AICCRA

Early Warning and Rapid Response System operationalised in Ghana to support farmers against climate-driven pests and diseases which cause annual crops losses of USD 1 billion

SECTION 1: At a glance

Short outcome/impact statement

Ghana has operationalised an Early Warning and Rapid Response System for Pests and Diseases (EWRRS-PD) to protect farmers against pests and diseases which cost over USD 1 Billion [1] in yield losses and management costs. After eleven public and private sector organisations validated the framework and signed a Memorandum of Understanding towards its operationalisation, its functional units have been developed with terms of Reference. An EWRRS-PD portal was developed on the Ag-Innovation Data Hub to further consolidate its operationalisation.

Geographic location

Scope: Sub-national, National, Regional, Global
Country(ies): Ghana
Region(s): Central Asia; Australia and New Zealand

General Information

OICR code 3517	**Status** Completed	**Tag as** New OICR
	Report year 2024	

Cluster lead Ghana

Lead contact person Ghislain Tepa-Yotto

Level of maturity Level 1 - Discourse/behavior changes (sphere of influence)

Other Clusters contributing

- Zambia
- Theme 2

Key contributors

Category	Name	Type	Headquarter
CG Centers/Managing partners	(CGIAR IITA) International Institute of Tropical Agriculture	Institute	Not available
External partners	GMet - Ghana Meteorological Agency	Government	Ghana
External partners	CSIR - Council for Scientific and Industrial Research (Ghana)	National/local research Institution	Ghana
External partners	BNARI - Biotechnology and Nuclear Agricultural Research Institute	National/local research Institution	Ghana
External partners	MoFA - Ministry of Food and Agriculture (Ghana)	Government	Ghana
External partners	CSIR-SARI - Council for Scientific and Industrial Research - Savanna Agricultural Research Institute	National/local research Institution	Ghana
External partners	UDS - University for Development Studies	University	Ghana
External partners	Farmerline Ghana - Farmerline Ltd.	Private company (other than financial)	Ghana
External partners	CSIR-CRI - CSIR-Crops Research Institute	National/local research Institution	Ghana

Note: These are the partners who have significantly contributed to the reported outcome or impact.

SECTION 2: The story and impact

Elaboration of outcome/impact statement

In Ghana, pests and diseases cause food and agriculture-related losses valued at USD 1 billion every year, impacting the economy and the livelihoods of smallholder farmers. In response, the Plant Protection and Regulatory Services Directorate, of Ghana's Ministry of Food and Agriculture (PPRSD), mandated to manage crop pests and diseases, sought support from the CGIAR to upgrade Ghana's emergency response plan to pests and diseases. The previous plan targeted only pests from imported commodities and lacked a comprehensive stakeholder support.

An AICCRA paper proposed a holistic framework for multi-stakeholder participation in Climate-Smart Integrated Pests Management (CS-IPM) [2] .Through a public-private partnership, informed and supported by AICCRA, a new plan and response framework was developed. This has since been developed into an EWRRS-PD for Ghana [3,4] which encompasses all crop pests and diseases and consolidates stakeholders' expertise in research, monitoring, and risk communication [5].

In 2024, PPRSD and the Biotechnology and Nuclear Agriculture Research Institute (BNARI), with technical and financial support from AICCRA spearheaded the operationalisation of the framework. They led the creation of the functional units of the EWRRS-PD on the ground and co-developed TORs for the operations of these functional units with stakeholders [6, 8]. The units include a Steering Committee, Technical Working Group, Crop Officers and Agriculture Extension Officers Network, and Communication Group who are functionally connected for emergency response.

To further consolidate operationalisation of the EWRRS-PD, AICCRA Partner, the Institute of Scientific and Technological Information which host Ghana's Ag-Innovation Data Hub (AIDH), developed an EWRRS-PD portal on the AIDH.This portal provides structured series of steps that streamlines the response process, starting with report submission, initial investigation, risk assessment, and risks verification and validation for accurate and reliable information. With validation complete, the portal facilitates coordination among critical response entities to align their response strategies. An Alert Preparation stage involves crafting alerts and advisories tailored to the incident, are then distributed in an alert dissemination phase to key stakeholders for dissemination. This comprehensive workflow integrated into the AIDH enables the functional units of the EWRRS-PD to manage each phase of pest and disease response efficiently thereby offering coordinated action across multiple agencies for a robust and unified emergency response system [7 page 7].

While the system has not triggered yet, the EWRRS-PD is ready and prepared to ensure farmers receive timely pest warnings and access appropriate solutions to manage pests and diseases to protect their yields and investments.

CGIAR innovation(s) or findings that have resulted in this outcome or impact:

AICCRA's Climate Smart Integrated Pest Management (CS-IPM) AICCRA Supported Ag-Innovation Data Hub

Innovations:

Code	Title	PDF
1625	Early Warning and Rapid Response System for Pests and Diseases (EWRRS-PD)	Coming Soon
1613	Climate Risk Management in Agricultural Extension (CRMAE) curriculum and approach builds foundational knowledge and skills for extension workers to help farmers better plan for, manage, and respond to climate risk	Coming Soon

Link to performance indicators

- (2024-2025) PDO Indicator 5: Beneficiaries with enhanced resilience to climate risks
- (2024-2025) PDO Indicator 1: Partners and stakeholders in the Project area increasingly accessing enhanced climate information services and/or validated climate-smart agriculture indicators

SECTION 3: Evidence and communications

Evidence and reference

Code	Title	PDF
454	Sample Handlebars PDF	Link to pdf
455	Sample Handlebars PDF 2	Link to pdf

Quantification

AICCRA
Accelerating Impacts of CGIAR
Climate Research for Africa
CGIAR

Type	Number	Unit	Comments
Type 1	1	Unit	Not specified
Type 2	2	Unit	Not specified

Communications

Communications materials relating to this outcome:

- https://tinyurl.com/yrt4apsm
- https://cabiagbio.biomedcentral.com/articles/10.1186/s43170-021-00038-7
- https://tinyurl.com/ysd96qt2
- https://tinyurl.com/yna7jacx

Acknowledgments:

Name	Position	Affiliation
Name 1	Position 1	Affiliation 1
Name 2	Position 2	Affiliation 2

SECTION 4: Alignment with other initiatives

Cross-cutting markers

Gender score	Youth score	CapDev score	Climate change score
0 - Not Targeted	**0 - Not Targeted**	**1 - Significant**	**1 - Significant**

0 = Not targeted: The result did not target any of the Impact Area objectives.
1 = Significant: The result has made a significant contribution to any of the Impact Area objectives, even though the objective(s) is not the principal focus of the result.
2 = Principal: The result is principally about meeting any of the Impact Area objectives, and this is fundamental in its design and expected results. The result would not have been undertaken without this objective.

Other cross-cutting dimensions

Not Required, Other cross-cutting dimensions

Alliance alignment

Link to levers and strategic lever outcomes:

- **Primary -** Lever 1: Food Environment and Consumer Behavior
  - **Strategic Lever Outcomes:**
  - National and international bodies promote more sustainably sourced, healthy food options.
  - Market actors increase equity and inclusion of women and youth in priority urban food environments.
- Lever 2: Multifunctional Landscapes
- Lever 3: Sustainable Food Systems

Contribution to SDG:

- 1.1 By 2030, eradicate extreme poverty for all people everywhere, currently measured as people living on less than $1.25 a day
- 2.2 By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons
- 12.1 Implement the 10-Year Framework of Programmes on Sustainable Consumption and Production Patterns, all countries taking action, with developed countries taking the lead, taking into account the development and capabilities of developing countries
- 1.1 By 2030, eradicate extreme poverty for all people everywhere, currently measured as people living on less than $1.25 a day
- 2.2 By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent

One CGIAR alignment

Link to Impact Areas and Global Targets:

Nutrition, health and food security

Impact area 4: Climate adaptation and mitigation