

Climate extreme and flood occurrence in coastal environment of Nigeria

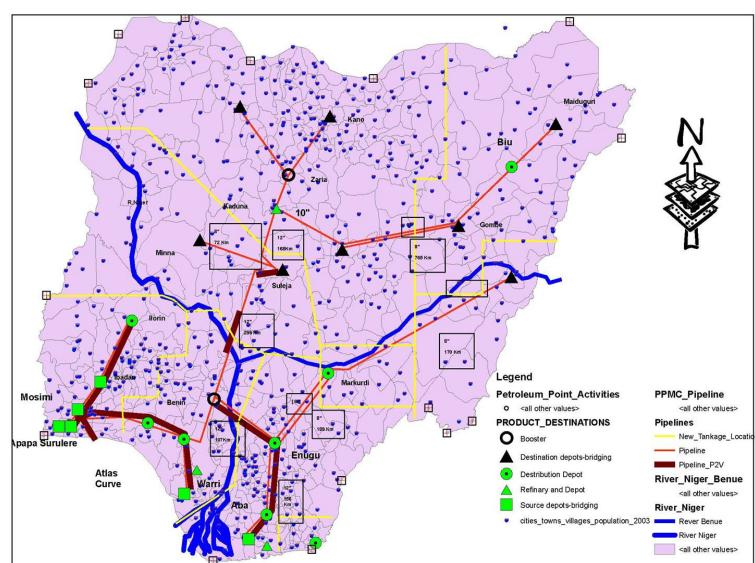
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by

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Map of Nigeria showing petroleum point activities and product destinations (Source: National Oil Spill Detection and Response Agency, Nigeria)



Introduction

- This presentation is centred strictly on desk top research
- Climate change represents an immediate and unprecedented threat to coastal Nigeria through frequent flooding occurrences
- This coastal zone serves as a hub for different socio-cultural activities
- Food security of millions of Nigerians also depends on such economic activities
- This complex and dynamic relationship between climate change , flooding and food security is also influenced by wider factors

Niger delta: Population

- Urban population density will rise to 500 people per square kilometres by 2025 (Awosika and Folorunsho, 2005)
- In developing countries like Nigeria, those at particular risk from effects of climate change are concentrated in urban areas (Moser and Satterthwaite, 2010)
- Accelerated industrial development and the search for livelihood sources have lead to huge stresses on the coastal resources

Major challenges

The coastal Niger delta zone is jeopardized by three predominant events:

- Acute utilization of living resources
- Contamination land based resources
- Devastation and modification of the marine environment

Sea-level rise and coastal erosion

- The delta region is also confronted with the menace of sea-level rise
- Alteration of the mean tidal range from 1.3m at River Benin to 2.0m at River Imo (Ibe, 1996)
- Compounds the adverse effects of coastal erosion and flooding
- Coastal erosion is the most acute problem in the Niger delta region

Impact of sea-level rise on the habitat

- About 18,120 to 18,396 square kilometres of the Nigerian coastal region is projected to be at risk by 21st century (Awosika and Folorunsho, 2005)
- Approximately 3,180,000 urban inhabitants could be endangered
- Salt water infiltration of fresh underground water will lead to salinity effects (Uyigue and Ogbeibu, 2004)

- Salt water infiltration is also modifying precipitation and ocean behaviour
- High salinity will affect the ecological aspects of aquatic wildlife
- Breeding sites for fish will be hugely destroyed
- Food supply from the agriculture sector will be affected

Socio-economic implications of flooding in the coastal Niger delta

- Climate change has increased coastal storms and allowed for continued sea-level rise
- Climate change has also increased advancement of adverse effects due to flooding incidence
- Flooding is linked to poor agriculture output as the fertile soil in the top layer is washed away
- Flooding incidence is also linked to water-borne diseases as the underground water used for domestic consumption becomes contaminated
- It destroys infrastructure like road networks and railway systems
- Roads become impassable and necessary fundamental amenities become inaccessible

Photo of flood in Benin city

(Source: Uyigue and Ogbeibu, 2004)



The reality

The catastrophic potential of climate change and its associated impacts puts people's assets, future prosperity and quality of life at stake (Moser and Satterthwaite, 2010)

- Food insecurity
- Poverty
- Increased morbidity to and mortality from disease challenges

Conclusion

- Although an assessment of findings in coastal Nigeria is presented, a concrete set of recommendations for future proceedings falls outside the scope of the mandate for this research
- However, vulnerability in the region is realized to have manifested not as a result of natural occurrences such as sea-level rise, floods or soil erosion or social occurrences such as gas flaring and oil spills, but as a result of activities linked with development that have yet to consider the probable outcome of such events (Villagran de Leon, 2006)