GUATEMALA

STRATEGIES OF RESILIENCE AND ADAPTATION TO CLIMATE CHANGE AND COVID-19 IN GUATEMALA

Presenter

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Description

In Guatemala, usually there are two main seasons: the rainy season and the dry period. Nevertheless, in the last couple of decades there have been changes due to climate change and this has taken a toll on agriculture. In addition to this, there was a notable change during the pandemic in relation to market demand for agricultural products. Strategies of resilience and adaptation to climate change had to be implemented.

Three are the pillars upon which the best practices implemented are based: diversification, efficiency and sustainability.

One of the best practices implemented is diversification to minimize the risk, in particular farmers introduced improved varieties, crop diversification and also market diversification.
Furthermore, farmers established experimental plots, with adaptable crops to climate change. Locally, it has been sought to implement new crops for local farmers with the objective of diversifying productive plots and increase family income.
As for the improvement of profitability and efficiency, farmers used sustainable infrastructures and applied crops traceability systems, in order to collect more information to take better decisions and improve the adaptability of crops.
Finally, in order to be more sustainable and eco-friendlier, farmers promoted organic agriculture and implemented a cleaner production process in the packaging house. Moreover, they used organic fertilizers for soil reduction and conservation: they have observed that organic fertilizers and biopesticides take care of soil's health and biodiversity while increasing productivity. In addition to these solutions, the implementation of living barriers was promoted, as well as the implementation of irrigation systems and of macro and micro tunnels.

As far as health is concerned, ALIAR had to implement security protocols and the necessary security measures including: chlorination systems, Personal Protective Equipment (PPE), temperature control of personnel.
Moreover, given the impact of the pandemic, ALIAR is exporting its production to Central American trading partners. However, due to the economic recession, exports to international markets (USA and Europe) have been stopped, and local sales strategies were established.

Results

Main results:
- Introduction with Improved Varieties
- Crop Diversification
- Market Diversification
- Security measures and controls were implemented
- Chlorination systems were installed
- Personal Protective Equipment (PPE) was provided
- Temperature control of the personnel
- Implementation of living barriers
- Irrigation systems
- Implementation of macro and micro tunnels

Climate smartness

The practices in this project are framed within Climate-Smart Agriculture (CSA), as they contribute to increasing adaptation and productivity, and reducing greenhouse gas emissions.
Practices, such as productive diversification, the establishment of trials to introduce better adapted varieties or species to micro climatic conditions, the use of irrigation systems, and the construction of structures such as macro tunnels increase climate adaptation capacity of production systems.

On the other hand, the implementation of organic agricultural practices, living fences, and soil conservation, helps to reduce the emission of greenhouse gases and to capture carbon in the agricultural systems, while they are also contributing to climate adaptation and productivity increase. Finally, practices such as the use of organic packaging and diversification of the market are practices more focused on value added increase which improves farmers' incomes.

It is worth highlighting that the collection of information that is being done by the farmers linked to the project to make better decisions. In that regard, for those who are not doing that, it is recommended to train these producers to monitor the climatic conditions within their plots, using low-cost rain gauges and thermometers, as well as hygrometers that enables them to learn the humidity of their soils. This information will be useful to plan the construction of water reservoirs so that they can have this resource during the dry seasons, and determine the periodicity and the quantity of water that they should use for irrigation.

Additionally, it is recommended to establish a training program for understanding and using agro climatic information[5] that would enable the farmers to make decisions about planting dates, the species and varieties to plant, and the place on their farm that is best for planting, among others.

5 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/).