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Modelling the climatic variability in the Niger Delta region: Influence of climate change on hydrology

Agumagu Obroma

University of Sussex, UK

Climate unpredictability and change in climatic parameters (temperature, precipitation and sea level rise etc) have direct influence on environment and human existence. A negative change in the climate always has corresponding dysfunctional effects on the ecosystem especially in the fragile coastal region. The effects of extreme climate change include amongst others exposure of the lowlands to higher risk of flooding, which leads to reduction in freshwater availability; poor agricultural yields and human and animal deaths. The climate change is contributing to global human vulnerability to extreme weather events as well as environmental hazards leading to extreme poverty and hunger as experienced particularly in Africa with low or no adaptive capacity. The capability to forestall the effects of such changes on hydrologic systems, thus on accessibility of water resources, is very significant with regards to approaches for climate change adaptation in the Niger Delta. In this respect, it is essential to grasp a better understanding of the hydrology of River Niger basins so as to underline vulnerability issues as a result of extreme flood events in the Niger Delta region in order to plan for possible mitigation and adaptation at large. This poster discusses the potentials of hydrological models from European Union project (EU WATCH) as well as climate models from Intergovernmental Panel on Climate Change (IPCC) (Ar4 and Ar5) to determine the climatic variability in the Niger Delta region as a result of River Niger discharge from (1970-2080). Policy intervention is pertinent in responding to climate change adaptation and would require the use of accurate climate data and reliable information for planning against future climate risk. The rationale behind this work is the need to understand in clear terms the climate change threats on the Niger Delta region; this will form a practical basis for developing adaptation strategies to manage future climate risks.

O.Agumagu@sussex.ac.uk