



The Challenges of Climate Change in National Development
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USING GEOSPATIAL DATA TO IDENTIFY OPPORTUNITIES FOR RENEWABLE ENERGY DEVELOPMENT IN RESPONSE TO CLIMATE CHANGE IN KATSINA

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Abstract

Finding ideal areas for the development of renewable energy has gained more attention as a result of the pressing need to switch to renewable energy sources in response to climate change. This study investigates how geographical data might be a useful tool for spotting developments in renewable energy as a reaction to climate change in Katsina. Potential regions with high renewable energy potential can be discovered in Katsina by utilizing a variety of geospatial data sources, including climate, geography, land use, and population density. These data layers are analysed and overlaid using Geographic Information Systems (GIS) software to identify areas with the best circumstances for the production of renewable energy, such as high solar irradiation and strong wind speeds, with adequate parameters. The most suitable solutions for each place can be determined by assessing the potential for various renewable energy technologies in these targeted locations. To evaluate the viability of renewable energy projects, additional aspects like land use policies, and environmental restrictions are taken into account. Policymakers, energy planners, and investors can greatly benefit from the findings of this study to strategically deploy funds and advance the development of sustainable renewable energy sources, which will aid in the fight against climate change.

Keywords: Climate change, Geographic Information Systems, Geospatial data, Renewable energy development