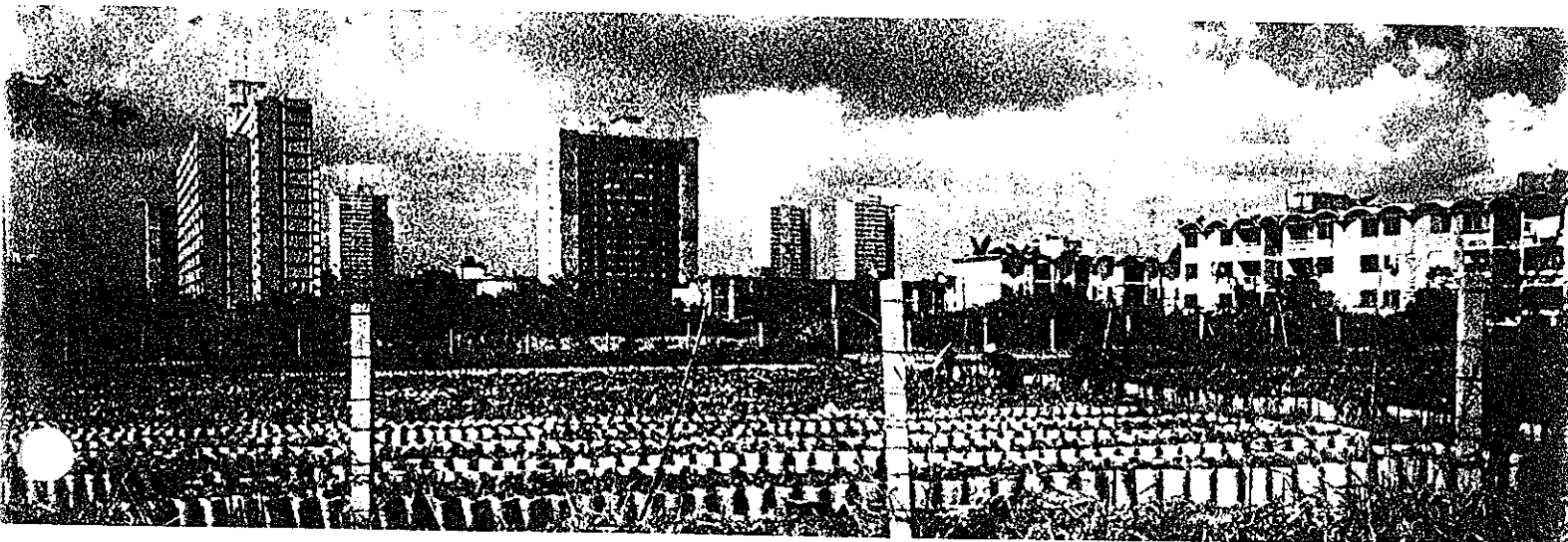


CUBA'S NEW REVOLUTION



30 000 Havana residents cultivate 8 000 officially recognized urban gardens in the shadow of skyscrapers (Photo courtesy Global Exchange)

BY STEPHEN ZUNES

Cuba has struggled with serious economic problems for more than a decade. Much of its travails are due to the cessation of the generous trade terms and foreign aid the country once received from the Soviet Bloc, as well as to the U.S. economic embargo – originally imposed in 1961 and tightened in 1992 and 1996. At the peak of the hardship – the so-called “special period” – in 1993, there were widespread predictions of the total collapse of the economy and of the country’s Socialist government. However, Cuba appears to have rebounded as a result of a dramatic shift of the economy to one emphasizing organic agriculture, environmental planning, renewable energy, and other sustainable development practices.

ORGANIC AGRICULTURE

Unable to obtain fuel, chemical fertilizers, pesticides, motor vehicles, and other items on which they depended, the Cubans faced a potential catastrophe. The response, in the words of Peter Rosset of the Institute for Food and Development Policy, is “the largest conversion from conventional agriculture to organic or semi-organic farming that the world has ever known.”

Despite an 80 percent drop in the availability of chemical pesticides and a 50 percent drop in petroleum for agriculture from 1989 levels, Cuban farmers have actually increased the quantity and quality of crop yields at lower costs and with fewer health and environmental side effects. Fungi, nematodes, wasps, and ants have all been



Many Cubans are now healthier because of increased consumption of organic vegetables (Photo courtesy Global Exchange)

harvested for pest control. Much of this biological pest control has been developed in cottage industries led by scientists in this poor but highly educated society.

Arnaldo Coro, a leading Cuban scientist, recalled that Cuban entomologists “threw a big party” when they learned the government was ending the import of most pesticides and herbicides. “Finally,” he exclaimed, “our discoveries were being implemented!”

On a trip to Cuba in 1994, I visited a vermicompost production center in Pinar del Río where dozens of concrete troughs of manure are used for raising worms in the shade of large mango trees.

Within three months the worm-manure mixture is ready for application. The nitrogen content is higher than chemical fertilizers and the vermicompost leaves no unhealthy residue in the plants. There are nearly 200 such vermicompost centers in the country that produce more than 100,000 tons of vermicompost per year.

In addition, Cuba is moving away from the monoculture model – based on exports of sugar and tobacco – and growing more food crops, particularly soybeans, to support the country’s burgeoning soy industry. Crop rotation, intercropping, and soil conservation efforts are widespread. Oxen are being bred to replace tractors.

There are incentives for urban dwellers to join the growing rural agricultural workforce, either permanently or on a short-term basis.

While most Third World countries center development strategies in urban areas at the neglect of the countryside, Cuba has done just the opposite. This explains why media reports of the shabby conditions of Havana – where most foreign journalists are based – while not inaccurate, fail to reflect a quality of life in the countryside far superior to that of most poor countries. Even in the cities, however, there is an agricultural revolution going on in the form of dramatically expanded urban agriculture. In addition to making up for the subsidized food imports from the former Soviet Bloc, there is also a strong motivation to reduce food transportation, refrigeration, and storage costs. There are now over 30,000 Havana residents cultivating 8,000 officially recognized gardens, covering nearly one-third of the available land. Some are privately developed, some are state enterprises, and some are affiliated with workplaces.

This has not been enough to make up for the end of food imports from the Eastern Bloc, so some serious food shortages remain. However, despite some periodic vitamin deficiencies, many Cubans are now healthier because of their increased consumption of organic vegetables and decreased consumption of red meat. Farmworkers especially report a dramatic improvement in health, due to their reduced exposure to pesticides and herbicides.

GREEN ENERGY

The shortage of fuel also led to a switch to renewable energy sources. Construction of the country's nuclear power plant has been suspended. There are now approximately 5,700 operating windmills. Solar panels are springing up all over, with over 350 solar heating systems currently operating. Biomass generators now supply nearly a third of the country's electricity. There are over 200 small hydroelectric facilities, mostly in isolated mountainous regions. Seventy percent of the country's sugar mills are now powered by waste from the cane. Solar ovens and other appropriate technologies are now commonplace in rural areas.

A bicycle revolution has swept Cuba. Millions of Cubans now travel under their own power. The World Bank reports that Cuba's "process of de-motorization of its transport system through the massive introduction of non-motorized vehicles [is] unprecedented in the history of transportation." Hundreds of miles of

traffic lanes, paths, and entire roads are now reserved for bicycles.

Havana is the most bicycle-friendly city I have pedaled through, with well-marked bicycle lanes, and the relatively few motorists are quite respectful. The number of cars in the city has been reduced by two-thirds and the number of bicycles is forty times what it was just a decade ago. One million bicycles have been imported from China for Havana alone and Cubans are beginning to produce their own as well.

REFORESTATION

While many countries have been destroying their rainforests, Cuba has made a conscious effort to expand its wooded areas through large-scale reforestation programs that include the planting of a rich variety of native species. Forested areas have grown by more than one-third since the 1959 revolution. So successful is this effort of reclaiming the natural vegetation that a mountainous region in the eastern part of Pinar del Rio Province – which was an overgrazed wasteland just thirty-five years ago – has recently been declared by UNESCO an international biospheric reserve.

DESPITE AN 80 PERCENT DROP IN THE AVAILABILITY OF CHEMICAL PESTICIDES AND A 50 PERCENT DROP IN PETROLEUM FOR AGRICULTURE FROM 1989 LEVELS, CUBAN FARMERS HAVE ACTUALLY INCREASED THE QUANTITY AND QUALITY OF CROP YIELDS AT LOWER COSTS AND WITH FEWER HEALTH AND ENVIRONMENTAL SIDE EFFECTS.

One of the by-products of the reforestation efforts is that Cuba is now a leading biotechnology center for medicines derived from tropical plants. There has been a dramatic increase in the use of herbal medicines and a return to some proven folk remedies.

Cuban Minister of Tourism Osman Cienfuegos, a world-renowned environmental architect, has made the preservation of scenic and environmentally sensitive areas a priority in the development of new resorts for the million Europeans and Canadians who visit each year. Indeed, ecotourism is now a major source of income, though Americans face possible fines and jail sentences if they travel to Cuba as tourists.

There is surprisingly little debate about Cuba's strong environmental direction, in part because it has no powerful corporate sector to oppose it. It also seems to be the only choice. According to Rene Capote of the Ecology Institute of the Academy of Sciences, "If we lose our natural resources, we have nothing. If we are not able to protect nature, we will not be able to have a sustainable economy. It's just common sense."

As a result of these innovations, Cuba was one of only two countries in the world to receive

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an "A-plus" rating at the Rio Earth Summit on its sustainable development practices, and Cuba's organic farming association won this year's Right Livelihood Award.

DECENTRALIZATION

As people grow less reliant on centralized sources for energy and agricultural inputs and more reliant on local sources, this once totalitarian system has partially democratized. Most state farms have become cooperatives run by the farmers themselves, and an increasing degree of political control now rests with democratically elected local administrations. Though the Cuban government is still authoritarian in many respects and there is little toleration of overt challenges to Fidel Castro's regime, the trend towards decentralization has brought new life to a country that had stagnated for years under a rigid, hierarchical state bureaucracy.

Most of Cuba's ecological innovations were made more out of necessity than by design. However, the Cubans believe that many of these changes are here to stay, even if the availability of fossil fuels and chemical agents improve. "We will never go back," one farmer told me. "I'm sorry it took us so long to figure this out." Indeed, as a number of Cuban scientists pointed out, sooner or later all countries will have to make the transition to a more environmentally sustainable economy.

"The revolution and the U.S. embargo freed us from having to follow the U.S. model of devel-

opment," says Raoul Guiterrez, who works for a tour agency. "Unfortunately, we ended up following the Soviet model, which didn't work either. Now, we have been forced to do what we should have done from the beginning — find a Cuban model, sensitive to our country's cultural, economic, and environmental needs."

Environmental education is taught in every grade at every level of education. There are prime-time radio and television shows on environmental themes. There is a major cleanup of Havana Harbor, thanks to a grant from Scandinavian countries. There is a major recycling program focusing on glass, aluminum, cardboard, and paper collected from every urban neighborhood and many smaller towns as well. High school students are recruited, with the incentive of cash donations for their schools, to collect recyclable materials.

There is a growing emphasis on natural medical practices, including homeopathy, Eastern traditions, and traditional Cuban medicines. Green pharmacies are in most towns and neighborhoods, and alternative medicine is a recognized specialization in Cuban medical schools.

The greening of Cuba would allow for an unprecedented degree of opportunities for environmental architects, appropriate-technology specialists, organic farming consultants, and others from the United States, yet such assistance is deemed illegal by the Clinton Administration, which has threatened those willing to provide such aid with fines and jail terms. It is ironic that pressure against Cuba has increased as it has moved away from the old rigid Communist development strategies to embracing Green development strategies. Yet perhaps a Green Cuba actually is a bigger threat than a Red Cuba. The Communist model was clearly unsustainable on many levels. Yet a Green model actually serves as a viable alternative to the foreign-investment-driven, capital-intensive model promoted by the United States, the World Bank, the International Monetary Fund, and the World Trade Organization. Indeed, Cuba may constitute the threat of a good example, which is perhaps the biggest threat of all. ■

Stephen Zunes is an associate professor of politics and chair of the Peace & Justice Studies Program at the University of San Francisco.

This article was made possible in part by the *DESIGNER/builder* Writer's Project, through a grant from the Graham Foundation for Advanced Studies in the Fine Arts.