



Global Supply Chain
Forum
Barbados
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CLIMATE CHANGE ADAPTATION, RESILIENCE - BUILDING AND DRR FOR PORTS

23
MAY



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Areas to cover
RISKS COSTS ACTIONABLE ISSUES

PORTS ARE THE LIFELINE FOR COUNTRIES

ACT NOW OR PAY LATER
The Costs of Climate Inaction for Ports and Shipping - EDF

NATURAL HAZARDS DAMAGE TO:

Economic Cost growth can causes years of lost for SIDS
Trade and shipping delays due to the drought in the Panama canal

PORT RISKS IS A FUNCTION OF HAZARDS

- Climatic hazards (emissions and changing factors)
- Exposure (of assets and people)
- Vulnerability (capacity to respond - finance, government, technical measures)

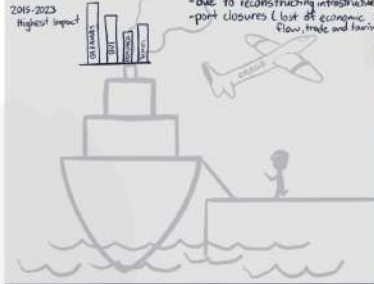
ASSESS AND ADDRESS

- innovative technical measures
- early planning (data collection)
- collaborative actions
- capacity building
- affordability
- assess (risk and vulnerability)
- effective policies

SIDS IN THE CARIBBEAN

- extremely vulnerable for natural hazards (flooding, droughts, seismic events, tropical cyclones, volcanic events)
- dependent on trade
- Airports, Seaports
- important to maintaining connection to the Global Supply Chain
- cruise shipping (passengers/tourist)

Damage to our ports and Coastal roads by natural disasters cause disruptions with trade and economic impact, - due to reconstructing infrastructure - port closures (lost of economic flow, trade and tourism)



PORT CONSTRUCTION CHALLENGES

Sea level ↑ 1 metre est

- raise ground level
- reinforce breakwaters

Typhoon intensity ↑ due to water warmth

- port downtime
- reinforce breakwaters

Port of Tokyo +32k ships one of largest

Jakarta Ports (below sea level) Have to spend % of income on adaptation measures

ADAPTATION TO LAND SUBSIDENCE

Raise section by section of wharfs
Move to a floating port

BARRIERS

- Piles
- if adaptation costs increase, they'll raise tariffs
 - government will have to pay
 - drainage difficulties may arise
 - moving to a floating port may be better
 - difficulty accessing ships for fishermen
 - anything above 2m for the pile is too expensive

Port Downtime

High winds cause ports to shut down

Bigger ports to help bounce back/compensate costs

NATURAL DISASTERS LEAD TO INFRASTRUCTURE DAMAGE AND ECONOMIC GROWTH DISRUPTIONS

250 Ports in the Caribbean

MARITIME SECTOR

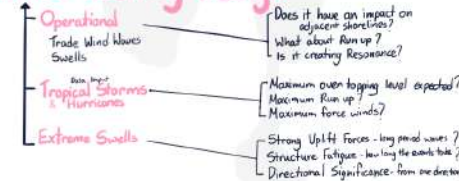
Creates jobs
Reduces poverty
growth transitions



HIGH WAVES CAUSE SIGNIFICANT DAMAGE TO INFRASTRUCTURE

WINTER SWELLS SHOULD BE ADDED TO FUTURE PREPARATION PLANS
3.9 m waves
consistently

Future Facility Design



MARINE POLLUTION ECONOMIC IMPACT in the Caribbean

Sargassum seaweed

- can cause port to shut down
- for cruises, the optics aren't good
- cruise liners don't like sitting ships into dirty ports