

## Land Suitability Analysis for Rice Production in a Typical Watershed of Southwestern Nigeria: A Sustainability Pathway

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**Abstract :** The study examined land management in a typical watershed in southwestern Nigeria with a view to ascertaining its impact on land suitability analysis for rice cultivation and production. The study applied the analytical hierarchy process (AHP), weighted overlay analysis (WOA), multi-criteria decision-making techniques, and suitability map calculations within a Geographic Information System environment. Five main criteria were used, and these include climate, topography, soil fertility, macronutrients, and micronutrients. A consistency ratio (CR) of 0.067 was obtained for rice cultivation. The results showed that 95% of the land area is suitable for rice cultivation, with pH units ranging between 4.6 and 6.0, organic matter of 1.4-2.5 g kg<sup>-1</sup> and base saturation of more than 80%. The study concluded that the Ofiki watershed is a potential site for large-scale rice cultivation in a sustainable capacity.

**Keywords :** land management, land characteristics, land suitability, rice production, watershed

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