

## ROOF GARDENS, WATER HARVESTING AND BIOPREPARATIONS TO PROMOTE FARMERS' RESILIENCE IN GUATEMALA AND HONDURAS

### Presenter

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### Description

This best practice refers to the framework of the projects carried out by CCAFS: the Sustainable Territories Adapted to Climate in Central America (in Spanish, Territorios Sostenibles Adaptados al Clima or TeSAC), which are being developed in Olopa (Guatemala) and Santa Rita (Honduras).

Although TeSAC communities in Central America have always been immersed in constant climate variability, this year, in addition to COVID-19, they have been faced with major challenges such as:

- The reduction in the supply of labour to harvest coffee, which has led to a reduction in their income. This is a consequence of the closure of borders, since during the coffee harvest there is a great deal of mobility of people looking for a job.
- The reduction in access to food, given that at some times urban centres were closed.
- Reduced supply or increased costs of agricultural inputs.

From a climate point of view, recently as a result of the passage of tropical storm Eta, several crops were lost due to excess rainfall, therefore some families may soon be affected by the food crisis.

Below some best practices implemented:

- **Roofed gardens and rainwater harvesting:** This consists of the establishment under a structure covered with transparent plastic of gardens with a diversity of crops (mainly vegetables), which are managed using bio-preparations. These gardens have a system for capturing and storing rainwater that falls on the roof, which is used for watering the plants. This practice helps to improve the adaptation of the species cultivated within the garden and improves the food security of the families, since with the implementation of this practice they largely guarantee their food security in both winter and summer seasons. As it is a low-cost practice, it helps to reduce the family's expenses corresponding to the purchase of food.
- **Rainwater harvesting ponds for fish production and irrigation:** this consists of digging a hole in the ground, which must be repaired or lined with geo-membrane, cement or plastic, so that water can be stored. These ponds are filled with rainwater and/or captured by runoff. The stored water is used for fish production (tilapia) in winter periods, when water resources are abundant, and for irrigation of small plots in dry periods. This practice serves to adapt farming areas to prolonged droughts, ensures the diversification of food for communities, introducing animal protein into the diet of some producers, and improves the food security of families. As it is a low-cost practice, it helps to reduce the family's expenditure on food purchases.
- **Elaboration of bio-preparations (Fertilizers and insecticides):** This consists of the preparation and application of agro-ecological inputs for the integrated management of pests and crop diseases and the improvement of the soil through the application of organic fertilizers that are produced with local resources in the community. It reduces costs, increases the physical-chemical and biological characteristics of the soil, reduces contamination by the use of agrochemicals and produces cleaner food. This practice contributes to the reduction of greenhouse gas emissions and, by increasing production potential, helps to ensure food security for families. As a low-cost practice, it helps reducing the family's expenses for the purchase of agricultural inputs.



## Results

Roofed gardens and water harvesting, along with ponds for fish production, have helped producers to be more resilient in times of drought. Similarly, especially in the case of vegetable gardens, they also improve adaptation in times of heavy rain, as being covered prevents the destruction of crops. Both practices contribute to the diversification of the diets of the families and improve their nutrition. Currently, these two practices have been very useful in mitigating the impacts of lockdown caused by COVID-19, as they have helped the families who have implemented them to have food available and in some cases to supply other neighbouring farmers.

With regard to bio-preparations, in addition to reducing farmers' production costs and contributing to the reduction of emissions, mainly of nitrogenous compounds, they have also been important during the lockdown due to COVID-19, as they have allowed farmers to carry out their agricultural activities despite the reduction in access to agro-inputs in traditional markets and the high prices that have occurred.

