Climate Change Adaptation for Seaports in Support of the 2030 Agenda for Sustainable Development

27–28 October 2020

Climate Change, Seaports and the Sustainable Development Goals: The Case of the OECS

Presentation by

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UNCTAD Multiyear Expert Meeting on Transport, Trade logistics and Trade facilitation (8th session) Climate Change Adaptation for Seaports in Support of the 2030 Sustainable Development Agenda

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Characteristics of SIDS (Selected)

- Geographic remoteness
- Location (in many instances) within regions prone to natural hazards
- Limited resilience to natural disasters
- High susceptibility to external shocks
- Small domestic markets and heavy dependence on a few external and remote markets;
- High energy, infrastructure, transportation, communication and servicing costs
- Long distances from export markets and import resources
Sea Ports in the OECS

Caribbean sea ports segregated into three categories:
- global hub ports,
- sub-regional hub ports
- service ports
All OECS (main) ports fall into the latter category
Several smaller ports, marinas and terminals serve, among others:
- yachts
- small fishing vessels
- ferries
Importance of Sea Ports to Caribbean SIDS

Even with the advent of air transport, 90 percent of Caribbean imports and exports are carried by sea

- Goods import and export
- Goods storage
- Revenue collection (“35 vs <4”)
- Direct employment
- Support for key economic sectors, including: tourism, commerce, agriculture
- Support to FDI
- Support for food security
- A vital link to the outside world
- Not just goods but people! (The Caribbean accounts for 50% of global cruise traffic)

OECS Sea Ports and Climate Change

Key hazards:
- Storms
- Sea Level Rise
- Coastal Flooding
- Elevated Temperatures
- Drought

Notes
- Many OECS sea ports constructed when CC was not a serious consideration
- Sea ports often heavily reliant on external utilities (water, electricity) which can be impacted by climate-related events.
- Roads and bridges connecting to airports are often themselves vulnerable
- Many airports are also exposed, by virtue of location, meaning that the entire international transport network is vulnerable.
Climate Change and Caribbean SIDS

SIDS are recognised by the UN Framework Convention on Climate Change, and Intergovernmental Panel on Climate Change (IPCC) as being particularly vulnerable to the impacts of Climate Change.

The 2018 IPCC Report highlights some of the implications for SIDS of a 1.5-degree increase in average global temperature, e.g.:

- Tropical regions including small islands are expected to experience the largest increases in coastal flooding frequency, with the frequency of extreme water-level events in small islands projected to double by 2050.

- ... an eventual 1 m SLR* could partially or fully inundate 29% of 900 coastal resorts in 19 Caribbean countries, with a substantially higher proportion (49–60%) vulnerable to associated coastal erosion...

- In Jamaica and St Lucia, SLR and extreme sea levels are projected to threaten transport system infrastructure at 1.5°C unless further adaptation is undertaken.

Projections indicate that at 1.5°C there will be ... substantial increases in the risk to critical transportation infrastructure from marine inundation (Mionioudi et al., 2018).

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Climate Change and Caribbean SIDS

<table>
<thead>
<tr>
<th>NAME</th>
<th>DURATION</th>
<th>SUSTAINED WIND SPEEDS</th>
<th>AREAS AFFECTED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allen</td>
<td>Aug 5–9, 1980</td>
<td>190 mph (305 km/h)</td>
<td>The Caribbean, Yucatán Peninsula, Mexico, South Texas</td>
</tr>
<tr>
<td>Gilbert</td>
<td>Sep 13–14, 1988</td>
<td>185 mph (295 km/h)</td>
<td>Jamaica, Venezuela, Central America, Hispaniola, Mexico</td>
</tr>
<tr>
<td>Hugo</td>
<td>Sep 15, 1989</td>
<td>160 mph (260 km/h)</td>
<td>The Caribbean, United States East Coast</td>
</tr>
<tr>
<td>Andrew</td>
<td>Aug 23–24, 1992</td>
<td>175 mph (280 km/h)</td>
<td>The Bahamas, Florida, United States Gulf Coast</td>
</tr>
<tr>
<td>Isabel</td>
<td>Sep 11–14, 2003</td>
<td>165 mph (270 km/h)</td>
<td>Greater Antilles, Bahamas, Eastern United States, Ontario</td>
</tr>
<tr>
<td>Ivan</td>
<td>Sep 9–14, 2004</td>
<td>165 mph (270 km/h)</td>
<td>The Caribbean, Venezuela, United States Gulf Coast</td>
</tr>
<tr>
<td>Emily</td>
<td>Jul 16, 2005</td>
<td>160 mph (260 km/h)</td>
<td>Windward Islands, Jamaica, Mexico, Texas</td>
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<tr>
<td>Katrina</td>
<td>Aug 28–29, 2005</td>
<td>175 mph (280 km/h)</td>
<td>Bahamas, United States Gulf Coast</td>
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<tr>
<td>Rita</td>
<td>Sep 21–22, 2005</td>
<td>180 mph (285 km/h)</td>
<td>Cuba, United States Gulf Coast</td>
</tr>
<tr>
<td>Wilma</td>
<td>Oct 19, 2005</td>
<td>185 mph (295 km/h)</td>
<td>Greater Antilles, Central America, Florida</td>
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<tr>
<td>Dean</td>
<td>Aug 18–21, 2007</td>
<td>175 mph (280 km/h)</td>
<td>The Caribbean, Central America</td>
</tr>
<tr>
<td>Matthew</td>
<td>Oct 1, 2016</td>
<td>165 mph (270 km/h)</td>
<td>Antilles, Venezuela, Colombia</td>
</tr>
<tr>
<td>United States East Coast, Atlantic Canada</td>
<td></td>
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<tr>
<td>Irma</td>
<td>Sep 5–9, 2017</td>
<td>180 mph (285 km/h)</td>
<td>Cape Verde, The Caribbean, British Virgin Islands</td>
</tr>
<tr>
<td>U.S. Virgin Islands, Cuba, Florida</td>
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<tr>
<td>Maria</td>
<td>Sep 18–20, 2017</td>
<td>175 mph (280 km/h)</td>
<td>Lesser Antilles, Virgin Islands, Puerto Rico, Dominican Republic, Turks and Caicos Islands</td>
</tr>
</tbody>
</table>
Key Considerations

• Climate Change is already affecting the Caribbean, which is a particularly vulnerable region
• Caribbean ports already face challenges, with climate change posing an additional layer
• Damage to ports and roads affects not only transport and trade but also entire national economies, which may often take long to recover
• Consecutive events can effectively cripple countries and impose severe fiscal strain.
• Climate change impacts on OECS SIDS seaports (and airports) will occur from many directions, with multifarious implications for regional societies and fulfilment of several SDGs.
Building Resilience in OECS Ports

- Need to urgently factor climate change considerations into port development, redevelopment, operation and management
- The recent work by UNCTAD on Caribbean ports, which has been considered by the IPCC in the 1.5 Report, serves as a very useful basis for doing so
- Pressing need for work to be continued and deepened (research, multi-hazard assessments) and for the work by UNCTAD to be expanded, in collaboration with others, to assess risk for all ports and airports in the OECS to develop technical and policy solution to help build resilience, using a network approach
- Need for supportive policy action, e.g., integration into National Adaptation Plans
- Recognition that the impact of climate change will affect the fulfilment of several SDGs necessitates a multi-layered approach to building resilience.

Thank You!

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