

The Causes of Sea Level Rise in the Caribbean Region

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The causes of Sea Level Rise in the Caribbean region are discussed with particular reference to Trinidad and Tobago. Short-term causes of sea level change include: Seasonal sea level changes (for semi-enclosed water bodies with flow restrictions), Rapid land level changes and Ocean temperature variations. Long term Changes in Sea Level can be caused by Tectonic instability, Isostasy and Sediment compaction such as that occurs due to Hydrocarbon Withdrawal.

The possibility of sea level rise can have serious implications to Coastal Zone management in an island state such as Trinidad and Tobago. Possible impacts are increased Coastal Erosion, inundation of Mangrove Communities and other important ecosystems, loss of livelihood and increased flooding during storms.

There are several options available to combating the impacts of Sea Level Rise in Trinidad including: Coastal Protection Works, Ecosystem Based Adaptation Projects and Coastal Retreat. In many areas, coastal management (mismanagement) practices have the greatest influence on erosion, and sea level changes are a secondary effect.

Recommendations as to the strategies that Trinidad and Tobago's Engineers can apply to address these concerns are given.

BIO



Frank Sean Teelucksingh is a Director and Physical Oceanographer at a Marine Environmental Company called Coastal Dynamics Limited.

Studied Marine Biology at the University of Miami (BSc) and obtained his MSc. in Physical Oceanography from University of Southampton in the UK.

Conducted primary research on wave along the North Coast of Trinidad and designed oceanographic data collection programmes while at the Institute of Marine Affairs in Chaguaramas where he assisted in setting up the Physical Oceanographic Department.

His present duties include:

- Conducting Environmental Assessments of coastal and offshore projects such as offshore exploration drilling and port and harbour development.
- Conducting environmental studies of waves, currents, tides, pollution, sediment movement and climate around Trinidad and Tobago.
- Conducting modelling exercises of various oceanographic processes such as waves, currents, sediment transport and oil spill transport.
- Deploying offshore instruments such as Acoustic Current meters, CTDS and wave gauges.