Climate Smart Technology Project

LAURENZO TIRTOPAWIRO

TECHNICAL SPECIALIST

IICA DELEGATION IN SURINAME

Presentation layout

- ❖ Project Summary & Objectives
- ❖ Main activities
- ❖ Deliverables
- ❖ Achievements
- ❖ Summary Farmers Experience
- ❖ Positive agroecological practices/Benefits

Project Summary

Project Title: Reducing Farmer Vulnerability to Climate Change Impacts through the Promotion of Climate Smart Agriculture Technologies in Suriname.

Amount: USD 266,087; Duration 18 months.
GCCA+ Suriname Adaptation Project
Funded by the European Union in collaboration with the UNDP Suriname

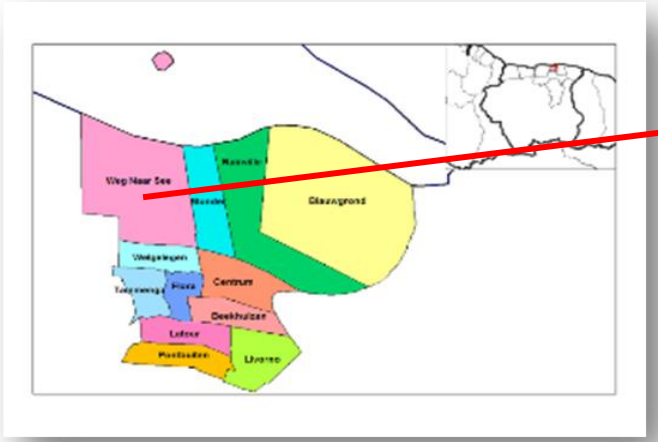
OVERALL OBJECTIVE

To strengthen the resilience of the agriculture sector to the negative impacts of climate change through the promotion and use of climate smart agriculture technologies.

SPECIFIC OBJECTIVE

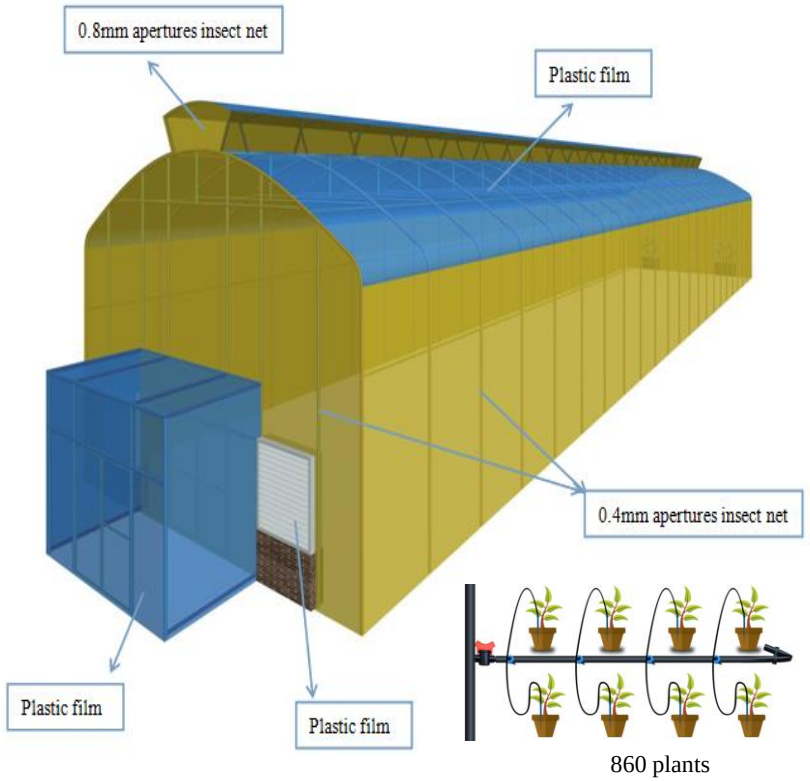
Reducing Farmer Vulnerability to Climate Change Impacts through the building of knowledge and skills in the use and management of protected agricultural structures, micro irrigation and rain water harvesting systems for sustainable commercial vegetable production.

Main Activities



Weg naar Zee

- Located on the Northwest of the Capital Paramaribo. As the name suggests, it is on the Atlantic coast.
- Is one the main Vegetable producing areas of Suriname
- Population 16.037 (2012)



Design:
Two (2) Doble Ridge Protected agriculture structure installed.
Dimension: (45mx9mx7.5m)

Design functions:

- ✓ To increase Air circulation,
- ✓ To keep out pest and disease
- ✓ To better manage of the temperature and Humidity (misting system)
- ✓ Hydroponic production system (soil-less culture)
- ✓ Substrate Mixture (local) of river sand (20%) & Rice chaff (80%)
- ✓ 16 Kw Solar Power System
- ✓ Water Reservoir (12x20x2m-HDPE pond liner)

Deliverables

MICRO-IRRIGATION SYSTEMS

- Leafy vegetables
- Area 4000m2
- Required less water pressure

Micro Overhead sprinklers irrigation system

- Fruit vegetable (tomato; Sweet pepper)
- Area 2000m2

Drip tube irrigation system

- Precision doses calculation of fertilizers
- Minimize nutrition loss by run-offs

Fertigation system

Rain Water Harvesting Reservoir

(20X12X2m)

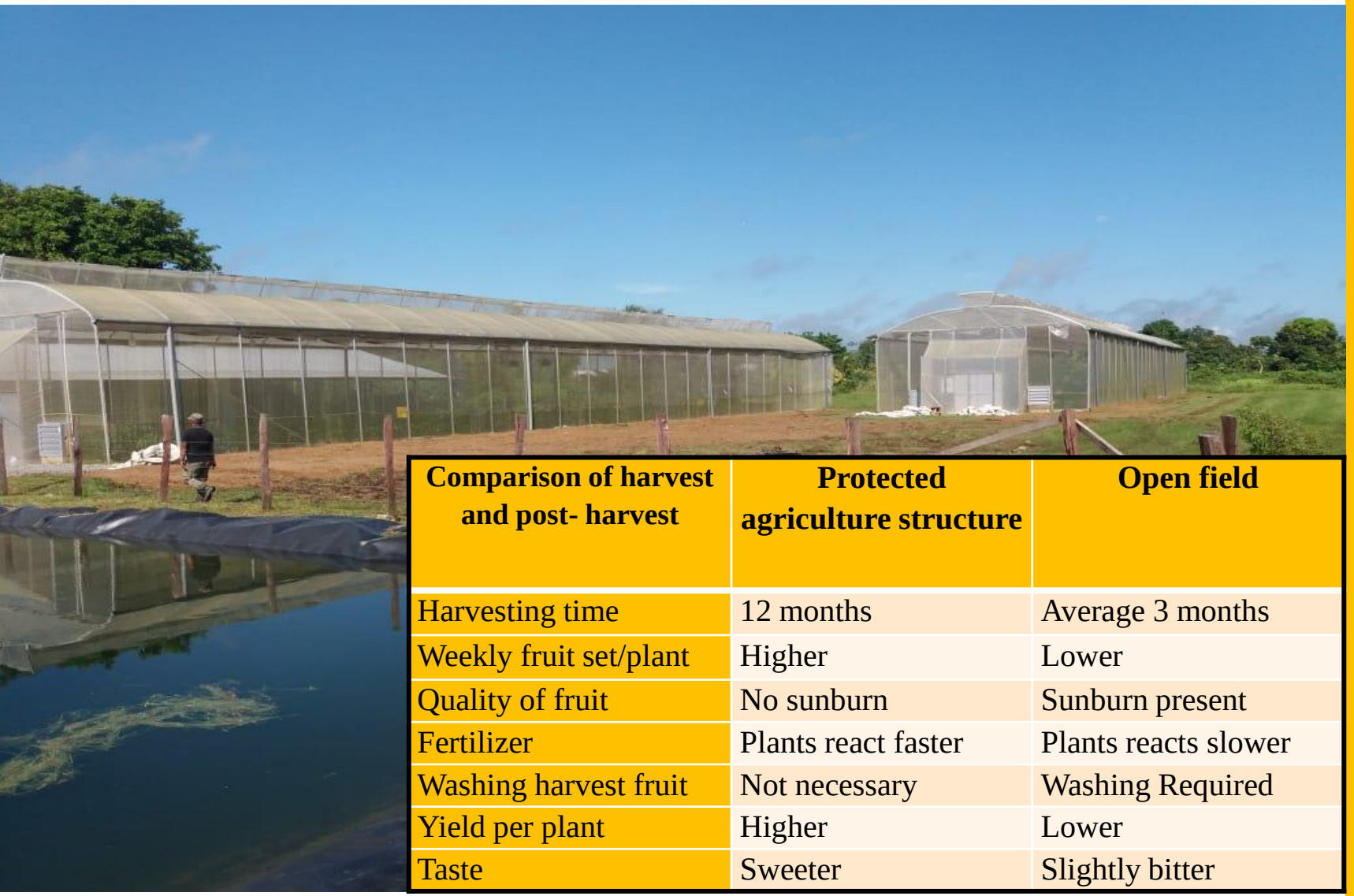
Achievements

Open field Micro-irrigation and Crop management under Protected Agriculture Structures

- Hundred and twenty two (121) Farmers trained
- Twenty Two (22) Agriculture extension officers trained
- Twenty one (21) students of the Anton de Kom University
- One (1) Knowledge exchange visit to Center for Research and Integral Services in Protected Agriculture (CRESIAP), Santa Anita, Jalisco, Mexico
- One (1) video produced on climate change and climate smart technologies. Link: https://www.youtube.com/watch?v=Bj2MfnXMavg&t=50s

SUMMARY FARMER'S EXPERIENCE:

Protected Agriculture Structure/Open field



Comparison of harvest and post- harvest	Protected agriculture structure	Open field
Harvesting time	12 months	Average 3 months
Weekly fruit set/plant	Higher	Lower
Quality of fruit	No sunburn	Sunburn present
Fertilizer	Plants react faster	Plants reacts slower
Washing harvest fruit	Not necessary	Washing Required
Yield per plant	Higher	Lower
Taste	Sweeter	Slightly bitter

Lessons Learnt

Positive agroecological practices/Benefits

- Growth substrate of rice chaff and river sand (substitutes traditional practice of burning of rice chaff which cause CO2 emissions)
- Growth substrate can be reused for open field soil amendment for amelioration upon replacement
- Rain water harvesting for irrigation
- Reduced water consumption through micro-irrigation to 85 to 100 % efficiency versus average 60 % other methods and reduced postharvest cleaning
- Reduced use of pesticides/weedicides due to soilless culture and protected cultivation environment
- More efficient use of fertilizers through hydroponics system which reduces leaching of agrochemicals into soil and groundwater sources
- Reservoirs with protective lining protects stored irrigation water from contamination by salt water intrusion.
- Reduces crops losses due to reduced incidence of weed (ground cover); reduced incidence of pests and disease (fully enclosed structure); reduced impact of environmental factors due to controlled environment (sunburn), nutrient and moisture deficiency disorders and chemical injury.

Project title: Reducing Farmer Vulnerability to Climate Change Impacts through the Promotion of Climate Smart Agricultural Technologies in Suriname

Thank You

Paramaribo, November 10, 2021