Climate Change Adaptation in Caribbean Agriculture: Enhancing Water Resources Management

Presentation to the Alliance of Ministers of Agriculture CWA, Dominica 2011
Importance of Agriculture in Region

- Agriculture plays a significant role in the socio-economic development of SIS
- For some countries agriculture contributes >20% of the GDP and seen as a major economic driver
- Climate variability and change will impact water availability – productivity of agricultural systems
- Climate change impacts water availability via changes in temperature, rainfall, intensity of storms and sea levels
Climate Change and Water Availability

- Less water available water due primarily to:
  - Increased variability in rainfall patterns
  - the long term drying (drought)

- Drought may become more frequent and be more severe.
Climate Change and Water Availability

- Agriculture in the Caribbean is predominantly rain fed
- Strong sensitivity to variations in rainfall
- Agriculture vulnerable

“Rainfall is king”
(Taylor 2011)
<table>
<thead>
<tr>
<th>COUNTRY</th>
<th>DATE</th>
<th>IMPACT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guyana</td>
<td>2009/2010</td>
<td>Up to 35% of rice fields left uncultivated. USD1.3 million spent to operate irrigation pumps (US$16,000/day). About 150 acres irrigated with salt water in desperation. In 2010 alone over 100,000 acres experienced water stress prompting government investment of over USD 30 million</td>
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<tr>
<td>Trinidad</td>
<td>Jan-May 1987</td>
<td>Over 10,000 acres of natural forest burned resulting in severe crop losses at mean of USD500,000/year</td>
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<tr>
<td>Dominica</td>
<td>2010</td>
<td>Banana export fell 43% below normal due to drought Dominica spent USD18 million in damage response after rain from Hurricane Ophelia</td>
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<td>St. Vincent &amp; Grenadines</td>
<td>2010 and 2002</td>
<td>Crop production reduced to 20% of normal Widespread damage hurricane Lili USD40M</td>
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<tr>
<td>Antigua and Barbuda</td>
<td>2010</td>
<td>Loss of 25% of onion crop, 30% of tomato crop estimated at 250,000 kg</td>
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Climate Change and Water Availability

- Based on the heavy reliance on rainfall, we are very **Vulnerable** to vagaries of climate

- Not responding to this vulnerability is **not** an option.

- **Serious implications for Food and Nutrition Security, economic development and the livelihoods**
CONCLUSIONS
POLICY INFLUENCING ISSUES
for the efficient management and use of water in agriculture
CONCLUSIONS
POLICY INFLUENCING ISSUES

- Access to water - essential for sustainable economic development and achieving MDG (poverty and hunger)
- Current fragmented approach to water allocation - focused response required.
DATA pertaining to the water sector is essential for the allocation of water to agriculture.

Science-based information required for the development of policies.

Current efficient technologies and practices for the collection, storage and use of water in farming operations must be encouraged.
New and innovative technologies to improve water use efficiency must be pursued.

Capacity building of technical personnel is imperative (agriculture, climate change)
RECOMMENDATIONS

- Develop/strengthen **policies** from which programmes and projects are developed and implemented.

  Essential elements:
  - Water allocation for agriculture
  - Data collection and management
  - Research and Development (scientific and socio-economic)
  - Capacity Building
  - Information systems, communication and outreach

- Scale up the implementation of current successful sustainable water management programmes and projects.
Our vulnerability due to the variability of rainfall can affect our viability if our water management systems are not enhanced and therefore demands immediate action.