

Building Agricultural Systems Resilience in Nigeria through Enhanced Early Action

Workshop Brief

The Bill and Melinda Gates Foundation (BMGF) seeks to strategically invest in the operational capacity of the Nigerian climate early warning infrastructure to bolster agricultural resilience and strengthen climate change adaptation for at-risk communities. As part of the consultation and planning phase for the project, a stakeholder co-creation workshop was convened on August 3, 2023. The workshop brought together representatives of key government agencies and institutions involved in the early warning system (EWS) in Nigeria for open dialogue and brainstorming to collaboratively generate ideas, synchronize project expectations, foster shared vision, and chart pathways for the intervention. The event was organized by BMGF in collaboration with Sahel Consulting Agriculture and Nutrition Limited and included representatives from The Nigerian Meteorological Agency (NiMet), the Federal Ministry of Agriculture and Rural Development (FMARD), the Federal Ministry of Environment, Nigeria Hydrological Services Agency (NIHSA), and the National Emergency Management Agency (NEMA).

Objectives

The objectives of the workshop were to:

- Establish a shared understanding among climate stakeholders of critical issues in the EWS of Nigeria.
- Foster cooperation and shared ownership of expected project outputs.
- Facilitate understanding of synergies and collaborative opportunities among the diverse entities involved in the climate EWS of Nigeria.
- Explore and generate innovative approaches to address the challenges in the system.
- Build consensus to shape project direction and implementation strategy for the intervention.

Event Summary

The workshop, moderated by Mr. Chinedu Agbara of Sahel Consulting, began with the introductions of participants and a welcome remark from Dr. Audu Grema, Senior Program Officer, Agricultural Development at the BMGF Nigeria office. In his address, Dr. Grema provided an overview of the project's context, underscoring the pivotal role of early warning systems in enabling vulnerable populations to navigate the challenges posed by climate change effectively. These systems are critical in disseminating timely weather information, ensuring proactive responses, and bolstering food security through well-informed agricultural decisions. He emphasized that the primary goal of this intervention is to boost Nigeria's agricultural resilience by empowering vulnerable farming communities and that core advances will extend to and align with other early action sectors relevant to the Nigerian context. Dr. Grema emphasized the importance of collaboration among climate stakeholders in attaining the project's objectives and ensuring impact sustainability beyond the project's duration.



The workshop explored the four critical project expected outcomes:

- **Increased analytic capacity and capability:** Enhance the system's ability to analyze climate data for improved effectiveness.
- **Improved capacity to support locally tailored climate analytics and information services:** Improve the system's capacity to provide locally relevant climate analytics and information services.
- **Aligned national early action infrastructure for improved regional impact:** Establish a unified framework for national climate action, driving positive regional impacts.
- **Enhanced early warning systems operational governance through inter-agency cooperation:** Foster inter-agency cooperation to optimize early warning systems' functionality.

These outcomes are the project's core mission and guiding principles throughout its development and

implementation.

Outlined below are the essential climate stakeholders key to the project outcomes:

- **Nigerian Meteorological Agency (NiMet):**
- **Nigeria Hydrological Services Agency (NIHSA):**
- **Federal Ministry of Environment:**
- **National Emergency Management Agency (NEMA):**
- **Federal Ministry of Agriculture and Rural Development (FMARD):**

In addition to these core national stakeholders, the project will involve two international technical partners:

- **International Centre for Tropical Agriculture (CIAT):** Specializes in upstream data management and forecasting activities.
- **Columbia Climate School, International Research Institute for Climate and Society (IRI):** Focuses on downstream activities, particularly data analysis and institutional collaboration.

The ensuing workshop segment involved an interactive dialogue among stakeholders, fostering candid insights into current challenges and novel improvement pathways. Representatives from each participating organization shared viewpoints, contributing innovative ideas and practical solutions. During this discussion, a critical question was raised by Dr. Audu. *"Are there ways to measure the impact (if any) of the utilization of the (climate) data received by the farmers?"*. Key insight arising from the discourse on the question underscored the importance of integrating Behavioral Change principles into the operational activities of EWS stakeholders and project design and implementation. In addition, NEMA's data transmission process to State Emergency Management Agencies (SEMAs) and associated local authorities was discussed, but uncertainties remain about the reach and impact at the community level. These discussions highlighted vital concerns about climate information's effectiveness within farming communities, emphasizing the need for robust mechanisms to ensure both data transmission and meaningful grassroots application.

Resolution Session

Following the engaging discussion and a brief intermission, the workshop transitioned into a breakout session with participants divided into two groups, each comprising representatives from all participating organizations. Presented here is a summary of the outcomes from the intensive discussions during the breakout sessions:

1) Early Warning Systems Governance

- **Status – Where are we now?**
 - **Awareness:** The awareness of the significance of early warning signs is notably lacking at the grassroots level, as farmers often do not recognize their importance.
 - **Pest and Disease Early Warning:** An early warning system is established for rainfall and flooding. However, no corresponding system is in place for anticipating and managing pest and disease outbreaks.
 - **Technical Working Groups:** There exist technical working groups within the climate stakeholder community, facilitated by NEMA, which foster collaboration and information exchange. However, the technical working groups only meet when emergencies arise.
 - **Memorandum of Understanding (MOU):** An MOU currently exists between FMARD and NiMet, outlining protocols for data sharing and cooperation.
 - **Lack of Harmonization:** Despite working together towards a shared goal, there is a notable lack of harmonization in the data generated and distributed by these agencies, leading to duplication.
 - **National Flood Early Warning Hub:** Managed by the Ministry of Environment, an operational national flood early warning hub exists.
- **Ambition – Where do we want to go?**
 - **Roles and Responsibilities:** Establish a standardized protocol for sharing climate information that clearly outlines each stakeholder's roles, responsibilities, defined timeframes, and mechanisms for

gathering feedback.

- **Enhanced Technical Working Group:** Strengthen the coordination of the technical working group by implementing a structured communication plan that goes beyond sporadic meetings, promoting consistent collaboration.
 - **National Central Climate Data Management System:** Create a centralized climate data management system accessible to all relevant parties. This platform should enable collaborative contributions, preventing duplication of efforts and promoting efficient data management.
 - **Pest and Disease Early Warning System:** Develop and manage an early warning system in collaboration between FMARD and NiMet. This system should predict and provide alerts for pests and diseases affecting both crops and livestock, empowering farmers to take proactive measures acknowledging that a locust monitoring system already exists within NiMet
- **Activities – How do we get there?**
 - **Roles and Responsibilities Architecture:** Develop a comprehensive framework that clearly outlines the roles and responsibilities of each stakeholder, specifying the type of information they provide and establishing realistic timeframes for information sharing. Also, accommodating the possibility of failure to carry out assigned responsibilities.
 - **Expand Climate Stakeholder Network:** Beyond the current core organizations, explore the inclusion of additional relevant agencies operating within the climate space. Collaborating with these entities can contribute to the advancement of early warning systems.
 - **Addressing Additional Early Warning Gaps:** Conduct a thorough assessment to identify any further gaps in the existing early warning systems. Acknowledge that early warning signs extend beyond rainfall and floods and proactively address these gaps.
 - **Enhance Capacity Building:** Foster partnerships and collaborations among various agencies and ministries to jointly enhance the skills and expertise of their personnel. This capacity building can empower the workforce to better contribute to effective climate information dissemination and early warning efforts.

2) Data Capability and Analytics

- **Status – Where are we now?**
 - **Enhancement of Situation Room:** The operational status of the existing situation room located at NiMet is functional, but measures should be taken to optimize its performance for improved outcomes.
 - **Deployment of Automated Stations:** The Ministry of Environment currently oversees a network of 52 automated stations nationwide, contributing to data collection and analysis efforts. NIHSA also has monitoring stations spread across the country for data collection.
 - **Climate-Smart Villages or Hubs:** Establishing climate-smart villages or hubs has proven effective in addressing specific challenges brought about by climate change, showcasing their potential to drive adaptive and resilient solutions.
- **Ambition – Where do we want to go?**
 - **Distinct Roles and Responsibilities:** Establish well-defined and transparent roles for various tasks, encompassing data generation, forecasting, analytics, and dissemination. This representation should specify the responsibilities of each entity involved in the process.
 - **Ongoing Training and Capacity Building:** Implement a structured program for consistent training and capacity building for staff members involved in climate information management. Regular skill enhancement sessions can ensure a proficient and empowered workforce.
- **Activities – How do we get there?**
 - **Evaluation of Current Infrastructure:** Conduct a thorough assessment of the current agrometeorological stations to ascertain their adequacy in collecting data for precise analysis.
 - **Capacity Mapping:** Undertake a comprehensive mapping exercise to identify and analyze the

existing capacities within each organization. This assessment will help pinpoint areas where enhancements are required for better performance and effectiveness.

3) Climate Information Services (CIS) and Dissemination

● Status – Where are we now?

- **Downscaling Challenges:** The effective dissemination of information down to the community level within different geopolitical zones is hindered by limitations in the number of extension officers and logistical constraints, impacting the achievement of targets.
- **Digital Application Redundancy:** Existing digital applications operated by different agencies often provide varying and overlapping information, necessitating a more coordinated approach.
- **Language Diversification in Dissemination:** While some agencies distribute information in local languages, the predominant mode of dissemination is in English, posing a challenge to broader accessibility.
- **Data Utilization for Farmers:** Data generated by agencies holds the potential to guide farmers in preventing post-harvest losses, but a more structured approach to presenting this information is needed.
- **Direct Farmer Dissemination Gap:** NEMA disseminates information at the state level, yet a direct dissemination channel to farmers is absent.

● Ambition – Where do we want to go?

- **Engagement of Digital Farmer Service Providers:** Collaborate with existing service providers in the digital agriculture sector to effectively transmit early warning information to farmers who have access to technology.
- **Robust Downscaling Strategy:** Establish a comprehensive strategy to ensure climate early warning information reaches grassroots communities across all six geopolitical regions.
- **Collaborate with Dams, River Basins, and Reservoir Department:** Partner with departments overseeing dams, river basins, and reservoirs to enhance water management and predict dam overflow scenarios. Their involvement can strengthen early warning systems.

● Activities – How do we get there?

- **Collaboration with the Private Sector:** Identify pathways for engagement within the private sector, considering that many private companies require customized information for their internal processes. Additionally, leveraging the connections between private sector companies and farmers could enable collaborative information gathering with government agencies and ministries.
- **Utilization of Traditional Media:** Harness traditional media outlets like farm radio stations and catchy jingles to convey weather information and local television broadcasts effectively.
- **Information Dissemination:** Ensure that essential groups within both the private sector and local communities have access to and the ability to share vital information.
- **Adoption of a Unified Digital Platform:** To prevent redundant efforts and target urban populations, consider implementing a single, integrated app or digital platform.
- **Gender-Inclusive Approach:** Recognize the differing information needs of men and women within local communities and design strategies that cater to both genders.
- **Collaboration with Dam Managers:** Forge partnerships with dam management entities to align water release plans, especially since dam discharge remains necessary regardless of weather conditions. This collaboration could lead to strategically utilizing released water within the dam protection zone for agricultural purposes.
- **Evaluation of Water Quality:** Assess stored water to ensure that released water is free from harmful chemicals like heavy metals, promoting the use of purified and treated water for farming.
- **Engagement with Faith-Based Organizations:** Recognize the significance of religion in farmers' lives and their relationships with religious leaders. Partnering with faith-based organizations can effectively raise farmers' awareness, enhancing the disseminated information's impact.

Concluding the workshop on a high note, Dr. Steve Prager, a Senior Program Officer at BMGF, delivered the closing remarks. Dr. Prager emphasized the positive impact of the discussions on the project's advancement and commended the collaborative spirit demonstrated by all participants. The workshop concluded with a sense of accomplishment and a shared commitment to further contribute to the project's success.

Next Steps

Task	Description	Delivery Date	Responsibility
Workshop Brief	Comprehensive Workshop brief to be distributed to all participants, ensuring that the insights from the workshop are widely shared	August 2023	Sahel Consulting
Documentation of Proposal	The workshop's valuable insights will enhance the proposal submitted to BMGF after the full proposal request is endorsed.	August 2023	Sahel Consulting/BMGF
Project Commencement	The project's timeline is set to commence with an inaugural inception meeting.	October 2023	Sahel Consulting/BMGF

Attendees

Below is a list of workshop attendees:

Organization	Participants
Bill and Melinda Gates Foundation (BMGF)	Dr. Audu Grema
	Dr. Steve Prager
	Ms. Deborah Ishaya-Ndahi
Nigeria Hydrological Services Agency (NIHSA)	Mr. Evans Chimdiga
	Ms. Desmond Amaka Dorathy
Nigerian Meteorological Agency (NIMET)	Mr. James Adamu
	Mr. Desmond Onyilo
	Ms. Maimuna Borno
	Mr. Babatunde Atoyebi
National Emergency Management Agency (NEMA)	Mr. Godwin Okwunwa
	Ms. Ngozi Iyase
Federal Ministry of Environment	Mr. Awojemila Oladele
	Mr. John Ituma
The Federal Ministry of Agriculture and Rural Development (FMARD)	Ms. Anna Nkeiru Kalu
	Mr. Wasiu Oyeleke Oyediran
Sahel Consulting Agriculture & Nutrition Limited	Mr. Chinedu Agabara
	Mr. Temi Adegoroye
	Ms. Hauwa Ali
	Ms. Grace Omini