participants and their activities (Ulin, Robinson, & Tolley, 2005). "In this more interactive approach, [the researcher's] responsibility is to stimulate conversation and behaviour that will let [the researcher] enter the culture as its members' guest" (Ulin et al., p. 75). Case studies generally rely on observing normal or ordinary activities and interactions for each case (Stake, 2006).

I set out to spend time with the three families in their gardens and in their homes, observing everyday activities related to agriculture as well as other aspects of running the home. From December 2009 to March 2010 (inclusive), I regularly (more or less once every two weeks) visited the homes of all three case families, as well as the *parcela* (or lot) where the third case produces fertilizers. I had hoped to participate with the families in their agricultural work – helping out in the garden and/or with other household tasks such as preparing food or transporting it to market. However, the three families repeatedly insisted that they needed no help. They were thrilled to have me there observing and asking questions, and were always happy to explain something or show me various aspects of production, as described in the individual case findings. However, my physical contributions to the projects were minimal; the majority of the observational data was based on social visits in which we would sit or walk, eat and drink, and chat about all topics, including but not limited to their agricultural production. The informal conversations that took place during these visits were crucial to building relationships with participants and developing my understanding of their daily routines, motivations and challenges. Although my formal participation in these families' agricultural activities was minimal, through our regular informal visits and shared meals, I felt our interactions represented participant observation because I was taking part in their daily lives.

I took detailed field notes related to my observations while I was a guest in the homes and gardens of the three cases and other producers I met in Havana. The field notes include detailed descriptions of what I saw and heard, including stories or information relayed to me through conversations (such as family history, the household's gardening history or details, etc.). I confirmed specifics with household members throughout the fieldwork process. I also kept a journal, which allowed space for more personal and emotional reflections related to my experience in Havana, as a guest in participating households and as a foreign researcher. Recognizing that my biases and personal views shaped what I observed and how I recorded it, there was considerable overlap between these two forms of documentation. However in maintaining both separately I attempted to 'bracket' my personal and value-laden thoughts separately from the recording of descriptive information.

Photographs

The use of photography or *visual methodologies* in social science research has been a topic of limited but growing interest in academic literature (Hurworth, 2003; Prosser & Schwartz, 2004). Photos may be taken by the researcher or by participants, and they may be used as data and/or as tools of elicitation in interviewing (Hurworth; Prosser & Schwartz; Stanczak, 2007). In both cases visual methods can provide an alternative means of conveying information and communication between the researcher and the participant, and sometimes the eventual audience.

This research set out to produce a rich, vivid description of the daily lives of food-producing households in Havana. Photos were used to add depth and detail to my field notes (a form of the 'visual diary' method described by Prosser and Schwartz, 2004), and to capture visual information about the participants and their environment. I took all of the photos myself, of the homes, gardens, and people that were the focus of this research. The photos were primarily taken with the idea of including them in this thesis and other presentations or publications, to enhance the readers' and audiences' vicarious experience of the setting and to convey visual information about the environments in which the studied activities take place. There exist ethical and cultural considerations with respect to taking photos; these notions vary between different contexts and individuals (Prosser & Schwartz). I discussed the idea and use of photos with all participants during the informed consent process and before taking any photos. In all cases the participants were enthusiastic about my use of photos and encouraged

me to take and use them to enhance the dissemination of the research. They all had opportunities to see the photos and approve them for use in my research.

In-depth Interviews

This research focused on the perspectives of various household members, anticipating that the work and benefits associated with urban agriculture might be experienced differently by each individual and by each household. In-depth interviews were conducted with two members of each participating household. “Polyphonic” interviewing can be used to present multiple perspectives on the same subject without ‘glossing over’ the differences between them (Fontana & Frey, 1994). This technique can be used in an attempt to minimize the researcher’s influence on the narratives and interpretation by relying on different researcher-participant dynamics and acknowledging discrepant information (Fontana & Frey).

A total of nine in-depth interviews were conducted in two rounds, with a total of six individuals (See Table 1). Both sets of interviews were semi-structured but very flexible; they needed to be adapted based on the case’s unique type and circumstances of production, the person(s) being interviewed, their role in the family or household, and their role in the production, preparation and sale of food. In Round 1, I interviewed the person from each case household who is most actively involved with the agricultural production, preparation and/or sale – in all three cases this was a male from the oldest generation in the home; they ranged in age from their late 50s to their early 80s. This set of interviews was conducted early in the fieldwork process, shortly following recruitment and completion of the informed consent process. The interview guide for the first round was developed based on the research questions and the household livelihood security concept. It was also designed to elicit background information about the family and the agricultural project. The guide was refined with help from my local advisors at FLACSO Cuba. This interview guide is included in Appendix B.

Table 1: In-depth interviews

	Case 1	Case 2	Case 3
Round 1	Francisco	Antonio	Fulgencio
Round 2	Francisco	Antonio	Fulgencio
	Pastora	Ana	Eva

Although theoretical frameworks are important in case study research, experts warn against over-reliance on anticipated findings, theories or assumptions (Gillham, 2000; Stake, 2006); rather they recommend entering data collection with a few possible influences in mind, but letting “[one’s] mind or eye scan a large number of happenings, variables and contexts” (Stake, p. 28). Based on this idea, I conducted a second round of interviews near the end of data collection. The Round 2 interviews included a second interview with each primary producer (the individuals interviewed in Round 1), as well as an interview with each female head-of-household. In all three cases these women were the wives of the primary producers; they ranged in age from their late 50s to their late 70s. These interviews were conducted based on the understanding that other household members (in these cases, women) might do other household or agricultural work and might perceive different benefits and challenges of the household’s urban agriculture.

The Round 2 interviews were much less structured than the first round. They were guided by a loose interview guide developed following preliminary analysis of the observational and first round interview data, and through discussions with my local advisors. The purpose of the second round questions was to clarify and elaborate on themes identified in the Round 1 interviews, to ask follow-up questions and seek confirming or discrepant information from other household members. These interviews also incorporated themes identified through my observation and discussions with key informants. A list of questions used in the Round 2 interviews is included in Appendix C. However, these questions were not used as structured interview guides. Rather, in each case some of these questions were selected and tailored to the specific case and the individual being interviewed, and other questions were incorporated based on the emerging direction of the conversation.

Interpretation

“Moving from the field to the text to the reader is a complex, reflexive process” (Denzin, 2004, p. 449). Meanings of activities and narratives change with the interaction between the researcher and participant, the researcher and the data, and the findings and the eventual audience (Borland, 2004). Interpretation in this study was particularly complex, as I am a foreign researcher in the Cuban setting, and the interviews, conversations and activities observed all took place in Spanish, which is not my first language. I employed a number of strategies to enhance the trustworthiness of the data and the appropriateness of my interpretation.

First, I sought feedback from my local advisors to ensure that the questions I was asking were understandable and appropriate in the study context. I had no trouble communicating with participants and was able to clarify or ask follow-up questions throughout the informal conversations as well as the semi-structured interviews. I hired a local transcriber to write out the interviews, which helped to ensure the transcripts are an accurate representation of what was said. The constructivist epistemology behind this research also calls attention to the complexity of conveying knowledge and meaning through language (Temple & Young). Therefore the act and process of translation must be acknowledged as part of the interpretation and findings of this case study, especially with respect to the oral or narrative data. Some authors recommend translating texts into the target language as soon as possible after transcription, while others contend that it is more accurate to analyze the data in its original form to reduce the possibility of misinterpretation (Ulin et al., 2005; Temple & Young, 2004). As Ulin and colleagues point out: “some words simply have no translation... Inclusion of particularly expressive terms from the original language enriches the transcript and may lead to discovery of new themes or ways of constructing familiar concepts” (p. 126-127).

In an effort to honour the original data as carefully as possible, I decided to conduct the majority of interview analysis from the original Spanish transcripts. As previously mentioned, time in the field was helpful in gaining familiarity and comfort with the local dialect, vocabulary, and cultural references. My relationship with the participant families also provided ample opportunities to clarify meanings or to understand more nuanced or culturally-specific words or comments.

As a Master’s student, I needed to have at least a selection of the transcripts available in English, so that my thesis advisor at Dalhousie, Dr. Lois Jackson, was able to follow and critique my analysis. Upon returning to Halifax, I translated two of the transcripts (one from a male, Round 1; the other from a female, Round 2) in full and provided these to my advisor. As I continued with the analysis, I translated many more quotations than those that appear in this thesis; providing evidence of various themes and their relative frequency or importance. For all direct quotations in Chapter 4, I have provided the original quotation in Spanish, followed by my own interpretation in square brackets. The other members of my committee at Dalhousie (Drs. Kirk and Karabanow) are both able to read Spanish, and therefore they have been able to read the original

and translated quotations; other readers may also be able to do this and may observe nuances that may potentially have been lost in (my) translation.

Analysis

According to Hamel and colleagues (1993), the case study is in complete harmony with the key processes that characterize any qualitative method: describing, understanding, and explaining. The typical approach in a collective case study is to first provide a detailed description and thematic analysis of each individual case, followed by a cross-case analysis to compare and contrast the emergent understandings (Creswell, 1998; Patton, 2002; Stake, 2006). The detailed description may be in the form of a “case record” or “case report”: a systematic compilation of all the data available on one case (Patton, 2002; Stake, 2006). I undertook the first key process, *describing*, throughout my time in the field; compiling interview data, observations, field notes and photographs for each case as I collected them, gradually developing a case record for each participating household, in the form of electronic folders on my computer. These folders contained all photos, field notes, and transcripts for each case, and as I proceeded with the data analysis they also included detailed notes and reflections on emerging themes.

I followed Stake’s (2006) method for analyzing and presenting the data (or *understanding* and *explaining*), which begins at the start of data collection. As described above, in a collective case study the ultimate objective is to understand some ‘whole’ (a phenomenon, activity, or condition) of which the selected cases represent distinct real-life examples. In collective case study analysis, both the case and the broader topic vie for more attention (Stake, 2006) – Stake contends that the initial focus should be on understanding each case first, and not allowing the issues of individual cases to merge too quickly with the broader research question. Many case study scholars (Meyer, 2001; Stake; Verschuren, 2003) recommend an iterative and flexible approach to data collection and analysis, moving back and forth between prior knowledge (such as existing concepts or questions) and emerging, case-specific information.

Following this approach, I first focused on understanding each case and how its emerging themes related to the research questions and conceptual framework. The transcripts were loaded into ATLAS.ti qualitative data management software. Working with one case at a time, the transcripts were read and re-read, and an initial coding scheme was developed based on themes or topics arising from the narrative data. The

data were coded and the codes and quotations were grouped into key thematic areas for further analysis. I also incorporated memos and notations relating the themes to each other or to points from my field notes. I followed Stake's (2006) process which guided me in identifying themes within each case, assessing their relative importance within that case, and making assertions about their relationship to the research questions. At this point the coded data and my interpretations of them were combined with the relevant field notes for each case, and more detailed case records were developed. Each case was described in detail, followed by a detailed account of the data from each case relative to the overall objective of the study and the subsidiary research questions.

After completing this process for each case, I proceeded to develop a cross-case analysis, where I compared and contrasted identified themes between cases, noting similarities and differences in the findings specific to each case and their respective assertions about the broader research questions. Although the details of each case were distinct in terms of the individual family makeup, activities and outcomes, several broad themes were reflected across all three cases. This allowed the individual case findings to be synthesized and presented together in terms of the study's key findings about the benefits and challenges of production, and the necessary inputs and activities to maintain that production. Discrepant information or key differences between cases are also noted in the cross-case findings. The data reflecting the physical, social, and political-economic context of food and agricultural production were analyzed for each case independently. However, the cross-case analysis revealed very similar themes and findings between all cases, with a high degree of data saturation. Thus the findings related to the context were condensed into one section in this thesis, in order to avoid repetition and also to highlight the commonalities in terms of how distinct families experience agricultural production within Havana's physical, social and political-economic context.

Reflexivity and Member-checking

The social actors who participate in case study research play an important role, not just as subjects, but in directing the study (Stake, 1995). According to Stake, "although it is they who are studied, they regularly provide critical observations and interpretations... they also help to triangulate the researcher's observations and interpretations" (p. 115). Like many forms of qualitative research, case studies often use

“member-checking” to elicit feedback and alternative explanations from participants. Any narrative or observational data can have multiple interpretations; the researcher shapes meaning based on his or her own experience and understanding with respect to the experience described by participants (Denzin, 2004).

Case study scholars often recommend a dialectic, reflexive approach in which researcher moves back and forth between pre-understanding, the collected data, and the participants themselves (Stake, 2006). This approach is facilitated by the tendency in case studies to examine the activity from within its context – proximity to the cases studied allows the researcher to share their thoughts and interpretations with participants at several points throughout the research process. From the time of recruitment, I maintained regular contact with the three case families – visiting regularly and talking on the phone. The visits comprised participant observation as previously described; the phone calls were necessary to arrange the visits, but also provided additional information on the families’ daily realities. Our frequent conversations allowed me to better understand their daily routines and also provided some insight into the relative importance of various themes that emerged from the interview data. All interview participants were provided a copy of the transcript from their interviews and had the opportunity to review it for accuracy and to ensure they were comfortable with the content. I also spoke with them informally about my working understandings and interpretations during the data period collection. The second round of interviews, which was conducted following a period of observation and preliminary analysis of the Round 1 transcripts, provided a slightly more structured opportunity to discuss my initial findings, ask follow-up questions, and see how participating household members made sense of my emerging analysis.

Limitations and Enhancing Trustworthiness

The debate over the worth of specific versus general knowledge dates back to the ancient scholars (Stake, 2006). From a positivist perspective, a case study might not be considered useful; in this view a case only provides insight into its own singular context or the specific object of study (Hamel et al., 1993). The epistemological expansion toward inclusion of post-positivist and constructivist perspectives has expanded science’s appreciation for the singular, and thus the case study approach (Hamel et al.; Gerring, 2007).

The three cases selected for this study in no way represent all families or households who produce food and other agricultural products. They were selected based on the rationale previously provided, and from a convenience sample. However, the intent of case studies is not to represent or predict findings for all possible cases. The generalizations resulting from case studies are of a different sort than those from more positivist or experimental studies. They do not project conclusions onto cases not studied, but rather “show how a variety of components and constraints lead to a partly irreducible individualism among the cases” (Stake, p. 90). Urban agriculture’s documented success in Havana, at the population and community level, is very context-specific; the combined conditions of tropical climate, urgency (during the Special Period) and significant government support, for example, may not exist in other settings. However, the lived experiences of Cubans who participate in that process, and what it means for them and their households, has provided valuable insight into the dynamics of small-scale urban agriculture, which has applications for the promotion of this activity even under very different circumstances.

This research was limited to the scope of a Master’s thesis, which restricted how much time I spent in the field before and during the research. Additionally, language and cultural differences added a layer of complexity as described above. Throughout the previous section I have described various techniques that were used to enhance the quality and trustworthiness of the data. Specific points include collaborative planning and execution with local experts; efforts to ground methodological and analytical decisions in the conceptual framework; triangulation through multiple types and sources of data; and significant time spent in the field of study.

CHAPTER 4: FINDINGS

This chapter begins with a more detailed description of the research setting, based on my own observations during a total of five months in Havana, the participants' descriptions, and in some cases, relevant literature. This description is intended to help readers situate the subsequent findings in the Cuban context. Next, each of the three cases is presented individually, with findings from each case organized into the following sections: 1) Background; 2) Beginning agricultural production; 3) Inputs, assets and activities; 4) Outcomes and benefits; and 5) Challenges. Finally, the chapter offers a cross-case analysis, which synthesizes and compares the individual case findings in terms of inputs and outcomes at the micro- (individual), meso- (family)⁶ and macro- (community or country) level. The cross-case analysis then elaborates on the role of the physical, social, and political-economic context in shaping inputs, activities and outcomes, again based on participants' comments and my own observations.

The Setting

Location of Field Work

Havana is located on the Cuba's northeast coast, and enjoys a tropical climate with a yearly average temperature of 25° Celsius. It is divided into 15 municipalities (shown in Figure 2) surrounding the large Bay of Havana (González Novo et al., 2009). During my fieldwork, I lived in a central location, with a local family near the University of Havana. My home, the university and Cases 2 and 3 are all located in the municipality of Plaza de la Revolución. Case 1 is located in the municipality of Diez de Octubre.

⁶ Social science research is frequently conceptualized at the micro (individual) and macro (population or national) level (Reid, Sutton & Hunter, 2010). The "meso" (meaning middle) level represents a level of analysis between these two; hence there are multiple ways of conceptualizing the meso level, e.g., communities, households, schools, teams, workplaces, etc. The data from this study relate to individuals, within families/households, within the community of Havana. Based on this rationale, I refer here to the household or family as the meso level of analysis. Reid and colleagues (2010) also conceptualized the meso level in this way; their analysis focused on households as key meso-level actors in environmental protection.



Figure 2: Municipalities of the city of Havana. Source: ONE (2009)

Buying, Preparing, and Eating food in Cuba

Cuban diets are strongly centred around basic, unprocessed foods. Cubans typically consume a variation of rice, beans, and root vegetables (such as yucca, taro, plantains, potatoes or sweet potatoes) on a daily basis, with pork, chicken and eggs providing most of their protein intake (Wright, 2009). Raw vegetables (referred to as salad even if it is just a plate of tomato slices) may be added to a meal, though fresh vegetables are not generally popular in Cuba (Wright, 2009) – many Cubans I know still joke about how vegetables are “*comida de chivo*” (goat food).

Buying and preparing food in Cuba is quite different than it is in Canada. Although there are small grocery stores selling prepared and packaged foods, these are sold in CUC at fairly high prices. As described in Chapter 1, the rationing system guarantees Cubans access to set amounts of staple foods including rice, beans, meat, eggs, root vegetables, sugar, white bread and coffee. These rations ensure that certain dietary requirements are met, and that families are not solely responsible for covering their costs for food. As one participant, Francisco, explains, the rations provide security of a certain level of food, ensuring all citizens generally have something to eat:

Francisco: "... pero aquí nadie se acuesta sin comer, aquí con arroz y frijoles se come, y alguna vianda, y aquí nosotros comemos todas las tardes algo de carne... hay días que no comemos cárnico, pero algo de proteína, huevo, tortilla, algo de eso".

[Francisco: ... but here no one goes to bed without eating; here you eat rice and beans, and some root vegetables, and here in our house we eat some meat every evening. Well, there are days when we don't eat meat, but something with protein – eggs, an omelette, something like that.]

However, as described in Chapter 2, the rations are not sufficient to meet a family's complete dietary needs; a fair portion of families' low salaries go to buying additional food (Mesa-Lago, 2006; Wright, 2009). The amounts and types of rationed goods have been reduced on many occasions since the implementation of the *libreta* system in 1962, and recently there has been talk of abolishing the rationing system altogether (Mesa-Lago). During the Soviet Era the rations included set or unlimited amounts of most staple foods and many household goods. Items such as gasoline, cigars, beer and toilet paper were once included, but were removed from the *libreta* entirely (cigarettes are still included). Quotas have been gradually introduced or reduced on a number of other products. For example, in 1962 an adult in Cuba was entitled to 3 pounds of beef per month; as of 2005 they were entitled to half a pound of a mixture of ground beef and soy (Mesa-Lago). Bread rations were once unlimited; now each person is entitled to one small bread roll per day (Mesa-Lago). Most recently, in late 2009 potatoes and peas were removed from the *libreta*; these products are still available, but no longer at subsidized prices (Haven, 2009). As highlighted in Chapter 2, current rations are estimated to cover 7-10 days worth of consumption out of every month (Mesa-Lago). Depending on the timing of monetary income and subsidized food available to a family, some days or weeks are better than others, much as they are for most families worldwide.

Cubans typically buy their food from a number of different sources, and may visit several markets, small vendors and/or shops in order to find what they are seeking (Sinclair & Thompson, 2008). Long line ups for rationed foods are common. The remainder of the family diet is made up with additional (similar) foods purchased through farmers' markets, roadside vendors, Dollar stores, and the informal economy. Buying and selling foods on the black market (or "*por la izquierda*" – on the left) is common, though somewhat surreptitious. People sell things such coffee, powdered milk, yogurt and honey, door-to-door, from their homes or on the street.

Foods are available seasonally and variably, with little predictability. During my time in Havana, there were a few occasions when no eggs were available for a week at a

time. Potatoes disappeared from the downtown markets in early January, and did not appear again for over a month. Prepared foods in shops are even less predictable. Grocery stores in Havana bear little resemblance to their counterparts in Canada. One week an aisle might be filled with cookies and crackers imported from Asia. The next week, all of those products are gone and the entire row has been filled with vast quantities of soda. During my visit I quickly learned that if you see something you like in a shop, buy it now – the next day it may be gone with no sign as to when or if it will be available again.

Despite the limited variety, food is a common topic of discussion in Cuban homes and neighbourhoods. Word of shortages and availability travels fast – people are always talking about what is, and is not, available in various locations, and how much people are paying for it. When potatoes suddenly reappeared by the truckload in late February, people were lined up around the block to buy them for one peso MN (about \$0.04 CAD) per pound. One day when eggs had been absent for over a week, I managed to find some “por la izquierda” – from a black-market cake-maker who sold me a carton from his secret stash. Walking home with the carton of eggs, I was stopped probably five times in a few short blocks by people wanting to know where I had found them.

Once purchased and brought home, the unprocessed foods are somewhat labour-intensive to prepare. A typical sight in a Cuban kitchen is a member of the family (typically a woman) sitting with a clean towel laid out on the table, sorting through the family’s rice rations grain by grain, removing stones, twigs and poor quality grains. Dried beans must also be sorted and soaked before cooking. Preparing fresh vegetables and root vegetables requires washing, peeling and chopping as it does in any setting. However, unlike in higher-income settings, for most Cuban families, their entire diet is made up of these unprocessed foods, with very limited options to combine them with labour- or time-saving prepared foods, which are scarce and prohibitively expensive. One participant, Eva, highlights the daily challenges of life in Cuba, and how basic tasks are often labour-intensive because prepared products or other resources are unavailable or unaffordable:

Eva: “Las cosas las compartimos, inventamos... cómo decirte... todo el mundo compra un pomo de mayonesa, yo hago mayonesa. La hago con huevo en la batidora... y si no hay batidora, invento algo. No es nada extraordinario, eso lo hacemos todos los cubanos. Las mujeres cubanas hacemos eso”.

[Eva: We share things, we invent... how can I explain... Everyone buys a jar of mayonnaise; I make my own mayonnaise. I make it with eggs in the blender... and if

there's no blender, I make something up. It's nothing extraordinary; that's what we Cubans do. That's what we Cuban women do.]

The daily work of seeking food from various sources at varying prices, preparing almost all food from scratch, and dealing with periodic shortages in even staple goods typify the social context of accessing food in Cuba. Most people have enough to eat, but the food they must buy for a complete diet is expensive (relative to their incomes), and finding and preparing it is time-consuming and somewhat labour-intensive.

Other Household Needs and Expenses

Other household tasks, including repairs, maintenance and cleaning can also be challenging and a lot of work, given the difficulty of finding and paying for various supplies, and since many families try to do as much of the work as possible themselves in order to save money. Most Cuban families who do not receive remittances from abroad or work in tourism operate almost exclusively in *moneda nacional* (Haven, 2009); converting their Cuban pesos into CUC is expensive, and many items sold in CUC are out of the reach of most citizens. Typical Cuban families are extremely limited in their discretionary spending – they have little capacity to pay for such things as home improvements, taxis, clothing, and meals in restaurants.

Small-scale Agriculture in Cities

Small farms, gardens and patios are common in Havana, though in the densely-packed centre they are fewer and harder to spot – tucked away on rooftops and in small backyards. Even in the city centre, however, there are communal plots, ornamental plant nurseries, and people keeping animals, vegetables and fruit trees in their yards or on their rooftops. Farmers' markets selling produce are distributed



Figure 3: An *organopónico* (organic research garden) in Central Havana

throughout the city – they range from small storefronts or kiosks selling, for example, potatoes and tomatoes, to large outdoor markets with a huge variety of fresh fruits and vegetables, herbs and spices, and even snack foods like peanut bars or fried-to-order

donuts. The state also runs a number of agricultural kiosks throughout the city's municipalities; these are often paired with or near the farmers' markets. They are called *Tiendas Consultorios del Agricultor* (TCAs) or farmers' consulting shops, and they sell inputs for gardeners and small-scale farmers, such as seeds, tools, fertilizers and materials, at subsidized prices. Gardeners or farmers can also request fumigation for garden pests through the TCAs. According to my advisors at the University of Havana, and the participants in this study, the TCAs are the state's primary mode of support for independent, small-scale producers.

Individual Case Findings

CASE # 1: FRANCISCO, PASTORA AND JORGE

Background

Francisco, Pastora and Jorge live in a medium-sized, detached house in the municipality of Diez de Octubre, a mostly residential area southeast of the city centre.

They live about 7km from Central Havana; they get around by bus and on foot. Francisco and Pastora are both in their 50s; their son Jorge is in his 20s.

Francisco is an agricultural engineer who works Monday to Friday in research and education related to agriculture and animal husbandry. His wife Pastora

retired from teaching over 10 years ago, but still tutors

neighbourhood children in the afternoons. Their son Jorge is a chemical and metallurgic engineer; he works full-time with an organization that makes luggage and leather goods. Since around 1990-91, the family has been raising rabbits and chickens, and growing fruit in their back yard, for home consumption and sale.

The house has a small backyard with a concrete floor (as is common in many backyard patios in Cuba), which is home to a seating area and outdoor kitchen, a large



Figure 4: Francisco and Pastora's patio

animal pen, and various fruit trees. They also have a small garden bed and many medicinal and ornamental plants in various containers. The animal pen holds 10 rabbit cages. They normally maintain approximately one male and four female ‘reproducers’, and there are generally 20-30 rabbits in various stages of development at any given time. The pen is also home to nine hens, one rooster, and a goose. The fruit-bearing trees in the yard include three guava trees, one lemon tree, one cherry tree, and five banana trees. In the small garden bed they produce a few vegetables; during my last few visits it was planted with chard and ají peppers.

I went to visit Francisco and Pastora at their home six times during my stay in Havana, and we spoke on the phone approximately once per week. Every time I visited I was greeted with a warm welcome and something fresh and healthy to eat and drink: fresh squeezed orange or papaya juice, fresh guava and bananas from the yard, pineapple or even fruit salad. Although I offered to help in the garden and in the kitchen, most of my offers were refused and the family insisted there was no need for help; they just wanted me to visit with them, to learn about what they do, and to observe them caring for the patio. Eventually Francisco saw my interest in the rabbits and invited me to help him butcher one of them. On my next visit, I “helped” (mostly watched and learned) while Francisco selected, killed and butchered a good-sized rabbit of about 2 months old. Afterwards he cooked the rabbit with wine, tomato and seasonings, and we all sat down to a beautiful meal.

Beginning Agricultural Production

Francisco was already involved with agriculture professionally at the start of the Special Period. Around the beginning of the crisis, through his work he had an opportunity to raise rabbits at home, supplying most of the animals he produced to the state, and keeping the surplus for the family’s own consumption, either at home or as a contribution to a meal when visiting with friends. Eventually the production was high enough that there were too many surplus animals for the family to eat and/or store, so they began selling some to neighbours. As he explains below, the opportunity to produce at home was very timely based on the economic circumstances:

Francisco: “... unido a esa posibilidad que tuve, en ese momento en el país estábamos entrando en la crisis de los 90, entonces ya era necesario, eh..., buscar algo con lo que uno pudiera sustentar la alimentación de la familia, y entonces buscamos esta posibilidad que ya habíamos iniciado y bueno seguimos, eh... creciendo en cantidad de animales para poder tener una producción mayor. Ese fue el objetivo inicial: sustentar en el período de los 90 la alimentación, a partir de las carnes de los animales”.

[Francisco: ... together with the possibility that I had, at that time in the country we were entering the crisis of the '90s, so it was already necessary to, uhh... look for something with which you could maintain the family's diet, so we looked for this opportunity which we had already initiated and, well, we kept increasing the number of animals to have a greater production. That was the initial objective: to maintain the family's diet in the period of the 90s, beginning with the meat from the animals].

Because they have relatives living abroad, the family had received some remittances, which made it easier to meet basic needs. However, Francisco explained that beginning production on the patio also represented an opportunity to be more independent and not rely on family – he asked his relatives to stop sending money. After a few years, the family decided to leave the state contract, and have since been producing rabbits, as well as poultry, eggs, vegetables and fruit, independently for their own consumption and private sale.

Inputs, Assets and Activities

Material Inputs

Access to Land

The family's yard is relatively small, but it is an important physical asset which allows the possibility of home-based food production. The space is used efficiently, maximizing both productivity and enjoyment. The animal pen occupies a large proportion of the yard, and a row of banana trees takes advantage of the narrow space along the side of the house. The family spends a lot of time on the patio, eating meals, caring for the plants and animals, or just relaxing – we shared many nice visits there with the animals close by, surrounded by fruit trees and pretty ornamental plants.

Ongoing Material Inputs

Under the previous state contract, the state organization provided cages and feed for the animals in exchange for the rabbits Francisco supplied. This was a welcome support, but the family encountered some problems with the quality of the feed provided, and left the contract after a few years. Since that time, the family has obtained the inputs for production themselves. The fruit trees and small vegetable garden do not require much, beyond water, to produce. The biggest expense is food for



Figure 5: A row of banana trees fills the narrow space alongside Francisco and Pastora's house

the animals, which are fed a combination of grasses and plants gathered around the neighbourhood, and cooked food such as rice or root vegetables, which are bought from the market and combined with household food scraps (from their own home and some provided by neighbours).

Non-material Inputs

Labour and Knowledge

Maintaining the patio and the animals adds an extra set of tasks that need to be completed in this home each day. The animals, especially the rabbits, can be a lot of work to maintain:

Francisco: “Bueno, la atención al conejo es bastante...es trabajoso porque no es sólo atender los animales, y limpiarle el local donde están y darle la comida, sino que hay que ir a buscarle la comida, una parte de lo que ellos se comen hay que ir a buscarlo, tengo que salir de aquí, ahora en estos tiempos, allá donde yo trabajo tengo bastante yerba, entonces allí corto y el ómnibus que me trae del trabajo me deja aquí cerca y traigo un saco por la mitad, bien apretado, que me da pa’ darle hoy por la noche y mañana por la mañana... al otro día voy y traigo otro saco”.

[Francisco: Well, caring for the rabbits is a lot of work, because it’s not just looking after the animals, cleaning the space where they are and feeding them. You also have to look for the food; a part of what they eat you have to look for it, I have to go out from here. Now these days where I work there is a lot of grass nearby, so I cut some there and the bus that brings me home from work drops me off close by, and I bring half a sack, well-stuffed, which gives me enough for tonight and tomorrow morning... the next day I go and I bring another sack.]

Francisco does the majority of work related to the rabbits and chickens, as he started the project himself and has the technical expertise. However, Pastora and Jorge also help out. In this family, the work of the home and the patio are shared by all members – all three do some work related to the patio, in the kitchen, around the home, and running errands. As Francisco says, “*nos ayudamos mutuamente*” -- we help each other mutually. The tasks are distributed according to what each is able to contribute.

A few years ago Pastora was diagnosed with breast cancer. She has since had a successful operation, but is under some restrictions from her doctor which currently limit the tasks she can do around the home. The household division of labour was changed accordingly. This means that Francisco and Jorge do a lot of the cooking, and Pastora’s work related to the agricultural production mostly consists of keeping the yard clean, tending to the plants, and occasionally bringing home food for the animals or feeding them. Jorge helps his father with cleaning the animal pen and

feeding the animals. At other times when Francisco has been sick, Pastora and Jorge have taken over the tasks that are normally his. Recently Jorge began taking language classes after work in the evenings, and this means he is less available to help with the animals at that time, but contributes in other ways at other times. This reflects the overall sense of the division of labour within the family – they all help each other and do what they can to make the home run smoothly. In these quotations Pastora and Francisco explain the family’s dynamic with respect to work around the house and yard:

Pastora: “En este caso es compartida; hoy puede uno, mañana puede otro, si entre dos o tres se puede, bueno. Se puede arreglar entre dos o tres, como en este caso que yo doy una ayudita, pero yo apporto también, doy mi aporte, yo creo que sí, que siempre se puede”.

[Pastora: In this case it’s shared; today one person can do it, tomorrow another can do it. If it can be done between two or three people, good. It can be managed between two or three, as in this case where I only give a little help, but I also make my contribution. Yes, I think it can always be done].

Francisco: “... es comunitario ¿no? Un trabajo comunitario, cada cual aporta lo que puede y en el momento que puede”

[Francisco: ... it’s communal, isn’t it? A community effort; each one contributes what they can in the moment they can.]

Outcomes and Benefits

Access to Healthy Foods:

Francisco, Pastora and Jorge try to eat a healthy and varied diet, with lots of fresh fruits and vegetables and lean meats. They access these foods through many avenues, including the state distribution system, free farmers’ markets, stores, and of course foods taken directly from their patio. The patio supplies more than enough fresh eggs to meet the family’s needs, and they eat a rabbit from their patio on average once or twice a week. The family consumes a lot of fruit, and the guava and bananas from the patio are an important part of that. The whole family likes these foods and considers them healthy, not only because their known nutritional properties, but also as a result of having been produced on the patio.

Pastora: “... carne de conejo... es una carne sana, una carne muy buena y muy nutritiva... lo que es beneficio para nuestra salud, ahí lo vemos, lo vemos en el huevo también, que comemos los huevos de ahí, son huevos sanos, esos animales se alimentan muy bien, en el sentido de que esos alimentos que comen ellos están en las carnes que comemos, en los huevos que nos alimentamos con ellos, en las gallinas que comemos, y lo vemos ahí, que

son alimentos muy sanos...ellos se crían con eso y después a nosotros nos reportan beneficios en la salud también”.

[Pastora: ...rabbit meat... is a healthy meat, a very good and very nutritious meat... it's beneficial to our health. We see it there, we see in the eggs as well – we eat the eggs from the patio too and they are healthy eggs, those animals are fed very well, meaning that the foods they eat are in the meats we eventually eat, in the eggs we feed ourselves with, in the chickens we eat. And we see that, they are very healthy foods ... they grow up with that and then they produce health benefits for us too.]

Saving and Earning Money

The food this family grows saves them money, as they have access to foods which otherwise they would need to buy. Because the family produces more than enough to meet their needs for those items, the excess is sold, which brings in income. The family is authorized by the Ministry of Urban Agriculture to sell their products independently from their home. When there are rabbits ready to be eaten, Francisco puts a sign on the front fence that says “*se venden conejos*” – rabbits for sale. People from the neighbourhood always come by to buy them; Francisco will kill the rabbit, and will skin it and butcher it if the customer wants. The family sometimes also puts out fruit from the trees in the yard, such as guava, when they have extra. Neighbours pass by and buy those too – according to Pastora, generally within a matter of minutes. Most of the monetary earnings from the patio are from the sale of rabbits. The monetary income varies by month and season but contributes approximately 1000-2000 pesos MN [CAD\$40-80] per month, roughly equivalent to three to five typical monthly state salaries in Cuba.



Figure 6: Inside the animal pen at Francisco and Pastora's house

This family lives a relatively comfortable lifestyle, though with few luxuries. They have a lovely home, and generally always have access to nutritious foods. Nonetheless, they operate on a tight budget – they get around by bus, they work hard, and they have limited capacity to go out or buy clothing or household goods. According to Pastora, some months are more difficult financially than others. The patio provides a means of balancing out or making up for other shortfalls:

Pastora: “si estamos un poquito cojos por alguna situación en la parte económica, ahí nivelamos otra vez la cosa por lo que se vende, porque es bastante cantidad, por lo tanto no podemos consumir todo eso, entonces regalamos un poco, a algunas personas, conocidos, vecinos y entonces la otra parte es la que se vende y esta parte nos ayuda, nos beneficia a nosotros generalmente, porque hay veces un mes que está más cojo, o otros meses está más pa’ arriba”.

[Pastora: if we are a little shaky because of any economic situation, we balance things out again with what is sold, because it is a fair amount, so we can’t consume all that. So we give some away to some people – acquaintances, neighbours – and then the other part is being sold and that part helps us. It’s beneficial to us generally, because sometimes one month is tight, or other months things are better.]

The amount eaten, saved or earned varies from month to month based on needs, yields, buyers, availability, and other opportunities. Whether something is considered a savings or income may be unclear, as highlighted in this quote from Francisco:

Francisco: “Los plátanos me ingresan una cantidad de dinero y los gastos que yo iba a tener por la carne también es un ingreso para mí, porque no tengo que gastar. Yo digo, si yo me como diez conejos yo tengo mil pesos que dejo de gastar, por ejemplo, y si no compro guayaba a tres pesos la libra, yo que consumo 10 libras semanal, son 30 pesos de que me dejo de gastar. O sea, económicamente eso nos ayuda porque tenemos la opción de escoger otra cosa, que la necesitamos pero que puede ser del dinero que dejamos de gastar porque tenemos la carne, porque tenemos la fruta”.

[Francisco: The bananas bring me a quantity of money, and the expense that I would have had for the meat is also income for me, because I don’t have to spend. I say, if I eat ten rabbits I have 1000 pesos that I have saved. For example if I don’t buy guava at 3 pesos per pound, me who eats 10 pounds a week, that’s 30 pesos that I have saved. That is, economically that helps us because we have the option of choosing something else that we need, but it can be from the money we saved because we have meat, because we have fruit.]

The patio is not the family’s only source of fungible (in-kind) income – food rations are also an important part of the equation. For example, the family buys their monthly quota of eggs through the rationing system, which are incredibly cheap. Having these eggs allows them to sell more of the eggs produced by their own hens to their neighbours:

Francisco: “...nosotros cogemos un par de cartones de huevos o tres a lo mejor en el mes”.

Joanne: “¿La mayoría son para la familia?”

Francisco: “La mayoría no, una parte, no todo, porque....mira, ahora mismo yo cogí los que nos dan por la bodega, por la libreta que son 30 huevos los que nos tocan”.

[Francisco: ... we get a couple of cartons of eggs, or three at best, every month [from the patio].

Joanne: Are most of them for the family?

Francisco: Most of them no, a part, not all because... look, just now I picked up the eggs that they give us though the bodega, through the ration book, which are 30 eggs that we are entitled to.]

Quality of Life: Spending on Basics and Comforts

The extra money that is available due to cost savings and sales allows the family to buy other foods that they do not produce. However, both Pastora and Francisco emphasized that the economic freedom provided by the patio is not only about food, but also about other needs, and expenses related to comforts or quality of life:

Francisco: “los he mantenido, porque a mí me sirven de alimento pero además me sirven de obtención de dinero pa’ invertir en otras cosas, que nos ahorramos. Con ese dinero yo hago muchas cosas, compro cosas pa’ la casa, pintura por ejemplo, y otras cosas más, paseo, también”

[Francisco: I have maintained them [the rabbits], because for me they serve as food but beyond that they serve as a way to obtain money to invest in other things; money we’re saving. I do a lot of things with that money, I buy things for the house, paint for example, and other things too; I also go out.]

Pastora: “La ayuda en la casa también, no sólo es comer, mira compramos pintura pa’ pintar la casa, entonces algo que hay que arreglar lo arreglamos... compramos cosas pa’ adornar la casa, cosas así que vamos...no solamente pensar en comida, los alimentos, sino también hay que pensar en las cosas que uno ve, así bonitas, como es el caso de tener las cosas lo mejor posible, sin mucho lujo, pero lo mejor posible, lo más bonitas posible y uno sentirse bien y agradable porque ya uno que está dentro de la casa el mayor tiempo, debe de sentirse lo más cómodo posible ...eso es lo que pretendemos”

[Pastora: And help at home too, it’s not just eating; look, we bought paint to paint the house, and then something needs to be fixed and we fix it... we buy things to decorate the house, things like that... we don’t only think about food and eating, we also have to think about the things one sees, pretty things like that. It’s a case of having things as nice as possible, without much luxury, but the best possible, as pretty as possible, and one feels good and nice, because someone who is in the house most of the time has to feel as comfortable as possible... that’s what we’re aiming for.]

Enjoyment, Meaning and Therapeutic Effects

During my many visits with Francisco, Pastora and Jorge, it was clear that they do not only produce animals, fruits and vegetables because of the economic benefits (including access to food and other comforts or activities). The entire family shows an interest in agriculture, and the patio represents both work and leisure for all of them. They all demonstrated a great deal of pride and enthusiasm when talking about or showing me their patio and products.

Francisco has been working in agricultural sciences for many years, and is very active in local urban agriculture organizations and activities, particularly related to raising small animals. He gives frequent seminars and is very knowledgeable not just about the technical side of agriculture, but also about the broader administration and politics of

agriculture in Cuba. He is passionate about his work, and the home patio seems to be an extension of that work. In fact, there seems to be a symbiotic relationship between the two. His studies, professional experience, and contacts contribute important knowledge to his home production, and his work provides access to some resources, such as the grass he sometimes brings home from work for the animals. At the same time, he reports that his experience with his home patio has also helped him with his professional activities:

Joanne: "Y ¿a usted le gusta tener, producir esas cosas?"

Francisco: "Sí, me gusta porque yo trabajo y soy especialista y le doy conferencia a la gente, a las personas, ¿entiendes? Y entonces eso me sirve a mí para ver si es verdad lo que les estoy diciendo a las personas... yo hago los mismos estudios que hice allá, los hice aquí, los estudios de caso con las reproductoras los hice aquí y eso me ayudó a un resultado que puedo decirles a las personas que es así".

[Joanne: And do you like having, producing those things?

Francisco: Yes, I like it, because I work and am a specialist [in agriculture], and I give seminars to people, you understand? And so this helps me to see if it's true, what I am saying to these people... I do the same the studies that I did there, I did them here [at home]; the case studies with the female reproducers, I did them here and that helped me achieve some results, so I can tell people that yes, it's like this.]

It is clear that agricultural production (at work and at home) is both a vocation and a personal interest for Francisco. Agriculture is his career and his passion, and his achievements at home and at his job are clearly a source of pride and enjoyment.

Pastora does not have professional ties to agriculture, but she also has some important reflections on the more therapeutic and spiritual benefits of growing food and other plants at home. She gets a lot of enjoyment and satisfaction out of the family's patio, and reports that the entire family enjoys the work they do there and the escape from the usual indoor chores:

Pastora: "... también que es entretenimiento, a veces es un entretenimiento, un aporte como sembrar una mata, como... echarle agua a las matas, ver uno las cosas, los animales que prosperan, las plantas igual que prosperan... el pedacito ese que es chiquito ahí, pero eso nos aporta muchísimo a nosotros también en todos los aspectos, y nos sirve de entretenimiento, de esparcimiento, porque estás trabajando y no estás pensando en otros problemas y otras cosas, estás trabajando ahí con los animales, estás echándole comida, agua. Todas esas cosas son fundamentales, porque uno se...sale de la misma rutina de lo que es la casa, del lavado, del fregado, sales de esa rutina, entras en otras cosa distinta y por eso te digo que esa parte es...es muy beneficiosa para todos, para todos los que vivimos aquí"

[Pastora: Also, it's entertainment, sometimes it's an entertainment, a contribution like planting a tree, like.... to water the plants, to see one of the things, one of the animals thrive, or the plants flourish... That little bit of land there, it's tiny but it contributes a lot to us in all aspects, and serves as a pastime, leisure, because you're working and you're not thinking about other problems and other things, you are working there with the animals, you're giving them food, water. All those things are fundamental, because you get out of the same household routine of washing, scrubbing; you get out of that routine, you get into different things and that's why I say that that part is ... it is very beneficial for everyone, for all of us who live here.]

These comments reveal the complexity of this family's motivations for producing food. Although the economic benefits are of clear importance to the family's well-being, the act of gardening and raising animals also produces a number of less tangible benefits including enjoyment, leisure and pride.



Figure 7: Pastora and Jorge admire the animals in their back yard

Contributing to the Collective

For this family, food production also represents a way for them to contribute to their community. A common theme in my discussions with Francisco and Pastora was the challenging economic climate, specifically in Cuba as well as globally. They both stressed the need for urban food production, and urban agriculture's significant contributions to the local food supply. Given the frequent shortages of various products, they both imply some sense of duty for everyone to help their community or contribute what they can to Cuba's self-sufficiency. For this family, producing their own food and food for others is one such contribution.

Francisco: "...la situación del país es bastante seria, no para este país, es para muchos países, es bastante difícil, entonces es necesario que las personas piensen que todo no puede venir del aire y que tenemos que trabajar más y que tenemos que hacer más esfuerzos para sustentarnos, en la medida en que se pueda".

[Francisco: ... the country's situation is fairly serious, not for this country, it is for many countries; it's quite difficult. So it's necessary that people think that not everything can appear out of thin air, and that we need to work more and that we need to make more efforts to sustain ourselves, in whatever way we can.]

Francisco and Pastora both noted that not everyone is able to produce food, or is interested in producing food. Because this family has the opportunity and capacity to produce, they are able to grow food for people who cannot or do not:

Francisco: "... los que puedan hacerlo porque es lógico, él que vive en un edificio es muy difícil que pueda hacer esto pero las personas que tienen espacio que puedan eh, ya sea sembrar, ya sea... criar animales yo creo que debían de hacerlo porque esa es la forma que vamos a tener para sustentar el bienestar de la familia, empezar por la familia, por las familias, que es lo que yo he hecho. Trabajo para mi familia pero le he dado cabida también a otras familias que tienen que pagarlo, que a veces son personas que tienen ehhh una situación que les permite comprar y no tener que criar pero bueno, yo tengo la posibilidad de vender, y de ayudarlos en su dieta diaria..."

[Francisco: ... those who can do it – because it’s logical, the guy who lives in an apartment building, it’s very difficult for him to be able to do this – but the people who have space, that can plant vegetables... raise animals, I think they should do it because this is the way we are going to have to sustain the wellbeing of our families; beginning with the family, with families, which is what I have done. I work for my family but I have also given capacity to other families that have to pay for it, that sometimes may be people who have, uhhh, a situation that lets them buy and they don’t have to raise animals, but well, I have the possibility of selling, and of helping them with their daily diet.]

Promotion, Education and Advocacy

While acknowledging that some people are unable to grow food or are not interested, both Pastora and Francisco clearly believe that more people should be producing food on a small scale as they do. They explained with conviction the very real benefits they have enjoyed as a family and the benefits to the community as a whole, emphasizing that anyone can do this and produce the same benefits in their communities and families.

Pastora: "... la agricultura urbana aquí... siempre va a reportar, si se lleva a cabo siempre va a reportar grandes beneficios para la familia y para la comunidad, para en forma general grandes beneficios, porque esto pequeñito aquí, nosotros hemos logrado cosas porque la vivimos en experiencia, por eso... no porque lo digan, ni porque lo otro, es porque vivimos esta experiencia, porque la estamos viviendo, la estamos mirando que sí, que se puede, que hay logros, hay beneficios."

[Pastora: ... urban agriculture here... is always going to produce. If it’s carried out it will always yield great benefits for the family, and the community. In general, it brings great benefits. Because even with this little piece of land we have here, we have accomplished things. And we live it, we experience it. It’s not because they say so, or because of something else; it’s because we live this experience, because we are living it, we are seeing that yes, you can; there are achievements, there are benefits.]

Speaking about the results and benefits they have achieved through their home production, they seem very eager for other families to dedicate themselves to similar projects, for the good of the country but also so they can also enjoy the same benefits that this family has.

Pastora: "... yo creo que cada persona que tenga un pedacito de patio, aunque sea así como tenemos nosotros, puede sembrar sus maticas, puede tener sus animales, puede cosechar cualquier tipo de verduras, de frutas, de plantas, aunque sean las ornamentales, las plantas que tienen flores también lucen muy bonitas, y entonces yo

creo que sí, que todas las familias debían de poner su pedacito en eso, y luchar por eso, llevar a cabo eso, que le viene bien”.

[Pastora: I believe that every person who has a bit of a yard, even if it's just like the one we have, can grow their little plants, can have their animals. You can harvest all kinds of vegetables, fruits, plants, even ornamental plants that have flowers, they look very nice too. So yes, I think that all families should put their little piece of land into this, and fight for this, and make this happen, because it works for them.]

Taking part in this research project represents another opportunity for this family to share their story, and Pastora comments that she hopes it will result in more families taking an interest in agriculture so that they might benefit in the same way:

Joanne: “Bueno, muchísimas gracias, Pastora. ¿Usted tiene algún otro comentario?”

Pastora: “No, no. Está bien, está muy bien. Nosotros nos sentimos bien porque tú has venido. Esto se puede hablar, divulgar, como tú estás haciendo, para que entonces todo el mundo se ponga a pensar un poquito más y pueda hacer lo que hemos hecho nosotros (risas de Pastora)”.

[Joanne: Well, thank you very much, Pastora. Do you have any other comments?

Pastora: No, no. It's good; it's great. We're really happy that you have come. That we can talk, share, like you're doing, so that maybe everyone is made to think a little more and is able to do what we've done (laughs).]

Challenges

Challenges Posed by Nature

In addition to the extra work of taking care of the patio, in particular the rabbits, the family reported a few other limitations and challenges to their production. As most gardeners do, they complained about pests and occasionally have to have someone come to spray the trees. This is arranged by request through the Tiendas Consultorios del Agricultor (TCAs), and is affordable. However, during my fieldwork they waited several weeks before the fumigator showed up.

Space

All of the family members frequently referred to the patio's small size. Francisco noted that he could produce a lot more and make much better use of opportunities for state support if he had more space, but that acquiring more land is not feasible for the family in terms of time and money. However, they recognized that not everyone has access to land of any size, and part of maximizing their yard's productivity was about taking advantage of the opportunity they have, as well as contributing to the food supply and producing for those who cannot or do not produce.

Needed Inputs

Francisco and Pastora also reported some challenges related to the relative scarcity or cost of necessary inputs. Both of them spoke with me about the challenges of obtaining quality feed for the animals, which would be better than the plants and cooked food they are currently fed. When they were producing for the state, in their first years of production, they agreed that having the state provide the feed was a welcome support. However, even at the national level, the supply of feed is challenging – Francisco and Pastora reported that there were problems with the quality of feed provided and that they had to leave the contract (and the inputs) behind. Francisco reported that other inputs, such as tools, are also relatively expensive, even those bought through the state-run TCAs.

CASE #2: ANTONIO AND ANA

Background

Antonio and Ana, both retired, live in Nuevo Vedado, a mostly residential area near the city centre, southwest of the Plaza de la Revolucion. Antonio is in his 80s and Ana is in her 70s. They live in a small semi-detached home about 3 km away from Central Havana, with their daughter Laura, her former husband Ernesto, and Laura and Ernesto's son Ernestico (or "little Ernesto" – he is in his 20s). Laura, Ernesto and Ernestico all work outside of the home Monday to Friday; Antonio and



Figure 8: Antonio working in the garden

Ana are generally around the house most of the day. Antonio began

gardening in the backyard, mostly as a hobby, when he retired from the military in 1980.

The home's backyard is fairly large and is entirely occupied by agriculture, including garden beds, fruit trees and several cages of chickens. Currently, the back patio holds 14 long garden beds; 2 of those are permanent crops of aloe and the others hold a regular rotation of seasonal vegetables. During my fieldwork, Antonio's vegetable crops included tomato, lettuce, parsley, spinach, chives, garlic, squash, and yucca. The yard

also holds two large avocado trees, a sour orange tree, about eight plantain trees and eight banana trees, as well as many herbs and ornamental and medicinal plants. There are several pens holding a total of about 40 chickens, which are kept primarily for their eggs. The family consumes vegetables, fruit, eggs and occasionally chicken from the patio. The remaining majority of the vegetables and fruit are sold to neighbours.

I visited with Antonio and Ana eight times; sometimes other members of the family were home as well but it was often just the three of us and the many neighbours who would drop by. Ana would pour me cup after cup of strong, sweet coffee and would try to feed me on every visit. I stayed for lunch a few times and enjoyed delicious meals that always included some of the vegetables from the patio. On every visit, Antonio and I would spend some time in the garden – we would walk around while he updated me on everything that had grown or had been sown or harvested since my last visit. He refused all of my offers to help, but whenever I asked him to show me things he was happy to let me get my hands dirty while he taught me the finer points of transplanting lettuce or harvesting yucca.

Beginning Agricultural Production

Antonio is originally from rural Cuba, and he has a passion for agriculture. He has always done some sort of gardening, but around 1980 he began producing food more seriously in the backyard. At that time, access to food in Cuba was fairly stable and the family had no major economic reasons for beginning to produce food. Antonio dedicated himself to raising animals and plants in the backyard as a hobby and to keep the patio clean and productive. Antonio prepared the yard and began the work by himself, though he jokes that his family “[helped me spiritually]”. Although his motivations stemmed more out of interest than need, the family has always consumed the products grown there and sold the surplus to the public.

Inputs, Assets and Activities

Material Inputs

Access to Land

The large backyard is the primary factor allowing this family to dedicate themselves to agricultural production. Both Antonio and Ana recognized that not everyone has access to such land, which despite being much smaller than the farm

Antonio wishes he had, provides ample space for producing fruit, vegetables and animals.

Ongoing Material Inputs

Antonio has a lot of knowledge and resourcefulness when it comes to agricultural production, and he reports that he needs little in terms of ongoing inputs to maintain what he describes as a small patio. For the past six or seven years Antonio has worked with a German-Cuban NGO which has provided some materials at a modest cost, including hoses, tools, and fencing and roofing for the animal cages. All other inputs, including animal feed, seeds, other tools, soil and fertilizer, he must find, produce and/or purchase himself. Nothing goes to waste in his back patio – he uses leftover food from the house and garden waste to feed the chickens and make compost, which he then uses as fertilizer. He also obtains waste products (free of charge) from the market, which contribute to the animals' diets as well.

Non-material Inputs

Labour

Antonio does the majority of the work related to the patio, but is helped by his (former) son-in-law Ernesto. The plants are Antonio's sole responsibility, while Ernesto cleans the chickens' cages and feeds the animals before and after work. According to Antonio, the patio requires very little work and maintaining it takes little time. Ana's description of how active the garden keeps him active paints a different picture:

Ana: "... está todo el día entero de pie, él está todo el día en eso, cuando no es sembrando, es guataqueando, cuando no es limpiando el cantero, ¿comprende? Siempre está haciendo algo, y buscando comida pa' los animales, pa' las gallinas, todo eso. Él busca la comida en la calle, que se la guarden..."

[Ana: ... he's on his feet all day, he spends the whole day on that; when it's not planting, it's working with the spade, when it's not cleaning the beds, it's... you understand? He's always doing something, and looking for food for the animals, for the hens, all that. He looks for the food out in the street, which they keep for him.]

Everyone in this home has more or less specific chores or duties which they carry out. Laura, Ernesto and Ernestico all work outside of the home Monday to Friday; they help with cleaning or laundry when they are home. Antonio and Ana are generally around the house most of the day. Ana spends most of her time in the kitchen; cooking, cleaning and making coffee or food to serve to the nearly constant visitors. Antonio is back and forth between the back yard and the hallway; puttering in the garden, chatting

with neighbours, or fetching them some vegetables or medicinal plants from the back yard. He also does the errand-running and food shopping for the family.

This division of labour is roughly based on what each person is able to contribute based on their free time, interests and abilities. Because Antonio and Ana are retired and home most of the time, they do more of the household work than the other three, who work full time. Antonio spends the most time in agriculture, because it is his main hobby. Although he reports that

he is very healthy and almost never sick, the few times he has been unable to work Ana has watered the plants for him. Ana used to do more of the errands in addition to the housework, but in the past 10 years her health has declined somewhat and on the doctor's advice that job became Antonio's.



Figure 9: Ana at home in the kitchen

Knowledge and Resourcefulness

Another important element in the production on this patio is Antonio's extensive experiential knowledge and resourcefulness. His knowledge of plant cycles, optimal growing conditions and timing, and the re-use of waste products as fertilizers and animal feed allow him to maximize production within the constraints of his available land and resources.

Outcomes and Benefits

Material Benefits

Access to Food and Medicinal Plants

The patio provides the family with direct access to a range of medicinal plants and foods including eggs, plantains, fruit, root vegetables, and other vegetables and herbs. Once in a while Antonio or Ernesto will kill a chicken and the family will eat it, although they report that the chickens they raise are mostly for the eggs as the meat produced by the specific breed is not the best for eating. Within the family, tastes vary with respect to vegetables and herbs, but these are eaten to some extent by different family members, and the patio's eggs and root vegetables are staples in the family's

diet. Although the family did not have trouble accessing food in 1980 when they began producing, the circumstances in the country have changed dramatically since that time, and the patio has been an important help:

Joanne: "Entonces, según usted ¿cuáles son los beneficios de tener el patio aquí en la casa?"

Ana: "Bueno, ¿el beneficio para la casa, para nosotros? Muy importante, porque mira tenemos los vegetales, tenemos huevos de las aves, a veces hace falta y se mata un animal de esos, un ave y tenemos para hacer una sopa, hacer un arroz, ¿comprende? Sí, sí, cómo no...nos aporta mucho, aquí hay matas de aguacate, tenemos matas de naranja agria, si nos hace falta naranja agria nada más vamos a la mata y la cogemos, ¿comprende? Y los vegetales, bueno... todos los vegetales que se siembran ahí, que Antonio siembra... sí, cómo no...nos reporta muchísimos beneficios, ese patio ha, ha resuelto muchísimos problemas aquí, muchas cosas"

[Joanne: So, according to you, what are the benefits of having the patio here at home?

Ana: Well, the benefit for the house, for us? Very important, because look, we have vegetables, we have eggs from the birds, sometimes it's needed and we kill one of those animals, and we have it to make soup, to make rice, you understand? Yes, yes, of course, it contributes a lot; here we have avocado trees, we have sour orange trees, if we need sour orange we just go to the tree and get it, you know? And the vegetables, well, all of the vegetables that Antonio plants there... yes, of course, it brings us a lot of benefits, that patio has resolved a lot of problems here, many things.]

The patio is only one source of food for the family, which they combine with the foods they are entitled to through the state rationing system, and those they buy at the free farmers' markets. Through the patio they have convenient and free access to some foods and medicinal plants, sometimes including products that may be temporarily unavailable through their local markets.

Saving and Earning Money

The garden produces many more fruits, vegetables and herbs than the family can eat. Like Francisco (Case 1), Antonio has a permit to sell his surplus products to the public, from home. Neighbours drop by regularly looking for various vegetables, herbs, fruits and medicinal plants.

Ana: "Aquí todos los días viene alguien siempre, cuando no es una cosa es otra. Unos vienen a buscar perejil, otros vienen a buscar sábila, otros vienen a buscar remedios para el catarro, siempre es algo".

[Ana: Someone comes here every day; when it's not one thing it's another. Some come looking for parsley, others come looking for aloe, others come looking for remedies for colds; it's always something.]

In addition, about once or twice a month, when there is a good quantity of a crop, for example lettuce, Antonio will harvest it and set it out to sell in front of the house.

Sometimes the money earned through these sales is used to buy other foods, such as another type of meat, or other things for the home or garden.

According to Antonio, the income from the patio is roughly equivalent to one additional salary in the household. He says that the patio would be a more significant source of income for the family if it were bigger, but that it does provide economic relief. Both he and Ana highlight the economic benefits, including saving and earning money, which help make ends meet on the family's limited income:

Antonio: "... lo que yo no consumo, lo vendo y eso es una entrada más que tengo que es una ayuda, porque nosotros los jubilados tenemos poco salario, no alcanza para sufragar los gastos de la casa, entonces eso es una ayuda..."

[Antonio: ... what I don't eat, I sell, and that is an additional income that I have, which is a help, because those of us who are retired have a very small salary; it's not enough to cover the expenses of the house, so that is a help...]

Non-material Benefits

Meaning, Pleasure and Health

Antonio strongly identifies with his rural roots, and is very passionate about agriculture and its benefits to producers and mankind:

Joanne: "Y para usted ¿qué significa la producción de alimentos?"

Antonio: "Bueno, hija, la producción de alimentos es lo más importante que... tiene el ser humano porque de ahí es su vida, y si tú no produces tienes que buscar la forma de adquirirlo, y cuando tú tienes una entrada que holgadamente puedas eeehhh, adquirir los alimentos fuera de tu área, pues está bien, pero así todo es un sacrificio, entonces cuando tú tienes la posibilidad de producir los alimentos es un beneficio, es un beneficio. No es lo mismo ir al mercado a buscar un mazo de lechuga a ir al patio que lo tienes ahí mismo, y además vas al mercado y tienes que desembolsar el dinero y en el patio uno no tiene que hacer eso".

Joanne: "Entonces ¿para usted además de ser un modo de producir, es una obligación?"

Antonio: "No, para mí es un, es un placer trabajar, ver las siembras crecer, verlo todo bonito, es un placer".

[Joanne: And what does the production of food mean to you?

Antonio: Well, hija [my daughter], the production of food is the most important thing... that humankind has, because that's where his life comes from. And if you do not produce you have to find a way to acquire it, and when you have an income that you can comfortably uhhh, buy foods out of your area, well that's fine, but that way everything is a sacrifice. So when you have the possibility to produce food, it's a benefit, it's a benefit. It is not the same, going to the market to find a head of lettuce, as going to your yard and you have it right there. And what's more, you go to the market and you have to spend money and in the yard you don't have to do that.

Joanne: So for you, as well as being a way to produce, is it an obligation?

Antonio: No, for me it's a, it's a pleasure to work, to see the crops grow, to see everything looking nice, it's a pleasure.]

In my conversations with both Ana and Antonio, they both seemed to place great importance on the less tangible benefits of food production, such as the pleasure and satisfaction of gardening and producing food, and the opportunity to stay active and productive in retirement:

Antonio: "... lo que yo siembro yo no te voy a comprar, entonces yo me ahorro, ese dinero yo me lo ahorro, entonces esa es ya una ventaja, además es un pasatiempos, es un pasatiempos porque tú te entretienes, viendo las plantas cómo crecen, en el sembrado, en el picado, en el regado, tú pasas el tiempo entretenido... para los jubilados eso es lo mejor que hay porque te entretiene y es un entretenimiento útil, útil porque tú percibes beneficios, de ese entretenimiento percibes beneficios".

[Antonio: ... what I plant I am not going to buy from you, so I'm saving that money, so that's already a benefit. Beyond that it's a pastime, it's a pastime because you entertain yourself, seeing the plants, how they grow, in the planting, in the digging, in the watering, you spend your time being entertained... for retired people that's the best there is, because you entertain yourself and it's a useful entertainment, useful because you perceive benefits, from that entertainment you perceive benefits.]

Although Antonio and Ernesto are the ones primarily involved with the backyard and the food production, Ana also maintains many ornamental plants in front of the house, and often sweeps or tidies the backyard. Both she and Antonio report that the patio has improved their quality of life and provided them with enjoyment and physical activity. According to Ana, this physical activity has also produced some physical health benefits, at least for Antonio:



Figure 10: Antonio uses basic hand tools to tend and transplant crops

Ana: "ha beneficiado en la salud, porque bueno, empezando que Antonio está así como está por el ejercicio que hace todos los días, por estar todos los días trabajando, todos los días, ¿comprende? Activo, está activo constantemente, eso le ha beneficiado porque si estuviera sentado en un sillón, quizás estuviera postrado porque la persona mayor... no puede estar sentado todo el tiempo".

[Ana: ... it has benefited our health because, well, beginning with Antonio, he is how he is because of the exercise he does every day, from spending every day working, every day, you understand? Active, he's constantly active; that has benefited him because if he was sitting in a chair, he might be bedridden, because an older person... can't be sitting down all the time.]

Contributions to the Collective

Although the economic benefits, food and leisure associated with growing food are important for this family, Antonio also emphasized the contributions of small-scale urban agriculture, his own and in general, to the broader community.

Antonio: "...sería conveniente que el Estado pusiera un poco más de interés porque los patios y las parcelas han ayudado mucho a la producción. En el Período Especial eso fue una parte muy importante, ayudó mucho a la alimentación, a la alimentación, no tanto así a la población independiente como al productor que por lo menos era un era un producto menos que tenía que trasladar el Estado. Cuando tú dejas de comprar un mazo de lechuga, es un mazo de lechuga más que hay para el que no puede producir"

[Antonio: ...it would be a good idea if the State took a little more interest, because the yards and community plots have really helped the production. In the Special Period that was a really important part, it helped a lot with the food supply. Maybe not so much the public as the producer, but at least it was one less product the state had to transport. When you stop buying a head of lettuce, it's one more head of lettuce available for the person who can't produce].

While recognizing that not everyone has access to land, or the knowledge or the desire to take up agriculture, Antonio and Ana also suggested that more families should be producing on a small scale, for the benefit of themselves, the community, and the country.

Antonio: "[los técnicos de la Agricultura], su función es visitar... los patios que estén sembrados y los que quieran sembrarlos, bueno, mejor todavía porque hace falta que todo el mundo que tenga un patio lo siembre porque así el país se ahorra una pila de cosas, por lo menos pueden sembrar la especie, la especie, que eso se siembra en poco espacio, pueden sembrar una pila de productos que no tienen que comprarlos después en el mercado".

[Antonio: [The Ministry of Urban Agriculture's extension agents], their function is to visit the patios that are planted, and the ones that people want to plant; really, even better because what's needed is for everyone who has a patio to plant it, because that way the country is saved a bunch of things. At the least they can plant spices, which you can plant in very little space, they can plant a bunch of things that then they won't have to buy in the market.]

Even this family's own production creates some benefits for the broader community. First, it provides neighbours with access to fresh, affordable foods and medicinal plants, close to home:

Antonio: "Yo saco para venderle allí y esos vecinos no tienen que ir a ningún lugar, lo tienen ahí...y yo se lo vendo más económico también y más fresco porque yo la corto por la mañana y a los 5 minutos está en tus manos ya, y no lo que viene del mercado, hay veces que viene de dos días... esa lechuga como quiera que sea, ya viene marchita, ya esa lechuga viene estropeada, por el transporte..."

[Antonio: I harvest it to sell out there, and those neighbours don't have to go anywhere, they have it right there... and I sell it more economically too, and fresher, because I cut it in the morning and 5 minutes later it's in your hands. Not the stuff that comes from the

market; sometimes it arrives 2 days later... that lettuce, no matter how it is, it comes already wilted, it comes damaged, because of the transportation...]

Antonio knows that a lack of land is not the only reason why people might not grow food; recognizing that not everyone who has a patio is “[addicted to planting]”. However, he feels if they have the will, there is no reason why they shouldn’t be able to produce, even if there is a learning curve:

Antonio: “claro, que todo el mundo no tiene un patio, un patio de tierra, y todo el mundo no sabe cultivar... entonces hay veces que no tienen voluntad tampoco, porque si tuvieran voluntad... porque cualquiera... viene un amigo y yo le enseño cómo se cultiva, porque a mí no me cuesta ningún trabajo irle a enseñar cómo se cultiva...”

[Antonio: Of course not everyone has a patio, a patio with soil, and not everyone knows how to cultivate... then sometimes they don’t have the will either, because if they had the will... because anyone... a friend comes here and I teach him how to cultivate, because it’s no work for me to go show him how it’s done.]

On more than one occasion, while visiting with Antonio and Ana, I saw Antonio giving advice to other gardeners or offering to go to look at someone’s yard and advise them on the best crops for their conditions and how to get started. On this level he is also promoting small-scale agriculture within their neighbourhood, and sharing his extensive knowledge.

Challenges

Challenges Posed by Nature

As in any garden, infestations by various pests are an ongoing challenge, which according to Antonio, one has to “[stay on top of constantly]” or risk losing a crop. The threat of hurricanes in Cuba, particularly since the vicious season of 2008, is also an ongoing concern, especially in terms of the large trees in the yard which are an important source of fruit that the family eats and sells.

Space

Antonio frequently describes his patio as “chiquito” – very small – with little capacity for production. By urban standards, including in Havana, most would consider the yard fairly large at approximately 360 square metres, and the scale of his production is impressive, as seen in the photos in this section. However, his early years on the farm in rural Cuba instilled in him such a love of agriculture that he wishes he had more space and could do more.

Antonio: “Con este sistema que hay ahora incluso, se están dando las tierras, se están dando las tierras a personas que las quieran trabajar, las tierras ociosas, y está dando muy buenos resultados... Si yo tuviera 30 años menos, yo iría pa’ una finca de esas,

seguro, seguro (risas de Joanne y Antonio). Lo que pasa es que yo ya no puedo estar en eso, como dice la canción esa...

[Antonio: With this system we have now even, they are giving away land, they are giving land to people who want to work it; idle land, and it's producing really good results... If I were 30 years younger, I would go for one of those farms, for sure, for sure (both laugh). The problem is that I can't be part of that anymore, like that song says...]

Needed Inputs

Although he reports needing few inputs to *maintain* his patio, Antonio believes he could dramatically increase his production if he had access to some inputs which are scarce and/or very cost prohibitive. A major challenge in terms of the animal production is the scarcity and cost of animal feed. Like Francisco (Case 1), he primarily feeds the chickens with garden waste and cooked food, as grains such as corn or dried peas are scarce and their prices have increased to a level he cannot afford.



Figure 11: The animals at Antonio and Ana's house eat cooked food made from household scraps and market waste

Joanne: "¿Cuántos huevos más o menos se producen?"

Antonio: "Están poniendo poco... por problemas de la alimentación porque estamos alimentando con comida cocinada, que no es lo mismo que si tuviera pienso. Nosotros tenemos como 40 animales y el problema es la comida cocinada no produce huevos, se mantienen pero no dan producción".

[Joanne: How many eggs are produced, more or less?

Antonio: They are not laying many... because of diet problems, because we are feeding them with cooked food, which is not the same as if I had proper feed. We have about 40 animals and the problem is that cooked food doesn't produce eggs; the animals are maintained but they don't produce.]

Another challenge is soil fertility, as Antonio reports that the fertilizer and compost he makes in the yard are not enough to restore sufficient nutrients to the soil. Another input which he wants but cannot afford is a protective mesh covering (the use of which is increasing in Cuba [Agencia de Información Nacional, 2010]) which blocks the sun and can dramatically increase production in the hot summer months:

Joanne: “Y, ¿es porque no se encuentra, o...?”

Antonio: “Lo hay, lo hay pero es área dólar, es área dólar y entonces yo no lo puedo comprar, en primera, y el Estado no te ayuda en eso, porque los patios no tienen la mayor importancia y hay una política de sembrar todos los patios pero es con el interés del dueño del patio, ahora mismo el interés es mío, de yo sembrar para mi beneficio”.

[Joanne: And is it that you can't find it, or...?]

Antonio: It's there, it's there, but it's sold at the dollar stores, it's a dollar thing so I can't buy it, first of all. And the state doesn't help you in that, because the patios aren't of the highest importance, and there is a policy to sow every yard but it's in the interest of the owner. Right now the interest is mine, of me planting for my benefit.]

CASE #3: FULGENCIO, EVA AND ENRIQUE

Background

Fulgencio and Eva, both in their late 60s, live with their son Enrique and his partner Miriam. Their spacious home is about 3.5 km from Central Havana, near Antonio and Ana in Nuevo Vedado. They have a lot, or *parcela*, in a wooded area about a 15 minute walk from their house, where they run a small family business called Ecofel, producing organic material, compost and organic liquid fertilizer through vermicomposting (worm composting). For the past 5 years they have been living solely off the proceeds of this production. Fulgencio and Enrique do the physical work at the *parcela*, while Eva is responsible for the technical, information and communication sides of the business. Miriam does not work outside of the home, but runs errands and does a lot of the daily chores around the house.

The family describes their production at Ecofel as very artisanal. The work is very much a manual process, with little advanced technology or equipment. They have no staff; the family does all the work themselves. The solid organic material and compost are sold in 5, 10 and 30kg sacks, and the concentrated liquid fertilizer is sold in 700ml and 1.5L bottles. They sell 90-95 percent of their products to the state for distribution (at subsidized prices) at markets, roadside vendors and TCAs. The rest is sold at the *parcela*, and occasionally given away to others in the neighbourhood.



Figure 12: The *parcela* where Fulgencio, Eva and Enrique make fertilizers

I visited the family at their home and at the parcela six times. Usually I would make arrangements to visit when Eva would be home, since she was more likely to be in the house than Fulgencio or Enrique. She and I would chat at the kitchen table and drink pot after pot of coffee. Because the parcela was close by, Fulgencio or Enrique would often come home during the day to pick something up or to make or eat lunch. I sometimes ate lunch with them, and then we would walk up to the parcela together. Despite the obviously heavy workload at the lot, they insisted that they needed and wanted no help from me – they only wanted to share information and help me with my thesis.

Beginning Agricultural Production

This family became involved in urban agriculture in 1998. At that time, they were working in state jobs at a company that makes elevators. They found their salaries were not enough to make ends meet, so they began producing ornamental plants for sale to the public. Soon the state granted them a piece of land (formerly an informal garbage dump) to clean and restore and use for their production. In the year 2000 the state approached them to begin producing organic material and compost instead of ornamental plants. The state provided training, and Eva, Fulgencio and Enrique spent two years making organic material with a staff of 44 people. In 2002 they also began producing liquid organic fertilizer, but the entire operation was halted by the state that same year, for reasons they did not explain. In 2003 the family was granted the piece of land they currently use, and resumed their work producing compost and fertilizers, this time with no staff:

Fulgencio: “Volvimos a hacer aquello, con las ideas que teníamos antiguas, o sea, de los años primeros, pudimos perfeccionar lo que nosotros queríamos, que con tres personas hacíamos la producción de 44 personas”.

[Fulgencio: We went back to doing that, with the ideas we'd had before, that is, from the first years we were able to improve what we wanted, and with three people we were doing the production of 44 people.]

Inputs, Assets and Activities

Material Inputs

Access to Land

Many of the physical inputs needed for Ecofel's production are provided by the parcela the family was granted by the state. The lot provides excellent conditions for

their production and is centrally located and close to home. The parcela is large (800m²) and shaded, dominated by an enormous short leaf fig tree, whose hundreds of trunks and twisted vines provide ample shade for the vermicomposting practiced there. The parcela has electricity (which they pay for) to run the machinery and lights, as well as a storage shed and a small building which serves as the office and as a workspace on rainy days. There is a river behind the lot which serves as a valuable water source. There are large mounds, filled bathtubs, and neat rows of earth that have been 'planted' with worms, all in various stages of production.

Equipment

Ecofel has a large manual mixer which aerates, combines and sifts the solid products, and a system of large cisterns where the liquid product is produced and concentrated. The family has worked over the years to gather, build and refurbish the larger equipment they use; these items are crucial, but buying them new would be impossibly expensive for this family.

Fulgencio: "Los recursos...son muchos los que necesitamos pero no nos entregan nada, nosotros para poder tener una buena tecnología, una buena productividad, para tener unas condiciones óptimas nos harían falta una serie de cosas que no las tenemos, si las tuviéramos, fuéramos [seríamos] una fabrica..."

Joanne: "¿Cómo obtiene, por ejemplo, las herramientas, la mezcladora...?"

Fulgencio: "Todo eso es la lavadora de mi casa que la cogí, y por ahí buscando en los basureros hice la mezcladora"

[Fulgencio: The resources we need are many, but they don't provide us anything. For us to have good technology, good productivity, to have optimal conditions we would need a lot of things we don't have; if we had them, we would be a factory...]

Joanne: Where do you get, for example, the tools, the mixer...?

Fulgencio: All of that comes from the washing machine which I took from my house, and afterwards I searched in dumpsters and I made the mixer.]

Ongoing Material Inputs

The family buys manure from various cattle farms in several of Havana's municipalities. The products Ecofel makes are all packaged and sold in re-used sacks and bottles they obtain through recovery of discarded and recycled materials. They gather up bottles and boxes at various recycling and disposal facilities throughout the municipality, and the state sells them the recycled sacks at a modest cost.

Non-material Inputs

Knowledge

From the time this family began producing fertilizers in the year 2000, they have required a great deal of technical and experiential knowledge in order to produce efficiently and enhance the effectiveness of their products. When they were first approached to produce fertilizers, the state provided them training in worm composting and the production of organic material. However, they have continued to seek knowledge from a variety of sources in an effort to continue developing and perfecting their products and the manufacturing process.

Eva: “Yo ni estudié esto ni nada por el estilo ni mi marido tampoco. No fue el tema de nosotros, no fue la inquietud de nosotros cuando jóvenes, o sea, para nosotros fue un reto completo que cuando nos dieran el pedazo de tierra nos dijeran: tienen que hacer abono. Yo no sabía que eso existía, y pasó por buscar un método, como tú estás haciendo ahora con la tesis, un método de búsqueda, un método de aprendizaje, y tú ves el resultado”.

[Eva: I never studied this or anything like it, and neither did my husband. This wasn't our thing; it wasn't our worry when we were young. That is, for us it was a complete challenge that when they gave us the piece of land, they told us “you have to make fertilizer”. I didn't know that existed, and I went in search of a method, like you're doing now with your thesis, a method of searching, a method of learning, and you see the result.]

Accessing current knowledge has not always been easy, given the limitations to media and communication in Cuba; this was particularly the case in their early years of production. However, through friends and family abroad they managed to access information from around the world, which gave them the idea to start producing the liquid fertilizer.

Eva: “Me llegó un trabajo americano que decía: ‘el oro de los cajones’ y empecé a leerlo, y me lo comí y se lo leí a esta gente y dije: bueno, ¿cómo podemos hacer de esto una forma líquida? y empezamos a buscar, y nos llegaron trabajos...te estoy hablando de hace 10 años, que internet aquí era....decir ahora ir al cosmos (risas de Eva) o algo parecido. Entonces bueno, yo tengo un hijo en Estados Unidos y entonces mi hijo me empezó a mandar cosas, información... ya la gente sabía que teníamos interés, hubo gente que nos mandó de Argentina, y cada vez que alguien viajaba: tráeme algo, cualquier cosa”.

[Eva: This American work came to me that said “crates of gold” and I started to read it... and I ate it up, and I read it to these people, and I said “alright, how can we make this in a liquid form?” and we started to look and studies came to us... I am talking about 10 years ago; the internet here was... like going to space would be today (laughs) or something like that. But well, I have a son in the US and so my son started to send me things, information... people already knew we were interested; there were people who sent us things from Argentina, and every time someone would travel: “bring me something, anything”.]

The process and formula for the liquid product were developed and refined through their own independent research, but they also received substantial guidance from a local retired professor they met in the laboratory.

Fulgencio: "...fue el tutor de nosotros... fue la gente que después que nosotros habíamos hecho el producto planteó que era muy difícil en cualquier país del mundo, lo más caro que había era el transporte. Que era necesario buscar la fórmula de que el producto saliera concentrado para poderlo diluir el cliente... y ese fue el objetivo que nosotros logramos".

[Fulgencio: ... he was our advisor... he was the person who, after we had made the product, brought up the fact that it was very difficult in any country, the most expensive thing was the transport. That it was necessary to look for a formula so the product would come out concentrated, so that the client would dilute it... and that was the objective we achieved.]

The professor helped them with perfecting the process and patenting the formula. Since that time they continue to constantly seek information from around the globe on new technology and practices in the production of ecological fertilizers.

Labour

Another important resource in Ecofel's production is the family's labour. As described in the background above, Fulgencio and Enrique do all of the physical work at the parcela, most of which is done by hand or with large manual equipment. This work is very labour- and time-intensive; the men generally spend 7 days a week at the parcela, often working 12 or 14-hour days. The work involves moving, spreading, and turning over tonnes of manure, soil, organic matter and worms. The solid products are sifted using a large manual mixer, weighed and packaged, all by hand. Although this work is labour-intensive, they prefer manual methods so as to reduce their energy consumption:

Fulgencio: "... tenemos un aparato pa' cernir eléctrico pero pa' no gastar corriente usamos el manual, para economizar, no lo que nos puede costar a nosotros, pero es para no gastar energía eléctrica, buscamos la manera de hacerlo manual".

[Fulgencio: ... we have an electrical device for sifting, but in order to not waste electricity we use the manual one, to economize, not what it might cost us, but it's so as to not waste electrical energy; we look for a way to do it manually].

The fact that many of their inputs are recovered or recycled also requires additional labour. The sacks in which they sell the solid organic material and compost are recycled from used rice, flour and produce sacks. Fulgencio and Enrique wash and cut the sacks to size, stamp them with the company's logo, fill them and sew them by hand. The concentrated liquid fertilizer is sold in recycled liquor and pop bottles, which they sterilize and fill, then apply a label, all by hand. The bottles are then packed in recycled cardboard boxes which they break down, turn inside out and reconstruct.

Eva's time commitment varies from week to week, but every day she works on something related to Ecofel. She goes to meetings and events, gives seminars, and seeks information on new techniques or ideas in the production of organic fertilizers. Agricultural events are important for accessing technical knowledge, but Eva also sees these events as important opportunities to share their knowledge and promote the importance of ecological fertilizers.

Although the men are primarily responsible for the physical labour and Eva the organizational aspects, they all work together to ensure Ecofel's success. The three of them work together in carrying out field tests of their products at the parcela, and having the products analyzed and certified by a state-run laboratory. Normally it is Eva who decides when to analyze the products and who takes the samples to the lab for analysis. However, Fulgencio and Enrique also understand the technical aspects and do some testing (e.g., pH) themselves at the parcela. Sometimes they take part in meetings or go to the lab, and Eva knows the production process well enough that she could fill in for either of the men at the parcela, if needed. Even Enrique's partner Miriam – who according to the family does not 'officially' work in the business – helps out with tasks that are done at home, such as preparing labels for the liquid fertilizer.

Maintaining the family home also requires time and energy. As in their business, this family also shares in the household tasks such as cooking, cleaning, and running errands. Because Fulgencio and Enrique are at the parcela most of the day, every day, a lot of the errands and housework fall on Eva and Miriam. However, both of the men also help with the cleaning and errands, and the whole family shares in the work of preparing meals; in this home everyone contributes what they can when they are able. The men's help is welcome to Eva, who describes herself as the world's most anti-domestic person, and who does not want the housework to fall on her daughter-in-law either.



Figure 13: Fulgencio sews the sacks of solid organic material by hand

Eva: “Cuando tengo que escoger un paquete de arroz, medir el arroz y grano por grano escogerlo me acuerdo de los primitivos habitantes de Cuba que se llamaban siboneyes... pero bueno, nos hemos acostumbrado a vivir así, a hacer los mandados y yo te diría que a pesar de todo los compartimos, a pesar del trabajo tan fuerte que hacen ellos, nos compartimos”.

[Eva: When I have to sort a package of rice, measure it out and select it grain by grain, I think of the primitive inhabitants of Cuba who were called Ciboney... but OK, we've gotten used to living like this, to doing the errands, and I would tell you, despite everything we share them, despite all of the hard work that they [the men] do, we share.]

Awards and Recognition

Through the Ministry of Urban Agriculture and several NGOs that they are connected to, Ecofel has received many certificates and awards acknowledging their achievements and contributions. Although these awards provide some sense of accomplishment and recognition, more concrete supports such as equipment and ongoing inputs would clearly be appreciated:



Figure 14: Some of the many diplomas and certificates that Ecofel has received are on display in the office

Joanne: “¿Y qué tipo de ayuda o apoyo ha recibido por parte de las ONG?”

Fulgencio: “Ninguna, del Estado nada, nada de nada. Técnicamente premios, diplomas”.

Joanne: “¿Pero nada concreto?”

Fulgencio: “No, muchos premios, muchos diplomas...eso uno se siente bien, con los premios, los diplomas uno se siente bien”.

[Joanne: What kind of support have you received from the NGOs?

Fulgencio: None, from the state, nothing, nothing of anything. Technically, awards, diplomas...

Joanne: But nothing concrete?

Fulgencio: No, a lot of awards, a lot of diplomas. With that one feels good, with the awards, the diplomas... one feels good.]

Outcomes and Benefits:

Income

The family's production with Ecofel has been their only source of income for the past 5 years. This work provides more income than they would receive through salaried state jobs.

Joanne: "Y según usted ¿cuáles son los beneficios de tener esta parcela?"

Fulgencio: "Poder vivir".

[Joanne: And in your view, what are the benefits of having this parcela?]

Fulgencio: Being able to live.]

The family has a large, lovely home, and lives relatively comfortably. Fulgencio and Eva both report that their income from Ecofel is sufficient to live on, but that it allows them no luxuries.

Fulgencio: "... en estos momentos tenemos dificultades económicamente... quiere decir, que cubrimos nuestras necesidades de luz eléctrica, gas, de agua, comida... pero no es para... uno ir a una fiesta o... comprar lo que uno quiera. No hay capacidad para eso, con esta la situación que tenemos, ¿que podemos hacer?"

[Fulgencio: Right now we're having trouble economically... meaning we cover our basic costs of electricity, gas, of water, food... but it's not enough to go to a party or... to buy whatever you want. There's not enough for that, with the situation we have; what can we do?]

Eva: "Para nosotros el beneficio económico siempre es limitado, es limitado porque ya nosotros tenemos una casa, y hay una serie de cosas que ya no tenemos que salir a comprar. Nosotros vivimos limitados hasta con la ropa que usamos, mentira que nosotros gastamos como puedes gastar tú, con tus necesidades".

[Eva: For us the economic benefit is always limited, it's limited because we already have a house, and there are a series of things that we don't need to go out and buy anymore. We live with limitations, down to the clothes we wear; it would be a lie to say we spend like you can, with your needs.]

The family's earnings from the parcela fluctuate with the amount they sell to the state each month. Some months are easier than others, in terms of household needs and available income. Eva explained that a few good months can provide enough capital to scale-up production. At present, the state buys all of the solid organic material and compost that they produce, but only buys a certain amount of the liquid fertilizer, which is then sold to the public at the retail level, at subsidized prices. Fulgencio emphasized that if they had the opportunity to sell more of the liquid fertilizer they could greatly increase their output and therefore their earnings.

Joanne: "¿Tiene alguna idea de cuánto se gana mensualmente, o...?"

Fulgencio: “Se gana lo que seamos capaces de producir y lo que sean capaces... los compradores de comprar”.

Joanne: “¿Cambia?”

Fulgencio: “Totalmente cambia, quiere decir que si a nosotros nos compraran el abono líquido, todo lo que produjéramos, no tuviéramos [tendríamos] dificultades”.

[Joanne: Do you have an idea of how much you earn on a monthly basis, or..?

Fulgencio: We earn whatever we are able to produce and whatever the... buyers are able to buy.

Joanne: Does it vary?

Fulgencio: It varies completely, meaning that if they bought our liquid fertilizer, all that we produced, we would have no problems.]

Non-material Benefits

Satisfaction and Pride

Both Eva and Fulgencio emphasized the spiritual benefits and feelings of satisfaction that their work provides. My conversations with them revealed a fierce pride in the products they make – above all the liquid fertilizer – and a sense that they were making an important contribution by resolving a critical need for their community and country.

Eva: “Y está el beneficio espiritual. Yo tengo más beneficio espiritual que otra cosa, o sea, pude hacer un producto; entre todos pudimos resolver hacer un producto, como tú viste esto es muy criollo, es muy artesanal... esas soluciones que sé que existen en el mundo, que la tecnología las tiene, pero que uno trata de dar un poquito aquí, un poquito que di allí y también tengo satisfacción: tengo un buen producto”.

[Eva: And there’s the spiritual benefit. For me the benefit is more spiritual than anything else; that is, I was able to make a product; among everyone, we managed to make a product, which as you saw, is very ‘criollo’, it’s very artisanal... these solutions that I know exist in the world, that the technology is there for them, but we try to do our part too; that’s what I’ve done, and I have satisfaction: I have a good product.]

Given the challenges of earning a decent livelihood in Cuba, Eva explains that the work in the parcela allows this family to meet their needs peacefully, and with less reliance on the informal economy:

Eva: “Chica, para nosotros es una forma muy tranquila de hacer el dinero que necesitamos. No hay que robar, no hay que hacer como decimos los cubanos ‘inventar’, no hay que ‘resolver’...todas esas palabras en cubano quieren decir coger lo que no es tuyo. Eso me da paz”.

[Eva: Chica, for us it’s a really peaceful way to make the money that we need. You don’t have to steal, you don’t have to, as we Cubans say, ‘invent’, you don’t have to ‘resolve’... all those Cuban words that mean taking what’s not yours. That gives me peace.]

Contributions to the Collective

Contributing to the broader community and the country are primary motivators for this family, as highlighted in this exchange with Fulgencio:

Joanne: “¿Y le gusta el trabajo de producir?”

Fulgencio: “Bueno, uno se siente satisfecho cuando realiza algo importante para su país”.

Joanne: “¿Usted cree que es importante para Cuba?”

Fulgencio: “Para Cuba es importante o para cualquier país del mundo es importante. En todos los países se produce”.

[Joanne: And do you like the work of producing?

Fulgencio: Well, you feel satisfied when you carry out something important for your country.

Joanne: You believe it is important for Cuba?

Fulgencio: It's important for Cuba, or for any country in the world it's important. In every country they produce.]



Figure 15: Enrique tests the pH of a bottle of Ecofel's liquid fertilizer

The fertilizers that Ecofel produces benefit others by generating higher yields with less work for the producer. The sales of their products help other small-scale producers to increase their agricultural yields, therefore contributing to those projects, as well as contributing (albeit indirectly) to the food supply. On a larger scale, Ecofel has made substantial donations to farms and producers throughout Havana, for example following the devastating hurricanes of 2008. They saw these contributions as having a direct impact on the city's recovery:

Eva: “A los dañados hicimos donaciones. A esos [tres] municipios, después que pasan esos ciclones... la tierra se compacta, la cosecha pequeña de los organopónicos perece, entonces nosotros cogimos un poco de abono líquido y se lo regalamos a los organopónicos... Y ellos lo usaron y el resultado fue...”

Fulgencio: “Óptimo”.

Eva: “... eso fue hace dos años. En esas cosechas... porque en esta ciudad no había nada, se quedó vacía porque date cuenta que fueron ciclones que iban barriendo la Isla... Aquí nos quedamos sin cosecha de nada, aquí no había viandas, no había vegetales. La Habana levantó su cosecha, sobre todo el tomate... como esto fue septiembre, octubre, y aquí en enero había 18 veces más tomates de lo que hay hoy y yo te digo que eso fue, aunque eso no sea reconocible, bajo aquella donación que nosotros hicimos”.

[Eva: We made donations to the people who had been affected by the hurricanes. To those [three] municipalities, after those hurricanes passed... the earth gets compacted; the small harvest from the organopónicos perishes; so we took some liquid fertilizer and we gave it to the organopónicos. And they used it, and the result was...]

Fulgencio: Optimal.

Eva: ... that was two years ago. In those harvests... because in the city there was nothing, it was left empty because, you have to understand that these were hurricanes that swept across the island. Here we were left with no crops of anything, there were no root crops, there were no vegetables. Havana increased its harvest, above all with the tomatoes, since this was in September, October, and by January there were 18 times more tomatoes than there are today, and I'm telling you, even if it can't be recognized, that was because of those donations we made.]

Fulgencio and Eva strongly believe that their concentrated liquid fertilizer is a superior product. Because it is meant to be diluted with water by the end user, at a ratio of 1:50, the product is much more efficient to transport than solid or dilute fertilizers. The family is extremely proud of this product, and they see it as holding major potential for enhancing Cuba's agricultural yields and self-sufficiency.

Joanne: "¿Cómo decidió vender casi todo al Estado?"

Fulgencio: "Porque el objetivo mayor nuestro, desde el primer día era tratar de venderle al Estado porque nosotros tenemos una necesidad estatal y aquí lo que necesitamos es cubrir las necesidades estatales, la productividad, la producción, buscar la manera de no exportar, no importar, y que aquí salga más barato que comprándolo afuera. Ese es el objetivo nuestro, siempre ha sido. Es difícil lograrlo pero bueno, alguien tiene que lograr algo....ya llevamos seis años en esta segunda etapa"

[Joanne: How did you decide to sell almost everything to the state?

Fulgencio: Because our major objective, from the first day, was to try to sell to the state because we have a state-wide need, and what we need here is to cover the state needs – the productivity, the production, to look for a way of not exporting, not importing, and where it would be cheaper here than buying it from abroad. That is our objective, it always has been. It's difficult to achieve but, well, someone has to achieve something... we've been doing this for six years already, this second phase.]

In addition to enhancing self-sufficiency, Fulgencio and Eva also argue that their product is better for the environment than chemical fertilizers such as synthetic urea, which is still imported in growing quantities for large-scale (mostly rural) fertilization in Cuba (FAO, 2003; Wright, 2009). In addition, the liquid organic product is more ecologically sustainable than other products because even within Cuba, it is more efficient to transport.

Challenges

Challenges Posed by Nature

The parcela and the equipment are relatively secure physically, and the family has not experienced problems related to hurricanes. They report that in the event of a natural disaster they can have the parcela functioning normally again within 24 hours. The biggest threat is the loss of electricity, because the parcela is in a wooded area and there is a real possibility of falling trees and delays in having electricity restored.

However, because the cisterns store a large quantity of liquid fertilizer, they always have that product on hand, to sell for their own livelihood and to provide to others who may have been affected by hurricanes.

Market Conditions

When asked about challenges, both Eva and Fulgencio reported that they are currently unable to operate at what they see as their full capacity. At present the state buys all of their solid product but only a certain amount of the liquid, which is then sold to individual gardeners. As they point out, many Cubans are not in the habit of buying fertilizer, and demand for the product at the retail level is not what Eva and Fulgencio believe it should be:

Eva: “Este país siempre los fertilizantes los dio, los daba la agricultura y entonces ahora la gente no entiende que tenga que comprarlos”.

Fulgencio: “Ese es el problema fundamental. Ese es el quid de la cosa”.

[Eva: In this country, fertilizers were always provided; they were given to those working in agriculture, so now people don’t understand that they have to buy them.

Fulgencio: That’s the fundamental problem. That’s the crux of the matter.]

More importantly, however, Fulgencio and Eva advocate strongly for their concentrated liquid fertilizer, which they see as having important potential to contribute to Cuba’s self-sufficiency. Its current application is limited to small-scale production, but they would like to produce liquid fertilizer for larger or industrial-scale farming, to enhance their own income and to maximize their contributions to the broader community. Here Fulgencio explains:

Fulgencio: “... el Estado lo está comprando para la población, para la venta a la población, para sus 15 municipios, para sus 50 unidades, no es para el uso que es real, que está hecho esto: para los organopónicos, pa’ los planes de arroz, pa’ los planes de todo tipo, esto está hecho, o lo hemos hecho para satisfacer Ciudad Habana y provincia Habana, sin necesidades de... que tengan que comprar el producto afuera, la urea que acaba con las capas de vegetales, y no la hemos podido lograr”.

[Fulgencio: ... the state is buying it for the public, to sell to the public, for its 15 municipalities, for its 50 units. It’s not for the real use, what it’s made for: for the organopónicos, for the rice fields, for the fields of any kind. This is made, or, we made it to satisfy the city of Havana and Havana province, without a need for them to buy the product from abroad – as is the case with urea, which destroys the vegetation – and we have not been able to achieve that.]

When asked how the state could better support them in their work, they again emphasized the need for the state to recognize the utility of their product and adopt it for larger-scale food production.

Joanne: “¿Hay algo más que le gustaría que hiciera el Estado?”

Fulgencio: “Que adquieran el producto, que lo utilicen, que se ahorren el dinero, que vean la productividad que tiene, las producciones que tuvieron porque el año pasado cuando yo hice unas donaciones a los municipios tuvieron hortalizas todo el año y fue de gratis, no las pagaron”.

[Joanne: Is there anything else that you would like the state to do?

Fulgencio: To acquire the product, to use it, to save money, to see the productivity that it has, the production that they had, because last year when I made some donations to the municipalities they had vegetables the whole year, and it was free, they didn't pay for it.]

Material Shortages

Another ongoing challenge is the shortage of various inputs, which creates additional work for the family. For example, seeking the packaging materials from recycling facilities and on the streets can be a lot of work. In addition, Eva explains that the small-scale and under-development of livestock farming in Cuba means that the quality of manure they use is highly variable. This makes Ecofel's process more labour-intensive because the products need to be analyzed more frequently.

Eva: “Todavía nosotros en Cuba tenemos un problema grande, aquí el ganado es poco, y por tanto por las condiciones del país, bloqueo etcétera, no está tabulado, o sea, qué quiere decir tabulado, las vacas no comen lo mismo todos los días, como es natural, al no comer lo mismo, su estiércol no es el mismo, entonces por eso es el cuidado ese de tener que hacer análisis y esas cosas”.

[Eva: In Cuba we still have a big problem, there is not much livestock here, and because of the conditions of the country, the embargo, etcetera, it's not kept in stables, meaning the cows do not eat the same thing every day, as is natural, and by not eating the same, their manure is not the same. So because of that there's the caution of having to do the analysis and things like that.]

CROSS-CASE ANALYSIS

This multiple case study explored small-scale agriculture as a strategy for household livelihood security, including the activities of family members, the assets they draw on to maintain or improve their livelihood, and the outcomes and challenges of this strategy. The study also focused on the context in which those activities, assets, benefits and challenges occur.

This section synthesizes the key themes identified across all three cases, highlighting commonalities and differences among cases with respect to the research questions. These findings are organized according to the inputs and outcomes of these

projects at the individual, family, and community or country level, as well as the challenges of production and the role of context⁷.

Inputs: Assets and Activities

Individual Contributions to the Project

Individual family members draw on human capital to contribute time, knowledge, and labour to the production. The observation and interviews revealed a gendered division of labour within these cases: the men do most of the physical agricultural work in all three families. In the two families who produce food, the women contribute to the agricultural production in small ways on a daily basis, such as watering plants or sweeping the patio. In Case 3, although Eva does little of the manual labour, she is responsible for the communication, marketing and technical aspects of Ecofel, thus contributing significant time and effort to the production. The younger generations in these households take part in the agriculture to varying extents: Enrique (Case 3) is highly involved; as is Ernesto (Case 2). Jorge (Case 1) helps his father but does not contribute as much time or labour. The other younger members of these families (Laura and Ernestico, Case 2; Miriam, Case 3) make only small, occasional contributions to the projects.

Each family has developed their own division of tasks and labour where everyone contributes to the household livelihood or workload, though specific roles differ within and between these families. Despite some evidence of a gendered and generational division of household labour, each family distributes tasks primarily based on each member's abilities, time, and preferences. The household and agricultural work are divided so that certain family members play a more prominent role in the agriculture (primarily the oldest-generation men), while other members contribute to the household's livelihood and functioning through formal work and different household tasks. In all three cases the men do a large share of the food shopping, other errands, and/or cooking. Case 2 most strongly reflected traditional gender roles; although Antonio does the household errands, Ana is solely responsible for cooking and most of the cleaning. It is important to note that none of these families had young children living at

⁷ The data reflecting the physical, economic, political and social context of agriculture in Havana was relevant to all cases, and all three families' descriptions of the context and its impacts on their activities and outcomes were very similar. Therefore, the findings about the role of context from all three cases have been combined in this section.

home. If there had been cases with young children, this would likely have revealed additional tasks, and possibly a higher workload for women.

Individuals also contribute knowledge and resourcefulness to the projects, applying ecological practices and knowledge of optimum conditions for various products, working with the natural resources available to them, and re-using waste or discarded products. These efforts result in high efficiency and little waste. Individual family members also contribute interest and enthusiasm in agriculture, and determination to see their projects succeed. Recognizing that producing can be hard work and that not everyone has an interest in it, these families saw their enthusiasm as an important component in their success.

Family Contributions to the Project

The interviews and my observations of these families also reveal that despite the sometimes unequal contributions that individuals make to the agricultural project, these families function as units to ensure the success of this and their other (if applicable) livelihood strategies. In Cases 1 and 2, the agricultural production is one of several sources of income (and livelihood strategies) in the household. In both families, in addition to the production work, there are family members who are retired (and who receive social security payments) and others working outside of the home (in paid state jobs). The various family members contribute what they are able to and what they are interested in; although the men are doing more work in agriculture, the women do other tasks (such as cooking, cleaning and errands) which also contribute to the running of the household. In Case 3, the production of fertilizers is the family's only source of income, therefore the entire family relies on this one strategy. Eva is more actively involved with the production than the other women in this study, and the shared workload at home reflects how busy she is with Ecofel.

In addition, in all three cases, the women reported that they are able to fill in for the men in the physical labour of production, to varying extents, if it were necessary due to illness or something else preventing the primary producers (the older males) from working.

Contributions by the State, NGOs and Others

Non-material Inputs

Some necessary conditions and inputs for these families' production come from individuals and institutions outside of the household. Many of these come from the

government. Firstly, state policies allow these families to sell the goods they produce. In Cases 1 and 2, the families have authorization from the Ministry of Urban Agriculture to sell their products independently from their homes. In Case 3, the state is the primary buyer of the fertilizer and organic materials they produce – their production is tied to this opportunity.

Another important non-material input provided by the state is information. Fulgencio and Eva received training when they began producing fertilizers, and information and training are available to independent producers upon request from the TCAs. In addition, extension agents from the Ministry of Urban Agriculture regularly visit parcels and patios in the various municipalities, offering advice and information. Both Francisco and Antonio reported that they do not need this information, as they have extensive knowledge from their own professional training (Francisco) and experience (both). However, they emphasized that the information is important and available to those who need it.

The various NGOs and agricultural groups also regularly hold events throughout Havana; these events are an important venue for sharing information among producers and with other experts. Members from all three families have attended these events, though Francisco and Eva take part more than the others because of their professional roles. In addition to the state and the NGOs, some individuals from outside of the family have contributed information over the years, such as the professor who assisted Fulgencio and Eva in developing and patenting their liquid fertilizer, and the family and friends who send them information and current research. During my field work I attended several events



Figure 16: Materials available at an agricultural event in Havana's municipality of Diez de Octubre

related to urban agriculture, mostly organized by individuals in the community with an interest in promoting it. At these events, a great deal of information was available from various state organizations, NGOs, academics and individuals with related projects.

Books, magazines and pamphlets were plentiful and included promotional materials about urban food production, guidelines and technical manuals for planting and growing, recipe books, and information on organic and biological pest control methods.

A final non-material input provided by the state and NGOs is recognition of these small-scale producers' achievements and contributions. All three families have received diplomas and certificates of recognition from the state and various NGOs. These gestures provide some sense of pride and motivation, as highlighted by a previous observation by Fulgencio. The other participants also proudly showed me their certificates and diplomas.

Material Inputs

In terms of material resources, access to land is an important condition for agricultural production. In Cases 1 and 2, the family homes both have yards suitable for cultivation. Francisco's is quite small, but the rabbits are an efficient use of space in terms of generating income, and little additional space is needed for the chickens and fruit trees. Antonio's yard is much larger, which provides ample space for vegetable production as well as more chickens and fruit trees than Francisco has. In the third case the state granted the family the piece of land they use to produce fertilizers, which is near their home but is not their own yard. All of the participants highlighted their good fortune to have access to land which enables their production activities; recognizing that not everyone has such access. However, the policy of granting under-utilized land to aspiring producers (which began during the Special Period) has been recently revived (Rodriguez, 2010), providing an important possibility for other urban families who, like Fulgencio and Eva, do not have sufficient space or conditions to produce at home.

Most of the ongoing inputs for these families' production are sought, purchased or made by the families themselves. Some of these are accessed at subsidized prices, such as tools and fumigation, as well as the re-used sacks that Ecofel buys from the state for their solid products. The two cases that grow food reported very limited use of the TCAs to access the subsidized inputs sold there. Antonio and Francisco occasionally visit a TCA, for example to buy a tool or to request fumigation. All other inputs, including seeds, soil, fertilizer and animal feed, they find, buy elsewhere, or make themselves. Ecofel also seeks out their remaining inputs from other sources and through re-using or re-furbishing equipment and packaging.

Some materials have been provided to all three families from NGOs and state organizations, but ongoing inputs are largely the small-scale producer's own

responsibility. Antonio in particular emphasized that the majority of the state's subsidies and inputs into agricultural production are aimed at larger-scale producers rather than individuals, because, in his opinion, it is understood that the independent producer uses these resources for their personal benefit.

Some material inputs are provided by neighbours or others in the community; these include the donated market waste which Antonio uses to feed the animals in his yard, as well as the food scraps that neighbours bring by Francisco's house for the same purpose.

Outcomes and Benefits of Production:

All three families reported extensive benefits resulting from their participation in urban agriculture. These benefits or outcomes may be grouped in terms of their impact on individual family members, on the family as a whole, and on the broader community or society.

Contributions to Individuals

The production of agricultural products in all three cases is a household endeavour: although some members participate more actively than others, the patio or parcela is part of each family's subsistence and daily reality. However, this activity also provides some personal benefits for individual members of these families.

For the two families who grow food, the backyard patio provides access to foods and medicinal plants, which may be consumed by individuals according to their tastes. These goods are fresh, nutrient-rich, and close-at-hand, a fact which was important to various members of each family. Certain (though not all) members of each family reported that they enjoy eating healthy diets with plenty of fresh produce (others [e.g., Laura and Ernestico, Case 2] prefer the typical Cuban diet of rice, beans, meat and root vegetables, with few fresh vegetables). Their patios provide easy, affordable access to these foods, with guaranteed freshness and the added benefit of knowing how the food was produced, as highlighted by Pastora. The ready access to foods also means less work for the individuals from each family tasked with buying food for the household – once planted, the vegetables and fruit trees require little maintenance, and mean many foods are available at home, without needing to walk to the market or wait in line.

Other important personal benefits reported by the majority of participants are related to the pleasure, leisure, and therapeutic aspects of agricultural production. This manifested differently between individual participants, but all expressed some sense of

enjoyment, pride and satisfaction related to their production. Pastora (Case 1) highlighted the therapeutic nature of gardening and raising animals – the distraction from other problems, the break from typical housework, and the joy of watching living things flourish. Antonio and Ana (Case 2) emphasized the importance of productive activity for older adults, emphasizing how the patio keeps them active and productive in retirement, resulting in both physical and spiritual health benefits. My interviews with Francisco and Fulgencio both revealed a strong sense of pride and accomplishment in their contributions to agriculture, the environment, and the community.

The economic independence provided by their agricultural activities was also an important perceived benefit. The added household income provides individual family members with opportunities to buy foods or other goods and take part in leisure or recreational activities, based on their own needs or interests. Eva (Case 3) emphasized that for her, agricultural production is a peaceful and dignified way to make money in a country where so much survival is based on the informal economy. Francisco explained that earning extra income through agricultural production gave his family the opportunity to be more independent and not rely on (or inconvenience) family members living abroad.

Contributions to the Family

The primary benefit of these families' agricultural production at the family or household level is the generation of income, both monetary and fungible (in-kind). For these three families, agricultural production provides a supplement to the basic subsistence needs that are met by their state entitlements (e.g., employment, housing, education, health care, and a portion of their required food). The monetary income is relatively stable and provides a higher standard of living than these families would enjoy if they were only dependent on state salaries. The income generated by their patios and parcela ranges widely, from one-fifth of the household income (Case 2), to approximately half (Case 1), to the entire household income (Case 3). For all three families, the money earned through the sale of produce or fertilizers provided access to food (through the ability to purchase more of it) as well as to other household goods, home improvements, or recreational activities. In addition, the two families who produce food have direct access to foods and cost savings, which are important in a context where a high proportion of household income is spent on food (Koont, 2010).

Contributions to the Collective

A key theme in all three cases related to the benefits or contributions these producers and their products provide to the broader community or the country, including contributions to the food supply.

In all cases, some of the products are shared with others free of charge. In Cases 1 and 2, some of the produce is given away to friends and neighbours, and they share foods from their patios with others, both at home and at social gatherings. For example, I rarely went home from Francisco and Pastora's house without a bag of guavas or a bunch of bananas. Antonio and Ana always sent me home with enough lettuce and herbs for my entire 8-member Cuban host family, as well as medicinal plants whenever I or someone I knew was sick. Both families fed me something from their patios during every visit, including rabbit meat, fresh fruit and fruit juices, salads and yucca. Although the family in Case 3 does not produce any food to give away, they occasionally give away some of their products to individuals. One day as I was leaving their parcela to go visit Antonio, Fulgencio gave me a bottle of liquid fertilizer to pass on to him. On a larger scale, during times of need (such as following the devastating hurricanes of 2008) Fulgencio's family has made sizeable donations of fertilizers to producers across the city, making an important contribution to the recovery effort.

Beyond the gifts and donations, all three families highlighted how the opportunity to purchase their products benefits individuals and families in the community. In Cases 1 and 2, their production means that nutritious foods and medicinal plants are available for their neighbours to purchase. These products are fresh, available close to home, and often more affordable than comparable items bought at the free farmers markets. The solid and liquid fertilizers that Fulgencio and Enrique produce at Ecofel are sold to individual gardeners, at relatively low prices. According to this family, these products dramatically increase the yields of any crop, and are easy to use in the small spaces or containers often found in the city.

At the collective level, members of all three families pointed out how their production, as small as it might be, contributes something to the food supply in the city of Havana and to Cuba's self-sufficiency in terms of food. Francisco pointed out that he is able to produce and supply for others who do not or cannot grow their own food. He also emphasized the need, within Cuba and globally, for everyone to do what they can to sustain themselves and their communities from within. Antonio highlighted how every

product he grows at home equals one more product available in the market for someone else to buy, and one less product for other producers or the state to transport. The contribution to the food supply is indirect in Case 3, but the organic fertilizers they produce have an important impact on agricultural yields, both small-scale and medium-scale. However, Ecofel would like to optimize this impact through wider application of their liquid product, which they see as an important opportunity for Cuba to save money and enhance its self-sufficiency.

Another contribution to the collective results from the knowledge-sharing that takes place between these producers and others in the broader community. This includes formal opportunities such as the seminars and workshops led by Francisco and Eva. It also includes informal education and consultations between members of all three families and friends or neighbours who are seeking advice and expertise.

A further collective benefit is the reduced environmental impact of the small-scale, ecological and organic methods widely applied in these three cases. All three cases rely on mostly organic, low-input techniques (an exception is the fumigation for garden pests). Both Francisco and Antonio use integrated approaches to minimize waste, such as the production of compost from garden and kitchen waste, which is then used to fertilize their crops. Fulgencio emphasized how Ecofel's products and others like them have the potential to reduce Cuba's importation of chemical fertilizers that damage vegetation.

These families were only three of the many urban agriculture advocates and participants I met in Havana. Many other gardens, farms and community projects that I visited also emphasized the long-term and collective benefits of ecologically sustainable, local agriculture. Many individuals take part in advocacy (including my local advisors at FLACSO Cuba, and other gardeners I visited or met at events) with little material or economic gain for themselves. Some do not produce at all, but are advocates and volunteers; others grow ornamental plants or a few herbs. As an example, I visited many times with a young man named Yeikel, who since the age of 14 has been a community leader in promoting urban gardening and the use of fruits and vegetables in the Cuban kitchen. He runs interest groups which are popular with neighbourhood children, teaching them gardening, preserving and cooking skills; organizes community events promoting agriculture; and is regularly featured in youth-focused publications in Cuba. His small rooftop herb garden provides very little in terms of in-kind income, and he covers the cost of his events and interest groups himself, through fundraising and his

own money. Yeikel is just one example of the many Cubans I met who were passionate about urban agriculture primarily or solely because of the collective benefits it produces.

Challenges and Limitations

Space

In Cases 1 and 2, the family's production is somewhat limited by the space of their yards; both Francisco and Antonio stated that they could (and likely would) produce much more if they had more physical space. This is not the case with Case 3, where the parcela is more than large enough to accommodate their current production and could easily support more.

Market Conditions

Challenges or limitations related to the demand or market conditions for their products were only identified in Case 3. Both of the families who produce food reported no shortage of customers from the neighbourhood, and no problems selling their entire surplus. However, as explained in the Case 3 findings, Ecofel's output and income are limited by the amount of their product purchased by the state, and by the demand for it at the retail level.

Material Shortages

Material shortages at both the household and national level impact the families' yields and profits. At the household level, scarce monetary resources impede improvements or expansion of production in Cases 1 and 2. For example, Antonio cannot afford the sun-blocking mesh that could increase productivity in his sunny yard. Likewise these two families both feed their animals with scavenged plants, leftover food and market waste. Although both maintain that animal feed would improve their animals' health and productivity, animal feed and other grains are scarce and prohibitively expensive to purchase. Antonio also highlights the poor quality of his (and other) urban soil, but explains how fertile soil is also too expensive for small producers, so he settles for homemade compost and labour-intensive soil-turning.

These same material shortages also impact the families' workloads. In all three cases, efforts to reuse, repair and recycle everything take time and energy, as does the work of seeking out discarded or cheap inputs. In Cases 1 and 2 this includes gathering and cooking food for the animals, and maintaining compost heaps and animal waste to

be used as fertilizer. In Case 3, scarce resources require the family to seek out and prepare recycled packaging for their various fertilizers, which is labour-intensive.

The various challenges and shortages identified at the household level reflect the broader political-economic context of Cuba as a nation, as discussed below.

Importance of Context

Physical Context

For the most part, Cuba's physical context is very conducive to the small-scale agriculture practiced by these families. The warm climate provides suitable conditions for growing crops, raising animals, and producing organic material outdoors, year-round. The excessive heat of the summer presents some challenges; for example it can damage plants and makes the chemistry of producing worm compost more challenging due to excessive heat in the piles of organic material. Though none of these families had been adversely affected by past hurricanes, the threat of natural disasters is a concern both in terms of potential damage and also the possibility of food shortages – providing further motivation to produce food close to home. However, for the most part these families emphasize the benefits of their tropical climate and try to make the most of the natural resources they have access to.

Political-economic Context

Cuba's political-economic context has strongly shaped the practice of small-scale urban agriculture since its sudden increase during the Special Period, and these three families' experiences also highlighted its central role. All three families live with limited household resources and few luxuries, as do the majority of Cuban families. In Cases 1 and 3, economic difficulties had been a key motivation to begin agricultural production, which has continued to provide economic relief and opportunities to improve their quality of life. In Case 2, Antonio began producing food more out of interest than need, but as the country's economic situation worsened during the 1990s, the patio also took on a new role of providing economic relief for this family as well.

The themes of need and scarcity of resources were woven through all of the interviews with these three families. They frequently referred not only to their own needs as a family, but also to the broader shortages and economic challenges facing Cuban families in general and the nation as a whole. This understanding of the shared experience of need across their country was reflected in their comments about the

importance of agricultural production and self-sufficiency, both at the household and national levels. Their notions of contributing to the collective food supply and saving the country money and resources were grounded in the understanding that there is simply not enough to go around in Cuba, and that each person has some duty to do his or her part. In this quote Francisco highlights the difference in food culture that he had observed when visiting the United States:

Francisco: "... la comida que no se comía iba pa' la basura, y al otro día volvíamos a hacer arroz, volvíamos a hacer carne... y botábamos carne, y botábamos arroz, y botábamos frutas, todo lo botábamos....porque tú ibas al mercado y había. ¿Por qué nosotros tenemos que guardar el arroz, y lo calentamos? Y con los granos, los frijoles también. Allí compras la lata de granos, de frijoles negros, colorados, garbanzos, pero aquí nosotros no tenemos, por eso tenemos que.... O sea, está, porque aquí en el mercado hay, lo que todo el mundo no tiene dinero pa' poder ir a comprarlo, o sea, tenemos que hacer eso y no botarlo, y nosotros no estamos tan mal, la gente dice..."

[Francisco: ... the food that wasn't getting eaten was thrown in the garbage, and the next day we would make rice again, make meat again... and we would throw out meat, we would throw out rice, and we would throw out fruit, we threw out everything... because you would go to the market and there would be lots there. Why do we [here in Cuba] have to keep the rice and heat it up again? And the grains, beans too. There you buy a can of beans, black beans, red beans, chick peas, but here we don't have that, so we have to... Well, it is there in the market, what people don't have is the money to be able to go buy it, that is, we have to do this and not throw it out, and we're not doing so badly, according to what people say...]

Support for Small Producers

All three families had many positive comments about the state's promotion of urban and small-scale agriculture, and the technical guidance provided to producers. All took part in informative events and applauded the information and advice that the Ministry of Urban Agriculture provides to small-scale producers; even though they reported not having much need for this information themselves because of their own research and experience.

Antonio: "... el Estado lo que... te hacen es que te verifican ehh... cómo tu siembras... te dan cursos, te dan algún material de estudio para... cómo tienes que hacer la compos, los canteros, cómo tienes que hacer el ciclo, el ciclo de siembra, eh... y toda esa serie de cosas... claro yo no las necesito porque ya yo las tengo de experiencia, pero esa es su función".

[Antonio: The state, what they do for you is they check on you; on how you're growing... they give you courses, they give you study materials... on how you have to make compost, garden beds, how you have to maintain the right cycle, the sowing cycle, uh, and all those types of things... of course, I don't need them, because I already have that from experience, but that is their role.]

Francisco (Case 1) and Antonio (Case 2) are both licensed by the state to sell their surplus products to the public. Aside from that, they have little interaction with the

Ministry of Urban Agriculture, and receive no material inputs from the state. More material inputs have been provided by NGOs, such as the materials provided to Antonio by the German-Cuban organization he belongs to. Otherwise, the contributions of the NGOs were described more as motivational, that is, through awards and recognition.

Despite the many positive comments, all three cases revealed some degree of tension with respect to the state's material support for small-scale producers. More than 50 years of intense socialism, including extensive entitlements and low individual buying power, have fostered a culture where Cubans have high expectations to be protected and provided for by the state. The existing support for small-scale producers was appreciated, but participants clearly thought the state should do more to support their (and other producers') efforts. Because Antonio and Francisco's patios are small, they both report that they need few material inputs to maintain them. However, some key inputs such as animal feed and fertile soil are scarce and expensive, limiting their productivity. Despite highlighting the importance of information and recognition from the state, all three families emphasized that more material inputs from the state could increase the significant benefits enjoyed by both independent producers and the community at large.

Antonio suggested that the state's priority in terms of material inputs is supporting larger-scale production, rather than providing materials to independent backyard producers. Because he enjoys so many benefits from the patio, Antonio agrees with this approach in principle. However, all participants suggested that if materials and inputs such as animal feed, soil and fertilizer were more accessible, small-scale production could be dramatically increased.

Antonio: "Sí, sí, sí, el precio de los alimentos es muy difícil, en primera, porque el Estado el alimento que tiene es para las producciones a nivel nacional y entonces al particular no le da posibilidad porque se entiende que el particular lo quiere pa' negocio, y entonces en esa línea caigo yo y de todas maneras, bueno, nosotros los criamos con lo que se pueda".

[Antonio: Yes, yes, yes, the price of [animal] feed is very difficult. First, because the feed that the state has is for production at the national level, so the private producer doesn't have that possibility, because it is understood that the individual wants it for business. And so I fall in that line, and anyway, well, we raise them with what we can.]

The participants also pointed out the work that the state has been doing to support new participation in agriculture, and felt that this was important work which is having a gradual impact. A common theme in these interviews was the importance of

recent efforts by the state to grant idle lands to people so that they are able to realize personal and collective benefits of agricultural production.

Promotion and Advocacy

The members of these three families enjoy many benefits from their small-scale food production, and feel that the activity should be promoted, both for the good of other families who might produce and for the broader community. They credited the state's former and present promotional efforts with having provided many people with the motivation and knowledge to begin producing food on a small scale, resulting in significant contributions to the food supply. The knowledge imparted through extension agents as well as various television programs, magazines and newspaper articles related to urban agriculture were seen as important promotion and support for urban agriculture.

Joanne: "¿Entonces qué piensa que puede hacerse para que más familias se ocupen también de la agricultura urbana?"

Ana: "Bueno, eso lo aconsejan aquí... por la misma televisión lo aconsejan, que todo el que tenga un... patio de tierra que lo siembre, que lo cultiven, eso se está... incrementando aquí y se alienta a la población que lo haga, que si tiene un canterito, dos canteritos, que siembren lo que puedan sembrar... Aquí muchas personas siembran en las azoteas..."

[Joanne: So what do you think can be done so that more families take up urban agriculture?]

Ana: Well, they recommend that here... even on television they advise that – that anyone who has a... yard with dirt, that they plant it, that they cultivate it, and that is... increasing here and it encourages the population to do it, that if they have a little garden bed, two beds, that they sow what they can... A lot of people here plant on rooftops, on building rooftops...]

All of the participants reported watching television programs about agriculture and taking part in agricultural events. Here Francisco explains the benefits of these events:

Francisco: "Ese es un momento de socializarse, es un momento de aprender cosas y es un momento de encontrar amigos que hace años no vemos. Es el momento de compartir en un momento determinado, es intercambio de conocimientos y de ideas y yo creo que sí, que son muy importantes, sobre todo, participar en los eventos, aunque uno no lleve un trabajo a presentar".

[Francisco: [the events] are a time for socializing, a time to learn things and see friends that you haven't seen in years. It's a time for sharing, in a given moment; it's an exchange of knowledge and ideas, and I think yes, it's really important, above all taking part in the events, even if you're not taking some research to present.]

In this quotation, Eva explains how the events are not only a source of information for Ecofel, but are also important opportunities to promote the type of artisanal, environmentally sustainable work that they do:

Joanne: “¿Y ustedes reciben información o ayuda de la oficina de agricultura urbana?”

Eva: “Nosotros lo que sí tratamos es... de no perder tribuna: nos citan para un seminario y allá vamos, nos citan para un grupo técnico, y allí vamos, un evento científico internacional... y en las visitas tratamos de explicar esto y lo que hemos encontrado en conocedores de abonos ecológicos... Nosotros tenemos eso: que nosotros los cubanos no le damos valor a lo humano, al trabajo humano, a la mano de obra. Ellos se asombran de que Fulgencio y Enrique sean los que puedan hacer esa cantidad de abono”

[Joanne: And do you receive information from the office of Urban Agriculture?

Eva: What we do try to do is... to not miss out on an audience: they invite us to a seminar and we go, they invite us to a technical group and we go, an international scientific event... and during the visits we try to explain this and what we have found from experts in ecological fertilizers... That's one of our challenges: we Cubans don't give value to the human aspect, to human work, labour. They are amazed that Fulgencio and Enrique are able to make that quantity of fertilizer.]

Several participants had the impression that the intensity of the state's promotion of small-scale agriculture in Havana has decreased in recent years, even as patios and balconies had continued to contribute substantially to the food supply. They all felt that the promotion that took place during the Special Period needs to be renewed in order to deal with the ongoing economic challenges, both at the family level and nationally.

Antonio: “Desde mi punto de vista la agricultura necesita un poco más de atención; está un poco desatendida, en aspectos que el Estado se ha volcado más a la agricultura rural porque es mayor cantidad y es adonde puede surtir mejor el mercado. Entonces la agricultura urbana en un momento determinado jugó su papel, ahora en estos momentos lo sigue jugando pero no tiene la misma atención... yo espero que se reanime, que se puede reanimar”.

[Antonio: From my point of view, agriculture needs a bit more attention; it's a bit neglected, for example, the state has shifted more to rural agriculture because there is a lot more, and that's the area that can better supply the market. So urban agriculture in a given time played its role; these days it is still playing it, but it doesn't get the same attention... I hope that it gets revived, that it can be revived.]

Social Context

The Importance of Agriculture

Agriculture holds a special place in Cuban society. It has long held an important role in the Cuban economy, politics and culture (Stricker, 2007). Particularly since the Special Period, the country's agricultural production is a part of daily lives, even for non-producers, as household diets are largely based on locally produced foods. Government

messages about the importance of agricultural production are relatively common in the cities, and from what I saw, extremely prevalent in rural areas. The families who took part in this study are all strong advocates for agriculture and for self-sufficiency; and the interviews reflected a belief that agriculture is important not only for their families or for Cuba, but for humankind.

One cannot spend much time in the company of Cubans without hearing a reference to José Martí (1853-1895) – philosopher, poet and Cuban national hero. Martí is known in Cuba as a pioneer in environmental protection and a steward of the environment; these concepts have long been part of the national psyche (Stricker, 2007). Francisco was one of many people I met who referred to Martí’s writings when speaking about the importance of food production:

Francisco: “Yo no sé si tú has leído Martí mucho pero Martí tiene... en sus obras completas, una parte de sus escritos tiene cosas relacionadas con lo que es la agricultura, lo que representa y lo que puede tributarle al hombre. Y creo que a pesar de que fue en un momento donde la ganadería era incipiente, estamos hablando de 1895, donde la ganadería en nuestro país empezaba con los primeros animales que trajeron los españoles y que empezaba a surgir, y sin embargo, él estaba tan claro, como siempre lo ha sido y ya vio cosas que son actuales”.

[Francisco: I don’t know if you’ve read much Martí, but Martí has... in his complete works, a part of his writings have something to do with what agriculture is, what it represents and what it can contribute to mankind. And I think that even though that was at a time when livestock farming was just beginning – we’re talking about 1895, when ranching in our country was starting with the first animals that the Spanish brought, and it was starting to take off – and nonetheless, he was so clear, as he always has been, and he already saw things that are happening now.]

The participants described the important contributions and benefits urban agriculture has already produced in Cuba – in particular its role in the country’s surviving the Special Period. However, another common sentiment among all of the study participants is that continued efforts in local, sustainable agriculture, both small- and large-scale, is a logical solution for the chronic shortages and challenges of accessing food in Cuba.

Francisco, in particular, had many ideas about the transformative power of agriculture, including, for example, its potential to finance and then contribute to the industry for value-added products (e.g. preserved or prepared foods) in Cuba. Although like the other two cases, his family is part of the popular movement of people producing food and fertilizers on a small-scale, through his work Francisco is also part of the state-driven efforts to continue to support this important activity. He spoke at length about efforts on a national scale to increase production of staple crops and animal products, and to reduce Cuba’s reliance on imports:

Francisco: “Estamos trabajando pa’ eso; lo que son muchos los problemas, las dificultades, pero con el deseo y con las ganas de trabajar yo creo que podemos alcanzar. Yo soy de los que dicen que Sí se puede.

[Francisco: We’re working toward that; there are a lot of problems and difficulties, but with the desire and the will to work, I think we can get there. I am among those who say that YES, we can.]

All of the families emphasized that more food (and fertilizer) production is necessary within Cuba, in order for the country and its citizens to survive. Several conversations highlighted the potential held by Cuba’s skilled workforce, and the need to motivate people to apply those skills and that knowledge to enhancing the nation’s self-sufficiency. In this exchange, Fulgencio states that the state needs to motivate or oblige people to work in agriculture so that it can continue to move in that direction:

Joanne: “¿Qué puede hacer él [el Presidente] o qué puede hacer el Estado?”

Fulgencio: “Obligar a la gente a trabajar, no comprar de afuera, la tonelada de abono y fertilizante vale 240 dólares la tonelada, mientras que aquí sale 240 kilos, y es mejor que la otra. Ésta es ecológica y aquella es artificial”.

Joanne: “¿Cree usted que va a mejorar la situación económica de Cuba?”

Fulgencio: “Sí, la situación va a mejorar. Tiene que mejorar, no queda más remedio. La inteligencia, las capacidades, el servicio, la mano de obra nuestra. Todo el personal nuestro es calificado...aquí no hay personal que no sea calificado, aquí es obligación ser calificado”.

[Joanne: So what can he [the President] do, or what can the state do?

Fulgencio: Make people work. Not buy from outside. A tonne of fertilizer costs 240 dollars, meanwhile here it costs 240 cents, and this is better than the other one. This is ecological and that one is artificial.

Joanne: Do you think the economic situation in Cuba is going to improve?

Fulgencio: Yes, the situation is going to improve. It has to improve, there’s no other way. The intelligence, the capabilities, the service, the workforce we have. Our entire personnel is qualified... there is no personnel here that isn’t qualified; here it is an obligation to be qualified.]

The Future of Agriculture

All of the interview participants expressed concern over young people’s diminished interest in agricultural production, both urban and rural. In particular they described a work culture that had dramatically changed in the years following the victory of the Revolution – as higher education became available to young people in every corner of the country, they saw rural youth abandoning the farm life in favour of technical or professional careers near home or in Havana.

Ana: “... hoy mismo las tierras en Cuba....ha habido un poco de abandono... porque la juventud no quiere trabajar el campo, lo que quiere es tener otro tipo de vida, el campo es un poco duro.... Antiguamente había que hacerlo por necesidad, no tenía otra forma. Pero como hoy el Estado le proporciona estudiar... ¿comprende? Le proporciona las

becas, le proporciona que se desarrolle técnicamente... y entonces bueno...lo hacen y dejan el campo”.

[Ana: ... today the land in Cuba has been a bit abandoned, because the youth don't want to work the land, what they want is another kind of life – working in the country is very hard. Back then, it had to be done out of necessity; there was no other way. But now, the state provides them education, you understand? They provide scholarships, they provide for their technical development... and well, they do it and they leave the countryside.]

Eva: “Por ejemplo los hijos míos ¿qué les interesa el campo? Cada uno estudió su carrera”.

[Eva: For example, my children, what interest does farming have for them? Each one studied to become a professional.]

Because these participants all view farming as hard work, they suggested that young people will return to farming only if they are motivated by economic benefits:

Antonio: “Para que la juventud vaya a la agricultura tiene que tener buen dividendo, tener buen beneficio porque sí lo hay, hay jóvenes que sí van pa’ la agricultura pero con ese.....con ese..... compromiso, pero ir a ganar un salario de...de....centavos.....no van...”

[Antonio: In order for the youth to turn to agriculture they need to have a good source of income, to have good benefits, because they do indeed exist, there are young people who take an interest in agriculture but with that... with that commitment, but to go and earn a salary of a few cents, they don't go...]

Despite expressing concern over the lack of interest in agriculture among young people in Cuba, the participants highlighted the state's efforts to promote the importance of farming among youth. These include mandatory school programs where youth are sent to work in the country for a few weeks, and the state's continued efforts to grant under-utilized lands to people who will use it productively. Although the majority of urban gardeners and producers I met in Havana were middle-aged or older, I also observed what I saw as a promising level of engagement among select youth. I have already mentioned Yeikel, the young man who works tirelessly to engage children from his neighbourhood in local food production. During my time in Havana Yeikel also organized an event for young people involved and interested in urban agriculture. I attended the event, along with approximately 45 youth and other local experts. There were presentations about many small projects involving youth and agriculture around Havana, and we all enjoyed a tour of an organic farm. Such activities are evidence that (at least some) Cuban youth are interested in carrying on the movement begun by their parents and grandparents during the Special Period.

Chapter Conclusion

The three families' small-scale agricultural production requires both material and non-material inputs, most of which (labour, time, materials) are provided by the family unit and individual family members. In all three cases, the human inputs such as time and labour were substantial compared to the value of material inputs going into the production – all three families rely on low-cost, recycled or home-made materials and equipment. This keeps the material costs of production to a minimum, but requires additional human resources (time and labour). Certain other necessary conditions and inputs are contributed by institutions and individuals; these include the authorization to sell their products, access to land, and knowledge. The families' agricultural activities generate multiple benefits for individual family members (access to foods and medicinal plants, independence, pleasure, satisfaction and therapeutic effects), for the household as a unit (monetary and fungible income), and for the broader community (information, contributions to the food supply, relieving burden on the state, applying ecological approaches).

CHAPTER 5: DISCUSSION

Havana is known worldwide for its urban agriculture, and this study's findings reflect the literature describing this city as a particularly hospitable environment for the small-scale production of food and other agricultural products (Companioni & Hernández, 2002; González Novo et al., 2009; Koont, 2009; Pinderhughes et al., 2000). Even beyond the urgency of the Special Period, small-scale agricultural production continues to generate multiple benefits for individuals, households, and the broader community.

Small-scale Agriculture in Havana and Household Livelihood Security

The cases in this study were selected specifically because their production fit the description of a livelihood strategy, meaning that they earn at least some monetary or fungible income as a result of their agricultural efforts. It is important to note that not everyone involved in urban agriculture in Havana does so for economic or material livelihood benefits. As in Canada, many families in Havana keep ornamental plants for the leisure and aesthetic benefits; many also grow herbs for the same reasons as well as personal food preferences. As mentioned earlier, I saw a great deal of urban agriculture and advocacy in Havana that produced limited economic or material benefits for growers or participants. However, this study set out to study agriculture as a livelihood strategy, thus the cases selected fit reasonably well with the household livelihood security framework (pictured in Figure 1, Chapter 3).

Assets and Activities

The production of food or fertilizers by the families in this study contributes monetary and fungible income to their households, in a setting where a higher income than that provided by state jobs is welcomed and important for quality of life. As in the household livelihood security framework, the families in this study make use of various material and non-material assets, or types of capital, to carry out this strategy. Physical assets include access to land and growing conditions, as well as ongoing material inputs. Human assets, including physical ability, labour, and knowledge were utilized to a great extent by the families in this study, as described in the cross-case analysis. Social capital includes connections to institutions such as the Ministry of Urban Agriculture, which grants authorization for private sales as well as opportunities to produce for others, as in Case 3. Social assets in this setting also include relationships with

neighbours, who buy the products, and with the state, vendors and individuals who provide subsidized or free access to inputs and information. Economic capital is fairly limited for these families – they have enough to cover their basic needs but not much more. Some of their monetary resources go back into production in the form of inputs, such as animal feed for the food growers, and raw materials and packaging for the fertilizer production. However, these activities or livelihood strategies are accessible for these families because they require little in terms of monetary resources in order to generate profit and other benefits. Other resources available to the families, such as rationed food, could also be considered an economic asset, in the form of fungible income.

Livelihood Security Outcomes in the Socialist Context

For the families in this study, agriculture helps them to secure many of the livelihood outcomes identified by Frankenberger, Drinkwater and Maxwell (2000) in the framework, including security of food, nutrition, health (physical as well as social and emotional), and community participation. However, many of the livelihood outcomes identified in this model are not connected to individual families' activities and income in the Cuban context to the extent they may be in other, less socialized settings. For example, securing food for the household is not as urgent for Cuban families as it might be for low-income families in countries where no rationing system exists, and essentially all food is acquired based on the activities individual families undertake to generate money and in-kind income. A certain level of nutrition is guaranteed by Cuban rations; families' livelihood activities help to procure *additional* food, which make up an important part of the family diet. However, feeding Cuban families is not solely the responsibility of the family – the state also has a commitment to ensure basic needs are met. Even in the absence of any household income, basic foods including rice, beans, eggs and meat are secure. Other livelihood outcomes identified in the framework include security of education, water, and shelter, which Cuban citizens are virtually guaranteed with no relation to their income-generating activities. The household livelihood security model does not refer to medical care, which is also guaranteed for all Cubans, playing an important role in their health outcomes without requiring that they pay or compromise on other household needs.

Although the household livelihood security framework was developed for applications in low-income settings (Lindenberg, 2002), which includes Cuba, this

study's findings suggest that it may not be as good a fit within the socialist paradigm as it is in the more capitalist settings where it has been applied previously. For example, the model was widely applied to assess livelihoods and needs in several regions of India by the large international humanitarian agency CARE (Lindenberg). Key differences were observed in livelihoods and household food security, varying both seasonally and between villages. High levels of insecurity (of food, education, health) were revealed as reflecting a (general or seasonal) lack of opportunities for generating monetary or in-kind income, as well as less access to government services than observed in communities where household livelihoods were assessed as more secure. Maldonado Villavicencio (2009) studied urban agriculture as a livelihood strategy in a suburb of Lima, Peru, applying a slightly different adaptation of the household livelihood security framework than the model I applied. Participants in that study generally reported low profitability from urban agriculture, but noted that it was enough to earn a subsistence living. One important outcome identified was that in some cases the income generated by urban agriculture allowed them to provide education (including at the post-secondary level) for their children. In these examples, security of food and education are more directly linked to families' income, savings, and activities than they are in the Cuban context.

State entitlements play a strong role in Cubans' livelihoods. Salaries and opportunities for the independent acquisition of wealth are very limited compared to the value of housing, education, medical care, and subsidized food that individuals are entitled to. The state's commitment to meeting the basic needs of all citizens has ensured that household livelihoods in Cuba are not as *insecure* as they may be in settings where low-income families have fewer entitlements. It also means that many of the livelihood security outcomes identified in the framework are not under individual control, but are controlled by the state, with an emphasis on equal distribution. The opportunities for development at the household level, in the capitalist sense of enhancing security or improving livelihoods through the acquisition of capital, are limited by the socialist system, the low salaries, and Cuba's economic status.

Beyond Survival

This research has confirmed the literature highlighting agricultural production as one important way that Cuban families can pursue a higher standard of living. The income (monetary and fungible) from these activities is important for producing families, especially in cases such as Eva and Fulgencio, where it is the sole source of monetary

income. However, with most of their basic survival and developmental needs met by the state, many of the outcomes achieved through small-scale agriculture, in the current context, reflect health, social, spiritual, and quality of life benefits. As explained in the Chapter 3, household livelihood security is said to oscillate along a continuum from relief, to rehabilitation, to development (Lindenberg, 2002). Many of the benefits these families described in the current context fit more in the category of development than relief or recovery. The household livelihood security framework seems to emphasize survival over quality of life, and fails to capture many of the benefits experienced by the families in this study. In particular, many of the less tangible benefits such as pleasure, satisfaction, and the sense of contributing to some greater good, are not acknowledged in the model, though they may also be necessary for quality of life.

Cuba's socialist model, emphasizing equality, distributes entitlements (and need, due to nationwide shortages) across the population to an extent not seen in capitalist societies. Since the current regime took power in 1959, individual and household wellbeing have strongly reflected the wellbeing of the collective. During the Soviet era, most Cubans enjoyed a higher standard of living than they had under previous regimes (Bell Lara, 2005; Pérez, 1988). With the onset of the Special Period, the vast majority of Cubans experienced dire shortages, resulting in population-level deterioration of health and quality of life, as described in the Chapter 1. Since that time, Cuba as a nation has recovered significantly (Wright, 2009), and essentially all of its citizens have seen and experienced these improvements first-hand (Stricker, 2007). The nation's dominant ideology, and the shared experiences of need and improvements reflecting the state's well-being, have created a culture where contributions to the collective are valued to an extent that is difficult to comprehend from an individualistic or capitalist perspective. According to Mateo (1998), one of the Cuban population's greatest strengths is its "solidarity and equity ethics, the imaginary collective centred in the patriotism developed in the Cuban people by the Revolution" (cited in Stricker, 2007, p. 107). In other ideologies, 'rational' choices are assumed to reflect economic and individualistic goals; these perspectives often overlook the social, environmental and collective factors and processes which are also important for living in civil society (Stricker). The Cuban culture, however, is strongly connected to nature, equality, and a strong sense of community and the notion of the collective or common good.

Overall Suitability of the Framework

Although the household livelihood security framework is elastic and emphasizes the role of various assets, entitlements and the importance of local contexts and institutions, it does not adequately capture the quality-of-life and collective benefits which are strong motivators and important outcomes in the Cuban context. Nor does it sufficiently capture the existence of livelihood outcomes that are directly shaped by the collective context, rather than individual or household efforts. In these ways, the model, as currently conceived, seems too individualistic for the Cuban example. This framework was useful in exploring household livelihoods, families, and their livelihood activities within their context. It was very helpful in developing the research questions and interview guides, and as a tool for identifying key factors that have enabled the success of this strategy for these families, such as the culture of food production, the importance of human capital including labour and knowledge, and the role of the state in facilitating production for income. However, the questions developed with this framework in mind generated findings that are not adequately captured by the model. These gaps reflect Cuba's unique position as a low-income country with high health and social development outcomes; the strong role of state entitlements in providing many livelihood security outcomes, unconnected to individual or household activities and incomes; and the nature of the collective good as understood within the socialist paradigm and the Cuban culture.

What Can be Learned From These Cases?

Each case in this study is unique in terms of the household makeup, the manner in which the family unit works together, and the contributions of individual members to the agricultural production and other aspects of running the family home, such as other income-generating activities and other household work. The three families also differ with respect to what and how much they produce, how much time is committed to agricultural activities, and how much they earn or save as a result of their production. Furthermore, these families, of course, do not represent all families in Havana, nor do their experiences necessarily reflect those of all families involved in urban agriculture there. For example, although the undertaking of gardening and agricultural projects during the Special Period was encouraged but not imposed by the state, to some extent it was imposed on Havana's residents by sheer necessity. Surely there are people who grew food out of necessity, and stopped when they no longer felt such urgent need. I

only spoke to current producers, who began producing before (Case 2) and during (Cases 1 and 3) the Special Period. Their ongoing participation reflects the benefits they achieve through these activities and their personal interest and commitment to agriculture. Other families may have experienced relief during the crisis, or may still produce out of perceived need, without experiencing the same level of enjoyment or broader benefits; I did not speak to any such families.

However, the intention of this study was not to describe the experiences of all households producing food in a similar way in Havana or elsewhere. Rather, it set out to explore the lived experiences of strategically selected households, in an effort to understand how the successes and challenges of this strategy are influenced both by the households themselves and the context in which they do this work. Previous studies have highlighted the unique physical, economic, political, and social context of food production in Havana, and the population-level achievements related to small-scale production (Companioni & Hernández, 2002; González Novo et al., 2009; Koont, 2009; Pinderhughes et al., 2000). These three unique families are real-life examples of the interactions and choices families make within this context; their experiences have uncovered information about the micro- and meso-level experiences, challenges, and outcomes of small-scale urban agriculture in Havana.

Case studies are ideal for understanding complex processes and unique contexts. Examining the Cuban context through the experiences of three distinct families provided layered and nuanced data with respect to the human experience of small-scale urban agriculture, teasing out how this context shapes the activities and outcomes of different families. Studying a small number of cases in-depth allowed me to uncover each family's individual personalities and circumstances, and to better understand their members' interactions with each other and with their context.

The cross-case analysis revealed many commonalities among the experiences of these three families. Four key points, which stood out to me as new and interesting relative to the available literature, are discussed here: context and agency, combining work and leisure, benefits to the individual and the collective, and challenges for small-scale producers.

Context and Agency

The Cuban government's commitment to ensuring the health of its citizens and their right to food was crucial in shaping the infrastructure and opportunities for urban

production. The urgency that encouraged many families to begin producing food independently in the early years of the Special Period was also felt by the state, which needed to act quickly and decisively in order to uphold the rights it had guaranteed its citizens since the early years of the Revolution. The extensive promotion, education and granting of land-use rights clearly facilitated people's participation in the movement. However, producing was not imposed by the state – many people chose to begin growing food; many others did not.

The families who took part in this study demonstrated initiative, creativity, and the pursuit of self-reliance *within* a supportive context. They had all decided to begin producing for independent reasons (including economic hardship and personal interest) and of their own volition. Some family members participated more than others; this reflected not only their available skills and time, but also their interest in the activities. They all spoke of independently seeking information, materials, and economical and sustainable ways to improve or maintain their production.

These findings call attention to the general perception of the role of the state in Cubans' lives under the present socialist system. As a nominally communist nation with a single-party structure, Cuba is typically seen as a highly regulated society, emphasizing "top-down" governance and limited individual freedoms (Sánchez, 2010). Although the state plays a strong role in the everyday lives of Cubans (e.g., universally state-run institutions and employers; rationed food; strict regulations on communications, media, and moving within or leaving the country [Sánchez]), this research suggests that Cubans also have a great deal of agency and choice in their daily lives, specifically in terms of agriculture. The informal market for agricultural products creates sanctioned opportunities for improved quality of life through family initiative and hard work. Premat (2009) used ethnographic data collected over a 10-year period (1997-2007) to analyze the creation of officially-sanctioned sustainable urban agriculture sites as a form of 'social production of space'. Similar to the findings of this study, Premat argues that although the state's function in the development of urban agriculture projects is crucial, a number of non-state actors, including individual producers and internationally-funded NGOs, play a significant role that has been "largely left out from most scholarly accounts of Cuba's recent agricultural developments" (p. 28). In the current study, participants did report having received some equipment from NGOs, as well as information, certificates, diplomas, and awards. However, the role of NGOs was not a major theme in this data, and was not as central to these families'

experiences as their own knowledge, initiative and hard work. However, in-depth, ethnographic studies such as the current case study and Premat's research, suggest a more nuanced, less simplistic view of the role of the state in Cubans' lives and in urban agriculture.

Combining Work and Leisure

Non-material, leisure and spiritual benefits represent an interesting theme that emerged in all three cases. The literature on small-scale agriculture in low-income settings generally frames it as a livelihood or subsistence strategy. Most of this literature emphasizes the subsistence outcomes, primarily access to food and economic benefits (Baumgartner & Belevi, 2001; Cuanalo de la Cerda & Guerra Mukul, 2008; Maldonado Villavicencio, 2009; Mougeot, 2000; Nugent, 1999). However, a select few articles mention enjoyment, pleasure, or leisure as an outcome of this production, such as Møller's (2005) study of generational perspectives on gardening in South Africa and Moskow's (1999) study of gardeners in Havana – both authors found these benefits among older participants. On the other hand, there is a body of literature highlighting the therapeutic, leisure, and mental health benefits of small-scale agriculture (i.e. gardening) – this research focuses almost exclusively on high-income settings (Milligan, Gatrell & Bingley, 2004; Maller et al., 2005; Wakefield, 2007). Contrast, for example, the first line of Milligan and colleagues' article based on research in Northern England ("While gardening is seen, essentially, as a leisure activity it has also been suggested that the cultivation of a garden plot offers a simple way of harnessing the healing power of nature" [p. 1781]) with the substantial body of literature describing home gardening in low-income settings only as a subsistence activity.

This study revealed that the small-scale production of food or other products can be a unique combination of work and leisure. This finding, when contrasted to the relevant literature, suggests an overly simplistic, 'either-or' view of small-scale agriculture. The implication in the literature is that gardening, as leisure, is a 'first world' pursuit, while in low-income settings it is only a subsistence activity. In reality, individuals and families in high-income settings can also enjoy access to fresh foods and cost savings, while individuals in low-income settings can also experience the leisure and therapeutic effects of production. The three cases in this study demonstrated that small-scale agriculture can be two things at once: a welcome source of much-needed monetary and fungible income, but simultaneously an enjoyable pursuit that produces

many non-material benefits. The leisure benefits may have emerged so strongly in the Cuban context because of its unique status as a country with first-world health and social indicators, despite remaining a low-income country. However, the importance of mental health, stress reduction, and quality of life are not limited to the wealthy, and must not be discounted in any setting, even if livelihoods are minimally sufficient or even precarious.

Benefits to the Individual and the Collective

The literature on urban agriculture in Havana highlights the importance of small-scale production in addressing the urgent food needs during the Special Period. The food produced on patios, rooftops, balconies and small urban plots was pivotal to securing food for families and the broader population at a time when there were few other options (Companiononi & Hernández, 2002; González Novo et al., 2009; Pinderhughes et al., 2000). However, as urban agriculture has become more established and organized in Havana, much of the literature and national attention has focused on larger-scale urban and suburban production, such as that taking place on cooperatives, *organopónicos* and peri-urban farms (ACTAF, 2009; Pérez, 2010; Rosset, 2000). According to ACTAF (The Cuban Agriculture and Forestry Technicians' Association) (2009), Cuba's suburban agriculture program, based on ecological, sustainable technologies and low, locally-sourced inputs, offers, among other benefits, the potential to facilitate the sustainability of each Cuban territory and to link the large urban population more closely with the food production process (p. 1). This research has demonstrated that small-scale production continues to play an important role in livelihoods and food security at the household level, even when the producing families are not motivated by urgent need, and may have other options available. These benefits are not limited to relief or crisis-avoidance, as they may have been during the Special Period, but more generally provide improved quality of life for individuals and households.

Furthermore, these small efforts continue to contribute to the collective in an important way – the foods and fertilizers they produce contribute directly and indirectly to the food supply, which despite improving conditions since the 1990s, remains a challenge for this low-income and politically isolated nation. Cuba is classified as a net food importing developing country – it is heavily reliant on imported grains including wheat and rice, with limited resources and export revenues to purchase those imports

(FAO, 2005). Although basic needs are guaranteed and all citizens have access to some foods through the rationing system, non-staple foods are relatively scarce and expensive, and even staple foods may be in short supply from time to time. In contrast to the reality of purchasing food in wealthy countries, where there is much more food available than needed to feed the population, Cuba's resources are so limited that shortages of staple foods are frequent. Producing any amount of food can help to satisfy the needs and preferences of the producing family and their neighbours. This in turn reduces their need to purchase from the markets, leaving more food available for others to purchase. The combined production of small-scale gardens and plots is significant in a country where every resource is needed and nothing can go to waste. The families who took part in this study clearly saw their production as ensuring food security for themselves, for others, and for the country. The successes of the Cuban model suggest that promotion of small-scale, urban and alternative agriculture in other settings should reflect both material and moral incentives for participants (Koont, 2010). As in Cuba and in other settings, this promotion could include education and social marketing aimed at fostering interest and knowledge of food systems and their connection to environmental conservation and social justice.

Challenges for Small-scale Producers in Havana

This research also revealed several challenges or limitations to small-scale production in Havana. Material shortages at the household and national level limit yields and profits (monetary and in-kind) for producing families. These include the scarcity and cost of inputs and equipment, including animal feed, fertile soil, and equipment. At present, animal feed is largely imported and is used in larger-scale farming for distribution through state markets. More nutritious feed could enhance the output of animal products, which can be valuable sources of protein as well as household income. Although soil is expensive, small-scale producers have access to fertilizers like the ones made by Ecofel, which are sold throughout the city at reasonable prices – a 1.5L bottle of Ecofel's liquid fertilizer, once diluted, provides 75 litres of fertilizer, and sells for 30 pesos MN (approximately CAD \$1.20). However, to understand what this cost represents to the small-scale producer, it must be taken into account that the price of that single bottle represents approximately one-tenth of an average monthly state salary.

Another issue identified by this study is the perception of declining support for small-scale producers. Wright (2009) describes forecasted changes in Cuban policy, including

further price reforms and increased use of incentives for agricultural producers. However, despite increased decentralization of decision-making and production, also predicted are efforts to reduce benefits or incentives in the informal sector. Urban agriculture and the free market allowing private produce sales have existed as something of a niche opportunity for entrepreneurship in Cuba since the relaxation of laws in the early years of the Special Period. According to Premat (2009) “Not surprisingly, at a time when the state had minimal material resources at its disposal, the emphasis was on self-reliance, and individual household solutions to food insecurity” (p. 34). Now that the state and the country have recovered significantly, it will be interesting to see the direction taken with respect to small-scale production and private sales. According to Eugenio Fuster Chepe, a delegate of the Ministry of Agriculture in Havana, urban agriculture’s design has been based on the idea of decentralizing up to the point of not losing control, and centralizing up to the point of not killing initiative (cited in González Novo et al., 2009). Allowing producers to privately sell their produce, with little oversight by the state, and to set their own prices, was a significant release of control by Cuban officials. The future of individual or family initiative in small-scale agriculture will depend on the availability of sufficient incentives, which may include opportunities for producers to sell their goods independently, as all of the cases in this study do (although the state is the primary buyer in the third case). Providing material supports for individual producers can increase incentives by decreasing costs and improving yields. As demonstrated by this research, these improvements can also continue to generate collective benefits much as they did during the Special Period.

What Can be Learned from the Cuban Example?

Beyond the Years of Crisis

The dramatic success of Havana’s small-scale agriculture during the Special Period was strongly shaped by the collective scarcity of food and petroleum products, the rapid undertaking of small projects across the city, and widespread promotion and support by the state. Given the desperate circumstances, the Cuban state had few options to meet its commitment to ensuring access to food for all citizens. Recognizing and acting swiftly upon the popular movement already underway was perhaps unavoidable from this perspective. The macro-level, widespread and formal support of urban agriculture was grounded in the socialist commitment of the Cuban state, and the urgent need for self-sufficiency.

Nearly 20 years later, the urgency of the Special Period has faded, thanks in part to the rapid agrarian shift toward self-sufficiency and small-scale, decentralized and organic production. These achievements were significant and have been lauded around the world as a testament to the power of alternative food production systems. Although Cuba's reduced dependence on world markets and emphasis on self-sufficiency has provided a more sustainable food system, Cuba remains a low-income country with limited resources. Cuba is not fully independent – the US-imposed trade embargo continues to isolate Cuba politically and economically, and Cuba still relies heavily on imports of grains (USDA Foreign Agricultural Service, 2005; FAO, 2003), which are staples in human diets as well as necessary animal feed.

These challenges continue to demand enhanced local production for local consumption, and maximum use of available human and material resources. Thus many of the benefits of small-scale production in Havana are still strongly connected to need and scarcity. The shared experience of need across the majority of the population, and the importance of solidarity and equality in Cuban society have also created a unique social context where many people see contributions to the collective, including food production, as a moral or social duty. More than a decade of promotion and concrete state support has solidified this idea, and normalized the prevalence of urban food production.

In the current context, Cuban families' livelihoods are more secure than they were during the crisis, but many still choose to produce food or other products in urban areas. The unique culmination of factors in Cuba, including its socialist model, trade circumstances, and agrarian system emphasizing small-scale, low-input, organic production, raise the question of how these lessons can be applied in other settings and other paradigms.

Applications Beyond Cuba

The production of food as fungible income has the potential to provide economic and food security relief for families in other countries, much as it has in Cuba. In settings where low-income families have fewer entitlements to basic needs such as food, shelter and water, these benefits could be more directly connected to survival (relief or rehabilitation) of the household or family.

Even in low-income settings, the individual and household benefits of this activity need not be limited to what we think of as basic or survival needs. Cost savings or

income from the sale of agricultural products could also support families in these contexts in moving toward developmental outcomes like security of education. Furthermore, as highlighted by this research, enjoyment, satisfaction, spiritual and therapeutic effects related to these activities provide ongoing benefits and motivation to continue producing, which are relevant in any setting. Likewise, the physical health benefits of regular activity and access to fresh, nutrient-rich foods are also important anywhere. Cuba's high levels of social development, education, and health outcomes also demonstrate that the benefits of this strategy need not be limited to "developing" countries. The health, spiritual, and therapeutic benefits of gardening can be enjoyed by anyone at any income level, even if saving money is not a priority. This includes decorative gardening, but there are additional benefits to food production, such as the taste, convenience and satisfaction of eating food you have grown yourself.

The promotion of this activity *as a livelihood strategy* within higher-income countries might be most relevant and realistic in low-income communities or among disadvantaged groups within these settings. Benefits to individual and household livelihoods are possible even if generating monetary income from small-scale produce sales may be unrealistic in other cities – the informal economy is less common and more stigmatized and regulated in developed countries, and authorization and demand for the private sale of fruits and vegetables are far less prevalent (Miller, 2008). However, access to food (fungible income), physical activity, and community participation could be particularly beneficial in low-income neighbourhoods, or in programs or centres for senior citizens or other socially disadvantaged groups. As highlighted in Chapter 2, the ongoing material resources needed to maintain small-scale family or household production systems are simple, affordable and accessible to most families.

However, as highlighted by this study, there are numerous benefits of small-scale urban agriculture which are not explicitly linked to household livelihoods. If promoted and supported to an extent that many families begin growing food, diverse urban food production could have impacts at the community or neighbourhood level. Promoting sustainable practices and locally-controlled food systems could help to reduce the social distance between high- and low-income groups or communities. Furthermore, normalizing local food systems and ecological approaches can benefit entire regions or countries by ensuring local needs are met with less impact on the

environment and less reliance on the current inequitable model of food production and distribution.

This research has revealed how the positive outcomes of small-scale urban agriculture in Havana are products of individual or family initiative, agency, and hard work, within a particularly supportive environment. From both development and health promotion perspectives, the results of individual efforts are shaped, and often limited by, the physical, social, political, and economic context within which people make choices. In this light, perhaps the real question raised by this research is not what positive outcomes could be produced in other contexts, but rather how *other contexts* can be shaped to produce these same benefits.

Supporting Small-scale Production

The actions taken by the Cuban government during the Special Period to support urban food production were not small or token gestures. The creation of a Ministry of Urban Agriculture and a system of extension agents and TCAs demonstrated the official and ongoing commitment to food production in cities. The widespread promotion, infrastructure, and policy changes created an environment that was particularly supportive of small-scale production. Granting rights of use for vacant lands, sending promoters and extension agents to encourage people to participate, providing technical guidance to those who need it, and dramatically relaxing laws around the private sale of produce all helped to encourage production and enhance the results for families and the broader community. Many of these approaches could be applied in other settings to facilitate some of the outcomes achieved in Cuba.

Dedicating more public lands to green spaces has important aesthetic, social and therapeutic effects (Maller et al., 2005). However, those green spaces can be productive as well as beautiful. Small plots of vacant or underutilized land could be dedicated to families or groups who wish to use them for food production. Municipal governments and urban planners could play a key role in facilitating beautification and enhanced productivity of even small pieces of land, with potentially widespread benefits. Small-scale animal production in urban areas has been gaining increased attention for the potential benefits it can provide urban residents (Schiere & van der Hoek, 2001). However, many cities (including the Halifax Regional Municipality) have by-laws prohibiting livestock-keeping (CBC News, 2010). Keeping farm animals in urban areas does present some potential threats to public health and may be seen as a nuisance by neighbours (CBC News, 2010; Schiere & van der Hoek). However, many other cities

around the world are successfully managing these challenges (Schiere & van der Hoek), and their experiences and technologies can inform other municipal governments as they embrace local food production for the benefit of their own constituents. Provincial and national governments can also develop programming to support urban food production; these could include education and guidance, start-up funds or supplies. The promotion of small-scale agriculture in other settings should emphasize and support both material incentives (i.e. food and possibly money) and non-material incentives (i.e., leisure, satisfaction, and community participation in environmental conservation and “buy local” movements) for individuals, families and community groups. It is important to note, however, that despite its broad and decentralized implementation, the Cuban approach to promoting urban agriculture was not based on one-off programs or small community projects, but rather on a country-wide commitment to a new way of producing food and feeding its citizens. The level of political will and the government’s strong, cohesive action “cannot be underestimated” (Wright, 2009, p. 226)

Moving Toward Sustainable Food Systems

The comments from the participants in this study about the collective benefits of local food production, including self-sufficiency, environmental sustainability, and local economic benefits reflect a growing global sentiment. In high-income countries like Canada, a rapidly growing “buy local” movement has emerged, largely from critics of the corporate food regime and from groups seeking alternative models (Weis, 2007). This movement reflects a growing awareness of the need for sustainably-produced food, including decreased reliance on the fossil fuels and chemical inputs typically used in large-scale, industrial farming.

Scale and Productivity

Advocates of free trade typically argue that large-scale farming is more efficient because of the yields generated per worker or per unit of land (Weis, 2007a). Thus small-scale food production efforts are often discounted or marginalized as fringe activities that do not contribute significantly to livelihoods or local economies (Landon-Lane, 2004). However, as Weis (2007a) explains, the efficiency equation typically presented by advocates of import- and export-driven (i.e. mono-crop) production is misleading, as it focuses only on the end-point (the quantity produced) and fails to consider the process. For example, small farms are “typically much better at retaining and recycling organic materials and hence drawing on local, renewable resources”

(Weis, 2007a, p. 166). Small-scale producers also typically use less mechanization, allowing intensive use of space (with no need for large machinery) and planting diverse crops, both of which help to preserve the soil and ensure sustainable production (Buckland, 2004; Rosset, 2000; Weis, 2007). The crop diversity that characterizes small-scale production also means producers are less vulnerable to pests and better able to adapt to changing seasons and climactic conditions (Buckland).

Many studies have concluded that small-scale, alternative and organic production is actually more efficient (Wright, 2009) and produces higher *output* (including many different crops and possibly animal products) per unit of area than *yields* (amount produced of a sole crop – how productivity is typically measured) over the long term (Rosset 1999). Further, industrial farming is known to degrade the very same natural resources it depends on (soil, water, vegetation), and has resulted in foods that contain decreasing levels of micro- and macro-nutrients, and increasing chemical contaminants (Wright, 2009). The industrialization and proliferation of chemical inputs in global food systems that occurred during the mid-20th century, also known as the Green Revolution, did produce significant yield increases of world grain crops, resulting in much more food being available per person, globally. However, the industrial, market-driven model has failed to distribute those gains in a way that provides an adequate diet for the estimated 842 million people in the world who are still undernourished (Pretty et al., 2006; Weis, 2007a; Wright, 2009). The Cuban example defies the ‘conventional’ wisdom espoused by corporations and free trade advocates that industrial, chemically intensive mono-crop farming is necessary to feed the world’s population. In Cuba, a devastating food crisis was overcome largely due to the efforts of small farmers and gardeners using ecological methods (Rosset, 2000).

Current Trends in Food Systems

The current movement towards self-sufficiency and small-scale, local food production in developed countries, including Canada, is largely a popular/grass-roots movement. In most countries – Cuba being a notable exception – international trade agreements, neo-liberal values and corporate control of food dominate public policies. According to Wright (2009), “To date, organic and localized [food] systems have occurred often in the face of prevailing policy and institutional arrangements, rather than because of them” (p. 26). The food chain is increasingly consolidated, putting ever more power and resources in the hands of a small number of transnational corporations, such as the chemical company Monsanto and grain giant Cargill (Patel, 2007). Canada’s

largest food distributor, Loblaw Companies Ltd., had over CAD \$30 billion in sales last year, and reported a gross profit of CAD \$7.2 billion for 2009 (Loblaw Annual Report 2009). The consolidation of food buyers and distributors provides increasing opportunities and revenues for corporations to lobby governments for further control of food systems (Nestle, 2002; Patel). Meanwhile, global exports of food increased by 21.8% in 2008, while food prices increased by 23.3% (WTO, 2009). According to the WTO, “While food exporters benefited – Thailand’s rice exports, for example, increased 65 per cent and EU exports of wheat outside the European Union expanded by 180 per cent – the burden became heavier on net-food importers” (p. 35).

The need for more sustainable approaches has been identified and global demand is growing. The disappearance of favourable trade relationships that brought about Cuba’s Special Period essentially *required* the shift to small-scale, organic production. Although the trade circumstances were unique, the crisis was largely based in the sudden (impossibly high) price increases for fuel and other chemical farming inputs such as fertilizers and pesticides. The sudden and urgent nature of this crisis may be unique to Cuba, but concerns about ‘peak oil’ and rising fuel costs are growing globally, raising critical questions for a global food system largely entangled with fossil fuels. Weis (2007a) describes the combination of the continued increase in the distance from farm to plate (or “food miles”) with the currently dwindling security of access to fossil fuels, as “one of the great contradictions of the global food economy” (p. 184).

As shipping costs rise, even corporate giants may begin to lose their competitive advantage in the global food market. Thus we have seen the local and organic trend spilling over into corporate food systems – many people are buying organic, “green” or “eco-friendly”, and fair trade products from the big-box stores, which are also a common source of fertilizers and pesticides for household gardens. In the past few years these corporations have done a lot to promote the idea that they support the “buy local” movement. For example, my local grocery store has strongly promoted and featured the few Atlantic Canadian products that appear among their thousands of imported goods. They have created their own brands of “fair trade” products such as coffee. However, these corporations continue to contribute to the consolidation of the food chain as they profit from the current popular movement. Nguyen and colleagues (2004), who studied ‘quality and ecolabelling schemes’ (labels providing consumers with information about the product’s environmental impacts) in France, state that although consumers may be willing to pay more for products produced in a sustainable way, this willingness is highly

variable and “unlikely ever, by itself, to be adequate to induce socially optimal levels of environmental quality across the full range of environmental outputs potentially associated with a truly multifunctional agriculture” (p. 400).

Another alternative model has emerged, reflecting the principles of food sovereignty on a local, community or farm-centred scale: the concept of community-supported agriculture (CSA). According to the United States Department of Agriculture, CSA consists of a community of individuals who commit to supporting to a farm operation “so that the farmland becomes, either legally or spiritually, the community’s farm, with the growers and consumers providing mutual support and sharing the risks and benefits of food production” (as cited in National Sustainable Agriculture Information Service, 2006, p. 2). Members pledge in advance to cover the anticipated costs of the farm operation and the farmer’s salary. In return, they receive shares in the farm’s products throughout the growing season. These models have been proliferating around the world, including projects in North, Central and South America, Europe, Asia and Australia (Lyons, 2003). Similar approaches have also been applied in developing community-supported fisheries. These models benefit producers by reducing transportation and marketing costs and providing a guaranteed market for their products. Benefits to members include healthy, fresh and seasonal foods, better understanding of local food production and risks, and a more direct connection to local resources and the source of their foods (Lyons, 2003).

Fostering Change

Given the emerging challenges and growing demand for local food production and increased food sovereignty (i.e., national and/or local control over food systems and decision-making), there is much to be learned from the actions and successes of Cuban producers and the Cuban administration. It is important to note that a return to local food production and consumption, emphasis on small-scale, labour-intensive and organic farming, with less reliance on mechanized or chemical means of production, is not a step backward or a return to ‘primitive’ approaches; nor does it mean the rejection of modern science (Weis, 2007a). Rather, maximizing outputs from these types of production requires extensive biotechnology and biochemical research and expertise, for developing organic fertilizers and biological pest control techniques, understanding complementary species, and identifying efficient and sustainable processes and systems for production and distribution (Weis). Cuba’s success illustrates this point: much of the productivity and efficiency of the current food system in Cuba is a product of

ongoing biotechnology research and development (Wright, 2009). An important characteristic that separates Cuba's experience, however, is the fact that the role that science and scientists play in food production there "is shaped explicitly by public, rather than private, ends" (Patel, 2007, p. 160). In recent decades, agricultural science on a global scale has increasingly reflected corporate funding and corporate interests (Middendorf, Skladany, Ransom & Busch, 2000). Such research is intrinsically designed to enhance the company's competitiveness, and therefore does not reflect the needs of the world's poor or the social justice elements of food systems.

Families such as the ones in this study exhibit a great deal of initiative, and much of the involvement in urban agriculture in Havana takes place at a community level, including events and the informal sharing of information. However, the government's role in supporting its citizens and communities in achieving results from these activities was (and is) crucial. The current push for more sustainable approaches in Canada and other wealthy countries is still largely at a grass-roots level, much as it began in Cuba in the early 1990s. Grass-roots groups, and corporations, have seized the "buy local" movement, but in most high-income countries, municipal and federal governments have yet to promote local or urban food production to any meaningful extent (Wright, 2009). However, the rapidly increasing demand presents an important opportunity for governments in other settings to implement upstream measures designed to meet this movement halfway, as the Cuban government did.

At a broader level, a commitment to pursuing sustainable food systems around the world will require a shift toward food sovereignty and away from reliance on external markets, i.e., imports and exports. Until recently, evidence on alternative food systems has been piecemeal and small-scale, with few examples of broad policy and action committing to their application (Wright, 2009). Cuba has provided an ideal study site to explore and observe the process and impacts of implementing such alternatives at the macro-level (Rosset, 2000; Stricker, 2007; Wright, 2009). Further research into food alternatives should consider the Cuban example as a wide evidence base for studying a variety of sustainable farming practices, as well as the process of developing and implementing policies and infrastructure supporting sustainable agriculture on a national scale. Agricultural research and development in other countries, following the Cuban model, should also focus on sustainable farming practices, ecological fertilizers and biological pest controls. However, dramatic change will require more than research. Political will is required to re-shape local and national priorities toward sustainability and

self-sufficiency, and there is no doubt that the opposition to these changes (specifically, corporate lobbying) is fierce. Likewise, a change in mentality among the broader public may be required to embrace local, seasonal diets and the importance of local food production, social justice in food systems, and environmental preservation.

Conclusion and Recommendations

Producing food, medicinal plants, and fertilizers on a small scale can be important livelihood strategies for individuals and families with limited resources. The families featured in this research enjoy a wide range of benefits, including but not limited to enhanced income and access to food. They also enjoy spiritual, leisure and therapeutic benefits from this work, and make important contributions to their households, neighbourhoods and country. Their experiences reveal that small-scale urban agriculture in the Cuban context is more than just a household livelihood strategy; each small project is one more thread in the complex fabric of Cuba's pursuit of sustainable food production and national food security. The Cuban example has demonstrated how small individual efforts, undertaken and supported on a large scale, can produce dramatic change in national nutritional, social, and environmental outcomes.

Specific recommendations generated by this research are summarized below. The findings of this study and these recommendations will be disseminated through academic and community presentations in Canada, Cuba, and elsewhere. They will also be shared in an abbreviated report that will be prepared in Spanish for the library at FLACSO Cuba, and the study participants. Shorter articles will be submitted for publication in community and academic journals and online resources in Canada and Cuba.

- 1) In the Cuban context, efforts to promote urban agriculture, both small- and large-scale, should continue to receive priority attention. Television shows and events related to agriculture were seen as good promotion by participants in this study. However, more promotion may be necessary as Cuba's economy continues to recover and the urgency that first encouraged these efforts fades into history. Participants in this study suggested further promotion of agriculture through such channels as radio shows and regular newspaper columns devoted to urban agriculture, also suggesting that gardeners could write or phone in seeking advice and technical information.

Efforts to grant lands in suburban areas have been an important step in making urban food supplies more secure and self-sustaining. Encouraging a long-term interest in seizing this opportunity, as well as ongoing opportunities for balcony, rooftop and backyard production, will require appealing to younger audiences. School-based promotion and training related to agriculture and its material and non-material benefits is an ideal means to encourage this activity into the future. Further reforms to increase incentives will also be important.

- 2) Policymakers in Cuba should also consider the collective benefits of small-scale, independent production, including private sales. During the Special Period, such projects were crucial to the survival of many individual households, but on a larger scale the food produced was pivotal in Cuba's ability to survive the crisis. This study has revealed that even beyond the years of crisis, small-scale agriculture continues to make important contributions at the collective level: contributing to the food supply while reducing the need to transport goods, sharing information, and promoting local and ecological production approaches within the community. This study revealed a lack of material support for small-scale producers, apparently grounded in the higher productive potential of suburban and rural lands, as well as the belief that independent production is for the benefit of the individual. If, as suggested by current analysts, the Cuban government moves to further reduce supports and incentives for the informal sector, not only may individual producers enjoy fewer benefits, but many of the collective benefits of small-scale production may also be threatened. This research has suggested that revitalizing state efforts to promote and facilitate small-scale production, including the provision of more material inputs, could also result in continued or even greater benefits to families, neighbourhoods, and the nation as a whole.
- 3) On a global scale, governments and policymakers would be well-advised to consider the evidence regarding the efficiency of small-scale and sustainable production, as well as the reality of the limitations to the current status quo. Research and advocacy must continue to move governments toward people-centered, community-supported production and distribution; self-sufficiency in terms of food and agriculture; and less reliance on fossil fuels. Research and

development of new techniques and practices in agriculture will be imperative. However, if the goal of such efforts is sustainable development, scientific investigation must be carried out in a way that provides real possibilities for the world's poor and disadvantaged. Political will is required to ensure public funds go to studying and implementing alternatives for the benefit of society, rather than for corporate or private interests.

4) Small-scale urban agriculture should be encouraged in all urban settings, both as a livelihood strategy as well as an important source of less tangible health and social benefits to individuals, families, and the broader community. Promotion of household or family participation in urban and small-scale agriculture should emphasize material benefits, recognizing the need for more secure household livelihoods and more affordable access to food for families around the world, including within high-income countries. However, borrowing from the Cuban example, promotion should also emphasize the moral incentives of such production, taking advantage of the growing popular movement toward social justice and environmental sustainability in food systems. Promotional efforts must be met with simultaneous improvements and changes in policy and infrastructure. Municipal governments and urban planners can play an important role through dedicating lands within and near urban centres to groups or individuals who can use them productively, as well as policies and guidelines supporting and managing small animal production within urban areas. Local institutions (such as schools, daycares, and hospitals) can play a role in promotion and education, as well as production by creating gardens and composting systems for institutional, employee or community use. Collaborative efforts between health, social service, urban planning and environmental management sectors will be crucial to implementing a cohesive response to the growing concerns over the (social and environmental) sustainability of our current food systems.

Final Thoughts

Urban agriculture is not just about food security. The production of agricultural products in small lots and backyards produces benefits that relate to the full spectrum of health: physical, social, mental, spiritual and environmental. The world's population is

growing and becoming more urban every day (Weis, 2007a), and the natural resource base we depend on is increasingly depleted and threatened. On a global scale, our continued failure to produce and distribute food in a socially just and environmentally sustainable way is growing harder to ignore.

Cuba is one nation that is actively pursuing a path to sustainable development, by focusing on meeting the needs of all of its citizens. This includes not only basic needs such as food and health care, but also needs of self-actualization through free education and rich cultural traditions including athletics and the arts. In terms of food production and self-sufficiency, the Cuban state has supported individuals and families in becoming the leaders and key actors in a social movement that has attracted attention from around the globe. This context is important, but the movement would be nothing without the commitment and hard work of families like those of Francisco and Pastora, Ana and Antonio, and Eva and Fulgencio.

REFERENCES

- Adorada, J.L. (2007). Assessment of vermicomposting as a waste management technology and a livelihood alternative. *Journal of Environmental Science and Management*, 10 (2): 28-39.
- Agencia de Información Nacional – Habana [National Information Agency - Havana] (2010). *Cuban province encourages covered crops against solar radiation*. n.p.
- Akram-Lodhi, A.H. (2007). Land reform, rural social relations and the peasantry. *Journal of Agrarian Change*, 7(4): 554-562.
- Altieri, M.A., Companioni, N., Cañizares, K., Murphy, C., Rosset, P., Bourque, M., & Nicholls, C.I. (1999). The greening of the “barrios”: Urban agriculture for food security in Cuba. *Agriculture and Human Values*, 16: 131-140.
- Altieri, M.A. (2002). The principles and strategies of agroecology in Cuba. In F. Funes, L. García, M. Bourque, N. Pérez & P. Rosset (Eds.). *Sustainable agriculture and resistance: Transforming food production in Cuba* (pp. xi-xiii). Oakland, CA: Food First Books.
- Armstrong, E.A. & Bernstein, M. (2008). Culture, power, and institutions: A Multi-institutional politics approach to social movements. *Sociological Theory*, 26(1): 74-99.
- Auld, A. (1999). Farming with Fidel. *Sustainable Times*, 14: 8-14.
- Bas, J.A. (2005). *Considering global food insecurity: The case of Cuba – A national alternative to the global capitalist food distribution system*. Master's Thesis, Dalhousie University, Halifax NS.
- Baumgartner, B., & Belevi, H. (2001). *A systematic overview of urban agriculture in developing countries*. Dübendorf, Switzerland: Swiss Federal Institute for Environmental Science & Technology, Department of Water & Sanitation in Developing Countries.
- Bell Lara, J. (2005). Cuba's struggle to maintain the social safety net in the age of globalization. In J. Bell Lara & R.A. Dello Buono (Eds.) *Cuba in the 21st century: Realities and perspectives* (pp. 115-139). Instituto Cubano del Libro: Havana, Cuba.
- Benjamin, M., Collins, J., & Scott, M. (1986). *No free lunch: Food and revolution in Cuba today*. New York, NY: Food First Books.
- Berti, P.R., Krasevec, J., & FitzGerald, S. (2007). A review of the effectiveness of agriculture interventions in improving nutrition outcomes. *Public Health Nutrition*, 7(5): 599-609.
- Birch, S.E., & Norlander, L. (2007). The Cuban paradox: a health care system that does a lot with very little. *American Journal of Nursing*, 107(3): 75-79.

- Blomström, M., & Hettne, B. (1987). *Development theory in transition*. London, UK: Zed Books.
- Borland, K. (2004). "That's not what I said!" Interpretive conflict in oral narrative research. In S. Nagy Hesse-Biber & P. Leavy (Eds.). *Approaches to qualitative research* (pp. 522-534). New York, NY: Oxford University Press.
- Brenner, P., Jiménez, M.R., Kirk, J.M., & LeoGrande, W.M. (Eds.) (2008). Introduction: History as prologue: Cuba before the Special Period. In *Reinventing the revolution: A contemporary Cuba reader*. Toronto, ON: Rowman & Littlefield Publishers, Inc.
- Bryld, E. (2003). Potentials, problems, and policy implications for urban agriculture in developing countries. *Agriculture and Human Values* 20: 79–86.
- Buckland, J. (2004). Ploughing up the farm: Neoliberalism, modern technology and the state of the world's farmers. Black Point, NS: Fernwood Publishing.
- CBC News (2009) Women in politics worldwide. Retrieved from: <http://www.cbc.ca/news/interactives/map-world-womenpolitics/>
- CBC News (2010, July 23). Halifax man fights for backyard flock. Retrieved from: <http://www.cbc.ca/canada/nova-scotia/story/2010/07/23/ns-halifax-urban-chickens.html>
- Caram León, T. (2005). Women's empowerment in Cuba. In J. Bell Lara & R.A. Dello Buono (Eds.) *Cuba in the 21st century: Realities and perspectives* (pp. 207-231). Instituto Cubano del Libro: Havana, Cuba.
- Carney, D., Drinkwater, M., Rusinow, T., Neefjes, K., Wanmali, S., & Singh, N. (2009). Livelihoods approaches compared: a brief comparison of the livelihoods approaches of the United Kingdom Department for international development (DFID), CARE, Oxfam, and the United Nations Development Programme (UNDP). In Department for International Development & Food and Agriculture Organizations of the United Nations (Ed.). *Proceedings from the forum on operationalizing sustainable livelihoods approaches*. Siena, Italy. Retrieved from: <ftp://ftp.fao.org/docrep/fao/003/X9371E/X9371E00.pdf>.
- Castro Medel, O., & Carballo, H. (July 26, 2009). Llama Raúl a aumentar producción de alimentos en Cuba [Raul calls for increased food production in Cuba]. *Juventud Rebelde*, n.p. Retrieved from: <http://www.juventudrebelde.cu/cuba/2009-07-26/llama-raul-a-aumentar-produccion-de-alimentos-en-cuba>.
- Chambers, R. (1989). Editorial introduction: vulnerability, coping and policy. *IDS Bulletin*, 2(2):1-7.
- Chaplowe, S.G. (1996). Havana's popular gardens: Sustainable urban agriculture. *World Sustainable Agriculture Association Newsletter*, 5(22), n.p. Retrieved from: <http://www.cityfarmer.org/cuba.html>

- Chima, J. (2005). What's the utility of the case-study method for social science research? A response to critiques from the qualitative/statistical perspective. In *Conference papers: American Political Science Association, 2005 annual meeting* (pp. 1-27). Retrieved from: http://www.allacademic.com/meta/p_mla_apa_research_citation/0/4/1/9/5/page_s41952/p41952-1.php
- Clyde Mitchel, J. (1983/2000). Case and situation analysis. In R. Gomm, M. Hammersley & P. Foster (Eds.) (2000). *Case study method* (pp. 165-186). Thousand Oaks: Sage.
- Companiononi, N., & Hernández, Y.O. (2002). The growth of urban agriculture. In F. Funes, L. García, M. Bourque, N. Pérez & P. Rosset (Eds.). *Sustainable agriculture and resistance: Transforming food production in Cuba* (pp. 220-236). Oakland, CA: Food First Books.
- Creswell, J. (1998). Five traditions of inquiry. In J. Creswell, *Qualitative inquiry and research design: Choosing among five traditions* (pp. 47-72). Thousand Oaks, CA: Sage.
- Cuanalo de la Cerda, H.E. & Guerra Mukul, R.R. (2008). Homegarden production and productivity in a Mayan community of Yucatan. *Human Ecology*, 36: 423–433.
- Davies, D., & Dodd, J. (2002). Qualitative research and the question of rigor. *Qualitative Health Research*, 12(2), p. 279-289.
- De Vos, P., Ceukelaire, W., Bonet, M., & Van der Stuyft, P. (2008). Cuba's health system: Challenges ahead. *Health Policy and Planning*, 23: 288-290.
- Denzin, N.K. (2004). The art and politics of interpretation. In S. Nagy Hesse-Biber, & P. Leavy (Eds.). *Approaches to qualitative research* (pp. 447-472). New York: Oxford University Press.
- Díaz, E. (2007). Mujer cubana: el proceso de participación social [The Cuban woman: the process of social participation]. *Estudios del Desarrollo Social: Cuba y América Latina (FLACSO-Cuba)*, 1(2): n.p.
- Díaz González, E. (2005). Is the socialist model still a viable alternative for Cuba? In J. Bell Lara & R.A. Dello Buono (Eds.) *Cuba in the 21st century: Realities and perspectives* (pp. 261-282). Instituto Cubano del Libro: Havana, Cuba.
- Díaz González, B. (2005). The transition to sustainable agriculture and rural development in Cuba. In J. Bell Lara & R.A. Dello Buono (Eds.) *Cuba in the 21st century: Realities and perspectives* (pp. 141-166). Instituto Cubano del Libro: Havana, Cuba.
- Díaz Tenorio, M. (2000). La familia cubana ante la crisis de los 90 [The Cuban family in the face of the crisis of the 1990s]. Paper presented at the *XXII Congress of the Latin American Studies Association*, March 16-18, 2000, Miami, Florida.

- Egal, F., Valstar, A., & Meershoek, S. (2001). Urban agriculture, household food security and nutrition in Southern Africa. Retrieved from: Food and Agriculture Organization, <ftp://ftp.fao.org/es/esn/nutrition/urban/stellenbosch.pdf>
- Evans, R.G. (2008). Thomas McKeown, meet Fidel Castro: Physicians, population health and the Cuban health paradox. *Healthcare Policy*, 3(4): 21-32.
- Flyvbjerg, B. (2006) Five misunderstandings about case-study research. *Qualitative Inquiry*, 12(2): 219-245.
- Fontana, A., & Frey, J.H., (1994). Interviewing: the art of science. In N. Denzin & Y. Lincoln (Eds.), *Handbook of qualitative research* (pp. 361-376). Thousand Oaks, CA: Sage.
- Food and Agriculture Organization (FAO) (2003). *Fertilizer use by crop in Cuba*. Rome: Land and Plant Nutrition Management Service, Land and Water Development Division, Food and Agriculture Organization of the United Nations. Retrieved from: <ftp://ftp.fao.org/agl/agll/docs/fertusecuba.pdf>
- Food and Agriculture Organization (FAO) (2005). *Small island developing states: Agricultural production and trade, preferences and policy*. Rome: FAO. Retrieved from: <http://www.fao.org/docrep/007/y5795e/y5795e00.htm>
- Food and Agriculture Organization (2006). *The state of food insecurity in the world 2006*. Rome: Food and Agriculture Organization.
- Food and Agriculture Organization (accessed: March 3, 2009). *Gender and food security: Agriculture*. Retrieved from: <http://www.fao.org/gender/en/agri-e.htm>
- Franco, M., Kennelly, J.F., Cooper, R.S., & Ordúñez-García, P. (2007). La salud en Cuba y los objetivos de desarrollo del milenio [Health in Cuba and the Millennium Development Goals]. *Revista Panamericana de Salud Pública*, 21(4): 239-250.
- Franco, M., Ordúñez, P., Caballero, B. & Cooper, R.S. (2008). Obesity reduction and its possible consequences: What can we learn from Cuba's Special Period? *Canadian Medical Association Journal*, 178 (8): 1032-1034.
- Frankenberger, T.R., Drinkwater, M., & Maxwell, D. (2000). Operationalizing household livelihood security: A holistic approach for addressing poverty and vulnerability. In Department for International Development & Food and Agriculture Organizations of the United Nations. *Proceedings from the forum on operationalizing sustainable livelihoods approaches*. Siena, Italy. Retrieved from <http://www.fao.org/docrep/003/X9371E/x9371e12.htm>.
- Frankenberger, T.R. & McCaston, M.K. (1998). The household livelihood security concept. *Food, Nutrition and Agriculture*, 22: 30-35.
- Frazo, E., Meade, B., & Regmi, A. (2008). Converging patterns in global food consumption and food delivery systems. *Amber Waves*, Feb 2008. Retrieved from: http://findarticles.com/p/articles/mi_qa5389/is_200802/ai_n24394074.

- Funes, F., García, L., Bourque, M., Pérez, N., & Rosset, P. (Eds.) (2002). *Sustainable agriculture and resistance: Transforming food production in Cuba*. Oakland, CA: Food First Books.
- García Sampedro, M.E. & Legañoa Martínez, G. (2006). *Cuba, mujeres, hombres y desarrollo sostenible* [Cuba, women, men and sustainable development]. Havana, Cuba: Oficina Nacional de Estadísticas [National Office of Statistics], Programa de Naciones Unidas para el Desarrollo [United Nations Program for Development], Programa de Desarrollo Humano Local [Local Human Development Program]. Retrieved from: <http://www.one.cu/publicaciones/enfoquegenero/DesSostenible/Genero.pdf>
- Gautam, R., Suwal, R., & Sthapit, B.R. (2009). Securing family nutrition through promotion of home gardens: underutilized production systems in Nepal. *Acta Hort.*, 806: 99-106.
- Gerring, J. (2007). *Case study research: Principles and practices*. New York: Cambridge University Press.
- Gillham, B. (2000). *Case study research methods*. New York: Continuum.
- Glaser, D. & Walker, D.M. (Eds.) (2007) *Twentieth-century Marxism: A global introduction*. New York: Routledge.
- González Novo, M. (2003) Urban agriculture in the city of Havana. Cuba Organic Support Group. Retrieved from: <http://www.cosg.org.uk/mario.htm>
- González Novo, M., Castellanos Quintero, A., & Price Masalías, J.L. (2009). *Testimonios: Agricultura urbana en Ciudad de La Habana*. Havana, Cuba: ACTAF (Asociación Cubana de Técnicos Agrícolas y Forestales).
- González Novo, M. & Murphy, C. (1999). Urban agriculture in the city of Havana: a popular response to crisis. In N. Bakker, M. Dubbeling, S. Guendel, U. Sabel-Koschella, & H. de Zeeuw (Eds.). *Growing Cities, growing food: Urban agriculture on the policy agenda* (pp 337-354). Leusden, Netherlands: Resource Centre on Urban Agriculture and Forestry.
- Guba, E., & Lincoln, Y. (1994). Competing paradigms in qualitative research. In Denzin, N., & Lincoln, Y. (Eds.), *Handbook of qualitative research* (pp. 105-117). Thousand Oaks, CA: Sage.
- Hamel, J., Dufour, S., & Fortin, D. (1993). Case study methods. *Qualitative Research Methods Series*, 32. California: Sage.
- Haven, P. (2009). Cuban Government cuts back on Libreta food rations. *Havana Journal, November 2009*: n.p. Retrieved from: <http://havanajournal.com/politics/entry/cuban-government-cuts-back-on-libreta-food-rations/>

- Henn, P. (2001). *User benefits of urban agriculture in Havana, Cuba: an application of the contingent valuation method*. Master's Thesis, Department of Agricultural Economics, McGill University.
- Henn, P., & Henning, J. (2002). Urban agriculture and sustainable urban systems: a benefits analysis of the garden movement in Havana, Cuba. *International Journal of Environment and Sustainable Development*, 1(3): 202-209.
- Hurworth, R. (2003). Photo-interviewing for research. *Social Research Update*, 40: n.p. Retrieved from: <http://www.soc.surrey.ac.uk/sru/SRU40.htm>
- Hutton, N.J. (2006). Peace profile: Roberto Fernández Retamar. *Peace Review: A Journal of Social Justice*, 18:549–554.
- International Federation of Red Cross and Red Crescent Societies (2008). *Cuba: Hurricane season 2008 revised emergency appeal, n° MDRCU0001*. Retrieved from: <http://www.ifrc.org/docs/appeals/08/MDRCU00104.pdf>
- Jenkins, T.M. (2008). Patients, practitioners, and paradoxes: responses to the Cuban health crisis of the 1990s. *Qualitative Health Research*, 18(10):1384-400.
- Jolly, D. (1999). Urban agriculture as food-access policy. In M. Koc, R. MacRae, L.J.A. Mougeot, & J. Welsh (Eds.). *For hunger-proof cities: Sustainable urban food systems*. Retrieved from: http://www.idrc.ca/en/ev-30623-201-1-DO_TOPIC.html.
- Killoran-McKibbin (2006). Cuba's urban agriculture: Food security and urban sustainability. *Women & Environments, Spring/Summer 2006*: 56-57.
- Koont, S. (2005) Cuba: Case study in food security. *Monthly Review*, 55(8): n.p. Retrieved from: <http://www.monthlyreview.org/0104koont.htm>
- Koont, S. (2009). The urban agriculture of Havana. *Monthly Review*, 60(8): np. Retrieved from: <http://monthlyreview.org/090119koont.php>
- Koont, S. (2010). *Sustainable urban agriculture: The model of Cuba*. Unpublished manuscript.
- Kracht U, Schulz M (1999). *Food security and nutrition: The global challenge*. New York: St. Martin's Press.
- Lamb, J (2005). Cuba and Venezuela lead global organic revolution. *Green Left Weekly, February 2005*; n.p. Retrieved from: <http://www.greenleft.org.au/2005/613/35491>.
- Landon-Lane, C. (2004). Livelihoods grow in gardens: diversifying rural income through home gardens. Rome, Italy: Food and Agriculture Organization of the United Nations, Agricultural Support Systems Division.
- Lanz, T.J. (2002). Sustainable rural development. *Journal of Third World Studies, Fall 2002*, n.p.. Retrieved from:

http://findarticles.com/p/articles/mi_qa3821/is_200210/ai_n9115945/?tag=content;col1

- Lincoln, Y.S. & Guba, E.G. (1979/2000). The only generalization is: There is no generalization. In Gomm, R., Hammersley, M., & Foster, P. (Eds.) (2000). *Case study method* (pp. 27-44). Thousand Oaks: Sage.
- Lindenberg, M. (2002). Measuring household livelihood security at the family and community level in the developing world. *World Development*, 30(2): 301-318.
- Luciak, I.A. (2005). Party and state in Cuba: Gender equality in political decision making. *Politics & Gender*, 1(2): 241-263.
- Maldonado Villavicencio, L. (2009). Urban agriculture as a livelihood strategy in Lima, Peru. In M. Redwood (Ed.). *Agriculture in urban planning: Generating livelihoods and food security* (pp. 49-71). Earthscan. Retrieved from: http://www.idrc.ca/en/ev-133761-201-1-DO_TOPIC.html
- Maller, C., Townsend, M., Pryor, A., Brown, P., & St Leger, L. (2005). Healthy nature healthy people: 'Contact with nature' as an upstream health promotion intervention for populations. *Health Promotion International*, 21(1): 45-54.
- Marsh, R. (1998). Building on traditional gardening to improve household food security. *Food, Nutrition and Agriculture*, 22: 4-14.
- Maxwell, S. & Frankenberger, T. (Eds.) (1992). *Household food security: Concepts, indicators and measurements: a technical review*. New York and Rome, UNICEF and IFAD.
- McCullum, C., Desjardins, E., Kraak, V.I., Ladipo, P., & Costello, H. (2005). Evidence-based strategies to build community food security. *Journal of the American Dietetic Association*, 105(2): 278-283.
- McMichael, P. (2000). Global food politics. In F. Magdoff, J. Bellamy Foster, & F.H. Buttel (Eds.) *Hungry for profit: the agribusiness threat to farmers, food and the environment* (pp. 125-144). New York: Monthly Review Press.
- Mesa-Lago, C. (2006). The end of rationing? Hemisphere, Fall 2006. Retrieved from: <http://www.allbusiness.com/public-administration/national-security-international/3974438-1.html>
- Mesa-Lago, C., & Pérez-López, J.F. (2005). *Cuba's aborted reform: Socioeconomic effects, international comparisons, and transition policies*. Gainesville, Florida: University Press of Florida.
- Meyer, CB. (2001). A case in case study methodology. *Field Methods*, 13 (4): 329-352.
- Middendorf, G., Skladany, M., Ransom, E., & Busch, L. (2000). New agricultural biotechnologies: The struggle for democratic choice. In F. Magdoff, J. Bellamy Foster, & F.H. Buttel (Eds.) *Hungry for profit: The agribusiness threat to*

- farmers, food and the environment* (pp. 107-124). New York, NY: Monthly Review Press.
- Miller, S. (2008). *Edible action: Food activism and alternative economics*. Halifax, NS: Fernwood Publishing.
- Milligan, C., Gatrell, A., & Bingley, A. (2004). 'Cultivating health': therapeutic landscapes and older people in northern England. *Social Science & Medicine*, 58(9): 1781-1793.
- Moskow, A. (1999). The contribution of urban agriculture to gardeners, their households, and surrounding communities: The case of Havana, Cuba. In M. Koc, R. MacRae, L.J.A. Mougeot, & J. Welsh (Eds.). *For hunger-proof cities: Sustainable urban food systems*. Retrieved from http://www.idrc.ca/en/ev-30598-201-1-DO_TOPIC.html
- Mougeot, L.J.A. (2000). Urban agriculture: Definition, presence and potentials and risks. In N. Bakker, M. Dubbeling, S. Guendel, U. Sabel-Koschella, & H. de Zeeuw (Eds.). *Growing Cities, growing food: Urban agriculture on the policy agenda* (pp. 1-42). Leusden, Netherlands: Resource Centre on Urban Agriculture and Forestry. Retrieved from: <http://www.trabajopopular.org.ar/material/Theme1.pdf>
- Møller, V. (2005). Attitudes to food gardening from a generational perspective: a South African case study. *Journal of Intergenerational Relationships*, 3(2): 63-80.
- Murphy, C (1999). *Cultivating Havana: Urban agriculture and food security in the years of crisis*. Oakland: Food First. Retrieved from <http://www.foodfirst.org/en/node/273>
- Murphy, C. (2006). Urban gardens increase food security in times of crisis: Havana, Cuba. *Estudios del Desarrollo Social: Cuba y América Latina [Social Development Studies: Cuba and Latin America]*, 1(2), n.p. Retrieved from: http://www.flacso.uh.cu/sitio_revista/num3/principal.htm
- Nagavallema, K.P., Wani, S.P., Lacroix, S., Padmaja, V.V., Vineela, C., Babu Rao, M., & Sahrawat, K.L. (2004). Vermicomposting: Recycling wastes into valuable organic fertilizer. *Global theme on agroecosystems, report no. 8*. Andhra Pradesh, India: International Crops Research Institute for the Semi-Arid Tropics. Retrieved from: <http://www.intranet.icrisat.org/gtaes/Projects/TATA/docs/publications/172-2004.pdf>
- National Sustainable Agriculture Information Service (2006). *Community supported agriculture*. Retrieved from: <http://www.attra.org/attra-pub/PDF/csa.pdf>
- Nestle, M. (2002). Food politics: how the food industry influences nutrition and health. In J. Pretty (Ed.) (2008) *Sustainable Agriculture and Food, Vol. III: Agriculture and Food Systems* (pp. 314-339). London, UK: Earthscan.

- Nguyen, G., Dobbs, T.L., Bertramsen, S.K., & Legagneaux, B. (2004). French quality and ecolabelling schemes: Do they also benefit the environment? In Pretty (Ed.) (2008) *Sustainable Agriculture and Food, Vol. III: Agriculture and Food Systems* (pp. 398-414). London, UK: Earthscan.
- Nichols, M., & Hilmi, M. (2009). *Growing vegetables for home and market*. Rural Infrastructure and Agro-Industries Division, Food and Agriculture Organization of the United Nations. Retrieved from: <ftp://ftp.fao.org/docrep/fao/011/i0526e/i0526e.pdf>.
- Nugent, R. (1999). The impact of urban agriculture on the household and local economies. In N. Bakker, M. Dubbeling, S. Guendel, U. Sabel-Koschella, & H. de Zeeuw H (Eds.). *Growing cities, growing food: Urban agriculture on the policy agenda* (pp 67- 97). Leusden, Netherlands: Resource Centre on Urban Agriculture and Forestry.
- Norton, G.W. & Alwang, J. (1993). The role of agriculture in economic development. In G.W. Norton & J. Alwang, *Introduction to Economics of Agricultural Development* (1st Edition) (pp. 116-129). Toronto, ON: McGraw-Hill.
- Odell, S.J. (2001). Case study methods in international political economy. *International Studies Perspectives*, 2: 161–176.
- Oficina Nacional de Estadísticas (ONE) [National Office of Statistics], Cuba (2007). *Población residente clasificada por sexos, zonas urbana y rural, provincias y municipios* [Resident population classified by sex, urban and rural zone, province and municipality]. Retrieved from: http://www.one.cu/aec2007/esp/03_tabla_cuadro.htm
- Oficina Nacional de Estadísticas (ONE) [National Office of Statistics], Cuba (2009). *Ciudad de la Habana*. Retrieved from: http://www.one.cu/publicaciones/provincias_masinf/ciudad%20de%20la%20habana.htm
- Offredy, M. (2008). The health of a nation: perspectives from Cuba's national health system. *Quality in primary care*, 16(4): 269-77.
- Overseas Development Institute (1997). *Global hunger and food security after the World Food Summit*. Retrieved from: <http://www.odi.org.uk/resources/odi-publications/briefing-papers/1997/1-global-hunger-food-security-world-food-summit.pdf>
- Padgett, T. (April 30, 2008). Hints of more reform in Cuba. Time: n.p. Retrieved from: <http://www.time.com/time/world/article/0,8599,1736186,00.html>
- Pagés, R. (2008). The status of Cuban women: From economically dependent to independent. In P. Brenner, M.R. Jiménez, J.M. Kirk, & W.M. LeoGrande (Eds.) *Reinventing the revolution: A contemporary Cuba reader* (pp. 311-315). Toronto, ON: Rowman & Littlefield Publishers, Inc.

- Patel, R. (2007). *Stuffed and starved: Markets, power and the hidden battle for the world's food system*. New York: Harper Collins.
- Patterson, J., Patterson Edward, J.K., Deepak Samuel, V., Wilhelmsson, D., Tamelander, J., & Linden, O. (2008). The role of alternate livelihoods and awareness creation in coral reef conservation in the Gulf of Mannar, Southeastern India. In D.O. Obura, J. Tamelander, & O. Linden (Eds) *Ten years after bleaching: facing the consequences of climate change in the Indian Ocean. CORDIO Status Report 2008* (pp. 387-395). Mombasa: Coastal Oceans Research and Development in the Indian Ocean. Retrieved from: <http://www.cordioea.org/storage/status-report-2008-papers/7.04%20PATTERSON%20ET%20AL%202008.pdf>
- Patton, M. (2002). *Qualitative research & evaluation methods*. (3rd ed.). Thousand Oaks, CA: Sage.
- Perez, C. (2004). *Caring for them from birth to death: The ethics, ideologies, values, and practices of Cuban medicine*. PhD dissertation, Loyola University Chicago.
- Pérez, J.V. (July 1, 2010). ¿Despega la agricultura suburbana? [Suburban agriculture takes off?] *Granma (Habana)*, n.p.
- Pérez, L.A. Jr. (1988). *Cuba: Between reform and revolution*. New York: Oxford University Press.
- Pertierra, A.C. (2008). En casa: Women and households in post-soviet Cuba. *Journal of Latin American Studies*, 40: 743-767
- Pinderhughes, R., Murphy, C., & Gonzalez, M. (2000). Urban agriculture in Havana, Cuba. Retrieved from: http://bss.sfsu.edu/raquelrp/pub/2000_aug_pub.html.
- Plait, S. (2008). *Equidad de género en la agricultura urbana en ciudades de América latina y el Caribe* [Gender equity in urban agriculture in cities of Latin America and the Caribbean]. Lima, Peru: IPES & RUAF. Retrieved from: <http://www.ipes.org/au/pdfs/publicaciones/cuaderno3.pdf>
- Premat, A. (2003). Small-scale urban agriculture in Havana and the reproduction of the 'new man' in contemporary Cuba. *Revista Europea de Estudios Latinoamericanos y del Caribe*, 75: 85-99.
- Premat, A. (2009). State power, private plots and the greening of Havana's urban agriculture movement. *City & Society*, 21(1): 28-57.
- Pretty, J., Noble, A.D., Bossio, D., Dixon, J., Hine, R.E., Penning de Vries, F.W.T., & Morison, J.I.L. (2006). Resource-conserving agriculture increases yields in developing countries. In J. Pretty (Ed.) (2008) *Sustainable Agriculture and Food, Vol. III: Agriculture and Food Systems* (pp. 209-222). London, UK: Earthscan.

- Prosser, J. & Schwartz, D. (2004). Photographs within the sociological research process. In S. Nagy Hesse-Biber & P. Leavy, P (Eds.). *Approaches to qualitative research* (pp. 334-349). New York: Oxford University Press.
- Punch, M. (1986). The politics and ethics of fieldwork. *Qualitative Research Methods Series, 3*. California: Sage.
- Redwood, M. (Ed.) (2009). *Agriculture in urban planning: Generating livelihoods and food security*. Earthscan. Retrieved from: http://www.idrc.ca/en/ev-133761-201-1-DO_TOPIC.html
- Reid, L., Sutton, P., & Hunter, C. (2010). Theorizing the meso level: the household as a crucible of pro-environmental behaviour. *Progress in Human Geography* 34(3): 309-327.
- Rodríguez, A. (June 25, 2010). Cuba has given private farmers nearly 2.5M acres. *Associated Press*, n.p.
- Rodríguez Nodals, A. (June 22, 2010) Miles de cubanos se suman a la agricultura [Thousands of Cubans join agriculture]. *Juventud Rebelde* (Habana): n.p. Retrieved from: <http://www.juventudrebelde.cu/cuba/2010-06-22/miles-de-cubanos-se-suman-a-la-agricultura/>
- Rosset, P. (2000). Cuba: A successful case study of sustainable agriculture. In F. Magdoff, J. Bellamy 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.
- Safa, H.I. (2002). Economic restructuring and gender subordination. In J. Abbassi & S.L. Lutjens (Eds.) *Rereading women in Latin America and the Caribbean: the political economy of gender* (pp. 43-60). Maryland, USA: Rowman & Littlefield Publishers.
- Sánchez, Y. (2010). *Freedom and exchange in communist Cuba*. Development policy briefing paper no. 5. Washington, DC: The CATO Institute.
- Schiere, H., & van der Hoek, R. (2001). *Livestock keeping in urban areas: A review of traditional technologies based on literature and field experience*. Bennekom, The Netherlands: Food and Agriculture Organization.
- Schofield, J.W. (2000). Increasing the generalizability of qualitative research. In R. Gomm, M. Hammersley, & P. Foster (Eds.). *Case study method* (pp.69-97). Thousand Oaks, CA: Sage.
- Schulz, M. (1999). Introduction. In U. Kracht & M. Shulz (Eds.) (1999). *Food security and nutrition: the global challenge*. New York: St. Martin's Press.
- Seeth, H.T., Chachnov, S., Surinov, A., & Von Braun, J. (1998). Russian poverty: Muddling through economic transition with garden plots. *World Development*, 26(9): 1611-1624.

- Sinclair, M., & Thompson, M. (2008). Going against the grain: Agricultural crisis and transformation. In P. Brenner, M.R. Jiménez, J.M. Kirk, & W.M. LeoGrande (Eds.) *Reinventing the revolution: A contemporary Cuba reader* (pp. 156-167). Maryland, USA: Rowman & Littlefield Publishers.
- Spiegel, J.M., & Yassi, A. (2004). Lessons from the margins of globalization: Appreciating the Cuban health paradox. *Journal of Public Health policy*, 25(1):85-100.
- Stake, R.E (1995). *The art of case study research*. Thousand Oaks, CA: Sage Publications.
- Stake, R.E. (2006). *Multiple case study analysis*. New York: The Guilford Press.
- Stanczak, G.C. (Ed.) (2007). *Visual research methods: Image, society and representation*. Thousand Oaks: Sage.
- Stoltz Chinchilla, N. (1977). Theoretical considerations: Class movements and sex movements. In: J. Abbassi & S.L. Lutjens (Eds.) (2002), *Rereading women in Latin America and the Caribbean: The political economy of gender* (pp. 132-136). Maryland, USA: Rowman & Littlefield Publishers.
- Stricker, P. (2007). *Toward a culture of nature: Environmental policy and sustainable development in Cuba*. Plymouth, UK: Lexington Books.
- Taboulchanas, K.H. (2001) *Organic status and dietary role of organopónicos in Cienfuegos, Cuba*. Master's Thesis, School for Resource and Environmental Studies, Dalhousie University, Halifax, N.S. Canada.
- Tellis, W. (1997). Introduction to Case Study. *The Qualitative Report*, 3(2). Retrieved from: <http://www.nova.edu/ssss/QR/QR3-2/tellis1.html>
- Temple, B., & Young, A. (2004). Qualitative research and translation dilemmas. *Qualitative Research*, 4(2):161-178.
- Thorne, B. (2004). "You still takin' notes?" Fieldwork and problems of informed consent. In S. Nagy Hesse-Biber & P. Leavy (Eds.). *Approaches to qualitative research* (pp. 159-176). New York: Oxford University Press.
- Toro-Morn, M.I.Roschelle, A.R., & Facio, E. (2002). Gender, work, and family in Cuba: the challenges of the Special Period. *Journal of Developing Societies*, 18 (2-3): 32-58.
- Tripp, R. & Longley, C. (2006). *Self-sufficient agriculture: Labour and knowledge in small-scale farming*. Sterling, VA: Earthscan.
- Ulin, P.R., Robinson, E.T., & Tolley, E.T. (2005). *Qualitative methods in public health*. San Francisco: Jossey-Bass.

- UNIFEM (2005). *Progress of the world's women 2005: Women, work and poverty*. New York, NY: United Nations Development Fund for Women. Retrieved from: http://www.unifem.org/attachments/products/PoWW2005_overview_eng.pdf
- United Nations & Economic Commission for Latin America and the Caribbean (2005). *The millennium development goals: a Latin American and Caribbean perspective*. Santiago, Chile: United Nations. Retrieved from: <http://www.eclac.org/publicaciones/xml/0/21540/lcg2331.pdf>
- USDA Foreign Agriculture Service (2005). International trade report: Cuban market, good for U.S. grain. Retrieved from: <http://www.fas.usda.gov/grain/highlights/2005/07-05/CubaRiceITR05.pdf>
- Vaillancourt, P.M. (1986). When Marxists do research. *Contributions in Political Science*, 150. New York: Greenwood Press.
- Verschuren, P. J. M. (2003). Case study as a research strategy: Some ambiguities and opportunities. *International Journal of Social Research Methodology*, 6(2): 121-139.
- Wakefield, S., Yeudall, F., Taron, C., Reynolds, J., & Skinner, A. (2007). Growing urban health: Community gardening in South-East Toronto. *Health Promotion International*, 22(2): 92-101.
- Weis, T. (2007a) *The global food economy: the battle for the future of farming*. Halifax: Fernwood Publishing.
- Weis, T (2007b). Small farming and radical imaginations in the Caribbean today *Race & Class*, 49(2): 112-117.
- Weis, L., & Fine, W. (2000). *Speed bumps: A student-friendly guide to qualitative research*. New York: Teachers College Press.
- World Bank (2007). *World Development Report 2008: agriculture for development*. Washington, DC: The World Bank.
- World Health Organization (2009). *Food Security*. Geneva: WHO. Retrieved from: <http://www.who.int/trade/glossary/story028/en/>
- World Health Organization (2006). Statistical annex. In *World Health Report 2006: Working Together for Health*. Retrieved from: http://www.who.int/whr/2006/annex/06_annex1_en.pdf.
- World Meteorological Organization (2009). Report on 2008 hurricane season in Cuba. Retrieved from: http://www.wmo.int/pages/prog/www/tcp/Meetings/HC31/documents/Doc.4.2.8_Cuba.doc.
- World Trade Organization (2009). International Trade Statistics 2009. Retrieved from: http://www.wto.org/english/res_e/statis_e/its2009_e/its09_toc_e.htm.

- Wright, J. (2009). *Sustainable agriculture and food security in an era of oil scarcity: Lessons from Cuba*. London, UK: Earthscan.
- Yin, R.K. (2008). *Case study research: design and methods*, (4th edition). New York: Sage.
- Zabala Argüelles, M.C. (2001). La familia cubana: principales tendencias en su desarrollo [The Cuban family: principle tendencies in its development]. *Estudios del Desarrollo Social: Cuba y América Latina: Revista Electrónica [Social Development Studies: Electronic Journal]*, 2: n.p. Havana, Cuba: FLACSO.
- Zabala Argüelles, M.C. (2005). Family and social security in Cuba. In J. Bell Lara & R.A. Dello Buono (Eds.). *Cuba in the 21st century: realities and perspectives*. Havana, Cuba: Instituto Cubano del Libro.

Appendix A: Types of Urban Agriculture in Cuba

Urban agriculture in Cuba takes several forms, among them:

- Organopónicos and intensive vegetable gardens: “These systems are an example of how scientists and gardeners can work together to develop new production methods” (MINAG, cited in Companioni & Hernández, 2002). Organopónicos are medium- to large-scale research gardens that simultaneously supply foods directly to the cities while working to develop and rediscover effective, low-input, organic methods of production (Companioni & Hernández, 2002; Murphy, 2006)

- Self-provisioning at factories and offices: The concentration of industry and institutions such as universities and hospitals in urban centres requires that many workers be fed each day. Many workplaces in Cuba’s cities have organized agricultural production near or beside their facilities; these gardens and farms supply workers’ cafeterias with produce, eggs, meat, milk, fish and fresh herbs (Companioni & Hernández, 2002; Murphy 2006) . In Havana alone there were 300 such farms in production by the year 2000 (Companioni & Hernández).

- Suburban farms: on the periphery of Cuban cities, integrated suburban farms are a key feature for planning in growth and development. These farms could not meet all of the food needs of the urban populations, but they are larger than the small plots and intensive gardens inside the cities, and are highly productive. In the suburbs of Havana, there were approximately 2000 such farms in production by the year 2000. (Companioni & Hernández, 2002)

- Small plots, patios and popular gardens: a popular form of participation and production through UA consists of gardening on private patios or in small spaces between buildings (*huertos privados*), or converting state-owned urban land into community gardens known as *huertos populares* (Altieri et al., 1999; González Novo &

Murphy, 1999). In general these plots and patios are necessarily quite small, though suburban plots generally have more space to work with than those in urban centres. Despite their small size, the popularity of these gardens has led them to be a significant source of fresh produce for Cuban households and local food supplies. By 2000 there were 104, 087 small plots and patios under production in Cuba's cities, producing more food than the organopónicos and intensive gardens combined (Companiononi & Hernández, 2002). "These small plots, patios and popular gardens have made it possible to feed the urban population; have promoted the development of an urban culture favourable to agriculture, have eliminated the abandoned spaces which in the past may have been breeding grounds for disease vectors and rodents; and have provided socially useful and productive employment opportunities" (Companiononi & Hernández, p. 227).

Appendix B: Interview Guide for In-depth Interviews, Round 1

Household or family composition

- Are you from Havana? How long have you been here?
- Who are the people that eat or sleep in your home on a regular basis?
- Who are the people that you consider part of your family?
- Who contributes to the agricultural project?

Household gardening background and profile

- Can you tell me about why got involved in agriculture?
 - Probes: When was it? What were the circumstances? What did you do to get started? What did you plan to do with the products? What challenges did you face? Who helped you or gave you advice?
- How has your production changed since that time? Can you tell me about your garden/plot now?
 - Probes: What do you grow now? Where? How big is the space? How much do you produce from your garden?
- What do you usually do with the products you produce?
 - Probes: [E.g. family eats it, give it away to friends/neighbours, donate to organizations, sell]
 - How do you decide what portion of the products goes to each of these? What factors are considered (e.g., contracts, market prices, yields, season, need, etc.)?

Agriculture and livelihood activities

- How do you personally contribute to growing, preparing or selling the products?
- Who else helps with these activities – who does what, and why?
- How does the state help, if at all?
- What are the family/household's other sources of income (money or gifts/entitlements such as food, etc.)?
- What proportion of your income would you estimate comes from agricultural sales? AND/OR
- How much money do you think you save on food each month because of gardening?

Benefits and challenges

- What do you see as the benefits for yourself since starting in agriculture? What do you see as the benefits for your family/household?
 - Probes:
 - Do you enjoy it? How has your life(style) changed?
 - How has it impacted your health or the health of the household?

- How has it impacted your/the household's ability to meet basic needs?
 - Are there other reasons why you produce?
- What do you see as the challenges of relying on agriculture as part of your family's livelihood?
 - Probes:
 - Is it secure or reliable?
 - What are the costs related to your production?
 - How heavy is the workload, in your opinion? Who does most of this work?
- What does the production of food or other agricultural products mean to you?

Resources and context

- How do you get the supplies and information you need?
 - Probes: seeds, tools, soil, knowledge?
 - What organizations or people help you to grow or sell your products?
- How do you see the government's support as helping you to achieve the outcomes you want? What if anything, would you add to that support?
- If the economic situation in Cuba improves, do you think you will continue to produce?
- How happy are you with your production, in terms of the costs versus benefits?

Other

- Are there any other comments you would like to add?

Appendix C: Selected Questions from In-depth Interviews, Round 2

*Note: these interviews were loosely structured and designed to clarify or elaborate on previous conversations as well as to inquire about additional ideas or themes identified during my observations and time in the field. In each Round 2 interview, some of the following questions were used, along with additional questions specific to each case and/or the emerging direction of the conversation. In the interviews with the women, some of the questions from the Round 1 interview guide were also incorporated, such as those inquiring about benefits and challenges of production, as well as the household division of labour.

Daily work:

- Who from the house goes to out buy food? What about other errands? How much time do these things generally take?
- How much do other family members know about the production process? Can or do they fill in if required?
- How do you see the role of Cuban women in the home?

State support

- Do you visit the local TCA to buy materials or inputs?
 - How close is it? How are the prices? Do you always find what you are looking for?
 - Where else do you get inputs for your production?
 - My understanding is that the TCAs are the state's primary mode of supporting small-scale producers. What are your thoughts on this type of support?
- Do you receive information or help from the Ministry of Urban Agriculture?

Culture of agriculture in Havana

- How do you see the culture of agriculture here in Havana?
- What, if any, difference do you see between youth and older people?
- How do you see the future of urban agriculture in Havana?
- Do you watch any of the TV programs about agriculture? Read articles in the newspapers? What kind of role do you think these sources of information play?
- What is your experience with local events related to agriculture?

Current context

- Can you tell me about any challenges you may have experienced as a result of the current global economic crisis? (e.g., price or availability of food or inputs, etc.)
- Did you suffer any damages as a result of the hurricanes which passed through in 2008? Can you tell me about any things you might do to try to ensure the patio or parcela is safe in the event of another natural disaster?