Land Suitability Analysis for Maize Production in Egbeda Local Government Area of Oyo State Using GIS Techniques

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Abstract : Maize constitutes a major agrarian production for use by the vast population but despite its economic importance, it has not been produced to meet the economic needs of the country. Achieving optimum yield in maize can meaningfully be supported by land suitability analysis in order to guarantee self-sufficiency for future production optimization. This study examines land suitability for maize production through the analysis of the physic-chemical variations in soil properties over space using a Geographic Information System (GIS) framework. Physic-chemical parameters of importance selected include slope, landuse, and physical and chemical properties of the soil. Landsat imagery was used to categorize the landuse, Shuttle Radar Topographic Mapping (SRTM) generated the slope and soil samples were analyzed for its physical and chemical components. Suitability was categorized into highly, moderately and marginally suitable based on Food and Agricultural Organisation (FAO) classification using the Analytical Hierarchy Process (AHP) technique of GIS. This result can be used by small scale farmers for efficient decision making in the allocation of land for maize production.
Keywords : AHP, GIS, MCE, suitability, Zea mays
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