

# VULNERABILITY AND ADAPTATIONS OF NIGERIA'S NIGER DELTA COAST SETTLEMENTS TO SEA LEVEL RISE

By

**SURVEYOR CHIMA O. OGBA**

## KEY WORDS

Vulnerability

Adaptations

Sea Level Rise

Inundation

Resilience Building

## INTRODUCTION

- The Study Area is the Niger Delta Area of Nigeria
- Major Economic Activities are Farming, Fishing and Presence of Oil Activities in Places like Bonny Island, Port Harcourt and Warri.
- The Economic Activities are Vulnerable to Sea Level Rise Effects such as Salinization of Farmlands.
- Economic Activities can be Truncated and Infrastructure Destroyed as a Result of Sea Level Rise Caused by Climate Change

## METHODS OF GATHERING DATA

- Official Map Coverage of the Sea is Poor, most Maps are without Contours and Incomplete Topo Maps
- Most Discussions were Based on Descriptive Analysis Using Maps Adopted from Existing Surveys

## FORMS OF VULNERABILITY

BIOPHYSICAL

SOCIO- ECONOMIC

**BIOPHYSICAL:** This increase, the chances of coastal flooding, storm damage, erosion of shore lines and contamination of water supply

## RESULTS:-

- Changes the position of the Coastline and Drown Natural as well as Human Habitants and Structures
- As a Result of Low Slope and its Flatness than other Areas in Nigeria, the Inundation along the Niger Delta Coast could extend about 100Km up the Delta which could lead to flooding by allowing Storm Waves to act further Inland
- Salt Water will intrude further with great potential to contaminate surface fresh water and ground Water aquifers

- The Niger Delta consists of the wetlands that are Spawning Grounds for Commercial Shrimps and Oysters, and Bait Fish for large Tuna Fishing Industry. Inundation, Submergence and Drowning of this Coastline will significantly affect these activities and may lead to the further Northward Migration of these grounds.
- The Typologies of Vegetation within Niger Delta is considered to be very productive and rich in Biodiversity. Several large Mammals such as the Chimpanzee, Elephant and Hippopotamus have been reduced to small and highly vulnerable populations in some Areas.
- Inundation of these Areas as provided by Sea Level Projections could cause these Endangered Species to be more Vulnerable to Extinction.

## SOCIO ECONOMIC

- The Niger Delta Coastal System is subject to much stress due to Demographic Pressure and this will be Increasingly affected by Sea Level Rise
- Because of Inundation, Oil activities will be Concentrated within 2 Zones. Onshore fields will be forced to become Offshore fields.
- Because of the Sea Level Rise Economic Activities will move away from Area of high risk to other Areas.

## OPTIONS FOR RESPONDING TO SEA LEVEL RISE IN THE NIGER DELTA

- Adoption of the Integrated Coastal Zone Management System which incorporates multiple approaches.
- Vulnerability can be reduced through strong and effective formal and informal Institutions, Robust Governance System, Efficient Early Warning System, Diversity in Resources Use and Livelihood Strategies.
- Adaptation through Resilience Building and Vulnerability Reduction is Highly Recommended for Nigeria as it involves the Niger Delta Coast. This should however be pursued through participatory approach in which all the Stakeholders are Involved.

## CONCLUSION

1. The potential impact of sea level rise on the coastal settlement of the Niger Delta could create alteration of the composition of the biophysical and socio-economic systems. The multiplier effects would be quite monumental and this calls for steps at protecting this fragile coastal system and enhancing capacity building.
2. The ability of the coastal system to adapt to the changes in sea level will depend largely on their management. It will also be dependent on the extent to which coastal protection will inhibit their migration and the nature of biophysical and socio-economic resilience and vulnerability of the communities as determined by the socio-economic status.
3. In reality, though human response to change in sea level rise will vary, the adoption of a particular strategy will depend on the socio-economic disposition of the society. In many cases, one response strategy is not likely to be in isolation, with a mixture of responses depending on the economic, social, and ecological consideration. However, enhancing socio-economic and ecological resilience will play a key role in minimizing the vulnerability of coastal communities in the Niger Delta.
4. There is therefore the need to first of all carry out biophysical and socio-economic vulnerability mapping to determine the extent to which land and livelihoods could be affected. Assessment of adaptation strategies relevant to the region needs to be made. Physical mapping of the area is imperative, given the fact that presently, most topographic maps of the region are without contours. Such mapping will give an idea of the probable areas of inundation, as the elevations in the region will be determined.

*Thank you for listening*