CLIMATE CHANGE ADAPTATION IN THE CARIBBEAN: CASE STUDY

Sejah Farm

- **Life zone or region:** Subtropical dry forest
- **Location:** St. Croix, U.S. Virgin Islands
- **Land area:** 21 acres [15 working acres] ; 85, 119.52 m2
- **Types of crops or livestock:** Locally produced lamb meat, organic fruits and vegetables
- **Climatic risks:** Water scarcity during the dry season

Dale and Yvette Browne; owners of Sejah farm

1. DEFINE goals

Important farm characteristics:

- **Soils:**
  - Vertisol (**Hogensborg** caly loam), high clay content rich in nutrients, making them fertile for agriculture but requiring careful management for optimal crop production.
- **Climate scenarios 2040-2060:** 7% to 12% reduction in precipitation and rise in temperature of 2.09 to 2.39 F [1.16 to 1.33 C]

Main Goal:

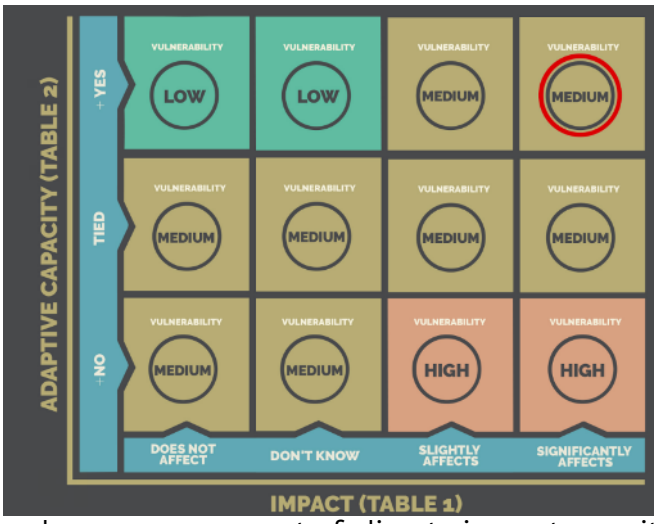
- Local food development within the U.S. Virgin Islands, and the preservation of land and water for food sovereignty.

2. ANALIZE the landscape

Vulnerability to climate

- Crops susceptible to high temperatures cause changes in flowering and fruiting periods.
- Difficulty in predicting water availability throughout the year and oversaturated soils during heavy rainfall events.
- Death or health problems of animals during droughts.
- High recovery costs after intense storms or hurricanes.

Drip irrigation system



Based on an assessment of climate impact, sensitivity, and adaptive capacity, Sejah farm is classified as having medium climate vulnerability. This indicates that the farm is moderately susceptible to the negative effects of climate change, but it also possesses some ability to adapt and mitigate these risks.

Adaptive capacity:

- The farm has an array of **material resources**, including machinery, water collection, irrigation systems, tools, and accessible roads. It also benefits from **human resources** such as volunteers, support from organizations, and various local and national recognitions. Both sets of resources play a crucial role in reducing the farm's climate vulnerability.

3. REEVALUATE goals

After considering the vulnerability, physical characteristics, and climate of the land, the primary goal of Dale and Yvette do not change, however, they consider the impact of dry seasons and sudden, intense rains when evaluating practices and actions that minimize the impact of climate change.

4. IDENTIFY actions

According to the reevaluated goal and considering the characteristics and vulnerability of the land, the following objectives and practices would support its achievement:

OBJECTIVE 1 | PRACTICE

Elevating soil in furrows (lines) to serve as a raised bed will retain soil humidity, and encourage root development

CODE 812| Raised Beds

OBJECTIVE 2 | PRACTICE

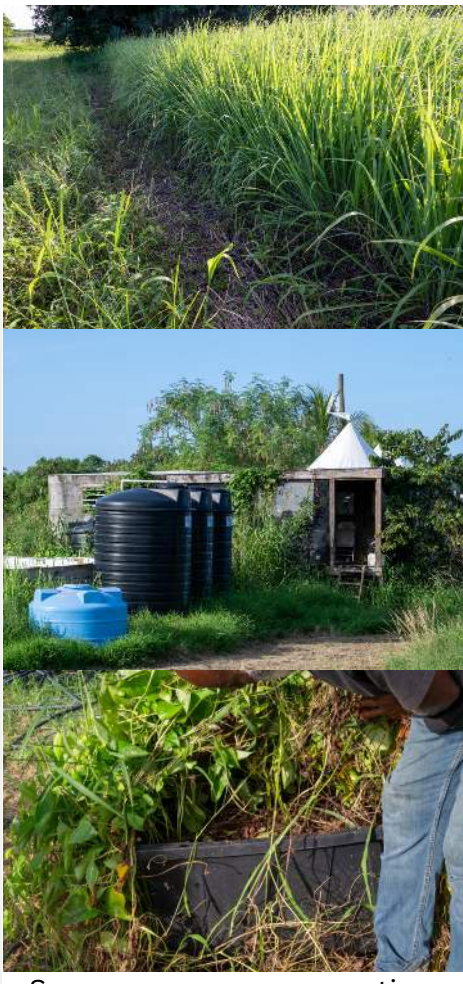
Establishing adapted and/or compatible herbaceous species suitable for pasture, or biomass production.

CODE 512 | Pasture and Hay Planting

OBJECTIVE 3 | PRACTICE

Frequent application of small quantities of water as drops, tiny streams, or miniature spray through emitters or applicators.

CODE 411| Irrigation system, Microirrigation



Some resource conservation and adaptation practices, such as a storage system, mound planting, and crop variety assays.

5. MONITOR changes

Monitoring enables adaptive management through observation and evaluation. It should be based on indicators that provide insights into the effectiveness of the implemented practice.

At Sejah farm, the practice of creating mounds for water and nutrient management can be monitored using the following:

Indicator:	Metric:	Tool:
Plant Vigor (e.g., visible wilting, malnutrition)	Weight and appearance of crops or livestock yield	Field observation (ocular, touch); if weighing using a balance

TENDENCIES

The Caribbean region is becoming hotter and drier due to climate change. Climate projections indicate that average temperatures in the region will continue to rise by 1.5˚F to 2.8˚F by 2050. Rainfall patterns are expected to change, with extended drought periods.

THIS PUBLICATION IS PART OF THE PROJECT: GUIDES FOR CLIMATE CHANGE ADAPTATION IN FARMS AND FORESTED LANDS OF THE CARIBBEAN.

For more information: Climate Adaptation Guide for Agriculture and Forested Lands in the Caribbean
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