

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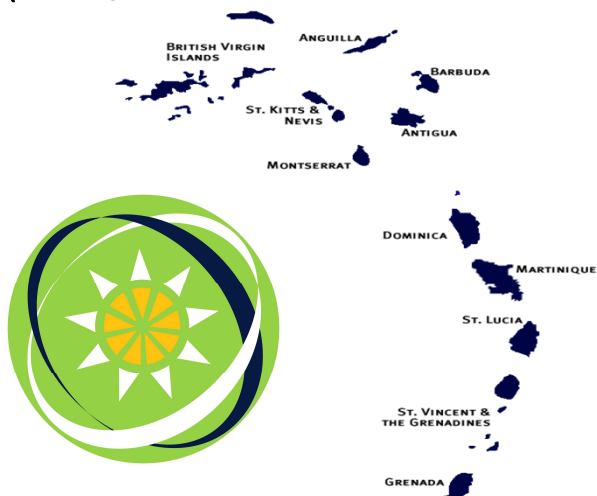
# CLIMATE CHANGE AND DISASTER RISK MANAGEMENT: IN COASTAL TRANSPORT INFRASTRUCTURE IN THE OECS



**UNCTAD Regional Workshop: "Climate Change Impacts and  
Adaptation for Coastal Transport Infrastructure in the Caribbean"  
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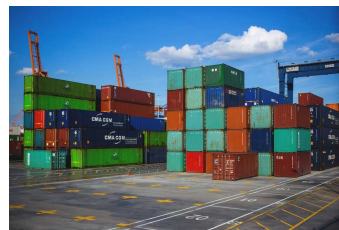
E. Crispin d'Auvergne, Organisation of Eastern Caribbean States (OECS) Commission

## THE ORGANISATION OF EASTERN CARIBBEAN STATES (OECS)



## SEA PORTS IN THE OECS

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



## AIRPORTS IN THE OECS



- Airports in the OECS fall into the following categories:
  - International/Regional
  - Regional/Domestic
  - Private

## AIR & SEA PORTS IN THE OECS

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

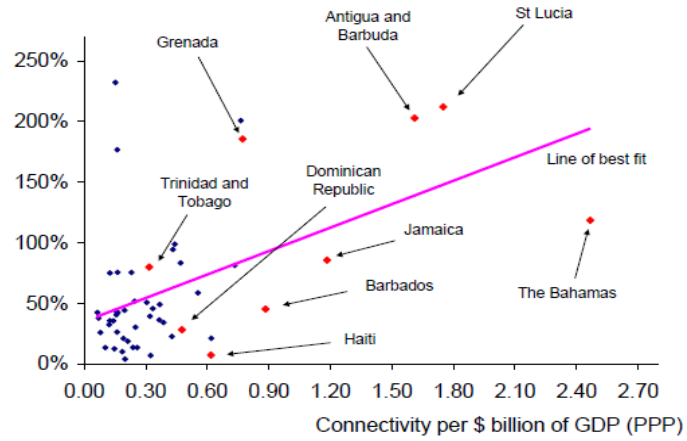
## VALUE & CONTRIBUTION OF AIR & SEA PORTS

- 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



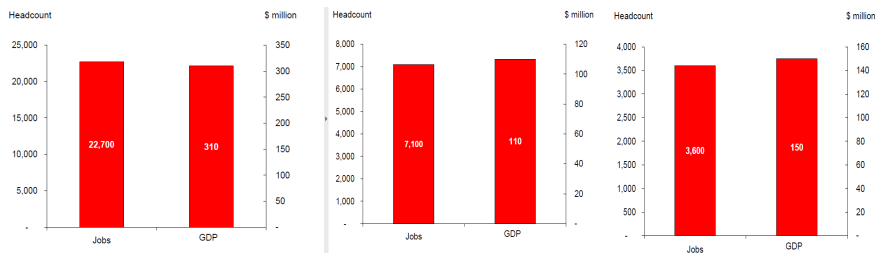
## ECONOMIC CONTRIBUTION OF AIR TRAVEL: FDI (2009)

FDI stock as % GDP



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"

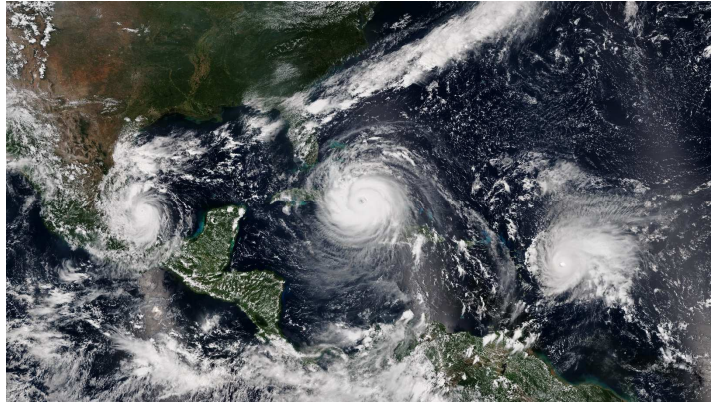
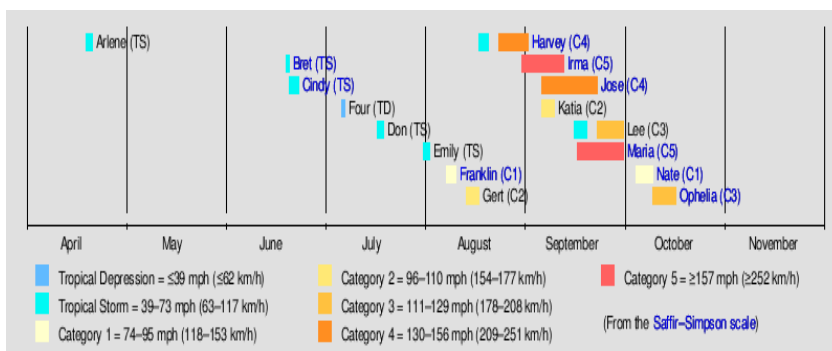


Photo: NOAA

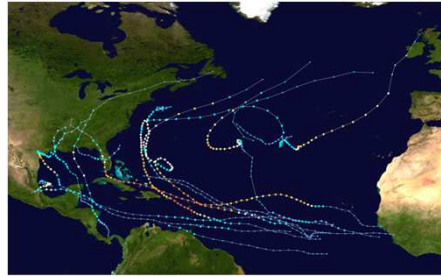
## THE SEASON OF '17



Graphics: Wikipedia

# 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



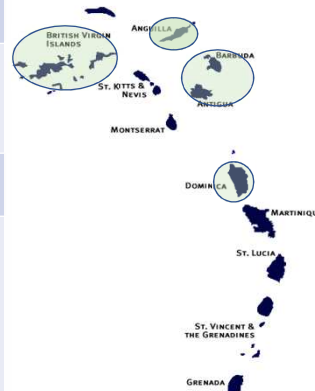
Graphic: Wikipedia



Photo: The Guardian

## Impact

Member State	Event	Estimated Damage	Airports	Sea Ports
Anguilla	Irma	Extensive	Airport terminal severely damaged	Ferry terminal compromised
Antigua & Barbuda	Irma	Barbuda: 95% of buildings damaged. Entire population evacuated.	Barbuda airport runway destroyed.	
British Virgin Islands	Irma	US\$3.3 Bn	Airport tower compromised	
Dominica	Maria	90% of GDP	Main airport temporarily flooded and largely cut off from the capital due to damaged roads and bridges. Second covered with alluvium	



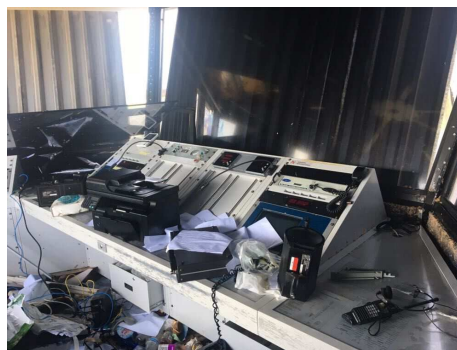


## IMPACTS



## 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

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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;

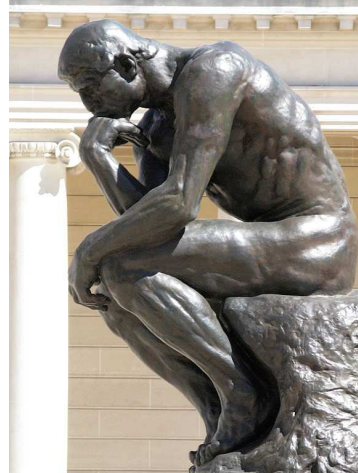
## CONTEMPLATIONS: BUILDING RESILIENCE



- 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

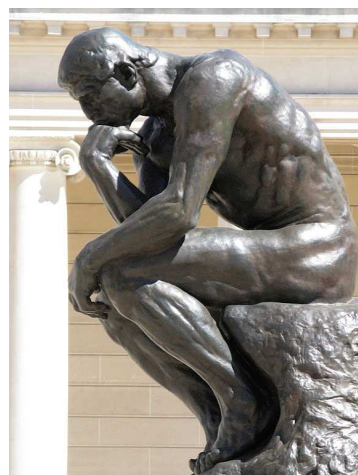
## REFLECTION

- 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.**



Photo: Phillip Cupid, OECS Commission

# THANK YOU