



**Organisation of  
Eastern Caribbean States**

# TRADE & VULNERABILITY IN SIDS: IMPLICATIONS OF CLIMATE CHANGE FOR AIR AND SEA PORTS IN THE EASTERN CARIBBEAN

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# Organisation of Eastern Caribbean States



- **The OECS (1981):** an International Inter-governmental Organisation dedicated to economic harmonisation and integration, protection of human and legal rights and the encouragement of good governance among independent and non-independent countries in the Eastern Caribbean.
- **Comprises:** Anguilla, Antigua and Barbuda, British Virgin Islands, Commonwealth of Dominica, Grenada, Guadeloupe, Martinique, Montserrat, St. Kitts and Nevis, Saint Lucia and Saint Vincent and the Grenadines.
- **Antigua and Barbuda, Commonwealth of Dominica, Grenada, Montserrat, St. Kitts and Nevis, Saint Lucia and St Vincent and The Grenadines** are full members.
- **Anguilla, British Virgin Islands, Guadeloupe and Martinique** are Associate Members
- **Anguilla, the British Virgin Islands, and Montserrat** remain overseas territories of the United Kingdom (UK) while Martinique continues to be an overseas department and region of France.
- **Saint-Martin (Fr.)** has recently gained Observer status to the OECS
- **Total population (2017):** ±1.4 M



# The Caribbean and International Transport

- Transportation has been pivotal to development of the Caribbean – the region stood at the center of the Atlantic trade in the 19<sup>th</sup> Century (the golden triangle – *labour, raw material, processing*);
- Transportation, both maritime and civil aviation have become central to trade, communication and defense;
- Even with the advent of air transport, maritime transport remains the main conveyance for commodity import and export;
- 90 percent of Caribbean imports and exports are carried by sea;
- Air transport has become the primary medium for stay-over travel.



# The Caribbean and International Transport

The seaport structure of the Caribbean has been heavily influenced by global change over the last two centuries;

Containerisation has dramatically changed the face of cargo shipping in the Caribbean with 3 major logistics hubs established – Bahamas, Jamaica and Miami being critical to US trade and direct routes to Europe predicated on agriculture exports;

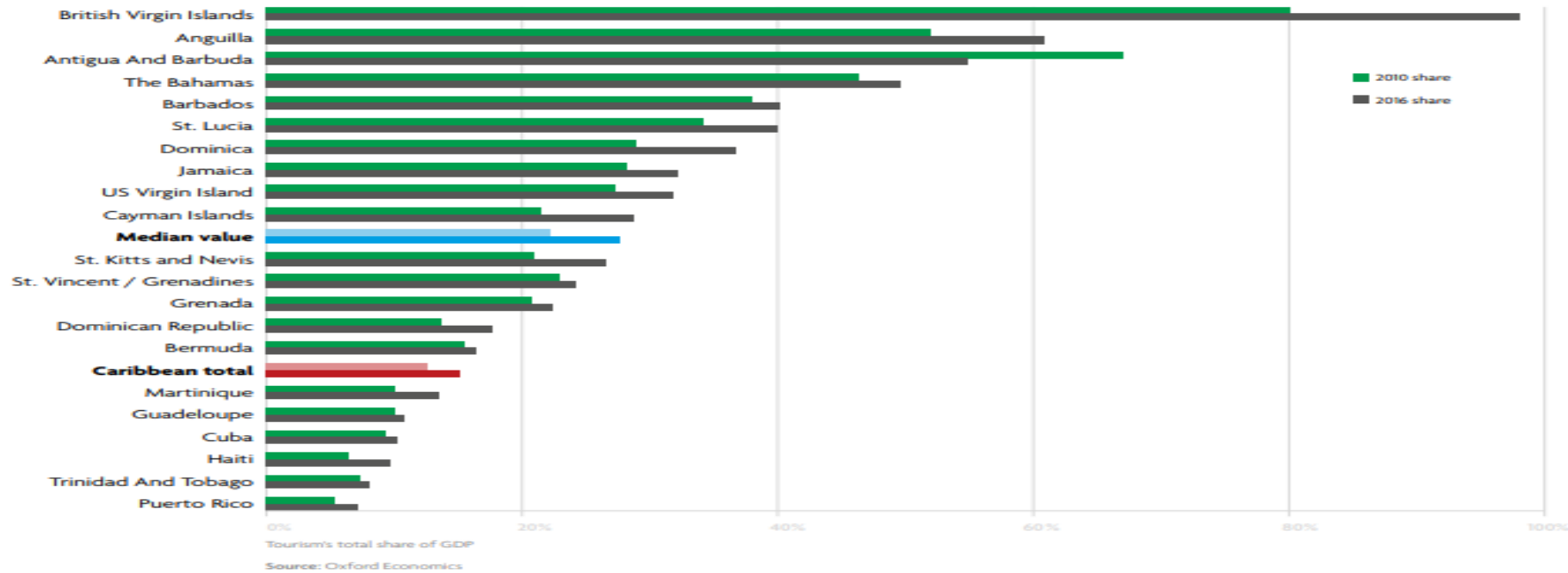
Cruise tourism has burgeoned in the region over the past two decades by 2012 the Caribbean accounted for 50% of global cruise traffic;

Simultaneous growth in containerisation and cruise tourism has resulted in competition for berth space in many Caribbean ports and the need for investment to expand the capital stock – Antigua and Barbuda, Bahamas, Barbados, Jamaica and Saint Lucia have/in the process of major investments;

Many regional ports have been challenged in meeting post 9/11 international security and related obligations – hence increasing the cost of investments.



### Tourism's total contribution to GDP in the Caribbean



Travel & Tourism contributes 15.2% of the Caribbean's GDP and 13.8% of employment

In half of the countries analyzed, the sector accounts for over 25% of GDP – more than double the world average of 10.4%

In the British Virgin Islands (BVI), the sector contributes 98.5% of GDP – the highest share of any country worldwide.



## Key Caribbean tourism indicators

Dollar figures in billions

**46.7 MN**

TOTAL INTERNATIONAL  
VISITOR ARRIVALS (2016)

**196.1 MN**

TOTAL INTERNATIONAL  
VISITOR NIGHTS (2016)

**\$31.4**

TOTAL INTERNATIONAL  
VISITOR SPENDING (2016)

**\$56.4**

TOTAL TRAVEL AND TOURISM-  
GENERATED GDP (2016)

**2.4 MN**

TOTAL TRAVEL & TOURISM  
GENERATED JOBS (2016)

**13.8%**

TOURISM'S SHARE OF  
TOTAL EMPLOYMENT (2017)

**15.2%**

TOURISM'S SHARE OF  
TOTAL GDP (2017)



# Sea Ports in the OECS

**Caribbean sea ports segregated into three categories:**

**global hub ports** (Freeport, Bahamas; Kingston, Jamaica)

**sub-regional hub ports** (Port-of-Spain and Pt. Lisas, Trinidad)

**service ports**

All OECS (main) ports fall into the latter category [service ports]

**several smaller ports** including marinas and terminals serving – *major economic and ancillary activities:*

- yachts
- small fishing vessels
- ferries



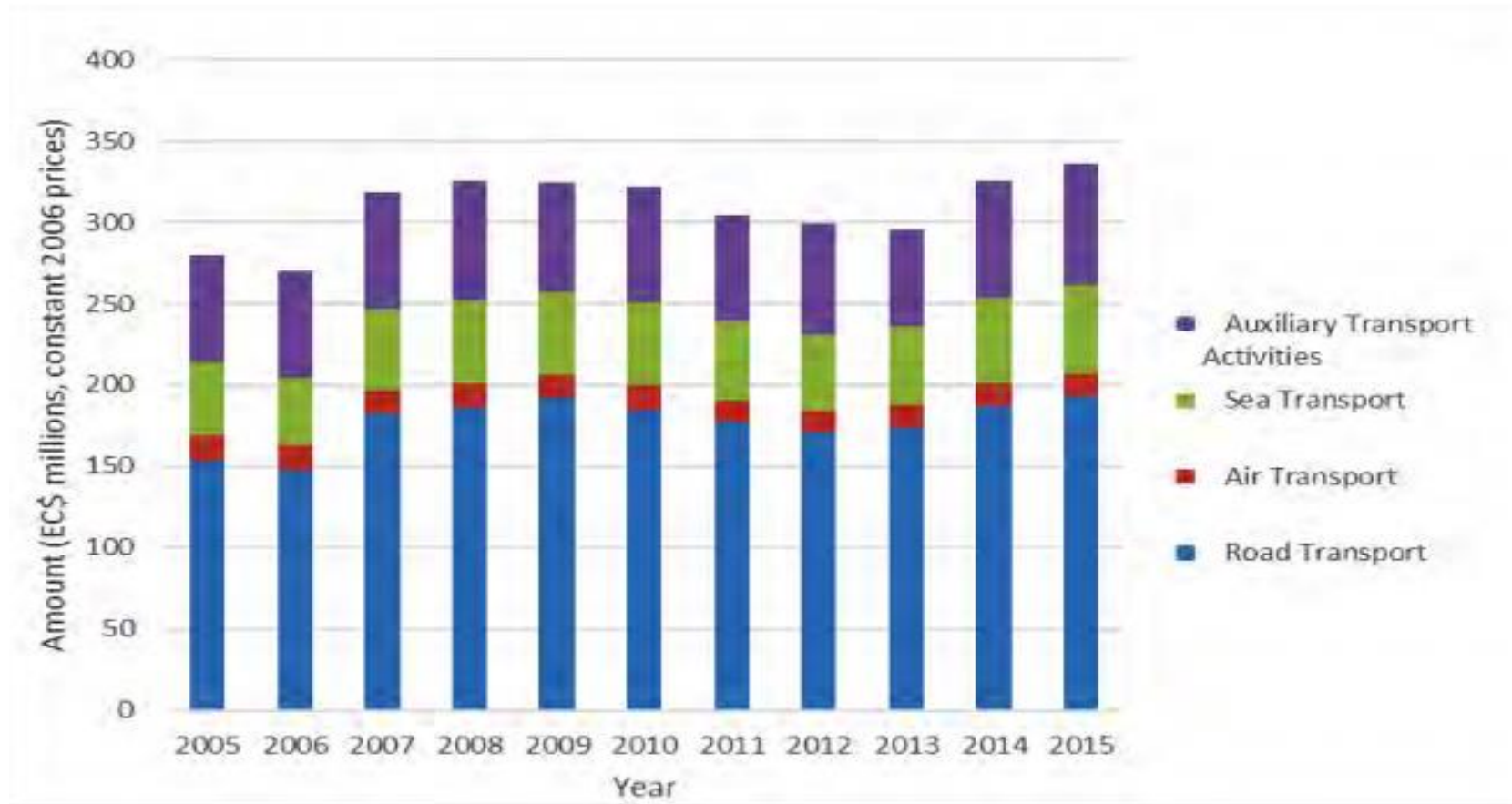
# Air & Sea Ports in the OECS

MEMBER STATE	AIRPORTS	SEAPORTS
Anguilla	1	1
Antigua & Barbuda	3	1
British Virgin Islands	4	2
Commonwealth of Dominica	2	2
Grenada	3	1
Guadeloupe	3	2
Martinique*	1	3
Montserrat	1	2
St. Kitts and Nevis	2	2
Saint Lucia	2	4
Saint Maarten (N)	1	1
Saint Vincent and the Grenadines	6	5
<b>TOTAL</b>	<b>29</b>	<b>26</b>





# Transport: Air, Sea and Road Contribution to GDP(Example: Saint Lucia)



# Caribbean SIDS and Natural Hazards

The Caribbean has high exposure to natural hazards. These hazards include volcanic eruptions, earthquakes, floods, landslides and hurricanes;

In recent decades, hurricanes have been the most frequently-recorded natural hazards;

While there is still uncertainty about changes in the overall frequency of extreme weather events due to climate change, projections point to higher frequency of Category-5 hurricanes.



# Caribbean SIDS & Climate Change

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.:

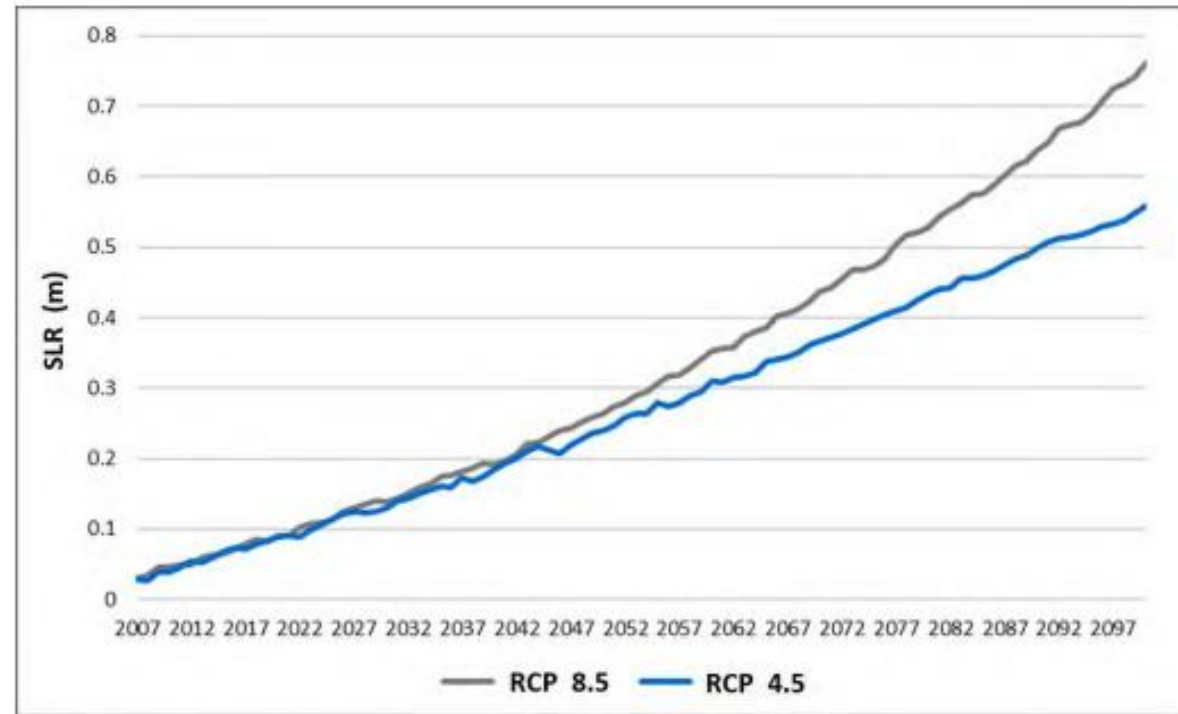
- *Tropical regions including small islands are expected to experience the largest increases in coastal flooding frequency, with the frequency of extreme water-level events in small islands projected to double by 2050*
- ***...an eventual 1 m SLR\* could partially or fully inundate 29% of 900 coastal 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 (Monioudi et al., 2018).*



# Summary of Main Threats Posed to OECS Ports Infrastructure by Climate Change

- Higher storms intensity (wind, precipitation)
- Sea Level Rise
- Coastal inundation
- Coastal erosion
- Elevated Temperatures
- Drought



Sea Level Rise Projections for Saint Lucia  
Chart Source: UNCTAD 2018



# Risk and Exposure

In the OECS all sea ports at risk by virtue of location

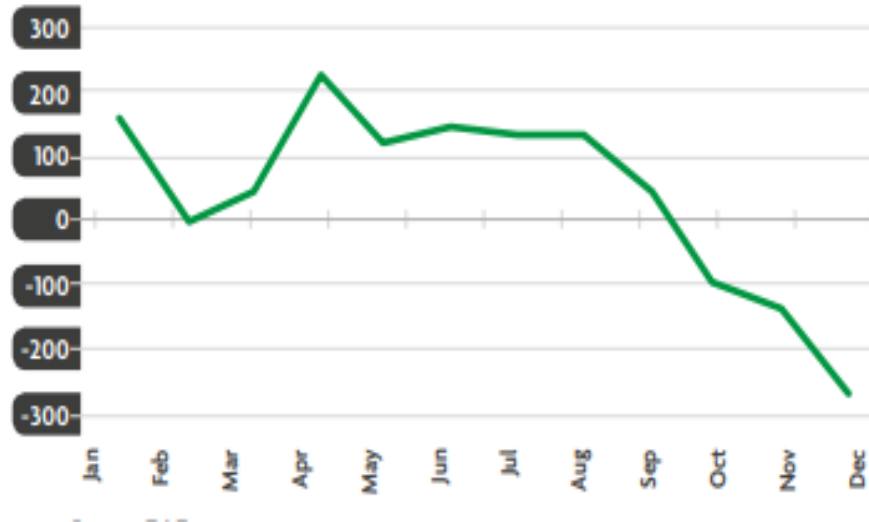
Several airports at risk due to location near the sea and/or in flood-prone locations, *e.g.*:

Hewanorra and GFL Charles, Saint Lucia  
Douglas-Charles, Dominica



# The Hurricane Season of 2017

Year to date change in visitor arrivals (000's)



***826,00 international overnight visitors lost***

***A loss of USD 741 million (spend) which would have supported 11,000 jobs***

***Long-term damage to supplier relations***

***Increase risk premium in insurance and re-insurance markets***

***Infrastructure damage and loss***

***Public and private sector debt distress***



# Building Climate Resilience in Trade Infrastructure in the OECS and the Wider Caribbean

There is a 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.**

There is also a critical need to expand the application of the methodology in the region.

Increase stakeholders engagement from the private sector and public sector is required to identify threats and opportunities and in formulating solutions related to port infrastructure development

There is a need for more collaborative and harmonised approaches to, among others: environmental and economic assessments, network/redundancy planning, disaster and emergency planning, maritime legislation;

Increased focus on multimodal transport systems (aviation, maritime roads, corridors)

Climate change necessitates a shift towards an integrated/network macro-approach if overall resilience is to be strengthened.



# THANK YOU!

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