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Report Name: Facilitating US - Brazilian Collaboration on Climate Change through US Mission Brazil Exchange Programs

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Post: Brasilia

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Report Highlights:

This report focuses on how the synchronization of two Mission Brazil exchange programs, USDA's Cochran Fellowship Program and State Department's International Visitor Leadership Program (IVLP), will help facilitate effective, climate-focused collaboration between American and Brazilian counterparts. Land use changes, livestock methane, and sustainable production are three critical topics that can be readily addressed through the coordination of these programs.

Summary

Brazil and the United States share a long history of scientific collaboration and to meet both countries' climate goals, FAS Brasilia has developed a multi-faceted climate strategy. The main mechanisms to implement the FAS Brazil Climate Strategy are through exchange programs, conferences and seminars, and market intelligence. This report focuses on one of these mechanisms, exchange programs, and how the synchronization of the Cochran Fellowship Program and the International Visitor Leadership Program will help facilitate effective, climate-focused collaboration between American and Brazilian counterparts. Land use changes, livestock methane, and sustainable production are three critical topics that can be readily addressed through the coordination of these programs.

History of U.S. - Brazil Knowledge Sharing

In the 19th and 20th centuries, Brazilian agriculture moved beyond subsistence as colonialism took root, leading to the unprecedented production and export of sugar and coffee. Brazil's agricultural system was labor-based, lacked large-scale funding, and was technologically deficient, thus Brazil remained a net-food importer until the 1940s. Following World War II, Brazil began to industrialize, spurring rapid population growth and elevating the average Brazilian's standard of living. Increasing demand for food combined with labor shortages led to a major food supply crisis in Brazil. The Brazilian Agricultural Research Corporation (Embrapa) was established in 1973 to increase Brazil's agricultural yield and meet food production demands, revolutionizing Brazil's agricultural industries and institutions (see GAIN Report: [Brazil: Agricultural Research in Brazil](#)). Today, Embrapa continues to promote collaboration between scientists and farmers, fostering innovation in agricultural technologies.

USDA supported the creation of Embrapa and continues to collaborate with Brazilian agricultural researchers through many joint efforts, including the Cochran Fellowship Program. Since 1991, USDA has utilized the Cochran Program to bring agricultural professionals to the United States for training missions and collaborative educational opportunities. Named after the late U.S. Senator Thad Cochran, the Cochran Program has brought over 18,900 individuals from 126 countries to the United States to learn about U.S. agriculture. Since its inception, over 300 Brazilians have traveled to the United States for training programs ranging from biofuel production to statistical methods for crop monitoring.

Similarly, the Department of State's International Visitor Leadership Program (IVLP) is a premiere professional exchange program. Since its establishment in 1940, the IVLP has strengthened relationships between the United States and other countries by developing interpersonal relationships among emerging and current leaders. IVLP offers a wide range of specialized programs each year that allows participants to interact with professionals in private/public sector organizations related to their field of interest. Previous IVLP programs in Brazil focused on issues such as community conflict resolution and infrastructure development.

Climate Change in Brazil: Addressing Land Use Changes, Livestock Methane Emissions, and Sustainable Production

The U.S. government has stressed the importance of addressing climate change, particularly in the agricultural sector. This was highlighted at the United Nations Framework Convention on Climate Change (UNFCCC) Conference of Parties (COP-26) and President Biden's launch of the Agriculture Innovation Mission for Climate (AIM4C).

Brazil remains a critical partner to the United States in the global fight against climate change and has prioritized climate change mitigation through the Ministry of Agriculture, Livestock, and Food Supply (MAPA). Prior to COP-26, MAPA announced the Sectoral Plan for Climate Change Adaptation and Low Carbon Emission in Agriculture Seeking Sustainable Development (2020-2030), called ABC+, which built on the previous ABC plan (see GAIN Report: [Brazil: New Plan for Climate Change Adaptation and Low Carbon Emission in Agriculture](#)).

The ABC+ program seeks to promote sustainable agriculture through systems of adaptation and mitigation of greenhouse gases. MAPA has gone on to establish working groups to monitor climate change-related agricultural issues that include Livestock Methane, Land Use Changes, Carbon Markets, and Forests and Biodiversity. The working groups present opportunities for the United States and Brazil to collaborate. FAS Brazil has identified land use changes to reduce deforestation, livestock methane emissions, and sustainable production as three critical topics that can be readily addressed through Cochran and IVLP programs.

Land Use Changes

Brazil has enacted policies aimed at deterring illegal and legal deforestation in the Amazon basin, including the Forest Code and the Action Plan for the Prevention and Control of Deforestation (PPCDAm). The 1965 Forest Code focuses on forest conservation through the legal requirement for landowners to preserve a certain portion of their land, while the 2004 PPCDAm aimed to reduce the illegal felling of forests.

Livestock Methane Emissions

Under the ABC+ Plan, Embrapa is spearheading Integrated Crop-Livestock-Forestry Systems (ICLFS) as a method to optimize land use while reducing, and ultimately mitigating, methane emissions. ICLFS is a technical process that integrates agriculture, animal farming, and forestry systems through intercropping, crop succession or crop rotation to enhance output and lessen livestock's environmental impact.

During COP-26, the United States and Brazil both signed on to the Global Methane Pledge, an international agreement to reduce the world's methane emissions 30 percent from 2020 levels by 2030. USDA is currently pursuing multiple avenues to reduce methane emissions including the adoption of alternative manure management systems, expanding on-farm generation and renewable energy, developing a climate-smart agricultural commodities partnership initiative, and increasing investments in agricultural methane quantification.

Sustainable Production

Agriculture is key to Brazilian and global food security. Agricultural mitigation and adaptation to climate change will involve adjusting production and supply chain practices to create a more sustainable food system. The 2021 Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment Report highlighted several ways to increase sustainability in agriculture, including:

- Switching from annual to perennial biofuels, like switchgrass and eucalyptus, to sequester carbon
- Reforestation and afforestation
- Soil carbon sequestration in croplands
- Bioenergy production with carbon capture and storage (BECCS)
- Efficient fertilizer use

In 2021, the United States launched the Coalition on Sustainable Productivity Growth for Food Security and Resource Conservation (SPG Coalition) to build international cooperation around productivity growth that optimizes agricultural sustainability. Brazil is already a co-signer of the SPG Coalition, and Post hopes to further sustainable production innovation through increasing partnership between USDA and MAPA. Both agencies have already expressed interest in pursuing technical collaboration on topics such as bio-fertilizers, digitalization, and improved measurement/validation.

Moving Forward: Enhancing Collaboration

The State Department and USDA hope to work in tandem with the Cochran and IVLP programs to address the high priority foreign policy goals of promoting land use changes to reduce deforestation, decrease livestock methane emissions, and promote sustainable production in Brazil. Inspired by President's Biden's policy priorities and Brazil's ABC+ program, Post has already planned two knowledge-sharing opportunities for 2023. In the first quarter of 2023, IVLP is slated to host Mitigating Climate Change Through Sustainable Land Use & Green Agricultural Technologies, a program that will bring together participants from across Brazil to share best practices on sustainable land use and green agricultural technologies, while exploring new and ongoing initiatives to reduce methane emissions through improved farming and processing of agricultural products. In the second quarter of 2023, USDA is planning to host a Cochran Program on methane reduction in cattle production.

Beyond IVLP and Cochran, Post is partnering with Embrapa, USDA's Agricultural Research Service (ARS), and the University of Florida to establish a joint fertilizer workshop series. In the wake of the 2022 fertilizer crisis brought on by the events in Ukraine, this series is focused on sharing best practices and setting sustainable agricultural standards that will reduce the need for fertilizer application, thereby improving soil conditions, preventing fertilizer runoff, and prioritizing the health and wellbeing of farmers. The first workshop took place virtually on July 29, 2022. For future workshops, participants will explore opportunities for fertilizer use efficiency, which also has added benefits for improving the environment.

Conclusion

Working in tandem, the Cochran and IVLP programs will maximize the efficient use of resources to address high priority foreign policy and climate mitigation goals. These programs are ideal for Brazilian government officials wanting to build a comprehensive network of American contacts and deepen collaboration. A Cochran/IVLP participant from Brazil will have the opportunity to engage in professional meetings, cultivate relationships with American counterparts, and advance technical discussions. Intended outcomes include innovative research, the measurable reduction of greenhouse gases, and increases in sustainable agricultural yield. Facing the mounting threat of climate change, Brazil and the United States will continue working together to strengthen food system resilience and ensure global food security for future generations.

Attachments:

No Attachments.