The impact of Embrapa's strategic agenda on Brazilian small-scale and family farmers

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Embrapa in Brazil

43 Research Centers
Eco-regional, Thematic and Product

7,806 employees
2,174 researchers
90% Ph.D.

50 YEARS
Brazilian Agriculture
A revolution in 30 years
Trajectory of Brazilian Agriculture

EXPANSION

- Transformation of acidic and poor soils into fertile soil
- "Tropicalization" of varieties and animals

COMPETITIVENESS

SUSTAINABILITY

Development of a Sustainable Production Platform

Agriculture...

- Food – Fibers – Energy...
- Feed – Nutrition – Health...
- Environmental Services – Ecosystem Services...
- Biomass – Biomaterials – Green Chemistry...
- Biofactories – New Manufacturing Processes...
- Microbiome – Bioinputs – Bioprocesses...
- Culture – Tradition – Gastronomy – Tourism...

MULTIFUNCTIONALITY

Science-based development
A Science based Agriculture

- Sustainable Systems
- Biotech Nanotech
- Technological & Bio- Inputs
- Agricultural Practices
- Digital Innovation
- Food security & social innovation
- Agricultural & Agroindustrial Processes
- Genetics (Animal / Plant / Breeding)
LAND-SAVING EFFECT FROM THE TECHNOLOGY AND INNOVATIONS DEVELOPED BY EMBRAPA
Brazilian agriculture is based on over 300 species and exports 350 types of products, which reach 180 markets worldwide.

Source: IBGE, Conab
Reference source: Embrapa/Sire (Jul, 2019)
Small scale and family farmers in Brazilian Agriculture

- **76,8%** of the **5 073 324** rural properties
- **70%** of food consumed by Brazilians
- Gross Production Value: **23%**
Technologies addressing Public Policies

186 related assets
(43% of the total qualified for family farming in the 3 areas)
Some Embrapa’s crops varieties available to Family Farmers
Biofortified food crops that are rich in minerals such as Iron and Zinc and Vitamins, and can be important products to fight malnutrition, especially for low income populations.

More than 10,000 families have already received biofortified propagating material to grow on their properties.

Cassava, Sweet Potato, Banana, Corn, Green beans, etc
Strategy to use biofortified food in school meals

Public schools must purchase at least 30% of food directly from family farmers.
Differentiated processed products that contribute to regional development of northeastern semi-arid region in Brazil

- Embrapa and Coopercuc (Family Farming Cooperative from Canudos, Uauá e Curaçá)

- Support on the agroindustrialization of some regional products;

- Lower sugar contents and suitable for small-scale processing

- Support for commercialization in local markets and through the Federal Government's Food Acquisition Program (PPA)
Technologies for Life in Drought Areas

Low-cost irrigation systems for family farming of riverside settlements in the semiarid area

• Recommendations for the irrigation systems to be more available for small farmers.

• The irrigation systems may be drip irrigation by using a network of handmade emitters, polyethylene tubes (4mm in diameter) and microsprinklers.

“Barraginhas” initiative are **micro-dams** made in the soil for rain water harvesting and erosion contention. They are conical in shape, approximately 16m in diameter and nearly 1.8m in deep. They are distributed in crop fields and grazing areas.
Looking into the future ➔ Digital Agriculture

E-campo
Embrapa’s on line training
https://www.embrapa.br/e-campo

Exemples of training themes for Family farming

1. Integrated production system for food security (Sisteminha Embrapa): management parameters
2. Introduction to planting material production strategies – RENIVA (Cassava)
3. Rural Basic Sanitation
4. Bioeconomy in the Caatinga
5. Meliponiculture: breeding stingless bees
6. Residential Aquaponics
Final remarks

Small-scale and family farmers have a major role in food security and in the agro-biodiversity conservation within the six Brazilian biomes. Nevertheless, the majority of family farmers find themselves in a situation of social vulnerability, with limited access to technical assistance, equipments and inputs necessary to adopt most of the existent innovations. Supporting partnerships between government, producers and research institutions is a way to achieve green innovation and equitable agriculture transition.
Thank you

https://www.embrapa.br/en/international

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