

EXECUTIVE SUMMARY

Utilization of Heat Early Warning Resources Within Slum Communities in Nigeria

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Slum communities in Nigeria are highly vulnerable to extreme heat, worsened by climate change. As last-mile communities, they face an urgent need for enhanced early warning systems to mitigate the impact of heat-related disasters. This report presents the findings of a study that evaluated the utilization of heat early warning systems in selected slum communities in Akure and Lagos. The study aimed to **assess awareness, access, and action regarding heat warning resources** and to pilot a Community Heat Early Warning System (CHEWS) tailored to these communities. The study followed three key objectives:

- Evaluate the utilization of heat-related early warning information by residents in selected slum communities.
- Develop and test a Community Heat Early Warning System (CHEWS) in these communities.
- Assess the effectiveness of the deployed CHEWS.

Methodology

This research focused on slum communities in Lagos and Akure, Nigeria, where the challenges of urbanization and climate change are evident. The study was conducted in collaboration with key stakeholders, including community leaders and civil society organizations, to foster community empowerment and ownership of early warning systems.

The first stage assessed heat-related weather warnings from the perspective of marginalized slum dwellers, focusing on awareness, accessibility, and actions taken. Five focus group discussions were held in each community, with participants representing diverse genders, age groups, and occupations. Surveys were also conducted, with 637 responses (364 in Akure and 273 in Lagos) analyzed.

The **second stage involved developing and piloting the "Community Heat Early Warning System (CHEWS)."** Weather data, including maximum temperature and humidity, were processed using the Humidex model to predict heat stress. SMS alerts and A2-sized posters with heat index predictions and preventative actions were disseminated. After 38 days, the system was evaluated through focus groups and semi-structured interviews.

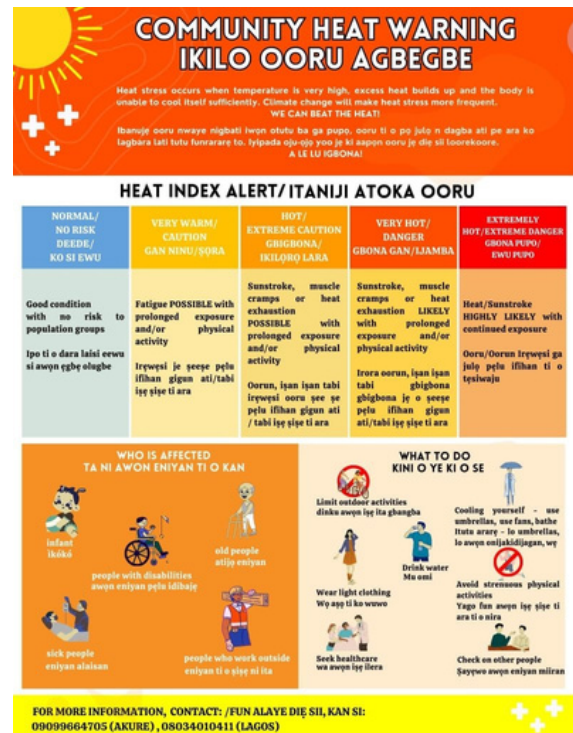
Key Findings

Low Awareness: Awareness of available heat early warning information was low, with only 36% of respondents having accessed such information. Radio, word of mouth, and TV were the most common sources of information.

Coping Strategies: The most frequently mentioned actions in response to heat included bathing, wearing light clothing, and drinking more water. However, these actions were often reactive rather than anticipatory.

Barriers to Effective Use: Access barriers included the infrequency of information dissemination, language issues, and limited access to the required technology.

Preferred Communication Channels: Residents preferred receiving heat warnings through traditional channels, with radio, SMS, and in-person communication ranked highest. Printed visual materials were also seen as effective, particularly among older and less-educated residents.



Poster developed under CHEWS to inform residents about extreme heat and recommended preventative actions

Targeted Groups: The community highlighted the need to target specific vulnerable groups, particularly parents of infants, children, and the elderly.

Impact of CHEWS: The CHEWS pilot was well received and positively impacted residents' lifestyles and health, though its limited reach became evident. Residents emphasized that beyond raising awareness, access to essential services like water and electricity is critical, as these are necessary for implementing many of the recommended heat precautionary measures.

Practical Implications and Recommendations:

Improved Communication Channels: Key limitations exist in the current heat warning dissemination approach used in Nigeria. The Nigerian Meteorological Agency (NIMET) shares impact-based Heat Index forecasts through websites, social media, and national TV, but these channels are often ineffective due to infrequent updates, technical jargon, power outages, and language barriers. The study found that slum residents prefer other communication channels such as SMS, radio, and in-person communication. To better reach "last mile" communities, it is important for NIMET to improve the content, consistency, and mediums used for heat warnings.

Language Inclusivity: Language plays a crucial role in effective early warnings. Heat alerts, jingles, and sensitization materials should be translated into the four widely spoken national languages—English, Yoruba, Hausa, Ibo, and pidgin. Additionally, other local languages and dialects should be considered to ensure broader accessibility and comprehension across diverse communities.

Address Socioeconomic and Infrastructure Needs: Prioritizing improvements in basic infrastructure, such as access to water and electricity, is essential for slum communities to take early action. These services are essential for residents to implement key adaptation measures, such as staying hydrated and cooling their homes, which are critical to cope with heat stress.

Promote Cross-Sector Collaboration: A hybrid top-down and bottom-up approach is recommended for heat alert dissemination. In this model, national heat forecasts would be transmitted to the National Broadcasting Corporation for distribution to all radio stations and then to end-users through SMS alerts and posters. Effective collaboration with stakeholders, including media outlets, educational and health institutions, religious organizations, and NGOs, is vital to ensure a coordinated response. Strengthening multi-sectoral partnerships will help integrate heat warnings into broader disaster risk management and public health strategies.

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