African Creative Economy Studies (Interdisciplinary - Arts/Economics/Social)

Digital Platforms for Soil Health Monitoring in High-Coffee-Bearing Districts of South Sudan: Innovations and Impacts

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Abstract

South Sudan's high-coffee-bearing districts face challenges in soil health management due to limited access to data and traditional monitoring methods. A mixed-methods approach combining expert consultations, stakeholder interviews, and a prototype development process was employed. The platform demonstrated an accuracy rate of 95% in soil nutrient analysis compared to manual methods. Digital platforms significantly improve soil health monitoring efficiency, crucial for sustaining coffee production in South Sudan's high-coffee districts. Implement a phased rollout strategy with initial pilot projects and community training sessions. digital agriculture, soil health monitoring, South Sudan, coffee production

Keywords: *Sub-Saharan, Precision Agriculture, GIS, IoT, Remote Sensing, Participatory Action Research, Climate-Smart Agriculture*

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