



Community-Based Early Warning Systems for Climate Change Adaptation in Yucatan, Mexico: A Two-Year Case Study in Gambia

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Abstract

Community-based early warning systems (EWS) play a crucial role in enhancing resilience to climate change impacts by providing timely information and support for adaptation strategies. Data were collected through structured interviews (

$n=50$) \wedge focus group discussions ($n=10$), supplemented by secondary data analysis of community records \wedge EW.

. Statistical models were employed to analyse the reliability and effectiveness of the systems. The EWS in Yucatan demonstrated a high level of system reliability, with an average accuracy rate of 95% (CI: 89-101%). User satisfaction was notably positive, with over 70% reporting improved decision-making regarding climate change impacts. In Gambia, the system had a slightly lower accuracy rate at 90%, but similar levels of user satisfaction. The community-based EWS in both regions proved effective in providing timely and actionable information to mitigate climate change risks, with notable improvements in adaptation practices among users. Continued support for system maintenance and training programmes is recommended to sustain the benefits observed. Future research should explore scalability and cost-effectiveness of such systems across diverse geographical contexts. Community-based early warning systems, Climate change adaptation, Yucatan, Gambia, User satisfaction

Keywords: *Community-Based, Early Warning Systems, Climate Change Adaptation, Gambia, Sub-Saharan Africa, Geographic Information Systems, Participatory Mapping*

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