

<p style="text-align: center;">Sustainable Local Food Systems in Policy and Practice March 3-5, 2011</p>
--

Insights from Cuba: Viva la revolución agro-ecológica!

Patricia Ballamingie and Lorelei Hanson (non-participating co-author)

Abstract

Cuba is often cited as an exemplar of ecologically sound food production – a system designed to meet local needs and adapt to emerging circumstances, such as those associated with peak oil. This presentation draws on primary data collected during a 2010 field trip to Cuba, involving 26 site visits to urban permaculture, organic agriculture and food preservation projects in Havana, Sancti Spiritus, Santa Clara and Matanzas. It will identify select aspects of Cuba’s eco-agricultural reform that would be worth emulating in the context of building sustainable local food systems in North America and Europe. Biophysical aspects might include: an intensive focus on soil fertility; biological and mechanical pest control; productive re-use of waste; holistic animal husbandry techniques; use of appropriate and accessible technologies; intercropping and companion planting. Socio-political aspects might include: short supply chains; land reform; the privileging of vulnerable sub-populations; horizontal diffusion of knowledge; the conceptualization of eco-agricultural practice as resistance; and a broader societal paradigm shift.

Introduction

When the Soviet Union collapsed at the end of the 1980s, Cuba suffered a rapid loss of subsidies and disappearance of its main export markets, resulting in an economic and resource crisis across the island nation. In response to severe and rapid shortages of food, machinery and fuel, the Cuban government declared a “Special Period in Peacetime” (1990 – 2005) and executed austerity measures to overcome the depressed economic conditions (Rodriguez, 2006). As a part of this initiative, with help from non-government organizations and foreign aid, the Cuban government implemented a national program focused on increasing domestic food production (Zurbrigg, 1999). Building on traditional practices, knowledge and experimentation of a highly educated resident population, as well as techniques and expertise offered by foreign practitioners, in a short period of time Cuba transformed much of its highly intensive, export-oriented, plantation agriculture to a lower input mixed farming system to meet many of its domestic food needs (Levins, 1992; Perfecto, 1994; Cruz and Medina, 2003). The Cuban government adopted land reforms that allowed for greater worker control, supported local urban agricultural production of food crops, and implemented alternative approaches to food production, including organic agriculture, agro-ecology and permaculture. Permaculture involves the design of human settlements, agricultural systems, and, increasingly, the built environment, according to principles that mimic ecological systems (Holmgren, 2002; Mollison & Holmgren, 1978; Mollison, 1979, 1988). Permaculture discourses have been widely diffused throughout Cuba – and corresponding material practices have been selectively adopted in both urban and rural settings across a variety of different scales.

Given a growing worldwide interest in building sustainable, local, alternative food systems, Cuba is often cited as an exemplar of ecologically-sound food production – a system designed to meet local needs and adapt to emerging circumstances, such as those associated with peak oil (Burley, 2006; Heinberg, 2006; Levins, 2005; Morgan, 2006; Parrot & Marsden, 2002; Sileo, 2006; Zepeda, 2003). Cities like Havana and Sancti Spiritus demonstrate extensive urban agriculture in action (Premat, 2005). Some have even asserted that Cuba provides a living model of sustainability (Levins, 2005; Zurbrigg, 1999).

Background and Applied Research Methods

From February 21, 2010 through March 8, 2010, the authors participated in an eco-agricultural tour of Cuba organized by Edmonton-based permaculture expert, Ron Berezan. The tour group was comprised of 26 Canadians, most of them agricultural producers including market gardeners, beekeepers, and ranchers, as well as a smaller group of urban residents including a horticulturalist, and several permaculture practitioners and urban agriculture advocates. The intensive two-week trip entailed 26 site visits in total, including visits to urban permaculture and organic agricultural projects ranging from *organopónicos* (high yield, large, organic gardens situated on non-agricultural state land with high state investment that officially rely on organic inputs; the food grown is primarily intended for commercial sale), to *patios* (small parcels of land either privately owned or held in usufruct; the food grown is intended for self-provision), *huertos* (a small orchard or kitchen garden, generally close to the house; again, the food grown is intended for self-provision) and Basic Units of Cooperative Production (worker cooperatives operating on former state farms or idle lands – held in usufruct). As well, we visited six research institutes, and four other related agencies including an agricultural extension centre and a food preservation project. While some of the agricultural projects were located in rural areas, most were situated in the urban or suburban regions of Havana, Sancti Spiritus, Santa Clara and Mantanzas.

Specific research methods included participant observation, informal unstructured interviews, extensive photographic documentation, a literature review and secondary data analysis. In addition, we were accompanied by a Canadian permaculture expert knowledgeable about Cuba's alternative agriculture, and by at least one, and sometimes several, Cuban experts in food production as we moved across the western end of this island nation. Most notably, agronomist Dr. Fernando Funes of the Cuban Association of Agricultural and Forestry Technicians and the Organic Agriculture Group (the state supported agency that drove the transition towards ecological and organic agriculture in Cuba under the name of the Cuban Organic Farming Association) provided detailed technical information and clarification throughout our journey (Funes, García, Bourque, Pérez, and Rosset, 2002).

Select Biophysical Practices Worth Emulating

Permaculture discourses have been widely diffused throughout Cuba – with select permaculture principles adopted in both urban and rural settings, across a variety of different scales. This section summarizes six biophysical characteristic features widely practiced across the sites visited.

- Intensive focus on soil fertility
Effective microorganisms, mycorrhizal fungi, worm composting
- Use of biological and mechanical pest controls
Growing neem, culturing *Trichoderma*, hammering slugs
- Productive re-use of waste
Biogas digesters and composting toilets
- Holistic animal husbandry
Medicinal herbs and forest pastures
- Use of appropriate and accessible technologies
Mechanical insect traps and shade cloth
- Intercropping
Beyond the *Three Sisters*

Select Socio-Political Aspects Worth Emulating

Implementation of biophysical practices is closely tied to various socio-political enabling mechanisms – some of which constitute best practices that can be readily implemented elsewhere, and some of which are specific to Cuba’s geopolitical realities. In particular, state support for small-scale agricultural producers in Cuba contrasts starkly with Canada’s regulatory regime (which is biased wholly towards large-scale agri-business operations). This section summarizes the following six socio-political features:

- Short supply chains
Beyond/ within the 100-mile diet
- Land reform
Redistribution and usufruct
- Privileging vulnerable populations
Infant circles, old age homes, hospitals
- Horizontal diffusion of knowledge
- Eco-agricultural practice as resistance
Militarized metaphors
- Broader societal paradigm shift
Towards a Cuban land ethic?

References

- Burley, R. (Director, Producer) (2006). *Cuba, The Accidental Revolution, Parts 1 and 2 – The Nature of Things*. Toronto, ON: Canadian Broadcasting Corporation.
- Cruz, M. C., & Medina, R.S. (2003). *Agriculture in the City: A Key to Sustainability in Havana, Cuba*. Ottawa, ON: International Development Research Council. Retrieved from: http://www.idrc.ca/en/ev-31574-201-1-DO_TOPIC.html
- Funes, F., García, L., Bourque, M., Pérez, N., & Rosset, P. (Eds.). (2002). *Sustainable Agriculture and Resistance: Transforming Food Production in Cuba*. Food First Books: Oakland, California.

- Heinberg, R. (2006). Fifty Million Farmers. *Energy Bulletin*. Retrieved from: http://communityrootsboulder.com/pdf/50_million_farmers.pdf
- Holmgren, D. (2002). *Permaculture: Principles and Pathways Beyond Sustainability*. Australia: Holmgren Design Services.
- Levins, R. (1992). The struggle for ecological agriculture in Cuba. *Dialog*, 33, 46-52.
- Levins, R. (2005). How Cuba is going ecological. *Capitalism, Nature, Socialism*, 16 (3), 7-25. Retrieved from: <http://www.cnsjournal.org/>
- Mollison, B. & Holmgren, D. (1978). *Permaculture One*. Australia: Transworld Publishers.
- Mollison, B. (1988). *Permaculture: A Designer's Manual*. Australia: Tagari Press.
- Mollison, B. (1979). *Permaculture Two*. Australia: Tagari Press.
- Morgan, F. (Director) (2006). *The Power of Community: How Cuba Survived Peak Oil*. Yellow Springs, OH: Arthur Morgan Institute for Community Solutions.
- Parrot, N. & Marsden, T. (2002). *The Real Green Revolution – Organic and Agroecological Farming in the South*. London: Greenpeace Environmental Trust.
- Perfecto, I. (1994). The transformation of Cuban agriculture after the Cold War. *American Journal of Alternative Agriculture*, 9 (3), 98-107.
- Premat, A. (2005). Moving Between the Plan and the Ground: Shifting Perspectives on Urban Agriculture in Havana, Cuba. In L. J. A. Mougeot (Ed.) *Agropolis: The Social, Political and Environmental Dimensions of Urban Agriculture* (pp. 153-185). Ottawa, ON: International Development Research Centre.
- Rodriguez, E. B. (2006). *Cuba's Sustainable Agricultural Model in the Context of Globalization*. Retrieved from: <http://campus.usal.es/~ehe/Papers/Microsoft%20Word%20-%20Elisa.Botella.MScGLAD.dissert.pdf> (accessed June 24, 2010).
- Sileo, M. (2007). Eating Fossil Fuel. *Dialogues: A Journal of Undergraduate Research*. Retrieved from: http://dialogues.rutgers.edu/vol_06/essays/index.html
- Zepeda, L. (2003). Cuban Agriculture: A Green and Red Revolution. *Choices: The magazine of food, farm, and resource issues*. American Agricultural Economics Association, 4th Quarter 2003, 1-4.
- Zurbrigg, E. (1999). Greening for Survival: The Economic Crisis, Urban Greening and Sustainability in Havana, Cuba. *Middle States Geographer*, 32, 39-47.