



15TH WORLD CONFERENCE CITIES AND PORTS " CROSSOVERS "

ROTTERDAM

5-7 OCTOBER 2016



The Green Port project, a broad plan to fight climate change in Port Louis (Mauritius)

Paper presented during the visit and workshop 5 "Climate resilience"

Date: **Thursday 6 October 2016**

Mr. Ramalingum Maistry has assumed the office of Chairperson of the Mauritius Ports Authority with effect from 27 February 2015. Mr. Maistry has an enriching experience in both the private and public sectors. After having been the Mayor of the Municipality of Beau Bassin/Rose-Hill, he presided over the Boards of the Tourism Fund under the aegis of the Ministry of Tourism & External Communications and Discover Mauritius, a State-Owned company respectively.

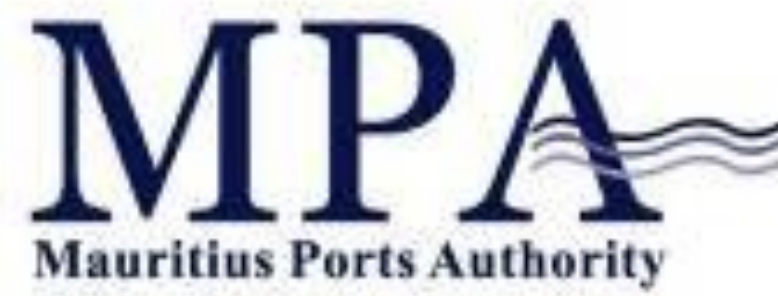
Mr. Maistry has also served as Senior Adviser to the actual Deputy Prime Minister, Minister of Tourism & External Communications when the latter occupied subsequently the portfolios of the Ministry of Social Integration and Economic Empowerment and the Ministry of Finance and Economic Development.

Mr. Maistry is presently the Vice Chairperson of the Indian Ocean Observatory of Ports & Cities and has recently been elected as the first Vice President of the Ports Association of Indian Ocean Islands.

He is also the President of the "Parti Mauricien Social Démocrate", which is a partner in the present Government.



Ramalingum Maistry
Chairman, Mauritius Ports Authority,
Port Louis, Mauritius



Mauritius Ports Authority

15th World Conference: Cities and Ports "Cross Overs"

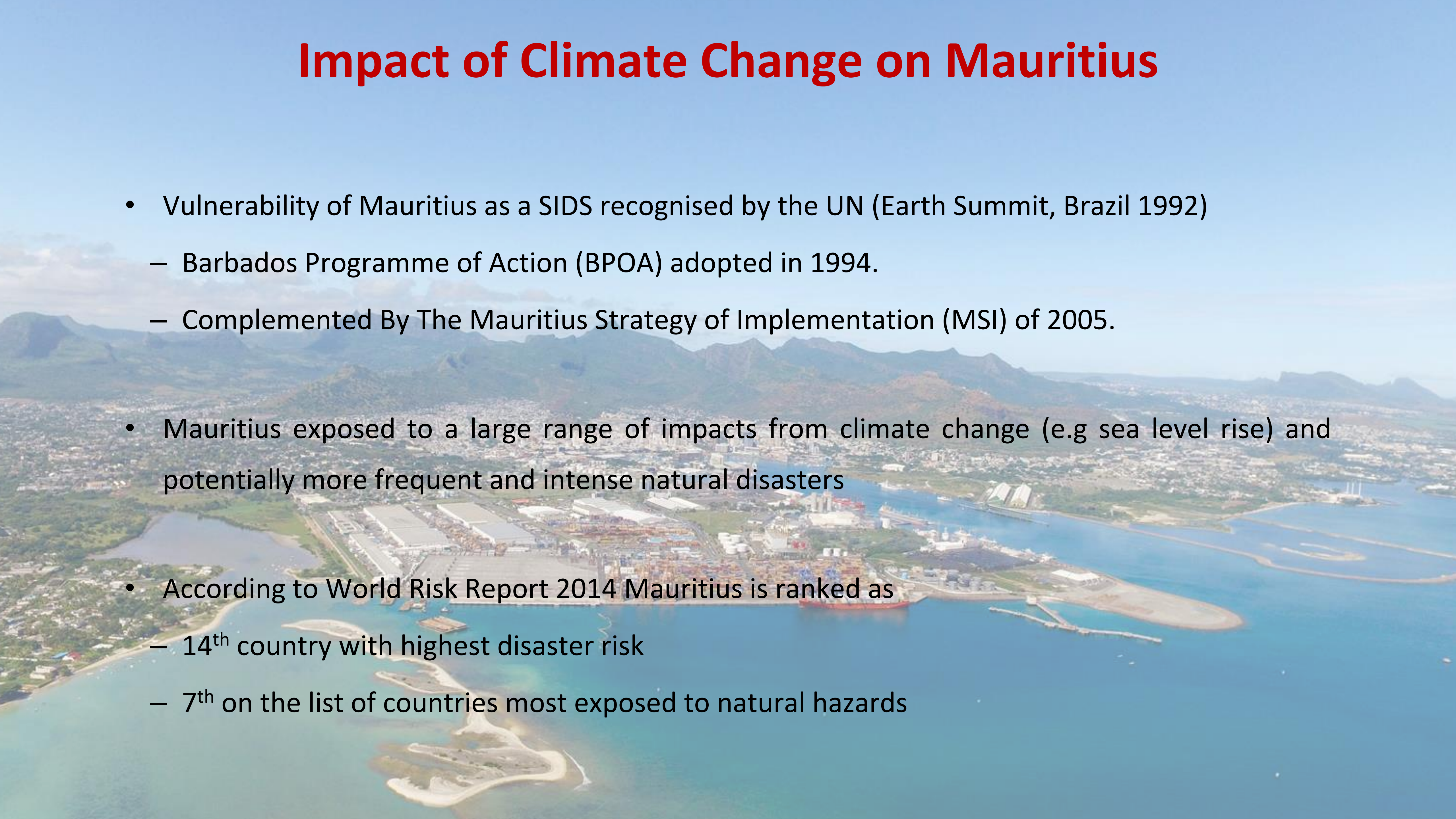
Climate Change Challenges, Mitigation and Adaptation Measures at Port Louis

**Presentation By Mr. Ramalingum Maistry
Chairman
Mauritius Ports Authority**

**Rotterdam
5-7 October, 2016**

Impact of Climate Change on Mauritius

- Vulnerability of Mauritius as a SIDS recognised by the UN (Earth Summit, Brazil 1992)
 - Barbados Programme of Action (BPOA) adopted in 1994.
 - Complemented By The Mauritius Strategy of Implementation (MSI) of 2005.
- Mauritius exposed to a large range of impacts from climate change (e.g sea level rise) and potentially more frequent and intense natural disasters
- According to World Risk Report 2014 Mauritius is ranked as
 - 14th country with highest disaster risk
 - 7th on the list of countries most exposed to natural hazards



Impact of Climate Change on Mauritius

International Panel on Climate Change (IPCC) Report 2007

- **Temperature**
 - Average temperature rise: 0.74 C – 1.1oC (1961-1990 mean)
 - Projected to rise by 2 C by 2061 - 2070
- **Sea Level Rise**
 - Sea level rise of 1.5 mm/yr at Port Louis (1950 – 2001)
 - Mean sea level rise of 2.1 mm/yr (1987 – 2007)
 - Projected to reach 1.0 m for southern oceans.
 - Latest figures from the University of Hawaii indicate a mean sea level rise of 5.6 mm/yr

Sea Level Rise at Port Louis Harbour



Climate Change Mitigation & Adaptation measures at Port Louis Harbour

Vulnerability of Port Louis

Port Louis Harbour is exposed to a combination of risks:

- Sea level rise
- High swells
- Strong wind gusts
- Storm surge
- Rapid intensification of cyclones
- Flooding

Estimated losses due to bad weather at National Level

2013 - Stoppage of port operations for 21 days – losses amount to Rs 3.9 billion

2014 – Stoppage of operations for 10 days – losses amount to Rs 1.9 billion

(Source: MPA/MEXA)

Flooding at Mauritius Container Terminal



Source: Mauritius Ports Authority

Climate Change Mitigation & Adaptation measure at Port Louis Harbour

Mitigation and Adaptation Strategy

Mauritius contributes to about 0.015 % of global GHG emissions (2010). Though insignificant the country has adopted a mixed mitigation / adaptation strategy.

Mitigation of GHG emissions at Port Louis

- Green Port Project initiated
- Environmental Management System to ISO 14001 Standards Implemented
- Resource conservation and sustainable waste management options adopted
- Port Environment Charter - signed by all port stakeholders

Climate Change Mitigation Strategies at Port Louis Harbour

Mitigation of GHG emissions at Port Louis (contd)

- A study on energy efficiency and the potential of renewable energy funded by the European Union was carried out by Montgomery Watson Harza (MWH) in 2013.
- The objective of the study was to carry out an energy audit and to identify a broad range of measures in Strategic Energy Management to make the harbour more energy efficient, environmentally friendly and also to reduce our carbon footprints.
- Energy conservation measures were identified and the potential to use renewable energy was also assessed.
- Photo Voltaic (PV) technology identified as the most viable renewable energy option that may be considered in the port

Climate Change Mitigation Strategies at Port Louis

Mitigation Actions Taken:

- Pilot PV Project implemented
- Replacement of about 1600 light bulbs with energy efficient (LED) ones is ongoing
- Deep Ocean Water Application Project - Air-Conditioning Scheme for the City of Port Louis (Expected saving of 40, 000 tonnes of CO2 per year) – Promoter Sotravic Ltd - with funding under Sustainable Energy Fund for Africa



Climate Change Adaptation measures at Port Louis Harbour

Adaptation measures

- Preliminary Technical Study and Design of an Island Terminal and Breakwater Structure at Port Louis Harbour
- Flood wall erected at Mauritius Container Terminal



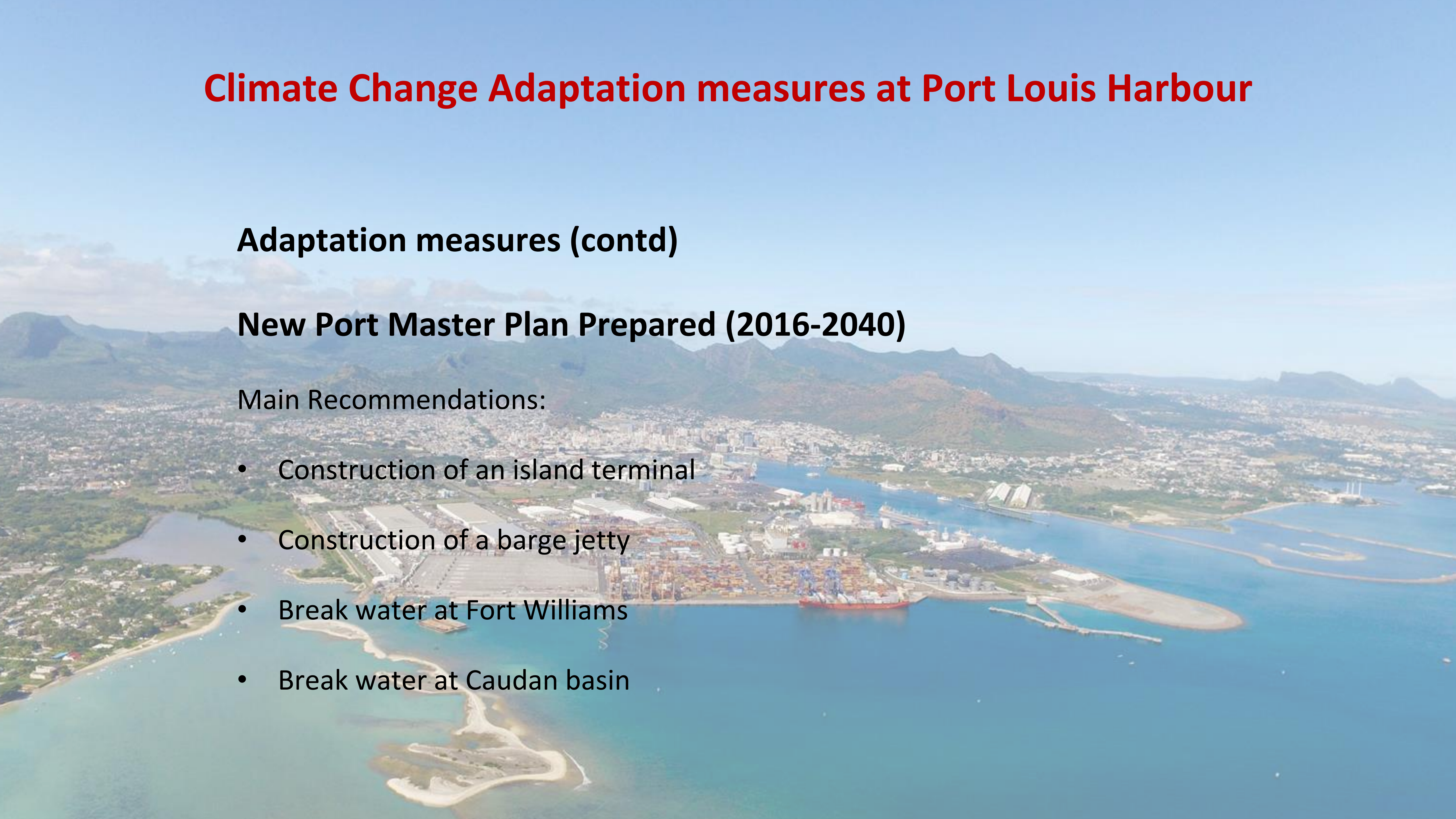
Climate Change Adaptation measures at Port Louis Harbour

Adaptation measures (contd)

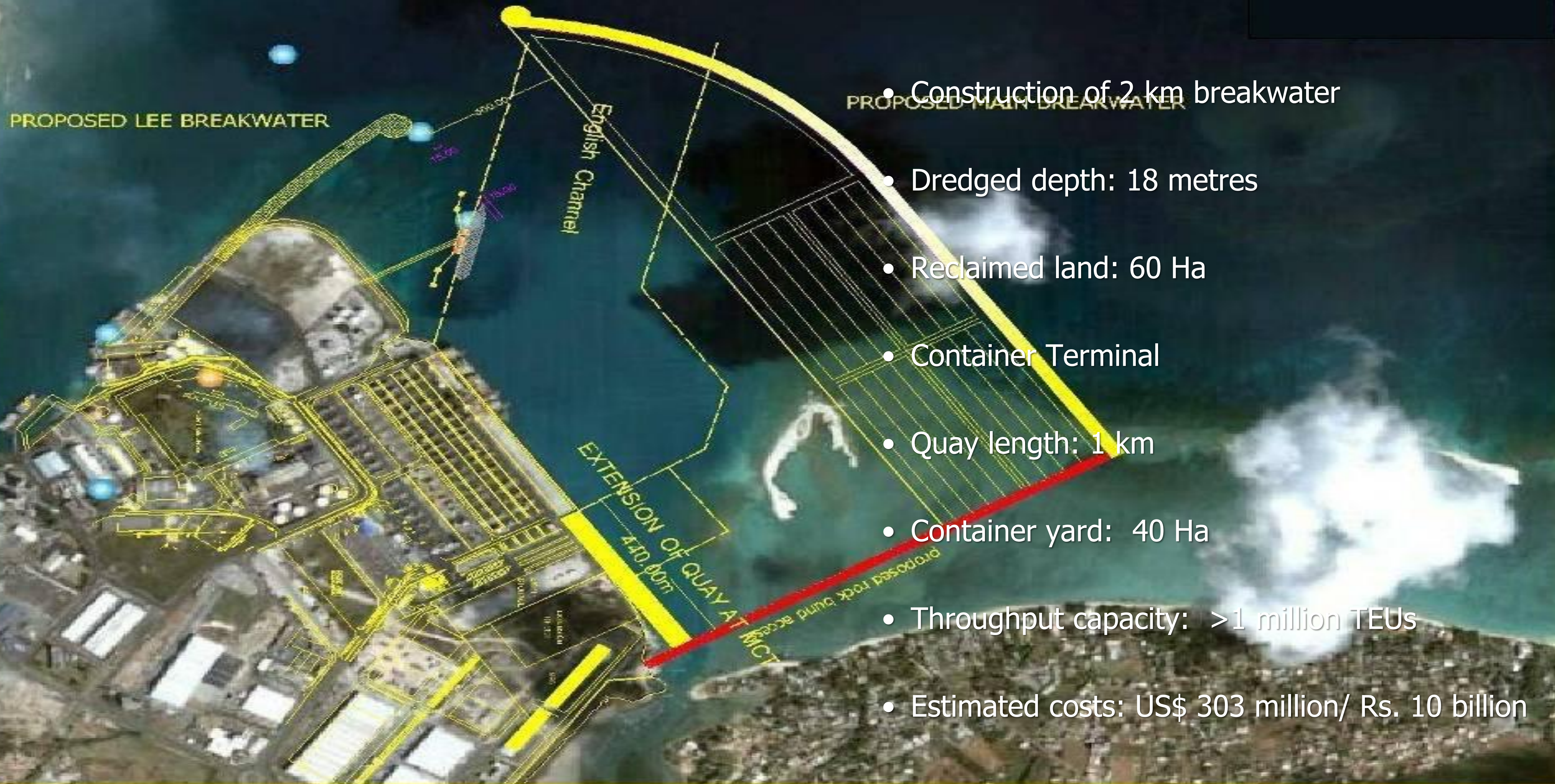
New Port Master Plan Prepared (2016-2040)

Main Recommendations:

- Construction of an island terminal
- Construction of a barge jetty
- Break water at Fort Williams
- Break water at Caudan basin



Breakwater and Container Terminal – Long Term



- Construction of 2 km breakwater
- Dredged depth: 18 metres
- Reclaimed land: 60 Ha
- Container Terminal
- Quay length: 1 km
- Container yard: 40 Ha
- Throughput capacity: >1 million TEUs
- Estimated costs: US\$ 303 million/ Rs. 10 billion

Climate Change Adaptation measures at Port Louis

Adaptation measures (contd)

- A “**Climate Change Vulnerability and Adaptation Study for the Port of Port Louis**” is underway with the technical assistance of the Climate Technology Centre & Network (CTCN)

Main Components of the Study:

- Review existing national plans and strategies directly or indirectly related to the port sector in the context of climate change.
- undertake a location-specific climate risk assessment for the Port of Port Louis, both land-based and sea-based,
- Formulate an action plan for the implementation of adaptation options
- Identify capacity building needs of engineers, marine personnel and other cadres of the port sector.
- Recommend appropriate construction standards, codes, specifications and climate-resilient legislations for the port infrastructure and develop adaptation guidelines to assist the port authorities.

Climate Change Mitigation & Adaptation measures at Port Louis

Adaptation measures (contd)

Expected Outcome of study:

- Enhancing the resilience of our port infrastructure
- Ensuring that climate changes are incorporated in future design specifications.
- Mitigating the impact of climate change through proper planning.
- Enable more targeted investment in technology and equipment that will adapt to future climate changes
- Identifying areas where upgrading of infrastructure including port facilities, storage areas and navigation systems are required.
- Ensuring that emergency preparedness and response plans include specific risks related to climate change and related to port operations.



Thank You