

5th United Nations Ocean Forum

Climate-resilient ports
for sustainable trade,
tourism and disaster
response and recovery

3 March 2025
4.30–5.15 p.m.



UNITED NATIONS CONFERENCE ON TRADE AND DEVELOPMENT

*5th UN Oceans Forum on Trade related aspects of SDG 14
Side event “Climate-resilient ports for sustainable trade,
tourism and disaster response and recovery”*

Climate adaptation, resilience-building and DRR for ports – key challenges and areas for accelerated action

3 March 2025

➤ Seaports: critical for global trade & development but at risk of climate change

Over **80% of volume** of world trade carried by sea (port-port)

- **Ports:** key nodes in the network of closely interlinked international supply chains - **gateways to global markets and the blue economy** – lifelines for SIDS
- **Critical in the context of disaster response and recovery**



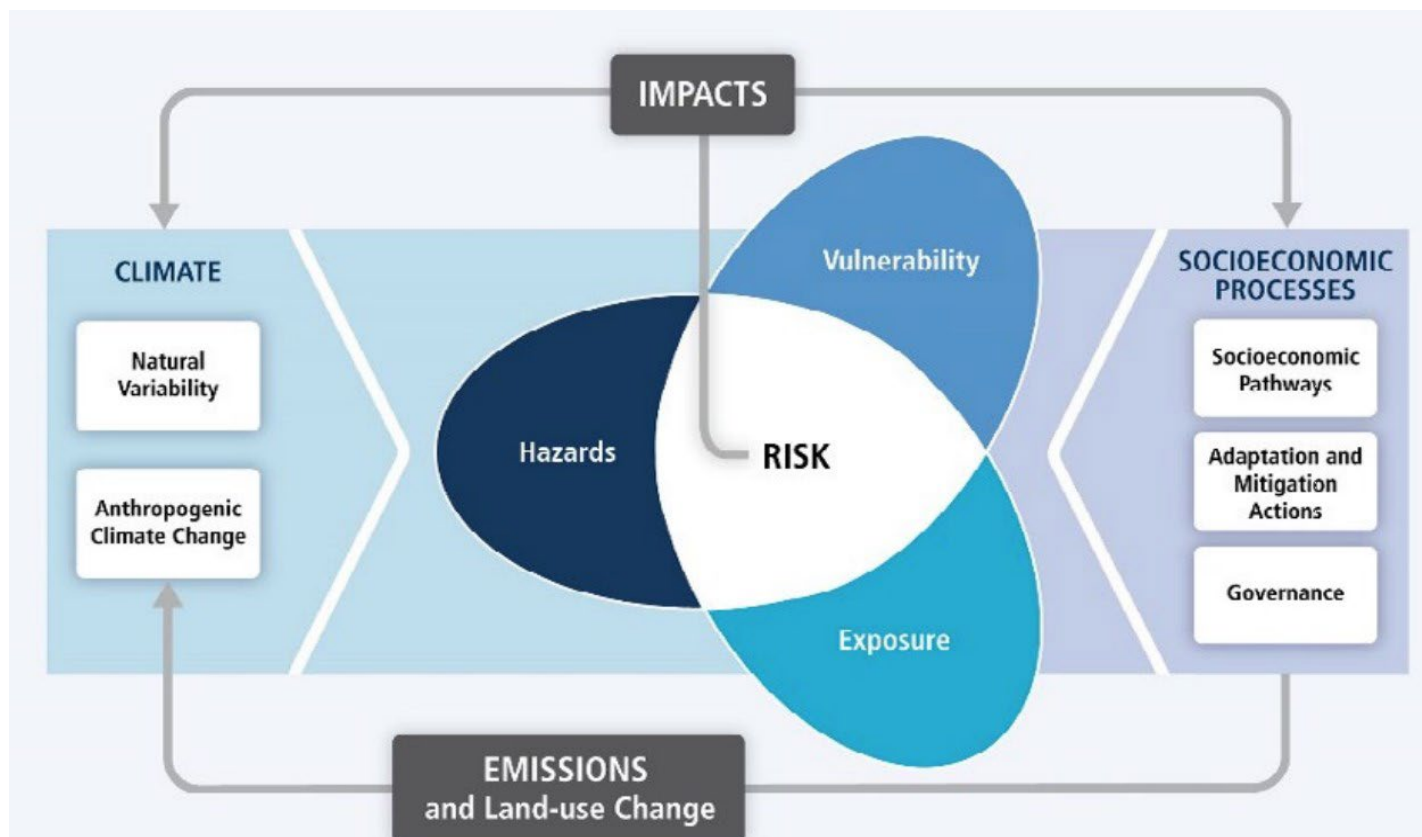
Climate hazards and weather extremes change will:

- affect port infrastructure and operations; hinterland transport; and the broader global supply-chain significant potential for damage, disruption and delay – extensive economic/trade related losses
- exacerbate transport-related challenges for SIDS and other vulnerable coastal economies; increase energy needs/costs
- pose a major threat to sustainable trade & development, particularly for the most vulnerable populations (see related UNCTAD work)

Climate change adaptation/resilience building for ports is of strategic economic importance – especially in the light of growing risks, cost of inaction and infrastructure lifespans



Port infrastructure risk of climate change impacts



IPCC, 2014

Port risk is a function of:

Hazard - changing climatic factors, dependent on climate scenario/emissions

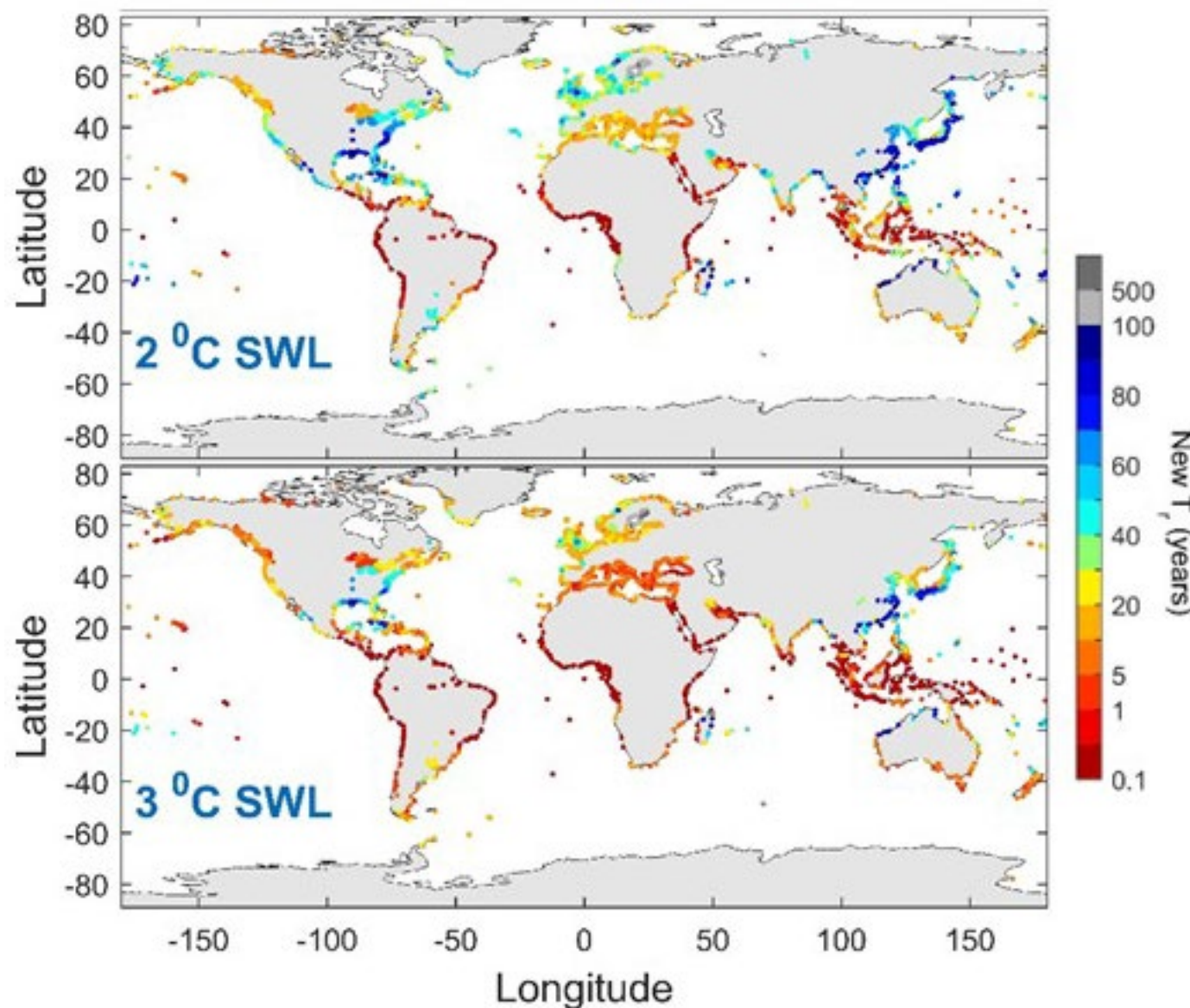
Exposure of infrastructure /operations to hazards

Vulnerability – depends on capacity to respond to factors that make infrastructure prone to damages/losses from hazards, e.g. availability of technologies and materials; human and financial resources; policy, legislation and management

Note: The IPCC risk definition differs from that of the Insurance Industry which defines risk as a function of the probability of the damaging event(s) and the magnitude of damages/losses: low probability events incurring large losses are high risks



Hazard projections for global ports under CV & C: Extreme sea level (ESL)



All global ports affected, with effects worsening with increasing SWL

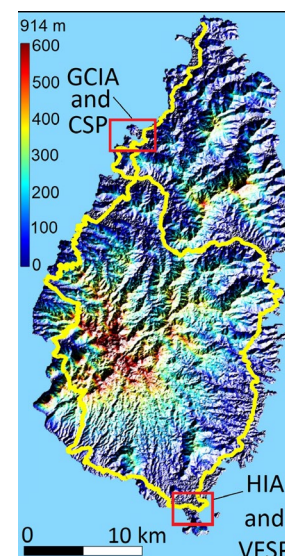
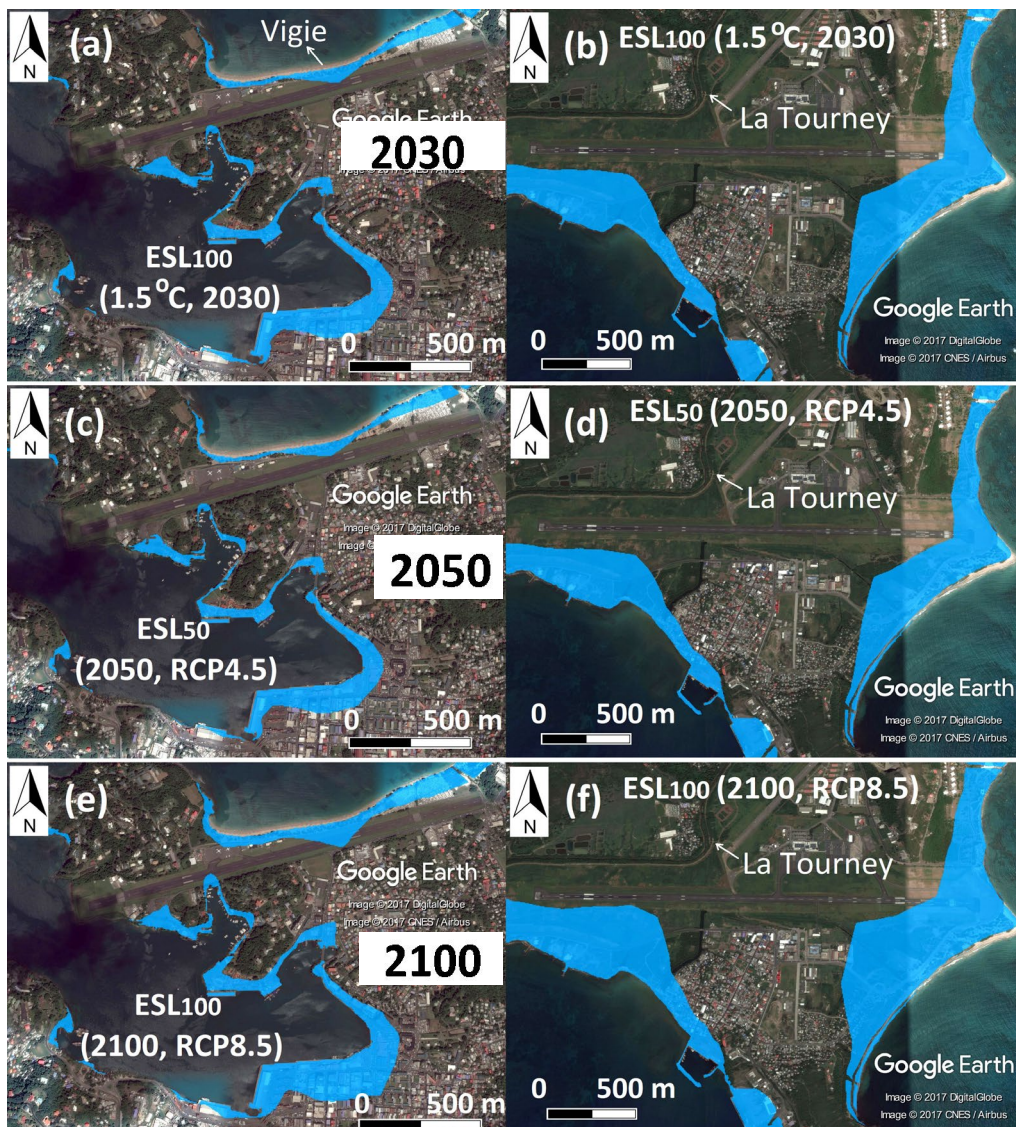
- Under a **2 °C SWL (2050s)**, the return period of the **baseline 1-in-100 years ESL** will occur every **1-10 years** in many S. American, African, Gulf, SE Asian and Pacific ports
- Under a **3 °C SWL (2100?)**, many global ports will experience the **baseline 1-in-100 years ESL**, **several times per year**

Projected changes in the return period of the baseline (mean of 1986-2014) 1-in-100 years ESL under CV & C for about 3700 global ports. Key: SWL (Specific Warming Level) in °C above pre-industrial times. T_r (years) return period. Seaport location from [World Port Index 2019](#). $ESLs_{100}$ projections for the global coastline from [EC-JRC data collection](#) (see also [Vousdoukas et al. \(2018\)](#)). See [UNCTAD \(2021\)](#)



Exposure - Coastal flooding projections under CV & C:

SIDSport-ClimateAdapt.unctad.org – 8 Ports and Airports in Jamaica and Saint Lucia



Exposure needs to be understood to adapt effectively

Requires risk assessment at local / facility level

All international transport assets (seaports/airports) of Saint Lucia are at high risk, under all scenarios, and from as early as 2030s

Marine flood maps: (a, c, e) George Charles Int. Airport; Castries seaport; (b, d, f) Hewanorra Int. Airport; Vieux Fort seaport for the: 1-in-100 year extreme sea level event, ESL100 (1.5C SWL, 2030); 1-in-50 year extreme sea level event, ESL50 (2050, RCP4.5); ESL100 (2100, RCP8.5) (Monioudi et al, 2018, Reg Env Change; IPCC 2018; IPCC SROCC 2019)



Climate resilience, adaptation and DRR for ports

Key to achievement of policy commitments/objectives/goals/targets

- **2030 Agenda** (SDG 1.5, 9, 13 [14]); **SFDRR** 2015-2030; and **EW4All** initiative
- **Beijing Statement** (para. 19h) – Outcome of 2nd UN Global Sustainable Transport Conference (2021)
- **2015 Paris Agreement**, Art. 7 (**Global Goal on Adaptation**) – note importance of **metrics/indicators**; Art. 8 (Averting, minimizing, addressing loss and damage)
- **Sharm-El-Sheikh Adaptation Agenda** (2022) includes Global 2030 Adaptation Outcome Target with focus on climate-resilient transport infrastructure
- **UAE Framework for Global Climate Resilience** (2023) targets:
 - (a) **Impact, vulnerability and risk assessment:** by 2030 all Parties have conducted **up-to-date assessments of climate hazards, impacts and exposure to risks and vulnerabilities**; by 2027 all Parties have established **multi-hazard early warning systems, climate information services for risk reduction and systematic observation** to support improved climate-related data, information and services;
 - (b) **Planning:** by 2030 all Parties have in place country-driven ... **national adaptation plans, policy instruments**, and planning processes and/or strategies ..., and have **mainstreamed adaptation in all relevant strategies and plans**;
 - (c) **Implementation:** by 2030 all Parties have **progressed in implementing their national adaptation plans, policies and strategies and, as a result, have reduced the social and economic impacts of the key climate hazards identified in the assessments** ...
 - (d) **Monitoring, evaluation and learning:** by 2030 all Parties have designed, established and operationalized a system for **monitoring, evaluation and learning for their national adaptation efforts** and have built the required institutional **capacity** to fully implement the system



Action needed to adapt and build resilience

Accelerate action to ensure that by 2030 critical transport infrastructure is climate resilient to 2050 (*cf. MPGCA Milestones Transport*)

High-quality risk assessments based on the best available science/data to **develop effective adaptation measures, prioritize resources** and **avoid maladaptation**

- **Well designed & innovative technical solutions; improved data** collection/availability; **early planning; systems thinking**; integrate **ecosystem approaches**
- **Mainstream** CC considerations in port infrastructure planning/operations
- **Human capacity building and affordable finance/technology transfer urgently needed** - particularly for ports in developing countries ([UNCTAD, 2022](#))
- Development and implement of strong **policy and legal frameworks** (see [UNCTAD, 2020](#)); as well as **standards** (eg [ISO 14090](#); [ISO 14091](#)), technical **guidance** (eg [PIANC 2020](#); [2022](#); [EC, 2021](#)), **methodological tools** (e.g [UNCTAD, 2018](#); [UNECE, 2024](#))
 - Compliance with [EC technical guidance on climate-proofing of infrastructure](#) (Art. 5 [EU Climate Law](#)) already required for new EU infrastructure & EU infrastructure funding
- Integrate considerations into **NAPs & NDCs**, Development, DRR, COVID-recovery policies / planning

Thank you

