

GLOBAL RESEARCH ALLIANCE

ON AGRICULTURAL GREENHOUSE GASES

Croplands Research Group (CRG)- Brazil Update

January 2023

**CRG Brazil Representative –
Ladislau Martin-Neto (Embrapa)**

- Commitments of Brazil- COP 27
 - Reduction of deforestation to zero (2030)
 - Neutral Carbon Country (2050)
 - **Low Carbon Agriculture Plan- LCAP-** stimulus for farmers to adopt more sustainable managements (2020-2030 period, mitigation goal of 1.1 billion of tons CO₂eq., with involvement of 72 Mi ha)
 - **8 Eligible LCAP practices:** reforestation; pastureland recovery; no-tillage; integrated crop-livestock-forest systems and agroforestry; bio inputs use (include intense biologic nitrogen fixation by plants, mainly to leguminous as soybean); intensive cattle production; irrigation; and treatment of animal waste.
 - Participation of new elected President (Luis Inácio Lula da Silva, 2023-2026) that in the past implemented a 80% reduction in the Amazonian rainforest deforestation, during his previous periods as Brazil's President (2003-2010)

- **New initiative of Journal Frontiers of Soil Science, with participation of CRG Co-Chairs**
Research Topic: Soil Carbon Sequestration in Tropical and Subtropical Regions: A paradigm change
Editors: Ladislau Martin-Neto, Rosa Maria Mosquera Losada, Hero Gollany, Carlos Crusciol and Débora Milori
Deadline Manuscript Submissions: March, 2023

Portfolio of Climate Changes and Agriculture of Embrapa(www.embrapa.br) :

- The general objective of the Climate Change Portfolio is to integrate RD&I actions by Embrapa and its partners in order to offer technical-scientific alternatives for the adaptation and sustainability of Brazilian agriculture in the face of the challenges imposed by climate change, contributing to national and global food security. and for the control of national emissions of greenhouse gases.
- Current Status: **30 on-going projects** addressing subjects on mitigation, adaption and forecasting impacts in agriculture.

Brazil Update – CRG

Recent Achievements

- São Paulo State Research Support Foundation-FAPESP (www.fapesp.br) –Funding Agency
- **FAPESP Research Program on Global Climate Change 2020-2030 (PFPMCG)** was launched in 2021 with opportunities for international cooperation with many countries and international agencies, in themes of mutual interest.
- **Recent Call- December/2022- Land-use Changes and Agriculture: Strategies for reducing GHG emissions and adaptation to climate change (deadline submissions: March, 01, 2023)**
- This Call was launched under the PFPMCG (www.fapesp.br/pfpmcg), aims to advance science so that Brazil can meet its international commitments to reduce greenhouse gas emissions and contribute to carbon neutrality in the sectors of land use change and agriculture, in combination with solutions for adapting to climate change and increasing the resilience of food production in the country.

Brazil Update – CRG

Recent Achievements

-On-going Project supported by GRA

-Project name: **Synergies in integrated systems: Improving carbon balance, resource use efficiency while mitigating greenhouse gas emissions through well-informed decisions about circularity (SENSE)**

-January 2022 –December 2024 (36 months)

-Project Coordinator and Institution: Dr. Jagadeesh Yeluripati, The James Hutton Institute, Scotland, UK),

- Coordination of Activities in Brazil: **Dr. Beata Eموke Madari, Embrapa (with 7 Embrapa's Research Centers working in the project)**

- **Relevant Project Cooperation with Private Corporation:**

Title: Carbon Balance and Footprint in the production of soybean, maize and sugar-cane: metrics, tools and protocols to tropical and subtropical areas from Brazil (2022-2025, cooperation Bayer Company and Embrapa)

- **Evaluation of private farmers (1,800) from different Brazilian biomes**
- **Use of innovative tools (as LIBS and NIRS) to soil C stocks determination, soil C modelling, Life Cycle Assessment and others**
- **Support to farmers to access Soil C credits market**

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Recent Achievements

- **Relevant International Certification to Innovative Soil C quantification Method:**
- **Laser-induced Breakdown Spectroscopy (LIBS) was approved as a new certification soil C quantification method by Verra Company (verra.org). Initiative and leadership of Embrapa Instrumentation (embrapa.br/instrumentacao) and Startup Agrorobotica (agrorobotica.com.br)**

Brazil Update – CRG

Research and Capability Priorities

Research Opportunities: –identify research gaps or opportunities for the CRG and Networks to raise during the discussion session

1. Priority topic 1- New tools to facilitate and to cost reduction of soil C stocks determination in large-scale of agricultural production systems

2. Priority topic 2- To establish a digital and integrated platform to large scale monitoring of C and N stocks and GHG emissions to relevant croplands and integrated production agricultural systems

Capability Opportunities: –identify upcoming workshops and training or projects with potential for students

1. Priority 1- Digital Agriculture Opportunities Applied to Climate Change Context

2. Priority 2- Increase Cooperation with Private Companies and Farmers to Consolidate a Soil Carbon Credits Market

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The poster is for a panel debate titled "CARBON FARMING & CARBON MARKETS" with the subtitle "PERSPECTIVES FOR TEMPERATE AND TROPICAL CLIMATES". It features six speakers with their names and affiliations: Lini Wollenberg (Alliance of Bioversity International & CIAT), Laura Lamonica (Brazilian Coalition on Climate, Forests and Agriculture), Sabine Frank (Carbon Market Watch), Dr. Ladislau Martin-Neto (Embrapa), Bernhard Osterburg (Thünen-Institute), and Dr. Daniel Vargas (Fundação Getúlio Vargas). The event is organized by zef (Center for Development Research, University of Bonn) and APD (Diálogo Agropolítico Brasil - Alemanha / Agrarpolitischer Dialog Brasilien - Deutschland). It is funded by the German Federal Government (Bundesministerium für Ernährung und Landwirtschaft) and implemented by GFA, IAK, and Embrapa. Partners include Embrapa, Thünen, Insper, AGRO GLOBAL, and CIAT. The event is held on June 30th from 17-19:00 CEST (12-14h Brasilia time) and is available online via Zoom. A live translation from English to Portuguese is provided.

zef
Center for
Development Research
University of Bonn

APD | DIÁLOGO AGROPOLÍTICO BRASIL - ALEMANHA
AGRAPOLITISCHER DIALOG BRASILIEN - DEUTSCHLAND

PANEL DEBATE

CARBON FARMING & CARBON MARKETS
PERSPECTIVES FOR TEMPERATE AND TROPICAL CLIMATES

Lini Wollenberg
Alliance of Bioversity
International & CIAT

Laura Lamonica
Brazilian Coalition on Climate,
Forests and Agriculture

Sabine Frank
Carbon Market Watch

Dr. Ladislau Martin-Neto
Embrapa

Bernhard Osterburg
Thünen-Institute

Dr. Daniel Vargas
Fundação Getúlio Vargas

Live translation: English to Portuguese

June 30th
On-line: via Zoom

17-19:00 CEST
12-14h Brasilia time

Implemented by:
GFA IAK

Partners:
Embrapa Thünen Insper AGRO GLOBAL CIAT

Panel held in person - June, 30, 2022
University of Bonn- Bonn/Germany

Thank you very much for your attention!

Happy 2023!

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