## Farmers' Adaptation to Climatic Variability in the Caribbean

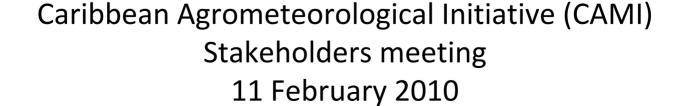
by

#### **Leslie Simpson**

Natural Resources Management Specialist

### Caribbean Agricultural Research and Development Institute (CARDI)







### Climatic phenomena being observed presently

- Variable rainfall conditions with alternating droughts and period of excess rainfall
- Increased number and intensity of tropical storms.
- Decrease in the overall predictability of weather and climate, making the day-to-day and medium-term planning of farm operations more difficult

#### Mulch farming in South St Elizabeth, Jamaica

- Rainfall in South St Elizabeth is low 1450 mm [57 inches] per annum.
- Land clearing provides the mulch for the planting area
- Crops are introduced directly into plant holes dug through the mulch.
- Increases water use efficiency and decreases risk to drought





#### **Soil Water Conservation systems**

This includes live mulches as well as straw mulches and plastic mulches





#### Water harvesting and storage facilities



#### Ferro cement Water Tank in St. Lucia



#### Increased use of Trickle irrigation

- Uniform water distribution
- Efficient water use
- Easy installation, operation and maintenance
- Possibility of fertigation
- Decreases risk to drought





## Using raised beds during the wet season to increase drainage





## Adjusting planting times so that production is mainly done in less wet seasons and decreased during the hurricane season (One and a half crops)

Dry season	Wet season (Hurricanes)	Crops/year
Full acreage	Full acreage	2
Full acreage	Half acreage	1 + 1/2
All crops	More tolerant crops	1 + 1/2
All crops	Only short term crops	1 + 1/2
All crops	Limited acreage & crop types	1 + 1/2

# Growing specific crops in the hurricane season e.g. Crops more tolerant to hurricane conditions, short term crops



#### Protected agricultural systems

- Relatively low cost exclusion cages
- Exclude important leaf eating pests of leaf vegetables like Callaloo (amaranthus spp.)
- Structure can be collapsed and rapidly restored in the event of a tropical storm or hurricane





#### Re-construction after hurricane



#### Climatic information needs of farmers

- On the macro level:
  - The duration of the rainy season
  - The time of rainy season commencement.
  - The total amount of rainfall in the next three months in the area.
  - The rainfall distribution over the rainy period
  - Temperature variations over the rainfall season
- On the micro level:
  - Total rainfall over the next week
  - Rainfall distribution over the next week

#### Thank you