

Evidence Driven Decision using GIS and Remote Sensing (EDDGAR): Experiences from Leveraging Geographic Information System (GIS) Software to Monitor HIV-Related Program Response in Southern Nigeria

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BACKGROUND/ OBJECTIVES

Geographic Information System (GIS) is useful in addressing healthcare disparities, such as underserved areas or vulnerable populations. This study highlights how the ECEWS, Accelerating the Control of HIV Epidemic (ACE-5) project leveraged GIS technology to improve monitoring of the HIV response in southern Nigeria.

DESCRIPTION

In 2022, the ACE5 project developed a web application that leverages GIS software (map-Info professional version 7.0) to collect, manage, visualize and utilize spatial data for decision-making in Akwa Ibom and Cross River States, Nigeria. We employed three phases. The first phase focused on mapping the coordinates of health facilities, community birth centers, decentralized drug delivery structures, etc., including site type, ownership, location and other descriptive characteristics. The second phase gathered aggregate data on select indicators (recent infection, ART treatment coverage, treatment continuity, viral load coverage, etc.) using an Excel-based extract from the project database. These were entered into the GIS software to visualize these outcomes by structures mapped in the first phase. The third phase mapped human resources for health. Spatial dashboards were then created that overlay the select indicators into the mapped structure and available resources to enable a visual representation of gaps and outliers. Healthcare workers were trained in the tool and spatial data interpretation. During data review meetings, presentations were made using visuals from GIS analysis showcasing areas that need improvement.

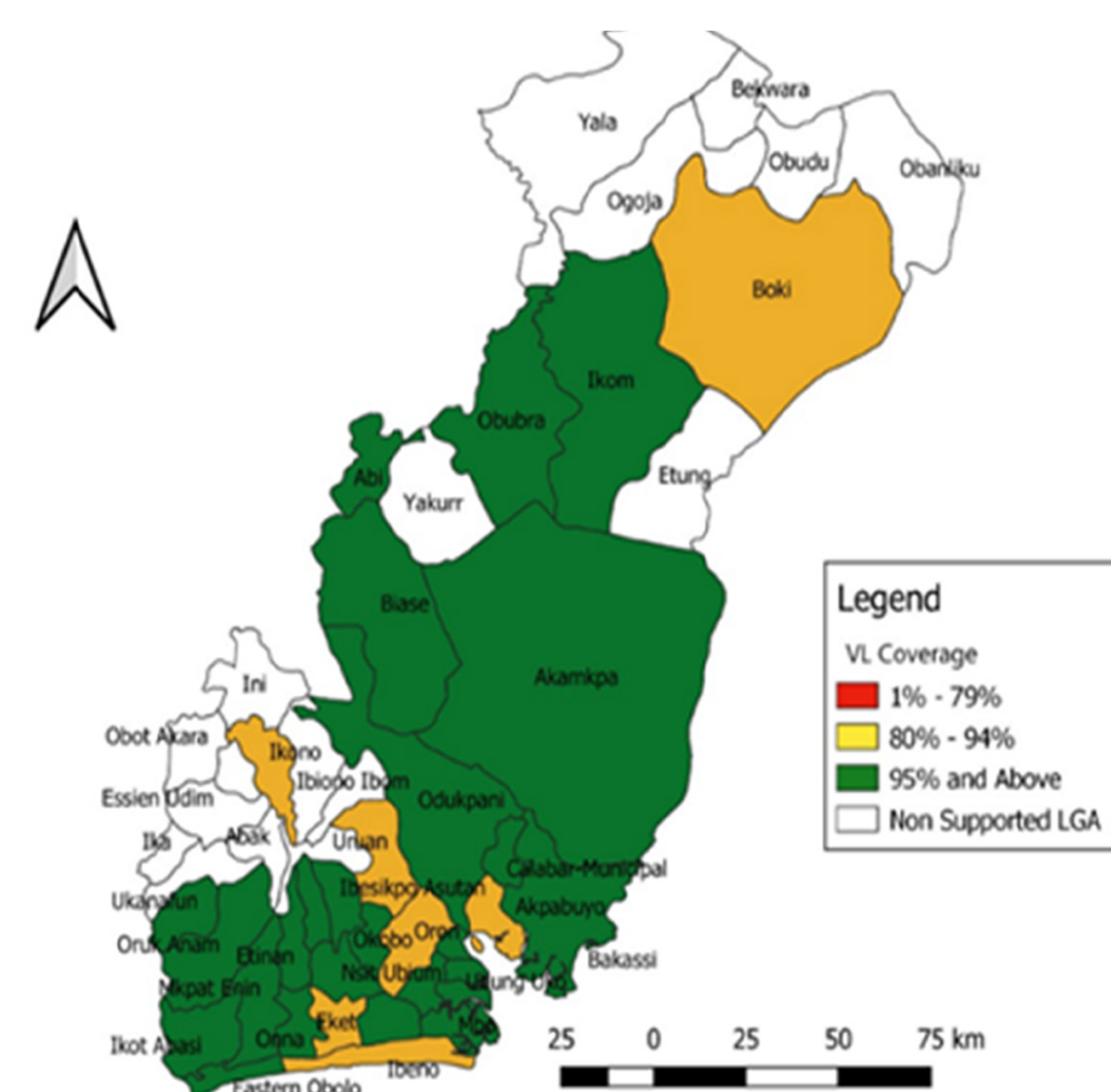
CONCLUSION

GIS technology can play a critical role in enhancing HIV program monitoring and response. Learnings can be adapted for other health program needs.

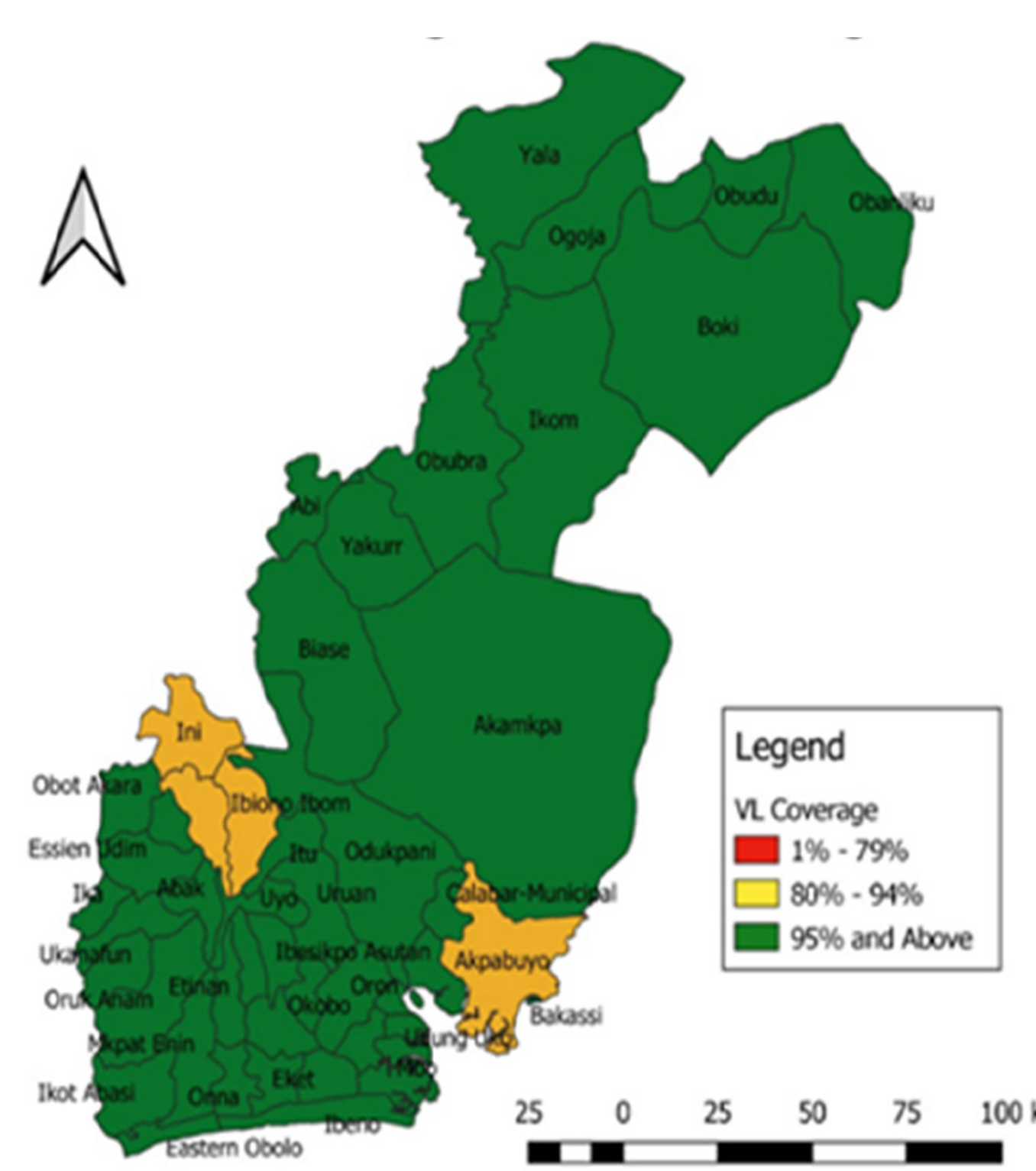
LESSONS LEARNT

After 24 months, all 225 health facilities and 2074 healthcare workers, 677 of 864 community birth centers and 1270 of 1324 decentralized ART drug delivery structures were mapped. Two healthcare workers were trained in interpreting spatial data for each state. Challenges included difficulties in obtaining spatial data like coordinates and boundaries, particularly in hard-to-reach areas.

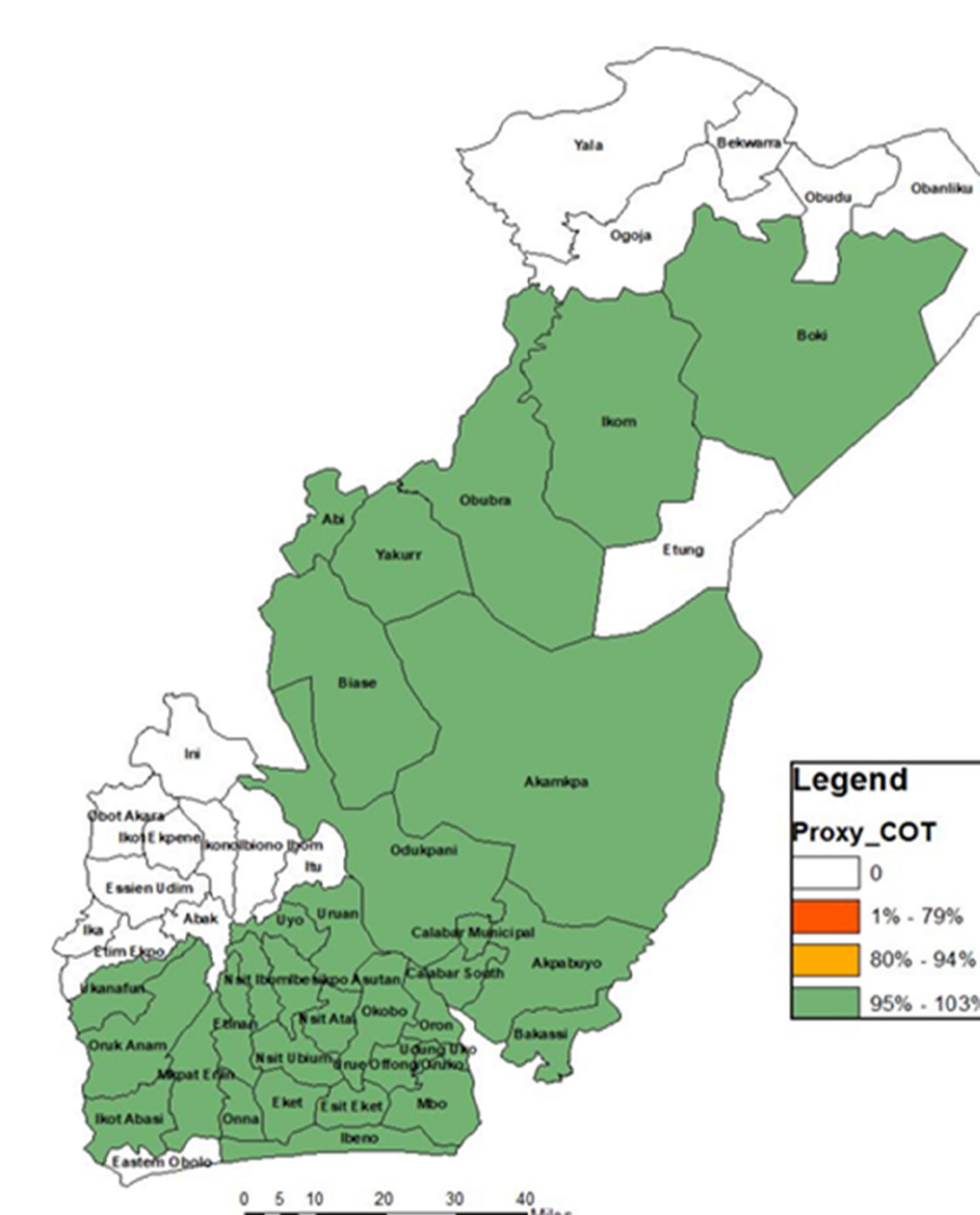
VL Coverage Before GIS integration



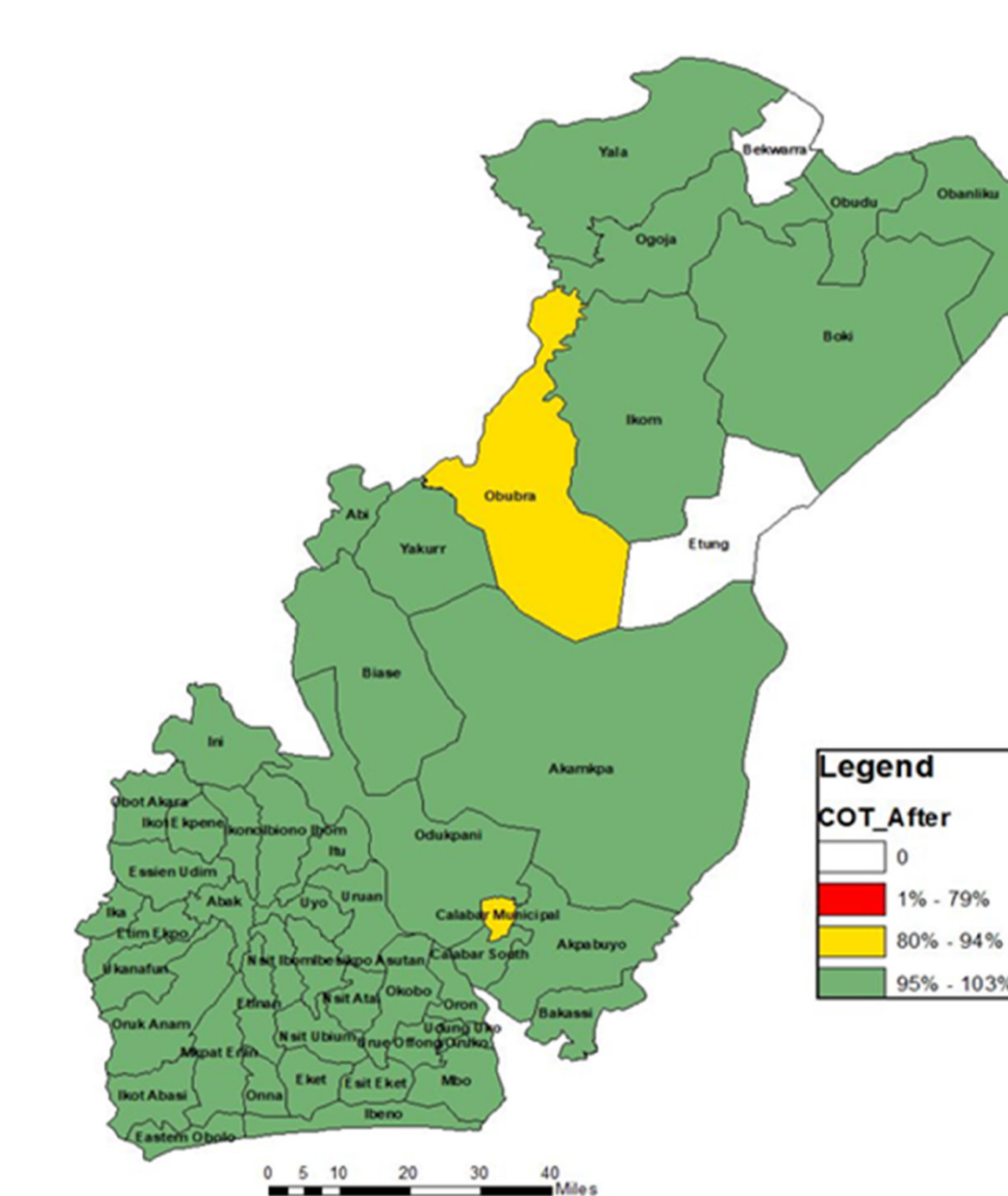
VL Coverage After GIS integration



Proxy_COT_Before GIS Implementation



Proxy_COT After GIS Implementation



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