

South America Seeks to Fill the World's Table

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LUCAS DO RIO VERDE, Brazil - Almost overnight, South America has driven a historic global shift in food production that is turning the largely untapped frontier heartland of the continent into the world's new breadbasket.

One of the last places on earth where large tracts are still available for agriculture, the region, led by Brazil, has had an explosion of farm exports over the past decade. The growth has been fueled by a combination of market-friendly economic policies and advances in agronomy that have brought formerly unusable tropical lands into production and increased productivity levels beyond those in the United States and Europe, challenging their traditional dominance of the global farm trade.

Sometime over the next decade or so, Brazil, which Secretary of State Colin L. Powell described as "an agricultural superpower" during a visit in October, hopes to pass the United States as the world's largest agricultural producer. But the trend is far broader and can be felt also in parts of Argentina, Bolivia, Paraguay and Uruguay, with a deep impact on the region's economy and environment. And it has spurred a debate that has mainly focused on expansion into areas where the Amazon rainforest is thought to be jeopardized.

"There has been a silent revolution in the countryside" since the 1990's, Brazil's minister of agriculture, Roberto Rodrigues, said in an interview in the capital, Brasília. The past four or five years in particular, he said, have been "characterized by spectacular growth and a huge increase in demand" abroad for foodstuffs, which has given Brazil "the capacity to compete with anyone."

The global effect has been powerful. In June, the United States imported more in farm products than it sold abroad, further evidence of its eroding position. Alert to the challenge, the Iowa Farm Bureau Federation even has a presentation for its members called "Should Brazil Give You Heartburn?" The answer is a not-so-qualified yes.

The competition is personified in producers like Otaviano Pivetta, 45, and Helmute Lawisch, 39. Less than 20 years ago, the two friends took turns driving 1,500 miles over mostly bone-jarring roads from their homes in Brazil's southernmost state to stake their claim in this region, which was mostly jungle then, with little in the way of electricity, sanitation or other public services.

In retrospect, it is clear that they were in the vanguard of a fundamental transformation of global agriculture. Today, farmland stretches to the horizon. With a climate that varies little the year round, it is not unusual to have two or even three harvests a year and to see combines clearing fields with planters sowing another crop in their wake.

The two men are now among the most successful producers in the region, and Mr. Pivetta has twice been elected mayor of Lucas do Rio Verde. Each now cultivates more than 100,000 acres, sending soybeans, cotton and pork to markets as distant as China, Russia and Pakistan. With the Southern Hemisphere's spring planting season now complete, the two farmers and scores of others like them here in Mato Grosso state are looking forward to another year of bumper crops.

"With the great climate and fertile soil we have here, I can't imagine any other place that gets the kind of productivity that we do," said Mr. Pivetta, whose family now runs a half-dozen farms here. "Not in Brazil or anywhere else are you going to find two crops a year yielding three tons of grain an acre."

Brazil's 'Green Anchor'

Agriculture is now a \$150-billion-a-year business in Brazil, accounting for more than 40 percent of the country's exports and creating what Brazilians call the "green anchor" of their economy.

Already the world's biggest exporter of chickens, orange juice, sugar, coffee and tobacco, according to Agriculture Ministry statistics, Brazil soon hopes to add soybeans to the list, depending on what happens in that volatile market.

With a grass-fed herd of 175 million cattle that is the world's largest, it passed the United States as the world's largest exporter of beef last year. During the first nine months of 2004, sales of Brazilian beef abroad rose 77 percent over the same period last year, leading the government to predict \$2.5 billion in earnings from beef exports this year.

Over all, the agricultural bonanza, aided in part by mad cow disease in Europe and avian flu in Asia, is likely to give Brazil a record trade surplus of over \$30 billion.

Brazil's advantages start with the availability of large amounts of cheap land, especially here in this region of well-drained tropical savanna known as the cerrado. Larger than the American grain belt but dismissed as useless for farming until barely a quarter of a century ago, the cerrado cuts across the heart of Brazil, and its vastness permits economies of scale that are the envy of producers elsewhere.

"What's really driving this revolution is that the Brazilians discovered how to use tropical and savanna soils that had always been considered poor," said G. Edward Schuh, director of the Center for International Economic Policy at the University of Minnesota. "They learned that with modest applications of lime and phosphorus they can quadruple and quintuple their yields, not just with soybeans but also with maize, cotton and other commodities."

The discovery of how to enrich the soil and make it highly productive came in research at the Brazilian Enterprise for Agricultural and Livestock Research, a government agency

known by the Portuguese-language acronym Embrapa. The agency's biggest successes, however, have been in modifying crops to grow in those altered soils.

Until recently, for example, soybeans were not thought to flourish in tropical soils and climates. But researchers at Embrapa and similar private or state institutes have developed more than 40 varieties of soy specially adapted for the cerrado. Soybeans now account for nearly half of Brazil's farm exports and are the main crop in this region.

Embrapa researchers have also developed breeds of cattle for the tropics, using a variety originally from India, as well as a "tropical hog" that is lower in fat and cholesterol than its American counterpart and that has a higher ham and loin yield. Perhaps most surprisingly, the Brazilians are also working on varieties of tropical wheat.

"One of the main reasons we believe that Brazil has a greater chance to prosper even further is that they have a very solid scientific foundation," said Daniel Lederman, an economist at the World Bank who specializes in agriculture. "The concept of tropical technology is very attractive and we are learning a lot by studying Embrapa, which is at the forefront of applied agricultural research."

Government's Helping Hand

Changes in economic policies have also spurred the boom here. At the beginning of the 1990's, for example, Brazil lifted longtime restrictions on imports, leading to a surge in purchases of tractors, combines, fertilizers, pesticides and seeds.

A leap in exports came in 1999, when the government devalued the currency and allowed the real, which had been trading at near par with the dollar, to float on the currency exchange market. Today, the real trades at almost three to the dollar, which means incomes for agricultural producers have nearly tripled.

The Brazilian bonanza has been eagerly welcomed by the main international agricultural trading companies, which have been quick to seize new opportunities. In this town of 30,000, Archer Daniels Midland, Bunge and Cargill not only have built huge warehouses and silos along the main highway, but have also provided credit to farmers on a scale far beyond the means of the Brazilian government.

"It's good business for them, but we have to admit we owe a lot to the trading companies," said Mr. Lawisch, whose family, modest stakeholders in their home state of Rio Grande do Sul, has moved here. "When we needed them, they supported us, and now that we are prospering, our commercial relationship continues to expand every year."

To counter the South American advances, the United States and Europe have increased subsidies to their own beleaguered farmers. But in a pair of landmark decisions, the World Trade Organization recently ruled that such subsidies for cotton and sugar are illegal and must be phased out.

The Bush administration is appealing the cotton ruling, but it is widely expected to lose, and many economists say the principle could be applied to other crops.

All of this clearly will have an increasing impact on agriculture in the United States. Experts say some areas that are not competitive with South America may have to move from one crop to another, while others will face pressure to shift out of agriculture altogether.

Some American and European farmers already have, and are starting to buy farmland here. Wolfgang Hudepohl, a real estate agent in Cuiabá, Mato Grosso's state capital, estimates that he has sold 60 farms to foreigners over the past few years. "Foreigners like not only the cheap prices, but also the low production costs and the fact they are not tied down by regulations," he said.

At the edges of the agricultural frontier, in states like Maranhão and Piauí hundreds of miles east of here, land is still remarkably cheap, as little as \$20 an acre in some remote areas. But in places where the boom is already going full blast, like here, land prices are rising rapidly.

"Seven years ago, I bought 6,175 acres, and paid \$125,000," said Jose Luiz Lorenzi, a farmer and manager of the John Deere agency here, which is the busiest in Brazil. "Just recently I got an offer of \$1.5 million for the same land. But I'm not selling. I want to buy more property myself because there is no better investment in the world than buying land in Mato Grosso."

The Costs of the Boom

The real estate boom has not been without social tensions and other costs, particularly to the environment, as the expansion of farm and grazing lands has accelerated Amazon deforestation. Typically, jungle is razed for conversion first into cattle pasture and then, as the agricultural frontier advances, into fields for soybeans and other crops.

But producers in the cerrado, which is more than 1,000 miles from the coast, say they are more concerned about the lack of reliable highways, railways and barge routes, which adds to the cost of doing business. That situation, farmers say, is gradually improving, as is Brazil's ability to weather the ups and downs of agricultural markets.

After nearly a decade of rising prices and record profits, soybean prices, for instance, have sharply dropped this year, the result in large part of a decision to curb imports and to cancel existing contracts by China, where a huge new market has emerged to satisfy the changing diet of a growing middle class.

In the past, when Brazilian agriculture was dependent on a single crop, that would have spelled certain disaster. But Brazil has made a successful effort to diversify its exports, and has reduced its vulnerability to sudden price fluctuations for any single crop. In the

1960's, for example, coffee was responsible for 60 percent of Brazil's exports. Today, coffee is seventh on the list.

As a result, the watchword today for Brazilian farm producers is to diversify even further.

"We're entering a phase in which we're not going just to be growing things, but processing them too, turning them into finished products," said Eledir Pedro Techio, manager of the local credit cooperative and a soybean and corn farmer. It is also clear that further gains in production are still to come, thanks both to expansion of the agricultural frontier and higher yields.

Government officials estimate that an additional 50 million acres, much of it as potentially fertile as the land being tilled here now, are likely to be put into production over the next decade.

"There's no way you can go wrong here," Mr. Lawisch said. "We're champions of production already, but we think we can do even better. We aim to feed not just Brazil, but the world."