
Reaching the *Last Mile*: Overcoming Barriers to Actionable Early Warnings in Eswatini

Last Mile – Webinar Series

Global Disaster Preparedness Center

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Reaching the Last Mile: Overcoming Barriers to Actionable Early Warnings in Eswatini

“This presentation explores the critical challenges faced by drought-prone communities in Eswatini, particularly in Lubombo and Shiselweni. We will examine how early warning systems can be improved to ensure that vital information reaches those who need it most. By understanding the barriers to effective communication and action, we aim to highlight practical solutions that can enhance resilience and safeguard livelihoods in these vulnerable regions. Join us as we delve into the findings and recommendations from our research”.



Presentation Outline

Core Question

What does meaningful 'coverage' mean in the context of early warning systems and their effectiveness in reaching vulnerable communities?

Context of Drought

Understanding the severe impact of drought on Eswatini's last-mile communities, particularly in the Lubombo and Shiselweni regions, is crucial for effective interventions.

Research Approach

How the study was conducted: research design, methodological approaches, including sampling and sample size determination and analysis.

Introduction, summary and overview



The Core Question of Coverage

Meaningful coverage is defined not just by the successful delivery of a signal, but by the community's ability to interpret and translate that information into protective measures.

Practical preparedness

The research evaluates whether households possess the necessary resources and trust to move from passive reception of a drought warning to active disaster mitigation.

Localized relevance

For coverage to be meaningful, messages must be tailored to the specific agricultural cycles and daily activities of the farming communities receiving them.

Understanding Meaningful Coverage



Does Early Warning Reach People?

Access to early warning messages is critical for triggering action. Modes of information dissemination and packaging (including language use) are critical elements for access.



Information vs. Action

The disconnect between information dissemination and actionable steps is critical. Warnings must be understandable, trustworthy, and relevant to trigger community response.



Trust and Understanding

Effective coverage requires building trust through accurate, timely information. Without this, communities may disregard warnings, leading to increased vulnerability.

Drought Vulnerability in Lubombo and Shiselweni

01

Arid Climatic Conditions

Experience frequent prolonged dry spells and erratic rainfall patterns that severely impact rain-fed agricultural productivity. (Over 70% relies on rain-fed agriculture –vulnerable to drought conditions & food insecurity.

02

Socio-economic Fragility

High levels of poverty and limited alternative livelihoods increase the dependency of local communities on climate-sensitive resources (2015/16 El Niño drought economic loss was E3.843 billion - 7.01% of the nation's GDP)

03

Resource Scarcity

Chronic water shortages and land degradation exacerbate the inability of smallholder farmers to recover from repeated drought shocks.

Research Goals and Scope



Assessing dissemination mechanisms

Evaluate the effectiveness of current communication channels in reaching rural and vulnerable populations in Eswatini.

Identifying systemic barriers

Analyze socio-economic, technical, and institutional obstacles that prevent early warnings from triggering proactive community responses.



Enhancing actionable protocols

Develop framework recommendations to transform meteorological data into clear, culturally appropriate, and localized action plans.

Study Area Selection



Risk Profiling

Selection targeted the Shiselweni and Lubombo regions due to their classification as the most drought-vulnerable zones in Eswatini, characterized by frequent rainfall deficits and high poverty levels.

Community Isolation

Choice focused on "last-mile" communities that are geographically remote and often bypassed by mainstream communication infrastructure, ensuring the research captures the most significant information gaps.

Agricultural Dependency

These areas were prioritized because the majority of inhabitants are smallholder farmers whose livelihoods are entirely dependent on rain-fed agriculture, making them the primary stakeholders for early warning systems.

Research Design

Mixed methods approach to capture a comprehensive understanding of community experiences regarding early warning systems.

Household Survey

Conducted with 796 households, the survey revealed critical patterns, including that 25% of respondents lack access to early warning information

Household Survey

Focus groups and interviews with diverse community members helped uncover barriers, such as language issues and cultural perceptions affecting warning utilization.

Key Findings: Barriers & Opportunities

Disconnect

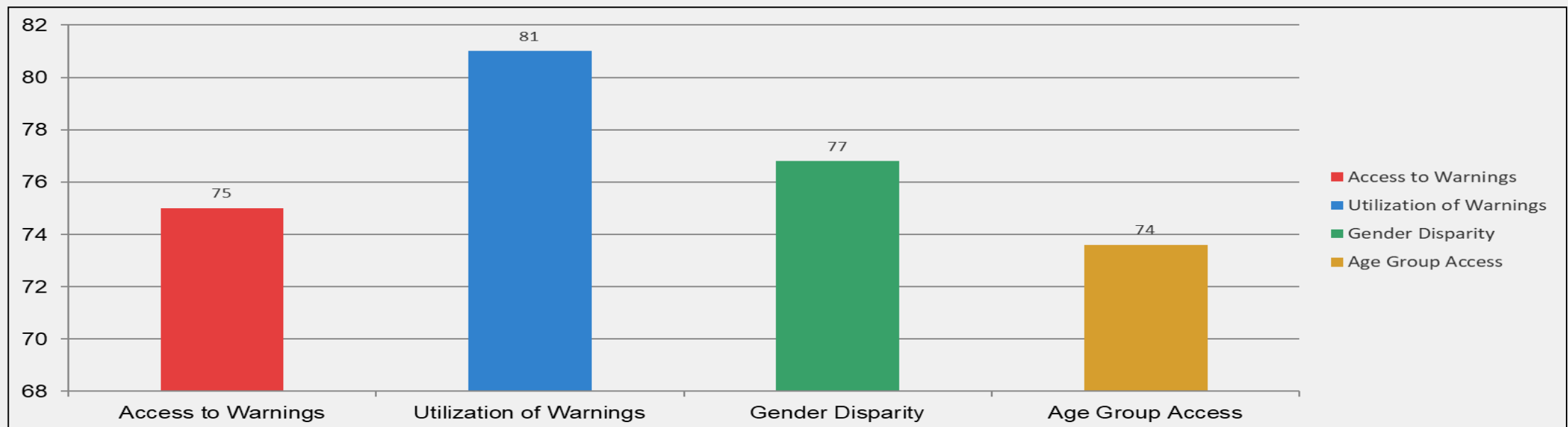
While a high percentage of households in the Lubombo and Shiselweni regions receive early warning messages, the information often fails to trigger specific agricultural adaptations due to its lack of localized relevance..

Practicality gap

Warnings frequently lack "how-to" guidance, leaving communities informed about incoming hazards but without the necessary tools or instructions to adjust their farming schedules or water management.

Resource constraints

Socio-economic barriers and limited access to capital prevent last-mile farmers from acting on warnings, even when the threat of drought is clearly understood.



Communication and Trust Gaps



Language accessibility

Limited translation of technical weather terminology into local dialects hinders community understanding and response. Warnings often lack specific guidance on actions to take. Clear, actionable advice is necessary to empower communities to respond effectively



Source credibility

Skepticism toward official government alerts compared to traditional knowledge systems reduces the uptake of life-saving information (47% of respondents perceive warnings as unreliable, leading to hesitance in taking action. Trust is crucial for effective early warning systems).



Feedback mechanisms

Absence of two-way communication channels prevents local communities from reporting real-time impacts to central authorities.

LANGUAGE



The Role of Indigenous Knowledge

01

Local integration

Traditional weather forecasting methods serve as essential cultural benchmarks for rural communities in predicting seasonal shifts.

02

Trust and credibility

Community members (99%) often prioritize indigenous indicators over scientific broadcasts due to long-standing historical reliability in specific microclimates. This indicates a strong reliance on local methods for weather forecasting and agricultural planning.

03

Knowledge synthesis

Combining ancestral wisdom with modern meteorological data enhances the overall acceptance and effectiveness of early warning systems.

Local Indicators

Moon shape, Tree fruiting, animal behavior, etc utilized to predict weather patterns.



Burchell's Coucal/rainbird



Dwarf Turkey berry



Euphorbia ingens



04 Recommendations

Practical Practitioner Guidelines



01

Indigenous integration

Practitioners should actively document and incorporate traditional environmental indicators into formal forecasts to increase the perceived legitimacy of warnings among rural populations. (Also validate local practices to enhance credibility and community engagement in early warnings)

02

Message simplification

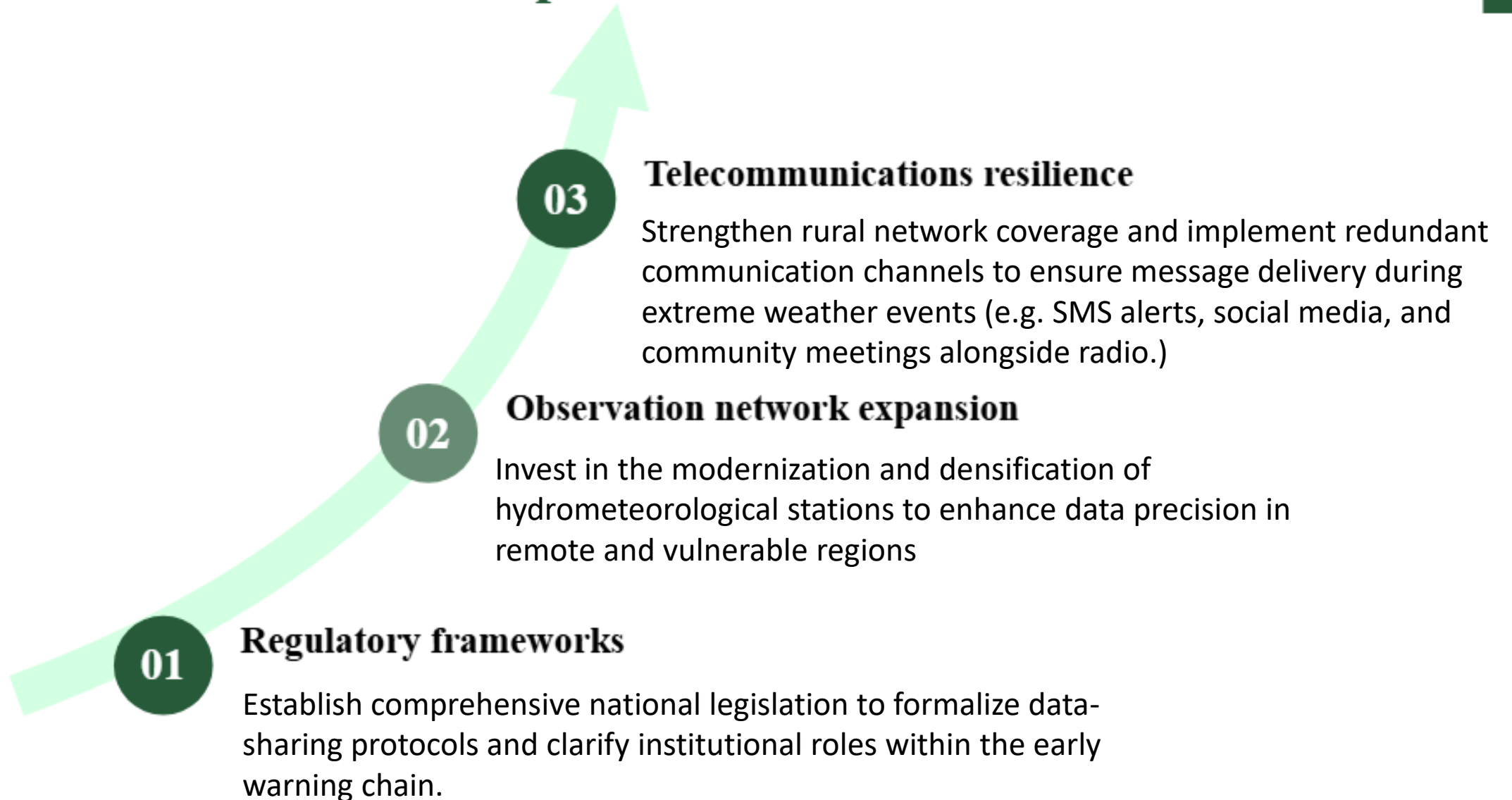
Warning communications must be translated into local dialects and stripped of technical jargon to ensure that risk information is immediately understandable and actionable for all literacy levels. Capacity building may also be necessary where comprehensive training programs for local authorities and citizens to translate technical alerts into immediate protective actions may be needed

03

Feedback loops

Establishing routine post-event consultations with local residents allows agencies to refine dissemination methods based on which channels proved most effective during real-world threats.

Policy and Infrastructure Improvements



Key Takeaways and Call to Action

The Last Mile Defined

The last mile encompasses not just geography but also identity and culture. Warnings must be understood, trusted, and actionable to be effective.

Indigenous Knowledge Matters

Communities possess valuable Indigenous Knowledge that can enhance formal systems. Integrating this knowledge fosters relevance and improves decision-making.

Building Trust is Crucial

Effective early warning systems require trust, which is built through accuracy, timeliness, and local relevance. Trust enhances community engagement and response.



THANKS

