# IDRC in Cuba

IDRC has supported research in Cuba since 1973. Recent support has responded to emerging needs in Cuba's health and agricultural sectors as a result of the country's battered economy.

In a two-phased initiative, Centre-supported research is assisting farmers who are dealing with the deterioration of the conventional centralized seed supply system. The Instituto Nacional de Ciencias Agrícolas (INCA, national institute of agricultural science) has developed a participatory plant-breeding program for corn and bean farmers in two Cuban regions. Through farmers' research committees and seed fairs, local farmers have increased their yields. INCA is extending this method to more crops and other areas of the country.

The Centre supported several research initiatives to combat dengue fever using an ecohealth approach, which seeks to improve human health through better management of the ecosystem. Several major and minor epidemics of the potentially lethal dengue hemorrhagic fever have occurred in Cuba. The Instituto Nacional de Higiene, Epidemiología y Microbiología (INHEM, national institute of hygiene, epidemiology and microbiology) and the University of British Columbia have recently concluded two phases of research on a community environmental surveillance system. Communities in five councils in Havana's city-centre are identifying breeding sites of mosquitoes that can carry dengue and determining other behaviours that put people at risk. The Instituto de Medicina Tropical (institute of tropical medicine) is developing a similar surveillance system in an outlying neighbourhood of the capital.

Other examples of IDRC support include research to develop urban agriculture, which became, through necessity, an important source of food in the country. As well, Carleton University introduced a master's degree in economics at the University of Havana. The University of British Columbia and Cuba's science research centre collaborated on two phases of research to develop technology that processes sugar cane waste to make a component of steroidal drugs.

In the late 1990s, the Canadian Embassy in Cuba collaborated with IDRC and INHEM on a safe water project. The embassy funded repairs to water mains in Veguita de Galo, while IDRC support enabled researchers to introduce the use of simple sand filters to purify water for home consumption.

IDRC-supported research has focused on the challenges Cuba faces and on the development of its research capacities. In some sectors, Cuba's research capacity is mature and the involvement of Cuban researchers in Latin American and Southern research networks allows for an effective South–to–South transfer of experience and knowledge.

IDRC has invested approximately CA$6.5 million over three decades in 34 research initiatives

involving Cuba. Four projects worth approximately CA$1 million are active in the country. Some are part of larger regional efforts. A small IDRC study on tourism also includes Cuba.

## RESEARCH HIGHLIGHTS

### Participatory Plant Breeding for Biodiversity

Agriculture is still the backbone of Cuba's battered economy. One consequence of the economic crisis of the 1990s was a move away from high-input, export-oriented monoculture, toward low-input, diversified production oriented to local markets. Another outcome was the rapid deterioration of the conventional centralized seed supply system. These unanticipated circumstances provided agricultural researchers and policymakers with an opportunity to implement alternative and improved seed production and distribution practices as part of the effort to build a new agricultural sector.

An earlier phase of this project saw the Instituto Nacional de Ciencias Agrícolas (INCA, national institute for agricultural sciences) working with farmers to improve the yield and quality of corn and bean crops. The institute established farmer research committees and uses seed fairs to share information about new varieties and farming methods. Bean yields increased 36 percent in the La Palma region and 15 percent in the Havana area and a promising variety of maize almost doubled the yield while producing a better tasting crop that required 20 percent less water. Farmers began organizing their own seed fairs in local communities and requested a similar approach for improving rice and tomatoes.

The current phase of this project is strengthening and broadening knowledge in the farmer research committees and establishing plant-breeding associations. It is also extending the methodology to the grain belt in the eastern part of the country. INCA is also working with Masters and PhD students to strengthen capacities at the national level and ensure the sustainability of participatory agricultural improvements.

(Project # 101898, Participatory Plant Breeding for Strengthening Agricultural Biodiversity in Cuba — Phase II; Duration: 2003–2006; IDRC allocation: CA$271 870; IDRC contact: Ronald Vernooy; Research Partner: Humberto Ríos, Instituto Nacional de Ciencias Agrícolas ( INCA), Carretera San José – Tapaste km 3 1/2, San José de Las Lajas, La Habana, Cuba CP 32700; Tel.: 53 64 63773; Fax: 53 7 240 942; Email: brumbun@ yahoo.com; Website: www.inca.edu.cu)

### Management of Seed Systems and Gene Flow

Many farmers in developing countries participate in dynamic informal seed exchange networks. In this way, their seed systems are shaping crop genetic diversity. Farmers retain a diversity of seeds that respond to environmental conditions, market demand, culinary and aesthetic preferences, and social factors. They also deliberately blend modern and traditional varieties.

This grant is allowing researchers to work with farming communities in three countries (Cuba, Mexico, and Peru), focusing on maize, cassava, lima beans, and chilli peppers, and assessing how local seed systems deliver and maintain crop genetic resources important to farmers' livelihoods. The researchers are also looking at the demand for specific attributes and the extent to which local seed systems can meet this demand. In Cuba, research is focusing on home gardens.

Under the coordination of the International Plant Genetic Resources Institute, based in Rome, Italy, this research initiative links the three countries through partnerships and institutional activities and aims to strengthen the use of crop seed systems through improved knowledge and capacities.

(Project # 102563, Management of Seed Systems and Gene Flow (Cuba, Mexico, Peru); Duration: 2004–2007; IDRC allocation: CA$392 680; IDRC contact: Ronald Vernooy; Research partner: Devra Jarvis; International Plant Genetic Resources Institute, Via dei Tre Denari 472/a, 0057 Maccarese – Fiumicino, Rome, Italy)

## Ecosystem Approaches to Human Health in Central America and the Caribbean

Since 1997, IDRC has promoted an interdisciplinary ecosystem approach to human health. The ecohealth approach proposes that better management of ecosystems can reduce the transmission of vector-borne diseases, in this case, malaria, dengue fever, and Chagas. This regional project supports ecohealth research efforts in several countries, including Cuba. It provides preliminary assessments of integrated ecosystem management strategies and helps train a critical mass of researchers in the approach in Central America and the Caribbean.

In Cuba, the Instituto de Medicina Tropical (institute of tropical medicine) is coordinating research aimed at developing, implementing, and evaluating a surveillance system for dengue vector control in Cotorro, a neighbourhood on the outskirts of Havana. This was recently done, through another IDRC project, in five city-centre neighbourhoods. Dengue fever is transmitted by the mosquito, *Aedes aegypti* and is a serious public health problem because it can easily become dengue hemorrhagic fever, which may be fatal. Dengue occurs in cities because of uncovered water storage and standing water that allow mosquitoes to thrive. Major epidemics occurred in Cuba in 1977 and 1981, and minor ones in 1997, 2000, and 2001.

This project's overall objective is to develop a better understanding regionally of the relationship between environmental factors and the ecology and epidemiology of malaria, dengue fever, and Chagas disease. Research actively involves policymakers and community members in order to encourage the replication, scaling-up, and institutionalization of the knowledge gained.

(Project # 10109, Ecosystem Approaches to Human Health in Central America and the Caribbean; Duration: 2002–2006; IDRC allocation to Cuba: CA$228 300; IDRC contact: Roberto Bazzani; Research partners in Cuba: Cristina Díaz Pantoja, Instituto de Medicina Tropical Pedro Kourí, Autopista Novia del Mediodía 6 1/2 entre Autopista Nacional y Carretera Central, La Habana, Cuba; Tel.: 537 202 0633; Fax: 537 204 6051; Email: cdiaz@ipk.sld.cu; Website: www.sld.cu)

## Increased Links Between Canada and the Americas

The Canadian Foundation for the Americas (FOCAL) was founded in 1990 with a mandate to deepen Canada's relations with Latin America and the Caribbean by promoting linkages between Canada and the Americas and fostering informed analysis and debate on the social, political, and economic issues that confront the region. Key areas of interest include poverty and inequality, economic development and trade integration, governance and democratic development, inter-American relations, and the Research Forum on Cuba. FOCAL organizes conferences, workshops, and seminars. As well, it commissions and publishes research papers and maintains a Website.

This project is assisting FOCAL to build the in-house Internet capacity to develop new Web and electronic communication applications tailored to its changing needs. FOCAL will also explore new Internet applications for online collaboration to advance linkages between Canada and the Americas. The project aims to increase the size of the audience that receives FOCAL material and uses its Website by improving its electronic communication services (including its database) and producing updated content in English, French, and Spanish.

(Project # 102685, Canadian Foundation for the Americas (FOCAL): Website and Information Dissemination Strategy; Duration: 2004–2006; IDRC allocation: CA$151 760; IDRC contact: Giselle Morin-Labatut; Research partner: Eduardo del Buen, Canadian Foundation for the Americas – FOCAL, 1 Nicholas Street, Ottawa, Ontario, K1N 7B7; Tel.: 613 562 0005; Fax: 613 565 2525; Email: focal@ focal.ca; Website: www.focal.ca)

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## Tourism in the Caribbean: Challenges and Opportunities

Tourism is the most important service sector in the Caribbean. According to 2004 data from the World Travel and Tourism Council, tourism accounts for 15 percent of the Caribbean's GDP and 16 percent of its employment. Tourism takes different forms. Mass tourism is more common in Barbados, Cuba, and the Dominican Republic; cruise ships stop on various islands; and ecotourism is more common in Belize and Dominica. Which types of tourism are best suited to address development concerns is a matter of debate. However, it is clear that tourism is vital to the Caribbean in its efforts to diversify national economies that still rely heavily on sugar and banana production.

This grant has supported a five-month study of tourism and its role in poverty reduction and local employment creation. The study is looking at the influence of regional policies in structuring the tourism sector in the Caribbean and participation in local or regional strategic associations. It is also supporting research and capacity building in the tourism sector that can add value in the policy-development process in the region. The results are expected to be useful for Caribbean policymakers who are trying to structure the tourism sector to obtain the most benefit for local economies and, where possible, to incorporate displaced workers from the banana and sugar industries.

(Project # 103581, Tourism in the Caribbean: Challenges and Opportunities; Duration: 2005–2006; IDRC allocation: CA$21 500; IDRC contact: Federico Burone, IDRC Regional Office for Latin America and the Caribbean, Avenida Brasil 2655, 11300 Montevideo, Uruguay; Tel.: 598 2 709 0042; Fax: 598 2 708 6776; Email: lacro@idrc.org.uy)

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