UNCTAD Regional Workshop
5 – 7 December 2017, Bridgetown, Barbados

“Climate Change Impacts and Adaptation for Coastal Transport Infrastructure in the Caribbean”

Perspectives on Climate Change and DRR in Coastal Transport Infrastructure in the OECS

By

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CLIMATE CHANGE AND DISASTER RISK MANAGEMENT: IN COASTAL TRANSPORT INFRASTRUCTURE IN THE OECS

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E. Crispin d'Auvergne, Organisation of Eastern Caribbean States (OECS) Commission

THE ORGANISATION OF EASTERN CARIBBEAN STATES (OECS)
SEA PORTS IN THE OECS

• Caribbean sea ports segregated into three categories:
  o global hub ports,
  o sub-regional hub ports
  o service ports
• All OECS (main) ports fall into the latter category
• Also several smaller ports and marinas and terminals serving, among others:
  o yachts
  o small fishing vessels
  o ferries

AIRPORTS IN THE OECS

• Airports in the OECS fall into the following categories:
  o International/Regional
  o Regional/Domestic
  o Private
AIR & SEA PORTS IN THE OECS

<table>
<thead>
<tr>
<th>MEMBER STATE</th>
<th>AIRPORTS</th>
<th>SEAPORTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anguilla</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Antigua &amp; Barbuda</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>British Virgin Islands</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Commonwealth of Dominica</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Grenada</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Martinique*</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Montserrat</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>St. Kitts and Nevis</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Saint Lucia</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Saint Vincent and the Grenadines</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>TOTAL</td>
<td>25</td>
<td>23</td>
</tr>
</tbody>
</table>

VALUE & CONTRIBUTION OF AIR & SEA PORTS

- Passenger arrivals/departures
- Goods import and export
- Goods storage
- Energy security
- Revenue collection ("35 vs <4")
- Direct employment
- Support for key economic sectors, including: tourism, commerce, agriculture
- Support FDI
- Support food security
- Provide a link to the outside world
ECONOMIC CONTRIBUTION OF AIR TRAVEL: FDI (2009)

Source: IATA, Oxford Economics in Oxford Economics 2011

ECONOMIC CONTRIBUTION OF AIR TRAVEL/TOURISM (2009)

Saint Lucia: 32.5%  
Grenada: 17.1% of GDP  
Antigua & Barbuda: 13.1% of GDP

Source: Oxford Economics, 2011
CLIMATE CHANGE THREATS

- Storms (wind, rain)
- Sea Level Rise
- Coastal Flooding
- Elevated Temperatures
- Drought

EXPOSURE

- All sea ports at risk by virtue of location
- Several airports at risk due to location near the sea and/or in flood-prone locations, e.g.:
  - Hewanorra and GFL Charles, Saint Lucia
  - Douglas-Charles, Dominica
THE “SEASON OF ’17”

![Image: NOAA](image)

THE SEASON OF ’17

<table>
<thead>
<tr>
<th>April</th>
<th>May</th>
<th>June</th>
<th>July</th>
<th>August</th>
<th>September</th>
<th>October</th>
<th>November</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tropical Depression (&lt;39 mph) ≤62 km/h</td>
<td>Tropical Storm (39-73 mph 63-117 km/h)</td>
<td>Category 1 + 74-95 mph (118-153 km/h)</td>
<td>Category 2 &gt; 96-110 mph (154-177 km/h)</td>
<td>Category 3 &gt; 111-129 mph (178-208 km/h)</td>
<td>Category 4 &gt; 130-155 mph (209-251 km/h)</td>
<td>Category 5 &gt; 215 mph (345 km/h) (From the Saffir-Simpson scale)</td>
<td></td>
</tr>
</tbody>
</table>

Photo: NOAA

Season of ‘17

• Signal that there is something up with “The Climate”
• Tragic death, damage, loss and dislocation to societies/economies
• The Eastern Caribbean on the frontline and (as usual) bore the initial brunt
• Air and sea ports not left unscathed

Impact

<table>
<thead>
<tr>
<th>Member State</th>
<th>Event</th>
<th>Estimated Damage</th>
<th>Airports</th>
<th>Sea Ports</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anguilla</td>
<td>Irma</td>
<td>Extensive</td>
<td>Airport terminal severely damaged</td>
<td>Ferry terminal compromised</td>
</tr>
<tr>
<td>British Virgin Islands</td>
<td>Irma</td>
<td>US$3.3 Bn</td>
<td>Airport tower compromised</td>
<td></td>
</tr>
<tr>
<td>Dominica</td>
<td>Maria</td>
<td>90% of GDP</td>
<td>Main airport temporarily flooded and largely cut off from the capital due to damaged roads and bridges. Second covered with alluvium</td>
<td></td>
</tr>
</tbody>
</table>
IMPACTS

• Damage to tourism, commerce, agriculture..., with short and long-term implications
• Damage to, or closure of ports, hampered evacuation and inflow of assistance and relief supplies
• Hub-and-spoke connections disrupted
**IMPLICATIONS**

Recent catastrophic events have:
- Brought exposure and vulnerability of Caribbean Basin countries into sharp focus
- Increased recognition of the need to rebuild with resilience, including for infrastructure.
- Brought a sense of urgency w.r.t resource mobilization for recovery and reconstruction

At COP-23, AOSIS countries issued a declaration that called for:
- **Call** for the simplification of the modalities for accessing the international climate finance mechanisms;
- **Call** for establishment of a fast-track mechanism for resilience building and development in SIDS;
- **Call** for rolling back of the graduation criteria based on GDP, to realistically reflect the special circumstances of SIDS in the context of impacts of climate change;

**CONTEMPLATIONS: BUILDING RESILIENCE**

- Learn lessons from what failed, what stood
- Recognise the “new normal” and apply the appropriate science in planning and design
- Adopt longer planning horizons for port development
- Enhance self-sustainability (water, power) of port facilities
- Design and build/rebuild resilience in support infrastructure (roads, etc.)
- Diversify transport options where possible (e.g. ferry services)
- Recognise the importance of inter-connection and redundancy
- Building awareness among key stakeholders critical
REFLECTION

• The UNCTAD-led work in the Caribbean has been an “eye-opener” and addresses the vulnerability/resilience of air and seaports and associated transport from a non-traditional perspective.

• Comes at a time when international transport is receiving heightened attention from the climate change aspect.

• Significant implications for the long-term development and prosperity of SIDS.

REFLECTION

• Pressing need for work to be continued and deepened: research, multi-hazard assessments.

• Need for alignment and coordination.

• Critical need for dissemination of lessons that will lead to enhanced decision-making.

• Must be accompanied by capacity-building and sustainable financing.
PARTING THOUGHTS

- Air and sea ports are critical to the survival and well-being of OECS and Caribbean societies and economies.
- Should not be viewed as a series of individual and isolated ports but rather as an interdependent network.
- Resilience-building must be approached in an integrated manner.
- Recent and painful experiences have shown that we are only as resilient as our weakest port.

THANK YOU

Photo: Phillip Cupid, OECS Commission