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BRAZIL INSTITUTE SPECIAL REPORT

SUSTAINABILITY AND AGRICULTURE IN THE STATE OF MATO GROSSO

EXECUTIVE SUMMARY

The issues of global climate change, environmental preservation, as well as land use and food security have emerged as dominant themes on the international agenda. Nowhere is the convergence of these issues more apparent than in Brazil—a major food supplier and owner of more than 65 percent of the Amazon rain forest—and, especially, in the state of Mato Grosso. The third largest Brazilian state, Mato Grosso, borders the southern stretches of the Amazon biome. As Brazil's leading producer of various foodstuffs, the state is at the center of a broader debate about economic development and environmental sustainability.

To advance dialogue and promote effective policy that addresses these interlinked issues, the Brazil Institute convened a seminar on December 4, 2008, focused on "Agriculture and Sustainability" with the principal stakeholders. The governor of Mato Grosso, Blairo Maggi, and agricultural sector representatives, researchers, and business leaders from the state were joined by prominent international environmentalists. The debate centered on increasing the value of forested regions, emphasizing the need for carbon markets; the detrimental climate impact of agriculture protectionism in advanced countries; monitoring and tracking of deforestation; the productivity of Brazilian agriculture and prospects for greater technological advances; improving infrastructure, stability of land tenure and questions of more effective governance; and the important role of the "Amazon rain machine" in the hydrologic cycle of agriculture in Brazil.

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Governor Blairo Maggi

THE STATE OF MATO GROSSO

In his second visit to the Wilson Center, *Governor Maggi* highlighted his administration's commitment to balance economic growth with environmental preservation. As the chief executive of a state that covers four biomes—the pantanal (wetlands) in the south, the cerrado (woodland-savanna) throughout the central region, the Amazon rain forest in the north, and an area of “transitional vegetation” between the cerrado and the Amazon—he is acutely aware of the different environmental challenges posed by many economic activities, especially agricultural production. At present, nearly 37 percent of Mato Grosso's territory (33.1 million hectares) is used for agriculture and livestock. The remaining 63 percent (57 million hectares), classified as “protected areas,” is restricted from commercial production. Moreover, Brazil has stringent national environmental protection laws that govern the amount of forest cover that can be converted for productive use; for example, in the Amazon region 80 percent of the original forest on any individual property must be preserved.

Nonetheless, there remains a fundamental challenge between upholding national environmental standards (and promoting conservation efforts in general) and providing incentives to discourage inhabitants from ignoring the laws and deforesting. Maggi explained that while people are legally obligated to preserve the forest, there is no mechanism to compensate citizens for these environmental services. Therefore, regardless of legislative or administrative efforts to combat deforestation, Maggi stressed that conservation efforts will be only successful when “we find a way to ensure that forests are more valuable standing.” With persistent underdevelopment still an obstacle in some parts of Mato Grosso, principally in the northern stretches bor-

“WE MUST FIND A WAY TO ENSURE THAT FORESTS ARE MORE VALUABLE STANDING THAN DESTROYED.”

-Governor Blairo Maggi

dering the Amazon, his administration's commitment to environmental protection must be managed alongside the need to provide “all citizens' access to quality health services, education, security and infrastructure.”

Part of the solution to this challenge, Maggi averred, rests on the creation of international carbon markets to channel funds from net polluters to areas such as the Amazon, where its residents carry out important “social and environmental services” with global effects. Governor Maggi stressed the urgency to create such a mechanism. “Global warming has been scientifically proven; we no longer have the right to ignore climate change,” he said.

Maggi maintained that Mato Grosso is committed to “changing [its] way of production,” recognizing that it is “no longer possible to open up new areas for agriculture.” Championing the sustainability and productivity of Mato Grosso's economy, the governor noted his state supplies 8 percent of the world's soy and over 26 percent of Brazil's total soy crop on only 6.4 percent of the state's land.

To meet the food demands of both domestic and export markets, he stressed the need to maximize the yields generated from unproductive lands, increase the use of technology and capital, adopt more efficient production methods (such as no till farming), and train livestock producers to also farm vegetable crops. By adopting these measures, Maggi predicts his state will be capable of doubling its agricultural output without



Rui Carlos Prado

increasing the amount of land used for commercial production. Moreover, he envisions his state moving up the production chain—“verticalizing” the economy in a way that also reduces carbon emissions by cutting emissions from transportation—producing higher value-added goods that require more manufacturing input and shift the economy beyond raw materials.

AGRIBUSINESS IN MATO GROSSO

Rui Carlos Prado, President of the Federação da Agricultura e Pecuária do Estado de Mato Grosso (FAMATO - Mato Grosso Agriculture and Livestock Federation), provided an overview of agribusiness in the state and highlighted the importance of the agricultural industry to Brazil’s economy. According to Prado, agribusiness comprises over 36 percent of the country’s exports, with soy and beef production each accounting for 7.1 percent. Not only is Mato Grosso the country’s leading soy producer, but it is also the top cotton and cattle producer (supplying 52 percent of Brazil’s cotton and 13 percent of its cattle) and the second largest

producer of corn. Over the past 20 years, the state of Mato Grosso has made great gains in productivity, increasing yields per hectare from about 1,859 in 1987 to 2,802 in 2007. This gain in productivity signifies that while overall agricultural production increased from about 17 million tons to 58 million tons, the state was able to conserve 10.5 million hectares of land.

Prado also detailed a series of strategies that can improve the efficiency of production and decrease the environmental impact of agriculture in Mato Grosso. First, by increasing the carrying capacity of pasture lands by 70 percent, from 0.8 heads of cattle per hectare to 1.36 per hectare (the efficiency of Brazilian cattle ranching lags far behind other industrialized countries), the state could conserve another 7 million hectares. Second, by integrating crop and livestock production in the same area, producers can utilize the wet season for agriculture and the dry season for livestock—yielding 3 harvests per year and diminishing demand for cleared forested areas. Third, increasing cattle confinement to a higher, yet sustainable level, could yield greater efficiency still.

Moreover, investing in genetic advances, use of limestone, and division of pastures are other, low-cost strategies that can improve the productivity of the state’s agribusiness. Prado concluded that the efficacy of these measures, however, are seriously diminished by the tariff and commercial barriers imposed on Brazilian imports to Europe.

“GLOBAL WARMING HAS BEEN SCIENTIFICALLY PROVEN. WE NO LONGER HAVE THE RIGHT TO IGNORE CLIMATE CHANGE.”

-Governor Blairo Maggi



Ricardo Arioli Silva

Over the past 15 years, Mato Grosso has increased the average annual soybean yield by more than 17 percent, said *Ricardo Arioli Silva*, vice president of the Soybean Farmers Association of Mato Grosso (APROSOJA). Silva dismissed concerns of the state's soy production in the Amazon, labeling it a "myth." According to data by the Brazilian Agricultural Research Corporation (EMBRAPA) and APROSOJA, only 0.4 percent of the state's soy is produced in the Amazon (22,800 hectares); nearly all of the soy is produced in the cerrado (74 percent, 4.56 million hectares) or in "areas in transition" (25 percent, 1.57 million hectares). Nonetheless, as the first farmers' association to participate in the international Round Table on Responsible Soy, APROSOJA is

**"MATO GROSSO IS BRAZIL'S
LEADING SOY, CORN AND
CATTLE PRODUCING STATE."**

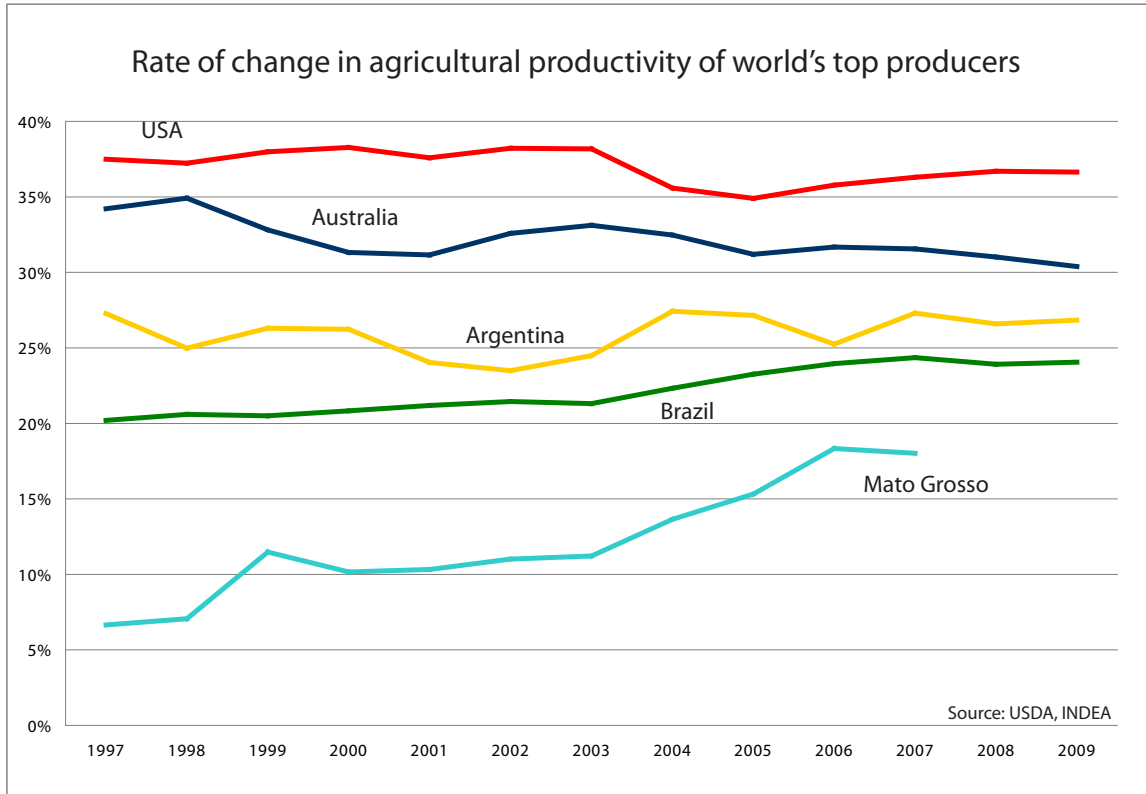
-Rui Carlos Prado

committed to working with businesses and non-governmental organizations to "develop principles and criteria to establish responsible soy production, processing and trading of soy on a global basis."

Silva also reiterated the commitment of farmers in the state of Mato Grosso to pursuing sustainable methods of production. In addition to the environmentally sustainable strategies highlighted by both Governor Maggi and Rui Prado, Silva advocated greater no till farming. No till farming prevents erosion, decreases the need for fertilizer (reducing the use of fossil fuels) and greenhouse gas emissions, and increases soil fertility and organic matter. Brazil is the world leader in no till farming, with over 53 percent of the country's productive land (25.5 million hectares) dedicated to this production method. Furthermore, Brazil has developed a successful and efficient recycling program; while the United States only recycles 20 percent of its discarded agrochemical containers, Brazil recycles 87 percent and the state of Mato Grosso recycles 92 percent.

Silva cited an environmental agreement established between the state of Mato Grosso and APROSOJA as further evidence of their commitment to sustainable agriculture. The agreement includes provisions such as, the elimination of soy production from riparian areas (currently at 0.4 percent); registering 100 percent of soybean farms in the Mato Grosso's environmental licensing system by 2010; creation of environmental education program for farmers; and increasing recycling of agrochemical containers to 98 percent. The environmental licensing system is possibly the most comprehensive and advanced component of the agreement; with satellite imagery, the Environmental State Secretary (SEMA) tracks compliance with

in the State of Mato Grosso



the provisions of the agreement and publishes an environment compliance report of all participating farms online.

He also expressed frustration with the imbalanced environmental concern of many developed countries. Specifically, Silva found the European Union's demands that Brazilian farmers "plant and produce responsible soy" to be hypocritical. He argued that environmental conservation is not a one way street; European's must do their part by lowering commercial barriers and punitive tariffs against agricultural products from the developing world to encourage farmers and compensate their efforts to supply sustainable and responsible crops. Finally, Silva advocated other measures aimed at reducing the environmental impact of agribusiness, including

the establishment of wildlife corridors, creation and enforcement of more legal reserves, greater contour planting and planned terrace system of production.

SUSTAINABILITY ON THE GROUND

John Carter, an American farmer in Mato Grosso and director of *Aliança da Terra*, provided a passionate "on the ground" perspective of the challenges of economic development and environmental conservation in the "frontier" of the Amazon. He distinguished between two areas of Mato Grosso, the "developed" areas with commercial production, infrastructure, and governance, and the Amazon frontier, a place with little development and even less government presence. Contrary the positions of prominent

environmentalists, Carter argued that soybean production in these areas is desirable. With soy cultivation comes “asphalt, good and competent workers, logistics” and more respected and effective government authority. Unfortunately, as a result of poor land titling, unenforceable environmental regulations, and the reality that “cleared land is worth 3-4 times more than standing forest,” much of the rainforest is destroyed for commercial production. Analyzing this phenomenon from a business perspective, Carter explained that it makes sense: “cows make more money than the forest.” He added that “if farmers follow their legal obligations, their internal rate of return on their investments are only about 5-7 percent; if farmer deforest and produce on that land, the rate of return is around 15 to 18 percent.”

Therefore, to make sense of the concept of sustainability, Carter maintained that it must be understood from a land owners’ perspective. The mission of the organization he leads, *Aliança da Terra*, is to act as an intermediary between the producers, government and civil society. With a series of initiatives and measures, such as official land registry and a comprehensive diagnostic assessment of member farms, the organization aims to raise the value of ecosystem services.

“SOY PRODUCERS ARE COMMITTED TO WORKING WITH BUSINESSES AND NGOS TO DEVELOP PRINCIPLES AND CRITERIA FOR RESPONSIBLE SOY PRODUCTION.”

-Ricardo Arioli Silva



John Carter

One successful example of such an initiative is Aliança’s International Finance Corporation/ Bertin project, which seeks to certify cattle ranchers’ compliance with IFC standards (the IFC is a branch of the World Bank). By providing participating farmers with geo-processing assistance, a complete socio-environmental analysis of their property, and training in cattle handling techniques and good land stewardship (pasture management and intensive grazing), the project is able to certify IFC compliance and the sustainability of the entire beef supply chain. Additionally, the IFC/Bertin project improves local institutions and the regional best practices.

ENVIRONMENTALIST PERSPECTIVES

Annie Petsonk, international counsel with Environment Defense Fund’s Climate & Air Program, provided an overview of the unique leadership opportunities present in the United States, Brazil and the environmental policy community. With the leadership of the Barack Obama administration, important congressional figures like Senator Barbara Boxer chairing the Environment and Public Works Committee

and Henry Waxman heading the Energy and Commerce Committee, and state officials such as Governor of California, Arnold Schwarzenegger, the United States is poised to play a significant role in the global fight against climate change. As a result, evidenced by the proposals outlined in President Barack Obama's New Energy Plan, it appears the United States is moving seriously to establish a cap-and-trade carbon market and stronger environmental regulations in order to reduce greenhouse gas emissions.

Brazil has a real stake in the creation of a functional global carbon market because of its immense natural resources and biodiversity. As a committed multilateralist, Brazil can do much to influence the terms of debate and the outcome of any international effort to combat global climate change. For these reasons, Petsonk applauded the leadership of Governor Maggi in confronting the challenge of making forests more valuable standing than destroyed. "By tackling the issue of deforestation and putting it center stage in global climate treaty talks," Petsonk explained, Maggi has been able to "transform the entire standoff in international negotiations." It seems that by seriously addressing the issue of global warming and embracing the move toward "sustainable agriculture," Maggi's stewardship has pushed the international agenda beyond

"BRAZIL HAS A REAL STAKE IN THE CREATION OF A FUNCTIONAL GLOBAL CARBON MARKET BECAUSE OF ITS IMMENSE NATURAL RESOURCES AND BIODIVERSITY."

-Annie Petsonk



Annie Petsonk

recriminations between the developed and developing world; the global dimensions of climate change ensures all nations must be willing to contribute as well as sacrifice to mitigate its disastrous consequences.

Among the "non-governmental" sector (meaning both environmental NGOs and industry), Petsonk argued that one of its primary missions should be to push governments to create an effective system of compensation for environmental services. It must be clear to members of the U.S. Congress and the executive branch that for a global carbon market to succeed, the United States must open its domestic market to international exchange. Without U.S. support, Petsonk averred, the goals envisioned in a new global agreement for the post-2012 period may fail to be met at the next United Nations Conference on Climate Change in Copenhagen in December 2009. She referenced the coalition of businesses and NGOs established by the Environmental Defense Fund as a potential model to be replicated and expanded. By establishing a united front of support for the opening of U.S. carbon markets

SOIL USE IN MATO GROSSO STATE

Mato Grosso uses just 6.4% of the area for soybean production:

	Area (millions of hectares)	Percent
Agriculture.....	6.86	7.6%
Soy Area 2007.....	5.80	6.4%
Pasture	26.24	29.1%
Pantanal.....	6.38	7.0%
Conservation Areas (Parks)....	5.10	5.6%
Indian Reservations.....	18.30	20.3%
Cerrado, Forest	27.42	30.4%
TOTAL.....	90.3	100%

Source: SEDER, 2008; Aprosoja - Diagnóstico Ambiental da Soja, 2007

Agriculture + Pasture: 36.7% of the area.

from diverse commercial interests, including utility companies and oil firms, and joining their voices with environmental organizations such as The Nature Conservancy and Conservation International, policymakers are presented with a clear message in favor of action.

Petsonk discussed other related challenges that may thwart international conservation efforts. She warned that the world would not succeed in reducing emissions to the scale needed to combat climate change if the only opportunity for developing countries to participate in global carbon markets is through individual projects (as opposed to state, regional or country levels) as enumerated under the Clean Development Mechanism of the Kyoto Protocol. Instead, anti-deforestation programs implemented on a state-wide scale (like in Mato Grosso), or nation-wide as President Luiz Inácio Lula da Silva has proposed, should be included as the types of carbon cap-and-trade programs eligible for trading with any country participating in the system.

Another threat may arise if agricultural sectors in different countries, such as the United States and Brazil, view the other as competitors in a traditional zero-sum perspective. If this is

the case, then any efforts that transfer funds from industrialized nations to tropical regions in compensation for diminished deforestation will be blocked by domestic constituencies.

Petsonk argued that this threat is precisely why the work of such exchanges between Brazilian and American business leaders and politicians—as represented by the December visit of Governor Maggi, Rui Prado and Ricardo Aioli—are needed to highlight the convergent interests of these companies.

UNDERSTANDING THE VALUE OF THE AMAZON

Thomas Lovejoy, biodiversity chair at the Heinz Center for Science, Economics and the Environment, grounded the discussion in a forward-looking, scientific analysis of the challenges to environmental preservation and the urgent need for comprehensive action to mitigate climate change. He stressed the need for greater understanding of how ecosystems can be “re-carbonized,” or restored, “in a way that makes them more resilient in the face of climate change.” He explained that the broad agreement among the conference panelists regarding the threat of climate change and the need for sustainable agri-

“THE WORLD IS EXPERIENCING A UNIQUE MOMENT TO CREATE THE ULTIMATE GLOBAL ARRANGEMENT FOR PLANETARY MANAGEMENT.”

-Thomas Lovejoy

in the State of Mato Grosso

culture reflects a general consensus taking place around the world. For Lovejoy, this consensus presents a unique and important opportunity to establish “the ultimate global arrangement for planetary management.”

Lovejoy commended the “many wonderful and creative” initiatives in agribusiness developed in Mato Grosso. He highlighted a particular land management technique that produces crops for 1-2 years and raises livestock on the third. This method allows landowners to switch between different commodities depending on market prices and also intensifies cattle ranching, making it more productive. Lovejoy predicts that over the next 100 years, burgeoning populations, growing food and fuel needs, and diminishing natural resources will oblige the world to find increasingly more productive and intensive land uses with minimal “side-effects.”

Lovejoy also stressed the importance of understanding the complete hydrological cycle of the Amazon and especially the critical role it serves for Brazilian agriculture. The Amazon “rain machine” provides a significant amount of the precipitation south of Amazônia, in Mato Grosso, São Paulo and even northern Argentina. In addition to fueling many of Brazil’s hydro-electric dams, the Amazon’s hydrological cycle supplies the moisture for the fertile soil of the country’s center-west region—which is what makes its agro-industry so successful. Therefore, in order to maintain the productivity of the agricultural sector, he argued that it is essential to comply with Brazil’s environmental laws that restrict productive activity in the Amazon to 20 percent per property. Lovejoy also contested John Carter’s assertion that the frontier of Mato Grosso needs more infrastructure and logistics because it attracts more orderly development. On the contrary, infrastructure projects have historically—

“WE NEED POSITIVE ENVIRONMENTALISM TO PROVIDE ALTERNATIVES AND SOLUTIONS TO DEFORESTATION, RATHER THAN SIMPLY DICTATING WHAT NOT TO DO.”

-Mark London

and almost uniformly—led to chaotic, spontaneous forms of colonization and deforestation.

Mark London, a trial lawyer at London & Mead and author of *The Last Forest*, outlined a model for “positive” environmentalism. For nearly two years, London has worked with the Governor of the state of Amazonas, Eduardo Braga and Marriott International to establish a program as a part of the Sustainable Amazon Fund developed by the Brazilian government. The joint venture created a 600,000 hectare reserve from the Amazon Fund and brought together local populations to serve as “the guardians of the forest.” Marriott raises money by offering their hotel guests around the world the ability to add one dollar to their hotel bills as a “carbon-offset.” Each contribution directly funds the joint venture with the government of Amazonas to pay for education, potable water, internet access, basic sanitation and health services and provide income for the residents. In return, as enumerated in a legal contract signed by all parties, the residents are committed to monitoring and preserving the forest reserve. London emphasized the need for more positive environmentalism agendas of this type that provide alternatives and solutions to deforestation, rather than simply dictating “what not to do.” ●

BRAZIL INSTITUTE

Created in June 2006 as part of the Wilson Center's Latin American Program, the BRAZIL INSTITUTE strives to foster informed dialogue on key issues important to Brazilians and to the Brazilian-U.S. relationship. We work to promote detailed analysis of Brazil's public policy and advance Washington's understanding of contemporary Brazilian developments, mindful of the long history that binds the two most populous democracies in the Americas.

The Institute honors this history and attempts to further bilateral cooperation by promoting informed dialogue between these two diverse and vibrant multiracial societies. Our activities include: convening policy forums to stimulate nonpartisan reflection and debate on critical issues related to Brazil; promoting, sponsoring, and disseminating research; participating in the broader effort to inform Americans about Brazil through lectures and interviews given by its director; appointing leading Brazilian and Brazilianist academics, journalists, and policy makers as Wilson Center Public Policy Scholars; and maintaining a comprehensive website devoted to news, analysis, research, and reference materials on Brazil.

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