News

MAIS Program: Climate-Smart Agriculture| Brazil

2018 Lighthouse Activity ()

The MAIS Program (*Modulo Agroclimático Inteligente e Sustentável*) is helping family agricultural operations adapt to climate change in the Jacuípe Basin, Brazil's semi–arid region. It is one of the first ever climate smart agricultural programs to mainstream climate disruptive technologies among farmers in Brazil.

The Program helps farmers implement best practices in animal nutrition, farm management, food and water security, and restoration of degraded pastureland soil to help them prepare for times of intense drought and ensure food security in the region.

Key facts

- The program has been developed by engaging 650+ farmers over a 12–year period
- Each US dollar invested in the program has generated about USD 7 in the Jacuipe Basin.
- The Program has increased farmers' dairy production by 63% and increased their income by 204%.
- The Program has also resulted in a 30% improvement in pastureland, a 50% decrease in the water footprint of the area's farms and a 30% reduction in production oscillations.
- Over 3 tonnes of CO_2 is estimated to be offset for each hectare of restored pastureland.

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Credit: Jorge Henrique/VR14

The problem

Family farmers in Brazil supply the majority of food, such as milk, cocoa, coffee, and acai, to strategic value chains. However, family farmers are also the most vulnerable farming group to climate change. This poses a serious risk to present and future food security and supplies.

The northeastern region of Brazil is considered one of the most socially, economically, and environmentally vulnerable regions in Brazil and is characterized by recurring droughts and floods which have intensified due to climate change and has brought about a decrease in agricultural production and an increase in deforestation.

Land degradation due to livestock production is widespread, forests have been cut down to make way for grazing areas, and livestock is responsible for a large part of the country's agricultural greenhouse gas emissions. Moreover, farmers are not able to access financial resources to accelerate farm development in trying times.

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Credit: Jorge Henrique/VR14

The solution

The MAIS Program is implementing climate smart agriculture across value chains to help farmers plan for drought-intensive periods. Examples of some of the practices includes the use of *Opuntia-ficus,* a cactus which acts as a substitute for corn and a biophysical water and food storage system, restoration of pastureland through the planting of drought-resistant trees and indigenous fruits, and the adoption of suitable animal management routines for semiarid climates.

The underpinning concept of the MAIS Program is to bundle different strategies and technologies together to create a "module" (the MAIS module) which is a "climate smart toolkit" that can guarantee a satisfactory income generation for farmers during the yearly dry period and during the most severe 50-year drought. Depending on farmers' interest and financial availability, a farm can have more than one module. The module is implemented through a technical assistance program provided by Adapta Group (http://www.adaptagroup.com/) and Instituto Adapta Sertão (http://www.adaptasertao.net/), where the field technicians linked to a farmers' cooperative are trained to help farmers adopt the MAIS module. The program also helps establish a specific financial mechanism together with local or international financial institutions to help finance those farmers who need credit to implement the module(s).

Helping the planet

The MAIS Program was developed to help farmers adapt to climate change and ensure food security for the region. The program was tested with over 650 farmers in the Jacuípe Basin and was able to recover degraded land, ensure water and food security, and reduce the dairy industries carbon footprint through the implementation of silvopastoralism – a rotational grazing system that combines nutritious forage grasses, herbs, shrubs, and trees.

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Credit: Jorge Henrique/VR14

Helping people

The MAIS Program is rooted in Community-based Adaptation strategies, through which local organizations and farmer leaders work together to adapt new technologies to their own reality. In this way, the innovations emerge from the community, which then takes ownership and sustains them, reducing reliance on government programs. By acting through cooperatives and companies, the MAIS Program strengthens producers' organizations, promotes added value and helps developing a local climate resilient economy with a very rapid farmers' uptake of climate disruptive technologies.

The MAIS Program was successfully refined and implemented through the support of Proadapt, a climate resilient fund lunched by the Interamerican Development Bank (https://www.iadb.org/en) and Nordic Development Fund (http://www.ndf.fi/index.php?id=197).

Spillover effect

If the MAIS Program was implemented in 15 of the largest dairy corporations, it would represent a market opportunity estimated at USD 5 billion and decrease Brazilian GHG emissions by 4%.

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