for HUNGER-PROOF CITIES

Sustainable Urban Food Systems

Edited by Mustafa Koc, Rod MacRae, Luc J.A. Mougeot, and Jennifer Welsh
For Hunger-proof Cities
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The Contribution of Urban Agriculture to Gardeners, Their Households, and Surrounding Communities: The Case of Havana, Cuba

Angela Moskow

Introduction

Urban agriculture is actively promoted in Havana, Cuba, to address the acute food-scarcity problems of the Special Period in Peacetime, which developed since 1989 as Soviet aid and trade were drastically curtailed. During the period of 1989–92, average daily per capita calorie consumption dropped an estimated 20%, and average daily per capita protein consumption dropped 27% (Torres 1996). A severe storm that destroyed much of the country’s sugar crop in 1993, along with the tightening of United States’ blockade in the early 1990s, further exacerbated these conditions (Deere et al. 1994).

In response to these conditions, the Cuban Ministry of Agriculture (MOA) began promoting urban food production in 1991. A number of urban agricultural activities have been under way. An important component of the government’s program are gardens grown to provide for the gardeners’ own needs. These gardens are cultivated on either private or state land. The gardeners can use state land at no cost. Havana has, according to an estimate, more than 26,000 such gardens (Paez Medina, interview, 1995).

Research was conducted in Havana to trace the contributions of the gardens to the nutritional intake of the gardeners’ households and the gardeners’ sense of control of their lives and to determine the effects of these gardens on the surrounding communities. Much of the literature on urban agriculture focuses on food security, without much discussion of its aesthetic and therapeutic effects. The findings presented below may warrant a broader focus.

In-depth interviews were conducted with 42 gardeners during the period of July to September 1995. Nine of Havana’s neighbourhoods were selected for the study. They represented a range of gardening conditions, from neighbourhoods with highly organized gardening efforts to areas known to have problems with their gardening programs. The researcher divided the neighbourhoods into three categories, based on the level of coordination between the gardeners and the MOA. Neighbourhoods in the first category lacked direct support from MOA. Neighbourhood activists were encouraging

NB: This research was conducted with funding from the Oberlin College Alumni Fund’s Henry J. Haskell Fellowship, the Jastro-Shields Graduate Research Scholarship Fund, and the International Agricultural Development Graduate Group. Interviews were conducted by the author and Ana Himeley, who provided translation assistance and background information in conducting and transcribing the audiotaped interviews.

and helped coordinate gardening activities, but they lacked assistance and coordination from MOA. The neighbourhoods of Los Angeles, Zayas, Pogolotti, and Alturas de Belem were assigned to this category. In the second category were neighbourhoods where gardening activities had just started to receive coordinated assistance from MOA or where MOA extension workers had been somewhat active, but not in a well-orchestrated fashion. The neighbourhood of Alamar was assigned to this category. The third category contained neighbourhoods where MOA activities were well developed. This included the neighbourhoods of Playa, Santa Fe, Diezmero, and La Lisa. Every interview was arranged by an individual involved in gardening promotion, usually one of the MOA's extension workers. No attempt was made to randomize the sample, as the logistical challenge of simply arranging the interviews precluded such a step.

At the time of the study, the MOA was hiring and training agricultural-extension staff to work at the community level in Havana. The MOA was hiring 67 workers to develop agricultural productivity with various types of urban agriculture. Additionally, every municipality in Havana had a staff member to oversee the extension activities. The extension workers helped gardeners to obtain land, encouraged the gardeners to form clubs, answered technical questions about gardening, acquainted the gardeners with available resources, and reported to the MOA. The MOA also worked with a number of Cuban and foreign organizations to coordinate training for gardeners and extension workers and provide materials to the gardeners, such as tools and hoses (Paez Medina, interview, 1995).

This paper presents the results of the study on what nutritional benefits accrued to the gardeners and their households, what psychological benefits accrued to the gardeners, and the contributions of the gardens to their surrounding neighbourhoods.

**Study findings**

**Characteristics of the gardeners**

The average age of people for the study sample was 58 years; the age range was 28–80 years. Twenty-eight of the gardeners (67%) reported that they had learned to garden from relatives when they were growing up in the countryside. Eighteen gardeners (43%) indicated that the garden was their first direct experience with horticulture, although some had acquired gardening skills by observing others.

Thirty-eight (91%) of the gardeners were men, and 4 (9%) were women. The agricultural background of many of these men was presumably a factor in the high level of male participation in gardening. Additionally, a Cuban study found that women's household responsibilities in the Special Period in Peacetime allowed little or no time for gardening (Cruz 1997).

**Characteristics of the gardens**

Most (26) of the gardeners' parcels were individual gardens, although the largest garden in the study included 72 gardeners on 53 parcels. Garden sizes ranged from 18 to 40 000 m². Usually, more than one gardener tended the larger plots.

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Half (21) of the gardeners had plots adjacent to their homes. Additionally, five gardeners (12%) with distant plots cultivated a second, smaller plot adjacent to their homes. The longest distance a study participant had to travel to his or her garden was 1 km. However, another researcher spoke with gardeners who lived in neighbourhoods that had very little available land. They had to travel across town to reach their plots (Chaplowe 1996).

Thirty-four gardeners (81%) used their land through a system of usufructo gratutito (free usufruct); the other 8 owned the land they cultivated. Having the right to usufructo gratutito allows the gardeners free use of state land for the rest of their lives (Paez Medina, interview, 1995).

Gardeners chose the crops they grew, constrained only by growing conditions and seed availability. Plantains were the most popular crop, cultivated by 98% (41) of the gardeners, who grew both fruit and viand types of plantain. Other popular crops were cassava, peppers, squash, and yams. Sixty percent of the gardeners (25) raised animals, including chickens, pigs, goats, ducks, rabbits, geese, guanacos (similar to llamas), and turkeys.

Food and economic security

The production of plant and animal products was found to significantly increase the quantity and quality of the food available to gardeners' households. An average of 5.83 people ate in the gardeners' households, and 9.52 people in their extended families received food from their gardens. If this pattern is true throughout Havana, then more than 1 of every 10 people in the city received some food from these gardens. However, as the sample was not random, no generalizations can be made.

The gardens also had a profound impact on household budgets: they reduced weekly food bills, and gardeners could earn money selling their garden products. Forty one gardeners (98%) indicated that they saved 10–250 CUP per week with their gardens, with the average at 50 CUP/week (in 1998, 20 Cuban pesos [CUP] = 1 United States dollar [USD]). This is a striking figure, as the average household salary reported by the gardeners was 125 CUP/week. Thus, the average savings from the garden was 40% of the average household salary.

Control

A number of themes emerged from the study related to the gardens' role in enhancing the gardeners' sense of control of their lives. Many gardeners spoke about the ways the gardens increased their self-sufficiency, in terms of both household food needs and a direct sense of greater control of one's life.

Produce from the garden represented 5–100% of the households' fruit, vegetable, and viand intake. On average, the garden provided 60% of the households' produce needs. Gardeners from households in which the percentage was lower than this average gave a lower rating than others to the Likert-scale question "I feel more in control of my life now that I am gardening." Further, a chi-square analysis found a

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4 Cuban pesos are not normally sold outside Cuba. The rate for Cubans is 20 CUP per USD; that for foreigners is 1 CUP per USD.
5 "Likert scaling is a measurement technique based on the use of standardized response categories" (Babbie 1996).
statistically significant relationship between responses to this and the Likert-scale question "Gardening increases the amount of food available to my family." A sense of increased control was also associated with the belief that the garden enhanced the family's nutrition. Lastly, awareness of information sources for gardeners was related to a greater sense of control. Thus, the findings indicated that both the ability of the gardeners to meet household food needs and their success in doing so were linked to their feelings of being in control of their lives.

The gardeners also considered their gardens entertaining and aesthetically appealing environments. Thirty-six of the gardeners elaborated on features of their gardens related to stress reduction, spiritual satisfaction, entertainment, and aesthetic value. Francis (1989) discussed Kimber's 1973 study of Puerto Rican gardeners, which found that "gardens ... represent social territories in which persons define their own places and express their self images." The most powerful story about the importance of the gardens, from this standpoint, was told by an individual with severe health problems, who was using the garden to help feed the 10 people in his very modest household. He was gardening where a road had been, so the soil was compacted and difficult to work. After discussing what he grew, he spoke at length about the aesthetic aspect of gardening and stressed its significance.

Many of the respondents indicated that gardening helped them relax. Study of the data revealed that these respondents gave relaxation two different but interrelated meanings. First, it meant that the gardens relieved their anxieties about meeting the family's food needs. Second, it meant the gardens were restorative. One respondent expressed both of these concepts: "Sometimes you have a lot of psychological pressure and the garden is a place to relax. Also, the worry of the canasta familia [household food supply] is less." Thus, given a measure of control of their families' physiological needs, the gardeners were also able to control their anxiety and experience the additional therapeutic properties of the gardens. Said one, "My nerves are better. I feel more agreeable." Another responded to the question "Are there other reasons why you garden here?" by noting "If you relax beneath a mata [grove], it restores you."

Many who had gardens next to their homes spoke of the pleasure of spending time in the garden watching the plants. Kaplan and Kaplan (1989) discussed this notion in The Experience of Nature: "Observing is an important form of involvement with nature. ... Much of the pleasure that people derive from nature comes from such occasions to observe." One gardener expressed this sentiment: "I came today just to watch the garden." Another respondent noted, "Seeing the plants grow makes me feel good." A third commented, "It's a distraction to watch the garden. At sunset it's relaxing." Thus, the gardeners conveyed a fascination with the elements of nature in their gardens.

Many of the older gardeners spoke of the importance of gardening to their health and social life. Those who grew up in the countryside were using skills they had neglected for years. They also spoke of the feeling of being useful in helping to provide their families and communities with food, and they contrasted their gardening days with an earlier, more idle time. One elderly gardener remarked, "You have to put love into agriculture. It's great to be able to help the family this way." In response to the question "Are there other reasons why you garden?", another gardener remarked, "I have been retired for 11 years and needed a way to feel useful." A number commented that if they had not been gardening they would be sitting in a corner drinking rum.
The findings illustrate that the gardeners' perceptions of control were strongly connected to their ability to meet their household needs and their success in doing so. The findings point to a number of ways in which the gardens afforded the gardeners a greater sense of control of their lives: gardening helped to meet food needs and helped the gardeners relax, connect with nature, and experience solitude. Further, the study determined that for the elderly participants, the ability to meet household needs was an especially important benefit of the gardens.

**Community enhancement**

The benefits of the gardens could also be traced to the surrounding neighbourhoods. Five types of community benefit were identified: a greater food supply, contributions to the country, neighbourhood beautification, improved safety, and enhanced urban ecology.

**Greater food supply**

The gardeners contributed and sold food to their local communities, enhancing local food supply. Fourteen (33%) of the gardeners sold some of the food they produced. Thirty-three gardeners (78%) donated food to the community, in some cases through their gardening clubs. Donations were often made to schools, nursery schools, and nursing homes. Gardeners also gave to neighbours, especially those who were not very well off.

**Contributions to the country**

Some of the gardeners characterized the gardens as having the power to contribute, in a variety of ways, to the country at large. A number of individuals spoke of gardening as an important way of solving Cuba's problems. They indicated that their work in their gardens was a way to help the revolution. One commented that he wanted a farm to "help the revolution with a huge harvest." Another observed that "work is good for health, spirit, and the revolution." Asked if gardening had been a positive experience for him and his family, another gardener responded, "Yes, for me, for my family, for the country." Three gardeners quoted José Martí, a 19th-century Cuban writer, poet, and revolutionary, when they spoke of their work in the garden.

**Neighbourhood beautification**

Quite a few of the gardeners indicated that they started their gardens in abandoned lots or trash dumps. Gardeners in one of the municipalities in the study constructed impressive walls, usually about 1 m high, with the rocks removed from the once-vacant lots that many of the gardens occupied. A number of the gardens in this area were quite lovely and contained multiple plots.

**Improved safety**

The gardens also improved neighbourhood safety. A number of gardeners indicated that before the gardens were planted lots were unsafe areas, where people had previously been afraid to walk. Two participants in the study mentioned that the area they
gardened had previously been called the "hill of fear." It had been restored to a series of beautiful gardens. Turning unsightly landscapes into beautiful gardens was one of the many unintended benefits of a program designed to deal with the country's food crisis.

**Enhanced urban ecology**

Gardens are a prominent feature throughout much of Havana. Although many more gardens appear in the peripheral areas than in the city centre, food gardens are a common sight in many parts of the city. Also, farm animals, often kept close to houses as a precaution against theft, are much more conspicuous in Havana than in many capital cities. Thus, food production is very transparent. It is also environmentally sound because it has few transportation and storage requirements. The gardens also bring the multiple aesthetic and environmental benefits of increased vegetation. Further, gardeners who compost their food scraps and garden residue transform them into soil nutrients and divert them from the waste stream.

Cuba has been heralded for its green agricultural practices, which the Cubans developed in response to the striking drop in agricultural inputs and fuel during the Special Period in Peacetime. Much of the success of this approach is attributable to the country's impressive research capabilities, as well as to the commitment of many Cuban scientists to environmentally sound farming methods (Rosset and Benjamin 1994). Also, MOA, along with many of the organizations it works with, promotes ecologically sound growing techniques. For example, a 1995 request for proposals for *autoconsumos* (gardens for the gardeners' own needs) from the Consejo Ecumenico de Cuba (Ecumenical council of Cuba) listed as one of its objectives "fomenting organic agriculture and application of ecological technologies in the processing of food."

The food gardens in the study were organic by default. Chemical inputs are not sold on the open market in Cuba (Consejo de Administración de la Provincia de la Ciudad de la Habana (council for the administration of the province of the City of Havana), interview, 1995). The gardeners showed varying levels of attachment to the environmentally benign gardening methods they practiced. One reason for this appeared to be the variation in their skills in managing soil fertility and insect problems. A number of educational efforts were ongoing under MOA and other organizations. Gardeners who knew of composting and pest-control techniques were far more enthusiastic about organic gardening than those who had little or no such knowledge. For instance, when asked about soil conditions, gardeners who had been to training sessions on composting techniques spoke glowingly about the importance of compost in maintaining soil fertility. One gardener explained, "Through enriching the soil I am fostering beneficial organisms." Other gardeners spoke of the hardships caused by the lack of chemical inputs.

Ten (24%) of the gardeners used compost in their gardens. The gardeners were not asked about the materials used in the compost, but some indicated that they used garden and household food waste. Gardeners who lived in the vicinity of a sugar-processing plant indicated they used sugar by-products in their compost. Twelve (29%) of the gardeners used manure, and 13 (31%) used organic matter, including green manure, on their gardens.
The gardeners were asked how important improving the environment was as a reason for gardening. The average response was 3.14 on a scale of 1 (not important) to 4 (very important). When asked this question one respondent noted, "I am aware that the environment has to be protected." Another gardener spoke about his plans to develop a living fence around his garden.

**Discussion**

Many Cubans recognize the importance of Havana’s food gardens and are committed to continuing to work with them. Thirty-nine of the gardeners (93%) indicated their intention to continue gardening when the Special Period in Peacetime ends. Government officials interviewed for the study indicated the government’s strong support for gardens and their intention to continue the gardening program.

The role of the Cuban government in promoting and supporting urban agriculture is unique from a global perspective and surely accounts for much of the success of the program (Marsh, interview, 19967). The commitment and considerable effort of the gardeners must also be recognized. The study found gardeners’ perceptions of control were strongly connected to their ability to meet their household needs and their success in doing so. The findings point to a number of ways the gardens gave the gardeners a greater sense of control of their lives, through improved household nutritional intake and relaxation, connection with nature, and experience of solitude. The study also traced the gardens’ roles in enhancing the surrounding communities. The gardens provided patriotic inspiration and enhanced the community’s urban ecology, landscape, and food supply. The impressive scope and achievement of Havana’s gardening program should be a inspiration to all adherents of urban agriculture.

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