NICARAGUA

ADDRESSING CLIMATE CHANGE IN THE AGRICULTURAL SECTOR, IN TIMES OF COVID-19 PANDEMIC: EXPERIENCES OF SEED BANKS IN NICARAGUA

Presenter

Banco de Semillas de arroz, Regalo de Dios Ochomogo-Nandaime, Nicaragua

Banco de Semillas El Esfuerzo, La Paz, Carazo, Nicaragua

Description

Climate change has brought extreme climatic variations that have significantly affected the national territory and caused the loss of agricultural production and even life losses:

- Between 2014-2016 there were droughts, while in 2017 the rains were intense.
- Droughts caused low yields (i.e. Bean's yield between 450- 650 kg / ha), causing in this way deficiency in food security, pushing producers to make variations in the dates of sowing due to the shortage of water in some years.

Moreover COVID-19 caused economic recession coupling with the effects of climate change:

- The lack of rain in some key periods of the crop and due to the effect of the pandemic, the prices of inputs have increased, resulting in a reduction in areas and lower production.
- Due to the pandemic, the closure of markets and the difficulty in transportation make production sale less easy.
- There is a shortage of labour for crops and marketing is concentrated in the community with less mobilization in the city.

Despite the challenges faced, seed banks proved to be a model that can survive in this difficult scenario as seed facilitators.

Since 2016, Seed Banks in Nicaragua has provided:

- 290 tons of bean seeds.
- 362 tons of rice seeds.
- Better prepared producers.
- Value Added to the Market.

Below the experiences and best practices implemented by two Seed Banks in Nicaragua:

• Bean seed bank "El esfuerzo"

In this seed bank, three main actions were implemented with the support of the Technical Mission of Taiwan (ICDF) in Nicaragua:

- Production: improved seed for drought, use of biological materials and biofertilizers, use of mulch etc.
- Organisation: cooperation fund to establish production areas; sufficient manpower.
- Marketing; promotion activities, seed supply to Managua.

The combined use of the INTA Rojo variety and the biofertilizer Rhizobium resulted in increased production: each plant produces 20 to 30 pods, with 5 to 6 grains, obtained 1,3 ton/ ha (before it was 0.7 ton/ha) of bean seeds.

• Rice seed bank "Regalo de dios"

In this seed bank, capacity building activities were implemented, resulting in increased production of rice seeds. In this seed bank, they used to produce less than 3 ton/ha, and after the capacity building, they could have more the 5 ton/ha, because of the training through the project of the Technical Mission of Taiwan (ICDF) in Nicaragua. Producers will achieve certification of their seed banks and be self-sustaining.

Results

Main results of best practices implemented by the Seed Bank community:

- Use of varieties resistant to drought, pests and diseases.
- Efficient use of resources to obtain good yields, reducing production costs.
- Making use of appropriate crop practices such as planting distance, densities and use of bio-inputs.

Climate smartness

Certainly, the practices implemented in Nicaragua are climate-smart because they address climate smart agriculture pillars: adaptation, mitigation, and productivity.

The use of seed banks, for both beans and rice crops, is an adaptation practice that allows replanting in the event of losses due to climate variability. The approach used in this project guarantees farmers access to seeds tolerant to drought, pests, and diseases. On the other hand, the use of mulch and other biological preparations contributes to mitigation, since those are practices that reduce nitrogen and carbon losses (in the form of organic matter) from soil.

All these practices have a positive impact on productivity, because they help to increase yields or reduce the costs of production depending on the case.

It is recommended to review some best practices for the study developed between the World Bank and CIAT (2015), which can have synergies with those described in this project. Likewise, it is recommended to include in this project the strengthening of the flows of climate information[12] to the producers, as well as empowering them in the use of such information, so as to ensure that the producers can make better decisions based on climate knowledge.

12 It is advisable to use climate information from official institutions. However, in case this information cannot be accessed, it is possible to use global secondary information such as CHIRPS (https://climateserv.servirglobal.net/). To transfer agroclimatic information, it is advisable to create spaces such as the Local Technical Agroclimatic Committees (LTACs) (https://www.sciencedirect.com/science/article/pii/S2212096316300298) and use methodologies such as PICSA (https://climateserv.servirglobal.net/).