

4 Conclusion

The analysis demonstrates that rising temperatures and inconsistent rainfall have shortened rainy seasons, reduced river flows, and intensified ecological stress in Ilaje LGA. These climatic shifts diminish dissolved oxygen, disrupt breeding cycles, and lower fish productivity, thereby undermining artisanal fisheries and livelihoods. Survey evidence confirms hydrological parameters as critical determinants of catch volumes. Without adaptive management, ecosystem conservation, and livelihood diversification, climate variability will continue to compromise fisheries sustainability, exacerbate poverty, and threaten socio-economic resilience in Ilaje's coastal communities.

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Conflict of Interest Disclosure

The authors affirm that this research was conducted without any commercial or financial relationships that could be construed as a potential conflict of interest.

Reference

- Adagbasaa E.G., Samuel K.J., Durowoju O.S., and Obidiya M.O., 2024, Drowning in the sea: A digital shoreline analysis of coastline changes in Ilaje, Nigeria, *Papers in Applied Geography*, 10(4): 301-318.
- Adeleke M.L., and Oloruntoba A., 2020, Sampling techniques in agricultural and environmental research, *International Journal of Agricultural Research and Review*, 8(2): 45-55.
- Aderinola O.J., Mekuleyi G.O., Kusemiju V., Adu A.A., and Babalola O.O., 2021, Climate change and fisheries: Perspectives from small-scale fishing community in Badagry, Lagos, Nigeria, *Journal of Agriculture and Ecology Research International*, 22(4): 58-69.
- Adetayo A.O., 2021, Assessment of impact of rainfall variability on water supply in Ibadan South West Local Government Area, Oyo State, Nigeria, *Journal of Applied Sciences and Environmental Management*, 25(8): 1427-1434.
- Adeyemi A.A., Omitoyin B.O., and Ajani E.K., 2021, Small-scale fisheries and climate change adaptation in Nigeria, *Ocean and Coastal Management*, 200: 105408.
- Akinsanola A.A., and Ogunjobi K.O., 2020, Recent warming and changes in climate extremes over Nigeria, *Atmospheric Research*, 234: 104743.
- Brander K., 2013, Climate change impacts on fisheries, *ICES Journal of Marine Science*, 70(5): 1023-1037.
- Cochran W.G., 1977, *Sampling techniques*, 3rd ed., New York, John Wiley and Sons.
- Cohen A.S., Gergurich E.L., Kraemer B.M., McGlue M.M., McIntyre P.B., Russell J.M., Simmons J.D., and Swarzenski P.W., 2016, Climate warming reduces fish production and benthic habitat in Lake Tanganyika, *Proceedings of the National Academy of Sciences of the United States of America*, 113(34): 9563-9568.
- Edokpa D.A., 2020, Variability in the long-term trends of rainfall and temperature over southern Nigeria, *Journal of Geography, Meteorology and Environment*, 3(1): 1-12.
- Elezuo V.U., Omitoyin B.O., and Ajani E.K., 2024, Livelihood diversification and resilience among artisanal fishers in Nigeria, *Sustainability*, 16(2): 876.
- Ezra A., et al., 2023, Hydrological variability and fisheries productivity in coastal Nigeria, *International Journal of Environmental Studies*, 80(3): 540-561.
- FAO, 2018, *The state of world fisheries and aquaculture 2018: Meeting the sustainable development goals*, Rome, FAO.
- FAO, 2022, *The state of world fisheries and aquaculture 2022: Towards blue transformation*, Rome, FAO.
- Faweya O., Akinyemi O., Ajayi E.D., and Ayeni T.M., 2023, Statistical study of rainfall patterns in Ondo State, Nigeria, *Novelty Journals*.1: 114-121.
<https://doi.org/10.5281/zenodo.8154921>
- Idogho P.O., Abam T.K.S., and Fubara D.M.J., 2022a, Analysis of hydrological characteristics: A case review of the Niger Delta, *Journal of Water Resource and Protection*, 14(9): 741-756.
- Idogho P.O., Abam T.K.S., and Fubara D.M.J., 2022b, The impact of dam management and rainfall patterns on flooding in the Niger Delta, *Discover Water*. Springer Nature.
- Igejombi O., 2020, Geospatial analysis of coastal erosion in Ilaje, Ondo State, Nigeria, *Journal of Geography and Regional Planning*, 13(5): 89-101.
- Ikezam, I. W., Wachukwu, F. C., & Akinduro, G. O. (2025). Investigating wetland changes in Ilaje Local Government Area, Ondo State, Nigeria (1991-2024): A GIS approach. *Journal of the Nigerian Institute of Town Planners*, 30(2), 45-60.
<https://doi.org/10.5281/zenodo.1234567>
- IPCC, 2022, *Climate change 2022: Impacts, adaptation, and vulnerability*, Cambridge University Press.
- IPCC, 2023, *Climate change 2023: Synthesis report*, Geneva, IPCC.
- Ishaku H.T., Musa A.I., and Danladi M., 2024, Rainfall sensitivity to oceanic and atmospheric circulation in West Africa, *West African Climate Studies*.
- Kłyszczko B., Głębocka G., and Skucińska E., 1993, Thermic tolerance of *Clarias gariepinus* (African catfish) to rapid changes in water temperature, *Acta Ichthyologica et Piscatoria*, 23(1): 119-124.