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## Climate Change and its Implications on Water Resources Management in Port Harcourt, Nigeria

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### ABSTRACT

*The study area (Port Harcourt) in the Niger Delta region is vulnerable to global and regional climate change particularly that associated with sea level change. Thus, sea-level rise and repeated ocean surges will not only worsen the problems of coastal erosion that are already a menace in the Niger Delta, but would accelerate the associated inundation, increase problems of floods, intrusion of sea-water into freshwater sources and ecosystems and destroying such stabilizing system as mangrove, and affecting agriculture, fisheries and general livelihoods. The study area has not been monitored for sufficiently long periods as to provide useful data to support detailed coastal modeling. This is a task that must be emphasized and taken seriously by relevant governmental institutions as it would facilitate sustainable coastal zone management. This paper therefore identified the threats of inundation and erosion arising from sea level rise on the basis of existing tidal limits and indicative shore zone morphological susceptibility as some of the problems that would be aggravated by scenarios of sea level rise. The need for monitoring the changing coastline using satellite remote sensing data and aerial surveys in conjunction with ground surveys at local scale for accurate data on the susceptibility of the region to human and natural changes cannot be overstated. There is an urgent need for a more systematic integration of high resolution topographic and bathymetric datasets with tidal and storm surge extreme water levels.*

**Key words:** Climate change, sea-level rise, coastal erosion, water resources management.

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