

give a superior database and guidance map for decision-makers contemplating agricultural harvesting substitution in order to improve agricultural productivity. The study demonstrated that the spatial distribution of agro-crops derived from RS data, in conjunction with the valuation of physical and biological variables of soil and topographic information in the GIS context, is beneficial in crop management options for intensification or diversification. Such an approach yielded excellent information about the relative relevance of the parameters under consideration and might serve as a beneficial model for future agricultural productivity research. This study also offers generic possibilities for local farmers in the context of agricultural land use planning for crop production. The findings of this study may be valuable to other researchers who may apply them in various investigations. This study considered present LULC, topography, and soil characteristics, all of which influenced the appropriateness categorization of land use categories. As a result, it produces main results. For further research, it has been advised to identify additional elements such as soil, climate, irrigation infrastructure, and socioeconomic aspects that impact land sustainability. In this circumstance, it needs to take the initiative to protect agricultural land, which is the recommendation based on this research assessment. The protection plans assist local governments in inventorying significant farmlands establishing goals for its conservation, and identifying implementation mechanisms.

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