

In the early 1990s, living conditions in Havana, the capital of Cuba, changed abruptly, with access to food becoming one of the biggest problems. For years, the city had been consuming imported farming products. Faced with this crisis, Havana had to be converted into a “productive city” that covered the majority of its population’s needs. Public and private spaces that were unoccupied were transformed into productive areas. The challenge was to allow for the coexistence of the urban population with large-scale agriculture.



Intensive production of worm humus under banana trees

Marielle Dubbeling

A Real Effort in the City of Havana

Organic Urban Agriculture

The economic crisis that struck the country made the revitalisation of old initiatives necessary. For instance, the concept of “Conuco” (plot and garden) has always been related to the feeding strategy of the family. The urban

ate adequate legislation in order to regulate the use of chemicals and limit potential health risks. Local alternatives to control pests and diseases and to assure adequate production levels had to be found.

In the city of Havana, 11 CREEs have been installed over the past years, one of which is located in a high school. This permits environmental education and awareness to be raised in future generations on the use of biological preparations. Moreover, the CREEs are also training producers and extension workers in the use of traditional and low-cost control methods:

Central government has supported the promotion of organic urban agriculture

agriculture initiatives therefore received widespread support by state institutions, scientific, and non-governmental institutions.

People began looking for alternative solutions. The creation of the *Centros de Reproducción de Entomófagos y Entomopatógenos* (CREE) helped to find answers to pests and diseases. These centres help to protect crops through biological control mechanisms, using parasite and micro-organisms for the control of pests and diseases.

The *tabaquina* (extracted from tobacco leaves) is commonly used as a natural insecticide, especially against soft-bodied insects (dragonfly larvae, white flies, trips, and lice)

THE CHALLENGE: URBAN AGRICULTURE WITHOUT CHEMICALS

Bio-pesticides

Dependence on agro-chemical inputs was to be limited. Due to the proximity of the areas used for agriculture to urban residential areas, it became necessary to cre-

Various plants have been identified that contain elements on which basis insecticides, nematocides, acaricides, molluscicides, rat poison, fungicides, bactericides and herbicides can be produced. Some impede virus attacks. One of the most important entomopathogens bacteria is the *Bacillus thuringiensis*. This species produces a toxin, which serves as an insecticide.

From leaves of the neem trees (*Azadirachta indica A. Juss*), a plant from the *Meliaceae* family of Hindu origins, a series of products are prepared both traditionally and industrially. Its efficacy has been proven against 160 species of pest insects, as well as in the control of diseases in domestic animals.

The use of entomopathogens and antagonist fungi for fighting against agricultural pests and diseases is also a very common form of biological control used in Cuba.

Many other biological products used in Havana towards controlling pests and diseases are available (see www.ruaf.org for a full table, or contact the authors).

Mario González Novo

Red Latinoamericana de Investigaciones en Agricultura Urbana, Peru,

✉ aguila@ipes.org.pe

Gunther Merzthal Y

IPES – Promoción del Desarrollo Sostenible, Peru

✉ gunther@ipes.org.pe

Bio-fertilisers

The daily generation of solid waste per person in Havana amounts to 0.5 kg, which adds up to a total of 1,060 tonnes of waste produced per day in the city. The lack of fuel and spare parts for waste-collection trucks have dramatically affected the collection services of the city, leading to the use of self-made bins that often attract diseases and rodents. Thus another example of a traditional practice taken up again, is the reuse of the city's organic wastes in preparing compost and worm compost. Through a relatively simple technique, the organic waste is transformed into high-quality bio-fertilisers that improve the physical, chemical and biological conditions of the soil.

In 2000, the city of Havana produced and applied more than 69,400 tonnes of compost. For 2001, more than 80,000 tonnes were produced. Even if the figures seem high, they are unsatisfactory in terms of the producers' organic fertiliser needs.

There are twelve cooperatives (so-called *Basic Cooperative Production Units*) which collect and process the organic material and distribute part of the compost to different production centres across the city. Another part of the production is offered to shops and centres that advise on agriculture and animal husbandry. These shops and centres supply inputs such as grains, biological preparations and tools, and also provide technical advice on the use of (biological) pesticides and the (biological) means of improving the soil.

GOVERNMENTAL SUPPORT

For a large part, the central government has supported Havana to achieve these results in promoting organic urban agriculture. The city of Havana participates in a national programme on urban agriculture developed in the country, supported and directed by the agricultural ministry. The ministry annually defines certain lines of action. Each province and municipality must then reach the objectives set out, thus contributing to the decentralisation of food production and storage.

For 2001, the following action-oriented objectives were in this way created:

- ❖ to apply 10 kg/m² of organic material per year to *organoponicos* and intensive gardens, and a minimum 20 ton/ha on plots and patios;

- ❖ to regularly update the existence of organic material sources in the municipality and at the level of the *consejos populares* (which are sections of the government at the neighbourhood level. In the city there are 104 of these popular councils);
- ❖ to create optimal conditions for worms to breed;
- ❖ to popularise and implement vermiculture at the level of each unit of agricultural production;
- ❖ to improve the recycling and use of urban waste;
- ❖ to link teaching of agriculture and animal husbandry at different levels with productive urban agriculture practices;
- ❖ to achieve links between producers and each of the following: polytechnic agricultural and animal husbandry institutes, university faculties and scientific institutions. (nationwide, there are 33 agricultural and animal husbandry research centres, of which 19 fall directly under the Ministry of Agriculture ministry and 11 are located in Havana); and
- ❖ to raise the agroecological awareness of the population in environmental conservation while maintaining high-quality production.

FINAL COMMENTS

As stated above, Cuba has defined its lines of action under the perspective of an agroecological approach of agriculture, requiring less dependency on external inputs. Even when the country's economic situation improves, it will not get trapped anymore in the over-consumption of agrochemicals.

The work developed in Havana is the fruit of various social actors, but would not have been possible without the support of the local government authorities. They understood from the first moment the real possibilities that farming can offer to the city and its significance in confronting the

difficult food situation faced by the population. Their authorities' understanding of the situation has resulted in the promotion of public policies that help to develop organic urban agriculture.

Havana's experience has demonstrated how urban agriculture has a role to play not only in reducing urban poverty, - by improving the food security of the excluded - but also in improving the urban environment through the reuse of solid organic waste produced in the city. In this way, it offers an alternative solution to the health problems of its population, provoked by developing intensive agricultural activities in intra-urban zones while applying chemical fertilisers and pesticides.

The educational support, that has existed for more than 40 years, is unquestionably a factor in the development, application and uptake of new agricultural technologies such as organic production techniques and the use of bio-fertilisers. The fruits of urban agriculture seen today are the harvest of efforts initiated years ago.



Natural methods for fighting pests are very common in agricultural production in the city of Havana. For instance, yellow flowers can be used to attract beneficial insects

"... we saw the need to look for non-conventional alternatives for large-scale production and we began to productively use lots in the urban area; we began to develop organic agriculture, and without even intending to do so, we had started urban agriculture. Urban agriculture in Havana arrived as an alternative, but it will stay in the streets, in the landscape and in its inhabitants. Ill-fated will be the ones who, at the start of the so-called "urban century" try to govern well without including urban agriculture in their political agenda."

President of the provincial government (mayor) of the city of Havana, at the opening of the international workshop "Ciudades en Crecimiento Cultivando Alimentos: Agricultura Urbana en la Agenda Política", October 10, 1999.