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## MITIGATION AND RESPONSE MEASURES TO FLOOD DISASTER IN KHANA LOCAL GOVERNMENT AREA OF RIVERS STATE, NIGERIA

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## ABSTRACT

This study examines flood hazard effects in Khana Local Government Area of Rivers State, Nigeria. Both Primary and Secondary data were used. The study adopted the research survey method that used social area analysis to investigate flood hazard effects, people's perception, frequency, magnitude and socio-economic characteristics of dwellers of flood-proned areas. The sample size of the study was obtained from the application of Taro Yamene's formula on the population of the LGA projected to 2019 which gives 400. These 400 copies of the structured questionnaire were designed and distributed to the respondents. Out of this, 350 copies of the structured questionnaire were duly analyzed. From the analysis, different people lived in the flood-proned areas eg. farmers, traders, transporters, civil servants, business men, company staff and students. It also revealed that flood hazard mitigation and response measures adopted in the area include raised pavement, wooden foot bridge, raised elevations and sand filling of their premises found to be grossly inadequate; based on their socio-economic status, perception, flood frequency and cultural background. Globally, recent developments have also shown that flood disaster increases with rapid population, up springing residential buildings and other infrastructural facilities that depend on the natural environment. Hence, immediate attention and efforts are needed because it puts the human race and the environment into great risks and untold hardships as the problems persisted. Thus, the study recommends among others; the reclamation of floodable areas for agro-based industries in Khana L.G.A, re-design and implement Bori urban Master plan according to specification, enactment of environmental byelaws with monitoring team, reactivate and strengthen the monthly environmental sanitation exercise in the area, provision of adequate basic amenities, dualization of all internal roads with good drainages in Bori Town, aggressive youth empowerment/poverty alleviation programmes

and capacity-building strategy for adequate security networks in Khana LGA and Nigeria at large.

**KEYWORDS:** Flood-Hazards, Disaster, Mitigation Measures, Bori Town, Khana LGA.

## REFERENCES

- 1. Oku HB, Wichendu S, Poronakie NB. Adjustment Strategies to flood hazards in Port Harcourt, Nigeria. Nigerian Journal of Agriculture, Flood and Environment, 2011;7(4):1-4.
- **2.** Aper JA, Hundu WT. The use of GIS and Remote Sensing to Determine Morphomtric Characteristics of the Katsina-Ala Watershed in North-Central Nigeria. Journal of Geography and Development, 2018;8(1):923-934.
- **3.** Smith K, Tobin GA. Human Adjustment to the Flood hazard. Topics in Applied Geography. Longman. 1979.
- 4. Umeuduji JE. An Introduction to the Science of Land forms. Jodigs and Associates. 2001.
- **5.** Udosen CE. Gully erosion in Ikpa River Basin: A Threshold Phenomenon. Lagos Time communications, 2008. pp. 10-212.
- **6.** Gregory KJ, Walling DE. Drianage Basin Form and Processes: A Geomorphological Approach. Fletcher and sons Ltd. 1973. pp. 22-58.
- 7. Oyegun, C.U. (1997). The Human Environment. Its forms and Processes. Paragraphics.
- **8.** Soufi M. The Impact of Land-Use and Soil Characteristics on Gully Formation in an Arid Ecosystem, Southwest of I.R. Iran. 2015. Retrieved from http://www.sciencedirect.com/science. On 30th November, 2017.
- **9.** Kapoor GP. Disaster Management and Economic Development APH Publishing Corporation. 2012.
- **10.** IPCC. Inter-governmental Panel on Climate Change 2 Synthesis Report, Summary Policy Makers. 2007. pp 1-22.
- **11.** Nnaji A. Climate variation in Sub-Saharan Region of Nigeria. Study of Rainfall variability in Northern Nigeria. Unpublished PhD Dissertation, Department of Geography University of Florida, Gainesville. 1999.
- 12. Johnson OM, Olanrewaju RM, Ukange PA, Ali IP. Precipitation Characteristics and Response to Global Warming in High and Low lands of Nigeria. In: Chukwu-Okeah GO, Elenwo EI, Amangabara GT. (Eds). Man, Environment & Sustainable Development. Amagov & COY. Nig. 2021. pp.25-52.
- **13.** Komolafe AA, Adegboyga SA, Akinluyi FO. A review of Flood Risk Analysis in Nigeria. American Journal of Environmental Sciences, 2015;1(3):157-169.
- **14.** Etuonovbe AK. The devastating effects of floods in Nigeria. Hydrology and Environment Journal, 2012;10(3);24-36.
- **15.** WHO International (2017). Disasters & Emergencies. Definitions (PDF), Humanitarian Action. Retrieved 2107-11-26 via WHO International.

- 16. Yekini J. Flood displaces 10,000 people in Kogi. This day Newspaper, September 13, 2017.
- **17.** Okorie LC. Learning through Crisis: The Tools and techniques to manage yourself and your team in trouble times. Paper presented at the 3<sup>rd</sup> Annual Emergency Crisis & Disaster Risk Management Conference, Uyo, Akwa-Ibom State, 24<sup>th</sup>-26<sup>th</sup> November, 2021.
- **18.** Adamu K. Strategic Crisis Management by Integrating Security and Emergency Responses. Paper presented at the 3<sup>rd</sup> Annual Emergency, Crisis & Disaster Risk Management Conference, Uyo, AkwaIbom State, 24<sup>th</sup> -26<sup>th</sup> November, 2021.
- **19.** Akpoghomeh OS. The Terror of Transportation and the Transportation of Terror. An Inaugural lecture Series No. 94, University of Port Harcourt Press. 2012.
- **20.** Adeyemo AM. Environmental Policy Failure in Nigeria and the Tragedy of Underdevelopment of Niger Delta Region. An Inaugural Lecture Series No. 63, University of Portharcourt Press. 2008.
- **21.** Poronakie NB. Challenges and prospects of Developing Bori Town as a Secondary City in Rivers State. Journal of Social and Policy Research, 2012;7(3):107-117.
- **22.** Babatulo JS. Rain patterns and their implications for flood frequency in Ondo. Journal of Arts and Social Sciences, 1996;1(1):125-126.
- **23.** Amangabara GT. eomorphological Processes and Gully Formation in Southeast Nigeria. In: Chukwu-Okeah GO, Elenwo EI & Amangabara GT (Eds). Man, Environment and Sustainable Development. Amajov & COY, Nig. 2021. pp. 1-24.
- **24.** Okechukwu CA, Okwu-Delunze VU, Ajaelu H. Disaster Management: Lessons for Nigeria from the 2017 hurricane floods in the USA. Paper presented at the Annual Conference of Environmental Management Association of Nigeria (EMAN), Jabi, Abuja (FCT), December, 5-7, 2018.
- **25.** Matt W. Massive Storm, one of history's worst. Corpus caller-Times, Friday August 25, 2017.
- **26.** NEMA/UNICEF. National Emergency Management Agency & United Nations International Children's Education Fund. Planning, research and fore casting; national Contingency plan of Nigeria. Government of Nigeria, Abuja. 2011.
- **27.** Oku HB. Public Perception of Flood Hazards in Mgbuoba, Port Harcourt, Nigeria. International Journal of Educational Development, 2011;6(2).
- **28.** Poronakie NB. The Role of Quantification and Statistical Methods in Geography & Environmental Studies Education, International Journal of Educational Development, 2014.4(2):181-190.
- **29.** David S, Tom HJ. President Signs Emergency Disaster Bill, keeps government open through December. The Washington Times September 8, 2017. 2017.
- **30.** Leigh HC, Kwaism O. Attitude and Adjustment to the flood hazard in mixed ethnic community in Malaka Town Penisular (Malasia). Singapore Journal of Tropical Geography. 1983;4(1).

- **31.** Erickson NJ. Human Adjustments to Floods in New-Zealand. New-Zealand Geographer. 1971;23:105-129.
- **32.** Oya M. Land-use Control and Settlement Plans in the flood area of the city of Nagoya and its vicinity. Geoforum 1970;4:7-62.
- **33.** Poronakie NB, Igbara SA. Environmental Laws and Enforcement in Nigeria. Paper presented at the Annual Conference of Environmental Management Association of Nigeria, Jabi-Abuja (;[FCT), December 5-7, 2018.
- **34.** UNEP'S Report (2011). Environmental Assessment of Ogoniland (Retrieved 2012/10/02, accessed on http://www.unep.org.wes/ondex.html.
- **35.** Oyegun CU. Climate Change and Nigeria's Coastal Resources; An Inaugural Lecture Series No. 56, University of Port Harcourt Press Ltd. 2007.
- **36.** Tamuno TT. The Geogrpahical Niger Delta. Paper presented at the International Conference on the Nigerian State, Oil Industry, and the Niger Delta, Yenagoa, Bayelsa State, 11<sup>th</sup>-14<sup>th</sup> March, 2008.
- **37.** Arokoyu SB, Umeuduji JE. The Concepts of environment. In: Belt-Gam WI. Arokoyu SB and Umeuduji JE. (Eds). Perspectives on the Human Environment, Amethyst & Colleagues Publishers. 2004. pp. 1-8