

# The Second Green Revolution

By Clifton Ross

It may seem hard to believe that the process that brought the head of lettuce to your salad—and all the other delicious components of your organic meal, like the baked potato and the grilled free-range chicken breast—are all a major cause of climate change. According to the Johns Hopkins Center for a Livable Future, “Approximately one-third of greenhouse gas emissions are produced by agriculture and land-use changes, with 18 percent of the overall total coming from livestock alone.”<sup>1</sup> While organic, free-range, or better yet, vegetarian diets are steps in the right direction, the steps are still circumscribed by a system that guarantees climate change, even in its “greenest” sectors.

Part of the problem is the amount of energy (inputs) required by standard agriculture to produce the world’s food: in the United States 7.3 calories of energy go into delivering one calorie of food.<sup>2</sup> From the tractors that break the ground for planting, then return to do the planting and harvesting, to the transport and processing, to the further transport to the supermarket, and all the way to your drive to make the purchase (unless you bicycle and cut a calorie or two off the process), energy is used and carbon produced.

The United States government’s agricultural policies reward large, capital-intensive corporations and leave small, labor-intensive farmers in the dust. In 2007, as a result of heightened public interest in food production and policy, the Federal Farm Bill became an issue for popular debate. But despite grassroots activist efforts, the bill passed without serious policy changes. It was agribusiness as usual. While factory farms continue to receive huge subsidies, alternatives—such as organic production—receive only limited support, mostly in the form of research grants.

Organically produced food represents only 3.5 percent of the United States food market, nonetheless it’s a growing segment.<sup>3</sup>

This is certainly a step forward, at least in theory. But while very small organic farms might qualify as “agroecological” by producing their own fertilizers, diversifying and rotating crops, using cover crops,

and practicing ecological pest management, very few of the larger farms meet this ideal. Julie Guthman, author of *Agrarian Dreams: The Paradox of Organic Farming in California* warns that, “In practice, few farms meet the ideal of on-farm composting” and “large-scale mixed growers are particularly inclined to rely on input substitution. Few plant cover crops because of the expense; instead, they use the controversial sodium (or Chilean) nitrate and other purchased fertility inputs.”<sup>4</sup>

As the demand for organic food grows, so does the likelihood that big corporations of agribusiness will step in to fill the void once they’ve put the small producers out of business. As Eric Holt-Gimenez of the Institute for Food and Development Policy puts it, “Given the system we have today, and given the corporate dominance... it’s perfectly imaginable that the largest organic producer would become Monsanto and that the largest distributor would become Walmart.” And it’s also perfectly imaginable that the new “organic” foods would leave the same carbon footprint and require the same 7.3 calories of energy for one calorie of organic food.

## Latin American Experiments in Change

This discussion isn’t taking place only in the United States. In fact, the entire world—most notably many nations of Latin America—is facing the crisis that agribusiness drags behind it like a plow cutting



through the earth. Activists in the social movements of the region are convinced that the transformation of agriculture to address the problems of global warming will require a new economic system. So far, most of the “left” governments elected across South and Central America continue to follow an extractive model of development, but pressure from below, the rising cost of food on international markets, and the financial collapse of the past year are increasing pressure for radical change.

In Venezuela, agroecology is a key component of anti-imperialist, socialist strategy. President Hugo Chavez, whose nation of Venezuela imports two thirds of its food—one half of that from the United States—has hoped to dramatically reduce imports through the development of ecological agriculture and agricultural

cooperatives. Coops, like Mistajá in the state of Mérida, have made it possible for many campesinos to work the land without the “patron” (boss) for the first time in their lives. But Mistajá produces only two crops: roses and potatoes, both conventionally grown with the usual chemical inputs. Moreover, like most other cooperatives, they lack the managerial training and the skills for collective processes needed for success. With upwards of 150,000 cooperatives founded since Chavez came to power, the Bolivarian State has a mixed record on support in that area. Worse still, it’s universally acknowledged in Venezuela that a large number of these collective enterprises are “ghost collectives” formed by enlisting family for the sole purpose of obtaining “loans” from the government, which will never be paid back.

### The First Green Revolution

The origins of today’s international monocropping industrial agricultural system began when food shortages swept Mexico in the 1930s. Norman Borlaug, an agronomist who had been working for DuPont, was recruited to help develop a high-yield, disease-resistant dwarf wheat, which proved so successful that by 1963 Mexico became a net exporter of wheat. The development of high-yield, disease-resistant monocultures cultivated with chemical fertilizer and pesticides allowed India and Pakistan to nearly double their wheat yields between 1965 and 1970.

In 1968, William Gaud, then USAID

director, said that “These and other developments in the field of agriculture contain the makings of a new revolution. It is not a violent Red Revolution like that of the Soviets, nor is it a White Revolution like that of the Shah of Iran. I call it the Green Revolution.”<sup>1</sup>

It was this directly political dimension of the Green Revolution, which caused a later generation of critics to see it as a central element in the United States strategy to maintain control of the developing world by subverting attempts at agrarian reform through increased crop yields. Kenny Ausubel described it this way:

“Fearing global upheaval, the devel-

oped nations initiated a deliberate strategy to supply cheap, abundant food to prevent political unrest. The Green Revolution seeds were, however, part of a larger package, conditioned to grow only within the narrow tolerances of costly petrochemical fertilizers and pesticides. The program also required expensive heavy equipment and massive high-tech irrigation. While initially the “miracle high-yielding” seeds did produce bigger crops, this gain proved to be at the expense of the environment and small farmers.”<sup>2</sup>

Formerly hungry campesinos were given a piece of bread rather than a piece of the field. They were eventually



Although the programs the Venezuelan government has designed and implemented have been riddled with incompetence and corruption, the objective remains crucial, since it's obvious that people who can't govern themselves on a day-to-day basis, or a nation that can't feed itself, can't be free and sovereign.

Miguel Angel Nuñez, founder of the Institute for Production and Research in Tropical Agriculture, works as an adviser on agriculture and agroecology for the Chavez government. He says the Venezuelan debate has gone from food security to food sovereignty. "Food security is about having access to food, a concept which doesn't necessarily question where food comes from, who produces it, or how it is produced. In contrast, food sovereignty implies a commitment to fostering self-sufficiency through land reform, community participation, ecologically-sound methods, and socially accountable research and policy agendas."<sup>5</sup>

The switch to organic food production to reduce total energy consumption and global warming needs to be part of a larger shift in food production. Peter Rosset, who has been researching alternative agricultural approaches for the past 20 years, links redistributive land reform, locally oriented production, and organic growing practices in an analysis that shows that these interlinked practices are ecologically and economically sustainable.<sup>6</sup>

He says that while the government of President

driven by necessity into the city to work in low-wage jobs in order to buy the bread they could no longer hope to produce from their own fields.

The environmental problems with the Green Revolution proved to be enormous. Pollution from pesticides and the runoff from the chemical fertilizers caused, and continue to cause, a cancer epidemic throughout the world. The enormous "dead zones" growing in our oceans are the result, in large part, of this same run-off. The fish and frogs that once thrived in the rice fields of Asia and Latin America have also fallen victim to the chemicals used in the "miracle" of massive crop production.

The small farmers who survived the centralization of production became dependent on the use of fertilizers and pesticides, which had to be imported from the United States and Japan—an enormous financial burden on their marginal resources. Furthermore, as food production was transformed

from the work of people whose cultural and spiritual roots were in the land to a commodity for export and import, untold consequences of alienation emerged.

Vandana Shiva has detailed the connections between the Green Revolution and the destruction of social life in India in her book, *The Violence of the Green Revolution*. The inter-communal violence in the Punjab and elsewhere, Shiva maintains, is the direct responsibility of the changes brought by the Green Revolution. "Instead of abundance, Punjab has been left with diseased soils, pest-infested crops, water-logged deserts and indebted and discontented farmers," she writes.<sup>3</sup>

As the Green Revolution progressed, entire countries, particularly in Central America, were made into enormous monocultural plantations. At first, resistance to the new methods of agriculture was virtually nil. But as the former indigenous farmers were reduced to serfs and as plantations were grad-

ually mechanized, thrown out of work, conflict grew. As the land from which industrial crops like bananas, corn, cotton, sugar cane, and soy began to die and blow away, the hunger, poverty, and rage grew, feeding revolutionary insurgencies that were suppressed by brutal dictatorships.

Nationalist movements attempted land reform in numerous countries around the world. But even the successful ones like Cuba implemented farming practices based on a centralized, industrialized monoculture. Well into the 1970s, the Green Revolution was upheld as the best model for agriculture not only by the United States and its Western allies, but also by those nationalist movements which challenged the United States' hegemony. ■ —CR

### Endnotes

1. [www.agbioworld.org/biotech-info/topics/borlaug/borlaug-green.html](http://www.agbioworld.org/biotech-info/topics/borlaug/borlaug-green.html)
2. Ausubel, Kenny. *Restoring the Earth*. H.J.Kramer Inc. 1997.
3. Shiva, V. *Green Revolution*. Zed Books. 1993 p. 12.



Chávez has made clear its commitment to agrarian reform, a number of factors have so far conspired to restrain progress. “These include the resistance of landlords and bureaucrats and the relative lack of organization of the peasantry into an actor, or at least an active subject, to push land reform.”<sup>7</sup> On the other hand, Cuba continues to be in the lead in Latin America and the world in its agricultural transformation.

Following the dramatic reduction of petroleum imports after the dissolution of the Soviet Union, Cuba made profound changes in its agricultural model. They moved from a centralized socialist state system that mirrored international agribusiness to community-based agriculture. In the countryside, peasant-run cooperatives took over the massive state farms. And in cities, empty lots became gardens. The fields were plowed and fertilized by oxen. The 2006 film, “The Power of Community,” reveals how this change in policy drew the country back from the brink of starvation and made the island nearly self-sufficient in food production.<sup>8</sup>

Rosset writes that “as Cuba re-oriented its agricultural sector, becoming a world-class case of ecological agriculture along the way, it rebounded to show the best performance in all of Latin America and the Caribbean, a remarkable rate of 4.2 percent annual growth in per capita food production from 1996 through 2005 (the most recent year for which statistics are available)<sup>9,10</sup>, a period in which the regional average growth rate was zero percent.”

Rosset has observed that to effectively sustain agricultural growth without returning to fertilizer and pesticides, agricultural workers must be re-linked to

their own land.<sup>11</sup> The ideological, socio-political, and economic implications of this transition are still being absorbed on the island, but Medardo Naranjo Valdés of the Alamar Vivero nursery in Havana sees the move as a return to ancestral traditions that have broadened and deepened his perspective on socialism. “We have to figure out how to work within the agroecological system because we’re convinced that all creatures in this biological chain of being on our planet have a right to live.” ■

## Endnotes

1. Intergovernmental Panel on Climate Change. *Climate Change 2007: Synthesis Report*. New York, NY: Cambridge University Press. Johns Hopkins Center for a Livable Future. [www.jhsph.edu](http://www.jhsph.edu).
2. “The Food and Farming Transition: Toward a Post-Carbon Food System.” 2009. Post Carbon Institute.
3. [www.greenrightnow.com/kg0/2009/05/04/organic-food-sales-grow-to-35-percent-us-market/](http://www.greenrightnow.com/kg0/2009/05/04/organic-food-sales-grow-to-35-percent-us-market/)
4. Guthman, Julie. *Agrarian Dreams*. University of California Press, 2004, 49-50.
5. Kerssen, Tanya. Report on Nuñez remarks at Center for Latin American Studies, University of California Berkeley. October 2007. <http://clas.berkeley.edu/Events/fall2007/10-16-07-nunez/index.html>
6. Rosset, Peter. “Fixing our Global Food System: Food Sovereignty and Redistributive Land Reform.” *Monthly Review*, July-August 2009. [www.monthlyreview.org/090817rosset.php#Volume](http://www.monthlyreview.org/090817rosset.php#Volume).
7. Wilpert, Gregory. “Land for People Not for Profit in Venezuela,” *In Promised Land*, Rosset, P., Patel, R., and Courville, M., eds., 249-264.
8. [www.powerofcommunity.org](http://www.powerofcommunity.org)
9. “Moving Forward,” in Peter Rosset, Raj Patel, and Michael Courville, eds., *Promised Land: Competing Visions of Agrarian Reform* (Oakland: Food First Books, 2006), 301-21
10. Food and Agriculture Organization of the United Nations (FAO). *The State of Food and Agriculture 2006* (Rome: FAO, 2006).
11. Rosset, Peter. *Cuba: A Successful Case Study of Sustainable Agriculture*. Monthly Review Press, 2000. <http://www.cosg.org.uk/rosset.htm>

Photo:

(Above)  
On sustainable farms,  
oxen act as plows and  
source of fertilizer.

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(Facing Page)

Miguel Angel Nuñez  
visiting a U.C. Berkeley,  
Latina American Stud-  
ies class.

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Clifton Ross is the author of *Translations from Silence* (2009, Freedom Voices Publications) and director of “Venezuela: Revolution from the Inside Out” (2008, PM Press). Portions of this article first appeared in *Left Curve*, #33, 2009.

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ISSN#1532-2874

*RP&E* was first published in 1990 by Urban Habitat Program and the California Rural Legal Assistance Foundation's Center on Race, Poverty & the Environment. In the interest of dialogue, *RP&E* publishes diverse views. Opinions expressed are not necessarily those of the editors, Urban Habitat, or its funders.

This issue is dedicated to Luke W. Cole (1962-2009)

Founding co-editor of the journal *Race Poverty & the Environment* and founder of the Center for Race, Poverty and the Environment.



**Photos:** (Above) Montage from the Luke Cole memorial booklet published October 25, 2009. Courtesy of Nancy Shelby.

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Vol. 16 No. 2 | Fall 2009

Printed on processed chlorine-free paper 50% post-consumer fiber, 100% recycled

# the Race, Poverty Environment



a journal for social and environmental justice

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