ACCELERATING IMPACTS OF CGIAR CLIMATE RESEARCH FOR AFRICA (AICCRA) (P173398)

ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP)

PREPARED BY

International Institute of Tropical Agriculture (IITA), Council for Scientific and Industrial Research-Crops Research Institute (CSIR-CRI) and University for Development Studies (UDS).

FOR

Pilot of Climate Smart Agricultural Innovations and Climate Information Services in Ghana

June 2022

List of Tables

Acronyms

AICCRA	Accelerating Impacts of CGIAR Climate Research for Africa
CABI	Center for Agriculture and Bioscience International (CABI)
CIS	Climate Information Services
CoC	Code of Conduct
CRI	Crop Research Institute
CSA	Climate Smart Agricultural
CSIR-CRS	Center for Scientific and Industrial Research-Crop Research Institute
E&S	Environmental and Social Risks
EIA	Environmental Impact Assessment
EPA	Environmental Protection Agency
ESF	Environmental and Social Framework
ESMP	Environmental and Social Management Plan
ESRM	Environmental and Social Risk Management
GBV	Gender Based Violence
IITA	International Institute of Tropical Agriculture
IPM	Integrated Pest Management
IWMI	International Water Research Institute
MMDAs	Municipal and District Assemblies
MoFA	Ministry of Food and Agriculture
OHS	Occupational Health and Safety
P&OD	People and Organizational Development
PMC	Project Management Committee
POP	Persistent Organic Pollutants
PPE	Personal Protective Equipment
PWD	Persons with Disabilities
SEA	Sexual Exploitation and Abuse
SEP	Stakeholder Engagement Plan
SH	Sexual Harassment
UDS	University for Development Studies

EXECUTIVE SUMMARY

Background

Accelerating Impacts of CGIAR Climate Research for Africa (AICCRA) is a project being implement in Africa to help deliver a climate-smart African future driven by science and innovation in agriculture. It is led by the Alliance of Bioversity International and Centre for International Tropical Agriculture (CIAT) and supported by a grant from the International Development Association (IDA) of the World Bank.

The Project **Development Objective** is to strengthen the technical, institutional, and human capacity needed to enhance transfer of climate-relevant information, decision-making tools, and technologies in support of scaling efforts in IDA-eligible countries in Africa. The project is structured into 4 major components and comprises of **Component 1:** Knowledge generation and sharing; **Component 2:** Strengthen Partnership for delivery; and **Component 3:** Validating Climate-Smart Agriculture Innovations through Piloting.

AICCRA-Ghana, led by the International Institute of Tropical Agriculture (IITA), is focused on bridging the gap between research institutes and development organizations to promote the adoption of improved technologies including digital climate advisories, for the purpose of enhancing the resilience of the country's agriculture and food systems. AICCRA project activities in Ghana is expected to run till December 2023.

AICCRA-Ghana is also focused on testing, piloting, and validating Climate Smart Agricultural (CSA) innovations and Climate Information Services (CIS) technologies in farmers' fields to expand the awareness and application of relevant climate adaption innovations among farmers. The AICCRA-Ghana team intends to set up CSA demonstration farms across 20 farming communities in 12 districts of the 6 regions in Ghana. The demonstration of CSA innovation and CIS technology in Ghana will be led by IITA with technical support from Council for Scientific and Industrial Research - Crop Research Institute (CSIR-CRI); Center for Agriculture and Bioscience International (CABI); University for Development Studies (UDS); Plant Protection Regulatory Directory (PPRSD), Esoko Company Limited and International Water Management Institute (IWMI).

Rationale for the Preparation of the Environmental and Social Management Plan (ESMP)

The environmental and social screening exercise conducted on proposed CSA demonstration plots confirmed a range of Environmental and Social (E&S) risks, which if not mitigated, could cause harm to people and the environment. Based on these findings, this Environmental and Social Management Plan (ESMP) is prepared to clarify (i) the measures that will be taken during the implementation of project activities to eliminate or offset adverse E&S impacts, or to reduce them to acceptable levels; and (ii) actions needed to implement these measures.

Purpose, Objectives and Scope of the ESMP

The purpose of this ESMP is to consider and develop proper measures and controls to decrease the potential for environmental degradation during all phases of the Project, and to provide clearly defined action plans and emergency response procedures to account for human and environmental health and safety.

This ESMP provides a practical plan to mitigate and respond to the potential E&S risks identified on the proposed demonstration of CSA innovations and CIS technologies in Ghana. The plan specifically details:

i. The description of sites identified for the CSA demonstrations and key E&S risks identified.
ii. Relevant national and international legal requirements and guidelines.
iii. Relevant environmental and social baseline conditions.
iv. The measures to be taken during the implementation and operation of a project to eliminate, reduce them to acceptable levels, mitigate or offset adverse environmental and social impacts.
v. Environmental & social management and monitoring plans for E&S risk mitigation.

Scope of Work

Based on the food crop production pattern in Ghana and dominant areas of production, the AICCRA-Ghana team has selected 5 major food crops to be piloted in 17 communities across 12 districts and 6 regions as shown the table below.

Region	District/Municipal /Metropolitan Area	Communities	Specific Commodity	Number of plots
Greater Accra Region	Ga south District	Tuba	Tomatoes,	1
Central Region	Cape Coast Metropolitan	Mempeasem	Sweet potato	1
		Effutu Dehyia	Sweet potato	1
	Komenda-Edena-Eguafo-Abrem	Dompoase	Sweet potato	1
		Enyinase	Sweet potato	1
Bono East Region	Kintampo North	Adomano	Yam, maize & cowpea	2
		Bawakura	Yam, maize & cowpea	2
	Kintampo South	Adiemra	Yam, maize & cowpea	2
		Agyegyemakunu	Yam, maize & cowpea	2
	Techiman North	Offuman	Yam, maize & cowpea	2
		Tanoboase	Yam, maize & cowpea	2
Northern Region	Tolon	Nyankpala	Yam, maize, cowpea & sweet potato	3
		Woribog	Yam, maize, cowpea & sweet potato	3
		Yizeigu	Yam, maize, cowpea, and sweet potato	3
Upper East	Kasena Nankana District	Tampola	Tomatoes	2
	Bongo District	Yidongo	Tomatoes	2
Upper West	Lawra	Boompari	Maize & cowpea	1
		Dzuuri	Maize & cowpea	1
	Jirapa Municipal Assembly	Doggoh	Maize & cowpea	1

The Table below provides breakdown and specific details on proposed CSA/CIS innovation technologies for each value chain selected for pilot activities.

Value Chain	CSA/CIS Innovations/Technologies
Yam	Biological soil and seed treatment (application of neem leaf powder to treat soil and ash to treat seed yam before planting
	Seedbed options- Ridging as an alternative to mounding for yam production
	Staking options-Trellis/Minimum staking to reduce deforestation in yam production

	Promotion of seed yam multiplication technologies (mini-sett technology; aeroponics and hydroponics technologies)
	Organic amendment for improving soil health
	Enhancing access to climate information
Sweet Potato	Vine technology (cutting and planting)
	Promotion of vine multiplication technologies (aeroponics and hydroponics technologies)
	Biocontrol of the sweet potato weevil
	Organic amendment for improving soil health / Leguminous crops as previous crop
	Enhancing access to climate information
Maize, Cowpea	Minimum tillage for maize, cowpea
	Promotion of stress (drought, early maturing, striga and low N) tolerant improved maize, and cowpea varieties
	Promotion of disease and pest tolerant maize, and cowpea varieties
	Biopesticide for managing cowpea and maize pests and disease
	Mucuna pruriens or cowpea /maize intercropping or rotation to build soil C stocks
	Promotion of dual-purpose cowpea (grain and fodder)
	Organic amendment for improving soil health / Leguminous crops as previous crop
	Mucuna pruriens or cowpea /maize intercropping to build soil C stocks
	Contour stone bunds or contour tillage with tied ridges (Zero or minimal rates of rainfall run-off and soil erosion)
	Enhancing access to climate information
Tomatoes	Contour stone bunds or contour tillage with tied ridges (Zero or minimal rates of rainfall run-off and soil erosion)
	Promotion of drip and sprinkler irrigation for vegetable farming
	Organic amendment for improving soil health / Leguminous crops as previous crop
	Enhancing access to climate information
	Enhanced biopesticide use in maize and cowpea systems

National Policy, Legal and Institutional Framework

The Constitution of the 4th Republic is the fundamental law of Ghana and provides the basis from which all other laws are derived. The relevant national and sector policies, national legal and institutional frameworks, and international conventions relevant to CSA demonstration are summarized below.

Relevant policies and plans	
National Environmental Policy, 2013	National Water Policy, June 2007
National Land Policy (NLP), 1999	Occupational Safety and Health Policy of Ghana, 2014
Forest and Wildlife Policy, 2012	Ghana National Climate Change Policy, 2013
Relevant Acts and regulations	
Environmental Protection Agency Act 1994 (Act 490)	Environmental Assessment Regulations 1999, LI 1652
The Forest Protection (Amendment) Act 2002 (Act 624)	The Labor Act 2003, Act 651
Ghana Disability Act, 2006 (Act 715)	The Children's Act 1998, Act 560
The Water Use Regulations 2001, LI 1692	Plants and Fertilizer Act 2010 (Act 803)
Institutional Framework	

Environmental Protection Agency (EPA)	Ministry of Food and Agriculture (MOFA)
Water Resources Commission (WRC)	Lands Commission
Ghana Irrigation Development Authority	
International Conventions	
Food and Agriculture Organization (FAO) Guidelines and Reference Material on Integrated Soil and Nutrient Management and Conservation for Farmer Field Schools.	
Convention Concerning the Protection of Workers Against Occupational Hazards in the Working Environment due to Air Pollution, Noise, and Vibration (ILONo.148).	
UN Framework Convention on Climate Change (UNFCCC) (Rio, June 1992).	
African Convention on the prohibition of the import into Africa of hazardous wastes in all forms and the transboundary control of such wastes produced in Africa (Bamako, 1991).	
Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal entered into force on May 5, 1992.	
Stockholm Convention on Persistent Organic Pollutants (POPs) - May 22, 2001.	
Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade (PIC) adopted on September 10, 1998. It entered into force on February 24, 2004.	
United Nations Convention on Biological Diversity.	
Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).	

E&S Risks Identified

The adverse environmental and social issues that could possibly arise from the pilot CSA demonstration and identified during site specific screening include the following:

- Occupational health and safety (OHS) risks relating to poisoning or other injuries from the use of pesticides and other chemicals, as well as workplace accidents/injuries, including lack/inappropriate use of personal protective equipment (PPE), dust, and traffic accidents.
- The use of pesticides and other chemicals which could lead to harmful exposure to workers and poor disposal of pesticide residues and containers;
- Excessive water loss through leaked irrigation pipelines;
- Indiscriminate disposal of solid waste;
- Child labor (the risk that a person under 18 years of age is engaged on project activities);
- Infection with a communicable disease (such as COVID-19) which may arise from the interaction of project workers with local communities or between project workers;
- SEA/SH related risks
- Potential exclusion of vulnerable groups such as blind and deaf farmers from learning sessions.
- Potential surface water and river contamination from pesticides use on crops and washed away by run-off water.
- Unsatisfactory labor working conditions.

During the on-farm screening activities, neither flora and fauna endangered species or at risk nor any protected species or areas have been identified next to the study areas.

Environmental and Social Risks Mitigation Plan

This ESMP considered a number of mitigation measures to eliminate adverse E&S risks and impacts identified. These measures include:

- Health and safety principles
- Integrated pest management principles

- Child and forced labor mitigation principles
- Gender and social inclusion principles
- SEA/SH prevention and response principles
- Stakeholder engagement and grievance redress mechanisms.

Conclusion

AICCRA-Ghana Cluster acknowledges that the activities and operations during the implementation of CSA technologies could potentially impact on the environment, workers, communities, and is very mindful of its obligations towards the protection of the environment and ensuring the health and safety of the farmers, and the communities within the project area. AICCRA-Ghana Cluster will continue to invest in ensuring a safe environment that will assure sustainable farming operations and will also continue to undertake its activities and operations in accordance with the Ghanaian laws as well as the Environmental and Social Framework of the World Bank.

1.0 BACKGROUND

1.1 Introduction

The implementation of Accelerating Impact of CGIAR Climate Research for Africa (AICCRA) project activities in Ghana, led by International Institute for Tropical (IITA), is focused on bridging the gap between research institutes that produce improved technologies and development organizations that promote the adoption of improved technologies including digital climate advisories, for the purpose of enhancing the resilience of the country's agriculture and food systems in the face of climate change, while improving livelihoods of hundreds of thousands of farmers.

AICCRA-Ghana is also focused on testing, piloting, and validating Climate Smart Agricultural (CSA) innovations and Climate Information Services (CIS) technologies in farmers' fields to expand the awareness and application of relevant climate adaption innovations among farmers. The AICCRA-Ghana team intends to set up CSA demonstration farms across 17 farming communities in 11 districts of the 6 regions in Ghana. The CSA innovation and CIS technology in Ghana will be led by IITA with technical support from Council for Scientific and Industrial Research - Crop Research Institute (CSIR-CRI); Center for Agriculture and Bioscience International (CABI); University for Development Studies (UDS); Plant Protection Regulatory Directory (PPRSD), Esoko Company Limited and International Water Management Institute (IWMI).

As envisaged, the pilot of CSA innovations, and CIS technologies on farmers' fields is expected to lead to environmental and social risks at the sites identified for demonstrations. In line with this expectation and in accordance with the requirements of the project's Environmental and Social Risk Management (ESRM) guide, the AICCRA-Ghana team conducted site specific screening of farm plots identified for CSA demonstrations in January 2022. The screening exercise confirmed the presence of a range of Environmental and Social (E&S) risks, which if not mitigated, could cause harm to people and the environment.

In response, the AICCRA-Ghana team has prepared this Environmental and Social Management Plan (ESMP) to guide the mitigation and response to the environmental and social (E&S) risks identified on farm plots proposed for pilot of CSA innovations under the implementation of AICCRA project activities in Ghana.

This ESMP has been prepared in tandem with a separate Labor Management Procedures (LMP) and a Stakeholder Engagement Plan (SEP) including a grievance mechanism (GM) as a collective set of mitigation instruments for managing E&S risks envisaged on AICCRA-Ghana activities.

This ESMP has also been consulted upon with key project stakeholders and would be disclosed in all project communities prior to the commencement of project activities. This ESMP is a living document, which will be updated and re-disclosed as and when new risks are identified, or field activities are expanded to other similar sites.

Scope of Work

This section provides the scope of work and in particular the description of selected value chains and a bundle of CSA innovations and CIS technologies that AICCRA-Ghana intends to test, pilot, and validate in farmers' fields to expand awareness and application of relevant climate adaptations among farmers.

Selected Value Chains/Crops

Based on the food crop production pattern in Ghana and dominant areas of production, the AICCRA-Ghana team has selected 5 major food crops highly produced and consumed in Ghana for the demonstration of CSA/CIS innovations on their production value chains. These value chains are yam, maize, cowpea, tomato, and sweet potato. The pilot of CSA/CIS innovations on these crops will occur in 6 of the 16 administrative regions in Ghana. The selection of these regions was informed by their dominance in the respective crop production, and reflections on other parallel CSA/CIS demonstrations happening across the country. Table 1 below provides the matrix of the regions, districts, communities, and selected value chains to be piloted.

Table 1: Confirmed value chains/crops to be piloted on each demonstration site

Region	District/Municipal /Metropolitan Area	Communities	Specific Commodity	Number of plots
Greater Accra Region	Ga south District	Tuba	Tomatoes	1
Central Region	Cape Coast Metropolitan	Mempeasem	Sweet potato	1
		Effutu Dehyia	Sweet potato	1
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CSA/CIS Innovations and Technologies to be piloted

Overall, the AICCRA-Ghana will focus on providing technical advisory to farmers on improved seeds and farm inputs, soil fertility management, biopesticides (use of biological extracts and bio-control agents), pest and disease management (pest alerts on maize, tomato scouting, safe use of agrochemicals), crop production techniques (site selection, land preparation, planting, weeding, etc.), weather pattern (onset of rains, cessation of rains, dry spells, amount of rains expected, daily/weekly forecast, temperature, etc.). Table 2 below provides breakdown and specific details on proposed CSA/CIS innovation technologies for each value chain selected for pilot activities. These proposed

innovations include CSA innovations adapted from farmers through previous collaborative efforts on climate change adaptions activities on farming.

Table 2: CSA/CIS innovation/technologies to be piloted on each value chain and plot

Value Chain	CSA/CIS Innovations/Technologies
Yam	Biological soil and seed treatment (application of neem leaf powder to treat soil and ash to treat seed yam before planting
	Seedbed options- Ridging as an alternative to mounding for yam production
	Staking options-Trellis/Minimum staking to reduce deforestation in yam production
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	Promotion of disease and pest tolerant maize, and cowpea varieties
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	Enhancing access to climate information
	Enhanced biopesticide use in maize and cowpea systems

Implementation Arrangements for the Pilot of CSA Innovation.

The table below provides the breakdown of roles and responsibilities on various partners that will oversee the implementation of CSA-CIS pilot initiatives under AICCRA Ghana.

Table 3: Roles and responsibilities on AICCRA Ghana Partners on CSA demonstrations.

Organization/Institution	Project management and intervention scope
IITA	• Overall Project coordination, monitoring and evaluation. • Overall coordination and management of environmental and social risks. • Trainings, CSA awareness and workshops coordination.

	• Provide overall technical and scientific backstopping towards refining and adapting Climate-smart One-health approaches and technologies. • Upgrading One-health approaches and technologies within the Regional Centers of Excellence (Roots & Tubers-Ghana, Maize-Benin). • Recruitment and management of farm laborers.
NIBIO (under IITA)	• Pesticide risk analysis and management.
CABI (under IITA)	• Promotion of pest forecast, early warning tools, and One-health approaches and technologies.
Ghana Met (under IITA)	• Upgrading Met services: operationalizing Climate-smart advisories.
CSIR-CRI (under IITA)	• Upgrading One-health approaches and technologies within the Regional Center of Excellence on Roots and Tubers. • Coordination of CSA/CIS demonstration activities in Northern, Upper East, Bono East, Central, Greater Accra and Upper West Regions.
PPRSD/MOFA (under IITA)	• Upgrading Plant Health unit and participation for the establishment of the National Task Force (Ghana) for the "One-health platform for climate-driven pests and diseases"
UDS (under IITA)	• Capacity building (joint PhD programs on One-health, CIS and CSA) • Curricula development on One-health approach, CIS and CSA.
Esoko Limited (under IITA)	• Implementation and promotion of digital Climate-informed Services
IWMI	• Backstopping and promotion of climate-smart technologies for improved Water Health at demonstration sites anchored on irrigation.
Extension Agents, Ministry of Agriculture	• Assist in the establishment and monitoring of demonstration fields. • Provide technical backstopping at plot level, • Mobilization of community members including farmers for project related activities, • Data collection and field supervision.
Meta Foundation	• Serve as local representative of the project at the community level • Community mobilization for project related activities • Technical backstopping at the community level • Training, skills development and coaching • Data collection, and documentation • Reporting

1.2 Rationale for the Preparation of the ESMP

The environmental and social screening exercise conducted on proposed CSA demonstration plots confirmed a range of E&S risks, which if not mitigated, could cause harm to people and the environment. Based on these findings, this Environmental and Social Management Plan (ESMP) is prepared to clarify (i) the measures that will be taken during the implementation of project activities to eliminate or offset adverse E&S impacts, or to reduce them to acceptable levels; and (ii) actions needed to implement these measures.

1.3 Purpose, Objectives and Scope of the ESMP

The purpose of this ESMP is to consider and develop proper measures and controls to decrease the potential for environmental and social risks and impacts during all phases of the Project, and to provide clearly defined action plans and emergency response procedures to account for human and environmental health and safety.

The ESMP provide a practical plan to mitigate and respond to the potential E&S risks identified on the proposed demonstration of CSA innovations and CIS technologies in Ghana. The specific objectives of the ESMP are to:

i. Describe the sites identified for the CSA demonstrations and key E&S risks identified.
ii. Identify and address relevant national and international legal requirements and guidelines.
iii. Describe relevant baseline environmental and social conditions.
iv. Prescribe measures to be taken during the implementation and operation of the project to eliminate, reduce them to acceptable levels, mitigate or offset adverse environmental and social impacts.
v. Develop environmental & social management and monitoring plans in compliance with the relevant environmental laws.
vi. Document and address environmental and social concerns raised by stakeholders and the public in consultation events and activities.

2.0 PROJECT DESCRIPTION

2.1 The AICCRA Project and its Components

The AICCRA project is a World Bank supported project that seeks to strengthen the technical, institutional, and human capacity needed to enhance transfer of climate-relevant information, decision-making tools and technologies in support of scaling efforts in International Development Association (IDA) eligible countries in Africa. It supports critical knowledge creation and sharing, and capacity building activities to enable regional and national-level stakeholders to take Climate Smart Agriculture (CSA) innovations to scale. It will achieve this by further strengthening partnerships between CGIAR and regional and local research institutes, universities, civil society organizations, farmer organizations, and the private sector. AICCRA will facilitate the development of Climate Information Services (CIS) and promote the adoption of CSA solutions across sub-regions within Africa that are extremely vulnerable to climate change. The project will also support on-the-ground activities in selected countries in Western, Eastern and Southern Africa where CGIAR science has the greatest chance of success in delivering catalytic results, which can be adopted by other countries in the region.

The **Project Development Objective** is to strengthen the technical, institutional, and human capacity needed to enhance transfer of climate-relevant information, decision-making tools, and technologies in support of scaling efforts in IDA-eligible countries in Africa. Based on this overall objective the project is structured into four components**:**

Component 1 - Knowledge generation and sharing: Supporting generation and sharing of knowledge products and tools designed to address critical gaps in the design and provision of agricultural climate services, enable climate-informed investment planning, and contribute to the design of policies to promote uptake of climate smart agriculture (CSA) practices at the regional, sub-regional and national levels.

Component 2 - Strengthen partnership for delivery: Strengthening the capacities of key regional and national institutions in Sub-Saharan Africa along the research-to-development continuum for

anticipating climate effects and accelerating identification, prioritization, and uptake of best-bet adaptive measures.

Component 3 - Validating Climate-Smart Agriculture innovations through piloting: Supporting testing and validation (including gender and social inclusion) of CSA technologies in research stations and in farmers' fields; linking of validated CSA technology packages to technology transfer systems; and improving access by farmers and other value chain actors to climate-informed agricultural advisory services to inform decision-making about choice of technology and enterprise management.

Component 4 - Project management: Supporting day to day implementation, coordination, supervision and overall communication and management (including, procurement, financial management, monitoring and evaluation, audits, environmental and social risk management, and reporting) of Project activities and results, all through the provision of goods, consulting services, non-consulting services, Training and Workshops, Operating Costs, and payment of staff salaries for the purpose.

2.2 Ghana Cluster Activities

AICCRA-Ghana, led by IITA, focuses on bridging the gap between the research institutes that produce improved technologies and the development organizations that promote the adoption of improved technologies including digital climate advisories, for the purpose of enhancing the resilience of the country's agriculture and food systems in the face of climate change while improving livelihoods of hundreds of thousands of farmers.

AICCRA-Ghana will mutualize existing expertise to strengthen the technical, institutional, and human capacity needed to move CGIAR innovations off the shelf and achieve impacts in the country. The project will specifically launch a "One-health platform for climate-driven pests and diseases." It is an advanced climate-informed One-health innovation that builds on CGIAR's track records in this area, framing the nexus of crop, livestock, soil and water health for improved human and ecosystem health, food safety and nutrition, and climate change as a complex public health issue.

AICCRA Ghana will use the CGIAR's scaling Readiness Tool to undertake assessment of CSA options for accelerated uptake of innovations. The National Framework for Climate Services (NFCS) and innovation platforms including private sector, Nourishing Africa network and farmers will be capacitated towards identification, promotion and implementation of suitable CIS and best-bet CSA and One-health innovations. Media and mass campaign awareness will be launched while developing business models and engaging champion women and youth-led enterprises. Pilot sites will be identified, and training provided to farmers for successful implementation of One-Health and CSA technologies. Key activities include:

- Development of ag-data hubs and decision support systems.
- Strengthening digital climate advisory services.
- Support strengthening of national meteorological real-time services.
- Build capacity of public and private sectors users to support implementation of CSA technology packages.
- Develop existing or strengthen new National Frameworks for Climate Services (NFCS).
- Identify and prioritize climate and gender and social inclusion smartness of CSA packages.
- Create awareness and identify scaling mechanism for best-bet CSA options.

- Integrate climate-smart options and tailored CSI advisory systems for specific value chains.

3.0 LEGAL, POLICY AND INSTITUTIONAL FRAMEWORK

The investments will strictly adhere to and follow the World Bank's Environmental and Social Framework (ESF) as well as the applicable legal and regulatory frameworks of Ghana for the pilot of CSA innovations. This section provides a brief overview of relevant national, environmental and social policies, regulation and legal frameworks that provide guidance for the conduct of on-farm activities in Ghana.

3.1 National Legal Framework

The Constitution of Ghana: The Constitution of the 4th Republic is the fundamental law of Ghana and provides the basis from which all other laws are derived. Article 36(9) on Directive Principles of State Policy has a provision on the environment which states that*: "The State shall take appropriate measures needed to protect and safeguard the national environment for posterity; and shall seek co-operation with other states and bodies for purposes of protecting the wider international environment for mankind".*

Article 41(K) in Chapter 6 of the Constitution requires all citizens (employees and employers) to;

- Protect and safeguard the natural environment of the Republic of Ghana and its territorial waters;
- Cooperate with other states and bodies to protect the wider global environment; and
- Endeavour to preserve and protect places of historical interest and preserve artifacts.

Section17(2) ensures equality and freedom from discrimination on grounds of gender, race, color, ethnic, origin, religion, creed or social or economic status. Section 17(3) amplifies this to cover place of origin and occupation; (4) constitutionally protects affirmative action generally. Section 21 sets out general freedoms such as freedom of speech.

Section 24 lays down economic rights, including the right to work under satisfactory, safe and healthy conditions and to receive equal pay for equal work; its subsection (3) states, among other things, that: "Every worker has the right to form or join a trade union of his choice for the promotion and protection of his economic rights and social interests".

Section 28 covers children's rights, including the right to protection against exposure to physical and moral hazards. Section 29 covers the rights of persons with disabilities (PWD); its subsection (7) promotes special incentives for PWD to engage in business and for businesses that employ PWD in significant numbers.

Chapter 6 is entitled "Directive principles of State policy". Section 35(6) requires the State to take appropriate measures to achieve reasonable regional and gender balance in recruitment and appointment to public offices. Section 36(6) lays down the economic objectives, including that the State afford equality of economic opportunity to all citizens, in particularly taking all necessary steps to ensure full integration of women into the mainstream of Ghana's economic development. Its subsection (10) safeguards the health, safety and welfare of all persons in employment; and its subsection (11) requires the State to "encourage the participation of workers in the decision-making process at the workplace".

Applicability/Relevance to the Project: *The foregoing therefore requires the AICCRA-Ghana team to consider and implement measures to promote sound environmental protection and management during the pilot of the CSA innovations.*

3.2 Policies and Plans

National Environmental Policy, 2013: The National Environmental Policy is based on a broad vision founded on and directed by respect for all relevant principles and themes of environment and sustainable development. According to the Policy, Ghanaians are entitled to an environment that is not harmful to their health and wellbeing and are enjoined to have the environment protected for the benefit of present and future generations through reasonable legislative and administrative measures.

Applicability/Relevance to the Project: *Specific policy actions that will be beneficial and relevant to the AICCRA Project implementation will include among others, measures to control water pollution and policy measures to protect critical ecosystems, including the flora and fauna in the project areas.*

National Water Policy, June 2007: The National Water Policy of Ghana aims at providing a framework for the sustainable development and utilization of Ghana's water resources. It is targeted at all water users, water managers and practitioners, investors, decision-makers and policy makers within the central and decentralized government structures such as the district assemblies, non-governmental organizations and international agencies.

Applicability/Relevance to the Project: *The Policy outlines various issues related to water-use and the links to other sectoral policies such as agriculture and food security, which is relevant for the project implementation.*

Forest and Wildlife Policy, 2012: The Forest and Wildlife Policy of Ghana aims at the conservation and sustainable development of forest and wildlife resources for the maintenance of environmental stability and continuous flow of optimum benefits from the socio-cultural and economic goods and services that the forest environment provides to the present and future generations, whilst filling Ghana's commitments under international agreements and conventions.

Applicability/Relevance to the Project: *The AICCRA project team will need to take actions for conserving and protecting the integrity of the forest and wildlife resources in project areas.*

Ghana National Climate Change Policy, 2013: The policy outlines the vision and objectives for ensuring climate-resilient and climate-compatible economy while achieving sustainable development through equitable low-carbon economy for Ghana. The policy, among other issues seeks to promote effective climate adaption issues in agriculture and food security. Section 1.2.4 - Application of the policy states that *"this policy shall guide the work of all governmental, statutory, non-governmental and civic entities which are involved in, or which may seek to become involved in, addressing climate change issues that are critical to the national development and status of Ghana".*

Applicability/Relevance to the Project: *The pilot CSA innovations in Ghana are a form of effective climate adaptation interventions to improve agriculture and food security in Ghana. The AICCRA-Ghana team would therefore need to conduct the pilot of the CSA innovations in accordance with policy objectives, principles and actions outlined under the agriculture and food security thematic area of the policy.*

National Land Policy, 1999: The National Land Policy of Ghana aims at the judicious use of the nation's land and natural resources in support of the different socio-economic activities undertaken, in accordance with sustainable resource management principles and to maintain viable ecosystems.

The policy seeks to address some of the fundamental problems associated with land management in the country. These include general indiscipline in the land market, characterized by land encroachments, multiple land sales, use of unapproved development schemes, haphazard development, indeterminate boundaries of customary ownership, resulting from lack of reliable maps and plans, compulsory acquisition by government of large tracts of land, which have not been utilized; a weak land administration system and conflicting land uses, such as, the activities of mining companies, which leave large tracts of land denuded as against farming, which is the mainstay of the rural economy, and the time-consuming land litigation, which have crowded out other cases in our courts.

Applicability/Relevance to the Project: The AICCRA Ghana Team will need to take this policy into consideration in the selection of plots for CSA demonstrations.

3.3 Acts and Regulations

Environmental Protection Act, 1994 (ACT 490) - The Environmental Protection Act, 1994 (Act 490) came into being to establish the Environmental Protection Agency (EPA) as a body for the protection, conservation, and management of environmental resources for the Republic of Ghana. The Act mandates the EPA with the formulation of environmental policies, prescription of standards and guidelines and issuance of environmental permits and pollution abatement notices. Section 2(i) of Act 490 further mandates the EPA to enforce compliance with established Environmental Impact Assessment (EIA) procedures among companies and businesses in the planning and execution of development projects, including existing projects. Section 10(2) of the Act also promulgates the establishment of a Hazardous Chemicals Committee which functions to monitor the use of hazardous chemicals by collecting information on the importation, exportation, manufacture, distribution, sale, use and disposal of such chemicals.

Applicability/Relevance to the Project: *If the on-farm pilot of a CSA innovation falls under the category of activities for which a prior environmental permit is required before commencement, the AICCRA-Ghana team would need to seek a permit from the EPA and involve them in the monitoring of E&S mitigation measures.*

Environmental Assessment Regulations, 1999 (LI 1652) - The Environmental Assessment Regulations is established to provide a framework for environmental assessment of development projects in Ghana.

> Regulation 1 (1) of LI 1652 mandates that *"no person shall commence any of the undertakings specified in Schedule 1 to these Regulations or any undertaking to which a matter in the Schedule relates, unless prior to the commencement, the undertaking has been registered by the agency and an environmental permit has been issued by the Agency in respect of the undertaking"*

In respect of agriculture, Schedule 1 specifies the following activities for which environmental permits may be required before commencement:

i. Land development for agricultural purposes not less than 40 hectares; and
ii. Agricultural programmes necessitating the resettlement of 20 families or more.

Applicability/Relevance to the Project: *Given that each land size required for the pilot of CSA innovations is less than 40 hectares (and not contiguous) and will not lead to any form of resettlement,*

the AICCRA-Ghana team is not mandated to secure environmental permits from the EPA prior to commencement of on-farm demonstrations of CSA innovations, and follow other subsidiary legislations on Environmental Impact Assessments.

The Forest Protection (Amendment) Act 2002 (Act 624)- The Act sets forest offences and penalties. The Act states that a forest offence is committed if any person who, in a Forest Reserve without the written consent of the competent forest authority: (a) fells, uproots, lops, girdles, or damages any timber; (b) makes or cultivates any farm or erects any building; (c) causes any damage by negligence in felling any tree or cutting or removing timber; or (d) sets fire to any grass or herbage, or kindles a fire without taking due precaution to prevent it.

Applicability/Relevance to the Project: *This act provides guidelines to the AICCRA project team on forest prohibitions that must be taken into consideration in the selection plots for CSA demonstrations.*

The Water Use Regulations 2001, LI 1692: Subject to these regulations, subsistence agricultural water used for land areas not exceeding one hectare is exempted from an authorization requirement but an application for the registration of such water use shall be submitted to the relevant District Assembly. The Commission may, in consultation with the Environmental Protection Agency, consider a proposed water use to constitute a use which requires an environmental impact assessment.

Applicability/Relevance to the Project: *If required*, t*he AICCRA Ghana project will realize water assessment to protect the resource.*

Plants and Fertilizer Act 2010 (Act 803): This Act makes provision with respect to plant health and protection from pests and diseases, the importation and exportation of plant material, the production and marketing of seeds, the quality control of seeds, and the control on the manufacture and use of, and trade in fertilizers. The Act establishes the Plant Protection and Regulatory Services Directorate, the Plant Protection Advisory Council, the National Seed Council, a Technical and Variety Release Committee, a National Variety Release and Registration Committee, a Fertilizer Inspection Fund, the National Fertilizer Council, the Ghana Fertilizer Advisory Committee, the Pesticide and Fertilizer Regulatory Division, and the Plant and Fertilizer Fund. The Act consists of 124 sections divide into five Parts: Plants Protection (1); Seeds (2); fertilizer Control (3); Plans and Fertilizer Fund (4); Miscellaneous Matters (5).

Applicability/Relevance to the Project: T*he AICCRA Ghana project will respect provisions of this Act to control seeds and fertilizers.*

The Labor Act 2003 (Act 641): The Act provides for the rights and duties of employers and workers, general conditions of employment, prohibitions on forced and child labor, settlement of labor disputes and occupational health, safety, and environment. The act explicitly indicates that it is the duty of an employer to ensure the worker works under satisfactory, safe and healthy conditions.

Applicability/Relevance to the Project: *The pilot of CSA innovations will involve the use of several contracted workers for which the AICCRA-Ghana team led by IITA must follow guidelines provided in this act to ensure sound working conditions for workers and eliminate potential occupational health and safety hazards for workers.*

Ghana Disability Act, 2006 (Act 715): The Ghana Disability Law is aimed at ending the discrimination that faces people with disabilities. The Act offers a legal framework to protect the rights of physically and mentally disabled persons in all areas of life, including agricultural activities. It is also intended to

promote the creation of an environment that will advance the economic well-being of disabled people and enable them to function better in society.

Applicability/Relevance to the Project: *The AICCRA-Ghana team will need to create an enabling environment by eliminating barriers that could impede the active participation and learning of farmers with disabilities in the pilot of CSA innovations.*

Land Act, 2020 (Act 1036): The new Land Act, 2020 Act (1036) seeks to consolidate various land legislations into one enactment to provide a comprehensive statement in respect of the consolidated legislation. It also provides easy access to legislation on land and helps remove the overlaps and inconsistencies that were associated with land legislation. Additionally, international best practices on land management were considered and found expressions in the Act. The Lands Act (Act 1036) of 2020 repealed the State Lands Act (Act 125) of 1962, Land Title Registration Act1986 (PNDCL 152), and the Administration of Lands Act (Act 123) of 1962. There are two main types of landownership/land tenure in Ghana: (1) Customary and (2) State land/Vested Lands.

The Act identified and recognized various interests guiding the acquisition of land and resettlement process. The procedure for the compulsory acquisition guaranteed under the 1992 Constitution of Ghana is affirmed and elaborated in the Act 1036, from Sections 233 to 267, including notice to a person with interest in the land, surveying of the land, consultations with stakeholders including interested parties, publication of the consultation report by the Lands Commission with copies of the report made available to the respective traditional authority and district assembly.

Section 258 in providing for fair and adequate compensation that protects the rights of a vulnerable claimant by ensuring that claimant is adequately represented in the process of assessment of compensation. However, this clause is not entirely consistent with the World Bank Environmental and Social Framework (ESF) Environmental and Social Standard (ESS) 5, which appeals to the full replacement cost standard.

Consistent with article 20(3) of the 1992 Constitution, detailed provisions have been made under clause 261 for resettlement of persons displaced by compulsory acquisition. Section 265 provides for the Resettlement of displaced Inhabitants and the preparation of a Land and Resettlement Plan.

Applicability/Relevance to the Project: *The AICCRA project will need to ensure fair and adequate payment for farm plots rented for CSA demonstration activities.*

Land Use and Spatial Planning Act, 2016 (Act, 926): The Land Use and Spatial Planning Act aims to provide for sustainable development of land and human settlements through a decentralised planning system. It establishes processes to regulate national, regional, district and local spatial planning, and generally to provide for spatial aspects of socio-economic development.

The Act establishes the Land Use and Spatial Planning Authority (section 2), funded by a Fund of the same name (sections 20-24). One of the Authority's aims is to "ensure the control of physical development in less controlled but sensitive areas such as forest reserves" through collaborations with relevant agencies such as the Forest Commission.

The Act ascertains that planning at a regional level (sections 25-29) and at district level (sections 30-41) is coordinated by Spatial Planning Committees, Councils and Authorities. The Act contains Spatial Development Frameworks at national (sections 49-51), regional (sections 52-54) and district (sections 55-60) levels, all of which include a strategic environmental assessment.

The Act includes sections on structure plans (sections 61-70), local plans (sections 71-82), zoning schemes (sections 83-103) and permits (113-125).

Applicability/Relevance to the Project: *The AICCRA Ghana project will need to ensure that lands rented for demonstration activities conforms to land arrangements in each project area.*

Local Governance Act, 2016 (Act 936): The Local Governance Act of 2016, Act 936 which Act repealed the Local Government Act 462 (1993), was passed into law on 27th October 2016, by parliament and was assented to by the President on 20th December 2016. The new Act give mandate to the Metropolitan, Municipal and District Assemblies among others, to promote local economic development; and provide guidance, give direction to and supervise other administrative authorities in the district as may be prescribed by law; initiate programmes for the development of basic infrastructure and provide municipal works and services in the district; as well as be responsible for the development, improvement and management of human settlements and the environment in the district;

Applicability/Relevance to the Project: *The AICCRA Ghana Team will need to inform respective MDAs and rally their support for implementation of CSA demonstration activities under their jurisdiction.*

Workmen's Compensation Law 1987 (PNDCL 187): The law holds employers responsible for the payment of compensation to workmen for personal injuries caused by accidents arising out and in the course of their employment. Where an employee sustains personal injury by accident arising out of, and in the course of employment, the employer is liable, subject to this Act, to pay compensation in accordance with this Act. Compensation is not payable under this Act in respect of incapacity or a death resulting from a deliberate self-injury.

Applicability/Relevance to the Project: *The AICCRA-Ghana team led by IITA must follow guidelines provided in this act to ensure sound working conditions and compensation in cases of personal injuries caused by accidents arising out and in the course of their employment.*

Water Resources Commission Act 1996, Act 522: The Water Resources Commission (WRC) Act 1996 (Act 522) establishes and mandates the WRC as the sole agent responsible for the regulation, management, and utilization of water resources and for the co-ordination of any policy in relation to them. The Commission does this through the granting of water rights to potential water users. Article 13 of the act states that a person shall not (a) divert, dam, store, abstract or use water resources, or (b) construct or maintain any works for the use of water resources, without the authority of the commission.

Applicability/Relevance to the Project: *Although the AICCRA Ghana CSA demonstration activities will involve CSA activities, the extent of water use does not involve any of the activities that require permit of the water resource commission.*

3.4 Institutional framework

Environmental Protection Agency (EPA) is the principal institution established for environmental protection in Ghana, created under the Environmental Protection Agency Act, 1994 (Act490). The EPA's policy direction is articulated by the Environmental Assessment Regulations, 1999 (LI1652). These two pieces of legislation mandate the EPA to manage, control and monitor compliance of environmental regulations by specific industries. The EPA has an important role in the project implementation as the lead environmental regulator, which oversees compliance with environmental assessment requirements, facilitate public participation and disclosure and issue

environmental permits for the project. The EPA has the mandate to decide on project screening, guide the conduct of the environmental assessment studies and to grant environmental approval for the project to commence. Its mandate also covers monitoring of implementation phase of the project to confirm compliance with approval conditions, mitigation measures, and other environmental commitments and quality standards.

Role under the project: *AICCRA Ghana CSA demonstration Activities as the scope of proposed activities do not meet the set of activities that require EPA approval and regulatory monitoring. However, The project will ensure that agrochemicals/pesticides used on the project comply with the EPA approved list.*

Ministry of Food and Agriculture (MoFA): (MOFA) promotes sustainable agriculture and thriving agribusiness through research and technology development, effective extension and other support services to farmers, processors, and traders for improved livelihood. Its primary roles are the formulation of appropriate agricultural policies, planning & co-ordination, monitoring, and evaluation within the overall national economic development.

Role under the project: *AICCRA Ghana will work closely with the MoFA especially its Agricultural Extension Officers to mobilize farmers and transmit key CSA and CIS information to farmers.*

Water Resources Commission (WRC): The Water Resource Commission has the mandate to regulate and manage Ghana's Water Resources and co-ordinate government policies in relation to them. The WRC Act (Act 522) stipulates that ownership and control of all water resources are vested in the President on behalf of the people. The functions of the WRC as established under Act 522 among other things are to:

- formulate and enforce policies in water resources conservation, development, and management in the country.
- coordinate the activities of the various agencies (public and private) in the development and conservation of water resources.
- enforce, in collaboration with relevant agencies, measures to control water pollution; and
- be responsible for appraising water resources development project proposals, both public and private, before implementation.

Role under the project: *The policies of the WRC will apply to the AICCRA project in particular in areas where the management of water resources is the responsibility of this commission. AICCRA Ghana team will ensure that these policies are adhered to throughout the CSA demonstrations.*

The Domestic Violence and Victim Support Unit (DOVVSU): DOVVSU is a unit in the Ghana Police Service and mandated to oversee matters of domestic abuse against women and children. DOVVSU has a mission to prevent, apprehend and prosecute culprits of domestic violence and child abuse. The unit provides support and protection for victims of domestic abuse by interrelating activities with the Department of Social Welfare, the International Federation of Women Lawyers and the Legal Aid Board.

Role under the project: *DOVVSU and Social Welfare Department may assist the AICCRA Ghana team in handling some SEA/SH cases on the project. Accordingly, these institutions have been identified and linked to the AICCRA Ghana Grievance Mechanism.*

3.5 World Bank's Environmental and Social Framework

The design and implementation of the overall AICCRA project is guided by the World Bank's Environmental and Social Framework (ESF), of which the AICCRA-Ghana is making conscious efforts to comply with all relevant requirements on Ghana activities. The following Environmental and Social Standards (ESSs) are considered relevant for pilot of CSA/CIS innovation in Ghana:

- ESS-1: Assessment and Management of Environmental and Social Risks and Impacts
- ESS-2: Labor and Working Conditions
- ESS-3 Resource Efficiency and Pollution Prevention and Management
- ESS-4 Community Health and Safety
- ESS-6 Biodiversity Conservation and Sustainable Management of Living Natural Resources
- ESS-10 Stakeholder Engagement and Information Disclosure

These ESSs especially ESS-1 set the basis for the E&S screening of project sites and the preparation of this ESMP. They further provided the lens for identifying potential E&S risks, key mitigation measures, and other procedures contained in this document.

Comparing national procedures and World Bank policies

In general, there is great convergence views and similarity between Ghana's environmental and social management system and that of the World Bank. The following table makes a comparison between national procedures and World Bank policies.

Table 4:Comparison between national procedures and World Bank policies

ESF Standard	ESS relevance and key requirements	Ghana national laws	Gap(s)	Action required
ESS-1 Assessment and Management of Environmental and Social Risks and Impacts	ESS-1 is applicable to the entire project and sub-project activities where social environmental impacts and risks are expected. It sets requirement for further assessment of E&S risks envisaged on sub-project activities.	The Government of Ghana has solid environmental legal and policy framework in place to protect, conserve, and mitigate adverse impacts. EIA system provides a comprehensive framework for environmental and social screening, impact assessment and management. By adopting the Environmental Protection Agency (EPA) Act, 1994 (Act 490) and Environmental Assessment Regulations, 1999 (LI 1652), Ghana significantly advanced its legislation about conducting environmental impact assessment which includes the screening, scoping, environmental categorization, ESMP, and public consultation and participation.	Both give provisions for E&S risks assessment. However, the LI1652 is highly environmentally focused and does not fully cover some social issues such as gender, inclusion, transparency, livelihood impacts and restoration, compensation etc. The ESS1 however, covers these matters.	AICCRA Ghana will follow the requirements of the ESS1. This ESMP incorporates mitigation measures relating to exclusion of vulnerable groups.
ESS-2 Labor and Working Condition	ESS-2 is relevant because the sub-project activities will contract workers who could be exposed to different types of risks from project activities. ESS-2 sets requirements to address terms and working conditions, equality of opportunity, workers' associations, grievance redress and include provisions that do not allow for forced or child labor.	Ghana Workmen Compensation Act (1987); Factories, Offices and Shops Act, Act 328 (1970); Labor Act, Act 651 (2003) are aligned with the ESF's standard for Labor and Working Conditions. Legal provisions on overtime work, compensation and benefits, assessment of young workers' working conditions, etc. are available. Labor Act, Act 651 (2003): Part XV, Section 118 (1) and (2a-h) of the Act requires employers to ensure that every worker employed by him or her works under satisfactory safe and healthy conditions, and is further obliged to provide necessary information, instructions, training, and supervision to ensure the health and safety at work of those other workers engaged in a particular task	Both regulations consider Labor Conditions, Health, and Safety.	AICCRA Ghana has prepared an LMP consistent with the Ghana laws and ESS2 to guide labor management on the project. The LMP has been realized in accordance with the provisions in the ESF of the WB and publicly disclosed after validation.

ESF Standard	ESS relevance and key requirements	Ghana national laws	Gap(s)	Action required
ESS-3 Resource Efficiency and Pollution Prevention and Management	ES-3 is relevant to guide the agricultural technologies that will promote by the project to ensure efficient use of resources and improvements in achieving water and fertilizer use efficiency especially at the level of small-scale farmers to ensure land conservation and productivity	Water and Sewerage Corporation Act, Act 310 (1965) & Environmental Sanitation Policy (1999): cover both solid waste management and sewage. The regulations provide a solid framework for the management of resources to prevent pollution. Pesticides Control and Management are regulated under Part II of the EPA Act 490 (1994).	Both promote efficient use of water and pesticides, fertilizer, and disposal of wastes to protect the environment.	AICCRA project will apply provisions of national legislation and ESS-3 to manage wastes and chemical products. Promote good agronomic practices. Water is very important for workers' and community members' health. To avoid water losses, an efficient irrigation system e.g., drip irrigation to conserve water at demonstration fields especially those within irrigation schemes will be implemented.
ESS-4 Community Health and Safety	The ESS4 is relevant as the Project activities are expected to cause health and safety risks and impacts to local communities. The research supported by the project might introduce or promote accidently new zoonotic diseases which could become a threat to communities while new plant diseases and invasive animals and plants may also challenge future food production.	There are national robust proclamations and guidelines addressing public and worker safety in Ghana. These cover a range of important aspects including environmental pollution control; labor laws; occupational health safety policies; traffic management, handling of hazardous materials, setting exposure limits to various pollutants, and standards for workplace environmental emissions and discharges. The government of Ghana has introduced Acts (e.g., Labor Act, 2003, Act 651 and Factories, Shops and Offices Act 1970, Act 328) and many other subsumed policies to protect the health, safety and welfare of all workers. The Labor Act, for example, makes it obligatory for the employer to "ensure that every worker employed in Ghana works under satisfactory, safe and healthy conditions (Labor Act, 2003 Act 651, Article 118:1). This provision is in consonance with the 1992 constitution of	ESS-4 as well as Ghanaian laws provide guidelines for addressing public health and safety.	Improve awareness and implementation capacity on health and safety through trainings and orientations. Preparation of ESMP in line with ESS-4 requirements. Develop sound procedures for disposal and management of wastes and chemical

ESF Standard	ESS relevance and key requirements	Ghana national laws	Gap(s)	Action required
		Ghana which states that "every person has the right to work under safe and healthy conditions" (section 24: 1). It is required that employees use the safety appliances, fire-fighting equipment and personal protective equipment provided by the employer in compliance with the employer's instructions (Labor Act, 2003 Act 651, Article 118:3). The employers' obligation under the Labor Act includes setting standards to safeguard the wellbeing of their employees, providing personal protection equipment, and providing necessary information, supervision and training consistent with the level of literacy of the employees. Furthermore, the Act requires employers to report the occurrence of occupational accidents to appropriate government agencies. Employees are obligated to exercise their actions with reasonable care as they go about their normal jobs at their workplaces to ensure their safety and the safety of others.		products when applicable. .
ESS-6 Biodiversity Conservation and Sustainable Management of Living and Natural Resources	The Project will not finance activities that will adversely affect biodiversity conservation or sustainable management of living resources. However, as the project supports research aiming to generate drought and pest-resistant seed varieties, multiplying, and making them available to farmers, it may pose some risks and impacts related to biodiversity and ecosystem services by introducing them.	Ghana has a strong regulatory framework pertaining to biodiversity conservation and use such as the Wild Animals Preservation Act 235 (1964) enforced by the Wetland Management (RAMSAR sites) Regulation, (1999); the Wild Reserves Regulations LI 740 (1971); Forestry Commission Act, 571 (1999); Fisheries Commission Act, 457 (1993); Fisheries Act, 625 (2002)). National proclamation and EIA procedural guidelines are consistent with the principle of environmental protection. The existing legislation for EIA process considers impacts on natural habitats and physical cultural resources. The program will exclude subprojects that have adverse impacts on natural habitats and physical cultural resources.	ESS-6 and Ghana national laws provide frameworks for a sound conservation of biodiversity and management of resources.	Enforce the project E&S exclusion list on CSA demonstration activities. Strengthen the screening procedures to include a check list to assess whether a demonstration site has the potential for disturbing and affecting biodiversity.
ESS-10 Stakeholder Engagement	This standard is relevant because the project will involve multiple stakeholders with diverse interest and influence on project activities. Therefore, the inputs and concerns of these stakeholder groups would need to be factored into project design and	Principles for stakeholder engagement and information disclosure are provided in the 1992 Constitution of Ghana, the Right to Information (RTI) Act (Act 989). The Ghana Environmental Assessment Regulation LI 1652 (1999) requires effective public consultation and participation as an integral component of the Environmental and Social Impact Assessment (ESIA) procedures. Project proponents are	Both ESS-10 and Ghanaian laws promote stakeholder engagement and information disclosure during project preparation and implementation. However the Grievance	A Stakeholder Engagement Plan consistent with requirement of ESS-10 has been prepared and approved by the World Bank. Public

ESF Standard	ESS relevance and key requirements	Ghana national laws	Gap(s)	Action required
	implementation through meaningful stakeholder engagements.	required by law to effectively and continuously engage potential project affected persons and communities and other stakeholders to ensure that issues of concern to them are addressed in project design and implementation. Section 16(1) (3) makes provision for the public to make comments and provide suggestions on any project. Section 17(1) makes provisions for public hearing, while Section 27(1) provides the platform for complaints by aggrieved persons. The EPA Act 1994 (Act 490) also grants citizens the right to be informed about any development project carried out by either private or public institutions. The project proponents are required to engage various stakeholders including potentially affected communities, relevant national and local authorities, NGOs, CSOs and other groups at early stages of the project. This helps in obtaining local knowledge and addressing public views, concerns, and values that can influence the project design, which in turn increases public confidence and minimizes conflicts.	Redress in Ghana legislation requires access to court of Law and Alternative Dispute Resolution option while the WB requires Appropriate and accessible grievance mechanisms to be established.	consultations are held in accordance with the Ghanaian national laws. Promote and provide means for adequate engagement with Affected Communities. Ensure that grievances from Affected Communities and external communications from other stakeholders are responded to and managed appropriately.

3.6 AICCRA Environmental and Social Risks Management Guide

The AICCRA Environmental and Social Risks Management (ESRM) guide is a management tool that provides guidelines for agricultural research institutions under AICCRA to assess the potential E&S risks and opportunities associated with their research activities towards more productive and climate-resilient agriculture. The Guide provides information on what is needed for project Grant recipients to assess the E&S risks, communicate requirements to agricultural research institutions, as well as monitor and report on implementation.

The ESRM guide sets the following E&S exclusion criteria for all grant recipients under the project.

1. Production or activities involving forced labor[1];
2. Production or activities involving child labor[2];
3. Cross-border trade in pesticide, waste, and waste products, unless compliant to the Basel Convention and the underlying regulations[3];
4. Research that may lead to environmentally damaging activities, such as inappropriate use of chemical fertilizers;
5. Production or trade in any product or activity deemed illegal under host country laws or regulations or international conventions and agreements, or subject to international bans, such as pharmaceuticals, pesticides/herbicides, ozone depleting substances, Polychlorinated Biphenyls (PCBs), wildlife or products regulated under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES);
6. Biotechnology application in genetically modified (GM) crops that may involve genetic transformations of the national original crops and/or might generate irreversible environmental impacts;
7. Activities that could introduce invasive alien species and may impact critical habitats and/or legally protected areas;
8. Activities that may result in discrimination against vulnerable groups, including on the basis of gender and disability;
9. Activities involving land acquisition leading to economic or physical displacement;
10. Activities that affect existing land tenure arrangements or cultural heritage;
11. Activities carried out by institutions with a record of unresolved occupational, health, and safety incidents or accidents;[4]
12. Activities carried out by institutions with a record of unresolved Sexual Exploitation and Abuse/Sexual Harassment incidents;[5]

[1] Forced labor means all work or service not voluntarily performed that is extracted from an individual under threat of force or penalty.

[2] Employees may only be hired if they are at least 15 years old, in accordance with the ILO Minimum Age Convention (C138, Art. 2). Children under the age of 18 will not be employed in hazardous work. Children will not be employed in any manner that is economically exploitive, or is likely to be hazardous to, or to interfere with, the child's education, or to be harmful to the child's health, or physical, mental, spiritual, moral, or social development.

[3] The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, usually known as the Basel Convention, is an international treaty that was designed to reduce the movements of hazardous waste between nations. Under the convention, hazardous waste, as defined under the convention, generally will not be traded cross-border without the consent of the State of import. Under Basel Convention, "hazardous wastes" are defined as (a) Wastes that belong to any category contained in Annex I, unless they do not possess any of the characteristics contained in Annex III; and (b) Wastes that are not covered under paragraph (a) but are defined as, or are considered to be, hazardous wastes by the domestic legislation of the Party of export, import or transit.

[4] Whether such incidents or accidents have been resolved and an institution is therefore eligible for a sub-grant will be evaluated and decided jointly in writing by CIAT and the Association.

[5] Whether such incidents have been resolved and an institution is therefore eligible for a sub-grant will be evaluated and decided jointly in writing by CIAT and the Association.

Applicability/Relevance to the Project: *The AICCRA-Ghana team will need to ensure that the pilot of CSA innovations does not involve any of the activities on the project exclusion list.*

3.7 International Treaties, Conventions and Protocols

Food and Agriculture Organization (FAO) Guidelines and Reference Material on Integrated Soil and Nutrient Management and Conservation for Farmer Field Schools: The guidelines provide a basic conceptual framework and supporting reference material for assisting in the development and implementation of effective Farmer Field Schools.

Applicability/Relevance to the Project: *The guidelines provide a lot of ideas for the AICCRA-Ghana team on integrated soil and plant nutrient management and conservation*

Convention Concerning the Protection of Workers Against Occupational Hazards in the Working Environment due to Air Pollution, Noise, and Vibration (ILONo.148). The Convention encourages that employers in consultation with their workers understand project hazards related to air pollution, noise pollution, and vibrations

Applicability/Relevance to the Project: A*s required by the convention, the AICCRA-Ghana Team would need to assess and consider appropriate and adequate mitigation measures for all occupational health and safety hazards on the field activities.*

UN Framework Convention on Climate Change (UNFCCC) (Rio, June 1992): Its objective is to stabilize, in accordance with the relevant provisions of the Convention, the concentrations of greenhouse gases in the atmosphere at a level which prevents dangerous anthropogenic interference with the climate system. (Article 2 of the agreement).

Applicability/Relevance to the Project*: The AICCRA project is aligned with the objectives of the UNFCCC as it helps farmers to better adopt to climate change.*

African Convention on the prohibition of the import into Africa of hazardous wastes in all forms and the transboundary control of such wastes produced in Africa (Bamako, 1991): Regulate the transboundary movements of toxic wastes. Solidarize African countries against any importation into the continent of hazardous waste.

The purpose of the agreement is to:

- Prohibit the import of all hazardous and radioactive waste into the African continent for any reason.
- Minimize and control transboundary movements of hazardous waste within the African continent.
- Prohibit any dumping of hazardous waste in oceans and inland waters or any incineration of hazardous waste.
- Ensure that waste disposal is carried out in an environmentally sound manner.
- Promote cleaner production based on the pursuit of an acceptable emissions approach based on assumptions of absorptive capacity.
- Establish the precautionary principle.

Applicability/Relevance to the Project*: AICCRA Ghana cluster must comply with the regulatory requirements in terms of hazardous waste management. The project plans to use Ghana EPA*

approved pesticides that are considered as hazardous products. A pest and pesticides management plans are embedded in this ESMP.

Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal entered into force on May 5, 1992: The Basel Convention applies to waste listed in Annex I, if it exhibits the hazardous characteristics listed in Annex III. Hazardous waste means explosive, flammable, poisonous, infectious, corrosive, toxic or ecotoxic waste.

The Convention has mainly focused on regulating the "transboundary" movement of hazardous waste, i.e. the movement of these substances between international borders, and defining the criteria for the environmentally sound management of waste.

More recently, the Convention's work has focused primarily on the full implementation of treaty commitments, the promotion of environmentally sound management of hazardous wastes, a life-cycle approach and the reduction of their formation.

Applicability/Relevance to the Project*: The AICCRA Ghana Project will not import or export hazardous materials prohibited by this convention. The project will comply with the Hazardous and Electronic Waste Control and Management Act, 2016 (Act 917) to manage obsolete agrochemicals, if any.*

Stockholm Convention on Persistent Organic Pollutants (POPs) - May 22, 2001: Its objective is to protect human health and the environment against Persistent Organic Pollutants (POPs). The latter contain very toxic properties, propagated among other things by air and water and accumulating in living organisms.

Applicability/Relevance to the Project*: As required by the convention, the AICCRA-Ghana Team would need to prevent the use of substances emitting POPs.*

Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade (PIC) adopted on September 10, 1998. It entered into force on February 24, 2004: The overall objective of the Rotterdam Convention is to promote shared responsibility and joint implementation of efforts among the various parties involved in international trade in certain chemicals with a view to protecting human health and the environment from potential danger of these chemicals and contribute to their environmentally sound use.

Chemicals listed in Annex III of the convention and chemicals banned or severely restricted in the territory of a party to the Convention are subject, when exported, to labelling rules to ensure the dissemination of the necessary information. concerning the risks and/or dangers for human health or for the environment

Applicability/Relevance to the Project*: As required by the convention, the AICCRA-Ghana Team should not use banned or hazardous pesticides or pesticide formulations for CSA demonstration.*

United Nations Convention on Biological Diversity: The goals of the Convention are to promote the conservation of biodiversity, the sustainable use of its components, and the fair and equitable sharing of benefits arising out of the utilization of genetic resources. The convention calls for the adoption of national strategies, plans and programs for the conservation and sustainable use of biological diversity into their relevant sectoral and cross-sectional plans, programs, and policies. One of the tools that are prescribed for the management of biodiversity is environmental assessment. Article 14 of the convention deals with impact assessment and minimization of adverse impacts.

Applicability/Relevance to the Project*: As required by the convention, the AICCRA-Ghana Team through this ESMP has considered appropriate mitigation measures to prevent loss of biodiversity. Further, The Project's adoption of an Integrated Pest Management (IPM) Strategy aligns with this convention.*

Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES): The objective of the Convention is to conserve wildlife and prevent international trade from threatening species with extinction.

Applicability/Relevance to the Project*: As required by the convention, the AICCRA-Ghana Team would need to avoid the implementation of any activity that endangers wildlife or facilitates trading of endangered species.*

4.0 STAKEHOLDER CONSULTATIONS

The process leading to the environmental and social screening of sites identified for CSA demonstrations and preparation of this ESMP involved extensive information disclosure and consultation with key stakeholders. The methodology used centered on one-on-one meetings, focus group discussions, community meetings, transect walks and field visitations.

In December 2021, the project implementing leads at Crop Research Institute (CRI) and University for Development Studies (UDS) embarked on extensive stakeholder engagements and information disclosure on the AICCRA project. They introduced the AICCRA project to the staff of Ministry of Food and Agriculture (MoFA), Municipal and District Assemblies (MMDAs) officials, traditional leaders, community members, farmer groups, landowners, and vulnerable groups. Information shared at these introductory meetings include the objectives, scope, and activities of the AICCRA-Ghana project. These sessions also offered an opportunity for the stakeholders to ask further questions, affirm commitments and propose diverse ways they could contribute to the successful implementation of the project in their respective jurisdictions. At these meetings, the project leads also expressed the interest of the AICCRA project to rent farming plots in target communities for the pilot CSA innovations' demonstrations.

Photo 1: AICCRA Ghana Team engagement with Municipal of Komenda-Edena-Eguafo-Abrem

Source: Field visits during E&S screening of plots, January 2022

During the site-specific screening in January 2022, the project team further consulted the various stakeholder groups (MoFA, MMDAs, traditional leaders, community members, farmer groups) about

the suitability of communities selected for demonstrations and farm plots offered for rent by some farmers in the target communities.

Photo 2: AICCRA Ghana meeting with Chiefs and People of Dompoase

Source: Field visits during E&S screening of plots, January 2022

Between February 28 and March 4 2022, the project team again held stakeholder validation sessions with landowners and various farmer groups at project host communities to validate the E&S risks identified and mitigation measures proposed. The summary of key issues raised by stakeholders in all the engagements are as follows:

- The safety boots to be provided by the project should not be taken away from farmers after the project demonstration activities.
- The project should consider measures to ensure that improve seeds to be piloted during the demonstrations are availability on the market for farmers to purchase after the exercise.
- The project should make arrangements to provide farmers with water and food during learning visits to farms.
- Farmers in other neighboring communities should be allowed to visit the demonstration sites for learning.
- Poor farmers who will join the learning sessions at the demonstration farm should be allowed to share the farm produce that will be harvested from the plot instead of selling.
- The project should consider supporting post-harvest losses.
- The subproject cannot lead to any conflicts between different users, there is unity among community members irrespective of the crops one grows or his/her social background.

The AICCRA-Ghana team has taken note of these feedback and considered them as essential input for the successful implementation of the project activities with farmers. For instance, all PPEs to be provided to farmers will not be taken back after the project implementation, whilst poor farmers will be allowed to share farm products from the demonstration plots.

5.0 ENVIRONMENTAL AND SOCIAL BASELINE CONDITIONS

This section provides a brief outline of the environmental and social baseline condition of the 11 districts selected for CSA demonstration in Ghana.

5.1 Location

Table 5: Location of Project Intervention Districts

Region	District	Description of Location
Greater Accra Region	Ga south District	The district is located in the western part of Greater Accra Region and has Ngleshie Amanfro as its capital town. The total land area of the Municipality is estimated at 517.2 sq km with about 362 communities.
Central Region	Cape Coast Metropolitan	This is a central district of about 122 sq km with both coastal and hinterland areas. The Metropolis is bounded to the south by the Gulf of Guinea, and by rural districts on the sides (west by the Komenda Edina Eguafo Abrem, East by the Abura Asebu Kwamankese District, and to the north by the Twifu Heman Lower Denkyira District). The Capital of the Municipality is Cape Coast and with other major communities including Efutu, Abura, Pedu and Nyinasin.
	Komenda-Edena-Eguafo-Abrem	The district is located in the southwest part of Central Region and has Elmina as its capital town. It is bounded on the South by the Atlantic Ocean (Gulf of Guinea) and is a major fishing center. It is bound on the east by the Cape Coast Municipality, the north by the Twifo-Hemang –Lower Denkyira District and the west by the Mpohor-Wassa East District.
Bono East Region	Kintampo North	The municipality is located in the northern part of Bono East Region and has Kintampo as its capital town. In terms of location and size, the Municipality is strategically located at the centre of Ghana and serves as a transit point between the northern and southern sectors of the country. The district falls within the Voltain basin and is therefore endowed with a lot of water resources.
	Kintampo South	The district is located in the northern part of Bono East Region and has Jema as its capital town. The district covers an area of about 1,774.85 km2 and comprises about 122 settlements. Many rivers and streams drain the district. The major ones are River Pumpum, River Oyoko, River Nante and River Tanti.
	Techiman North	The district is located in the western part of Bono East Region and has Tuobodom as its capital town. Total land area is 669.7 sq km. It as three main vegetation zones, namely, the Guinea-Savanna woodland, located in the north-west, the semi-deciduous zone in the south and the Transitional zone, which stretches from the south-east and west up to the north of the municipality.
Northern Region	Tolon	The district assembly is located in the northwest part of Northern Region and has Tolon as its capital town. It shares borders with North Gonja to the West, Kumbungu District to the North, Central Gonja to the south and to the East with Tamale Metropolitan.
Upper East	Kasena Nankana District	The municipality is located in the western part of Upper East Region and has Navrongo as its capital town. With a total land area of 767 sq km, it is divided into six (6) Zonal Councils namely Navrongo, Doba, Manyoro, Pungu, Kologo and Naaga.
	Bongo District	The Bongo District is one of the nine districts in the Upper East Region and shares boundaries with Burkina Faso to the north, Kassena-Nankana East District to the west, Bolgatanga Municipal to the southwest and Nabdam District to south east. It lies within the Oncho-cerciasis-freed zone.
Upper West	Lawra	It lies in the northwestern corner of the Upper West Region and is bounded to East and south by the Jirapa and Lambussie District and to the North and West by the Republic of Burkina Faso. The total area of the District is estimated at 1051.2 sq km which

		constitutes about 5.7% of the region's total land area. The landscape of the district is generally flat and low-lying.
	Jirapa Municipal Assembly	The Jirapa district is also located in the northwestern part of the upper west region of Ghana. There is a concentration of granite rocks that store considerable qualities of ground water and therefore have high potential for digging bore holes and handdug wells. The population in the district is distributed among 170 settlements.

5.2 Sensitive Zones

Table 6: Sensitive Zones in Project Intervention Districts

District	**Senstive Zones (Habitats, areas with high biological importance, important bird areas, import plant areas, protectorates, wildlife, forest reserve and archeological sites.**
Ga south District	None
Cape Coast Metropolitan	None
Komenda-Edena-Eguafo-Abrem	Dumpow and Abosom Aya Hill Forest
Kintampo North	Buru Forest Reserve
Kintampo South	Bosomoa Forest Reserve
Techiman North	Asubingya forest reserve
Tolon	None
Kasena Nankana District	Dedoro Forest Reserve, Saboro Forest Reserve, Aseblika Forest Reserve, Kologo- Naaga Forest Reserve, Tankwidah West Forest Reserve
Bongo District	Asolompiiro Forest Reserve, Kologo Forest Reserve, Naaga forest reserve, Red Volta Forest Reserve
Lawra	Lawra Forest Reserve, Boro Community Forest, Eremon crocodile pond,
Jirapa Municipal Assembly	None

5.3 Air Quality and Noise:

Data on air quality is extremely scarce. No air quality monitoring data for the subproject areas was found. Some air pollution may be caused due to tillage of soil. Apart from Waribogu, where the project demonstration plot is closer to school there are no sensitize receptors (eg. Hospitals) near to the project sites in other locations.

5.4 Rainfall, Climate, and Weather

Table 7: Rainfall, Climate, and Weather Pattern of Project Intervention Zones

District	Climate (description of climatic zone)	Annual Rainfall (range & average)	Annual Temperature (range & average)	Monthly Humidity Levels (range & average)
Ga south District	Rainfall pattern is bi-modal. The first season begins in May and ends in mid-July while the second season begins in mid-August and ends in October. Rainfall is usually characterized by thick cloudy conditions and highly intensive storms.	790mm - 1270mm	25.1 °C - 34 °C	75%
Cape Coast Metropolitan	There are two seasons of rainfall with peak in May – June and October. Dry periods (harmattan) are experienced between November and February.	90cm - 110cm along the coast 110cm - 160cm in the hinterland.	24 °C – 32 °C	60 % - 80 %
Komenda-Edena-Eguafo-Abrem	The coastal areas of the district experience a lower rainfall compared with the interior locations. Temperatures are generally high and so the variability in climate and vegetation is influenced more by rainfall than temperature.	750mm - 1,000mm along the coast 1,200mm – 1,500mm in the more interior areas	24 °C – 32 °C	60 % - 80 %
Kintampo North	The Municipality experiences the Tropical Continental or interior Savannah type of climate, which is a modified form of the tropical continental or the Wet-semi equatorial type of climate. This is due largely to the fact that the Municipal is in the transitional Zone between the two major climatic regions in Ghana.	1,400mm - 1,800mm	24 °C – 30 °C	90% - 95% (RH) in the rainy season 75% – 80% in the dry season
Kintampo South	The Kintampo South District experiences a modified Tropical Continental climate or modified Wet Semi-equatorial climate. This is because the District lies in the transitional zone between the Wet Semi-equatorial and Tropical Continental climates. Like other parts of the country, the District experiences two seasons namely wet and dry.	1,150mm - 1,250mm	24 °C – 30 °C	90% - 95%
Techiman North	The Techiman north district experiences both semi-equatorial and tropical conventional or savanna climates, characterized by moderate to heavy rainfall annually.	1,250mm – 1,650mm	24 °C – 30 °C	70% - 80% in the rainy season 70% - 72% in the dry season
Tolon	The climate reflects a typical tropical continental climate experienced in northern Ghana. There is a rainy season	900mm – 1,000mm	28 °C - 36 °C	

	that lasts from May – October, peaking in August and September. The rest of the year is virtually dry.			
Kasena Nankana District	The Municipal has a tropical climate. The Municipality experiences dry and wet seasons which are influenced mainly by two (2) air masses [i.e. the North-East Trade winds (Harmattan air mass) and the South-Westerlies (Tropical Maritime)].	950mm (annual mean)	28.1 °C (av) 25.8 °C (August) - 31.4 °C (March/April)	
Bongo District	The climate is tropical with two distinct seasons, the Wet (rainy) and Dry (no rain).	600mm – 1,400mm	12 °C – 40 ° C	
Lawra	The District experiences two (2) seasons, which are dry and wet season. The dry season starts from October– April and wet season starts from May – September.		21 °C – 35 ° C	
Jirapa Municipal Assembly	The climate is tropical with two distinct seasons, the Wet (rainy) and Dry (no rain).			

5.5 Socio-economic

Table 8: Socio-economic indices of project intervention districts

District	**Population (males and females**	**Percentage Engaged in Agriculture**	**Average income levels (GHc)**	**Major food crops**	**Major cash crops**
Ga south District	350,121 172,492 (m) 177,629 (f)	3.5%	17,024	Cassava, maize, cowpea, groundnut, yam, plantain and sweet potato.	Pineapple, mango, cashew, watermelon.
Cape Coast Metropolitan	189,925 92,790 (m) 97,135 (f)	65%	11,408	Maize, cassava, sweet potato, cocoyam, yam, plantain, citrus.	
Komenda-Edena-Eguafo-Abrem	166,017 80,570 (m) 85,447 (f)	70%	11,408	Maize, cassava, sweet potato, pineapple, watermelon and vegetables (okra, tomato, pepper, cabbage and garden eggs).	Coconut, sugarcane, citrus, oil palm, cocoa and rubber.
Kintampo North	139,508 69,520 (m) 69,988 (f)	71.1%	12,103	Yam, maize, cowpea, cassava, rice, plantain, egushie, groundnut and beans.	Cashew, mango, soya beans.
Kintampo South	89,126 45,465 (m) 43,661 (f)		12,103	Yam, cassava, millet and sorghum, cowpeas, , groundnut, watermelon.	Rice, cashew, mango, ginger and tobacco.
Techiman North	102,529 50,248 (m) 52,281 (f)		12,103	Maize, cassava, yam, cocoyam, plantain, groundnuts, cowpea, tomatoes, garden eggs, okra.	Cashew, cocoa and mango.
Tolon	118,101	88%	10,095	Cassava, yam, rice,	Soybean.

	58,512 (m) 59,586 (f)			maize, and groundnut.	
Kasena Nankana District	99,895 48,658 (m) 51,237 (f)	82%	10,095	Millet, sorghum, rice, maize, groundnuts, cowpea.	Shea nuts, dawadawa, baobab and acacia.
Bongo District	120,254 56,920 (m) 63,334 (f)	74%	10,095	Soybean Millet, sorghum, rice, maize, groundnut, cowpea, bambara beans and vegetables.	Onions, watermelon, tomatoes, pepper, okra.
Lawra	58,433 28,325 (m) 30,108 (f)		12,103	Maize, Rice, sorghum, millet, groundnuts, cowpea, soybean.	Shea nut and dawadawa trees.
Jirapa Municipal Assembly	91,279 43,021 (m) 48,258 (f)	71%	12,103	Maize, rice, sorghum, millet, yam, groundnuts, cowpea, soybean.	Cashew and mango.

6.0 DESCRIPTION OF PROJECT SITES

This section provides a brief description of the demonstration plots identified and assessed for CSA demonstrations in Ghana. Overall, the project identified 26 plots, of which 23 were deemed suitable for the demonstration of CSA-CIS demonstrations. The three plots were rejected on the grounds of land tenure ambiguities and potential tensions envisaged between existing plot tenants and actual owners, especially after the transfer of tenancy arrangements to the project. The detail screening checklist and results for all plots is provided in Annex 2.

6.1 Land Acquisition Protocol

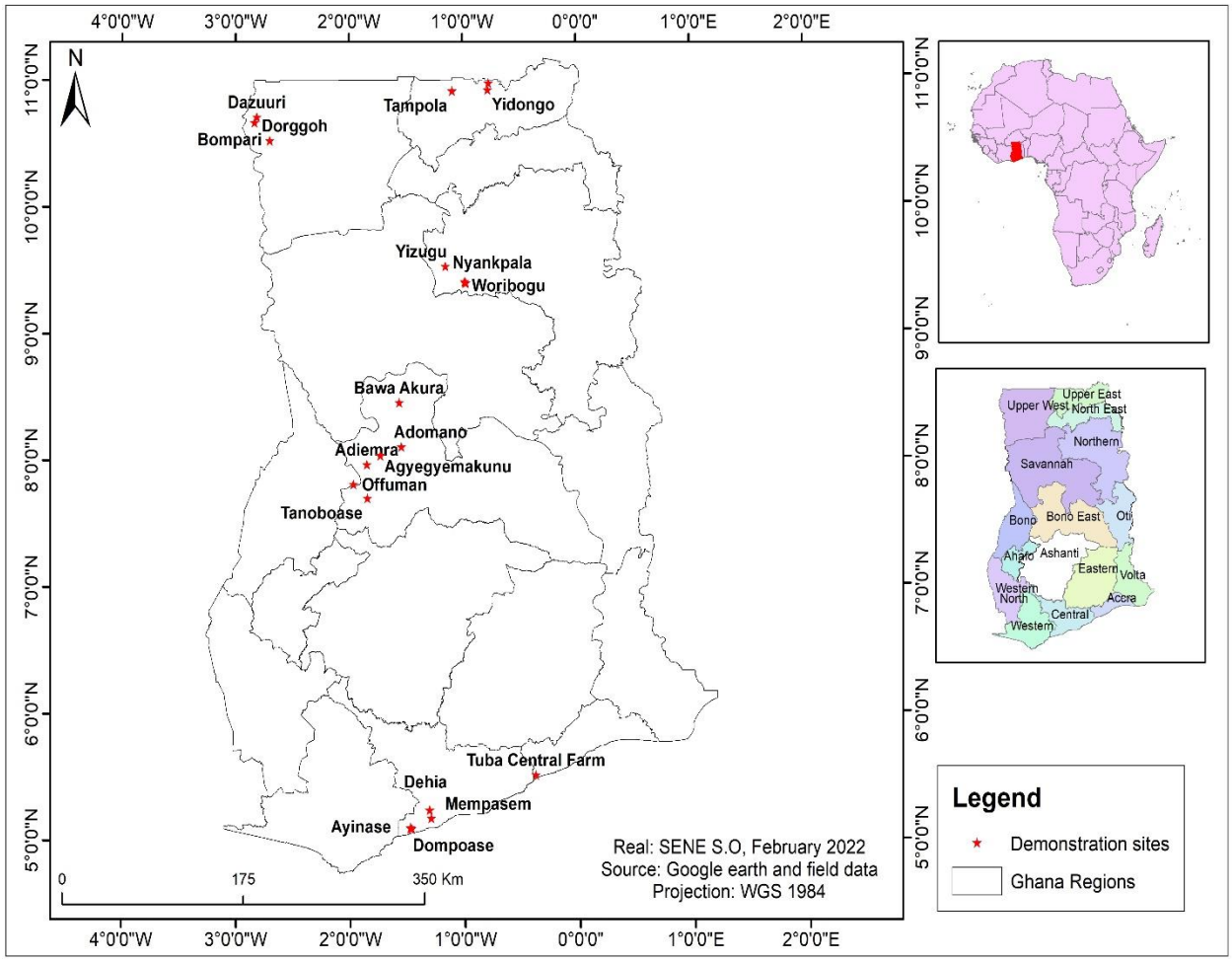
Consistent with the requirements of the project exclusion list, all plots identified are acquired through the guide of the World Bank voluntary land acquisition principles and the laws of Ghana. The plots are being rented for a two-year period at agreed rental fees that commensurate with the market value of similar plots in the area. Based on the screening findings, no physical or economic displacement or livelihood disruption will occur before and during the pilot CSA/CIS innovations/technologies on selected plots.

The summary of the protocol followed for acquisition of demonstration plots are as follows:

1. The selection of plots was not limited to site specific preference.
2. In each community, between three to five rental plots were requested and the famer groups in the community were allowed to discuss and agree on the final sets of plots. These discussions and selection took into consideration ownership issues, additional farmlands available to the land renters, and potential encumbrances.
3. It was ensured that each renter has other land for farming and renting it out will not affect their ability to farm to sustain their livelihood.
4. A combination of market comparison approach and negotiated approach were used to set rental fees for each plot.
5. All plots selected are free of squatters, encroachers, or other claims of encumbrances.
6. Landowners and community members were engaged on the land acquisition process and sensitized on the project's grievance mechanism.

7. Written agreements that include endorsement of landowners and witnesses and conditions of acquisition have been provided on every plot. See Annex 1 for sample of the land acquisition letter.
8. Each landowner is entitled to a rental fee and 50% of produce from the demonstration plot.

Figure 1: Map of Ghana Showing Sites Identified for demonstration of CSA innovations in Ghana



6.2 AICCRA CSA/CIS Pilot Activities in the Central Region

Central region is located at the mid-coastal zone of Ghana. The AICCRA project in the region will focus on the pilot of CSA innovations on the sweet potato value chain, a major staple food crop cultivated in the region. The bundle of CSA/CIS to be piloted will include cutting and planting technology for sweet potato vine, the use of aeroponics and hydroponics technologies for vine multiplication, biocontrol of the sweet potato weevil, organic amendments for improved soil health, and facilitation of access to climate information. The AICCRA project will operate a total of 4 demonstrations plots in 4 communities: Dompoase and Ayinase in Komenda-Edna-Eguafo-Abrem Municipality, and Mempeasem and Effutu Dehyia in Cape Coast Metropolitan Area.

Dompoase Demonstration Plot: The proposed demonstration plot at Dompoase is a 1-acre plot belonging to a woman in the community, who has farmed on the plot for over 10 years. The chief linguist and other farmers who accompanied us to the plot confirmed the woman as the true owner of the land. The plot is located along the main road to the community and is about 10 meters away from the last building to the community. The plot is a modified farmland that was used for watermelon farming in the September–December 2021 planting season. As of the time of screening, the plot was covered with shrubs and other weeds up to about 1 foot. No major economic or non-economic crops were found on the land. All the adjoining landmarks were being used for other farming activities. The set of CSA innovations and CIS technologies to be piloted meet the E&S exclusion list for the AICCRA project. There are no flora and/or fauna of endangered species; no important physical cultural resources nearby or protect areas/forest or water sources; will not lead to the introduction of invasive alien species; and will not involve the application of biotechnology application in genetically modified crops. Key E&S risks identified include the presence of hazardous animals such as scorpions and snakes and the lack of PPE use by the farmers, which could result in potential farm injuries during farming activities. The project will not resort to the use of fertilizers or pesticides at this demonstration plot.

Photo 3: Interaction with a female landowner at Dompoase Demonstration site.

Source: Field visits during E&S screening of plots, January 2022

Ayinase Demonstration Plot: At Ayinase, the proposed demonstration plot is located about 500 meters away from the main Cape Coast to Takoradi Highway and the main town. The 1-acre plot considered for the demonstration belongs to a woman who identified herself as the wife of the community's Best Farmer. The woman has customary ownership to the land and has farmed on it for over 15 years. The plot was covered with lowly grown weeds and shrubs. The set of CSA innovations and CIS technologies to be piloted meet the E&S exclusion list for the AICCRA project. There are no flora and/or fauna of endangered species; no important physical cultural resources nearby or protect areas/forest or water sources; will not lead to the introduction of invasive alien species; and will not involve the application of biotechnology application

in genetically modified crops. Key E&S risks identified include the presence of hazardous animals such as scorpions and snakes, trips, slips, and falls at the demonstration site, and the lack of PPE use by the farmers, which could result in potential farm injuries during farming activities. The project will not resort to the use of fertilizers or pesticides at this demonstration plot.

Photo 4: Screening of proposed plot with Ayinase community members

Source: Field visits during E&S screening of plots, January 2022

Mempasem Demonstration Plot: The plot is in the peri-urban area of Mempasem township. The plot belongs to a renowned potato farmer who usually produces high quality potato vines for supply to other farmers in the area. According to the landowner, the plot was previously used by the Kofi Annan Foundation and Alliance for Green Revolution in Africa (AGRA) to pilot and promote orange flesh potato in Ghana. Even though the plot is in a build-up area, it is free from other encumbrances, for instance, livestock are not reared in that area. It is expected to serve as the learning center for other peri-urban sweet potato producers in Mempasem and Cape Coast. At the time of the screening, the plot was covered with few remains of sweet potatoes planted in the September-December 2021 planting season. The set of CSA innovations and CIS technologies to be piloted meet the E&S exclusion list for the AICCRA project. There are no flora and/or fauna of endangered species; no important physical cultural resources nearby or protect areas/forest or water sources; will not lead to the introduction of invasive alien species; and will not involve the application of biotechnology application in genetically modified crops. Key E&S risks identified include trips, slips, and falls at the demonstration site, the presence of hazardous animals such as scorpions and snakes and lack of PPE use.

Photo 5: Interaction with landowner on Mempasem demonstration plot

Source: Field visits during E&S screening of plots, January 2022

Efutu Dehia Demonstration Plot: The Dehia demonstration plot is located at the outskirt of Dehia community. It is a fenced 1-acre plot, adjacent to the house of the plot owner. The plot owner is a male farmer who bought the land from the community chief and has used a part of the plot for his residence, and the remainder for farming activities in the last 5 years. During the screening visit, the owner was harvesting cassava which had been planted on the land in the early part of 2021. The set of CSA innovations and CIS technologies to be piloted meet the E&S exclusion list for the AICCRA project. There are no flora and/or fauna of endangered species; no important physical cultural resources nearby or protect areas/forest or water sources; will not lead to the introduction of invasive alien species; and will not involve the application of biotechnology application in genetically modified crops. Key E&S risks identified include trips, slips, and falls at the demonstration site, the presence of hazardous animals such as scorpions and snakes and the lack of PPE use by farmers, which could result in potential farm injuries during farming activities. Due to its proximity to the owner's house, there could be the tendency for the owner to employ his children to work on the plot. The project will not resort to the use of fertilizers or pesticides at this demonstration plot.

Photo 6: Farmers harvesting cassava from proposed CSA demonstration plot at Effutu Dehia

Source: Field visits during E&S screening of plots, January 2022

6.3 AICCRA CIS/CSA Pilot Activities in Greater Accra Region

The AICCRA project in Greater Accra will focus on piloting CSA and CIS innovations on the vegetables value chain at Tuba in the Ga South District of the region. The bundle of CSA/CIS to be piloted will include contour stone bunds or contour tillage with tied ridges (zero or minimal rates of rainfall run-off and soil erosion), drip and sprinkler irrigation for vegetable farming, organic amendments for improved soil health, and facilitation of access to improved climate information.

Tuba Demonstration Plot: The 1-acre demonstration plot secured at Tuba for pilot of CSA/CIS innovations is part of a 650-hectare peri-urban irrigated vegetable farmland belonging to the Ghana Irrigation Authority. The allotted land belongs to the secretary of 250 smallholder cooperative farmers working on the 650-hectare land. The plot owner operates on a 6-acre land of which one acre is being rented to the project for demonstrations. The plot has an access road, and it is surrounded by farming plots of other smallholder farmers. There is a medium scale irrigation facility that provides water for year-round farming at the Tuba Agric station. The water for irrigation flows from the Densu river through underground canals constructed by the government in the 1970s. The key E&S risks identified include trips, slips, and falls at the demonstration site, workers and residents' exposure to pesticides, lack of PPE use by farmers, which could result in potential farm injuries during farming activities. The set of CSA innovations and CIS technologies to be piloted meet the E&S exclusion list for the AICCRA project. There are no flora and/or fauna of endangered species; no important physical cultural resources nearby or protect areas/forest or

water sources; will not lead to the introduction of invasive alien species; and will not involve the application of biotechnology application in genetically modified crops.

Photo 7: Interactions with land owner on proposed site for CSA demonstration at Tuba

Source: Field visits during E&S screening of plots, January 2022

6.4 AICCRA CIS/CSA Pilot Activities in Upper East Region

Upper East Region is in the Northeastern corner of Ghana. The climate and soils in this Guinea Savanna zone promote production of crops such as millet, sorghum, rice, maize, groundnut, cowpea, beans, and vegetables. The AICCRA project in this region will focus on the pilot of CSA innovations on vegetable value chain, particularly tomatoes. The bundle of CSA/CIS to be piloted will include adoption of best practices such as density planting, soil preparation, intercropping, biocontrol of pests, organic amendments for improved soil health, and facilitation of access to climate information. Water from Tono irrigation scheme and a community dugout pond will be used to support demonstrations of all CSA innovations in this region. The AICCRA project will operate a total of 4 demonstrations plots with two each at Yidongo in Bongo District and Tampola in Kassena-Nnakana District.

Yidongo Demonstration plots: The two proposed sites for CSA demonstration at Yidongo are two adjoining 0.5-acre plots separately owned by a male and a female farmer. Both have worked on the plot for over ten years. The man has direct ownership over the land whilst the woman received the land from her husband, as women in that community do not have right to directly own land. The plot is about 200 meters away from the residential areas of the community and about 100 meters away from the community dugout pond. The plot is used for rice farming during raining season and vegetable farming in

the dry season. Dry season farming on the plots is supported by an extensive network of gravity irrigation channels from the community dugout pond. The pond also serves as a major source of drinking water for livestock, and for construction activities in the community. According to the farmers, due to excessive leakages at the gravity pipeline's control points, the community dugout pond almost run out of water at the peak of the 2021 dry season. The project will need to assist the farmers repair the leakages to preserve water conservation. The key E&S risks identified include trips, slips, and falls at the demonstration site, workers and residents' exposure to pesticides, the lack of PPE use by farmers which could result in potential farm injuries during farming activities, water scarcity at the dam, poor handling and application of fertilizers and pesticides due to limited knowledge on it use. The set of CSA innovations and CIS technologies to be piloted meet the E&S exclusion list for the AICCRA project. There are no flora and/or fauna of endangered species; no important physical cultural resources nearby or protect areas/forest or water sources; will not lead to the introduction of invasive alien species; and will not involve the application of biotechnology application in genetically modified crops.

Photo 8: Interaction with landowner at proposed irrigation plot for CSA demonstration at Yidongo

Source: Field visits during E&S screening of plots, January 2022

Tampola Demonstration plots: At Tampola, the AICCRA-Ghana project has secured two separate 1-acre plots in close proximity of each other for the pilot of CSA innovations on the vegetable value chain, specifically, tomato cultivation. Each of the 1-acre plots belongs to a male and a female farmer who have customary ownership of the land. Whereas the man has farmed on the land for about 5 years, the woman has consistently worked on the plot for more than 20 years. The plots are about 1 kilometer away from the Tampola community. Both plots are modified agriculture land that are used for rice or maize farming in the raining season, and vegetable farming in the dry season. They are dotted with Shea-nut trees (Vitellaria), which the project will need to avoid cutting down during land clearing and ploughing due to their economic value. The vegetable farming in the dry season is anchored on water flowing from Tono

irrigation dam through a 50-kilometer-long canal next to the sites. The canal was renovated in 2021 by the Ghana Commercial Agricultural Project with funding from the World Bank. Each farmer tapping water from the canal pays an annual water usage fee of GHC350 ($55). No water scarcity is experienced throughout the year. Farmers in Tampolo employ labor when the physical farm work demands additional hands. Workers are usually hired from the community at daily wage rate of GHC40 ($7), which higher than current daily minimum wage rate of GHC12 ($2). The set of CSA innovations and CIS technologies to be piloted meet the E&S exclusion list for the AICCRA project. There are no flora and/or fauna of endangered species; no important physical cultural resources nearby or protect areas/forest or water sources; will not lead to the introduction of invasive alien species; and will not involve the application of biotechnology application in genetically modified crops. The key E&S risks identified include trips, slips, and falls at the demonstration site, workers and residents' exposure to pesticides, the lack of PPE, presence of hazardous animals such as snakes, which could result in potential farm injuries during farming activities.

Photo 9: Interaction with female landowner on the proposed Plot for CSA demonstration at Tampola

Source: Field visits during E&S screening of plots, January 2022

6.5 AICCRA CIS/CSA Pilot Activities in Upper West Region

The Upper West Region is located in the Northwestern corner of Ghana. The area experiences one major raining and farming seasons. The savanna vegetation and climate in the area support the production of corn, millet, peanuts, okra, and rice. The AICCRA project in this region will focus on the pilot of CSA innovations on maize and cowpea production. The bundle of CSA/CIS innovations to be piloted will include adoption of best practices such as soil preparation, intercropping, biocontrol of pests, organic amendments for improved soil health, use of approved seeds, and facilitation of access to climate information. The CSA demonstrations will be rain-fed and the AICCRA project will operate a total of 3

demonstration plots, with one at Doggoh in Jirapa Municipality and another each in the Bompari and Dazuuri communities in Lawra District.

Doggoh demonstration plot: The plot selected for CSA demonstration in the Doggoh Community belongs to a man who has farmed on the plot for over five years. He acquired it through family heritage, and it is located by the main road from Jirapa to the community. It is about 3 kilometers from the last community's building. The plot is modified farmland, surrounded by savanna vegetation. No economic tree was found on the land. It has in the past been used by Climate Change Agriculture and Food Security (CCAFS) for other demonstrations. There are no cases of child and forced labor in the community. Casual laborers are occasionally employed by farmers in the community and the prevailing wage rate is about GHC20 ($3.5), which is higher than the daily minimum wage rate of GHC ($2). The main pest of maize in the area is the fall armyworm and the main control method is with the use of pesticides. The set of CSA innovations and CIS technologies to be piloted meet the E&S exclusion list for the AICCRA project. There are no flora and/or fauna of endangered species; no important physical cultural resources nearby or protect areas/forest or water sources; will not lead to the introduction of invasive alien species; and will not involve the application of biotechnology application in genetically modified crops. Key E&S risks identified include trips, slips, and falls at the demonstration site, workers and residents' exposure to pesticides, the lack of PPE use by farmers, which could result in potential farm injuries during farming activities.

Bompari demonstration plot: The Bompari demonstration plot is a 1-acre plot located at the center of the community dispersed settlements. It is owned by a female farmer who has worked on the land for over 10 years. The plot is a modified farmland mostly used for maize, millet, and groundnut farming. No economic tree was found on the land. There are no cases of child or forced labor in the community. Casual laborers are occasionally employed by farmers in the community at the prevailing wage rate of about GHC15 ($2.5) and a meal at work. Although livestock are reared in the community, they are usually tied or caged during the farming season to prevent their destruction of farm crops. The key E&S risks identified include trips, slips, and falls at the demonstration site, workers and residents' exposure to pesticides, presence of hazardous animals such as snakes, which could result in potential injuries during farming activities. The fall armyworm is the main pest to corn production in the area which the project intends to control through integrated pest management practices. The set of CSA innovations and CIS technologies to be piloted meet the E&S exclusion list for the AICCRA project. There are no flora and/or fauna of endangered species; no important physical cultural resources nearby or protect areas/forest or water sources; will not lead to the introduction of invasive alien species; and will not involve the application of biotechnology application in genetically modified crops.

Photo 10: Proposed demonstration plot at Bompari

Source: Field visits during E&S screening of plots, January 2022

Dazuuri demonstration plot

The proposed demonstration plot at Dazuuri is a 0.8-acre plot lying between two houses in the community. The plot is bare land with a few isolated shea nut trees at its edges. The plot is owned by a male farmer residing in one of the adjacent houses. It is a modified farmland mainly used for millet cultivation in the raining season. The farmer has customary ownership to the land and has farmed on it for over 15 years. Although livestock graze on the land during the dry season, the community usually cages them during the farming season to prevent trespasses and crop destruction. The key E&S risks identified include trips, slips, and falls at the demonstration site, workers and residents' exposure to pesticides, the lack of PPE use, presence of hazardous animals such as snakes, which could result in potential injuries during farming activities. The set of CSA innovations and CIS technologies to be piloted meet the E&S exclusion list for the AICCRA project. There are no flora and/or fauna of endangered species; no important physical cultural resources nearby or protect areas/forest or water sources; will not lead to the introduction of invasive alien species; and will not involve the application of biotechnology application in genetically modified crops.

Photo 11: Proposed plot for pilot of CSA innovation at Dazuuri

Source: Field visits during E&S screening of plots, January 2022

6.6 AICCRA CIS/CSA Pilot Activities in Northern Region

The Northern Region falls within the savanna zone of Ghana and the main economic activity is agriculture. The region experiences one major rainy farming season in a year, usually between May and October. Subsistence and peasant agriculture remain dominant in the area and the main crops grown are maize, beans, yam, millet, groundnuts, and vegetables. Industrial crops like tobacco, cotton and jute are also grown in the region. The AICCRA project in this region will focus on the pilot of CSA innovations on yam, maize, sweet potato, and cowpea production. The bundle of CSA/CIS to be piloted will include:

- Biological soil and seed treatment (application of neem leaf powder to treat soil and ash to treat seed yam before planting);
- Seedbed options (ridging as an alternative to mounding for yam production);
- Seed yam multiplication technologies (mini-sett technology; aeroponics and hydroponics technologies);
- Introduction of improved maize seeds (tolerant to drought, striga and Low N);
- Improved cowpea seeds (tolerant to pest and disease infestation);
- Biopesticides for managing cowpea and maize pests and diseases;
- Minimum tillage for maize and cowpea production;
- Organic amendments for improved soil health; and
- Facilitation of access to climate information.

CSA demonstrations will be rain-fed. The AICCRA project will operate a total of 3 demonstration plots with one each in Woribog, Yizeigu, and Nyankpala in the Tolon District.

Yizeigu Demonstration Plot: The Yizeigu demonstration plot is a 4-acre land at the outskirts of the community. It borders the landmark of a community Basic School. The plot is owned by a male farmer who usually uses the plot for millet and maize farming. It is a modified farmland that was covered with shrubs and plant growth of about 2 feet at the time of the visit. No economic tree was found on the land. There are no cases of child or forced labor in the community. Farmers employ casual laborers at the prevailing wage rate of about GHC40 ($7). Although livestock are reared in the community, they are usually caged during the farming season to prevent trespassing and destruction to farm crops. The set of CSA innovations and CIS technologies to be piloted meet the E&S exclusion list for the AICCRA project. There are no flora and/or fauna of endangered species; no important physical cultural resources nearby or protect areas/forest or water sources; will not lead to the introduction of invasive alien species; and will not involve the application of biotechnology application in genetically modified crops. The key E&S risks identified include trips, slips, and falls at the demonstration site, workers and residents' exposure to pesticides, the lack of PPE use, presence of hazardous animals such as snakes, which could result in potential farm injuries during farming activities.

Photo 12: Proposed CSA demonstration plot at Yizeigu with Agric Extension Agent at the background

Source: Field visits during E&S screening of plots, January 2022

Woribog Demonstration Plot 1: The Woribog plot is owned by a female farmer who inherited the land from her father and has worked on it for the past 6 years. The plot is a 3-acre land located on the eastern side of the town, at a distance of about 0.5 kilometers from the community and about 20 meters next to the community dugout. The dugout is mainly used for domestic purposes and watering of livestock.

Photo 13: Woribog dagout

Source: Field visits during E&S screening of plots, January 2022

A ridge of about 10 feet has been raised around the dam to prevent entry of run-off water from farmlands. At the time of the visit, the plot was covered with residue of pepper and tomato crops cultivated in the previous planting season. No economic tree was sighted on the land. There are no cases of child and forced labor in the community. Farmers employ casual laborers at the prevailing wage rate of about GHC40 ($7). Although livestock are reared in the community, they are usually caged during the farming season to prevent trespassing and destruction to farm crops. The key E&S risks identified include trips, slips, and falls at the demonstration site, workers and residents' exposure to pesticides, the lack of PPE use, presence of hazardous animals such as snakes, which could result in potential farm injuries during farming activities. The set of CSA innovations and CIS technologies to be piloted meet the E&S exclusion list for the AICCRA project. There are no flora and/or fauna of endangered species; no important physical cultural resources nearby or protect areas/forest or water sources; will not lead to the introduction of invasive alien species; and will not involve the application of biotechnology application in genetically modified crops.

Photo 14: Proposed CSA demonstration plot at Woribog

Source: Field visits during E&S screening of plots, January 2022

Woribog Demonstration Plot 2: The second demonstration plot at Woribog is a 1-acre plot that lies next to the community and the main road from Tolon to Tamale. The plot is owned by a male farmer in the community who has consistently farmed on the land for over 10 years. The plot will be used for demonstration of CSA innovations on the cowpea and sweet potatoes value chains. At the time of the visit, the plot was covered with patches of shrubs of about 1 foot and no economic tree was sighted on the land. The key E&S risks identified include trips, slips, and falls at the demonstration site, workers and residents' exposure to pesticides, the lack of PPE use, presence of hazardous animals such as snakes, which could result in potential farm injuries during farming activities. The set of CSA innovations and CIS technologies to be piloted meet the E&S exclusion list for the AICCRA project. There are no flora and/or fauna of endangered species; no important physical cultural resources nearby or protect areas/forest or water sources; will not lead to the introduction of invasive alien species; and will not involve the application of biotechnology application in genetically modified crops.

Photo 15: Second demonstration plot at Woribog

Source: Field visits during E&S screening of plots, January 2022

Nyankpala Demonstration Plot

The Nyankpala demonstration plot is approximately 3-acre plot owned by a male farmer and located about 1 kilometer away from the Nyankpala town. At the time of the visit, the plot was covered with weeds and no economic tree was sighted. The 3-acre plot will be divided into three separate plots to run CSA demonstrations for maize, sweet potatoes, and cowpeas. The demonstrations are expected to be rain-fed and will occur between April – October 2022 with the potential for scale up. The community members rear livestock but keep them in their pen during the farming season to prevent trespassing and destruction of farm crops. There are no cases of child or forced labor in the community. Farmers employ casual laborers at the prevailing wage rate of about GHC35 ($6.5). The set of CSA innovations and CIS technologies to be piloted meet the E&S exclusion list for the AICCRA project. There are no flora and/or fauna of endangered species; no important physical cultural resources nearby or protect areas/forest or water sources; will not lead to the introduction of invasive alien species; and will not involve the application of biotechnology application in genetically modified crops. The key E&S risks identified include trips, slips, and falls at the demonstration site, workers and residents' exposure to pesticides, the lack of PPE use by farmers, presence of hazardous animals such as snakes, which could result in potential farm injuries during farming activities.

Photo 16: Proposed demonstration plot at Kyankpala

Source: Field visits during E&S screening of plots, January 2022

6.7 AICCRA CIS/CSA Pilot Activities in Bono East Region

The Bono East Region falls within the forest transitional zone in Ghana. Agriculture is the dominant economic activity here and constitutes the major source of household income. The major food crops produced in the area are yam, maize, cowpea, cassava, rice, plantain, Egushie, groundnut and beans. Other crops include cashew, mango, tomatoes, onions, watermelons, garden eggs, soyabeans and sorghum. In this region, the AICCRA project will focus on the demonstration of CSA innovations on yam, maize, and cowpea. The bundle of CSA/CIS to be piloted will include:

- Biological soil and seed treatment (application of neem leaf powder to treat soil and ash to treat seed yam before planting);
- Seedbed options (ridging as an alternative to mounding for yam production);
- Seed yam multiplication technologies (mini-sett technology; aeroponics and hydroponics technologies);
- Introduction of improved maize seeds (tolerant to drought, striga and Low N);
- Improved cowpea seeds (tolerant to pest and disease infestation);
- Biopesticide for managing cowpea and maize pests and diseases;
- Minimum tillage for maize and cowpea production;
- Organic amendments for improved soil health; and

- Facilitation of access to climate information.

CSA demonstrations will be rain-fed and the rainfall pattern in the region support two major farming seasons. In Bono East Region, the AICCRA project will operate a total of 6 demonstrations plots with two plots in each of the three target districts - Kintampo North, Kintampo South, and Techiman North District.

Bawa Akura Demonstration Site in Kintampo North District: The proposed demonstration plot at Bawa Akura is a 1-acre plot located 1 kilometer away from the main town. It is owned by a male farmer who in the past, has dedicated the plot for pilot of agricultural innovations under several projects including CCAFS. The plot is a modified farmland that was covered with old yam mounds at the time of the visit. There are no cases of child or forced labor in the community. Farmers in the community employ casual laborers at the prevailing wage rate of about GHC30 ($5), which is higher than the minimum wage rate in Ghana. The key E&S risks identified include trips, slips, and falls at the demonstration site, workers and residents' exposure to pesticides, the lack of PPE use by farmers, presence of hazardous animals such as snakes, which could result in potential farm injuries during farming activities. The set of CSA innovations and CIS technologies to be piloted meet the E&S exclusion list for the AICCRA project. There are no flora and/or fauna of endangered species; no important physical cultural resources nearby or protect areas/forest or water sources; will not lead to the introduction of invasive alien species; and will not involve the application of biotechnology application in genetically modified crops.

Photo 17: Proposed CSA demonstation plot at Bawa Akura

Source: Field visits during E&S screening of plots, January 2022

Adomano Demonstration Site in Kintampo North District: The Adomano demonstration site is 1-acre plot located along the main road passing through the community to the next town with a distance of 1 kilometer away from the main community. Most farmers in the community use that road to get to their farms. It is owned by a male farmer who has farmed on the plot for over 10 years. It is a personal land inherited from his father. During the screening visit, the plot was covered with remains of harvested cowpea and no economic tree was sighted on the land. This plot was used as a demonstration farm under the CCAFS project. Farmers in the community employ casual laborers at the prevailing wage rate of GHC30 ($5), which is higher than the minimum wage rate in Ghana. Due to the absence of a basic school in the community, some farmers heavily rely on their children's support for farm labor. The project will need to check to ensure that persons less than 18 years are not employed to work on the demonstration plot. Other key E&S risks identified include trips, slips, and falls at the demonstration site, workers and residents' exposure to pesticides, the lack of PPE use by farmers, presence of hazardous animals such as snakes, which could result in potential farm injuries during farming activities. The set of CSA innovations and CIS technologies to be piloted meet the E&S exclusion list for the AICCRA project. There are no flora and/or fauna of endangered species; no important physical cultural resources nearby or protect areas/forest or water sources; will not lead to the introduction of invasive alien species; and will not involve the application of biotechnology application in genetically modified crops.

Photo 18: Proposed CSA demonstration plot at Adomano

Source: Field visits during E&S screening of plots, January 2022

Adiemra Demonstration Plot in Kintampo South District.

The Adiemra demonstration plot is located along the main road to the community and it's about 0.5 kilometers next to the community. The plot is owned by a male farmer who regularly uses the plot for maize and cassava cultivation. At the time of the visit, the plot was covered with the remaining stalks of harvested maize. There are no cases of child or forced labor in the community. Farmers in the community employ casual laborers at the prevailing wage rate of about GHC30 ($5), which is higher than the minimum wage rate in Ghana. The key E&S risks identified include trips, slips, and falls at the demonstration site, workers and residents' exposure to pesticides, the lack of PPE use by farmers, presence of hazardous animals such as snakes, which could result in potential farm injuries during farming activities. The set of CSA innovations and CIS technologies to be piloted meet the E&S exclusion list for the AICCRA project. There are no flora and/or fauna of endangered species; no important physical cultural resources nearby or protect areas/forest or water sources; will not lead to the introduction of invasive alien species; and will not involve the application of biotechnology application in genetically modified crops.

Photo 19: Interactions with landowner on proposed plot for CSA demonstration at Adiemra

Source: Field visits during E&S screening of plots, January 2022

Agyegyemakunu Demonstration Plot in Kintampo South

The proposed plot in this community is a half-acre plot belonging to a male farmer. It is about 1.5 kilometers away from the community and located at the center of the major farming area of the community. The plot is a modified farmland that was used for maize cultivation in 2021 planting season. At the time of the visit, the plot was covered with grasses of about 2 feet tall and no economic tree was found on it. Although no major economic tree was sighted on the plot, it is bound on its sides by cashew plantations belonging to other farmers. This means for any attempt to burn grasses cleared on the land,

adequate precaution would need to be put in place to prevent the spread of fire to nearby cashew farms. Due to shortages of casual laborers in the community, some farmers attempt to engage the services of children under 15 years to assist them in their farming activities. Therefore, the project will need to check and prevent persons under 18 from offering labor services on the plot. The set of CSA innovations and CIS technologies to be piloted meet the E&S exclusion list for the AICCRA project. There are no flora and/or fauna of endangered species; no important physical cultural resources nearby or protect areas/forest or water sources; will not lead to the introduction of invasive alien species; and will not involve the application of biotechnology application in genetically modified crops. Other key E&S risk identified include trips, slips, and falls at the demonstration site, workers and residents' exposure to pesticides, the lack of PPE use by farmers, and presence of hazardous animals such as snakes, which could result in potential farm injuries during farming activities.

Photo 20: Proposed CSA demonstration plot at Agyegyemakunu

Source: Field visits during E&S screening of plots, January 2022

Tanoboasi Demonstration Plot Techiman North District: The Tanoboase demonstration plot is 1-acre piece of land owned by a male farmer who also doubles as a sub-chief in the community. The plot is located along the main Techiman to Kintampo highway and 30 meters next to the main township. It is a modified farmland mainly used for maize and yam cultivation in the rainy season. The plot was covered with weeds of about 1-foot-high and no economic tree was found on the land. There are no cases of child or forced labor in the community. Farmers in the community employ casual laborers at the prevailing wage rate of about GHC30 ($5), which is higher than the minimum wage rate in Ghana. The set of CSA innovations and CIS technologies to be piloted meet the E&S exclusion list for the AICCRA project. There are no flora and/or fauna of endangered species; no important physical cultural resources nearby or

protect areas/forest or water sources; will not lead to the introduction of invasive alien species; and will not involve the application of biotechnology application in genetically modified crops. The key E&S risks identified include trips, slips, and falls at the demonstration site, workers and residents' exposure to pesticides, the lack of PPE use by farmers, presence of hazardous animals such as snakes, which could result in potential farm injuries during farming activities.

Photo 20: Proposed CSA demonstration plot at Tanoboase

Source: Field visits during E&S screening of plots, January 2022

Offuman Demonstration Plot in Techiman North District

The proposed demonstration plot at Offuman is 1.5-acre plot located at about 30 meters away from the main township. It is located along a major road used by several farmers to get to their farms. The plot is owned by a male farmer who happens to be the first person to be awarded as a National Best Farmer in Ghana. It is adjacent to the residents of the landowner. The same plot has in the past been used by the Ministry of Agriculture to operate several demonstration farms. As at the time of the visit, the farmer had just finished harvesting maize planted in the previous farming seasons. There are no cases of child or forced labor in the community. Farmers in the community employ casual laborers at the prevailing daily wage rate of about GHC35 ($6.5), which is higher than the minimum wage in Ghana. Key E&S risks identified include trips, slips, and falls at the demonstration site, workers and residents' exposure to pesticides, the lack of PPE use by farmers, and presence of hazardous animals such as snakes, which could result in potential farm injuries during farming activities. The set of CSA innovations and CIS technologies to be piloted meet the E&S exclusion list for the AICCRA project. There are no flora and/or fauna of endangered species; no important physical cultural resources nearby or protect areas/forest or water

sources; will not lead to the introduction of invasive alien species; and will not involve the application of biotechnology application in genetically modified crops.

Photo 21: Proposed CSA demonstration plot at Offuman

Source: Field visits during E&S screening of plots, January 2022

7.0 E&S RISKS MANAGEMENT

7.1 E&S Risks Identified, Mitigation Measures and Cost

Overall, the potential E&S risks envisaged on the pilot of CSA/CIS innovations/technologies and identified during the site-specific screening include:

- Occupational health and safety (OHS) risks relating to poisoning or other injuries from the use of pesticides and other chemicals, as well as workplace accidents/injuries, including lack/inappropriate use of personal protective equipment (PPE), dust, fumes, and traffic accidents; excessive hours of work;
- The use of pesticides and other chemicals which could lead to harmful exposure to workers and poor disposal of pesticide residues and containers;
- Excessive water loss through leaked irrigation pipelines;
- Indiscriminate disposal of solid waste;
- Child labor (the risk that a person under 18 years of age is employed/engaged in relation to the project);

- Community health and safety issues, including community exposure to pesticides and other hazardous materials;
- Infection with a communicable disease (such as COVID-19) which may arise from the interaction of project workers with local communities or between project workers;
- Gender Based Violence (GBV) in relation to contact between project workers and members of local communities and unavailability of separate sanitation facilities for both male and females; and
- Potential exclusion of vulnerable groups such as blind and deaf farmers from learning sessions.
- Potential surface water contamination from run-offs given the use of pesticides and fertilizers.
- Unsatisfactory labor working conditions.
- Absence or lack of courage of vulnerable people to voice out grievance.
- Unequal access to project information especially by the vulnerable including women and non-literates, youths, and Persons with disabilities.

During the on-farm screening activities, neither flora and fauna endangered species or at risk nor any protected species or areas have been identified next to the study areas.

The table 9 below provides an overview of the potential adverse E&S risks, associated risk rating, proposed mitigation measures, responsible parties, and the estimated costs.

Table 9: Environmental and Social Risk Mitigation Plan

Type of risk	Potential impact	Key receptor	Risk level	Proposed mitigation measures	Responsible	Estimated cost (US$)
Planning Phase						
Site not suitable for CSA demonstrations	CSA demonstrations works not implementable	IITA and partners Farmers	Moderate	• Follow World Bank and national protocols on voluntary land acquisition to acquire plots. • Conduct E&S due diligence on proposed sites to ensure suitability.	IITA and Partners, AICCRA E&S Specialists	$5000 (already implemented)
IITA and implementing partners not aware of safeguard requirements	Non-compliance with ESMP	IITA and partners	Moderate	• Incorporate AICCRA E&S requirements into grantees contract. • Train grant partners and workers on E&S requirements and procedures under the AICCRA project and for pilot of CSA innovations.	IITA and AICCRA E&S Specialists	$2000 (already implemented)
Farmers not aware of safeguard requirements	Non-compliance with ESMP	Farmers	Moderate	• Training of farmers on applicable AICCRA E&S safeguard requirements, particularly grievance mechanism, child labor and SEA/SH prohibitions, and occupational health and safety measures.	IITA and implementing partners	$2000 (ongoing)
Implementation Phase						
Pesticide and other chemical use for agricultural activities at Boopari, Dzuuri, Tampola, Yidongo, Doggoh, Offuman, Tanoboase, Adomano, Bawa Akura, Adiemra, Agyegyemakunu & Tuba.	Air, water and land pollution, Poisoning of aquatic and terrestrial life.	Workers, farmers, animals and consumers of farm products	Moderate	• Promote good farming practices that use fewer chemical inputs as per the integrated pest management procedures detailed in Section 7.3. • Resort to the use of synthetic chemical pesticides as a last pest mitigation measure. • Use pesticides approved by the national government, in particular this project prohibits the use of **glyphosate.** • Integrate training of workers and farmers in the proper handling and disposal of chemical residue and cans. • Comply with prescriptions contained in the pesticide safety data sheets. • Follow pesticide storage procedures contained in the safety data sheets. • Consider the direction of the wind during phytosanitary treatments and do not spray against the direction of the wind;	IITA, UDS, CSIR-CRI, CABI, PPRSD, AICCRA-Ghana Safeguard Focal Person	$3000

Type of risk	Potential impact	Key receptor	Risk level	Proposed mitigation measures	Responsible	Estimated cost (US$)
				• Provide appropriate protective clothing and equipment i.e., protective googles, hand gloves, air purifying disposable/washable masks, neoprene gloves, chemical resistant hats. • Avoid practices likely to cause unintentional emissions of persistent organic pollutants (POPs) such as open burning of agricultural residues treated with pesticides. • Promote good farming practices that use fewer chemical inputs. • Prohibit indiscriminate disposal and littering of farmland with empty agrochemical containers to avoid being used for drinking.		
Excessive water loss through irrigation pipelines at Yidango, and Tuba	Water scarcity	Other users - livestock, local residents and farmers	Moderate	• Seek consent of community members before drawing water from a shared community water source. • Repair broken control points, canals, and replace damaged pipelines and water holes. • Train workers and farmers in the proper handling of water control points and pipelines. • Use drip irrigation method for demonstration to facilitate effective water conservation. • Conduct water balance assessment to ensure community dugouts are not over-abstracted as a result of this project.	IITA, UDS, CSIR-CRI and IWMI	$6000
Burning of cleared weeds and other residual materials at all project sites	Air pollution	Residents Climate change	Low	• Set prohibitions on burning of cleared weeds and waste at project sites. • Sensitize all project workers and farmers on this prohibition. • Convert weeds cleared into organic manure for use as mulch. • Regular supervision of demonstration plots to prevent bush and waste burning at sites.	IITA, UDS, CSIR-CRI	$0

Occupational health and safety (OH&S) at all project sites	Injuries, accidents, disruption of workflow etc.	Workers & Visiting Farmers	Moderate	• Include OH&S requirements in workers Code of Conduct (CoC).
				• Provide OH&S orientation to workers, visiting farmers and other stakeholders.
				• Procure and provide relevant PPE for staff working on demonstration sites, visiting farmers and other stakeholders as and when needed.
				  ○ The minimum PPE includes safety shoes and coveralls.
				  ○ Pesticide treatments will require additional PPE including protective googles, hand gloves, air purifying
					IITA, UDS, CSIR-CRI, CABI, PPRSD, AICCRA-Ghana Safeguard Focal Person	$5000

Type of risk	Potential impact	Key receptor	Risk level	Proposed mitigation measures	Responsible	Estimated cost (US$)
				disposable/washable masks, neoprene gloves, chemical resistant hats. • Ensure that all equipment is maintained and in safe operating condition. • Inspect all farm equipment with the view of ascertaining its safety status before use. • Provide first aid boxes at project demonstration sites. • Provide workers and visiting farmers with access to toilets and potable drinking water. • Investigate cause of accidents at workplace and maintain a record of health and safety incidents. • Workers will have the right to refuse work in unsafe conditions. • Comply with prescriptions contained in the pesticide safety data sheets.		
Indiscriminate disposal and improper handling of solid waste at all project sites	Land and water pollution, poisoning of terrestrial and aquatic life.	Residents, river bodies, land and animals,	Low	• Provide waste bins at demonstration sites. • Dispose of waste at approved waste dump sites. • Keep hazardous substances including obsolete agrochemicals and empty agrochemical containers in a secure storage area. • Sensitize workers and visiting farmers on waste disposal arrangements. • Return agrochemical containers to the suppliers.	IITA, UDS, CSIR-CRI, AICCRA-Ghana Safeguard Focal Person	$1000
COVID-19 transmissions at all project sites	Increased spread of the corona virus	Residents; workers	Moderate	• Provide nose masks to workers and visiting farmers at no cost to them and require mandatory wearing of face masks at sites. • Ensure social distancing at the workplace. • Provide handwashing facilities supplied with soap, disposable paper towels and closed waste bins at key places at sites. • Provide accessible sanitation areas with water, soap, and sanitizers. • Ensure that all workers have adequate and updated information on COVID-19 and Government of Ghana updated COVID-19 guidelines. • Establishing measures and a referral pathway including linkage with the Ministry of Health for workers who get infected with COVID-19 in line of duty. • Immediately isolate workers or visiting farmers with symptoms of COVID-19 (e.g., fever, dry cough, fatigue) and report suspected	IITA, UDS, CSIR-CRI, CABI, PPRSD, AICCRA-Ghana Safeguard Focal Person	$1000

Type of risk	Potential impact	Key receptor	Risk level	Proposed mitigation measures	Responsible	Estimated cost (US$)
				cases through the following emergency numbers 112 or 311 or link up with local district health authorities for immediate evacuation or medical help. • Provide adequate support to workers who get exposed to the virus at workplace.		
Sexual Exploitation and Abuse (SEA)/Sexual Harassment (SH) at all project sites	Female workers being harassed. Female farmers and other community members being sexually exploited. Violation of sexual privacy.	Workers, residents	Low	• Include SEA/SH prohibitions and sanctions in Worker's code of conduct and enforce compliance. • Provide mandatory training and awareness raising for the workforce on SEA/SH probations. • Informing workers about national laws and institutional policies that make sexual harassment and gender-based violence a punishable offence. • As part of Stakeholder Engagement, sensitize farmers and project communities on the risk of SEA/SH and on available resources and services. • Provide safe and suitable toilets and washing facilities, separate for men and women workers, particularly during on-farm demonstrations. • Provide safe and confidential grievance channels easily accessible to all stakeholders.	IITA, UDS, CSIR-CRI, CABI, PPRSD, AICCRA-Ghana Safeguard Focal Person	$2,000
Child labor at Adomaso and Agyegyemakunu	Underage children engaged in hazardous work	Children in host communities	Low	• Enforced prohibitions on child labor, persons under 18 years will not be permitted to work on AICCRA-Ghana demonstration plots. • Sensitize all partners and farmer groups on child labor prohibitions. • Institute age verification for new workers before engagement. This will include national identification cards, passports, alternative methods including copies of academic certificates, testimony/affidavits from officials of the schools attended, a medical examination, statements from family members and locality/village officials/local authorities. • Develop a simple protocol in line with ESS2 of how to handle a child labor case.	IITA, UDS, CSIR-CRI, CABI, PPRSD, AICCRA-Ghana Safeguard Focal Person	No cost.

Type of risk	Potential impact	Key receptor	Risk level	Proposed mitigation measures	Responsible	Estimated cost (US$)
Influx of temporary workers at Agyegyemakunu	Sexual Transmission of Diseases. Social conflicts	residents of host communities	Low	• Mandatory awareness raising for the workers about refraining from unacceptable conduct toward local community members, specifically women and girls • Informing workers about national laws and project prohibitions on sexual harassment, exploitation and abuse. • Include SEA/SH prohibitions and sanctions in Worker's code of conduct and enforce compliance. • As part of Stakeholder Engagement, sensitize farmers and project communities on the risk of SEA/SH and on available resources and services. • Maintain a functional grievance mechanism, which is accessible to all community members. • Cooperate with law enforcement agencies in investigating complaints about gender-based violence.	IITA CSIR-CRI	No cost.
Exclusion of vulnerable groups especially the blind farmers at Dehia	Discrimination against person with disability	Persons with disabilities	Low	• Use local languages for all engagements and meetings with farmers. • Organize appropriate focus groups and learning sessions. • Engage the services of sign language interpreters. • Maintain sensitivity to local culture and traditional meeting and event days. • Provide free transport services for PWDs as and when necessary.	IITA, UDS, CSIR-CRI,	$2000

7.2 Chance Find Procedures

In the event of finding previously unknown sites or features of cultural value during project implementation, the following standard procedures for identification, protection from theft, treatment and recording should be followed.

Specifically,

i. Stop the activities in the area;
ii. Delineate the discovered site or area;
iii. Secure the site to prevent any damage or loss of removable objects;
iv. Notify the AICCRA Safeguard Focal Person who in turn will notify the responsible authorities;
v. The Ministry of Tourism and Culture, in collaboration with responsible local authorities (where applicable), would be in charge of protecting and preserving the site before deciding on subsequent appropriate procedures;
vi. The Ministry of Tourism and National Museums and Monument Board will make decisions on how to handle the findings. This could include changes in the layout (such as when finding irremovable remains of cultural or archaeological importance), conservation, restoration, and salvage;
vii. The Ministry of Tourism shall communicate implementation of the authority decision concerning the management of the finding in writing; and
viii. Demonstration activity could resume only after permission is given from Ministry of Tourism or other responsible authorities concerned with safeguarding the cultural heritage.

7.3 Pest Management Plan

The management of various pests under the AICCRA project will be based on Integrated Pest Management (IPM) approach. This approach recommends the combination of multiple control methods against pests while considering the use of chemical pesticides as a last resort. In this regard, several management methods such as biological control, agronomic control, varietal selection and the judicious use of chemicals when needed.

This Action Plan includes measures to (i) Promote the use of alternative pest management strategies, and (ii) Promote IPM technologies. Table 4 below provides the pest management strategy for each of the five selected value chains.

Table 10: Pest Management Strategy

1. Yam	
Pest/Disease	Intervention/ Management Strategy
Nematodes- Root knot and the yam nematodes,	• Select and use improved/tolerant varieties. • Select clean and healthy yam setts. • Amend ridges/mounds with bio-nematicides such as neem, mucuna leaves powder at 40g per plant. • Use poor host crop such as maize as intercrop or fallow crops. • Plant antagonistic plants such as crotalaria and marigold as rotation crops during fallow period. • Ensure proper farm sanitation; some weeds serve as alternative host therefore regular clearing of weeds is advisable. • Dip and treat tubers in aqueous neem extract before storage.
Insect Pest- Beetles, Millipedes, scale insects, mealybugs	• Select healthy and clean planting materials. • Treat freshly cut setts with mixture of insecticides and fungicide such as mancozeb and lambda cyhalothrin respectively before planting.

	• Botanicals such as neem powder can be incorporated into the ridges/mounds at planting.
Yam Anthracnose Disease	• Treat freshly cut setts with a mixture of fungicide and insecticide treatment.
Viral diseases	• Practice positive selection to select virus free material for setts during planting.
2. Sweet Potato	
Pest/Disease	Intervention/ Management Strategy
Sweet Potato Weevils	• Select site with required nutrients. • Manipulate planting time to avoid peak period of the pest. • Select and use clean and healthy vines free from insect damage/symptoms. • Treat vines with insecticides before planting. • Frequent re-ridging to cover tubers to avoid oviposition in tubers. • Harvest at the right time to escape pest attack. • Properly dispose of infested vines and roots to reduce build up. • Practice crop rotation.
Viral Disease Complex	• Select, cut, and use vines from healthy mother plants. • Select and use improved tolerant varieties. • Rouge (remove) and bury/burn infected plants as soon as they are observed in the field. • Remove all debris from field before planting and ensure proper field sanitation at all times.
Fungal Disease- Alternaria leaf spots, Phomopsis leaf spot/blight, Black rot	• Use Improved tolerant sweet potato varieties. • Select healthy parents to use as planting material. • Practice crop rotation to reduce inoculum build up. • Ensure proper field sanitation. • Treat vines with fungicides such as mancozeb before planting. • Dip tubers in fungicides before storage.
3. Tomatoes	
Pest/Disease	Intervention/ Management Strategy
White flies	• Seek advice and grow improved/ tolerant cultivars. • Avoid intercropping with crops such as garden eggs and pepper which may serve as alternative hosts. • Neem based extracts and microbial insecticides such as Bt. (Bypel) Abamectin can be applied and potash-based soap such as alata samina can be sprayed. • Use of sticky traps. • Plant companion plants such as mint to attract and conserve natural enemies such as lady bird beetles, wasps, lacewings, pirate bugs and hover flies. • Judiciously apply recommended doses of chemical insecticide when infestation is very heavy and only as last resort. Example: Indoxacurb. Imidacloprid and Thiamethoxam can be used only before flowering, to save bees that pollinate flowers.
Aphids	• Aphids can be dislodged by applying water on leaves. • For large aphid invasion, dust plants with ashes. • Apply neem-based extracts and soapy water. Soapy water should be reapplied every 2-3 days for 2weeks. • Apply chemical insecticides only when aphid infestation is very high.
Fruit Borers	• Apply neem-based extracts/products. • Plant trap crops such as marigold to attract pest. • When necessary, judiciously spray insecticides such as cypermethrin at the given recommended rate at the beginning of the flowering period and continue biweekly.
Tuta Absoluta (Leaf miner)	• Apply neem-based extracts/products. • Use pheromone traps to monitor and mass trap adult moth. • Regularly control weeds which serve as alternative host to the pest.

Spider mites	• Ensure regular monitoring and scouting for symptoms of red mites. • Plough to bury crop residues into soil before planting. • Application of bio-products such as neem, Bt (e.g. Bypel) and emamectin benzoate (e.g. Attack) or other biorationals like Warrior super at recommended doses. • Apply Sulphur based pesticides or Abamectin. • Practice intercropping with crops such as basil and garlic. • Irrigate field regularly.
Root- knot nematodes	• Practice crop rotation (about 3 years). • Intercrop tomato with African marigold. • Plant cover crops such as crotalaria to reduce nematodes build up. • Amend soil with neem cake, neem leaf powder and/or poultry manure before planting.
Damping off	• Sterilize seed bed/growing media before nursery. • Treat seeds with fungicides before sowing. • Regulate water supply during nursing. • Do not irrigate late in the evening and allow water on leaves to sufficiently dry. • Avoid overcrowding seedlings on seed bed. • Apply copper-based fungicides in severe attack.
Early and Late Blight	• Plant improved tomato cultivars. • Follow good agricultural practices such as proper spacing of plants, pruning and staking. • Ensure proper field sanitation. • Judiciously apply pesticides such as mancozeb, Sulphur/copper-based in severe cases.
Wilt	• Use improved planting materials. • Treat seeds with fungicides before planting. • Ensure good/appropriate soil moisture. • Practice proper field sanitation such as clearing of alternative hosts, removing, and not buying affected/dead plants. • Avoid intercropping or rotating with other vegetable crops such as pepper, garden eggs. • Apply recommended dosage/rate of nutrients. • Nematode attacks increase severity of wilting, hence manage nematodes. • Copper-based fungicides may be applied in severe cases to manage bacteria wilt.
Anthracnose	• Use improved cultivars and disease-free seeds. • Practice crop rotation with non-host crop. • Follow good agricultural practices, such as mulching, staking and harvesting fruits at the right time. • Judiciously apply fungicides such as; Carbendazim, Benzimidazole, Azoxystrobin, etc.
4. Cowpea	
Pest/Disease	Intervention/ Management Plan
Aphids	• Select and use improved/tolerant varieties. • Rotate cowpea with crops such as maize. • Intercrop cowpea with crops such as garlic. • Ensure good agricultural practices such as applying the recommended planting distances. • Application of bio-pesticides such as neem-based products. • Judicious application of insecticides.
Flower Thrips	• Grow tolerant cowpea varieties. • Plant early maturing varieties to escape periods of heavy attack. • Intercrop cowpea with cereals such as maize to reduce population of thrips. • Apply neem-based products. • Judiciously apply recommended insecticides such as Chlorpyrifos.

cowpea pod borer	• Plant improved tolerant varieties. • Hand pick and crush insects and their eggs. • Practice good cultural practices such as weed control, as weeds can serve as hiding place for the insects. • Prune excess leaves from stem to allow sunlight. • Judiciously apply recommended insecticides.
Parasitic weeds- Striga	• Select and grow improved/tolerant varieties. • Practice crop rotation with non-host plants. • Apply optimal amount of Nitrogen nutrients. • Spray recommended herbicides. • Timely weeding/ hand pulling of striga before it flowers.
Mosaic virus disease	• Plant tolerant varieties. • Effectively control insect pest such as aphids.
Cercospora Leaf spot disease	• Plant tolerant varieties. • Treat seeds with fungicides before planting. • Practice proper field sanitation such as removal of weeds which may serve as alternative host and removal of plant debris. • Intercrop cowpea with other crops such as maize. • Judiciously apply recommended fungicides such as mancozeb at recommended dosages.
5. Maize	
Pest/disease	Intervention/ Management Plan
Striga	• Plant improved/tolerant maize varieties. • Pull out striga plants prior to flowering. • Cultural practices such as crop rotation with poor host such as groundnut and soyabean. • Apply recommended fertilizer at the recommended rates.
Stem borers	• Remove, destroy or bury crop residues on the field after harvest. • Amend soil with neem seed cake/neem-based product at planting. • Crop rotation with poor hosts such as legumes. • Intercrop maize with non-host crops such as cassava and legumes. • Practice push-pull technology. • Wisely apply insecticides such as Karate at the recommended rate when necessary.
Fall Army worm	• Use recommended maize varieties. • Do not plant in already infested field. • Remove and destroy crop residues before planting. • Frequently control weeds and other alternative hosts as they may serve as breeding spots. • Monitor fields regularly for early warning signs. • Spray neem-based products. • Spray recommended insecticides such as Bt - *Bacillus thuringiensis* (Bypel), Emamectin benzoate etc. at the recommended rate and time. • Practice push-pull technology.
Cutworms	• Turn up the soil to expose them to sunlight and predators such as birds. • Monitor field, hand pick and mechanically destroy caterpillars. • Apply Bt based products. • Treat soil with insecticides such as chlorpyrifos.
Maize Streak virus	• Use tolerant varieties. • Manage vectors by judiciously applying recommended insecticides.

7.4 Institutional Arrangements and Responsibilities for Implementing the ESMP

This ESMP will be implemented by IITA, CSIR-CRI, CABI, PPRSD and UDS through the leadership of AICCRA Cluster Lead for Ghana and with assistance from the Safeguard Focal Person for the AICCRA Ghana. The AICCRA Environmental and Social Safeguard Specialists will provide additional oversight to ensure compliance to and implementation of material actions proposed to mitigate key risks in this ESMP. Detailed level of oversight, responsibility and key roles are provided in the table below:

Table 11: Roles and Responsibilities

Institution/Lead Person	Roles and Responsibilities
AICCRA E&S Specialist	• Provide technical support for the implementation of materials actions in this plan. • Monitor compliance to mitigation measures through regular field monitoring and on the spot checks. • Provide biannual reports to the World Bank on progress of implementation and compliance.
IITA (AICCRA Ghana Safeguard Focal Person)	• Facilitate overall coordination and funding for the implementation material actions in the ESMP. • Sensitize project partners and workers on this ESMP. • Monitor compliance to mitigation measures through regular field monitoring and on the spot checks. • Document implementation progress, grievances received, incidents and accidents. • Provide biannual progress updates on implementation and compliance to AICCRA PMC (Project Management Committee).
Implementing partners (IWMI, CABI, CSIR-CRI, UDS)	• Sensitize workers and farmers on this ESMP and on all mitigation measures. • Implement applicable material actions.
Community Level Grievance Focal Persons	• Receive grievances from the farmers and community members and escalate them to the AICCRA-Ghana Safeguard Focal Person.

7.5 Institutional Strengthening and Capacity Building for ESMP Implementation

For effective implementation of this ESMP, there will be the need to enhance the appreciation of implementing partners, project workers and relevant stakeholders on E&S mitigation and response measures considered in this document. Capacity building is needed for key stakeholders to enable them take appropriate responsibility in implementing mitigation measures outlined in this document. The following broad areas, but not limited to, have been identified as key areas that deserve attention for capacity building.

- Occupational health and safety measures.
- Engagement of casual laborers.
- Handling of pesticides and disposal of used cans.
- Mechanism for inclusion of vulnerable groups i.e., women and persons with disabilities.
- Receipt and management of grievances including cases linked to SEA/SH.
- Reporting on E&S issues.

The project will leverage space on existing monthly meetings among implementing partners (IITA, IWMI, CABI, Essoko, UDS, PPRSD and CSIR-CRI) to regularly sensitive project leads and workers on

these key issues. In particular, training on the use of biopest control. In addition, the project will organize tailored engagement with other relevant stakeholders to enhance their perspectives on the issues outlined above.

7.6 Grievance Mechanism

IITA and project implementation partners on AICCRA-Ghana are committed to providing a transparent and easily accessible grievance mechanism for all workers to report complaints relating to disagreement on working conditions, health and safety, discrimination, bullying, sexual harassment, and abuse.

Two major grievance mechanisms are currently available for all workers working on the AICCRA project to report labor related grievances including SEA/SH. These include (i) the CGIAR grievance mechanism, and (ii) the project grievance mechanism provided in the AICCRA-Ghana stakeholder engagement plan (SEP). All workers will be informed of the grievance mechanism at the time of their engagement on the project including measures put in place to protect them against any reprisal for its use. The mechanism will also allow for anonymous complaints to be raised and addressed through providing options for people reporting a grievance to not mention their names, positions or place or workstation.

7.7 The CGIAR Grievance Mechanism

Scope

The grievance mechanism procedure primarily applies to all staff members of ABC, IWMI, CIFOR-ICRA, IITA (covering all types of employment contracts including, but without limitation to regular, consultants, part-time, contract of service and temporary employees), interns, visiting scientists, fellows, contractors, grantees, visitors, donors, volunteers, board members and vendors of the CGIAR centers.

The reporting mechanisms under this policy procedure are also applicable to workers of other grant partners including CABI, NIBIO, UDS and Esoko although in such cases the investigation procedures may be adjusted in consultation with other relevant legal entities where this may be applicable. The workers of grant partners will be encouraged to report labor related concerns on the AICCRA project through this mechanism.

Types of complaints

The mechanism handles complaints relating to three broad areas:

i. Fraud related breaches: these include embezzlement, theft, bribery, and kickbacks;
ii. Compliance related breaches: these include unsafe working conditions, vandalism, falsification of contracts, reports, or records, non-compliance to research ethics, etc.; and
iii. Human resource related breaches: these include sexual harassment, discrimination, abuse, bullying, conflict of interest, alcohol, substance abuse, etc.

Reporting/grievance uptake point

Staff members and all other stakeholders may choose one of two ways to submit their reports:

1. Anonymous reporting using a CGIAR wide external service provider known as Lighthouse. The provider has been commissioned by the CGIAR to manage anonymous reporting services for all the CGIAR centers through an ethics hotline. Cases can be reported to Lighthouse anonymous reporting page, Email reports@lighthouse-services.com and Toll-Free number: 844-709-6000. Complaints received by Lighthouse through these channels including cases linked with SEA/SH will be shared with the AICCRA-Ghana Safeguard Focal Person for record-keeping and reporting, and referral of SEA survivors to GBV service providers listed at Annex 6. OR
2. Direct reporting to a supervisor/manager/director/People and Organizational Development directorate (P&OD)/or a colleague.

Procedure for direct reporting

- The whistle-blower/reporter shall prepare a written report to a supervisor/manager/ relevant director/P&OD directorate/other colleagues. If the report is made verbally, the person receiving the report shall capture the matter in writing and submit to either the supervisor/manager/ director or P&OD directorate.
- The person receiving the report shall acknowledge receipt of the report.
- The information provided shall be reviewed and may be the basis of an internal and/or external investigation into the issues which are reported.

Procedure for anonymous reporting through the Lighthouse ethics hotline

The whistle-blower/reporter:

- Makes a call through the ethics hotline or accesses the online case management system platform and provides information to the external vendor (Lighthouse) which will be captured as a report.

Lighthouse:

- Captures all the information and generates a report that will be shared with the designated recipient.
- May liaise with the whistle-blower/reporter to seek clarification, gather additional information and work with the whistle-blower as appropriate to build their confidence or encourage to come out of anonymity (as may be relevant).
- Analyzes and shares the report with the designated case system administrator and designated recipient at employees' organization.

Designated recipient: The designated recipients of the reports will generally be the directors of the institute and the reports that will be shared with them will align to their area of work according to the three broad areas of breaches.

The designated recipient will:

- Receive a copy of the report submitted to Lighthouse; and
- Review the report and consult internally to decide on the way forward.

Case management investigator: Case management investigators are the designated investigators of the case, who shall investigate the case in accordance with institutional policies and procedures.

Case management system (CMS) administrator: A P&OD official will assume the role of a case management systems administrator responsible for updating case information on the Lighthouse platform in accordance with the institute's policies and procedures.

Investigation

- After receipt of the ethical report either directly or anonymously, an initial assessment shall be carried out to determine if there is a genuine concern. If the concern is considered to fall more properly within a different type of complaint procedure, such as a grievance, the whistle-blower/reporter will be informed accordingly by the supervisor and P&OD directorate and be provided with advice on how to proceed.
- If there are sufficient grounds to initiate a full investigation, a diverse committee shall be constituted by the Director General or his designate to investigate the matter and recommend the course of action to be taken. During the investigation, the alleged perpetrator(s) may be given the opportunity to represent their argument.
- The amount of contact between the individual submitting a report and the body investigating the concern will depend on the nature of the issue, the clarity of information provided, and whether the employee remains accessible for follow-up.
- Where breaches of duty are confirmed to have occurred, the investigation report will provide recommendations on what action is appropriate, which may involve disciplinary procedures of the institute. Action will be taken to correct the failure and avoid similar events in the future as well as to address the alleged perpetrator(s) of misconduct.

Conclusion of cases

- Management endeavors to conclude on all cases under investigation within a month of the start of the process, although it is recognized that there may be exceptions depending on the circumstances.
- At the discretion of the institute and subject to legal and other constraints, the reporter may receive information about the outcome of an investigation.
- Should the whistle-blower/reporter still feel either victimized or disadvantaged following the report and subsequent investigation, they may choose to escalate the issue to the next level in the form of an appeal to the next level of authority. Should the issue raised be with reference to the P&OD director, then the whistle blower/reporter shall raise it with the Director General. In the event that the matter is with regards to the Director General, it may be raised with the Chair of the Board and subsequently in cases where the matter refers to the Chair of the Board, the staff member may raise it directly with the Director of the CGIAR Internal Audit Unit.

7.8 AICCRA-Ghana Grievance Mechanism

The AICCRA-Ghana grievance mechanism outlined in the cluster SEP constitutes an alternative pathway for project workers and community members to report grievances including cases linked to SEA/SH. The mechanism provides for several channels for lodging complaints including emails, phone calls, texts, letters, and a toll-free line that will also be accessible to all workers and community members. Information on this grievance will be made available to all workers and community members to ensure that they have adequate knowledge on how to lodge a complaint and receive resolution through the mechanism. Further details of the AICCRA-Ghana GM can be found in the project SEP approved by the World Bank.

Community Level

In each of the project communities, two community members/farmers (one man and one woman) involved in the project activities will be designated as a focal person for receiving complaints. When

designated, the contact details of such persons shall be disclosed and made available to community members. The community focal person will be trained in how to receive and promptly lodge complaints with the Safeguard Focal Person. Community members will also be allowed to lodge complaints directly during project meetings and consultation sessions with community members.

7.9 SEA/SH Grievance Mechanism

Overall, the AICCRA Ghana project has prepared an SEA/SH mitigation and response action to detail material measures for preventing and handling potential SEA/SH cases. Based on the measures set out in this plan an anonymous reporting channels have been provided as part of CGIAR and AICCRA-Ghana grievance uptake points to encourage reporting of SEA/SH related cases. When such a case is reported, the complainant would be provided with information about the available services including confidentially appropriate medical and psychological support, emergency accommodation, and any other necessary services as appropriate, including legal assistance. The Safeguard Focal Person will refer all SEA/SH survivors to relevant GBV service provider identified by the project. When a case of that nature is reported, the Safeguard Focal persons will record the case with the following limited information: the nature of the incident, the age and sex of the complainant, and whether the survivor was referred to a service provider.

The AICCRA-Ghana Grievance committee will review all cases referred to it to determine and agree upon course of action for handling and resolving the case. The appropriate institution that employs the perpetrator will be required to review the case and take disciplinary action in accordance with the employer's code of conduct and the national legislation. Disciplinary actions may include informal warning, formal warning, additional training, loss of salary, suspension, or termination of employment. A survivor may continue to receive support from the appropriate GBV service providers while the case is being handled by the employer.

7.10 Public Consultation, Participation, and Information Disclosure

Information disclosure and stakeholder consultations have been a crucial process leading to the preparation of this ESMP and will continue to be carried out during the implementation of this ESMP and throughout the project lifespan.

In accordance with the AICCRA Ghana SEP, the project team will publicly disclose this ESMP to all stakeholders and further communicate the content to farmers in host communities in their preferred local languages. Farmers will be educated on the risk mitigation measures at the demonstration sites and what is required of them when visiting the demonstration sites. Various methods such as community meetings, focus group discussions, public announcements, posters would be used to educate farmers and ensure their full participation in the project.

Additional measures will be taken to address the consultation and participation needs of vulnerable groups such as women and persons with disabilities. In line with the measures in the AICCRA Ghana SEP, when necessary, women focused group discussion with female facilitators will be organized to ensure full participation of women in the CSA demonstration learning process.

The project will hold quarterly engagements with stakeholders at the MMDA's and community levels to update them on the progress of project activities and outcomes of measures being implemented to avoid, mitigate, and respond to E&S risks and impacts.

7.11 Environmental and Social Monitoring, Reporting, and Completion Audit

Monitoring

Monitoring of compliance to mitigation measures contained in this document will constitute an essential activity in the implementation of this plan. E&S monitoring will aim at ensuring compliance with

i. The mitigation measures proposed in this plan;
ii. Commitments of partners in connection with the implementation mitigation measures applicable to their operations; and
iii. Requirements relating to national laws and regulations.

The overall framework proposed to guide monitoring of E&S risk and mitigation progress is organized in table 6 below.

Reporting on the ESMP

The AICCRA Ghana Safeguard Focal Person based at IITA shall be responsible for providing progress updates on compliance and implementation status of material actions contained in the plan. At minimum the report will include the following issues

i. Grievance received, resolved and outstanding;
ii. Incidents and accidents recorded;
iii. Changes made to the ESMP due to identification of new E&S risks or scale up of CSA pilot demonstrations; and
iv. Difficulties and/or constraints relating to the implementation of the ESMP.

At the community level, the focal implementing partner will provide a monthly report to the Safeguard Focal Person.

Completion Audit

Consistent with the requirements of ESS-1, a completion audit will be commissioned at the end of the pilot of CSA innovations to determine whether the objectives of this ESMP was achieved. The audit will allow IITA and other implementing partners to verify whether mitigation measures proposed in this plan have been implemented as required. The audit will also evaluate and ascertain whether the actions prescribed in the ESMP contributed in improve environmental and social outcomes of the project.

Table 12: E&S Risks and Mitigation Monitoring Framework

Type of risk	Proposed Mitigation Strategy	Monitoring Indicators	Means of verification	Responsibility
Site not suitable for CSA demonstrations	• Follow World Bank and national protocols on voluntary land acquisition to acquire plots. • Conduct E&S due diligence on proposed sites to ensure suitability.	• Project sites screened • ESMP prepared and cleared by the World Bank		AICCRA E&S Specialist AICCRA Ghana Safeguard Focal Persons
IITA and implementing partners not aware of safeguard requirements	• Incorporate AICCRA E&S requirements into grantees contract. • Train grant partners and workers on E&S requirements and procedures under the ACCRA project and for pilot of CSA innovations.	• Signed grantees contracts include E&S requirement • Workers of grant partners are trained on E&S requirements	Signed contracts Records of E&S training for grantees	AICCRA E&S Specialist
Farmers not aware of safeguard requirements	• Training of farmers on applicable AICCRA E&S safeguard requirements, particularly grievance mechanism, child labor and SEA/SH prohibitions, and occupational health and safety measures.	• E&S training organized for farmers and regular refresher briefing provided to farmers prior to any engagements with them on the farm.	Records of E&S training and refresher briefing. for farmers. Regular checks by Safeguard Focal Person.	AICCRA Ghana Safeguard Focal Person
Pesticide and other chemical use for agricultural activities at Boopari, Dzuuri, Tampola, Yidongo, Doggoh, Offuman, Tanoboase, Adomano, Bawa Akura, Adiemra,	• Promote good farming practices that use fewer chemical inputs as per the integrated pest management procedures detailed in Section 7.3. • Resort to the use of synthetic chemical pesticides as a last pest mitigation measure. • Use pesticides approved by the national government, in particular this project prohibits the use of **glyphosate.** • Integrate training of workers and farmers in the proper handling and disposal of chemical residue and cans. • Comply with prescriptions contained in the pesticide safety data sheets. • Follow pesticide storage procedures contained in the safety data sheets. • Consider the direction of the wind during phytosanitary treatments and do not spray against the direction of the wind;	• Limited use of agrochemicals • Increased use of animal and plant manure. • Increased use of bio-pesticides • Absence of pesticide-related accidents/incidents	Regular checks and supervision at project demonstration site.	AICCRA E&S Specialist AICCRA Ghana Safeguard Focal Person

Type of risk	Proposed Mitigation Strategy	Monitoring Indicators	Means of verification	Responsibility
Agyegyemakunu & Tuba.	• Provide appropriate protective clothing and equipment i.e., protective googles, hand gloves, air purifying disposable/washable masks, neoprene gloves, chemical resistant hats. • Avoid practices likely to cause unintentional emissions of persistent organic pollutants (POPs) such as open burning of agricultural residues treated with pesticides. • Promote good farming practices that use fewer chemical inputs. • Prohibit indiscriminate disposal and littering of farmland with empty agrochemical containers to avoid being used for drinking			
Excessive water loss through irrigation pipelines at Yidango, and Tuba	• Seek consent of community members before drawing water from a shared community water source. • Repair broken control points, canals, and replace damaged pipelines and water holes. • Train workers and farmers in the proper handling of water control points and pipelines. • Use drip irrigation method for demonstration to facilitate effective water conservation. • Conduct water balance assessment to ensure community dugouts are not over-abstracted as a result of this project.	• Broken controls points and pipelines repaired. • Trained organized to farmers on water utilization efficiency • Demonstration farms being supported with drip irrigation	Regular checks on project sites by Safeguard Focal Person Independ checks by water engineers from IWMI	AICCRA E&S Specialist AICCRA Ghana Safeguard Focal Person IWMI water engineers
Burning of cleared weeds and other residual materials at all project sites	• Set prohibitions on burning of cleared weeds and waste at project sites. • Sensitize all project workers and farmers on this prohibition. • Convert weeds cleared into organic manure for use as mulch. • Regular supervision of demonstration plots to prevent bush and waste burning at sites.	• Project workers and farmers sensitized on waste burning • The use of cleared weeds for mulching and farm manure.	Independ checks on project sits.	AICCRA E&S Specialist AICCRA Ghana Safeguard Focal Person

Occupational health and safety (OH&S) at all project sites	• Include OH&S requirements in workers Code of Conduct (CoC).
	• Provide OH&S orientation to workers, visiting farmers and other stakeholders.
	• Procure and provide relevant PPE for staff working on demonstration sites, visiting farmers and other stakeholders as and when needed.
	  ○ The minimum PPE includes safety shoes and coveralls.
	  ○ Pesticide treatments will require additional PPE including protective googles, hand gloves, air purifying
		• Signed code of conduct by workers,
		• OHS orientation provided to workers
		• adequate and appropriate use of PPEs
		• No. of recorded OHS incidents/accidents
			Daily self-check by the project lead
			
			Spot checks by AICCRA E&S Specialist
			AICCRA Ghana Safeguard Focal Person
				Project Leads of CABI, PPRSD, CSIR-CRI & UDS.

Type of risk	Proposed Mitigation Strategy	Monitoring Indicators	Means of verification	Responsibility
	disposable/washable masks, neoprene gloves, chemical resistant hats. • Ensure that all equipment is maintained and in safe operating condition. • Inspect all farm equipment with the view of ascertaining its safety status before use. • Provide first aid boxes at project demonstration sites. • Provide workers and visiting farmers with access to toilets and potable drinking water. • Investigate cause of accidents at workplace and maintain a record of health and safety incidents. • Workers will have the right to refuse work in unsafe conditions. • Comply with prescriptions contained in the pesticide safety data sheets.	• First aid kit procured and made available at project sites • Functional grievance mechanism		
Indiscriminate disposal and improper handling of solid waste at all project sites	• Provide waste bins at demonstration sites. • Dispose of waste at approved waste dump sites. • Keep hazardous substances including obsolete agrochemicals and empty agrochemical containers in a secure storage area. • Sensitize workers and visiting farmers on waste disposal arrangements. • Return agrochemical containers to the suppliers.	• Waste containers at the project sites.	Regular and on the spot checks by the Safeguard Focal Person.	AICCRA E&S Specialist AICCRA Ghana Safeguard Focal Person
COVID-19 transmissions at all project sites	• Provide nose masks to workers and visiting farmers at no cost to them and require mandatory wearing of face masks at sites. • Ensure social distancing at the workplace. • Provide handwashing facilities supplied with soap, disposable paper towels and closed waste bins at key places at sites. • Provide accessible sanitation areas with water, soap, and sanitizers. • Ensure that all workers have adequate and updated information on COVID-19 and Government of Ghana updated COVID-19 guidelines. • Establishing measures and a referral pathway including linkage with the Ministry of Health for workers who get infected with COVID-19 in line of duty.	• Nose masks procured and made available for use by farmers • Handwashing facilities made available at the project sits. • No. of COVID-19 transmission incidents links to the project.	Regular and on the spot checks by the Safeguard Focal Person. Daily self-check by the project lead	AICCRA E&S Specialist AICCRA Ghana Safeguard Focal Person

Type of risk	Proposed Mitigation Strategy	Monitoring Indicators	Means of verification	Responsibility
	• Immediately isolate workers or visiting farmers with symptoms of COVID-19 (e.g., fever, dry cough, fatigue) and report suspected cases through the following emergency numbers 112 or 311 or link up with local district health authorities for immediate evacuation or medical help. • Provide adequate support to workers who get exposed to the virus at workplace.			
Sexual Exploitation and Abuse (SEA)/Sexual Harassment (SH) at all project sites	• Include SEA/SH prohibitions and sanctions in Worker's code of conduct and enforce compliance. • Provide mandatory training and awareness raising for the workforce on SEA/SH probations. • Informing workers about national laws and institutional policies that make sexual harassment and gender-based violence a punishable offence. • Provide safe and suitable toilets and washing facilities, separate for men and women workers, particularly during on-farm demonstrations.	• Signed code of conducts • Compliance to the Project GBV action plan • Functioning grievance mechanism and referral pathways. • Male and female separate toilet facilities available at demonstration sites. • No reported incident on SEA/SH	Regular and on the spot checks Mission by World Bank E&S Specialist	AICCRA E&S Specialist AICCRA Ghana Safeguard Focal Person
Child labor at Adomaso and Agyegyemakunu	• Persons under 18 years will not be permitted to work on AICCRA-Ghana demonstration plots. • Sensitize all partners and farmer groups. • Institute age verification for new workers before engagement. This will include national identification cards, passports, alternative methods including copies of academic certificates, testimony/affidavits from officials of the schools attended, a medical examination, statements from family members and locality/village officials/local authorities.	• Age structure of project workers, in particular the minimum age of workers at these sites.	Age verification records of project workers. Regular and on the spot checks Mission by World Bank E&S Specialist	AICCRA E&S Specialist AICCRA Ghana Safeguard Focal Person
Exclusion of vulnerable groups especially the farmer with hearing	• Use local languages for all engagements and meetings with farmers. • Organize women-only focus groups and learning sessions. • Engage the services of sign language interpreters. • Maintain sensitivity to local culture and traditional meeting and event days.	• Satisfactory feedback from women, youth and persons with disability on level of engagement and involvement learning activities.	Regular sample interviews with vulnerable groups Mission by World Bank E&S Specialist	AICCRA E&S Specialist AICCRA Ghana Safeguard Focal Person

Type of risk	Proposed Mitigation Strategy	Monitoring Indicators	Means of verification	Responsibility
impairment at Effutu Dehia	• Provide free transport services for persons with disabilities as and when necessary.			

7.12 Indicated Budget for implementation of ESMP

The following project activities will be undertaken to facilitate the implementation of this ESMP.

- Public disclosure of the ESMP in national news papers
- Sensitization of project partners, workers and stakeholders on E&S risks mitigation measures contained in this ESMP.
- Engagement activities at the community, district, and regional levels to share project updates.
- Field monitoring of compliance with mitigation measures in this ESMP.
- An E&S audit to ascertain the extent of compliance with WB ESF requirements and procedures.

All the activities outlined above will be financed from the project budget and the estimated cost for implementing these activities are presented in table 13 below.

Table 13: Indicative Budget

#	E&S Activity	Estimate Cost (USD)
1.	Disclosure of ESMP	$200
2.	Training/Sensitization of partners, workers, and stakeholders	$3,000
3.	Stakeholder Engagements to share project updates	$3,000
4.	E&S audits	$8,000
5.	Occupational health and safety (OH&S) at all project sites (Protective equipment, first aid boxes, etc.)	$5,000
6.	Monitoring of project sites	$3,000
7.	Management of pesticides and other chemical used during field activities	$3,000
8.	Management of Excessive water loss through irrigation pipelines at Yidango, and Tuba	$6,000
9.	wastebin at all project sites	$1,000
10.	Management of COVID-19 transmissions at all project sites	$1,000
11.	Management of Sexual Exploitation and Abuse (SEA)/Sexual Harassment (SH) at all project sites	$2,000
12.	Management of inclusion of vulnerable groups especially the blind farmers at Dehia	$2,000
13.	Operationalization of the GM	$2,000
	Total	**$39,200**

7.13 Conclusion

AICCRA Ghana Cluster acknowledges that the activities and operations during the implementation of CSA technologies could potentially impact on the environment, workers, communities, and is very mindful of its obligations towards the protection of the environment and ensuring the health and safety of the farmers, and the communities within the project area. AICCRA Ghana will carry out relevant sensitization and capacity building to ensure rigorous implementation of all material actions considered in this ESMP

and other allied safeguard instruments. The AICCRA Ghana team will operationalize this ESMP as a living document with firm commitment to review, update, and redisclose it as and when project activities or locations change. The Team will further provide biannual updates on implementation progress to the AICCRA program management unit and the World Bank. With this plan in place, the AICCRA Ghana hopes to carry out the CSA demonstrations in a manner that eliminates harm to people and the environment, whilst improving the overall sustainable outcomes of the AICCRA project.

Bibliography

1. AICCRA Ghana Stakeholder Engagement Plan
2. AICCRA Ghana Labor Management Procedures
3. AICCRA SEA/SH Mitigation and Response Action Plan
4. AICCRA Environmental and Social Risk Management Guide.

ANNEXES

Annex 1: Voluntary Land Acquisition Form

ACCELERATING IMPACTS OF CGIAR CLIMATE RESEARCH FOR AFRICA (AICCRA)

LAND ACQUISITION FORM

RELEASE OF LAND FOR …….

I/We ……. being the owner(s) of the parcel of land located in ……area of the ……. Community, have agreed to release the said land measuring ……m^2 as shown on the sketch (see attached) to the ……. in support of …….

This document and the process leading to the release of this land were read and explained to me in a language that I/We understand. I/We therefore agree to release the said land under the following conditions:

1. ……

2. ……

3. Out of my (our) own free will without any compensation consideration whatsoever and under no circumstance will I/We claim back the land in so far as the purpose for which the land was taken still holds.

LAND OWNER(S)

Signed …… Signed……

Name ……. Name……

Date…… Date ……...

Tel …… **Tel ……**

WITNESS FOR LANDOWNER(S)

Signed ……. Tel Name ……..

Relationship with landowner(s)……. Date……

AICCRA Ghana Coordinator

Signed …… Tel Name ……..

Position…… Date……

WITNESS (Project Lead (UDS or CSIR-CRI))

Signed …….. Tel
Position……..

Name …….
Date…….

GPS Coordinate of land

Point	Longitude	Latitude	Line	Distance
A			A-B	
B			B -C	
C			C-D	
D			D-A	
E				
F				
G				

PICTURE SHEET

(Must capture the owner(s) and witnesses involved on the land acquisition and in signing the land release form.

Figure 1: Picture of land owner(s) signing the land acquisition form

Figure 2: Picture of owners on the land

Annex 2: E&S Screening Checklist for Selected CSA Demonstration Plots.

Name of Sub-project: AICCRA GHANA CLUSTER		
Project Location: GHANA		
Region: Central Region	District: Komenda-Edena-Eguafo-Abrem	Town/Farming Community: Dompoase

S No	ISSUES	YES	NO	Comments
A	**Water and Soil Contamination**			
1.	Will the subproject generate large amounts of residual waste?		X	
2.	Will the subproject result in potential soil or water contamination (e.g., from oil, grease and fuel from equipment yards)?		X	
3.	Will the subproject involve the use of herbicides for vegetation control and chemicals for pest control?	X		The use of herbs for pest control will be part of the integrated pest control measures.
4.	Will the subproject lead to contamination of ground and surface waters by herbicides for vegetation control and chemicals for pest control?		X	
5.	Will the subproject lead to increased sedimentation in river stream?		X	
6.	Will the subproject involve the use of chemicals or solvents?		X	
D.	**Noise and Air Pollution Hazardous Substances**			
7.	Will the subproject increase the levels of harmful air emissions?		X	
8.	Will the subproject increase ambient noise levels?		X	
9.	Will the subproject involve the storage, handling or transport of hazardous substances?		X	
10.	Will the subproject generate large amounts of residual waste?		X	
E.	**Fauna and Flora**			
11.	Will the subproject lead to the destruction of vegetation?		X	Project site is already used for farming activities
12.	Is the area home to a forest? Is the forest protected or proposed for protection? Is the forest high conservation value forest?		X	
13.	Is the subproject located in an area with designated natural reserves?		X	
14.	Is the subproject located in an area with endangered or conservation-worthy ecosystems, fauna or flora?		X	
15.	Is the subproject located in an area falling within 500 meters of national forests, protected areas, wilderness areas, wetlands, biodiversity, critical habitats, or sites of historical or cultural importance?		X	

S No	ISSUES	YES	NO	Comments
16.	Is the project likely to cause effects on rare, vulnerable and/or important species from an economic, ecological, cultural point of view?		X	
17.	Will the project have a potential to introduce alien species not native to the area (even if not intended)?		X	
18.	Will the subproject involve the disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes)?		X	
19.	Will the subproject lead to the destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development?		X	
20.	Will the subproject involve the use of water for irrigation?		X	Demonstration activities will be rain-fed.
21.	Is the source of water a multiple water use point (i.e. livestock and domestic use), if yes does the project pose a risk to other users?		X	
22.	Does water scarcity exist in the area, and if yes, does it pose a risk to the project?		X	
23.	Are there areas at risk of salinization? If yes, does it pose a risk to the project?		X	
24.	Will the subproject lead to the disruption/destruction of wildlife through interruption of migratory routes, disturbance of wildlife habitats, and noise-related problems?		X	
25.	Does the project have potential for carbon capture and, if so, is this potential being utilized?		X	
G.	**Cultural Property**			
26.	Is the subproject located in an area with designated cultural properties such as archaeological, historical and/or religious sites?		X	
27.	Is the subproject in an area with religious monuments, structures and/or cemeteries?		X	
28.	Is the subproject located in an area of tourist importance?		X	
H.	**Expropriation and Social Disturbance**			
29.	Will the subproject involve land expropriation or demolition of existing structures?		X	
30.	Will the subproject occur in an area with squatters or lead to relocation of squatters?		X	
I	**Labor and working condition**			
31.	Will the subproject involve the use of contracted workers (i.e. both skilled and unskilled labor)?	X		Demonstration activities will involve staff of implementing partners and casual labor from project communities.

S No	ISSUES	YES	NO	Comments
32.	Will the subproject involve the use of primary supply workers?		X	
33.	Is the subproject located in an area with historical cases of child labor?		X	
34.	Is the subproject located in an area with historical cases of forced labor?		X	
35.	Are there adequate and appropriate use of personal protective clothing in project area?	X		Farmers in the community don't use adequate and appropriate PPE.
36.	Is the subproject located far (beyond 1km) from the nearby community (where farmers can access toilet facility)?		X	
37.	Are there case of sexual exploitation and abuse/ Sexual Harassment in this area		X	
38.	Will the subproject involve participation of vulnerable groups (e.g. women, disabled, elderly, youth etc.)? kindly identify specific risks that each vulnerable group may face?	X		Women, youth, and the elderly will be involved but will not face any specific risks in this community. No farmer with hearing or visual impairment in the community.
J	**Social inequalities, conflicts, gender**			
39.	Could the project lead to an increase in social inequalities?		X	
40.	Could the project lead to incompatible uses or social conflicts between the different users?		X	
41.	Does the project disadvantage the integration of women and other vulnerable groups?		X	
K	**Health and safety**			
42.	Can the project induce risks of accidents for workers or the population?	X		There could be slip and falls, cutlass cuts, travel accident etc.
43.	Can the project cause health risks for workers or the population?	X		Through wrongful exposure to pesticides to be used as well as COVID-19.
44.	Can the project lead to an increase in disease vectors?		X	

Name of Sub-project: AICCRA GHANA CLUSTER		
Project Location: GHANA		
Region: Central Region	District: Komenda-Edena-Eguafo-Abrem	Town/Farming Community: Enyinase

S No	ISSUES	YES	NO	Comments
A	**Water and Soil Contamination**			
1.	Will the subproject generate large amounts of residual waste?		X	

S No	ISSUES	YES	NO	Comments
2.	Will the subproject result in potential soil or water contamination (e.g., from oil, grease and fuel from equipment yards)?		X	
3.	Will the subproject involve the use of herbicides for vegetation control and chemicals for pest control?	X		The use of herbs for pest control will be part of the integrated pest control measures.
4.	Will the subproject lead to contamination of ground and surface waters by herbicides for vegetation control and chemicals for pest control?		X	
5.	Will the subproject lead to increased sedimentation in river stream?		X	
6.	Will the subproject involve the use of chemicals or solvents?		X	
D.	**Noise and Air Pollution Hazardous Substances**			
7.	Will the subproject increase the levels of harmful air emissions?		X	
8.	Will the subproject increase ambient noise levels?		X	
9.	Will the subproject involve the storage, handling or transport of hazardous substances?		X	
10.	Will the subproject generate large amounts of residual waste?		X	
E.	**Fauna and Flora**			
11.	Will the subproject lead to the destruction of vegetation?		X	Project site is already used for farming activities
12.	Is the area home to a forest? Is the forest protected or proposed for protection? Is the forest high conservation value forest?		X	
13.	Is the subproject located in an area with designated natural reserves?		X	
14.	Is the subproject located in an area with endangered or conservation-worthy ecosystems, fauna or flora?		X	
15.	Is the subproject located in an area falling within 500 meters of national forests, protected areas, wilderness areas, wetlands, biodiversity, critical habitats, or sites of historical or cultural importance?		X	
16.	Is the project likely to cause effects on rare, vulnerable and/or important species from an economic, ecological, cultural point of view?		X	
17.	Will the project have a potential to introduce alien species not native to the area (even if not intended)?		X	
18.	Will the subproject involve the disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes)?		X	

S No	ISSUES	YES	NO	Comments
19.	Will the subproject lead to the destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development?		X	
20.	Will the subproject involve the use of water for irrigation?		X	Demonstration activities will be rain-fed.
21.	Is the source of water a multiple water use point (i.e. livestock and domestic use), if yes does the project pose a risk to other users?		X	
22.	Does water scarcity exist in the area, and if yes, does it pose a risk to the project?		X	
23.	Are there areas at risk of salinization? If yes, does it pose a risk to the project?		X	
24.	Will the subproject lead to the disruption/destruction of wildlife through interruption of migratory routes, disturbance of wildlife habitats, and noise-related problems?		X	
25.	Does the project have potential for carbon capture and, if so, is this potential being utilized?		X	
G.	**Cultural Property**			
26.	Is the subproject located in an area with designated cultural properties such as archaeological, historical and/or religious sites?		X	
27.	Is the subproject in an area with religious monuments, structures and/or cemeteries?		X	
28.	Is the subproject located in an area of tourist importance?		X	
H.	**Expropriation and Social Disturbance**			
29.	Will the subproject involve land expropriation or demolition of existing structures?		X	
30.	Will the subproject occur in an area with squatters or lead to relocation of squatters?		X	
I	**Labor and working condition**			
31.	Will the subproject involve the use of contracted workers (i.e. both skilled and unskilled labor)?	X		Demonstration activities will involve staff of implementing partners and casual labor from project communities.
32.	Will the subproject involve the use of primary supply workers?		X	
33.	Is the subproject located in an area with historical cases of child labor?		X	
34.	Is the subproject located in an area with historical cases of forced labor?		X	
35.	Are there adequate and appropriate use of personal protective clothing in project area?	X		Farmers in the community don't use adequate and appropriate PPE.

S No	ISSUES	YES	NO	Comments
36.	Is the subproject located far (beyond 1km) from the nearby community (where farmers can access toilet facility)?		X	
37.	Are there case of sexual exploitation and abuse/ Sexual Harassment in this area		X	
38.	Will the subproject involve participation of vulnerable groups (e.g. women, disabled, elderly, youth etc.)? kindly risk and identify specific risks that each vulnerable group may face?	X		Women, youth, and the elderly will be involved but will not face any specific risks in this community. No farmer with hearing or visual impairment in the community.
J	**Social inequalities, conflicts, gender**			
39.	Could the project lead to an increase in social inequalities?		X	
40.	Could the project lead to incompatible uses or social conflicts between the different users?		X	
41.	Does the project disadvantage the integration of women and other vulnerable groups?		X	
K	**Health and safety**			
42.	Can the project induce risks of accidents for workers or the population?	X		There could be slip and falls, cutlass cuts, travel accident etc.
43.	Can the project cause health risks for workers or the population?	X		Through wrongful exposure to pesticides to be used as well as COVID-19.
44.	Can the project lead to an increase in disease vectors?		X	

Name of Sub-project: AICCRA GHANA CLUSTER		
Project Location: GHANA		
Region: Central	District: Cape Coast	Town/Farming Community: Mempasem

S No	ISSUES	YES	NO	Comments
A	**Water and Soil Contamination**			
1.	Will the subproject generate large amounts of residual waste?		X	
2.	Will the subproject result in potential soil or water contamination (e.g., from oil, grease and fuel from equipment yards)?		X	
3.	Will the subproject involve the use of herbicides for vegetation control and chemicals for pest control?	X		The use of herbs for pest control will be part of the integrated pest control measures.
4.	Will the subproject lead to contamination of ground and surface waters by herbicides for vegetation control and chemicals for pest control?		X	

S No	ISSUES	YES	NO	Comments
5.	Will the subproject lead to increased sedimentation in river stream?		X	
6.	Will the subproject involve the use of chemicals or solvents?		X	
D.	**Noise and Air Pollution Hazardous Substances**			
7.	Will the subproject increase the levels of harmful air emissions?		X	
8.	Will the subproject increase ambient noise levels?		X	
9.	Will the subproject involve the storage, handling or transport of hazardous substances?		X	
10.	Will the subproject generate large amounts of residual waste?		X	
E.	**Fauna and Flora**			
11.	Will the subproject lead to the destruction of vegetation?		X	Project site is already used for farming activities
12.	Is the area home to a forest? Is the forest protected or proposed for protection? Is the forest high conservation value forest?		X	
13.	Is the subproject located in an area with designated natural reserves?		X	
14.	Is the subproject located in an area with endangered or conservation-worthy ecosystems, fauna or flora?		X	
15.	Is the subproject located in an area falling within 500 meters of national forests, protected areas, wilderness areas, wetlands, biodiversity, critical habitats, or sites of historical or cultural importance?		X	
16.	Is the project likely to cause effects on rare, vulnerable and/or important species from an economic, ecological, cultural point of view?		X	
17.	Will the project have a potential to introduce alien species not native to the area (even if not intended)?		X	
18.	Will the subproject involve the disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes)?		X	
19.	Will the subproject lead to the destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development?		X	
20.	Will the subproject involve the use of water for irrigation?		X	Demonstration activities will be rain-fed.
21.	Is the source of water a multiple water use point (i.e. livestock and domestic use), if yes does the project pose a risk to other users?		X	

S No	ISSUES	YES	NO	Comments
22.	Does water scarcity exist in the area, and if yes, does it pose a risk to the project?		X	
23.	Are there areas at risk of salinization? If yes, does it pose a risk to the project?		X	
24.	Will the subproject lead to the disruption/destruction of wildlife through interruption of migratory routes, disturbance of wildlife habitats, and noise-related problems?		X	
25.	Does the project have potential for carbon capture and, if so, is this potential being utilized?		X	
G.	**Cultural Property**			
26.	Is the subproject located in an area with designated cultural properties such as archaeological, historical and/or religious sites?		X	
27.	Is the subproject in an area with religious monuments, structures and/or cemeteries?		X	
28.	Is the subproject located in an area of tourist importance?		X	
H.	**Expropriation and Social Disturbance**			
29.	Will the subproject involve land expropriation or demolition of existing structures?		X	
30.	Will the subproject occur in an area with squatters or lead to relocation of squatters?		X	
I	**Labor and working condition**			
31.	Will the subproject involve the use of contracted workers (i.e. both skilled and unskilled labor)?	X		Demonstration activities will involve staff of implementing partners and casual labor from project communities.
32.	Will the subproject involve the use of primary supply workers?		X	
33.	Is the subproject located in an area with historical cases of child labor?		X	
34.	Is the subproject located in an area with historical cases of forced labor?		X	
35.	Are there adequate and appropriate use of personal protective clothing in project area?	X		Farmers in the community don't use adequate and appropriate PPE.
36.	Is the subproject located far (beyond 1km) from the nearby community (where farmers can access toilet facility)?		X	
37.	Are there case of sexual exploitation and abuse/ Sexual Harassment in this area		X	
38.	Will the subproject involve participation of vulnerable groups (e.g. women, disabled, elderly,	X		Women, youth, and the elderly will be involved but will not face any specific risks in this

S No	ISSUES	YES	NO	Comments
	youth etc.)? kindly risk and identify specific risks that each vulnerable group may face?			community. No farmer with hearing or visual impairment in the community.
J	**Social inequalities, conflicts, gender**			
39.	Could the project lead to an increase in social inequalities?		X	
40.	Could the project lead to incompatible uses or social conflicts between the different users?		X	
41.	Does the project disadvantage the integration of women and other vulnerable groups?		X	
K	**Health and safety**			
42.	Can the project induce risks of accidents for workers or the population?	X		There could be slip and falls, cutlass cuts, travel accident etc.
43.	Can the project cause health risks for workers or the population?	X		Through wrongful exposure to pesticides to be used as well as COVID-19.
44.	Can the project lead to an increase in disease vectors?		X	

Name of Sub-project: AICCRA GHANA CLUSTER		
Project Location: GHANA		
Region: Central	District: Cape Coast	Town/Farming Community: Effutu Dehia

S No	ISSUES	YES	NO	Comments
A	**Water and Soil Contamination**			
1.	Will the subproject generate large amounts of residual waste?		X	
2.	Will the subproject result in potential soil or water contamination (e.g., from oil, grease and fuel from equipment yards)?		X	
3.	Will the subproject involve the use of herbicides for vegetation control and chemicals for pest control?	X		The use of herbs for pest control will be part of the integrated pest control measures.
4.	Will the subproject lead to contamination of ground and surface waters by herbicides for vegetation control and chemicals for pest control?		X	
5.	Will the subproject lead to increased sedimentation in river stream?		X	
6.	Will the subproject involve the use of chemicals or solvents?		X	
D.	**Noise and Air Pollution Hazardous Substances**			
7.	Will the subproject increase the levels of harmful air emissions?		X	
8.	Will the subproject increase ambient noise levels?		X	
9.	Will the subproject involve the storage, handling or transport of hazardous substances?		X	

S No	ISSUES	YES	NO	Comments
10.	Will the subproject generate large amounts of residual waste?		X	
E.	**Fauna and Flora**			
11.	Will the subproject lead to the destruction of vegetation?		X	Project site is already used for farming activities
12.	Is the area home to a forest? Is the forest protected or proposed for protection? Is the forest high conservation value forest?		X	
13.	Is the subproject located in an area with designated natural reserves?		X	
14.	Is the subproject located in an area with endangered or conservation-worthy ecosystems, fauna or flora?		X	
15.	Is the subproject located in an area falling within 500 meters of national forests, protected areas, wilderness areas, wetlands, biodiversity, critical habitats, or sites of historical or cultural importance?		X	
16.	Is the project likely to cause effects on rare, vulnerable and/or important species from an economic, ecological, cultural point of view?		X	
17.	Will the project have a potential to introduce alien species not native to the area (even if not intended)?		X	
18.	Will the subproject involve the disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes)?		X	
19.	Will the subproject lead to the destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development?		X	
20.	Will the subproject involve the use of water for irrigation?		X	Demonstration activities will be rain-fed.
21.	Is the source of water a multiple water use point (i.e. livestock and domestic use), if yes does the project pose a risk to other users?		X	
22.	Does water scarcity exist in the area, and if yes, does it pose a risk to the project?		X	
23.	Are there areas at risk of salinization? If yes, does it pose a risk to the project?		X	
24.	Will the subproject lead to the disruption/destruction of wildlife through interruption of migratory routes, disturbance of wildlife habitats, and noise-related problems?		X	
25.	Does the project have potential for carbon capture and, if so, is this potential being utilized?		X	
G.	**Cultural Property**			

S No	ISSUES	YES	NO	Comments
26.	Is the subproject located in an area with designated cultural properties such as archaeological, historical and/or religious sites?		X	
27.	Is the subproject in an area with religious monuments, structures and/or cemeteries?		X	
28.	Is the subproject located in an area of tourist importance?		X	
H.	**Expropriation and Social Disturbance**			
29.	Will the subproject involve land expropriation or demolition of existing structures?		X	
30.	Will the subproject occur in an area with squatters or lead to relocation of squatters?		X	
I	**Labor and working condition**			
31.	Will the subproject involve the use of contracted workers (i.e. both skilled and unskilled labor)?	X		Demonstration activities will involve staff of implementing partners and casual labor from project communities.
32.	Will the subproject involve the use of primary supply workers?		X	
33.	Is the subproject located in an area with historical cases of child labor?		X	
34.	Is the subproject located in an area with historical cases of forced labor?		X	
35.	Are there adequate and appropriate use of personal protective clothing in project area?	X		Farmers in the community don't use adequate and appropriate PPE.
36.	Is the subproject located far (beyond 1km) from the nearby community (where farmers can access toilet facility)?		X	
37.	Are there case of sexual exploitation and abuse/ Sexual Harassment in this area		X	
38.	Will the subproject involve participation of vulnerable groups (e.g. women, disabled, elderly, youth etc.)? kindly risk and identify specific risks that each vulnerable group may face?	X		Women, youth, and the elderly will be involved but will not face any specific risks in this community. There is a hearing impaired farmer who could be alienated from communications without sign language interpreter.
J	**Social inequalities, conflicts, gender**			
39.	Could the project lead to an increase in social inequalities?		X	
40.	Could the project lead to incompatible uses or social conflicts between the different users?		X	
41.	Does the project disadvantage the integration of women and other vulnerable groups?		X	
K	**Health and safety**			

S No	ISSUES	YES	NO	Comments
42.	Can the project induce risks of accidents for workers or the population?	X		There could be slip and falls, cutlass cuts, travel accident etc.
43.	Can the project cause health risks for workers or the population?	X		Through wrongful exposure to pesticides to be used as well as COVID-19.
44.	Can the project lead to an increase in disease vectors?		X	

Name of Sub-project: AICCRA GHANA CLUSTER		
Project Location: GHANA		
Region: Great ACCRA	District: Ga South	Town/Farming Community: Tuba central farm

S No	ISSUES	YES	NO	Comments
A	**Water and Soil Contamination**			
1.	Will the subproject generate large amounts of residual waste?		X	
2.	Will the subproject result in potential soil or water contamination (e.g., from oil, grease and fuel from equipment yards)?		X	
3.	Will the subproject involve the use of herbicides for vegetation control and chemicals for pest control?	X		The use of herbs for pest control will be part of the integrated pest control measures.
4.	Will the subproject lead to contamination of ground and surface waters by herbicides for vegetation control and chemicals for pest control?		X	
5.	Will the subproject lead to increased sedimentation in river stream?		X	
6.	Will the subproject involve the use of chemicals or solvents?		X	
D.	**Noise and Air Pollution Hazardous Substances**			
7.	Will the subproject increase the levels of harmful air emissions?		X	
8.	Will the subproject increase ambient noise levels?		X	
9.	Will the subproject involve the storage, handling or transport of hazardous substances?		X	
10.	Will the subproject generate large amounts of residual waste?		X	
E.	**Fauna and Flora**			
11.	Will the subproject lead to the destruction of vegetation?		X	Project site is already used for farming activities
12.	Is the area home to a forest? Is the forest protected or proposed for protection? Is the forest high conservation value forest?		X	
13.	Is the subproject located in an area with designated natural reserves?		X	

S No	ISSUES	YES	NO	Comments
14.	Is the subproject located in an area with endangered or conservation-worthy ecosystems, fauna or flora?		X	
15.	Is the subproject located in an area falling within 500 meters of national forests, protected areas, wilderness areas, wetlands, biodiversity, critical habitats, or sites of historical or cultural importance?		X	
16.	Is the project likely to cause effects on rare, vulnerable and/or important species from an economic, ecological, cultural point of view?		X	
17.	Will the project have a potential to introduce alien species not native to the area (even if not intended)?		X	
18.	Will the subproject involve the disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes)?		X	
19.	Will the subproject lead to the destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development?		X	
20.	Will the subproject involve the use of water for irrigation?	X		
21.	Is the source of water a multiple water use point (i.e. livestock and domestic use), if yes does the project pose a risk to other users?		X	
22.	Does water scarcity exist in the area, and if yes, does it pose a risk to the project?		X	
23.	Are there areas at risk of salinization? If yes, does it pose a risk to the project?		X	
24.	Will the subproject lead to the disruption/destruction of wildlife through interruption of migratory routes, disturbance of wildlife habitats, and noise-related problems?		X	
25.	Does the project have potential for carbon capture and, if so, is this potential being utilized?		X	
G.	**Cultural Property**			
26.	Is the subproject located in an area with designated cultural properties such as archaeological, historical and/or religious sites?		X	
27.	Is the subproject in an area with religious monuments, structures and/or cemeteries?		X	
28.	Is the subproject located in an area of tourist importance?		X	
H.	**Expropriation and Social Disturbance**			

S No	ISSUES	YES	NO	Comments
29.	Will the subproject involve land expropriation or demolition of existing structures?		X	
30.	Will the subproject occur in an area with squatters or lead to relocation of squatters?		X	
I	**Labor and working condition**			
31.	Will the subproject involve the use of contracted workers (i.e. both skilled and unskilled labor)?	X		Demonstration activities will involve staff of implementing partners and casual labor from project communities.
32.	Will the subproject involve the use of primary supply workers?		X	
33.	Is the subproject located in an area with historical cases of child labor?		X	
34.	Is the subproject located in an area with historical cases of forced labor?		X	
35.	Are there adequate and appropriate use of personal protective clothing in project area?	X		Farmers in the community don't use adequate and appropriate PPE.
36.	Is the subproject located far (beyond 1km) from the nearby community (where farmers can access toilet facility)?		X	
37.	Are there case of sexual exploitation and abuse/ Sexual Harassment in this area		X	
38.	Will the subproject involve participation of vulnerable groups (e.g. women, disabled, elderly, youth etc.)? kindly identify specific risks that each vulnerable group may face?	X		Women and youth will be involved but will not face any specific risks. No farmer with hearing or visual impairment was noted.
J	**Social inequalities, conflicts, gender**			
39.	Could the project lead to an increase in social inequalities?		X	
40.	Could the project lead to incompatible uses or social conflicts between the different users?		X	
41.	Does the project disadvantage the integration of women and other vulnerable groups?		X	
K	**Health and safety**			
42.	Can the project induce risks of accidents for workers or the population?	X		There could be slip and falls, cutlass cuts, travel accident etc.
43.	Can the project cause health risks for workers or the population?	X		Through wrongful exposure to pesticides to be used as well as COVID-19.
44.	Can the project lead to an increase in disease vectors?		X	

Name of Sub-project: AICCRA GHANA CLUSTER

Project Location: GHANA				
Region: Upper East	District: Bongo	Town/Farming Community: Yidongo (2 sites)		
S No	**ISSUES**	**YES**	**NO**	**Comments**
A	**Water and Soil Contamination**			
1.	Will the subproject generate large amounts of residual waste?		X	
2.	Will the subproject result in potential soil or water contamination (e.g., from oil, grease and fuel from equipment yards)?		X	
3.	Will the subproject involve the use of herbicides for vegetation control and chemicals for pest control?	X		The use of herbs for pest control will be part of the integrated pest control measures.
4.	Will the subproject lead to contamination of ground and surface waters by herbicides for vegetation control and chemicals for pest control?		X	
5.	Will the subproject lead to increased sedimentation in river stream?		X	
6.	Will the subproject involve the use of chemicals or solvents?	X		Chemicals may be used for pests control
D.	**Noise and Air Pollution Hazardous Substances**			
7.	Will the subproject increase the levels of harmful air emissions?		X	
8.	Will the subproject increase ambient noise levels?		X	
9.	Will the subproject involve the storage, handling or transport of hazardous substances?		X	
10.	Will the subproject generate large amounts of residual waste?		X	
E.	**Fauna and Flora**			
11.	Will the subproject lead to the destruction of vegetation?		X	Project site is already used for farming activities
12.	Is the area home to a forest? Is the forest protected or proposed for protection? Is the forest high conservation value forest?		X	
13.	Is the subproject located in an area with designated natural reserves?		X	
14.	Is the subproject located in an area with endangered or conservation-worthy ecosystems, fauna or flora?		X	
15.	Is the subproject located in an area falling within 500 meters of national forests, protected areas, wilderness areas, wetlands, biodiversity, critical habitats, or sites of historical or cultural importance?		X	
16.	Is the project likely to cause effects on rare, vulnerable and/or important species from an economic, ecological, cultural point of view?		X	

S No	ISSUES	YES	NO	Comments
17.	Will the project have a potential to introduce alien species not native to the area (even if not intended)?		X	
18.	Will the subproject involve the disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes)?		X	
19.	Will the subproject lead to the destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development?		X	
20.	Will the subproject involve the use of water for irrigation?	X		
21.	Is the source of water a multiple water use point (i.e. livestock and domestic use), if yes does the project pose a risk to other users?	X		Source of water for livestock and construction activities in the community.
22.	Does water scarcity exist in the area, and if yes, does it pose a risk to the project?		X	
23.	Are there areas at risk of salinization? If yes, does it pose a risk to the project?		X	
24.	Will the subproject lead to the disruption/destruction of wildlife through interruption of migratory routes, disturbance of wildlife habitats, and noise-related problems?		X	
25.	Does the project have potential for carbon capture and, if so, is this potential being utilized?		X	
G.	**Cultural Property**			
26.	Is the subproject located in an area with designated cultural properties such as archaeological, historical and/or religious sites?		X	
27.	Is the subproject in an area with religious monuments, structures and/or cemeteries?		X	
28.	Is the subproject located in an area of tourist importance?		X	
H.	**Expropriation and Social Disturbance**			
29.	Will the subproject involve land expropriation or demolition of existing structures?		X	
30.	Will the subproject occur in an area with squatters or lead to relocation of squatters?		X	
I	**Labor and working condition**			
31.	Will the subproject involve the use of contracted workers (i.e. both skilled and unskilled labor)?		X	Demonstration activities will involve staff of implementing partners and casual labor from project communities.
32.	Will the subproject involve the use of primary supply workers?		X	

S No	ISSUES	YES	NO	Comments
33.	Is the subproject located in an area with historical cases of child labor?		X	
34.	Is the subproject located in an area with historical cases of forced labor?		X	
35.	Are there adequate and appropriate use of personal protective clothing in project area?		X	
36.	Is the subproject located far (beyond 1km) from the nearby community (where farmers can access toilet facility)?		X	
37.	Are there case of sexual exploitation and abuse/ Sexual Harassment in this area		X	
38.	Will the subproject involve participation of vulnerable groups (e.g. women, disabled, elderly, youth etc.)? kindly identify specific risks that each vulnerable group may face?	X		Women, youth, and the elderly will be involved, women could feel intimidated to talk in the presence of men. No farmer with hearing or visual impairment in the community
J	**Social inequalities, conflicts, gender**			
39.	Could the project lead to an increase in social inequalities?		X	
40.	Could the project lead to incompatible uses or social conflicts between the different users?		X	
41.	Does the project disadvantage the integration of women and other vulnerable groups?		X	
K	**Health and safety**			
42.	Can the project induce risks of accidents for workers or the population?	X		There could be slip and falls, cutlass cuts, travel accident etc.
43.	Can the project cause health risks for workers or the population?	X		Through wrongful exposure to pesticides to be used as well as COVID-19.
44.	Can the project lead to an increase in disease vectors?		X	

Name of Sub-project: AICCRA GHANA CLUSTER		
Project Location: GHANA		
Region: Upper East	District: Kassena-Nankana	Town/Farming Community: Tompola (2 sites)

S No	ISSUES	YES	NO	Comments
A	**Water and Soil Contamination**			
1.	Will the subproject generate large amounts of residual waste?		X	
2.	Will the subproject result in potential soil or water contamination (e.g., from oil, grease and fuel from equipment yards)?		X	

S No	ISSUES	YES	NO	Comments
3.	Will the subproject involve the use of herbicides for vegetation control and chemicals for pest control?	X		The use of herbs for pest control will be part of the integrated pest control measures.
4.	Will the subproject lead to contamination of ground and surface waters by herbicides for vegetation control and chemicals for pest control?		X	
5.	Will the subproject lead to increased sedimentation in river stream?		X	
6.	Will the subproject involve the use of chemicals or solvents?	X		Chemicals may be used for pests control
D.	**Noise and Air Pollution Hazardous Substances**			
7.	Will the subproject increase the levels of harmful air emissions?		X	
8.	Will the subproject increase ambient noise levels?		X	
9.	Will the subproject involve the storage, handling or transport of hazardous substances?		X	
10.	Will the subproject generate large amounts of residual waste?		X	
E.	**Fauna and Flora**			
11.	Will the subproject lead to the destruction of vegetation?		X	Project site is already used for farming activities
12.	Is the area home to a forest? Is the forest protected or proposed for protection? Is the forest high conservation value forest?		X	
13.	Is the subproject located in an area with designated natural reserves?		X	
14.	Is the subproject located in an area with endangered or conservation-worthy ecosystems, fauna or flora?		X	
15.	Is the subproject located in an area falling within 500 meters of national forests, protected areas, wilderness areas, wetlands, biodiversity, critical habitats, or sites of historical or cultural importance?		X	
16.	Is the project likely to cause effects on rare, vulnerable and/or important species from an economic, ecological, cultural point of view?		X	
17.	Will the project have a potential to introduce alien species not native to the area (even if not intended)?		X	
18.	Will the subproject involve the disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes)?		X	
19.	Will the subproject lead to the destruction or damage of terrestrial or aquatic ecosystems or		X	

S No	ISSUES	YES	NO	Comments
	endangered species directly or by induced development?			
20.	Will the subproject involve the use of water for irrigation?	X		
21.	Is the source of water a multiple water use point (i.e. livestock and domestic use), if yes does the project pose a risk to other users?	X		Source of water for livestock and construction activities in the community.
22.	Does water scarcity exist in the area, and if yes, does it pose a risk to the project?		X	
23.	Are there areas at risk of salinization? If yes, does it pose a risk to the project?		X	
24.	Will the subproject lead to the disruption/destruction of wildlife through interruption of migratory routes, disturbance of wildlife habitats, and noise-related problems?		X	
25.	Does the project have potential for carbon capture and, if so, is this potential being utilized?		X	
G.	**Cultural Property**			
26.	Is the subproject located in an area with designated cultural properties such as archaeological, historical and/or religious sites?		X	
27.	Is the subproject in an area with religious monuments, structures and/or cemeteries?		X	
28.	Is the subproject located in an area of tourist importance?		X	
H.	**Expropriation and Social Disturbance**			
29.	Will the subproject involve land expropriation or demolition of existing structures?		X	
30.	Will the subproject occur in an area with squatters or lead to relocation of squatters?		X	
I	**Labor and working condition**			
31.	Will the subproject involve the use of contracted workers (i.e. both skilled and unskilled labor)?		X	Demonstration activities will involve staff of implementing partners and casual labor from project communities.
32.	Will the subproject involve the use of primary supply workers?		X	
33.	Is the subproject located in an area with historical cases of child labor?		X	
34.	Is the subproject located in an area with historical cases of forced labor?		X	
35.	Are there adequate and appropriate use of personal protective clothing in project area?		X	
36.	Is the subproject located far (beyond 1km) from the nearby community (where farmers can access toilet facility)?		X	

S No	ISSUES	YES	NO	Comments
37.	Are there case of sexual exploitation and abuse/ Sexual Harassment in this area		X	
38.	Will the subproject involve participation of vulnerable groups (e.g. women, disabled, elderly, youth etc.)? kindly identify specific risks that each vulnerable group may face?	X		Women, youth, and the elderly will be involved, women could feel intimidated to talk in the presence of men. No farmer with hearing or visual impairment.
J	**Social inequalities, conflicts, gender**			
39.	Could the project lead to an increase in social inequalities?		X	
40.	Could the project lead to incompatible uses or social conflicts between the different users?		X	
41.	Does the project disadvantage the integration of women and other vulnerable groups?		X	
K	**Health and safety**			
42.	Can the project induce risks of accidents for workers or the population?	X		There could be slip and falls, cutlass cuts, travel accident etc.
43.	Can the project cause health risks for workers or the population?	X		Through wrongful exposure to pesticides to be used as well as COVID-19.
44.	Can the project lead to an increase in disease vectors?		X	

Name of Sub-project: AICCRA GHANA CLUSTER		
Project Location: GHANA		
Region: Upper West	District: Lawra	Town/Farming Community: Bompari

S No	ISSUES	YES	NO	Comments
A	**Water and Soil Contamination**			
1.	Will the subproject generate large amounts of residual waste?		X	
2.	Will the subproject result in potential soil or water contamination (e.g., from oil, grease and fuel from equipment yards)?		X	
3.	Will the subproject involve the use of herbicides for vegetation control and chemicals for pest control?	X		The use of herbs for pest control will be part of the integrated pest control measures.
4.	Will the subproject lead to contamination of ground and surface waters by herbicides for vegetation control and chemicals for pest control?		X	
5.	Will the subproject lead to increased sedimentation in river stream?		X	
6.	Will the subproject involve the use of chemicals or solvents?	X		Chemical may be used for pests control

S No	ISSUES	YES	NO	Comments
D.	**Noise and Air Pollution Hazardous Substances**			
7.	Will the subproject increase the levels of harmful air emissions?		X	
8.	Will the subproject increase ambient noise levels?		X	
9.	Will the subproject involve the storage, handling or transport of hazardous substances?		X	
10.	Will the subproject generate large amounts of residual waste?		X	
E.	**Fauna and Flora**			
11.	Will the subproject lead to the destruction of vegetation?		X	Project site is already used for farming activities
12.	Is the area home to a forest? Is the forest protected or proposed for protection? Is the forest high conservation value forest?		X	
13.	Is the subproject located in an area with designated natural reserves?		X	
14.	Is the subproject located in an area with endangered or conservation-worthy ecosystems, fauna or flora?		X	
15.	Is the subproject located in an area falling within 500 meters of national forests, protected areas, wilderness areas, wetlands, biodiversity, critical habitats, or sites of historical or cultural importance?		X	
16.	Is the project likely to cause effects on rare, vulnerable and/or important species from an economic, ecological, cultural point of view?		X	
17.	Will the project have a potential to introduce alien species not native to the area (even if not intended)?		X	
18.	Will the subproject involve the disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes)?		X	
19.	Will the subproject lead to the destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development?		X	
20.	Will the subproject involve the use of water for irrigation?		X	Demonstration activities will be rain-fed.
21.	Is the source of water a multiple water use point (i.e. livestock and domestic use), if yes does the project pose a risk to other users?		X	
22.	Does water scarcity exist in the area, and if yes, does it pose a risk to the project?		X	
23.	Are there areas at risk of salinization? If yes, does it pose a risk to the project?		X	

S No	ISSUES	YES	NO	Comments
24.	Will the subproject lead to the disruption/destruction of wildlife through interruption of migratory routes, disturbance of wildlife habitats, and noise-related problems?		X	
25.	Does the project have potential for carbon capture and, if so, is this potential being utilized?		X	
G.	**Cultural Property**			
26.	Is the subproject located in an area with designated cultural properties such as archaeological, historical and/or religious sites?		X	
27.	Is the subproject in an area with religious monuments, structures and/or cemeteries?		X	
28.	Is the subproject located in an area of tourist importance?		X	
H.	**Expropriation and Social Disturbance**			
29.	Will the subproject involve land expropriation or demolition of existing structures?		X	
30.	Will the subproject occur in an area with squatters or lead to relocation of squatters?		X	
I	**Labor and working condition**			
31.	Will the subproject involve the use of contracted workers (i.e. both skilled and unskilled labor)?		X	Demonstration activities will involve staff of implementing partners and casual labor from project communities.
32.	Will the subproject involve the use of primary supply workers?		X	
33.	Is the subproject located in an area with historical cases of child labor?		X	
34.	Is the subproject located in an area with historical cases of forced labor?		X	
35.	Are there adequate and appropriate use of personal protective clothing in project area?		X	
36.	Is the subproject located far (beyond 1km) from the nearby community (where farmers can access toilet facility)?		X	
37.	Are there case of sexual exploitation and abuse/ Sexual Harassment in this area		X	
38.	Will the subproject involve participation of vulnerable groups (e.g. women, disabled, elderly, youth etc.)? kindly identify specific risks that each vulnerable group may face?	X		Women, youth, and the elderly will be involved, women could feel intimidated to talk in the presence of men. No farmer with hearing or visual impairment.
J	**Social inequalities, conflicts, gender**			
39.	Could the project lead to an increase in social inequalities?		X	

S No	ISSUES	YES	NO	Comments
40.	Could the project lead to incompatible uses or social conflicts between the different users?		X	
41.	Does the project disadvantage the integration of women and other vulnerable groups?		X	
K	**Health and safety**			
42.	Can the project induce risks of accidents for workers or the population?	X		There could be slip and falls, cutlass cuts, travel accident etc.
43.	Can the project cause health risks for workers or the population?	X		Through wrongful exposure to pesticides to be used as well as COVID-19.
44.	Can the project lead to an increase in disease vectors?		X	

Name of Sub-project: AICCRA GHANA CLUSTER		
Project Location: GHANA		
Region: Upper West	District: Jirapa	Town/Farming Community: Dorggoh

S No	ISSUES	YES	NO	Comments
A	**Water and Soil Contamination**			
1.	Will the subproject generate large amounts of residual waste?		X	
2.	Will the subproject result in potential soil or water contamination (e.g., from oil, grease and fuel from equipment yards)?		X	
3.	Will the subproject involve the use of herbicides for vegetation control and chemicals for pest control?	X		The use of herbs for pest control will be part of the integrated pest control measures.
4.	Will the subproject lead to contamination of ground and surface waters by herbicides for vegetation control and chemicals for pest control?		X	
5.	Will the subproject lead to increased sedimentation in river stream?		X	
6.	Will the subproject involve the use of chemicals or solvents?	X		Chemicals may be used for pests control
D.	**Noise and Air Pollution Hazardous Substances**			
7.	Will the subproject increase the levels of harmful air emissions?		X	
8.	Will the subproject increase ambient noise levels?		X	
9.	Will the subproject involve the storage, handling or transport of hazardous substances?		X	
10.	Will the subproject generate large amounts of residual waste?		X	
E.	**Fauna and Flora**			
11.	Will the subproject lead to the destruction of vegetation?		X	Project site is already used for farming activities

S No	ISSUES	YES	NO	Comments
12.	Is the area home to a forest? Is the forest protected or proposed for protection? Is the forest high conservation value forest?		X	
13.	Is the subproject located in an area with designated natural reserves?		X	
14.	Is the subproject located in an area with endangered or conservation-worthy ecosystems, fauna or flora?		X	
15.	Is the subproject located in an area falling within 500 meters of national forests, protected areas, wilderness areas, wetlands, biodiversity, critical habitats, or sites of historical or cultural importance?		X	
16.	Is the project likely to cause effects on rare, vulnerable and/or important species from an economic, ecological, cultural point of view?		X	
17.	Will the project have a potential to introduce alien species not native to the area (even if not intended)?		X	
18.	Will the subproject involve the disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes)?		X	
19.	Will the subproject lead to the destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development?		X	
20.	Will the subproject involve the use of water for irrigation?		X	Demonstration activities will be rain-fed.
21.	Is the source of water a multiple water use point (i.e. livestock and domestic use), if yes does the project pose a risk to other users?		X	
22.	Does water scarcity exist in the area, and if yes, does it pose a risk to the project?		X	
23.	Are there areas at risk of salinization? If yes, does it pose a risk to the project?		X	
24.	Will the subproject lead to the disruption/destruction of wildlife through interruption of migratory routes, disturbance of wildlife habitats, and noise-related problems?		X	
25.	Does the project have potential for carbon capture and, if so, is this potential being utilized?		X	
G.	**Cultural Property**			
26.	Is the subproject located in an area with designated cultural properties such as archaeological, historical and/or religious sites?		X	
27.	Is the subproject in an area with religious monuments, structures and/or cemeteries?		X	

S No	ISSUES	YES	NO	Comments
28.	Is the subproject located in an area of tourist importance?		X	
H.	**Expropriation and Social Disturbance**			
29.	Will the subproject involve land expropriation or demolition of existing structures?		X	
30.	Will the subproject occur in an area with squatters or lead to relocation of squatters?		X	
I	**Labor and working condition**			
31.	Will the subproject involve the use of contracted workers (i.e. both skilled and unskilled labor)?	X		Demonstration activities will involve staff of implementing partners and casual labor from project communities.
32.	Will the subproject involve the use of primary supply workers?		X	
33.	Is the subproject located in an area with historical cases of child labor?		X	
34.	Is the subproject located in an area with historical cases of forced labor?		X	
35.	Are there adequate and appropriate use of personal protective clothing in project area?		X	Farmers in the community don't use adequate and appropriate PPE.
36.	Is the subproject located far (beyond 1km) from the nearby community (where farmers can access toilet facility)?		X	
37.	Are there case of sexual exploitation and abuse/ Sexual Harassment in this area		X	
38.	Will the subproject involve participation of vulnerable groups (e.g. women, disabled, elderly, youth etc.)? kindly identify specific risks that each vulnerable group may face?	X		Women, youth, and the elderly will be involved, women could feel intimidated to talk in the presence of men. No farmer with hearing or visual impairment.
J	**Social inequalities, conflicts, gender**			
39.	Could the project lead to an increase in social inequalities?		X	
40.	Could the project lead to incompatible uses or social conflicts between the different users?		X	
41.	Does the project disadvantage the integration of women and other vulnerable groups?		X	
K	**Health and safety**			
42.	Can the project induce risks of accidents for workers or the population?	X		There could be slip and falls, cutlass cuts, travel accident etc.
43.	Can the project cause health risks for workers or the population?	X		Through wrongful exposure to pesticides to be used as well as COVID-19.

S No	ISSUES	YES	NO	Comments
44.	Can the project lead to an increase in disease vectors?		X	

Name of Sub-project: AICCRA GHANA CLUSTER		
Project Location: GHANA		
Region: Upper West	District: Lawra	Town/Farming Community: Dazuuri

S No	ISSUES	YES	NO	Comments
A	**Water and Soil Contamination**			
1.	Will the subproject generate large amounts of residual waste?		X	
2.	Will the subproject result in potential soil or water contamination (e.g., from oil, grease and fuel from equipment yards)?		X	
3.	Will the subproject involve the use of herbicides for vegetation control and chemicals for pest control?	X		The use of herbs for pest control will be part of the integrated pest control measures.
4.	Will the subproject lead to contamination of ground and surface waters by herbicides for vegetation control and chemicals for pest control?		X	
5.	Will the subproject lead to increased sedimentation in river stream?		X	
6.	Will the subproject involve the use of chemicals or solvents?	X		Chemicals may be used for pests control
D.	**Noise and Air Pollution Hazardous Substances**			
7.	Will the subproject increase the levels of harmful air emissions?		X	
8.	Will the subproject increase ambient noise levels?		X	
9.	Will the subproject involve the storage, handling or transport of hazardous substances?		X	
10.	Will the subproject generate large amounts of residual waste?		X	
E.	**Fauna and Flora**			
11.	Will the subproject lead to the destruction of vegetation?		X	Project site is already used for farming activities
12.	Is the area home to a forest? Is the forest protected or proposed for protection? Is the forest high conservation value forest?		X	
13.	Is the subproject located in an area with designated natural reserves?		X	
14.	Is the subproject located in an area with endangered or conservation-worthy ecosystems, fauna or flora?		X	
15.	Is the subproject located in an area falling within 500 meters of national forests, protected areas,		X	

S No	ISSUES	YES	NO	Comments
	wilderness areas, wetlands, biodiversity, critical habitats, or sites of historical or cultural importance?			
16.	Is the project likely to cause effects on rare, vulnerable and/or important species from an economic, ecological, cultural point of view?		X	
17.	Will the project have a potential to introduce alien species not native to the area (even if not intended)?		X	
18.	Will the subproject involve the disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes)?		X	
19.	Will the subproject lead to the destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development?		X	
20.	Will the subproject involve the use of water for irrigation?		X	Demonstration activities will be rain-fed.
21.	Is the source of water a multiple water use point (i.e. livestock and domestic use), if yes does the project pose a risk to other users?		X	
22.	Does water scarcity exist in the area, and if yes, does it pose a risk to the project?		X	
23.	Are there areas at risk of salinization? If yes, does it pose a risk to the project?		X	
24.	Will the subproject lead to the disruption/destruction of wildlife through interruption of migratory routes, disturbance of wildlife habitats, and noise-related problems?		X	
25.	Does the project have potential for carbon capture and, if so, is this potential being utilized?		X	
G.	**Cultural Property**			
26.	Is the subproject located in an area with designated cultural properties such as archaeological, historical and/or religious sites?		X	
27.	Is the subproject in an area with religious monuments, structures and/or cemeteries?		X	
28.	Is the subproject located in an area of tourist importance?		X	
H.	**Expropriation and Social Disturbance**			
29.	Will the subproject involve land expropriation or demolition of existing structures?		X	
30.	Will the subproject occur in an area with squatters or lead to relocation of squatters?		X	
I	**Labor and working condition**			

S No	ISSUES	YES	NO	Comments
31.	Will the subproject involve the use of contracted workers (i.e. both skilled and unskilled labor)?	X		Demonstration activities will involve staff of implementing partners and casual labor from project communities.
32.	Will the subproject involve the use of primary supply workers?		X	
33.	Is the subproject located in an area with historical cases of child labor?		X	
34.	Is the subproject located in an area with historical cases of forced labor?		X	
35.	Are there adequate and appropriate use of personal protective clothing in project area?		X	Farmers in the community don't use adequate and appropriate PPE.
36.	Is the subproject located far (beyond 1km) from the nearby community (where farmers can access toilet facility)?		X	
37.	Are there case of sexual exploitation and abuse/ Sexual Harassment in this area		X	
38.	Will the subproject involve participation of vulnerable groups (e.g. women, disabled, elderly, youth etc.)? kindly identify specific risks that each vulnerable group may face?	X		Women, youth, and the elderly will be involved, women could feel intimidated to talk in the presence of men. No farmer with hearing or visual impairment.
J	**Social inequalities, conflicts, gender**			
39.	Could the project lead to an increase in social inequalities?		X	
40.	Could the project lead to incompatible uses or social conflicts between the different users?		X	
41.	Does the project disadvantage the integration of women and other vulnerable groups?		X	
K	**Health and safety**			
42.	Can the project induce risks of accidents for workers or the population?	X		There could be slip and falls, cutlass cuts, travel accident etc.
43.	Can the project cause health risks for workers or the population?	X		Through wrongful exposure to pesticides to be used as well as COVID-19.
44.	Can the project lead to an increase in disease vectors?		X	

Name of Sub-project: AICCRA GHANA CLUSTER		
Project Location: GHANA		
Region: Northern	District: Tolon	Town/Farming Community: Yizugu

S No	ISSUES	YES	NO	Comments
A	**Water and Soil Contamination**			
1.	Will the subproject generate large amounts of residual waste?		X	
2.	Will the subproject result in potential soil or water contamination (e.g., from oil, grease and fuel from equipment yards)?		X	
3.	Will the subproject involve the use of herbicides for vegetation control and chemicals for pest control?	X		The use of herbs for pest control will be part of the integrated pest control measures.
4.	Will the subproject lead to contamination of ground and surface waters by herbicides for vegetation control and chemicals for pest control?		X	
5.	Will the subproject lead to increased sedimentation in river stream?		X	
6.	Will the subproject involve the use of chemicals or solvents?	X		Chemicals may be used for pests control
D.	**Noise and Air Pollution Hazardous Substances**			
7.	Will the subproject increase the levels of harmful air emissions?		X	
8.	Will the subproject increase ambient noise levels?		X	
9.	Will the subproject involve the storage, handling or transport of hazardous substances?		X	
10.	Will the subproject generate large amounts of residual waste?		X	
E.	**Fauna and Flora**			
11.	Will the subproject lead to the destruction of vegetation?		X	Project site is already used for farming activities
12.	Is the area home to a forest? Is the forest protected or proposed for protection? Is the forest high conservation value forest?		X	
13.	Is the subproject located in an area with designated natural reserves?		X	
14.	Is the subproject located in an area with endangered or conservation-worthy ecosystems, fauna or flora?		X	
15.	Is the subproject located in an area falling within 500 meters of national forests, protected areas, wilderness areas, wetlands, biodiversity, critical habitats, or sites of historical or cultural importance?		X	
16.	Is the project likely to cause effects on rare, vulnerable and/or important species from an economic, ecological, cultural point of view?		X	
17.	Will the project have a potential to introduce alien species not native to the area (even if not intended)?		X	

S No	ISSUES	YES	NO	Comments
18.	Will the subproject involve the disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes)?		X	
19.	Will the subproject lead to the destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development?		X	
20.	Will the subproject involve the use of water for irrigation?		X	Demonstration activities will be rain-fed.
21.	Is the source of water a multiple water use point (i.e. livestock and domestic use), if yes does the project pose a risk to other users?		X	
22.	Does water scarcity exist in the area, and if yes, does it pose a risk to the project?		X	
23.	Are there areas at risk of salinization? If yes, does it pose a risk to the project?		X	
24.	Will the subproject lead to the disruption/destruction of wildlife through interruption of migratory routes, disturbance of wildlife habitats, and noise-related problems?		X	
25.	Does the project have potential for carbon capture and, if so, is this potential being utilized?		X	
G.	**Cultural Property**			
26.	Is the subproject located in an area with designated cultural properties such as archaeological, historical and/or religious sites?		X	
27.	Is the subproject in an area with religious monuments, structures and/or cemeteries?		X	
28.	Is the subproject located in an area of tourist importance?		X	
H.	**Expropriation and Social Disturbance**			
29.	Will the subproject involve land expropriation or demolition of existing structures?		X	
30.	Will the subproject occur in an area with squatters or lead to relocation of squatters?		X	
I	**Labor and working condition**			
31.	Will the subproject involve the use of contracted workers (i.e. both skilled and unskilled labor)?	X		Demonstration activities will involve staff of implementing partners and casual labor from project communities.
32.	Will the subproject involve the use of primary supply workers?		X	
33.	Is the subproject located in an area with historical cases of child labor?		X	

S No	ISSUES	YES	NO	Comments
34.	Is the subproject located in an area with historical cases of forced labor?		X	
35.	Are there adequate and appropriate use of personal protective clothing in project area?		X	Farmers in the community don't use adequate and appropriate PPE.
36.	Is the subproject located far (beyond 1km) from the nearby community (where farmers can access toilet facility)?		X	
37.	Are there case of sexual exploitation and abuse/ Sexual Harassment in this area		X	
38.	Will the subproject involve participation of vulnerable groups (e.g. women, disabled, elderly, youth etc.)? kindly risk and identify specific risks that each vulnerable group may face?	X		Women, youth, and the elderly will be involved, women could feel intimidated to talk in the presence of men. No farmer with hearing or visual impairment.
J	**Social inequalities, conflicts, gender**			
39.	Could the project lead to an increase in social inequalities?		X	
40.	Could the project lead to incompatible uses or social conflicts between the different users?		X	
41.	Does the project disadvantage the integration of women and other vulnerable groups?		X	
K	**Health and safety**			
42.	Can the project induce risks of accidents for workers or the population?	X		There could be slip and falls, cutlass cuts, travel accident etc.
43.	Can the project cause health risks for workers or the population?	X		Through wrongful exposure to pesticides to be used as well as COVID-19.
44.	Can the project lead to an increase in disease vectors?		X	

Name of Sub-project: AICCRA GHANA CLUSTER		
Project Location: GHANA		
Region: Northern	District: Tolon	Town/Farming Community: Woribogu (2 sites)

S No	ISSUES	YES	NO	Comments
A	**Water and Soil Contamination**			
1.	Will the subproject generate large amounts of residual waste?		X	
2.	Will the subproject result in potential soil or water contamination (e.g., from oil, grease and fuel from equipment yards)?		X	

S No	ISSUES	YES	NO	Comments
3.	Will the subproject involve the use of herbicides for vegetation control and chemicals for pest control?	X		The use of herbs for pest control will be part of the integrated pest control measures.
4.	Will the subproject lead to contamination of ground and surface waters by herbicides for vegetation control and chemicals for pest control?		X	
5.	Will the subproject lead to increased sedimentation in river stream?		X	
6.	Will the subproject involve the use of chemicals or solvents?	X		Chemicals may be used for pests control
D.	**Noise and Air Pollution Hazardous Substances**			
7.	Will the subproject increase the levels of harmful air emissions?		X	
8.	Will the subproject increase ambient noise levels?		X	
9.	Will the subproject involve the storage, handling or transport of hazardous substances?		X	
10.	Will the subproject generate large amounts of residual waste?		X	
E.	**Fauna and Flora**			
11.	Will the subproject lead to the destruction of vegetation?		X	Project site is already used for farming activities
12.	Is the area home to a forest? Is the forest protected or proposed for protection? Is the forest high conservation value forest?		X	
13.	Is the subproject located in an area with designated natural reserves?		X	
14.	Is the subproject located in an area with endangered or conservation-worthy ecosystems, fauna or flora?		X	
15.	Is the subproject located in an area falling within 500 meters of national forests, protected areas, wilderness areas, wetlands, biodiversity, critical habitats, or sites of historical or cultural importance?		X	
16.	Is the project likely to cause effects on rare, vulnerable and/or important species from an economic, ecological, cultural point of view?		X	
17.	Will the project have a potential to introduce alien species not native to the area (even if not intended)?		X	.
18.	Will the subproject involve the disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes)?		X	
19.	Will the subproject lead to the destruction or damage of terrestrial or aquatic ecosystems or		X	

S No	ISSUES	YES	NO	Comments
	endangered species directly or by induced development?			
20.	Will the subproject involve the use of water for irrigation?		X	Demonstration activities will be rain-fed.
21.	Is the source of water a multiple water use point (i.e. livestock and domestic use), if yes does the project pose a risk to other users?		X	
22.	Does water scarcity exist in the area, and if yes, does it pose a risk to the project?		X	
23.	Are there areas at risk of salinization? If yes, does it pose a risk to the project?		X	
24.	Will the subproject lead to the disruption/destruction of wildlife through interruption of migratory routes, disturbance of wildlife habitats, and noise-related problems?		X	
25.	Does the project have potential for carbon capture and, if so, is this potential being utilized?		X	
G.	**Cultural Property**			
26.	Is the subproject located in an area with designated cultural properties such as archaeological, historical and/or religious sites?		X	
27.	Is the subproject in an area with religious monuments, structures and/or cemeteries?		X	
28.	Is the subproject located in an area of tourist importance?		X	
H.	**Expropriation and Social Disturbance**			
29.	Will the subproject involve land expropriation or demolition of existing structures?		X	
30.	Will the subproject occur in an area with squatters or lead to relocation of squatters?		X	
I	**Labor and working condition**			
31.	Will the subproject involve the use of contracted workers (i.e. both skilled and unskilled labor)?	X		Demonstration activities will involve staff of implementing partners and casual labor from project communities.
32.	Will the subproject involve the use of primary supply workers?		X	
33.	Is the subproject located in an area with historical cases of child labor?		X	
34.	Is the subproject located in an area with historical cases of forced labor?		X	
35.	Are there adequate and appropriate use of personal protective clothing in project area?		X	Farmers in the community don't use adequate and appropriate PPE.

S No	ISSUES	YES	NO	Comments
36.	Is the subproject located far (beyond 1km) from the nearby community (where farmers can access toilet facility)?		X	
37.	Are there case of sexual exploitation and abuse/ Sexual Harassment in this area		X	
38.	Will the subproject involve participation of vulnerable groups (e.g. women, disabled, elderly, youth etc.)? kindly risk and identify specific risks that each vulnerable group may face?	X		Women, youth, and the elderly will be involved, women could feel intimidated to talk in the presence of men. No farmer with hearing or visual impairment.
J	**Social inequalities, conflicts, gender**			
39.	Could the project lead to an increase in social inequalities?		X	
40.	Could the project lead to incompatible uses or social conflicts between the different users?		X	
41.	Does the project disadvantage the integration of women and other vulnerable groups?		X	
K	**Health and safety**			
42.	Can the project induce risks of accidents for workers or the population?	X		There could be slip and falls, cutlass cuts, travel accident etc.
43.	Can the project cause health risks for workers or the population?	X		Through wrongful exposure to pesticides to be used as well as COVID-19.
44.	Can the project lead to an increase in disease vectors?		X	

Name of Sub-project: AICCRA GHANA CLUSTER		
Project Location: GHANA		
Region: Northern	District: Tolon	Town/Farming Community: Nyankpala

S No	ISSUES	YES	NO	Comments
A	**Water and Soil Contamination**			
1.	Will the subproject generate large amounts of residual waste?		X	
2.	Will the subproject result in potential soil or water contamination (e.g., from oil, grease and fuel from equipment yards)?		X	
3.	Will the subproject involve the use of herbicides for vegetation control and chemicals for pest control?	X		The use of herbs for pest control will be part of the integrated pest control measures.
4.	Will the subproject lead to contamination of ground and surface waters by herbicides for vegetation control and chemicals for pest control?		X	

S No	ISSUES	YES	NO	Comments
5.	Will the subproject lead to increased sedimentation in river stream?		X	
6.	Will the subproject involve the use of chemicals or solvents?	X		Chemicals may be used for pests control
D.	**Noise and Air Pollution Hazardous Substances**			
7.	Will the subproject increase the levels of harmful air emissions?		X	
8.	Will the subproject increase ambient noise levels?		X	
9.	Will the subproject involve the storage, handling or transport of hazardous substances?		X	
10.	Will the subproject generate large amounts of residual waste?		X	
E.	**Fauna and Flora**			
11.	Will the subproject lead to the destruction of vegetation?		X	Project site is already used for farming activities
12.	Is the area home to a forest? Is the forest protected or proposed for protection? Is the forest high conservation value forest?		X	
13.	Is the subproject located in an area with designated natural reserves?		X	
14.	Is the subproject located in an area with endangered or conservation-worthy ecosystems, fauna or flora?		X	
15.	Is the subproject located in an area falling within 500 meters of national forests, protected areas, wilderness areas, wetlands, biodiversity, critical habitats, or sites of historical or cultural importance?		X	
16.	Is the project likely to cause effects on rare, vulnerable and/or important species from an economic, ecological, cultural point of view?		X	
17.	Will the project have a potential to introduce alien species not native to the area (even if not intended)?		X	
18.	Will the subproject involve the disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes)?		X	
19.	Will the subproject lead to the destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development?		X	
20.	Will the subproject involve the use of water for irrigation?		X	Demonstration activities will be rain-fed.
21.	Is the source of water a multiple water use point (i.e. livestock and domestic use), if yes does the project pose a risk to other users?		X	

S No	ISSUES	YES	NO	Comments
22.	Does water scarcity exist in the area, and if yes, does it pose a risk to the project?		X	
23.	Are there areas at risk of salinization? If yes, does it pose a risk to the project?		X	
24.	Will the subproject lead to the disruption/destruction of wildlife through interruption of migratory routes, disturbance of wildlife habitats, and noise-related problems?		X	
25.	Does the project have potential for carbon capture and, if so, is this potential being utilized?		X	
G.	**Cultural Property**			
26.	Is the subproject located in an area with designated cultural properties such as archaeological, historical and/or religious sites?		X	
27.	Is the subproject in an area with religious monuments, structures and/or cemeteries?		X	
28.	Is the subproject located in an area of tourist importance?		X	
H.	**Expropriation and Social Disturbance**			
29.	Will the subproject involve land expropriation or demolition of existing structures?		X	
30.	Will the subproject occur in an area with squatters or lead to relocation of squatters?		X	
I	**Labor and working condition**			
31.	Will the subproject involve the use of contracted workers (i.e. both skilled and unskilled labor)?	X		Demonstration activities will involve staff of implementing partners and casual labor from project communities.
32.	Will the subproject involve the use of primary supply workers?		X	
33.	Is the subproject located in an area with historical cases of child labor?		X	
34.	Is the subproject located in an area with historical cases of forced labor?		X	
35.	Are there adequate and appropriate use of personal protective clothing in project area?		X	
36.	Is the subproject located far (beyond 1km) from the nearby community (where farmers can access toilet facility)?		X	
37.	Are there case of sexual exploitation and abuse/ Sexual Harassment in this area		X	
38.	Will the subproject involve participation of vulnerable groups (e.g. women, disabled, elderly, youth etc.)? kindly identify specific risks that each vulnerable group may face?	X		Women, youth, and the elderly will be involved, women could feel intimidated to talk in the presence

S No	ISSUES	YES	NO	Comments
				of men. No farmer with hearing or visual impairment.
J	**Social inequalities, conflicts, gender**			
39.	Could the project lead to an increase in social inequalities?		X	
40.	Could the project lead to incompatible uses or social conflicts between the different users?		X	
41.	Does the project disadvantage the integration of women and other vulnerable groups?		X	
K	**Health and safety**			
42.	Can the project induce risks of accidents for workers or the population?	X		There could be slip and falls, cutlass cuts, travel accident etc.
43.	Can the project cause health risks for workers or the population?	X		Through wrongful exposure to pesticides to be used as well as COVID-19.
44.	Can the project lead to an increase in disease vectors?		X	.

Name of Sub-project: AICCRA GHANA CLUSTER		
Project Location: GHANA		
Region: Bono East	District: Techiman North	Town/Farming Community: Offuman

S No	ISSUES	YES	NO	Comments
A	**Water and Soil Contamination**			
1.	Will the subproject generate large amounts of residual waste?		X	
2.	Will the subproject result in potential soil or water contamination (e.g., from oil, grease and fuel from equipment yards)?		X	
3.	Will the subproject involve the use of herbicides for vegetation control and chemicals for pest control?	X		The use of herbs for pest control will be part of the integrated pest control measures.
4.	Will the subproject lead to contamination of ground and surface waters by herbicides for vegetation control and chemicals for pest control?		X	
5.	Will the subproject lead to increased sedimentation in river stream?		X	
6.	Will the subproject involve the use of chemicals or solvents?	X		Chemical may be used for pests control
D.	**Noise and Air Pollution Hazardous Substances**			
7.	Will the subproject increase the levels of harmful air emissions?		X	
8.	Will the subproject increase ambient noise levels?		X	
9.	Will the subproject involve the storage, handling or transport of hazardous substances?		X	

S No	ISSUES	YES	NO	Comments
10.	Will the subproject generate large amounts of residual waste?		X	
E.	**Fauna and Flora**			
11.	Will the subproject lead to the destruction of vegetation?		X	Project site is already used for farming activities
12.	Is the area home to a forest? Is the forest protected or proposed for protection? Is the forest high conservation value forest?		X	
13.	Is the subproject located in an area with designated natural reserves?		X	
14.	Is the subproject located in an area with endangered or conservation-worthy ecosystems, fauna or flora?		X	
15.	Is the subproject located in an area falling within 500 meters of national forests, protected areas, wilderness areas, wetlands, biodiversity, critical habitats, or sites of historical or cultural importance?		X	
16.	Is the project likely to cause effects on rare, vulnerable and/or important species from an economic, ecological, cultural point of view?		X	
17.	Will the project have a potential to introduce alien species not native to the area (even if not intended)?		X	
18.	Will the subproject involve the disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes)?		X	
19.	Will the subproject lead to the destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development?		X	
20.	Will the subproject involve the use of water for irrigation?		X	Demonstration activities will be rain-fed.
21.	Is the source of water a multiple water use point (i.e. livestock and domestic use), if yes does the project pose a risk to other users?		X	
22.	Does water scarcity exist in the area, and if yes, does it pose a risk to the project?		X	
23.	Are there areas at risk of salinization? If yes, does it pose a risk to the project?		X	
24.	Will the subproject lead to the disruption/destruction of wildlife through interruption of migratory routes, disturbance of wildlife habitats, and noise-related problems?		X	
25.	Does the project have potential for carbon capture and, if so, is this potential being utilized?		X	
G.	**Cultural Property**			

S No	ISSUES	YES	NO	Comments
26.	Is the subproject located in an area with designated cultural properties such as archaeological, historical and/or religious sites?		X	
27.	Is the subproject in an area with religious monuments, structures and/or cemeteries?		X	
28.	Is the subproject located in an area of tourist importance?		X	
H.	**Expropriation and Social Disturbance**			
29.	Will the subproject involve land expropriation or demolition of existing structures?		X	
30.	Will the subproject occur in an area with squatters or lead to relocation of squatters?		X	
I	**Labor and working condition**			
31.	Will the subproject involve the use of contracted workers (i.e. both skilled and unskilled labor)?	X		Demonstration activities will involve staff of implementing partners and casual labor from project communities.
32.	Will the subproject involve the use of primary supply workers?		X	
33.	Is the subproject located in an area with historical cases of child labor?		X	
34.	Is the subproject located in an area with historical cases of forced labor?		X	
35.	Are there adequate and appropriate use of personal protective clothing in project area?		X	
36.	Is the subproject located far (beyond 1km) from the nearby community (where farmers can access toilet facility)?		X	
37.	Are there case of sexual exploitation and abuse/ Sexual Harassment in this area	X		
38.	Will the subproject involve participation of vulnerable groups (e.g. women, disabled, elderly, youth etc.)? kindly identify specific risks that each vulnerable group may face?	X		Women, youth, and the elderly will be involved but will not face any specific risks in this community.
J	**Social inequalities, conflicts, gender**			
39.	Could the project lead to an increase in social inequalities?		X	
40.	Could the project lead to incompatible uses or social conflicts between the different users?		X	
41.	Does the project disadvantage the integration of women and other vulnerable groups?		X	
K	**Health and safety**			
42.	Can the project induce risks of accidents for workers or the population?	X		There could be slip and falls, cutlass cuts, travel accident etc.

S No	ISSUES	YES	NO	Comments
43.	Can the project cause health risks for workers or the population?	X		Through wrongful exposure to pesticides to be used as well as COVID-19.
44.	Can the project lead to an increase in disease vectors?		X	

Name of Sub-project: AICCRA GHANA CLUSTER		
Project Location: GHANA		
Region: Bono East	District: Techiman North	Town/Farming Community: Tanoboase

S No	ISSUES	YES	NO	Comments
A	**Water and Soil Contamination**			
1.	Will the subproject generate large amounts of residual waste?		X	
2.	Will the subproject result in potential soil or water contamination (e.g., from oil, grease and fuel from equipment yards)?		X	
3.	Will the subproject involve the use of herbicides for vegetation control and chemicals for pest control?	X		The use of herbs for pest control will be part of the integrated pest control measures.
4.	Will the subproject lead to contamination of ground and surface waters by herbicides for vegetation control and chemicals for pest control?		X	
5.	Will the subproject lead to increased sedimentation in river stream?		X	
6.	Will the subproject involve the use of chemicals or solvents?	X		Chemicals may be used for pests control
D.	**Noise and Air Pollution Hazardous Substances**			
7.	Will the subproject increase the levels of harmful air emissions?		X	
8.	Will the subproject increase ambient noise levels?		X	
9.	Will the subproject involve the storage, handling or transport of hazardous substances?		X	
10.	Will the subproject generate large amounts of residual waste?		X	
E.	**Fauna and Flora**			
11.	Will the subproject lead to the destruction of vegetation?		X	Project site is already used for farming activities
12.	Is the area home to a forest? Is the forest protected or proposed for protection? Is the forest high conservation value forest?		X	
13.	Is the subproject located in an area with designated natural reserves?		X	

S No	ISSUES	YES	NO	Comments
14.	Is the subproject located in an area with endangered or conservation-worthy ecosystems, fauna or flora?		X	
15.	Is the subproject located in an area falling within 500 meters of national forests, protected areas, wilderness areas, wetlands, biodiversity, critical habitats, or sites of historical or cultural importance?		X	
16.	Is the project likely to cause effects on rare, vulnerable and/or important species from an economic, ecological, cultural point of view?		X	
17.	Will the project have a potential to introduce alien species not native to the area (even if not intended)?		X	
18.	Will the subproject involve the disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes)?		X	
19.	Will the subproject lead to the destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development?		X	
20.	Will the subproject involve the use of water for irrigation?		X	Demonstration activities will be rain-fed.
21.	Is the source of water a multiple water use point (i.e. livestock and domestic use), if yes does the project pose a risk to other users?		X	
22.	Does water scarcity exist in the area, and if yes, does it pose a risk to the project?		X	
23.	Are there areas at risk of salinization? If yes, does it pose a risk to the project?		X	
24.	Will the subproject lead to the disruption/destruction of wildlife through interruption of migratory routes, disturbance of wildlife habitats, and noise-related problems?		X	
25.	Does the project have potential for carbon capture and, if so, is this potential being utilized?		X	
G.	**Cultural Property**			
26.	Is the subproject located in an area with designated cultural properties such as archaeological, historical and/or religious sites?		X	
27.	Is the subproject in an area with religious monuments, structures and/or cemeteries?		X	
28.	Is the subproject located in an area of tourist importance?		X	
H.	**Expropriation and Social Disturbance**			

S No	ISSUES	YES	NO	Comments
29.	Will the subproject involve land expropriation or demolition of existing structures?		X	
30.	Will the subproject occur in an area with squatters or lead to relocation of squatters?		X	
I	**Labor and working condition**			
31.	Will the subproject involve the use of contracted workers (i.e. both skilled and unskilled labor)?	X		Demonstration activities will involve staff of implementing partners and casual labor from project communities.
32.	Will the subproject involve the use of primary supply workers?		X	
33.	Is the subproject located in an area with historical cases of child labor?		X	Farmers are helped by their children in farm activities
34.	Is the subproject located in an area with historical cases of forced labor?		X	
35.	Are there adequate and appropriate use of personal protective clothing in project area?		X	
36.	Is the subproject located far (beyond 1km) from the nearby community (where farmers can access toilet facility)?		X	
37.	Are there case of sexual exploitation and abuse/ Sexual Harassment in this area	X		
38.	Will the subproject involve participation of vulnerable groups (e.g. women, disabled, elderly, youth etc.)? kindly identify specific risks that each vulnerable group may face?	X		Women, youth, and the elderly will be involved but will not face any specific risks in this community.
J	**Social inequalities, conflicts, gender**			
39.	Could the project lead to an increase in social inequalities?		X	
40.	Could the project lead to incompatible uses or social conflicts between the different users?		X	
41.	Does the project disadvantage the integration of women and other vulnerable groups?		X	
K	**Health and safety**			
42.	Can the project induce risks of accidents for workers or the population?	X		There could be slip and falls, cutlass cuts, travel accident etc.
43.	Can the project cause health risks for workers or the population?	X		Through wrongful exposure to pesticides to be used as well as COVID-19.
44.	Can the project lead to an increase in disease vectors?		X	

Name of Sub-project: AICCRA GHANA CLUSTER
Project Location: GHANA

Region: Bono East	District: Kintampo South	Town/Farming Community: Agyegyemakunu		
S No	**ISSUES**	**YES**	**NO**	**Comments**
A	**Water and Soil Contamination**			
1.	Will the subproject generate large amounts of residual waste?		X	
2.	Will the subproject result in potential soil or water contamination (e.g., from oil, grease and fuel from equipment yards)?		X	
3.	Will the subproject involve the use of herbicides for vegetation control and chemicals for pest control?	X		The use of herbs for pest control will be part of the integrated pest control measures.
4.	Will the subproject lead to contamination of ground and surface waters by herbicides for vegetation control and chemicals for pest control?		X	
5.	Will the subproject lead to increased sedimentation in river stream?		X	
6.	Will the subproject involve the use of chemicals or solvents?	X		Chemicals may be used for pests control
D.	**Noise and Air Pollution Hazardous Substances**			
7.	Will the subproject increase the levels of harmful air emissions?		X	
8.	Will the subproject increase ambient noise levels?		X	
9.	Will the subproject involve the storage, handling or transport of hazardous substances?		X	
10.	Will the subproject generate large amounts of residual waste?		X	
E.	**Fauna and Flora**			
11.	Will the subproject lead to the destruction of vegetation?		X	Project site is already used for farming activities
12.	Is the area home to a forest? Is the forest protected or proposed for protection? Is the forest high conservation value forest?		X	
13.	Is the subproject located in an area with designated natural reserves?		X	
14.	Is the subproject located in an area with endangered or conservation-worthy ecosystems, fauna or flora?		X	
15.	Is the subproject located in an area falling within 500 meters of national forests, protected areas, wilderness areas, wetlands, biodiversity, critical habitats, or sites of historical or cultural importance?		X	
16.	Is the project likely to cause effects on rare, vulnerable and/or important species from an economic, ecological, cultural point of view?		X	
17.	Will the project have a potential to introduce alien species not native to the area (even if not intended)?		X	

S No	ISSUES	YES	NO	Comments
18.	Will the subproject involve the disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes)?		X	
19.	Will the subproject lead to the destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development?		X	
20.	Will the subproject involve the use of water for irrigation?		X	Demonstration activities will be rain-fed.
21.	Is the source of water a multiple water use point (i.e. livestock and domestic use), if yes does the project pose a risk to other users?		X	
22.	Does water scarcity exist in the area, and if yes, does it pose a risk to the project?		X	
23.	Are there areas at risk of salinization? If yes, does it pose a risk to the project?		X	
24.	Will the subproject lead to the disruption/destruction of wildlife through interruption of migratory routes, disturbance of wildlife habitats, and noise-related problems?		X	
25.	Does the project have potential for carbon capture and, if so, is this potential being utilized?		X	
G.	**Cultural Property**			
26.	Is the subproject located in an area with designated cultural properties such as archaeological, historical and/or religious sites?		X	
27.	Is the subproject in an area with religious monuments, structures and/or cemeteries?		X	
28.	Is the subproject located in an area of tourist importance?		X	
H.	**Expropriation and Social Disturbance**			
29.	Will the subproject involve land expropriation or demolition of existing structures?		X	
30.	Will the subproject occur in an area with squatters or lead to relocation of squatters?		X	
I	**Labor and working condition**			
31.	Will the subproject involve the use of contracted workers (i.e. both skilled and unskilled labor)?	X		Demonstration activities will involve staff of implementing partners and casual labor from project communities.
32.	Will the subproject involve the use of primary supply workers?		X	
33.	Is the subproject located in an area with historical cases of child labor?	X		Due to excessive and competing demand for casual labor in the community some farmers resort to

S No	ISSUES	YES	NO	Comments
				use of under age children for farming activities.
34.	Is the subproject located in an area with historical cases of forced labor?		X	
35.	Are there adequate and appropriate use of personal protective clothing in project area?		X	Farmers in the community don't use adequate and appropriate PPE.
36.	Is the subproject located far (beyond 1km) from the nearby community (where farmers can access toilet facility)?		X	
37.	Are there case of sexual exploitation and abuse/ Sexual Harassment in this area	X		
38.	Will the subproject involve participation of vulnerable groups (e.g. women, disabled, elderly, youth etc.)? kindly identify specific risks that each vulnerable group may face?	X		Farmers in the community don't use adequate and appropriate PPE.
J	**Social inequalities, conflicts, gender**			
39.	Could the project lead to an increase in social inequalities?		X	
40.	Could the project lead to incompatible uses or social conflicts between the different users?		X	
41.	Does the project disadvantage the integration of women and other vulnerable groups?		X	
K	**Health and safety**			
42.	Can the project induce risks of accidents for workers or the population?	X		There could be slip and falls, cutlass cuts, travel accident etc.
43.	Can the project cause health risks for workers or the population?	X		Through wrongful exposure to pesticides to be used as well as COVID-19.
44.	Can the project lead to an increase in disease vectors?		X	

Name of Sub-project: AICCRA GHANA CLUSTER		
Project Location: GHANA		
Region: Bono East	District: Kintampo South	Town/Farming Community: Adiemra

S No	ISSUES	YES	NO	Comments
A	**Water and Soil Contamination**			
1.	Will the subproject generate large amounts of residual waste?		X	
2.	Will the subproject result in potential soil or water contamination (e.g., from oil, grease and fuel from equipment yards)?		X	

S No	ISSUES	YES	NO	Comments
3.	Will the subproject involve the use of herbicides for vegetation control and chemicals for pest control?	X		The use of herbs for pest control will be part of the integrated pest control measures.
4.	Will the subproject lead to contamination of ground and surface waters by herbicides for vegetation control and chemicals for pest control?		X	
5.	Will the subproject lead to increased sedimentation in river stream?		X	
6.	Will the subproject involve the use of chemicals or solvents?	X		Chemicals may be used for pests control.
D.	**Noise and Air Pollution Hazardous Substances**			
7.	Will the subproject increase the levels of harmful air emissions?		X	
8.	Will the subproject increase ambient noise levels?		X	
9.	Will the subproject involve the storage, handling or transport of hazardous substances?		X	
10.	Will the subproject generate large amounts of residual waste?		X	
E.	**Fauna and Flora**			
11.	Will the subproject lead to the destruction of vegetation?		X	Project site is already used for farming activities
12.	Is the area home to a forest? Is the forest protected or proposed for protection? Is the forest high conservation value forest?		X	
13.	Is the subproject located in an area with designated natural reserves?		X	
14.	Is the subproject located in an area with endangered or conservation-worthy ecosystems, fauna or flora?		X	
15.	Is the subproject located in an area falling within 500 meters of national forests, protected areas, wilderness areas, wetlands, biodiversity, critical habitats, or sites of historical or cultural importance?		X	
16.	Is the project likely to cause effects on rare, vulnerable and/or important species from an economic, ecological, cultural point of view?		X	
17.	Will the project have a potential to introduce alien species not native to the area (even if not intended)?		X	
18.	Will the subproject involve the disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes)?		X	
19.	Will the subproject lead to the destruction or damage of terrestrial or aquatic ecosystems or		X	

S No	ISSUES	YES	NO	Comments
	endangered species directly or by induced development?			
20.	Will the subproject involve the use of water for irrigation?		X	Demonstration farms will be rain-fed.
21.	Is the source of water a multiple water use point (i.e. livestock and domestic use), if yes does the project pose a risk to other users?		X	
22.	Does water scarcity exist in the area, and if yes, does it pose a risk to the project?		X	
23.	Are there areas at risk of salinization? If yes, does it pose a risk to the project?		X	
24.	Will the subproject lead to the disruption/destruction of wildlife through interruption of migratory routes, disturbance of wildlife habitats, and noise-related problems?		X	
25.	Does the project have potential for carbon capture and, if so, is this potential being utilized?		X	
G.	**Cultural Property**			
26.	Is the subproject located in an area with designated cultural properties such as archaeological, historical and/or religious sites?		X	
27.	Is the subproject in an area with religious monuments, structures and/or cemeteries?		X	
28.	Is the subproject located in an area of tourist importance?		X	
H.	**Expropriation and Social Disturbance**			
29.	Will the subproject involve land expropriation or demolition of existing structures?		X	
30.	Will the subproject occur in an area with squatters or lead to relocation of squatters?		X	
I	**Labor and working condition**			
31.	Will the subproject involve the use of contracted workers (i.e. both skilled and unskilled labor)?	X		Pilot activities will involve staff of implementing partners and casual labor from project communities.
32.	Will the subproject involve the use of primary supply workers?		X	
33.	Is the subproject located in an area with historical cases of child labor?		X	
34.	Is the subproject located in an area with historical cases of forced labor?		X	
35.	Are there adequate and appropriate use of personal protective clothing in project area?		X	Farmers in the community don't use adequate and appropriate PPE.
36.	Is the subproject located far (beyond 1km) from the nearby community (where farmers can access toilet facility)?		X	

S No	ISSUES	YES	NO	Comments
37.	Are there case of sexual exploitation and abuse/ Sexual Harassment in this area	X		
38.	Will the subproject involve participation of vulnerable groups (e.g. women, disabled, elderly, youth etc.)? kindly identify specific risks that each vulnerable group may face?	X		Women, youth, and the elderly will be involved but will not face any specific risks in this community.
J	**Social inequalities, conflicts, gender**			
39.	Could the project lead to an increase in social inequalities?		X	
40.	Could the project lead to incompatible uses or social conflicts between the different users?		X	
41.	Does the project disadvantage the integration of women and other vulnerable groups?		X	
K	**Health and safety**			
42.	Can the project induce risks of accidents for workers or the population?	X		There could be slip and falls, cutlass cuts, travel accident etc.
43.	Can the project cause health risks for workers or the population?	X		Through wrongful exposure to pesticides to be used as well as COVID-19.
44.	Can the project lead to an increase in disease vectors?		X	

Name of Sub-project: AICCRA GHANA CLUSTER		
Project Location: GHANA		
Region: Bono East	District: Kintampo North	Town/Farming Community: Adomano

S No	ISSUES	YES	NO	Comments
A	**Water and Soil Contamination**			
1.	Will the subproject generate large amounts of residual waste?		X	
2.	Will the subproject result in potential soil or water contamination (e.g., from oil, grease and fuel from equipment yards)?		X	
3.	Will the subproject involve the use of herbicides for vegetation control and chemicals for pest control?	X		The use of herbs for pest control will be part of the integrated pest control measures.
4.	Will the subproject lead to contamination of ground and surface waters by herbicides for vegetation control and chemicals for pest control?		X	
5.	Will the subproject lead to increased sedimentation in river stream?		X	
6.	Will the subproject involve the use of chemicals or solvents?		X	Chemical may be used for pests control on maize.
D.	**Noise and Air Pollution Hazardous Substances**			

S No	ISSUES	YES	NO	Comments
7.	Will the subproject increase the levels of harmful air emissions?		X	
8.	Will the subproject increase ambient noise levels?		X	
9.	Will the subproject involve the storage, handling or transport of hazardous substances?		X	
10.	Will the subproject generate large amounts of residual waste?		X	
E.	**Fauna and Flora**			
11.	Will the subproject lead to the destruction of vegetation?		X	Project site is already used for farming activities
12.	Is the area home to a forest? Is the forest protected or proposed for protection? Is the forest high conservation value forest?		X	
13.	Is the subproject located in an area with designated natural reserves?		X	
14.	Is the subproject located in an area with endangered or conservation-worthy ecosystems, fauna or flora?		X	
15.	Is the subproject located in an area falling within 500 meters of national forests, protected areas, wilderness areas, wetlands, biodiversity, critical habitats, or sites of historical or cultural importance?		X	
16.	Is the project likely to cause effects on rare, vulnerable and/or important species from an economic, ecological, cultural point of view?		X	
17.	Will the project have a potential to introduce alien species not native to the area (even if not intended)?		X	
18.	Will the subproject involve the disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes)?		X	
19.	Will the subproject lead to the destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development?		X	
20.	Will the subproject involve the use of water for irrigation?		X	
21.	Is the source of water a multiple water use point (i.e. livestock and domestic use), if yes does the project pose a risk to other users?		X	
22.	Does water scarcity exist in the area, and if yes, does it pose a risk to the project?		X	
23.	Are there areas at risk of salinization? If yes, does it pose a risk to the project?		X	

S No	ISSUES	YES	NO	Comments
24.	Will the subproject lead to the disruption/destruction of wildlife through interruption of migratory routes, disturbance of wildlife habitats, and noise-related problems?		X	
25.	Does the project have potential for carbon capture and, if so, is this potential being utilized?		X	
G.	**Cultural Property**			
26.	Is the subproject located in an area with designated cultural properties such as archaeological, historical and/or religious sites?		X	
27.	Is the subproject in an area with religious monuments, structures and/or cemeteries?		X	
28.	Is the subproject located in an area of tourist importance?		X	
H.	**Expropriation and Social Disturbance**			
29.	Will the subproject involve land expropriation or demolition of existing structures?		X	
30.	Will the subproject occur in an area with squatters or lead to relocation of squatters?		X	
I	**Labor and working condition**			
31.	Will the subproject involve the use of contracted workers (i.e. both skilled and unskilled labor)?	X		Pilot activities will involve staff of implementing partners and casual labor from project communities.
32.	Will the subproject involve the use of primary supply workers?		X	
33.	Is the subproject located in an area with historical cases of child labor?	X		There is no basic school in the community so formers usually take their children to farm and engage their services.
34.	Is the subproject located in an area with historical cases of forced labor?		X	
35.	Are there adequate and appropriate use of personal protective clothing in project area?		X	Farmers in the community don't use adequate and appropriate PPE.
36.	Is the subproject located far (beyond 1km) from the nearby community (where farmers can access toilet facility)?		X	
37.	Are there case of sexual exploitation and abuse/ Sexual Harassment in this area	X		
38.	Will the subproject involve participation of vulnerable groups (e.g. women, disabled, elderly, youth etc.)? kindly identify specific risks that each vulnerable group may face?	X		Women, youth, and the elderly will be involved but will not face any specific risks in this community.
J	**Social inequalities, conflicts, gender**			
39.	Could the project lead to an increase in social inequalities?		X	

S No	ISSUES	YES	NO	Comments
40.	Could the project lead to incompatible uses or social conflicts between the different users?		X	
41.	Does the project disadvantage the integration of women and other vulnerable groups?		X	
K	**Health and safety**			
42.	Can the project induce risks of accidents for workers or the population?	X		There could be slip and falls, cutlass cuts, travel accident etc.
43.	Can the project cause health risks for workers or the population?	X		T Through wrongful exposure to pesticides to be used as well as COVID-19.
44.	Can the project lead to an increase in disease vectors?		X	

Name of Sub-project: AICCRA GHANA CLUSTER		
Project Location: GHANA		
Region: Bono East	District: Kintampo North	Town/Farming Community: Bawa Akura

S No	ISSUES	YES	NO	Comments
A	**Water and Soil Contamination**			
1.	Will the subproject generate large amounts of residual waste?		X	
2.	Will the subproject result in potential soil or water contamination (e.g., from oil, grease and fuel from equipment yards)?		X	
3.	Will the subproject involve the use of herbicides for vegetation control and chemicals for pest control?	X		The use of herbs for pest control will be part of the integrated pest control measures.
4.	Will the subproject lead to contamination of ground and surface waters by herbicides for vegetation control and chemicals for pest control?		X	
5.	Will the subproject lead to increased sedimentation in river stream?		X	
6.	Will the subproject involve the use of chemicals or solvents?	X		Chemical may be used for pests control on maize
D.	**Noise and Air Pollution Hazardous Substances**			
7.	Will the subproject increase the levels of harmful air emissions?		X	
8.	Will the subproject increase ambient noise levels?		X	
9.	Will the subproject involve the storage, handling or transport of hazardous substances?		X	
10.	Will the subproject generate large amounts of residual waste?		X	
E.	**Fauna and Flora**			

S No	ISSUES	YES	NO	Comments
11.	Will the subproject lead to the destruction of vegetation?		X	Project site is already used for farming activities
12.	Is the area home to a forest? Is the forest protected or proposed for protection? Is the forest high conservation value forest?		X	
13.	Is the subproject located in an area with designated natural reserves?		X	
14.	Is the subproject located in an area with endangered or conservation-worthy ecosystems, fauna or flora?		X	
15.	Is the subproject located in an area falling within 500 meters of national forests, protected areas, wilderness areas, wetlands, biodiversity, critical habitats, or sites of historical or cultural importance?		X	
16.	Is the project likely to cause effects on rare, vulnerable and/or important species from an economic, ecological, cultural point of view?		X	
17.	Will the project have a potential to introduce alien species not native to the area (even if not intended)?		X	
18.	Will the subproject involve the disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes)?		X	
19.	Will the subproject lead to the destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development?		X	
20.	Will the subproject involve the use of water for irrigation?		X	Demonstration activities will be rain-fed.
21.	Is the source of water a multiple water use point (i.e. livestock and domestic use), if yes does the project pose a risk to other users?		X	
22.	Does water scarcity exist in the area, and if yes, does it pose a risk to the project?		X	
23.	Are there areas at risk of salinization? If yes, does it pose a risk to the project?		X	
24.	Will the subproject lead to the disruption/destruction of wildlife through interruption of migratory routes, disturbance of wildlife habitats, and noise-related problems?		X	
25.	Does the project have potential for carbon capture and, if so, is this potential being utilized?		X	
G.	**Cultural Property**			
26.	Is the subproject located in an area with designated cultural properties such as archaeological, historical and/or religious sites?		X	
27.	Is the subproject in an area with religious monuments, structures and/or cemeteries?		X	
28.	Is the subproject located in an area of tourist importance?		X	

S No	ISSUES	YES	NO	Comments
H.	**Expropriation and Social Disturbance**			
29.	Will the subproject involve land expropriation or demolition of existing structures?		X	
30.	Will the subproject occur in an area with squatters or lead to relocation of squatters?		X	
I	**Labor and working condition**			
31.	Will the subproject involve the use of contracted workers (i.e. both skilled and unskilled labor)?	X		Pilot activities will involve staff of implementing partners and casual labor from project communities.
32.	Will the subproject involve the use of primary supply workers?		X	
33.	Is the subproject located in an area with historical cases of child labor?		X	
34.	Is the subproject located in an area with historical cases of forced labor?		X	
35.	Are there adequate and appropriate use of personal protective clothing in project area?		X	Farmers in the community don't use adequate and appropriate PPE.
36.	Is the subproject located far (beyond 1km) from the nearby community (where farmers can access toilet facility)?		X	
37.	Are there case of sexual exploitation and abuse/ Sexual Harassment in this area	X		
38.	Will the subproject involve participation of vulnerable groups (e.g. women, disabled, elderly, youth etc.)? kindly identify specific risks that each vulnerable group may face?	X		Women, youth, and the elderly will be involved but will not face any specific risks in this community.
J	**Social inequalities, conflicts, gender**			
39.	Could the project lead to an increase in social inequalities?		X	
40.	Could the project lead to incompatible uses or social conflicts between the different users?		X	
41.	Does the project disadvantage the integration of women and other vulnerable groups?		X	
K	**Health and safety**			
42.	Can the project induce risks of accidents for workers or the population?	X		There could be slip and falls, cutlass cuts, travel accident etc.
43.	Can the project cause health risks for workers or the population?	X		Through wrongful exposure to pesticides to be used as well as COVID-19.
44.	Can the project lead to an increase in disease vectors?		X	