



# Feeding the World in a Sustainable Way: Brazil's Agricultural Challenges

## EXECUTIVE SUMMARY

Despite its recent political and economic setbacks, Brazil stands in a unique position: that of a rising powerhouse in sustainability and agriculture. Amid projections that a dramatic increase in both population and income levels across the developing world will lead to much greater food consumption in the future, Brazil possesses both the available land and sustainable practices to satisfy the demand. Rapid improvements in productivity in both Brazil's agricultural and meat sectors have allowed the country to increase its output while maintaining or decreasing total land use. The new Brazilian Forest Code represents a monumental and innovative piece of legislation that promises to help Brazil navigate this rise while minimizing deforestation. By partnering with the private sector, improving transportation infrastructure, assisting producers to achieve legal compliance, and facilitating adequate access to capital markets, Brazil can both mitigate the effects of environmental degradation and climate change on its territory and ensure its place as the world's breadbasket for the decades to come.

**Speakers:** Roberto Jaguaribe, President, Brazilian Trade and Investment Promotion Agency (Apex-Brasil)  
Gustavo Fonseca, Director of Programs, Global Environment Facility at the World Bank  
Jean François Timmers, Director of Public Policy at WWF Brasil  
Bill Westman, Senior Vice President of International Affairs, North American Meat Institute

**Moderator:** Paulo Sotero, Director, Brazil Institute

# Feeding the World in a Sustainable Way: Brazil's Agricultural Challenge

Wednesday, April 26, 2017, 10:30 am – 12:00 pm

5th Floor, Woodrow Wilson Center

Brazil finds itself in challenging times—a historically unprecedented recession and a deep political crisis have threatened its prospects for economic growth and forced the country to revisit its commitment to equality, social justice, and prosperity under the rule of law. Brazil's strong agricultural sector, however, leaves room for optimism and presents the country with both a unique opportunity and a responsibility in the area of global food security. According to the UN Food and Agriculture Organization, Brazil is expected to supply 40 percent of the increase in global food demand created by expected global population growth over the next three decades. As noted by **Paulo Sotero**, director of the Brazil Institute, the country has committed to achieving this goal while also preserving its rich natural assets, the biodiversity of its many biomes, and its large fresh water reserves, which are all essential to the task.

**Roberto Jaguaribe**, President of the Brazilian Trade and Investment Promotion Agency (Apex-Brasil), began his remarks by outlining why his agency—which primarily focuses on maximizing the success of Brazilian firms in foreign markets—is concerned with agricultural sustainability. Apex-Brasil, he explained, wants to build Brazil's

brand by ensuring that global consumers associate Brazilian products with sustainable production. The 1992 Earth Summit held in Rio de Janeiro was a “game changer” for both perception of and concern for environmental, climate, and sustainability issues, and provided the impetus for Brazil's current sustainability effort. Moreover, Brazil is uniquely suited to meet increasing global demand for food in a sustainable manner.

Jaguaribe offered a comprehensive look at both the global agricultural market and Brazil's agricultural sector through the presentation of a variety of data points. He highlighted expected trends in global meat consumption from 2000 to 2030, noting the significant increase expected in the amount of meat consumed per capita by countries in the developing world. Similarly, he presented data on projected growth in middle-class consumer spending over the same period broken down by region, with the vast majority of increases (571 percent) occurring in the Asia Pacific. This increased spending, Jaguaribe emphasized, will go primarily toward food demand, making Asia an even more important market for Brazilian agricultural exports. Asia is already responsible for purchasing 50 percent of Brazil's food exports,

*From left to right: Paulo Sotero, Gustavo Fonseca, Roberto Jaguaribe, and Bill Westman*





and China alone consumes 25 percent. Globally, Brazil ranks fourth for overall value of agricultural production, behind just China, India, and the United States. Given that 50 years ago Brazil was a significant food importer, Jaguaribe argues that this shift to a global food exporter has been Brazil's most impressive revolution in the last several decades.

He then provided data on land use in Brazil, emphasizing both the sheer extent of the country's agriculturally viable geography and its sustainability efforts. Brazil has maintained 554 million hectares of native vegetation, or 62 percent of its total land area. As a comparison, Jaguaribe noted that Europe's native vegetation makes up only 0.3 percent of their land area. Around 274 million of these hectares are conserved on private farms, a figure he noted as being particularly impressive and one set to grow under the new Brazilian Forest Code. Brazil also has 107 million hectares of conservation units, 103.5 million hectares of indigenous lands, 60 million hectares in productive area, and nearly 200 million hectares in pasture land, most of which are degraded and available for productive use in agricultural production.

For Jaguaribe, the "most impressive element of the Brazilian agricultural story" has been its dramatic gains in productivity. While total land used in agricultural production has remained relatively consistent since 1976, output has increased by 220 percent. These productivity gains were even more impressive in the country's Cerrado region—the vast grasslands in the center of Brazil—and much of it has stemmed from an increase in the area of land used for second harvests. Meat production has also seen significant improvements in the efficiency of land use: since 1990, the total area used in livestock has decreased even as productivity has increased. Looking toward the future, Jaguaribe argued that Brazil has the potential to meet growing global demand through increased production due to its vast amount of spare farmland and its large reserve of renewable water resources.

Brazil has also established itself as a global leader in renewable energy, deriving over 41 percent of its total energy from renewables. By comparison, the rest of the world averages at only 13.5 percent and the industrialized countries that make up the Organization for Economic Co-operation and Development (OECD) average just 9 percent. This commitment to renewable energy has led to a significant decrease in carbon emissions associated with the Brazilian meat industry.

Jaguaribe then turned his attention to the new Brazilian Forest Code, a law passed in 2012 that was, according to him, the most debated issue in the Brazilian Congress since the adoption of the 1988 Constitution. In his view, the adoption of the law marked an important achievement for the country, for which he credits

former Minister of Environment Isabela Teixeira, whose rational approach allowed her to understand both sides of the contentious issue. While he did note several possible areas for improvement, he stressed that the law was probably the best possible code the country could reasonably expect.

*"Brazil has sustainable solutions, but must continue expanding land restoration, smarter water use, and increasing agriculture productivity."*

- Ambassador Roberto Jaguaribe

One of the law's most significant results was the Rural Environmental Registrar (Cadastro Ambiental Rural or CAR), which is unique in the world and allows the government to more effectively control the application and enforcement of the Forest Code. Through leveraging both the Code and the CAR, the government has committed to reforesting close to 12 million hectares of land. The code requires that 80 percent of any private land approved for agricultural production in the Amazon region be conserved as native vegetation, along with 35 percent of any such land in the Cerrado region and 20 percent in the rest of the country. He noted that success rates for registry with the CAR have been varied but promising, with 100 percent compliance in the North and Southeast regions of the country, nearly full compliance in the South and Center-west regions, and some delay in the Northeast. As a result of these and other efforts, Brazil has witnessed a significant reduction in gross deforestation, and an even larger reduction in net deforestation, which has helped make Brazil one of the most important contributors to the fight against climate change in the world.

He ended his remarks by emphasizing that Brazil is continuing to experiment with new technologies to find the best solutions for each of its many biomes, and is working on a partnership with the Global Environment Facility (GEF) and the Brazilian Rural Society, the most conservative representation of rural property interests in Brazil, to promote "MATOPIBA," an acronym that refers to the states of Maranhão, Tocantins, Piauí, and Bahia. This area, which covers over 500,000 square kilometers in the Center-west and Northeast regions, provides ample opportunity for finding more sustainable solutions to increasing agricultural production due to its high level of already-degraded pasture land.

**Jean François Timmers**, Director of Public Policy at the World Wildlife Fund of Brazil (WWF Brasil), attended the meeting via Skype and discussed the importance

of Brazil's commitment to sustainability. He began by echoing Jaguaribe's assertion that Brazil has the most advanced environmental legislation in the world, and emphasized Brazil's innovative approach by highlighting that it was able to eliminate deforestation for a specific commodity product like soy in the span of only a few years. He also noted, however, that Brazil's unparalleled level of biodiversity means that the environmental risk posed by deforestation is even greater.

Timmers stated that the new Forest Code is a significant first step and the WWF is strongly supporting its implementation by providing guidelines to producers and other actors in the supply chain. The law could still allow for the legal deforestation of almost 100 million square kilometers, and has faced significant challenges in its implementation, which WWF is working with the Brazilian government and the Brazilian Rural Society to overcome.

An advantage for Brazil, Timmers added, is the high quality of its land use data, which allows for the development of precise solutions. He noted that Brazil has 40 million hectares of pasture land available for expanding crops, and utilizing just 20 million of those hectares would absorb demand for land until 2070. This gives reason for hope, showing that it is possible to meet the growing global demand for food "without cutting one single tree." Brazil has already begun this effort by completing a thorough zoning effort for its sugar cane production, identifying all of the land suitable for sugar cane that will not contribute to deforestation. Timmers said that WWF was willing to engage with Brazil's agricultural sector to complete a similar process for its soy and beef industries. He also noted that increasing efficiency in beef production would liberate enough land to absorb the additional land required by the expansion of crops, and would also create jobs and assets as an investment-centered form of agriculture.

*"Good stewardship of the land is essential to business."*

- Bill Westman

He closed his remarks with an observation regarding the impact of deforestation on food systems. Data has projected that a 30 percent deforestation of the Amazon or further deforestation of the Cerrado region would have a very significant effect on the rain systems in central Brazil, southern Brazil, Paraguay and Argentina. This demonstrates even more clearly the importance of achieving sustainability in food production, so that Brazil can ensure food security in the long-term.

**Bill Westman**, who serves as Senior Vice President of International Affairs at the North American Meat Institute (NAMI), considers interaction with the global economy crucial for the U.S. meat industry, not only as an export market, but as an important source of two-way trade. He noted that world meat production is not keeping up with consumer demand, and that while demand is decreasing in the United States, it is rapidly increasing in developing economies.

Brazil's strong growth in agricultural productivity is due in large part, he said, to the Brazilian Agricultural Research Corporation (EMBRAPA) which has developed new productive plant varieties and succeeded in negating the aluminum toxicity in the Cerrado region. He credited this innovation with propelling Brazil's transformation into an agricultural powerhouse.

Westman highlighted the strength of the Brazilian economy in commodity exports, but recommended that Brazil work to strengthen the power of its agricultural brand. He argued that Brazilian beef should follow the example of Embraer, Brazil's aerospace conglomerate, in establishing a globally recognized label.

Transportation has been a consistent bottleneck for Brazil's economy, particularly in the interior regions of the country, but important advances are being made. Highways like BR-163, which extends from Rio Grande do Sul through the Amazon to the northern state of Pará, are being paved, which will have important implications for agricultural production in the Cerrado region. Westman pointed to railroad development as another hurdle for Brazilian agriculture, as the country's central region is significantly less connected to important ports via railroad than the agriculturally productive areas of the United States, despite the two countries' similar sizes and agricultural potentials. While total rail track has not grown in the past 90 years, the Northern Grain Railroad could be completed by 2025 and would allow products and commodities to be transported from Sinop, Mato Grosso to Miritituba on the Tapajos River, and then moved by barge to Santarem on the Amazon River. Additionally, a new terminal in Tocantins has provided a similar connection with the North-South Railroad.

**Gustavo Fonseca**, Director of Programs for the Global Environment Facility (GEF) at the World Bank, noted that Brazil has historically been the second largest recipient of grants from the GEF, and the largest for grants related to land use. While China receives more grants overall due to the size of its energy sector, Brazil's adoption of renewables has left its energy footprint significantly smaller than China's, so it requires less international support to achieve its objectives under international agreements.



*Panelists and audience at “Feeding the World in a Sustainable Way: Brazil’s Agricultural Challenge” (Wilson Center, April 26, 2017)*

Explaining the GEF’s process for allocating funds, Fonseca noted that it presents a new strategy to donor countries every four years articulating the most pressing issue areas that would benefit from grant resources. While 32 countries contribute to the GEF, G7 nations make up roughly 80 percent of donations. Traditionally, he mentioned, the GEF has succeed in creating a variety of interesting projects on the ground, but those projects fail to function when expanded to a larger scale. While agriculture has become the single most important driver of land use change, the primary driver of biodiversity loss, and the primary driver of water stress in many countries, the GEF has largely failed to look at agriculture from the perspective of sustainability. It has partnered with the Brazilian government and the Amazon Region Protected Areas Programme (ARPA), which has had a significant impact on reducing deforestation, but more attention must be paid, he said, to improve sustainability in regions outside of specifically protected areas. To address this, the GEF is emphasizing to donors in its next strategic cycle the need to work with the private sector, trade associations, and governments in order to change the trajectory of agriculture.

The GEF has already begun working with the Brazilian government, civil society, and industry actors like the Brazilian Rural Society to push through a sustainability initiative, although he noted the difficulty the GEF experienced in coordinating among the diversity of actors, particularly because members of the agricultural sector perceived the initiative to be exclusively environmentally-focused. In reality, the multi-sector initiative has broad implications, particularly in the MATOPIBA region, which contributes about 30 percent of Brazil’s agricultural production. Landowners in these regions,

he said, require assistance in making their property legally compliant with new regulations and the GEF is trying to work with landowners and trade associations to establish mechanisms through which they can do so, and therefore gain access to financial incentives. He also mentioned that the GEF is teaming up with the Norwegian government to establish the Production Protection Inclusion Fund, which provides risk investment to assist landowners with becoming compliant over a period of time. The legal framework and financial incentives are already in place, he explained, but landowners need a catalyst, which the GEF hopes to provide.

Looking to the future, Fonseca observed that by 2030 the world’s population will reach 8.5 billion, and the 5 billion members of the global middle class will demand more food and higher input. Brazil, he said, is one of the few countries where that demand can be met and expanded sustainably. To ensure the continuity of Brazil’s productivity increase, however, Brazil will need to determine to what extent improvements will sustain themselves and how they can be encouraged going forward, as well as how the country can restore degraded lands to productivity. For this goal, he recommended pooling investors with long-term risk tolerance.

To ensure Brazil’s continued rise as an agriculture power, it needs to live up to its goal of crafting a brand of sustainability for its commodity products. Paraphrasing Tom Friedman, Fonseca ended his remarks by saying that if biodiversity experts don’t speak with the agricultural sector, what they have is a hobby: the challenge is scale, and without scale you cannot achieve sustainability. Engagement of the private sector, then, is the crucial step Brazil must take toward meeting its environmental goals.

## Q&A Session

*A dialogue involving the audience—of approximately thirty people—followed the panelists' remarks.*

**Q: As the United States appears to be going through a transformation in its trade policy, how can Brazil and its agro-business sector best position itself globally on trade? Additionally, how does the U.S. agro-business sector view the new U.S. direction with regard to market access?**

**Roberto Jaguaribe** responded that in both Brazil and the United States, most experts believe that things are not going to change as much as it might seem. He also noted that while there will be a need for rhetorical adjustment, the system in the United States, particularly the system of agricultural trade, is very strong and will remain resilient. He reiterated that Brazil is looking toward the long term, where it predicts significant growth in demand for agricultural products, which Brazil and other agriculturally competitive countries will fulfill through trade. Brazil is not, however, focused on any potential short-term gains due to a possible U.S. withdrawal from certain trade agreements.

**Bill Westman** added that the U.S. agro-business sector is relying on the assumption that trade is vital to the long-term health and viability of the meat sector and all of agriculture. He also said that NAMI has been working through the U.S. Food and Agriculture Dialogue for Trade with officials from the new administration to express why agricultural trade is important to job creation and why the industry needs both exports and imports to keep plants and facilities running. He emphasized that the new administration's trade officials understand the importance of trade and that he sees their appointment as an opportunity to work together.

**Q: How did Operation Weak Meat (Operação Carne Fraca) affect the Brazilian Trade and Investment Promotion Agency (Apex-Brasil)? Do you think the situation is now under control?**

**Roberto Jaguaribe** stressed that although the operation did raise significant cause for concern, it also demonstrated the high level of independence enjoyed by the Brazil's Federal Police and state prosecutors, which he argued was one of the highest in the world, although they do not always make the best use of it. He noted that the majority of the damage has already occurred, and that it has not been very significant. He highlighted the important role that the Minister of Agri-

culture played in reassuring Brazil's major trading partners and issuing a speedy and timely decision to close or suspend affected producers, which helped reduce the operation's effects. The confusion regarding Brazil's regulatory processes was not reflective of reality, as its agriculture industry is highly controlled, not only by the Brazilian government, but also by hundreds of foreign companies that do business with Brazil. For example, BRF and JBS, two of Brazil's largest meat producers, are subject to 500 outside inspections per month. Jaguaribe noted that the operation threatened to throw this strong regulatory infrastructure off course, but the potential damage that many feared, fortunately, did not occur.

**Bill Westman** expressed support for Jaguaribe's comments and emphasized that NAMI bases its views regarding meat production and safety on science, and that the situation that precipitated the operation was not based on science. He observed the situation as one of fraudulent and illegal activity, which can happen anywhere, in both developed and emerging countries. NAMI felt that the U.S. Department of Agriculture responded to the situation appropriately by not banning beef from Brazil, but rather increasing the inspection rate on Brazilian beef, which will be decreasing again soon. He reiterated that NAMI is not concerned about the safety of Brazilian meat.

**Q: Given the necessity of capital-intensive technology for productivity growth, how do we promote a better linkage between financial markets and the agricultural sector?**

**Gustavo Fonseca** recognized that there is a cost to becoming compliant with new regulations, and that scalable solutions are much more viable than a property-by-property approach. Linking financial institutions to this process can provide both incentives and financial instruments to lessen the risk of transitioning, particularly for small and medium-sized firms. The GEF looks to involve private sector players with long-term return profiles to assist in the effort, and has also initiated a new fund operating in Brazil that will work with local banks to train loan officers on how to assist local producers with becoming compliant.

**Q: What are the drivers for the lack of scalability found in many GEF projects? And what lessons has the GEF learned in Brazil that could be applied to other Latin American countries?**

**Gustavo Fonseca** explained that there are many reasons for the lack of scalability. For the past 25 years, the GEF's resources have been overly fragmented, with seven different funding lines and 140 different recipient



countries every four years. The relative size of projects decreased over time, and they became isolated within sector silos, so the GEF has attempted to convince its donors to reintegrate funding lines. The GEF wants to engage on a variety of interconnected issues such as biodiversity, water, climate change, and personal livelihoods to develop cross-sectoral solutions that build on one another. Additionally, it wants to increase its operating pace in order to enable private sector involvement.

**Q: What kind of incentives can the financial sector provide to increase productivity while maintaining sustainability?**

**Roberto Jaguaribe** said that because Brazil does not heavily subsidize agriculture, the incentives are mainly market-oriented. These market forces have created dramatic social change, raising the cost of labor in rural areas, while driving the level of production to where it is today. He noted that recent legislation has imposed limitations upon the agricultural sector for the sake of regulatory compliance; although these do not function as direct incentives, the compliance is to the producers' own benefit. A huge revolution in Brazil, Jaguaribe concluded, is that members of the agriculture industry are now seriously talking with the environmental advocates, which is a conversation that did not occur 20 years ago.

**Q: How can Brazil balance the environmental costs of its focus on animal protein production, which include water use, land use, and emissions, in order to maintain its commitments on climate change while increasing production?**

**Roberto Jaguaribe** noted that Brazil has already begun to address this need for balance by dramatically reducing emissions associated with agricultural production and making the "most courageous" emissions commitments of any developing country. Additionally, he reiterated that by restoring degraded land, Brazil can double the area of land currently in use without "cutting down a single tree." With regard to water, Brazil's water supply—one of the largest in the world—allowed water legislation to become lax. Brazil should respond by rationing its water use to promote sensible and sustainable practices in the industry. He argued that Brazil's miracle has been its innovation in sustainable tropical agriculture, a model which should be replicated in other parts of the world, including Latin America and Africa, because of its capacity for sustainability. Despite Brazil's large meat industry, its largest export is grain; however, the focus is on increasing other areas as grain provides little added value, resulting in fewer new jobs.

**Q: Shouldn't agricultural products that originate from Brazil have the same or better access to markets as products from other countries given their high standards for sustainability?**

**Roberto Jaguaribe** responded that Brazil is the most sustainable producer in the world today, by far, but still does not have full market access or even due recognition. He explained that this is not an environmental issue, but rather an economic issue; barriers to trade that impede Brazilian goods are put in place largely by Europe as a way to defend sectors that do not have the same level of competitiveness as Brazil. They are able to create standards that protect their own interests while appearing to uphold sustainability. Jaguaribe noted that Brazil's meat consumption is as high as in the United States—not because Brazilians are as wealthy, but because revolutions in big agriculture have allowed Brazil to produce cheaper meat.

**Jean-François Timmers** observed that there has been active competition in both the Chinese and European markets between Brazilian soy and U.S. and Canadian soy, the latter two of which are being promoted as deforestation-free. He noted that this distinction is unfortunate given all of the work Brazil has done to comply with the Forest Code, and that Brazil should not be exposed to such criticism.

**Q: How should Brazil balance productivity with environmental resilience in the face of climate change? And how might Brazil come to see the restrictions present in the Forest Code as an environmental benefit, not a cost?**

**Jean-François Timmers** mentioned that WWF would like to see the current government take a stronger stance on deforestation, similar to the actions several states have recently taken. Cross-sectoral collaboration could ensure that environmental work is more than just a hobby, but rather makes significant change.

**Gustavo Fonseca** affirmed the point that restrictions can represent a benefit by saying that the Amazon does not just sit idly by, but rather provides a service to the rest of the country in the form of hydropower and rainfall. He mentioned that the Achilles heel of the Forest Code is the fact that it still allows for legal deforestation, but incentives could provide a possible solution to shift the market away from contributing to deforestation.

**Roberto Jaguaribe** also affirmed that restrictions provide a resource and that the CAR's full potential has not yet been realized. Brazil's challenge is not meeting global standards for sustainability, but rather meeting its own strict Forest Code.



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