**Mapping Hunger in Nigeria: A Data-Driven Approach using Machine Learning**

This research project aims to develop a spatial machine learning model to:

1. Generate high-resolution predictions of child stunting rates across Nigerian Local Government Areas (LGAs)

2. Evaluate the impact of nutrition and women empowerment interventions on stunting outcomes

3. Fill data gaps by predicting stunting rates in non-surveyed areas and years using spatial interpolation techniques

The analysis will combine multiple nationally representative surveys (NDHS, MICS and LSMS) to create a comprehensive dataset of child nutrition indicators across Nigeria.

**Use of GIS Information:**

The geographic coordinates (latitude and longitude) of survey clusters are essential for:

\* Spatial joining of survey data to corresponding LGAs for aggregation of stunting rates;

\* Implementation of spatial machine learning techniques that account for geographic proximity and spatial autocorrelation in stunting patterns;

\* Integration of additional geospatial covariates (e.g., environmental, socioeconomic, and infrastructure indicators) that may influence stunting rates;

\* Creation of high-resolution maps showing the spatial distribution of stunting across Nigeria;

\* Spatial analysis of intervention coverage areas and their relationship to stunting outcomes.

The requested cluster-level geographic coordinates will be used solely for research purposes and will comply with all data privacy and protection requirements. No individual-level data will be published or shared, and results will be presented only at aggregated levels (LGA or higher) to ensure confidentiality.