

**Global Supply Chain Forum  
(Bridgetown, Barbados, 21–24 May 2024)**

**Parallel Session 9**

**Climate change adaptation, resilience-  
building and disaster risk reduction for  
ports**

23 May 2024

**Climate change adaptation, resilience-  
building and disaster risk reduction for  
ports: the perspective of CDEMA**

Presentation by

**Elizabeth Riley**  
Executive Director  
Caribbean Disaster Emergency Management Agency



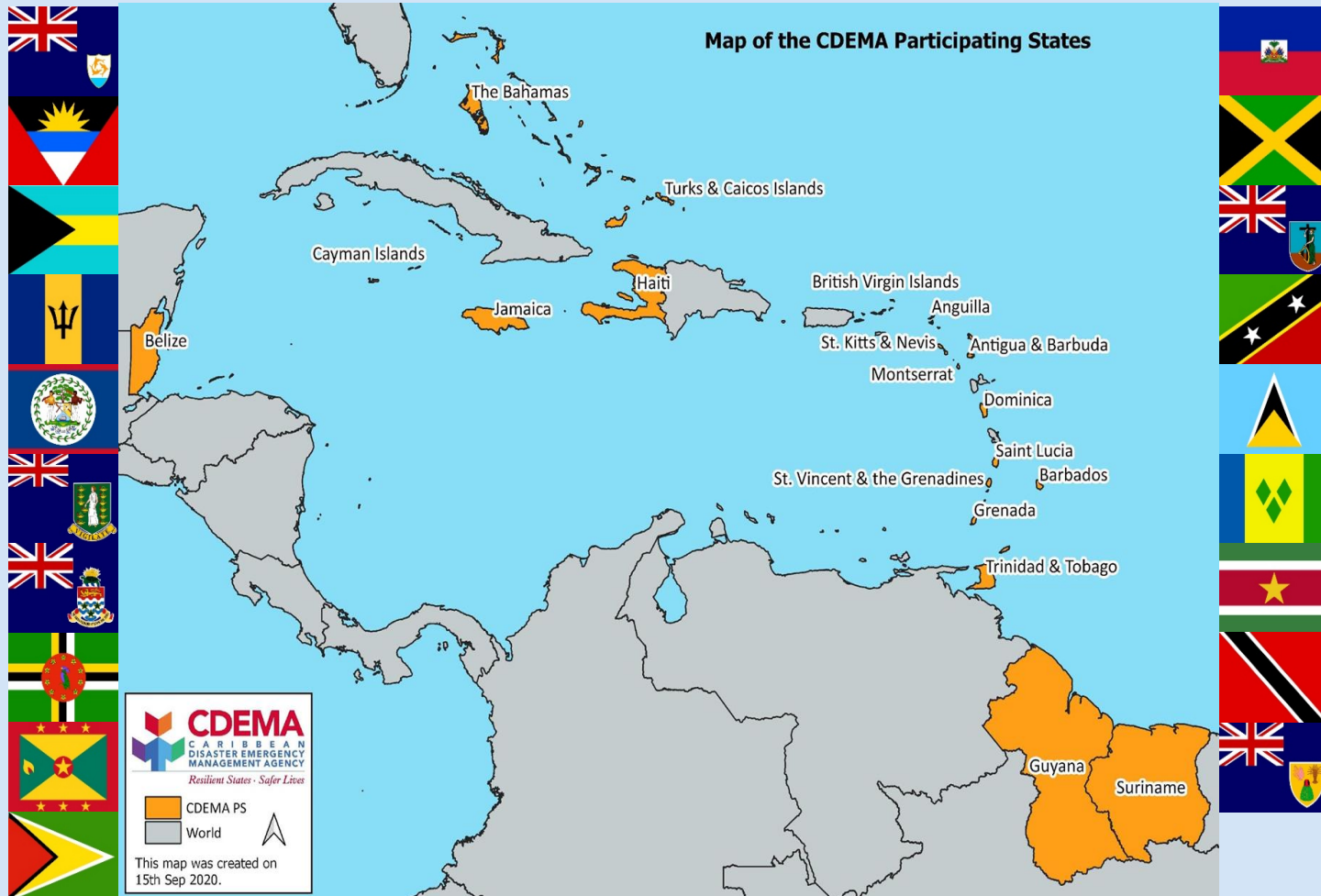
# Global Supply Chain Forum

Barbados

21-24 May 2024



# CDEMA Participating States and Mandate



**Mobilizing and coordinating disaster relief**

**Mitigating consequences of disasters**

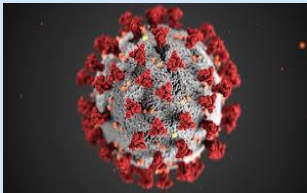
**Providing comprehensive information on disasters**

**Encouraging disaster loss reduction and cooperative arrangements and mechanisms**

**Establishment enhancement and maintenance of adequate emergency disaster response capabilities among the Participating States**



# Complex multi-hazard environment

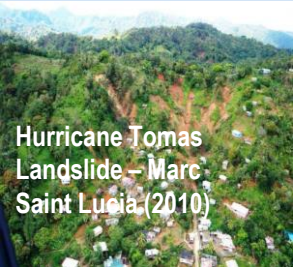


Guyana Floods 2021



Volcanic eruption in Montserrat 1995

...



Hurricane Tomas Landslide – Marc Saint Lucia (2010)



Oil Spill Trinidad, 2013



Earthquake Haiti, 2010



La Soufriere Volcanic eruption lahars, 2021



La Soufriere Volcanic eruption, 2021



# The State of the Caribbean Climate – 2020 Report



All climate parameters are changing

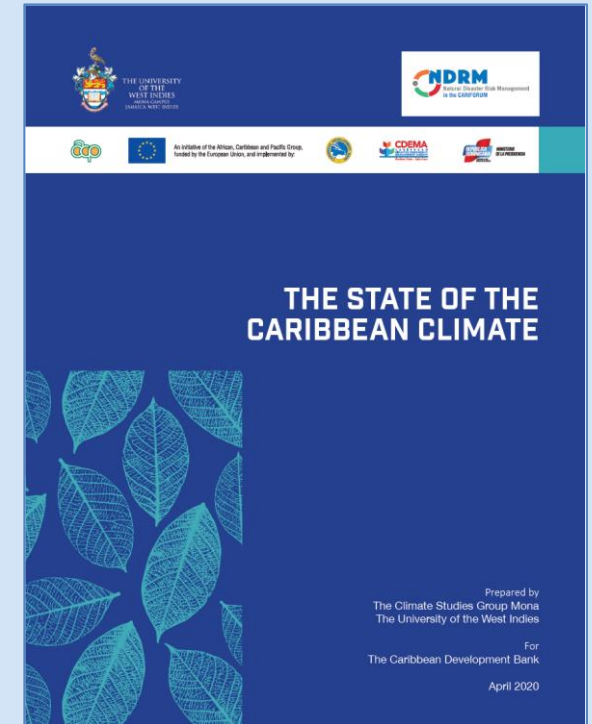
SLR to reach or exceed 1m by end of Century

Air and Sea Surface Temperatures trending upwards. Region may be up to 17% drier by end of century

Anticipated 80% increase in the frequency of Category 4 & 5 Atlantic Hurricanes over the next 80 years



Water shortage/ drought at Potworks Dam in Antigua (2015)



<https://www.caribank.org/publications-and-resources/resource-library/publications/state-caribbean-climate>





# Global Supply Chain Forum Barbados 21-24 May 2024

loop Environment 2 min read

## Caribbean heatwave: Near-record heat expected until October

Loop News | May 9, 2024 09:26 AM ET

loop Environment 2 min read

## CariCOF says Caribbean to face climate extremes in 2024

CMC | April 2, 2024 10:53 AM ET



Caribbean Drought & Precipitation Monitoring Network (CDPMN)

### CARIBBEAN DROUGHT BULLETIN

January 2024 | Volume X | ISSUE 8

**Announcement**

With below normal to normal rainfall being most likely during the first quarter of 2024, significant enough concerns exist about short term drought by the end of March 2024 that can impact streams, small rivers and ponds in southern French Guiana, northern Suriname, Grenada, western Puerto Rico and northern and western Belize. It is recommended that the remainder of the region monitor their water resources for short term drought particularly the southern portion of the eastern Caribbean chain, the western Caribbean from Hispaniola to Cuba, northern Bahamas and southwestern Belize. Though there is uncertainty in the rainfall amounts during the second quarter of the year at this time, interests in southern French Guiana, western Puerto Rico and Belize should be concerned about long term drought by the end of May 2024 that can impact large rivers and reservoirs and groundwater. The islands and Suriname should monitor their water resources for long term drought.

**Month at a Glance**

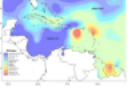


Normal to below normal conditions were seen throughout most of the islands of the eastern Caribbean during the month of November. Trinidad, Tobago, Grenada, Barbados, St Vincent and Saint Lucia normal. Martinique mostly slightly dry to normal. Dominica mostly normal to slightly dry. Guadeloupe moderate to exceptionally dry; Antigua extremely dry; St Kitts slight to moderately dry; St Maarten and Anguilla moderately dry; St Croix and St Thomas normal to slightly wet. In the Guianas, conditions ranged from exceptionally dry in northern Suriname to very wet on the northern coastline of French Guiana and to moderately wet in southwestern Guyana. Aruba was very wet and Curacao moderate to slightly wet. Puerto Rico ranged from exceptionally dry in the south to very wet in the extreme northwest. Hispaniola was predominantly wetter than usual, ranging from normal in northeastern areas to exceptionally wet in eastern areas. [Read More](#)

**Latest News**

Impact of America's climate-driven drought may last until 2026. [Read More](#)

**September-October-November**

Normal to below normal conditions were mostly seen over the three month period throughout the eastern Caribbean. Trinidad slight to severely dry; Tobago extremely dry; Grenada predominantly moderate to severely dry on the western coastline; Barbados, St Maarten and Anguilla moderately dry; St Vincent and Antigua predominantly moderate to slightly dry; Saint Lucia slightly dry; Dominica and Guadeloupe normal to moderately wet; St Kitts slightly wet to normal and Antigua, St Croix and St Thomas normal. In the Guianas, conditions ranged from slightly wet in southwestern Guyana to exceptionally dry from southern areas of French Guiana to central Suriname. Aruba was slightly wet to predominantly normal and Curacao normal. Puerto Rico was exceptionally dry in the south ranging to slightly wet in the extreme northwest. Hispaniola was mostly normal ranging from moderately dry in the extreme southwest of Haiti and to very wet in the extreme east of the Dominican Republic. Jamaica and Grand Cayman ranged from slightly wet to mostly normal. Cuba ranged from exceptionally wet in the west to severely dry in the east. Northern Bahamas ranged from moderately wet to normal and Belize ranged from extremely wet in the south to normal in the north.

SEP 2023 - NOV 2023  
SPI 3 MONTHS

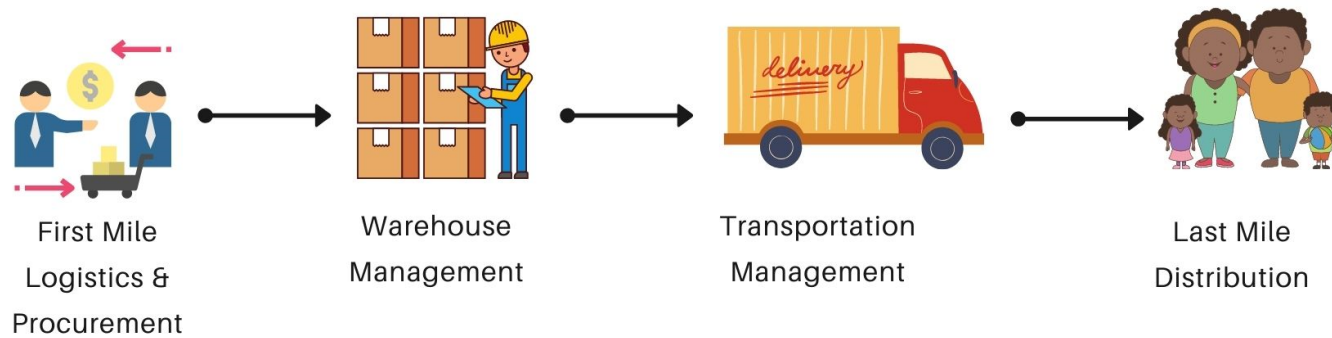
OCT 2023 - NOV 2023  
SPI 2 MONTHS

DEC 2023 - NOV 2024  
SPI 12 MONTHS





## EMERGENCY LOGISTICS SUPPLY CHAIN



# Dominica: Hurricane Maria (Source PDNA Report 2017)

## Woodbridge Bay

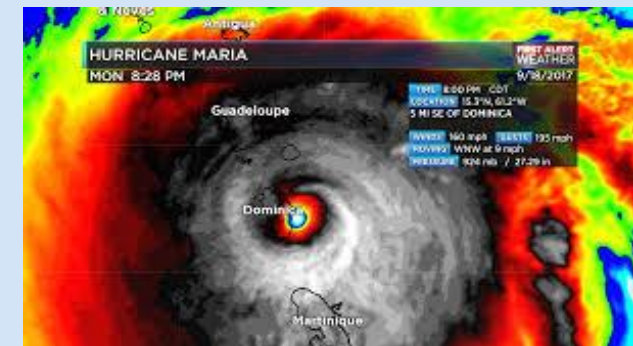
1. All sheds lost roofs and damaged
2. Security fencing compromised
3. Maintenance shed destroyed & Electrical equipment and electronics damaged

**Ferry Terminal** – Severely damaged by heavy seas and river flooding; 3-4 ft layer of debris

**Roseau Cruise Ship Berth** - inoperable

## Shipping Sector Losses:

1. Loss of traffic, including due to infrastructure damage
2. Government moratorium on charges for non-commercial activity – 75% revenue loss since post port shipments related to relief and rebuild efforts



Cruise Ships: No income – no infrastructure to receive them



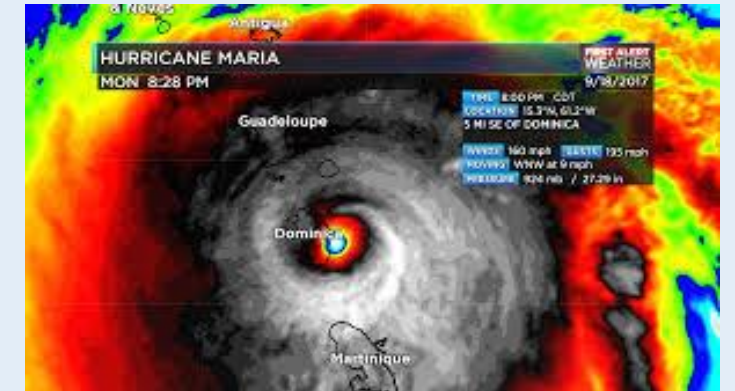


# Global Supply Chain Forum

**Barbados** 21-24 May 2024

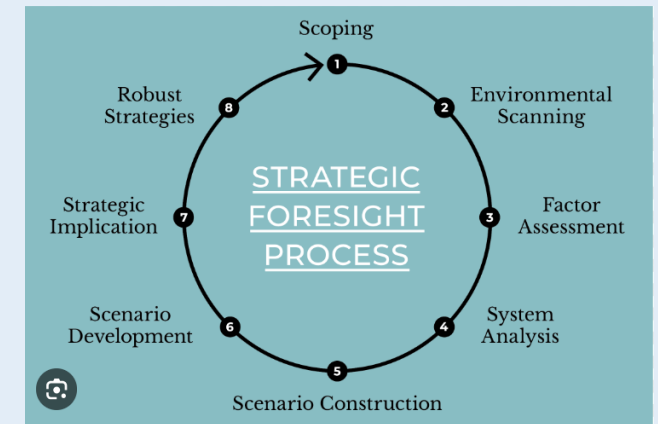


	PUBLIC	
	US\$ M	EC\$ M
<b>DAMAGES</b>	<b>18.89</b>	<b>51.00</b>
Cargo Port Woodbridge Bay	3.70	10.00
Longhouse Portsmouth	2.96	8.00
Roseau Ferry Terminal	3.89	10.50
Roseau Cruise Ship Berth	1.85	5.00
Cabrits Cruise Ship Terminal	3.33	9.00
Douglas Charles Airport	1.85	5.00
Canefield Airport	1.30	3.50
<b>LOSSES</b>	<b>3.26</b>	<b>8.79</b>
Loss of Revenue (6 months) (Depending on GoCD policy)	3.26	8.79





Global Supply Chain **Forum**  
**Barbados** 21-24 May 2024



Source: Foresight Intelligence





Global Supply Chain  
Forum

# Thank you!

