Proposed GCF/UNEP/EPA Project "Climate-resilient landscapes for sustainable livelihoods in northern Ghana"

Project's Environmental and Social Assessment and Management Framework (ESAMF)

For Public Disclosure

UN environment

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Contents

Acronyms

CCAP	Community Climate Action Plan
CIG	Common Interest Group
DA	District Assembly
DAPs	District Adaptation Plans
DEMC	District Environmental Management Committee
DMTDP	District Medium-Term Development Plan
DPCU	District Planning Coordination Unit
EbA	Ecosystem-based adaptation
ECOWAS	Economic Community of West African States
EIA	Environmental impact assessment
EPA	Environmental Protection Agency
ESERN	Environmental, Social and Economic Review Note
ESMF	Environmental and Social Management Framework
ESMS	Environmental and Social Management System
ESS	Environmental and Social Safeguards
FBO	Farmer-based organisations
GCF	Green Climate Fund
GDP	Gross Domestic Product
GECCA	Ghana Environmental Conventions Coordinating Authority
GoG	Government of Ghana
ITCZ	Intertropical Convergence Zone
LFI	Local financial institutions
MESTI	Ministry of Environment, Science, Technology and Innovation
MoF	Ministry of Finance
MoFA	Ministry of Food and Agriculture
MSMEs	Micro, small and medium enterprises
NADA	Northern Development Authority
NAP	National Adaptation Plan
NGO	Non-governmental organisation
NSLMC	National Sustainable Land Management Committee
PET	Potential evapotranspiration
PSC	Project Steering Committee
REMC	Regional Environmental Management Committee
SADA	Savannah Accelerated Development Authority
TCO	Technical Coordination Office
VSLA	Village Savings and Loans Association
WDM	Water Demand Management
WRC	Water Resources Commission

Executive summary

The agriculture sector in northern Ghana — which supports ~80% of the total workforce — is dominated by smallholder farmers practising mostly rainfed, subsistence farming, using mostly traditional agricultural practices and minimum technology.

The long duration of the dry season experienced in northern Ghana results in prolonged periods of food shortages. High temperatures in northern Ghana already contribute to reduced water-retention capacity and frequent drying of water bodies — such as wells, dams, and streams — that serve as sources of water for both livestock and household use, including for dry season gardening. Increased temperatures linked to climate change exacerbate the problem through the expansion of ranges of the weeds, pests and fungi that cause food spoilage. Conversely, extreme rainfall events often result in severe flooding across many areas of northern Ghana, destroying crops, taking lives and damaging assets and public infrastructures, as well as reducing storage capacity of reservoirs in northern Ghana, causing them to dry-up quicker in the dry season as well as increase the risk of dam collapse, leading to downstream flooding.

The proposed project objective is to enhance the climate resilience of vulnerable smallholder farming communities in northern Ghana by improving food security and enhancing the agro-based rural economy. The project strategy is three-fold comprising the improved climate data and early warnings made available to facilitate proactive drought and flood management, the adoption of climate-resilient agriculture and water storage to enable dry season farming, and investments in landscape restoration (such as riverbank restoration, agroforestry, reforestation and fire management) to improve soil health and integrity, physical and land-based water retention and protect physical assets from flooding.

The project will work at three levels: community level on planning and implementation systems, at the regional level on strengthening weather forecast capability that will serve the Northern Sector, complementing investments in forecasting capability in the South of the country as well as national level in establishing a national action plan for drought and flood hazard management. The community level integrated ecosystem-based adaptation approach will inform the District level planning and budgeting systems, through building capacity and awareness of District planning officers to scale up the project approach. Combined with associated community training, extension services and awareness-raising, this will increase opportunities for knowledge and technology exchange between communities, and thereby promote autonomous upscaling of these interventions.

The proposed project will be implemented in the North East, Upper East and Upper West Regions of northern Ghana, in eight districts in northern Ghana that have been specifically chosen because of their high vulnerability to climate change impacts. The eight districts are:

- Jirapa, Lambussie, Lawra and Wa West Districts in the Upper West Region
- Binduri and Garu Districts in the Upper East Region; and
- East Mamprusi and Yunyoo-Nasuan Districts in the North East Region.

Across the eight districts, the project will provide agricultural and livelihood support for 120 communities over seven years as well early warning advisories for the entire population in the 8 Districts.

The EPA is the main executing entity, that will work in partnership with Ministry of Food Security and Agriculture together with the Ghana Meteorological services and Water Resources Commission to deliver an integrated, ecosystem-based adaptation strategy that will transition the smallholder farming communities of northern Ghana more climate-resilient, productive and sustainable livelihoods.

This Environmental and Social Management Framework (ESMF) provides clear and systematic guidelines to identify environmental and social risks linked to project interventions and outlines the institutional and administrative pathways to address these risks. The proposed project was assessed according to the UNEP Environmental and Social Sustainability Framework (ESSF) — using UNEP's Safeguard Risk Identification Form (SRIF)[1] — and classified as Moderate Risk or Category B (See Annex VI). Category B projects, as per the UNEP and GCF criteria involve potential adverse environmental and social impacts that are moderate in severity, site-specific, and largely reversible. These impacts are typically confined to the project area and can be effectively managed through targeted plans, processes, and good practice. Regular project-level actions, as outlined under this Environmental and Social Management Framework (ESMF) are usually sufficient to address risks of this magnitude and include actions such as ongoing stakeholder engagement, operation of grievance redress mechanisms and site-specific plans and processes. However, despite the pre-identification of risks as part of the project development process, all interventions will be subjected to continuous screening to ensure that they comply with GCF environmental and social safeguards (ESS) throughout project implementation. The purpose of this is to identify and develop strategies to mitigate any additional risks or adverse impacts that may emerge during the implementation period. An Indigenous Peoples Plan (IPP) will be developed in line with GCF requirements to ensure that Indigenous Peoples are meaningfully consulted, their free prior and informed consent secured when needed, and appropriately supported throughout implementation. In addition, an Initial Environmental Examination (IEE) will be undertaken for the proposed S-band radar installation and for other infrastructure which may require an IEE under Ghanian law, in conjunction with the AE's Safeguards screening procedure. The outcome of the combined IEE and screening procedure will determine whether a scoped, site-specific Environmental and Social Impact Assessment (ESIA) and Environmental and Social Management Plan (ESMP) will be required[2]. The framework also identifies important environmental and social indicators and outlines the monitoring guidelines and reporting criteria for each of them.

As the lead executing entity with the responsibility for environmental risk management in Ghana, the Environmental Protection Agency (EPA) is responsible for ensuring that the actions prescribed in the ESMF are applied to all project activities. The EPA, together with UNEP, will provide technical guidance and specialist advice on environmental and social issues to all stakeholders. Furthermore, all potential delivery organisations – including private contractors – will be vetted by the EPA in terms of their environmental and social performance to ensure compliance with the ESMF.

On the ground, the District Environmental Management Committees (DEMCs) – with the aid of district extension officers – will be responsible for overseeing regular environmental inspections of project sites, compiling the findings into mitigation compliance reports. Further independent reviews may be conducted to ensure compliance with the ESMF where deemed necessary. The DEMCs will also provide training and advice to raise awareness of effective environmental and social management practices for all stakeholder to promote compliance with ESMF guidelines.

[1] The UNEP screening process based on nine Safeguard Standards included under their Environmental and Social Management System (ESMS).

[2] The S-Band Radar that is included in the proposal is the only intervention which has been assessed to have any likelihood of triggering the need for a site-specific ESIA or ESMP. Depending on the screening results, other subplans may be developed as necessary (i.e. Health and Safety Plan, Emergency Response Plan, etc.). However all interventions will be screened according to the relevant requirements (as per national regulations and the procedures set out in this ESMF) and scoped ESIA's or targeted management plans will be developed wherever required. A outline of an ESIA and ESMP is provided as Annex V in this ESMF.

The actions necessary to carry out the avoidance, minimisation and mitigation measures for the environmental and social risks identified during the screening process are provided in Table 10 (See next page).

Table 1. Mitigation measures for potential environmental and social safeguard impacts.

Potential environmental/social impact	Avoidance / mitigation measure	Relevant national regulations/policies applicable	Responsibility	Cost
Requirements for private land use (SS5). *Relevant for activities under Output 1*	• The project will in all instances seek to use government owned land for the installation of monitoring equipment. • Any requirement for private land, or the installation of infrastructure on pastoralist grazing areas usage will be negotiated in good faith and secured via a process aligned with free-prior and informed consent (FPIC). • No monitoring equipment will be installed on land that is used or may be used for productive purposes in the future as per community input. • Any land-use/access agreements will be recorded via a shared land-use agreement or record of donation and submitted to the GCF. • No activities that may impede existing land-use practices, or access to livelihood resources, or result in land-use conflict will be supported	Land Act, 2020 Office of the Administrator of Stool Lands Act, 1994 Forestry Commission Act, 1999 Customary Land Secretariat Regulations, 2019 Local Government Act, 2016 (Act 936) Environmental Protection Agency Act, 1994 Land Use and Spatial Planning Act, 2016	MLNR – EPA Office of the Administrator of Stool Lands DA's Traditional Authorities (TAs)	Salaries
Impacts on marginal groups, Indigenous Peoples or inequitable distribution of project benefits (SS5; SS7) *Relevant to activities under Output 1, Output 2 and Output 3*	• The project will include the development of an Indigenous Peoples Plan (IPP) in consultation with affected Indigenous Peoples, including the Fulani. • The project will include E&S screenings for all on-the-ground activities, to ensure that these activities are implemented in a manner that is consistent with current local practices and does not prejudice one groups over another or inhibit access to resources, such as water, on which Indigenous Peoples or pastoralists rely.	Land Act, 2020 Environmental Protection Agency Act, 1994 National Climate Change Policy Local Governance Act, 2016 Customary Land Secretariat Regulations, 2019	MLNR – EPA DA's Traditional Authorities (TAs) ESS focal points (district level and national level roles)	Salaries Additional budget included under the IPP implementation ($10,000 annual). GRM Budget ($5,000 annual).

	• The project will ensure that FPIC is gained prior to the installation of any infrastructure on land used for grazing by pastoralists or Indigenous Peoples. • The IPP will ensure the project will utilises FPIC process for these engagements with Indigenous Peoples and ensure FPIC engagement reports and agreements are available for submission to the GCF. • The project will include an accessible GRM, with dedicated considerations for access for Indigenous Peoples, vulnerable groups and a dedicated SEAH grievance channel. • Project staff and contractors will be required to sign and abide by a code of conduct. • Project staff and contractors will be sensitized to SEAH risk management.	Chieftaincy Act, 2008 Right to Information Act, 2019 Development Planning Systems Act, 1994		
Construction related risks, including those pertaining to biodiversity impacts, health and safety and labour practices (SS1; SS3; SS4; SS8) *Relevant for activities under Outputs 1, 2 and 3*	• Environmental and Social Screenings will be undertaken for each selected site and will consider risks covered under UNEPs Safeguards Standards. • If required, an IEE will be undertaken (in compliance with national regulations and appropriate management plans implemented. • All construction works will utilise local labour if labour is required. • Construction standards will comply with national regulation, including for minimum safety standards. • All procurement will be implemented according to UNEP policies and national regulations, ensuring no child labour, forced	Land Act, 2020 Environmental Protection Agency Act, 1994 Building Regulations, 1996 Land Use and Spatial Planning Act, 2016 Labour Act, 2003 Public Procurement Act, 2003 Occupational Health and Safety Policy	MLNR – EPA DA's Traditional Authorities (TAs) ESS focal points (district level and national level roles)	Salaries Discretionary Safeguards fund (estimated at $60,000 across entire project[3])

[3] For ESMF updates, screenings, IEA and any need for specialist studies, ESIA's or development of capacity building material – budgeted at $10,000 annually in year 1 – 5 with half budget in year 6 and 7.

	labour or coercive labour practices occur under the project. • Project sites will be subject to regular monitoring and spot checks by EPA. • Contractors and workers will be formally contracted and required to sign and abide by a code of conduct. • Boreholes, when installed will consider appropriate siting to reduce likelihood of contamination and potential water quality issues (in cases where communities will use boreholes for drinking water). • Communities receiving boreholes will receive training on proper operation and management to reduce risks of contamination or vector/water borne disease.	Ghana Building Code, 2018		
Introduction of harmful species including genetically modified organisms (GMOs) (SS1) *Relevant for activities under Output 2 and Output 3*	• All species to be included in the menu of interventions — including any proposed genetically modified organisms (GMOs) — will be screened (based on behaviour in the northern savanna and similar environments) to ensure that they are not invasive, highly water demanding, likely to negatively impact other crops grown nearby, or require substantial application of fertiliser or pesticides. • Mixed farming systems will be encouraged, as opposed to extensive mono-cropping, to reduce pest and market vulnerability. • If GMOs are proposed, their use will be subject to regulatory review in accordance with Ghana's national biosafety procedures	Forestry Commission Act, 1999 Environmental Protection Agency Act, 1994 The Tree Crops Policy Biosafety Act, 2011 (Act 831)	Forestry Commission MLNR – EPA	Staff Salaries (co-finance)[4]

[4] Under Activity 2.2, existing government staff working on the project (salaries paid by in-kind contributions) will review all interventions proposed in the individual CCAPs against evaluation criteria set by DEMCs, REMCs, the PMU and Directorate of Crop services. One of the evaluation criteria will be to ensure that the proposed interventions do not violate any of the social and environmental safeguards put in place by the proposed project. The reviews will take place for the first 5 years of the project as CCAPs are developed in each of the beneficiary communities. This cost is captured in budget note B16.

	and with due regard to the Cartagena Protocol on Biosafety.			
Habitat conversion (SS1) *Relevant for activities under Output 2 and Output 3*	• Agricultural EbA interventions will only be supported on existing farmlands. • The project will not finance conversion of natural habitats to cropland or plantation, nor directly finance large-scale irrigation. • The project will finance improved natural habitat management and improved fire management. • The project excludes the development of monocropping systems and will ensure that any perennial crops (e.g. cashew, mango) are integrated into diversified or mixed cropping systems. • Training and extension support provided under the project will promote intercropping, agroforestry, and climate-resilient diversified farming systems, in line with the project's exclusion of monocropping.	Forestry Commission Act, 1999 Land Use and Spatial Planning Act 2016 The Office of the Administrator of Stool Lands Act 1994 Environmental Protection Agency Act 1994 Ghana National Fire Service Act, 1997 Lands Commission Act, 2008 The National Environment Policy, 2014	Forestry Commission MLNR – EPA Office of the Administrator of Stool Lands	Staff Salaries[5]
Overly rigorous fire suppression (SS1) *Relevant for activities under Output 3*	• The project will support improved fire management through controlled early burning, rather than outright fire suppression. • Village fire volunteers may receive training and basic equipment but will not be	Ghana National Fire Service Act, 1997 National Wildfire Management Policy, 2006	MLNR – EPA Ghana National Fire Services (NFS) DA's	**$19,200 per year for the first five years of the project (Included in project activity budget)[6]

[5] Under Activity 2.2, existing government staff working on the project (salaries paid by in-kind contributions) will review all interventions proposed in the individual CCAPs against evaluation criteria set by DEMCs, REMCs, the PMU and Directorate of Crop services. One of the evaluation criteria will be to ensure that the proposed interventions do not violate any of the social and environmental safeguards put in place by the proposed project. The reviews will take place for the first 5 years of the project as CCAPs are developed in each of the beneficiary communities. This cost is captured in budget note B16.

[6] Under Activity 2.1, target communities will be trained on climate change impacts and the menu of adaptation interventions. Within this activity, target communities will be trained on appropriate fire management. This training will take place for the first five years of the project. This cost is captured in budget note C7.

	encouraged to directly tackle large and dangerous fires.		Traditional Authorities (TAs)	
Harvesting of wild species (SS1) *Relevant for activities under Output 2 and Output 3*	• Increased extractive use of natural resources will only be supported where populations are sufficiently robust, and subject to community monitoring systems. • Interventions to support harvesting of wild species will only be supported where this is traditional activity and only on land in which the community has existing access or tenure (for example within community managed forestry plots).	Environmental Protection Agency Act, 1994 Forestry Commission Act, 1999 Ghana Food and Agriculture Sector Development Policy (FASDEP II), 2007 Ghana Forest and Wildlife Policy, 2012	MLNR – EPA Forestry Commission	**$24,000 per year[7]
On-farm earthworks (SS1; SS4) *Relevant for activities under Output 3*	• Only as part of EbA interventions selected by landowners and users. • Only within existing fields, or in near-field sites involving habitats that are degraded and/or common within the agricultural landscape. • Water-harvesting structures (e.g. dugouts) may be constructed along ephemeral streams or eroded drainage lines, but not within well-vegetated, perennial watercourses. • Training of farmers on the use of climate decision-support system will include provisions on how to utilise the tools in a sustainable and responsible manner that will	Lands Commission Act, 2008 The Lands (Statutory Wayleaves) Act, 1963 Environmental Protection Agency Act, 1994 Local Government Act, 2016 The Office of the Administrator of Stool Lands Act 1994	MLNR – EPA DA's DDoA Office of the Administrator of Stool Lands	**$80,000 per year[8]

[7] Under Activity 4.1, local intervention monitor will be designated in each target community to monitor progress and the socio-ecological impacts of the climate change adaptation interventions. Within this monitoring framework, the intervention monitors will monitor the populations of species targeted for NTFPs to ensure that extraction rates are sustainable. Monitoring will take place throughout the lifespan of the project. This cost is captured in budget note E3.

[8]Under Activity 2.3, national consultants will provide technical assistance in the implementation and maintenance of adaptation interventions. These consultants may be drawn from government departments (e.g. department of water to oversee riverbank stabilisation interventions), academia or specialised research institutes. Amongst other technical advice, these consultants will provide specialised guidance to ensure that interventions adhere to all relevant environmental and social safeguards and standards. This will take place throughout the lifespan of the project as interventions are implemented in different target communities This cost is captured in budget note B23.

	not result in negative impacts to groundwater resources, the balance of surface water and water quality. • Only local-labour construction techniques will be use, no work camps will be established. • If any heavy equipment is required, it must be used and under qualified supervision. • Earthworks must be conducted during the dry season, as required • For excavations: i) spoil should be used for bunding if possible, or otherwise left in low mounds (<1m height) at least 10m from water courses; and ii) topsoil must be piled separately and used to cover spoil. • Chance finds of artefacts suspected to have cultural or historical value will result in: i) immediate cessation of work and notification of a project officer; ii) inspection by TCO to determine if genuine artefact; and if so iii) notification of Ministry of Chieftaincy & Culture to determine appropriate steps before work may continue. • Code of conduct for all contractors and project workers	The Ghana Strategic Investment Framework for Sustainable Land Management (GSIF), 2011–2025		
Increased use of agricultural chemicals (SS3; SS4) *Relevant for activities under Output 2*	• Species dependent on high pesticide or fertiliser use will not be introduced. • The project will not finance pesticides. • Integrated pest and nutrient management approaches will be included within EbA interventions and capacity building programs as appropriate.	Part Two of the Environmental Protection Agency Act, 1994 Ghana Food and Agriculture Sector Development Policy (FASDEP II), 2007	MLNR – EPA DDoA	**$47,295 per year for the first five years of the project provided by in-kind contributions[9]

[9] Under Activity 2.2, existing government staff working on the project (salaries paid by in-kind contributions) will review all interventions proposed in the individual CCAPs against evaluation criteria set by DEMCs, REMCs, the PMU and Directorate of Crop services. One of the evaluation criteria will be to ensure that the proposed interventions do not violate any of the social and environmental safeguards put in place by the proposed project. The reviews will take place for the first 5 years of the project as CCAPs are developed in each of the beneficiary communities. This cost is captured in budget note B16.

Increased demand for irrigation (SS1; SS3) *Relevant for activities under Output 2*	• The project will not finance large-scale or diesel pump irrigation. • The project may finance improvement of existing irrigation schemes or those being introduced by other projects, e.g. through application of more efficient technologies such as drip or pot irrigation, or through capacity building of water user groups for better management and maintenance of irrigation systems, and resolution of water use disputes.	Environmental Protection Agency Act, 1994 Water Resources Commission (WRC) Act, 1996 National Action Programme to Combat Drought and Desertification The Ghana Irrigation Policy, 2011	DDoA GIDA MOFA – Agricultural Extension Services Directorate MOFA – Women in Food and Agricultural Development Directorate	**$80,000 per year[10]
Pollution and hazardous waste risks from small-scale processing by beneficiaries (SS3; SS4) *Relevant for activities under Output 2*	• Provide training to beneficiaries on safe handling, storage, and disposal of materials used in small-scale processing activities (e.g. caustic agents in soap-making, by-products from shea processing). • Disseminate good practice guidance on pollution prevention, resource efficiency, and environmentally sound waste disposal tailored to common livelihood activities. • Promote the use of low-input, low-pollution processing techniques through technical support and extension services.	Environmental Protection Agency Act, 1994 Hazardous and Electronic Waste Control and Management Act, 2016 (Act 917) Ghana Food and Agriculture Sector Development Policy (FASDEP II), 2007	EPA MOFA – Agricultural Extension Services Directorate MOFA – Women in Food and Agricultural Development Directorate	Staff Salaries (co-finance)

[10] Under Activity 2.3, national consultants will provide technical assistance in the implementation and maintenance of adaptation interventions. These consultants may be drawn from government departments (e.g. department of water to oversee riverbank stabilisation interventions), academia or specialised research institutes. Amongst other technical advice, these consultants will provide specialised guidance to ensure that interventions adhere to all relevant environmental and social safeguards and standards. This will take place throughout the lifespan of the project as interventions are implemented in different target communities This cost is captured in budget note B23.

1. Introduction

1.1. Background

Ghana is a West African country situated along the Gulf of Guinea of the Atlantic Ocean. With a population of approximately 27.4 million people in 2015[11], Ghana is the 48th most populous country in the world. Over the coming century, it is projected that Ghana's population will nearly triple in size, reaching ~73 million people by 2100[12]. The country covers an area of 238,535 km^2 and is bordered by Burkina Faso to the North, Côte d'Ivoire to the west and Togo to the East. The administrative divisions of Ghana consist of 10 regions, which are divided into metropolitan, municipal and ordinary assemblies, forming a total of 216 districts. For the purposes of this Environmental and Social Management Framework (ESMF), the administrative regions of Ghana are partitioned into the northern regions (including the Northern, Upper East and Upper West Regions) and southern regions (including the Ashanti, Brong Ahafo, Central, Eastern, Greater Accra, Volta and Western Regions).

1.1.1. Economic background

Ghana's economy has experienced consistent growth over the last five decades, with the Gross Domestic Product (GDP) increasing from ~US$1.2 billion in 1960 to a peak of ~US$36.6 billion in 2014 The enhanced growth observed during the period 2000–2011 allowed the country to attain lower-middle income status in 2010 – a decade earlier than expected – with a Gross National Income (GNI) per capita of US$1,260[13]. In 2011, Ghana had the fastest growing economy in the world with a growth rate of 13.4%. As one of the few countries in West Africa with lower-middle income status, Ghana is considered an economic leader in the region and is an influential member of the Non-Aligned Movement, the African Union, the Economic Community of West African States (ECOWAS), Group of 24 and the Commonwealth of Nations.

As Ghana's economy matured over the last 50 years, there has been a noticeable shift from a primarily agrarian towards a services-based economy. The services sector has replaced the agriculture sector as the highest contributor to GDP, accounting for 51% of the country's GDP in 2015. With increased exports in commodities such as gold, bauxite, manganese and diamond – and recently oil and gas – the industry sector has also surpassed the agriculture sector in terms of contribution to GDP, with a contribution of 28% in 2015. The agriculture sector, however, still accounts for 21% of GDP and provides employment for ~45% of Ghanaians compared with the 41% provided by the services sector and 14% by the industry sector[14,15]. The agriculture sector, therefore, remains an important source of income and employment in Ghana. The crops subsector – with significant contributions from cocoa production – continues to be the single largest contributing subsector to the economy of Ghana, accounting for 16% of GDP in 2015[16].

[11] The World Bank. 2015. Ghana. Available at: http://data.worldbank.org/country/ghana
[12] United Nations Department of Economic and Social Affairs, Population Division. 2015. World Population Prospects: The 2015 Revision.
[13] Calculated using the World Bank Atlas method.
[14] Estimates are for 2013
[15] The World Bank. 2013. Ghana. Available at: http://data.worldbank.org/country/ghana.
[16] Ghana Statistical Services. 2016. Revised 2015 Annual Gross Domestic Product.

1.1.2. Agricultural and natural resource-based livelihoods

Approximately 155,000 km^2 (~65%) of Ghana's total land area is classified as suitable for agriculture[17]. Of this land, 78,500 km^2 is under cultivation and only 300 km^2 is irrigated[18]. In 2010, the agricultural sector employed ~50% of the total labour force of Ghana (Table 2). Agriculture as a livelihood option is most popular in the three northern regions of the country and least popular in Greater Accra (Table 2).

Table 2. Agricultural employment in Ghana[19]. The bold border indicates the northern regions.

Administrative regions	Total labour force	Agricultural labour force	Agricultural as a % of total labour force
Ashanti	1,612,467	706,888	43.8
Brong Ahafo	819,190	566,066	69.1
Central	671,003	371,703	55.4
Eastern	927,699	531,635	57.3
Greater Accra	1,377,903	145,034	10.5
Northern	727,553	523,278	71.2
Upper East	360,508	242,077	67.1
Upper West	241,209	176,600	73.2
Volta	697,752	424,458	60.8
Western	856,830	511,826	59.7
Ghana	8,292,114	4,199,185	50.6

Cocoa is Ghana's principal agricultural export[20] and is commercially produced in the forested areas of the Ashanti, Brong-Ahafo, Central, Eastern, Western and Volta Regions. Ghana is the world's second largest exporter of cocoa, exporting ~US$2,220 million worth of cocoa beans in 2010.

[17] CountrySTAT. N.d. Food and agriculture data network. Available at: http://www.countrystat.org/home.aspx?c=GHA.
[18] Ibid.
[19] Ministry of Food and Agriculture. 2011. Agriculture in Ghana: Facts and figures.
[20] Ghana Statistical Services. 2011. Ghana's Economic Performance in 2010.

However, the cocoa subsector only accounts for 11% of the agricultural sector's contribution to Ghana's GDP[21]. Approximately 80% of national agricultural output is produced by non-commercial, smallholder[22] farmers who rely on rudimentary technologies to manage their lands. These farmers cultivate a variety of food crops to meet their nutritional and income needs. Popular crops include: i) roots and tubers such as cassava, cocoyam and yam; ii) cereals like maize, millet, sorghum and rice; iii) legumes such as groundnuts and beans[23]; and iv) plantain. Ghana is the world's sixth largest producer of cassava, producing nearly 14 million metric tonnes in 2010. Approximately 90% of Ghana's cassava crop is produced and consumed by smallholder farmers.

The hoe and cutlass are the primary farming tools used by smallholder farmers, and mechanised farming is uncommon. Few smallholder farmers have access to irrigation infrastructure and, as a result, are highly dependent on rain for their livelihoods. Farmers in Ghana primarily use two farming systems to manage their agricultural land; bush fallow and continuous cropping[24]. The bush fallow system involves the rotation of land between natural vegetation and crops. Using this system, farmers cultivate an area of land for several years, then temporarily abandon the land and clear and cultivate a natural area. In Ghana, natural areas of vegetation are often cleared using slash and burn techniques. The abandoned land is left uncultivated for several years to allow the fertility of depleted soils to replenish naturally. In the past, this period of abandonment lasted ~15 years, allowing for natural regeneration of vegetation and an increase in soil quality. Recently, however, because of increasing human populations and a subsequent shortage of suitable land, the fallow period has shortened to less than five years[25]. As a result, land degradation in Ghana is extensive and smallholder farmers are achieving significantly reduced crop yields compared with the past.

Livestock farming plays a major role in the maintenance of food security and income generation for smallholder farmers in Ghana. Approximately 41% of Ghana's rural population manage some form of livestock. This implies that ~6 million rural households partly depend on livestock for their livelihoods[26]. Smallholder livestock production – particularly in the northern regions of Ghana[27] – is stimulated by a strengthening demand for meat and other livestock products. This increasing demand for livestock products in Ghana and their integration into global markets provides new opportunities to small-scale livestock producers[28].

[21] Ghana Statistical Services. 2016. Revised 2015 Annual Gross Domestic Product.
[22] Farms <2 hectares in size
[23] Ministry of Food and Agriculture. 2011. Agriculture in Ghana: Facts and figures.
[24] Barry B, Obuobie E, Andreini M, Andah W, & Pluquet M. 2005.The Volta River Basin: Comprehensive assessment of water management in agriculture. International Water Management Institute.
[25] Barry B, Obuobie E, Andreini M, Andah W, & Pluquet M. 2005.The Volta River Basin: Comprehensive assessment of water management in agriculture. International Water Management Institute.
[26] Ghana Statistics Service (GSS). 2012. 2010 Population and housing census: Summary report of final results. Sakoa Press Limited, Accra, Ghana. Available at: http://www.statsghana.gov.gh/docfiles/2010phc/Census2010_Summary_report_of_final_results.pdf
[27] Upper East, Upper West and Northern Regions
[28] FAO. 2012. Livestock sector development for poverty reduction: An economic and policy perspective – Livestock's many virtues. Rome. Available at: http://www.fao.org/docrep/015/i2744e/i2744e00.pdf

The important livestock industries in the country include: i) cattle; ii) poultry; iii) pigs; and iv) small ruminants – goats and sheep[29]. Of these, the beef industry has the highest rate of production[30]. In terms of livestock, production is distributed across the rest of the country as follows: i) cattle in the Northern Savanna zones; ii) poultry in the southern region; iii) pigs in the Brong-Ahafo, Upper East, Volta and Western regions[31]; and iv) sheep and goat production throughout all of Ghana[32].

Apart from livestock farming, many smallholder farmers in Ghana supplement their household food supply and income with additional natural resource-based livelihood activities. Access to a livelihood source beyond rainfed agriculture and livestock provides smallholder communities in Ghana with year-round income. Additionally, the risks associated with farming are spread across multiple sources of income i.e. if crops are damaged or yields are reduced as a result of environmental hazards, farmers have another source of income available. Such alternative livelihoods provide vital income diversification and access to cash during critical periods where the risks of farming are high and rural savings, credit and insurance mechanisms are poorly developed or not available[33]. Consequently, it is estimated that 46% of households in Ghana operate non-farm enterprises – including those dependant on natural resources[34]. Examples of natural resource-based livelihoods include woodlots, fruit and nut cultivation, fish farming, beekeeping, snail breeding and mushroom farming (Table 3). The specificity of certain natural resource-based livelihoods to a specific area are influenced by the location, culture and resources in an area.

1.1.3. Land degradation

Natural ecosystems and agricultural land in Ghana have been severely degraded over the past few decades. With 69% of the total land area prone to severe land degradation, Ghana is well above the Sub-Saharan Africa average of 43%[35]. The main causes of this degradation are *inter alia*: i) deforestation for wood and charcoal production and clearing for agricultural activities; ii) wildfires to clear natural vegetation for agriculture; iii) overgrazing by cattle; and iv) soil erosion and fertility loss as a result of unsustainable farming practices (see Section 2.4.2 above). The magnitude of the effect of this degradation has increased overtime as the population of Ghana has grown. By reducing the soil fertility of agricultural land and impeding the delivery of goods and services from natural ecosystems, land degradation can have serious negative consequences for Ghanaians. For example, soil erosion and deforestation are estimated to cost ~2% and ~5% of the national annual GDP, respectively[36]. This ~US$530 million loss per annum because of land degradation is equivalent to more than one third of Ghana's annual Official

[29] FAO. 2024. Ghana at a glance. Available at: https://www.fao.org/ghana/fao-in-ghana/ghana-at-a-glance/es/.
[30] Ibid.
[31] Odoom E. 2021. Value chain analysis of pig production in Ghana: A review. University for Development Studies. Available at: http://udsspace.uds.edu.gh/bitstream/123456789/3264/1/VALUE%20CHAIN%20ANALYSIS%20OF%20PIG%20PRODUCTION%20IN%20GHANA%20A%20REVIEW.pdf
[32] FAO. 2024. Ghana at a glance. Available at: https://www.fao.org/ghana/fao-in-ghana/ghana-at-a-glance/es/.
[33] Reardon T. 1997. Using evidence of household income diversification to inform a study of the rural no-farm labour market in Africa. *World Development Report*. 25(5): 735–747.
[34] Mensah KK. 2014. Assessing the livelihood opportunities of rural poor households: a case study of Asutifi district. MSc. Thesis. Kwame Nkrumah University of Science and Technology, Kumasi. Available at: http://ir.knust.edu.gh/bitstream/123456789/7586/1/KYEREMEH%20KWAME%20MENSAH.pdf
[35] FAO, 2000.
[36] World Bank, DFID, ISSER, 2005.

Development Assistance. The effect of land degradation on poverty is also considerable. For example, soil loss increases the incidence of poverty by ~5% compared with a scenario of zero soil loss[37]. Moreover, land degradation impedes the progression out of poverty, especially in the three northern regions of Ghana.

1.1.4. Poverty and the north-south divide

The remarkable economic growth achieved in Ghana over the last decade resulted in millions of Ghanaians diversifying their livelihoods and rising out of poverty. As a result, Ghana achieved the Millennium Development Goal of halving levels of extreme poverty by 2015. However, this phase of economic and social development did not benefit the population evenly across the 10 regions of the country. For example, while ~2.5 million people rose above the poverty line[38] in the southern regions during the transition to lower middle-income status, ~1 million descended into poverty in the North. Six years after achieving lower middle-income status, the spatial disparity remains: the three northern most regions still have the highest poverty rates in the country and are home to ~2 million (~35%) of Ghana's ~5.8 million poor people. Poverty depth and severity are also generally greater in northern than in southern regions. In addition to lower economic activity and development[39,40], northern Ghana also lags the South in terms of social development. Child mortality is relatively high in the North[41,42,43], while data on indicators relating to education, sanitation, water, health, security and governance suggest that the northern regions have experienced less development compared with the southern regions[44]. It is apparent that the recent and rapid progress made in developing the southern regions of the country has not translated necessarily into better lives for most Ghanaians living in the North. This is also evident from the observation that large numbers of young northern Ghanaians are migrating South in search of economic opportunity[45].

[37] Diao and Sarpong. 2007. Cost Implications of Agricultural Land Degradation in Ghana. International Food Policy Research Institute, Discussion Paper.
[38] GH₵1,314 per person per year
[39] Indicated by night light intensity
[40] Mellander C, Lobo J, Stolarick K & Matheson Z. 2015. Night-time light data: a good proxy measure for economic activity? DOI: http://dx.doi.org/10.1371/journal.pone.0139779.
[41] Data were downloaded from: http://sheftneal9.wixsite.com/fse-data/download-data.
[42] Burke M, Heft-Neal S & Bendavid E. 2016. Understanding variation in child mortality across Sub-Saharan Africa: A spatial analysis. The Lancet Global Health, 2016, Volume 4, Issue 12, e936-e945.
[43] ICF International (2004–2015) Demographic and Health Surveys (various) [Datasets]. Calverton, Maryland: ICF International [Distributor], 2015.
[44] UNICEF. 2015. Ghana's District League Table 2015.
[45] van der Geest K. 2011. North-south migration in Ghana: what role for the environment? International Migration 49. doi:10.1111/j.1468-2435.2010.00645.x.

Table 3. A summary of poverty characteristics of the regions of Ghana[46,47]. The colour scale relates to the values for each poverty variable. The bold border indicates the northern regions.

Administrative regions	Total population	Population in poverty	% in poverty	Poverty depth	Poverty severity	Gini coefficient
Ashanti	4,671,948	636,787	14	4	2	37.3
Brong Ahafo	2,265,434	648,367	29	10	4	49.4
Central	2,113,763	514,143	20	6	2	42
Eastern	2,574,543	566,399	22	6	3	37.9
Greater Accra	3,888,237	257,401	7	2	1	37.6
Northern	2,445,061	1,079,494	44	16	7	38.8
Upper East	1,034,688	474,818	46	22	14	57.6
Upper West	688,328	477,631	69	36	23	49.7
Volta	2,086,557	694,615	33	12	6	43.7
Western	2,307,385	443,479	19	6	2	41.2
All of Ghana	24,075,944	5,793,134	24			
Northern regions	4,168,077	2,031,943	49			
Southern regions	19,907,867	3,761,191	19			

1.2. Description of project area

The proposed GCF project will be implemented in the Northern, Upper East and Upper West Regions of Ghana. The three northern regions are especially exposed to harsh climatic conditions and a changing climate. Minimum, maximum and average temperatures are highest in the northern regions, while rainfall is low and concentrated into just one annual wet season[48]. Under a business-as-usual scenario, mean temperatures are expected to increase by 17% and mean annual rainfall by 7% by 2085 for all three northern regions. Additionally, the northern populace is extremely sensitive to climate variability and change and has limited capacity to adapt to any changes in climate[49]. It is for these reasons of excessive exposure, elevated sensitivity and limited adaptive capacity that the northern regions of Ghana are considered the most vulnerable regions of the country to climate change[50]. See Annex 2: Feasibility Study, Section 2[51] for a detailed analysis that identifies the three northern regions as the most vulnerable to climate change impacts.

Within the northern regions of Ghana, implementation of the proposed GCF project will be focused in eight districts (Figure 1), namely the:

- Bunkpurugu, Yunyoo and Mamprusi East Districts of the Northern Region;
- Garu Tempane and Binduri Districts of the Upper East Region; and
- Lawra, Lambussie, Jirapa and Wa West Districts of the Upper West Region.

[46] Population figures are from 2012/2013 and not 2015.
[47] Ghana Statistical Services. 2015. Ghana Poverty Mapping Report.
[48] Whereas southern regions experience a bimodal rainfall pattern.
[49] Please see 'Problem setting' above for more information on sensitivity an adaptive capacity.
[50] Please see Annex 2: Feasibility Study, Section 4 for a full description of how climate change vulnerability was calculated.
[51] Section 2: Climate change vulnerability of the districts and regions of Ghana.

These districts were selected for project implementation using a comprehensive, quantitative assessment of district-specific vulnerability to climate change – incorporating exposure, sensitivity and adaptive capacity of communities – and a rigorous stakeholder engagement process (see Annex 2: Feasibility Study, Section 2; and Annex 7h: Stakeholder Engagement Plan). Districts benefiting from support from other ongoing projects (specifically those districts that are being targeted by ongoing SLWMP and Adaptation Fund project[52] interventions) were not considered for the project. By complementing rather than duplicating the ongoing efforts of existing projects, this project will increase the geographic and population coverage of support in the three northern regions. This increased geographic and population coverage will increase opportunities for knowledge and technology exchange between communities, and thereby promote autonomous upscaling of EbA interventions. This, in turn, will promote a paradigm shift from unsustainable agricultural practices to climate-resilient land management.

From those districts not currently receiving support, and taking climate change vulnerability scores into account, the final project districts were selected by national, regional and district level stakeholders from: i) the National Designated Authority (NDA) of Ghana within the Ministry of Finance (MoF); ii) members of the inter-ministerial Technical Advisory Committee (TAC) to the NDA; iii) staff of the Directorate of Crop Services from the Ministry of Food and Agriculture (MoFA); iv) representatives of the Environmental Protection Agency (EPA) from the Ministry of Environment, Science, Technology and Innovation (MESTI); and v) members of civil society organisations.

Within each district, 15 communities will receive direct support from the project. Each community will receive support for three consecutive years. Across the eight districts, the project will, therefore, support 120 communities over a period of seven years. The direct beneficiary communities have been selected based on a rigorous set of selection criteria and comprehensive consultations at the national, regional, district and community levels. The selection criteria includes *inter alia*: i) high vulnerability to climate change; ii) close proximity to at least five other vulnerable, non-beneficiary communities; iii) a willingness to participate; and iv) favourable land availability and access. In addition to the selection criteria listed above, other considerations, including the need for a representative geographic spread and equitable access across communities with different ethnic compositions has been considered in the final selection criteria. The selection process has involved consultations with: i) representatives from MESTI, MoFA and the NDA at the national level; ii) EPA and Department of Agriculture staff from the Northern, Upper East and Upper West regional offices; iii) zonal EPA officers within target districts; iv) District Assemblies (DA) from the eight target districts; v) leaders from potential beneficiary communities; and vi) potential beneficiary community members.

At the time of writing, four communities within each district have been selected based on the criteria described above. These communities were selected for detailed community consultations (see Annex 7h: Stakeholder Engagement Plan) that took place during the development of the proposed project. Three of the four communities already identified will receive support during the first year of project implementation. The remaining community, as well as the additional communities that will also be identified through the selection process described above, will receive support from the second year of project implementation onwards.

[52] Increased Resilience to Climate Change in Northern Ghana through the Management of Water Resources and Diversification of Livelihoods.

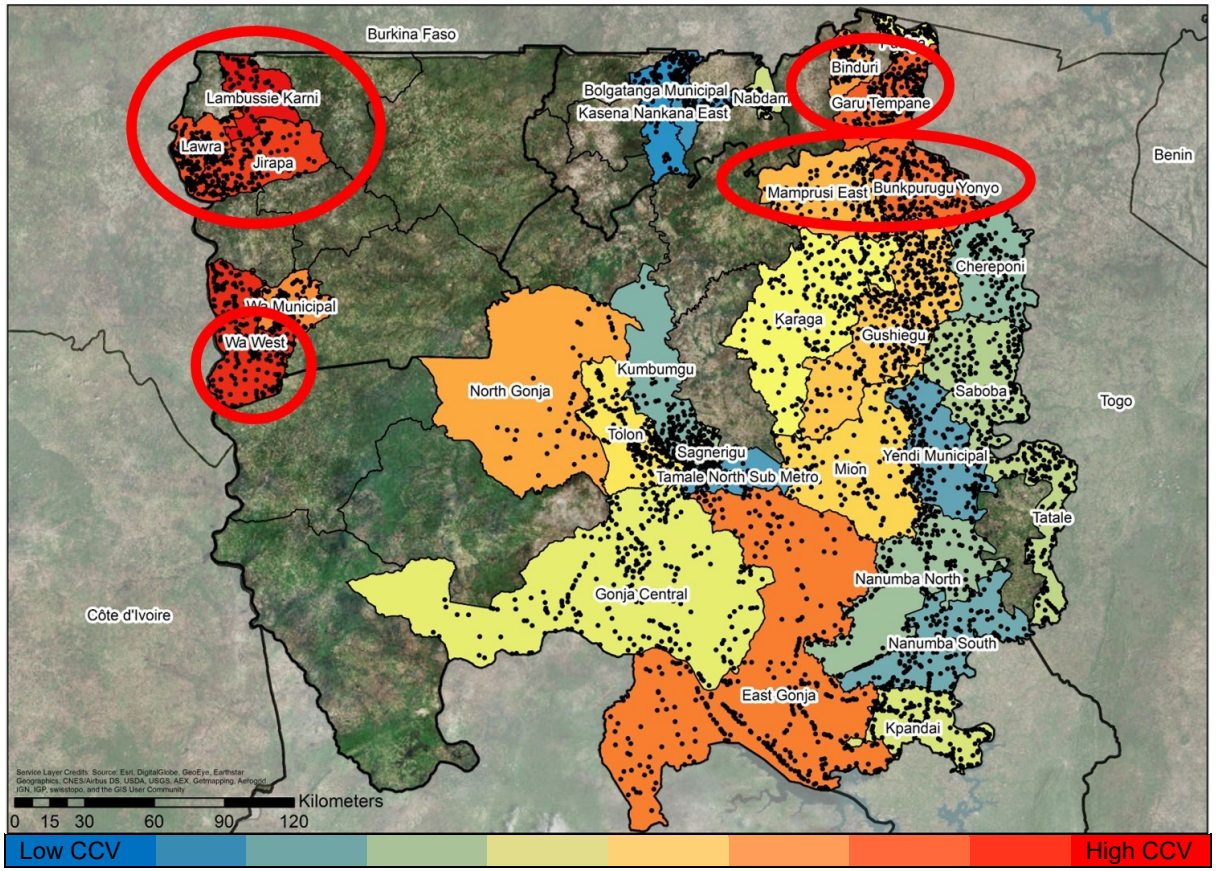

Figure 1. Target districts of the proposed GCF project within the three northern regions. Districts that are not depicted in this map are receiving support from the SLWMP and Adaptation Fund projects and were not considered eligible for selection.

1.2.1. Physical environment

1.2.1.1. Climate profile

The climate of Ghana is primarily determined by the interaction of the Intertropical Convergence Zone (ITCZ) and the West African Monsoon. The ITCZ is characterised by an area of calm winds that creates a boundary between the warm, moist winds of the West African Monsoon in the

southwest of Ghana and the dry, hot and dusty winds (the Harmattan) in the North-East. The location of the ITCZ oscillates on an annual basis, reaching its northern-most extent from June to September and its southern-most extent from January to March (Figure 2). The movements of the ITCZ and West African Monsoon create distinct temperature and rainfall regimes in northern and southern Ghana.

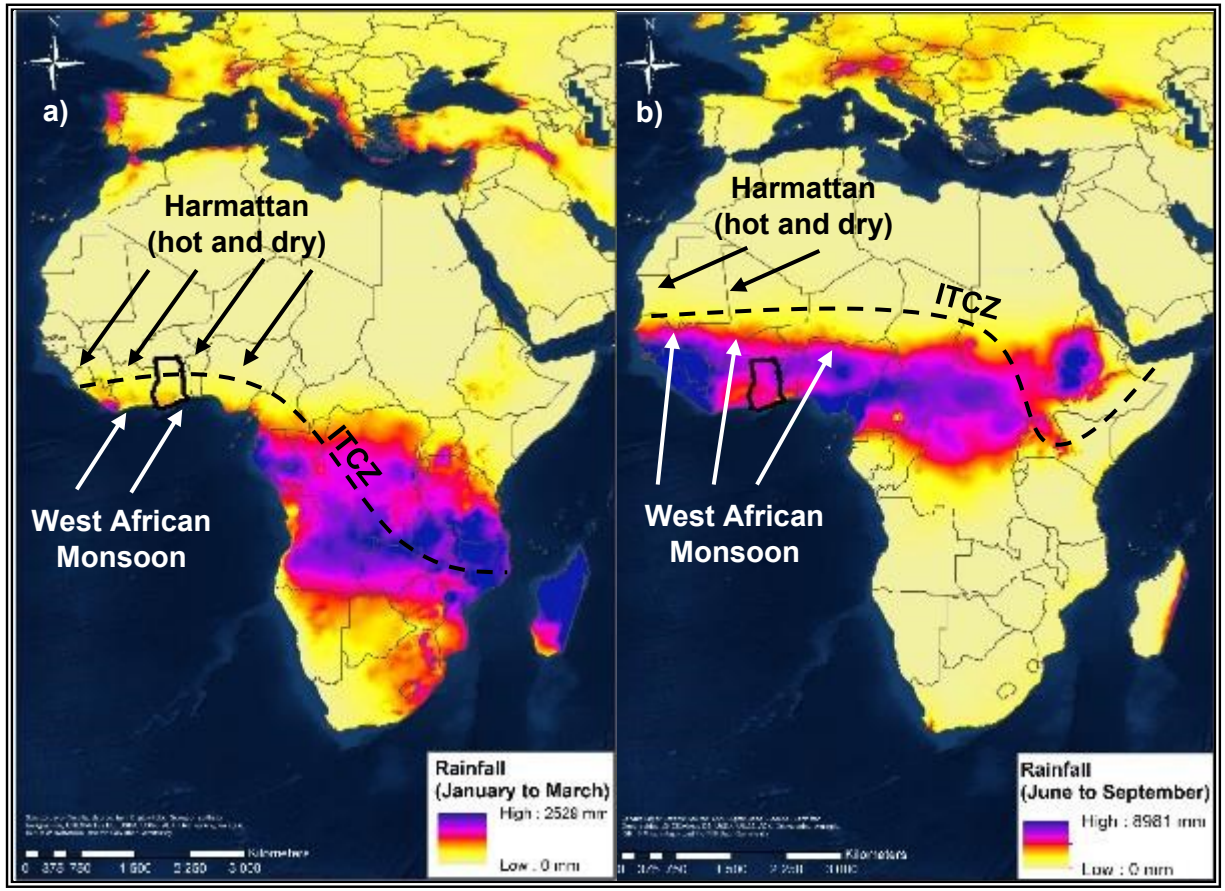

Figure 2. The interaction between the Intertropical Convergence Zone (ITCZ) and West African Monsoon from: a) January to March; and b) June to September. Ghana is shown in bold. Rainfall data are from www.worldclim.org.

While the southern regions of Ghana experience a bimodal equatorial rainfall pattern that allows for two annual growing seasons (the major and minor growing seasons), the northern regions have a unimodal tropical monsoon that only allows for a single growing season each year (major season). The two rainfall seasons of southern Ghana correspond to the northern and southern passages of the ITCZ across the region. In the North, the single rainfall season occurs when the ITCZ is in its northern position and the dry season prevails when the Harmattan wind blows north-easterly. As a result of the unimodal rainfall pattern, the northern regions experience more dry months (i.e. a longer dry season) and higher rainfall seasonality than the southern regions. The northern regions also receive less rainfall per annum than the southern regions, ~300 mm less per year on average.

Across Ghana, mean monthly temperatures are highest from February to April (ranging from ~27 ℃ in the South to ~32 ℃ in the North) and lowest from July to September (~19 ℃ in the South to ~27 ℃ in the North). While the mean minimum temperatures only vary slightly across the country because of the proximity of the equator and the absence of high altitude areas, mean maximum temperatures differ substantially. On average, the mean maximum annual temperature is ~3 ℃ (10%) higher in the northern than the southern regions. Additionally, the northern regions experience high daily ranges in temperature and extreme temperature seasonality. The high temperatures that occur from February to March in northern Ghana coincide with the dry season and the hot, dry Harmattan winds that blow in from the Sahara Desert.

Potential evapotranspiration (PET) – the amount of evapotranspiration that would occur if a sufficient water source were available – varies across Ghana and is highest in the three northern regions. As the northern regions also have the lowest mean annual rainfall, the annual moisture index (mean annual rainfall / potential evapotranspiration) is lowest in the North. With a mean annual moisture index of <0.50, the Upper East Region is considered the most arid region of Ghana.

1.2.1.2. Geology and Soils

The Upper East and the Upper West regions of Ghana are underlain by Birimian granitoids – including granitic and gneissic rocks – while the Northern region is underlain predominantly by sandstones, shales and limestones of the Voltaian system. Both fluvisol and leptosol soils are common in all ecological zones, developed on thoroughly weathered parent materials. The soils in the savanna zones of the North are low in organic matter (less than 2%), with high iron concentrations and are susceptible to severe erosion and nutrient depletion[53]. Groundwater Lateritic Soil is found extensively in the northern regions, characterised by a well cemented layer of iron stone at a shallow depth below the surface. This layer is largely impervious to rainwater, resulting in inundation of the topsoil during the wet season. However, during the dry season, these topsoils dry out and crops cannot be grown without irrigation[54].

1.2.1.3. Surface and Ground Water

[53] Oppong-Anane K. 2006. Country Pasture/Forage Resource Profiles - Ghana. FAO
[54] SAL Consult. 2010. EAMP for Sustainable Land and Water Management Project. Final Report.

The Northern Savanna Zone is primarily drained by several rivers and their tributaries, specifically the: i) White Volta and its tributaries – Morago, Red Volta, Atankwindi and Asibelika – in the Upper East Region; ii) Kulpawn with its tributary – Sisili – in the Upper West Region; and iii) Black Volta, Nasia and Oti rivers in the Northern Region. During the dry season, the flow of water in the Upper East and Upper West Regions drops significantly, reducing to disjointed pools or drying up completely during the peak of the dry season. With limited surface flow, especially during the dry season, the northern regions of Ghana highly dependent on groundwater resources. However, supply is limited and in areas experiencing over-extraction, wells and boreholes often run dry. This problem is further exacerbated by poor management and enforcement of groundwater regulations[55].

1.2.2. Biological environment

1.2.2.1. Agro-ecological zones of Ghana

Spatial variation in climate – as well as soil properties – influences ecological processes across Ghana. Based on the climate- and soil-induced differences in vegetation, Ghana is divided into six agro-ecological zones (Figure 3. Map of Ghana's agro-ecological zones). Savanna zones are found in the northern regions, while transition and forest zones are found in the southern regions.

[55] Yidana SM, Banoeng-Yakubo B, Aliou AS & Akabzaa T. 2012. Groundwater quality in some Voltaian and Birimian aquifers in northern Ghana — application of mulitvariate statistical methods and geographic information systems. Hydrological Sciences Journal, 57 (6), 1168–1183.

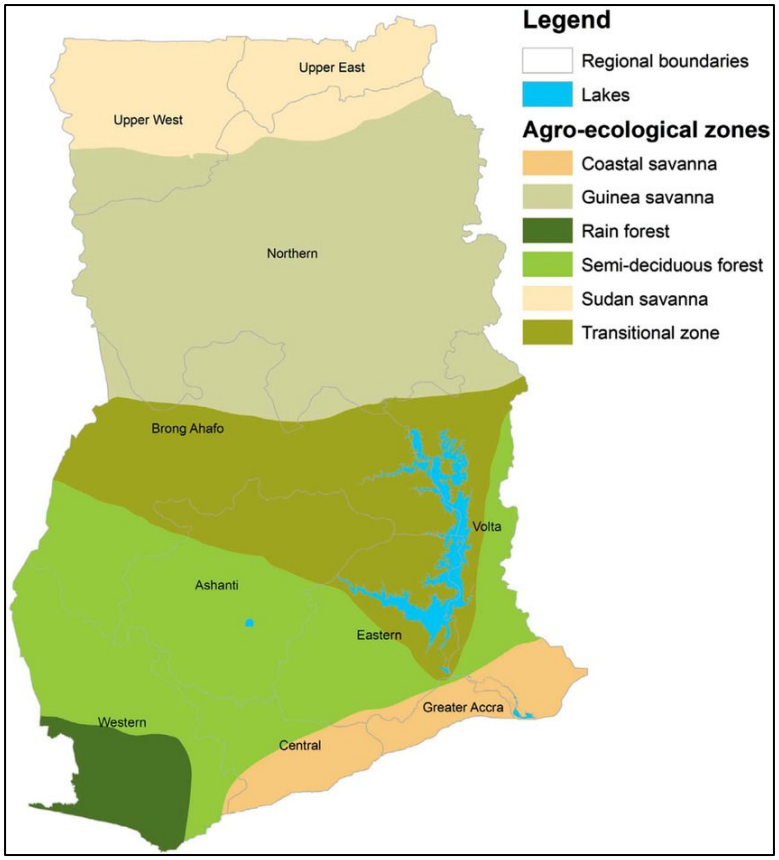

Figure 3. Map of Ghana's agro-ecological zones[56].

Guinea Savanna

The Guinea Savanna Zone (or Interior Savanna Zone) is located North of the Transitional Zone and is the largest agro-ecological zone in Ghana, covering the northern half of the country. The zone is characterised by wooded grassland, consisting of a ground cover of grasses of variable height interspersed with fire-resistant, deciduous, broad-leaved trees. In general, tree cover and height decrease from South to North along a gradient of decreasing rainfall. The Guinea Savanna Zone receives ~1,100 mm of rainfall per year, mostly during one rainfall season. Among the

[56] Demi, S and Sicchia, S. 2021. Agrochemicals Use Practices and Health Challenges of Smallholder Farmers in Ghana. *Environmental Health Insights.*

grass species present in the Guinea savanna, several species are important for grazing, particularly in densely populated areas. These include *Andropogon gayanus, Diectomis fastigiata, Pennisetum pedicellatum* and *Loudetia togoensis.* The common trees include *Vitellaria paradoxa* (shea), *Parkia biglobosa* (dawadawa), *Piliostigma thonningii, Combretum glutinosum, Anogeissus sp., Detarium* sp*., Afzelia* sp*., Prosopis* sp*., Pterocarpus* sp*., Butyrospermum* sp*., Antiaris* sp*., Vitex* sp*., Piliostigma* sp*., Lonchocarpus* sp*.* and *Acacia* sp*.*

Sudan Savanna

The Sudan Savanna Zone is located in the north-eastern corner of Ghana, with the majority of the zone located in Burkina Faso and Mali. It is characterised by fire-swept short grasses interspersed with low-density woodland. Grass cover is sparse, with some areas of land bare and severely eroded. The common trees include species of *Adansonia, Butyrospermum, Acacia* and *Parkia.* One school of thought holds that the Sudan Savanna Zone is merely an original area of the Guinea Savanna that has undergone severe degradation because of poor land use practices. The Sudan Savanna Zone receives the least rainfall of Ghana's agro-ecological zones (~940 mm per annum) and only one rainfall season.

Transitional Zone

The Transitional Zone represents the transition from Guinea Savanna in the northern parts of Ghana to forest in the South. The tree species found in the Transitional Zone are similar to those in the forest zones further South and occur with tall and medium height grasses. This zone is encroaching into southern forest zones as grassland replaces forest. Average annual rainfall is ~1,250 mm and generally occurs in two rainfall seasons.

Deciduous Forest

The Deciduous Forest Zone incorporates two forest types: moist semi-deciduous forest and dry semi-deciduous forest. It is further separated into two subtypes: the wetter inner zone and the drier fire zone. The original high forest of the fire zone has been destroyed by the opening of the forest canopy for farming. The Deciduous Forest Zone now contains clearings of savanna because of invasion by savanna species. Average annual rainfall is ~1,400 mm and occurs in two rainfall seasons.

Evergreen Forest

The Evergreen Forest Zone is located in the southwestern corner of Ghana. The forest types are the wet evergreen – occurring in the south-western most corner of the country – and the moist evergreen. The Evergreen Forest Zone receives the most rainfall of the agro-ecological zones of Ghana, with an annual average of ~1,700 mm, which occurs in two rainfall seasons.

Coastal Savanna

The Coastal Savanna Zone runs in a narrow belt parallel to the coast. It consists of a thin strip of vegetation along the seashore, mangrove vegetation associated with lagoons and coastal estuaries, and inland vegetation consisting of shrubs, grasses and scattered trees. Average annual rainfall is ~1,000 mm and occurs in two rainfall seasons. The rainfall in the south-eastern corner of the zone is the lowest in Ghana.

1.2.2.2. Forest Reserves

There are 72 forest reserves in the northern savanna – 23, 33 and 16 in the Northern, Upper East and Upper West regions, respectively — and range in size from 0.4km^2 to 1,116 km^2. However, pressure from subsistence farmers, livestock herders and illegal activities are threatening the future of these reserves[57].

1.2.2.3. Protected Areas

Ghana has a network of 313 protected areas, covering ~15% of the country's terrestrial land area, inland waters, and marine areas[58]. According to national designations, these protected areas comprise 286 forest reserves, seven national parks, six resource (game) reserves, one nature reserve and four wildlife sanctuaries (Figure 4). Internationally designated protected areas within Ghana include six RAMSAR sites and three UNESCO-MAB biosphere reserves.

[57] Acheampong AB. 2001. *Environmental Assessment of Northern Savanna Biodiversity Conservation Project (NSBCP)-Draft Report*. Ministry of Lands and Forestry, Republic of Ghana.

[58] UNEP-WCMC and IUCN. 2024. Protected Planet: The World Database on Protected Areas (WDPA) and World Database on Other Effective Area-based Conservation Measures (WD-OECM). Cambridge, UK. Available at: www.protectedplanet.net.

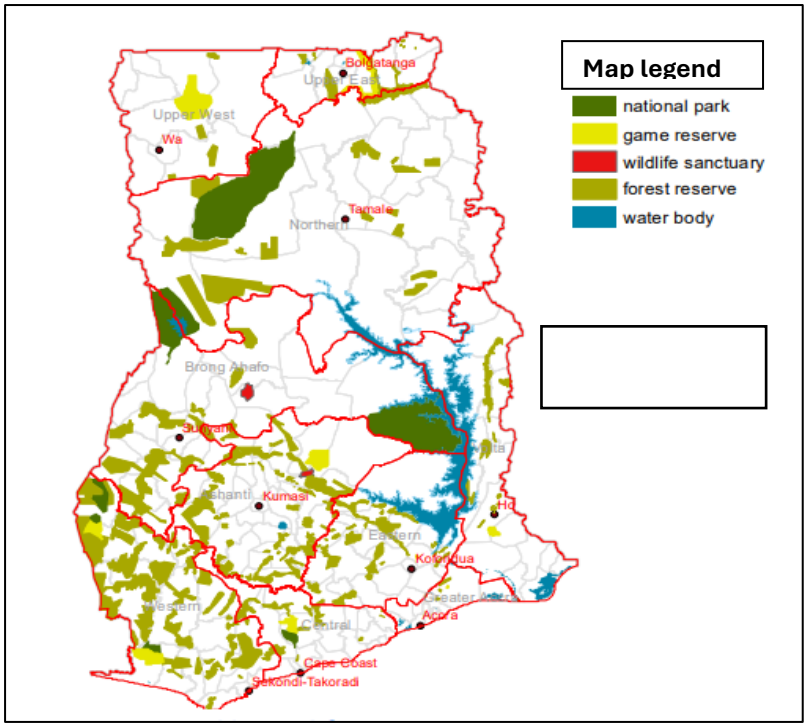

Figure 4. Protected areas in Ghana[59]

1.2.2.4. Fauna

Savanna fauna comprises at least 93 mammal species – about half of which can be considered to be large mammals – along with over 350 bird species, 9 amphibians and 33 reptiles. Among the large mammals, common species include lion (*Panthera leo*), leopard (*Panthera pardus*), elephant (*Loxodonta aficana*), buffalo (*Syncerus caffer*), royal antelope (*Neotrigus pygmaeus*), monkey (*Colobus* and *Cercopithecus* sp), and hippopotamus (*Hippopotamus amphibious).* Several species of snake are also found in Ghana, including python (*Python regius*), cobra (*Naja nelanoleuca*) and gaboon viper (*Bitis gabonica*). Other prominent reptiles include crocodile (*Crocodilus* sp*)* and lizard (including *Veranus niloticus*as). Large snails, spiders, insects and scorpions are also found in large numbers. The prominent bird species include bush fowl

[59] Republic of Ghana, Ministry of Environment, Science, Technology, and Innovation. 2016. National Biodiversity Strategy and Action Plan (NBSAP). Accra.

(*Francolinus* sp) falcons, hawks, and eagles *(Falconidae* sp.), grey parrots (*Psittacus erithacus*), vulture (*Neophron* sp.) and guinea fowl (*Guttera edouardi*). Furthermore, 13% of the ~860 recorded butterfly species in Ghana are found in the northern savanna.

1.2.2.5. Threats to faunal diversity

The protective status of wild animals in Ghana are scheduled in the Wildlife Conservation Regulations of 1971, (LI. 685), with 55 species receiving full protection[60]. Wildlife in Ghana face numerous challenges and threats, largely linked to human activity, including over-hunting, disruptive agricultural practices, road construction and bush burning. These threats are being exacerbated by population growth in the northern regions. Increasing population densities have led to an increase in the demand for bushmeat, with hunting having a noticeable effect on wildlife numbers. Furthermore, as human populations increase, the demand for land increases, causing habitat fragmentation through the loss of savanna woodlands and secondary groves. This leads to a decrease in the carrying capacity of these habitats and a decline in wild animal numbers.

Habitat fragmentation also limits wild animal movement between reserves, groves and sanctuaries in the northern savannas. For example, wildlife in northern Ghana are known to migrate through forests along the Red Volta river to Togo and back. However, human settlements have fragmented these pathways, interspersing them with farmlands and other human land use practices. This results in increased human-wildlife conflict, as wild animals – particularly elephants that leave reserves – damage property and agricultural land in search of water and food during the dry season. In areas where communities do not receive sufficient support from the Wildlife Division to drive these animals back to reserves, communities often resort to killing these animals.

1.2.3. Social environment

1.2.3.1. Population

The total population size of the three northern regions of Ghana is ~4,168,000, with the Northern region having the largest population (~2,445,000), followed by the Upper East (~1,034,000) and Upper West (~688,000) regions[61]. However, the large area of the Northern Region means that population density is the lowest in this region (~26 people per km^2), followed closely by the Upper West Region (~31 people per km^2). The Upper East region, in contrast, has a far higher population density (~104 people per km^2) than the other two northern regions[62]. The high population density, low soil fertility and harsh climatic conditions in the Upper East region leads to intense competition for resources, including land.

The population dynamics in Ghana largely reflects an interplay between urbanisation, rural livelihoods, and nomadic pastoralism, particularly in the north. The Northern, Upper West and Upper East regions are predominantly rural, with only 30, 16 and 21% of their population dwelling in

[60] Republic of Ghana, Ministry of Environment, Science, Technology, and Innovation. 2016. National Biodiversity Strategy and Action Plan (NBSAP). Accra.
[61] Ghana Statistical Service. 2015. Ghana Poverty Mapping Report.
[62] Ghana Statistical Service. 2013. 2010 Population and Housing Census – National Analytical Report.

urban areas, respectively[63]. While the proportion of urban dwellers in Ghana has increased by ~14% between 2000 and 2010, strong increases occurred mostly in the southern regions, with changes of 1–5% being observed in the northern regions. Given the relative stability of these northern rural populations, their socio-economic wellbeing is dependent on the sustainability of rural livelihood strategies (see Section **Error! Reference source not found.**). In addition to these sedentary populations, nomadic pastoralist populations, such as the Fulani (see Section 1.2.3.3), are prevalent in Ghana, particularly in the north. The proportion of the Ghanaian population made up of nomadic pastoralists has been estimated to be ~14,000[64], however, this figure is not precisely documented in national statistics — largely due to them being perceived as foreigners. Nonetheless, nomadic pastoralists represent a spatially dynamic component of Ghana's population, influencing socio-economic interactions and resource-related tensions with the sedentary populations they encounter.

1.2.3.2. Women, girls and the youth

In Ghana, the population of women, girls, and youth represents a considerable portion of the country's demographic structure. Women make up ~51% of the total population, with the youth (those between the ages of 15 and 35) accounting for ~36% of the population. However, the situation of women, girls, and youth varies across the country, particularly in the northern regions — Northern, Upper East and Upper West — where socio-economic challenges are more pronounced. The challenges facing women, girls and youth in these regions are compounded by high levels of poverty, limited access to education and traditional norms that often hinder their social and economic empowerment.

In these predominantly rural areas, women and girls experience additional socio-economic barriers. Women are central to agricultural production, but their access to land ownership, financial resources, and decision-making power within their households and communities is often limited. In the Northern, Upper East and Upper West regions, women are also disproportionately affected by the impacts of climate change, as their livelihoods are highly dependent on agriculture, which is vulnerable to environmental changes. Women and girls in these areas may also face heightened risks of gender-based violence (GBV), including sexual exploitation, abuse and harassment (SEAH), particularly in contexts where poverty, labour insecurity and weak protection systems intersect. Girls in these regions may also be engaged in early marriage — although the prevalence of such practices is unclear — and limited access to secondary education, which perpetuates cycles of poverty and dependence. The increased presence of external actors during project implementation may elevate SEAH/GBV risks if not adequately addressed through safeguards and mitigation measures.

The youth in the northern regions also exposed to several challenges. While there is a growing recognition of the importance of youth in national development, rural youth often struggle with high unemployment rates, limited access to education and training and inadequate opportunities for meaningful employment. Migration to urban centres in search of better opportunities is common, but this often leads to a disconnection from rural communities and a loss of agricultural labour, which is required for local economies. Young women in particular may face compounded

[63] Ibid.
[64] Bukari and Schareika. 2015. Pastoralism: Research, Policy and Practice.

vulnerabilities related to both age and gender, including increased exposure to SEAH risks in informal labour markets or during migration. Gender-sensitive policies, youth empowerment programmes and targeted interventions for persons with disabilities are necessary for ensuring that all segments of society are able to contribute to and benefit from the country's economic growth and environmental resilience.

1.2.3.3. Ethnic and Religious Diversity

Ghana, similar to many West African countries, exhibits considerable ethnic and religious diversity, as a result of migration, trade, settlement patterns and shifting political powers. While several broad ethnic groups are used to describe Ghana's profile, the country has over 100 distinct ethnic communities. This diversity is pronounced in the northern regions, where several ethnic groups coexist (Table 4). The dominant ethnic group in all three northern regions is the Mole-Dagbani, comprising ~53, 75, and 73% in the Northern, Upper East and Upper West Regions, respectively. The Gurma group is the second most common ethnic group in the Northern Region (~27%), whereas the Grusi is second in the Upper East and Upper West Regions (~8 and 20%, respectively)[65]. Other notable groups include the Akan, Ewe, and Mande, although they make up smaller proportions of the population in these regions. Each ethnicity is also associated with a different language, resulting in a diverse range of languages being used across the three regions. The major ethnic groups are each represented by a paramount chief, with traditional authority held by the chief.

Table 4. Ghanaians by major ethnic group and region, 2010[66].

Ethnic Group	Northern	Upper East	Upper West
Akan	3.1	2.3	1.4
Ga-Dangme	0.3	0.1	0.1
Ewe	1.7	0.3	0.4
Guan	8.6	0.3	0.8
Gurma	27.3	4.7	1.2
Mole-Dagbani	52.7	74.7	73.0
Grusi	3.7	8.6	20.6
Mande	0.5	5.6	0.3
Others	2.1	3.4	2.1

The Fulani are an additional ethnic group within northern Ghana, known for being nomadic pastoralists. As a transnational ethnic group found throughout West Africa, their pastoralist practices often bring them into contact with sedentary agricultural communities, sometimes leading to conflicts over land and water resources. As a result of their transhumance movements, Ghanaians view the Fulani as foreign and have historically been excluded from official national plans and projects. Nonetheless, this group forms a considerable component of the country's socio-economic environment.

[65] Ghana Statistical Service. 2013. 2010 Population and Housing Census – National Analytical Report.
[66] Ghana Statistical Service. 2013. 2010 Population and Housing Census – National Analytical Report.

Traditional social structures play a considerable role in shaping land access, labour distribution and gender dynamics within ethnic groups and across the nation as a whole. Among the Mole-Dagbani, Konkomba and Kusasi, men typically control land ownership while women gain access through their marital or familial connections. However, women's roles in agriculture are substantial, particularly in post-harvest activities — such as processing shea nuts and groundnuts — which provide income for many households. Women's contributions to farming and livestock management are also necessary for household food security.

In Fulani communities, gender roles are similarly distinct. Men are primarily responsible for managing cattle — which is central to the Fulani economy — while women contribute to livestock care and household tasks. As more Fulani have settled into farming, women have taken on greater roles in crop cultivation — particularly in the management of home gardens and small-scale farming plots. These shifts reflect broader changes in gender roles across the region, as women increasingly engage in both farming and income-generating activities.

The religious landscape also reflects Ghana's diversity. Islam is the dominant religion in the Northern Region (60%), with a lower representation in the Upper East (27%) and Upper West (38%) regions. Traditional beliefs are on par with those of Islam in the Upper East Region (28%), with lower representation in the Northern (16%) and Upper West (14%) regions. Christianity, which includes various denominations such as Catholicism, Protestantism, and Pentecostalism, is more prevalent in the Upper East (42%) and Upper West (44%) regions.

Ghana's ethnic landscape is not only diverse in language, culture and religion, but also in social practices and historical experiences — at times resulting in intergroup social tension. There is a north-south divide, where the southern regions, particularly dominated by the Akan, have historically enjoyed greater economic and political power compared to the northern regions, which are less developed[67]. This disparity stems from colonial policies that favoured the south for development projects, leading to ongoing tensions and inequalities among ethnic groups. The persistence of these inequalities, coupled with environmental stressors such as climate change and population growth, has exacerbated competition over land and water, particularly in the north. This disparity combined with the prevalence of agricultural livelihoods and environmental degradation has led to possessive attitudes over limited agricultural resources.

In northern Ghana, the possession over land is a catalyst of conflicts between ethnic groups, particularly between sedentary farmers and transhumant pastoralists such as the Fulani. Expanding agriculture, land commodification, and urbanisation intensify competition over natural resources. Although civil conflicts have not occurred between ethnic groups in Ghana, tensions are evident in rural areas where land use patterns intersect with traditional livelihoods, necessitating effective management. Such tensions have intensified over the past two decades, manifesting in recurring conflicts along transhumance routes, where Fulani herds encroach on farmlands.

While the broad ethnic groupings serve as convenient references, they do not fully capture the complexity of ethnic interactions in Ghana. The various subdivisions in the main ethnic groups as well as the geographic distribution of these populations result in complex tribal-level social relationships. While communities generally have convivial relations, there is potential for conflict, particularly around agricultural resources and

[67] Asante R & Gyimah-Boadi E. 2004. *Ethnic Structure, Inequality and Governance of the Public Sector in Ghana*. UNRISD, Ghana.

land tenure. For instance, Fulani pastoralists have been socially marginalised and excluded from formal decision-making platforms, reinforcing tensions with sedentary farmers, especially in the Northeast of the country. However, the relationships between sedentary Ghanian groups and the Fulani in the Northwest are defined by historical cooperation, grounded in mutual benefits such as trade and informal grazing agreements. These localised relationships have been shaped by collaboration in resource sharing and cultural practices like informal dispute resolution mechanisms, which have helped maintain social cohesion[68,69].

Given that the project is being implemented in areas that reflect these highly localised and differential characteristics, there is a need for a finer analysis of ethnic interactions in the project design and implementation processes during the project inception period. This analysis should pay particular attention on opportunities for integration of marginalised groups such as the Fulani into governance structures and decision-making platforms, to enable more inclusive and sustainable land management.

This process of identification mapping and engagement will be implemented during the inception period of the proposed project and will form one of the primary outputs of the Indigenous Peoples Planning Framework (IPPF). The implementation of the IPPF (Annex 6C) will ensure that the requisite assessments are conducted, and iterative planning instruments are developed and operationalised to ensure that interventions implemented over the project lifecycle are done an inclusive manner and structured with cognisance to any localised socio-political dynamics.

1.2.3.4. Livelihood practices

The target districts of Ghana's three northern regions encompass both rural and urban populations, with a predominance of rural areas. As a result, rural livelihood practices, particularly subsistence crop farming and livestock rearing, are prevalent in the north. Many households engage in mixed farming, combining both these activities according to seasonal variations in climate and agricultural resources. In contrast, the less prevalent urban centres in the region are characterised by a growing service sector, trade and other formal employment opportunities. These urban hubs often attract members of rural communities during the dry season, providing supplementary income sources.

Stakeholder engagements[70] with the northern communities revealed a wide range of livelihood activities both within and outside of the agricultural sector. Livestock farming, and in some instances trading, includes the rearing of cattle, sheep, goats, guinea fowl, ducks and pigs. This sector faces challenges related to water availability, access to natural vegetation for forage and a lack of veterinary services. Crop farming is equally significant, with primary crops including rice, maize, cowpea, groundnuts, millet, sorghum, yam, soybean, butternut, onion and tomato. Additionally, dry season farming is practised where water sources are available. Semi-nomadic pastoralism is also practiced by communities such as the Fulani. These communities engage in transhumance, moving with their livestock seasonally in search of grazing land and water.

[68] Bukari and Schareika. 2015. Pastoralism: Research, Policy and Practice.
[69] Bayala, E. R. C., Ros-Tonen, M., Sunderland, T., Djoudi, H., & Reed, J. 2023. Farmer-Fulani pastoralist conflicts in Northern Ghana: are integrated landscape approaches the way forward? *Forests, Trees and Livelihoods*, 32(2), 63-89.
[70] For district-specific detailed on these livelihood strategies, see Annex 7h: Stakeholder Engagement Plan.

The northern rural communities also engage in a variety of other livelihood activities, although at a smaller scale. These include charcoal production, tree planting and harvesting and stone gathering for building materials, informal and illegal gold mining (Galamsey), fishing, aquaculture farming, beekeeping and wild honey production. Small-scale businesses — such as petty trading, poitou (beer) brewing, watermelon juice production, shea butter processing and soap production — also contribute to rural livelihoods. However, these operations often face constraints due to limited capital for expansion and insufficient power infrastructure.

The geographic distribution of these practices and the participating communities is not homogenous, with variations influenced by environmental conditions, resource availability, gender and ethnic backgrounds. Gender, in particular, influences the division of labour, ownership of economic assets and participation in various activities. For example, traditional gender roles dictate that men are responsible for land preparation while women focus on sowing and harvesting. Additionally, men generally retain ownership and control over the economic land, while women engage in supplementary income-generating activities like shea butter processing and petty trading (see Annex 8: Gender Assessment and Action Plan). Despite these constraints, women contribute considerably to agricultural production — with women-owned plots often being more productive than men-owned plots despite their smaller size.

2. Overview of the proposed project

The climate of Ghana has changed considerably in recent decades and is expected to continue changing throughout the 21st century. These changes in climate, including decreased duration of the wet season, increased rainfall intensity, increased temperatures and increased frequency of floods and droughts, are having a range of negative impacts on the livelihoods of Ghanaians. Although climate change is occurring across the country, the hot and dry Northern, Upper East and Upper West Regions – hereafter referred to as northern Ghana – have been, and will continue to be, exposed to the most substantial changes in climate. The sensitivity of the northern population to climate change centres around the fact that ~70% of the ~4 million people living in northern Ghana are smallholder farmers depending on traditional, small-scale, rainfed agricultural systems to generate household incomes and maintain food security. These agricultural systems are vulnerable to changes in rainfall patterns and extreme climate events. Additionally, a large proportion of northern Ghanaians rely on climate-dependent ecosystem goods produced in the agroecological landscapes in which their livelihoods are embedded.

Agroecological systems in northern Ghana, on which the livelihoods of smallholder farmers rely, are already under considerable stress because of among other things: i) unfavourable climate conditions; ii) extensive environmental degradation related to high population growth rates; and ii) outdated and unsustainable farming methods. Climate change in northern Ghana is expected to include, among other changes: i) a rise in maximum and minimum temperatures; ii) a shorter wet season; iii) increased rainfall intensity; iv) less frequent but more intense rainfall events; v) more frequent extreme rainfall events; vi) increased number of dry days; vii) more frequent heatwaves; and viii) increased evapotranspiration and reduced annual moisture index. The effects of future climate change are expected to exacerbate the current challenges in these systems through, *inter alia*:

- increased frequency and severity of floods — particularly in areas near rivers —– that will lead to soil erosion, major crop losses and damage to agricultural infrastructure, including post-harvest storage and irrigation facilities;

- increased frequency and intensity of droughts leading to, among other things: i) increased frequency in the drying-up of surface water bodies such as dams and streams; and ii) a decline in agricultural productivity as the ability of small-scale farmers to engage in dry season gardening is reduced;
- shortened agricultural production period resulting in decreased crop yields and income as the number of achievable wet season cropping cycles and harvests of non-timber forest products (NTFPs) from agroecosystems are reduced;
- pushing common northern Ghanaian crop and livestock varieties beyond their optimum thermal limits and expanding the range ranges of weeds and pests as previously cooler areas warm up;
- elevated soil erosion and loss of soil nutrients leading to decreased crop yields and increased pollution and eutrophication of water bodies; and
- more frequent and severe uncontrolled bushfires resulting in the destruction of crop fields – particularly of the dry mature crop – and reduced capacity of agroecosystems to provide critical ecosystem services such as NTFPs, forage, soil stabilisation and flood mitigation

The proposed project aims to catalyse a paradigm shift towards climate-resilient agriculture and natural resource-based livelihoods in northern Ghana by facilitating the widespread adoption by smallholder farmers of climate-resilient agricultural practices, ecosystem–based adaptation (EbA) approaches and alternative climate-resilient livelihoods. The proposed project aims to catalyse a paradigm shift towards climate-resilient agriculture and natural resource-based livelihoods in northern Ghana by facilitating the widespread adoption by smallholder farmers of climate-resilient agricultural practices, ecosystem-based adaptation (EbA) approaches, and alternative climate-resilient livelihoods. This will be achieved by, *inter alia*: i) strengthening the technical capacity of regional and district institutions in northern Ghana to implement and monitor climate change adaptation (CCA) projects; ii) facilitating the integration of CCA into regional and district medium-term development plans; iii) enabling the sharing of information and strengthening coordination between CCA projects, government institutions, academic institutions, and climate monitoring services; iv) providing funding for the implementation of climate-resilient agriculture, EbA interventions and alternative livelihoods in target districts; and v) catalysing future private sector funding by organising smallholder farmers into registered FBOs that can access loans from local finance institutions (LFIs) to finance adaptation interventions.

The project will also expand Ghana's climate, weather monitoring network, and enhance early warning systems (EWS), with a particular focus on providing reliable and actionable climate information. This improved climate information will be targeted to benefit small-scale farmers and other Ghanaians who depend on climate-sensitive livelihoods, enhancing their ability to anticipate and respond to climate-related hazards. By doing so, the project will not only improve climate resilience in the agricultural sector but also strengthen the capacity of communities to adapt to the impacts of climate variability and long-term climate change. Furthermore, the project will develop an extensive knowledge-sharing programme, enabling non-beneficiary communities to learn from the experiences of nearby target communities and create an enabling environment for the long-term upscaling of proposed project activities.

2.1. Summary of proposed project activities

The proposed GCF project interventions will enhance the climate resilience of vulnerable smallholder farming communities in northern Ghana by improving food security and contributing to the agro-based rural economy[71]. This would be achieved through four inter-related project components (please see below) that contribute to the following GCF project-level outcomes.

A5.0: Strengthened institutional and regulatory systems for climate-responsive planning and development;
A7.0: Strengthened adaptive capacity and reduced exposure to climate risks; and
A8.0 Strengthened awareness of climate threats and risk-reduction processes.

In contributing to these GCF Outcomes, the proposed project will also contribute to the fund-level impacts of:
A1.0: Increased resilience and enhanced livelihoods of the most vulnerable people, communities and regions; and
A4.0: Improved resilience of ecosystems and ecosystem services.

Output 1: Improved climate data and early warnings made available to facilitate proactive drought and flood management.

Through Output 1, the proposed project will focus on building national and sub-national (regional) institutional and technical capacity for the production of reliable and actionable drought management and early warning data and their dissemination to vulnerable communities, as well as proactive drought management through appropriate national and regional programmes. At the local level, capacity for drought response will be built by improving access, use and generation of early warning climate-information in vulnerable farming communities to enable a proactive drought management approach and timely responses.

Activity 1.1: Implement a new early warning data information and management system to provide access to improved data sources and new datasets on floods and droughts.

Activity 1.2: Enhancing hydrometeorological and groundwater monitoring observation networks.

Activity 1.3: Capacitate key technical staff at national, regional and district levels, including GMet, HYDRO and WRC, for drought and flood services delivery.

Activity 1.4: Establishing a robust communication framework for disseminating DSS and climate-related hazard management to communities.

Activity 1.5: Implement national action plan for coordinating drought and flood hazard management in the agricultural sector.

[71] Project activities will enhance the agricultural productivity of smallholder farmers, allowing farmers to sell excess produce to increase their household income.

Output 2: Climate-resilient agricultural practices in beneficiary communities.

Through Output 2, the proposed project will implement climate-resilient agriculture, EbA and alternative climate-resilient livelihoods in beneficiary communities. The rationale for selecting these specific interventions and their implementation modality is further described below.

The development of this proposal included, amongst others, the following steps.

1. A detailed vulnerability assessment was undertaken to identify: i) the most vulnerable regions in Ghana; ii) the most vulnerable districts within those regions; and iii) the specific climate change impacts, risks and adaptation needs in northern Ghana (see Annex 2: Feasibility Study, Sections 2, 3, 4 and 5).
2. An analysis of past and ongoing adaptation projects in Ghana was undertaken to identify best practices, lessons learned and provide recommendations for the implementation of adaptation interventions in this project (see Annex 2: Feasibility Study, Sections 9, 10 and 11).
3. National, regional, district and community consultations were conducted to validate the findings of the vulnerability assessment and identify locally-relevant adaptation responses to the identified climate change impacts (see Annex 7h: Stakeholder Engagement Plan).

Based on the results of the steps described above, a menu of climate change adaptation interventions has been developed for northern Ghana (Table 5). The climate change adaptation interventions identified within this menu have been specifically chosen to circumvent and/or disrupt climate change impact pathways threatening agricultural production of smallholder farmers at the plot, farm and landscape levels (see Annex 2: Feasibility Study, Section 5).

Table 5. Description of recommended climate change adaptation interventions and the climate change impact that they disrupt.

Climate change adaptation Intervention	Climate change impacts addressed	Description
Climate-resilient agriculture interventions		
Crop rotation and intercropping	• Reduced crop and livestock production • Increased soil erosion • Increased weeds, pests and post-harvest losses	• Increased temperatures – that may push certain crops beyond their thermal limits – combined with more frequent extreme events will reduce agricultural yields. By growing a variety of crops with different temperature and inundation limits, farmers can reduce the risk of losing their entire harvest during an extreme event. • The effects of climate change – including more intense rainfall over a shorter period – will compound the problem of soil erosion in northern Ghana, leading to reduced soil moisture and the leaching of nutrients from the soil. This will lead to a decrease in crop yields and an increase in the need for agricultural inputs – for example, fertilisers. Crop rotation and

		intercropping will reduce runoff and improve infiltration, thereby reducing the impact of climate change on soil erosion. • By diversifying crops and staggering harvest times, crop rotation and intercropping can reduce the need for long-term post-harvest storage and reduce the impact of crop-specific pests and diseases. Furthermore, crop rotations can break the pest/disease cycle over time.
Slash and mulching	• Increased drought frequency and intensity • Increased soil erosion	• A reduction in soil water content and the lowering of groundwater levels in northern Ghana – as a result of increased potential evapotranspiration and more frequent droughts – will decrease crop production as less water will be available for crop growth. Slash and mulching will increase water infiltration and reduce evaporation, thereby improving soil moisture, disrupting this climate change impact pathway. • Slash and mulching dissipates the energy of rainfall, improving infiltration and reducing runoff. Consequently, soil moisture and nutrient availability will be increased, thereby reducing the impact of climate change on soil erosion.
Contour bunding	• Increased drought frequency and intensity • Reduced length of the agricultural growing season • Increased soil erosion	• By increasing infiltration, contour bunds improve soil moisture, thereby countering the climate change impacts of increasing temperatures and potential evapotranspiration. Increased soil moisture content also allows for smallholder farmers to grow crops for a longer period. • Contour bunding reduces on- and near-field runoff velocity, thereby: i) decreasing soil and nutrient loss; ii) increasing the drainage of water into the soil; and iii) decreasing the formation of damaging geomorphic features such as rills and gullies. This disrupts the climate change impact of increased soil erosion.
Vegetative barriers	• Increased drought frequency and intensity • Increased soil erosion	• By increasing infiltration, vegetative barriers improve soil moisture, thereby countering the climate change impacts of increasing temperatures and potential evapotranspiration. • Vegetative barriers reduce runoff velocity, improve infiltration and decrease the formation of damaging geomorphic features such as rills and gullies, disrupting the climate change impact of increased soil erosion.
Ridging	• Increased drought frequency and intensity	• Tied ridging is effective in retaining on-field water and increasing soil water content during dry conditions, reducing the impact of extended dry periods resulting from climate change.

	• Increased soil erosion	• Ridging allows for the controlled drainage of excess water, reducing the effect of water-logging and erosion associated with heavy rainfall events.
Organic composting and zai pits	• Reduced crop and livestock production • Increased drought frequency and intensity • Increased soil erosion	• Zai pits reduce surface runoff, thereby improving water retention and infiltration. This, combined with increased soil nutrients, will increase agricultural yields, even during dry periods. • Organic composting increases soil nutrients, countering the effect of nutrient loss from increased soil erosion.
Cover cropping	• Reduced crop and livestock production • Increased soil erosion • Increased weeds, pests and post-harvest losses	• Cover cropping shades the soil surface, reducing soil temperatures and helping retain soil moisture. Improved infiltration also increases soil moisture, countering the climate change impacts of increased temperatures and evapotranspiration. • Cover cropping creates a protective barrier over exposed soils, dissipating the energy during intense rainfall events, consequently reducing soil erosion and increasing infiltration. Furthermore, residues from cover crops maintain soil quality by replacing nutrients in soils which have been leached by surface runoff and erosion. • A dense mat of cover competes strongly with weeds that grow as a result of increased rainfall. The consequent reduction in weeds improves crop yields.
Climate-resilient seed varieties	• Increased flood frequency and severity • Increased drought frequency and intensity • Reduced length of the agricultural growing season • Reduced crop and livestock production	• Flood-resilient seed varieties are adapted to flood pressures resulting from intensified rainfall events. • Drought-resilient seed varieties are adapted to cope with prolonged dry seasons resulting from climate change. • Seed varieties with shorter growing cycles will allow farmers to complete the harvest despite a reduction in the length of the agricultural growing season. • Heat stress-resilient seed varieties are adapted to higher temperatures, allowing for increased productivity and reduced crop losses during heat waves.
Dry season gardening	• Reduced length of the agricultural growing season	• A shortened agricultural production period because of a shorter wet season will decrease crop yields and incomes as the number of achievable cropping cycles within a growing season

		will be reduced. Dry season gardening allows for additional production to supplement food and income supply during the prolonged dry season.
Climate-resilient post-harvest management		
Post-harvest storage devices	• Increased flood frequency and severity • Increased weeds, pests and post-harvest losses	• Improved post-harvest storage methods will reduce the impact of and damage caused by intense rainfall and flooding on post-harvest storage facilities and infrastructure. • Increased humidity, moisture migration and condensation caused by flooding leads to rotting of harvested crops. Improved post-harvest storage devices will reduce the likelihood of flood-induced fungal growth and spoilage during storage and drying. • Post-harvest storage devices reduce loss of grain caused by increasing temperatures which result in increased insect activity, fungal growth and rodent pest infestation.
Climate-resilient water infrastructure investments		
Boreholes and check dams	• Reduced crop and livestock production • Reduced length of the agricultural growing season • Reduced water availability • Reduced water quality	• A shortened agricultural production period because of a shorter wet season and insufficient water supply will decrease crop yields and incomes. Boreholes and check dams allow smallholder farmers to irrigate their crops, thereby allowing production to continue during the prolonged dry season to provide farmers with food and income security throughout the year. • Boreholes and weirs can support livelihood activities such as dry-season gardening and small ruminant rearing to counter the impacts of prolonged climate change-induced dry periods. • Decreasing wet season length coupled with rising temperatures will increase the frequency of the drying-up of surface water bodies such as dams and streams resulting in reduced water availability. Furthermore, increased flooding and erosion will reduce the quality of the water that is available. Boreholes and check dams will provide communities with improved access to quality water.

Output 2 of the proposed project will focus on the implementation of appropriate climate change adaptation interventions drawn from the above menu in beneficiary communities to reduce their vulnerability to climate change. Each beneficiary community will be trained on climate change interventions and will develop/finalise their own CCAP. The specific adaptation interventions identified within the CCAP – drawn from the menu of climate change adaptation interventions – will then be implemented in each community with the assistance of district extension officers.

Activity 2.1: Train beneficiary communities in northern Ghana on climate–resilient agricultural practices, EbA and alternative climate-resilient livelihoods.

Activity 2.2: Develop community climate action plans (CCAPs) in collaboration with beneficiary communities.

Activity 2.3: Implement climate change adaptation interventions, including climate-resilient agricultural practices, EbA and alternative climate-resilient livelihoods, identified in the CCAPs in beneficiary communities.

Activity 2.4: Develop a monitoring and evaluation strategy for climate advisory services in northern Ghana to improve the accuracy and appropriateness of advisories for smallholder farmers.

Output 3: Restoration of landscape to reduce drought and flood risk

The long duration of the dry season experienced in northern Ghana results in prolonged periods of food shortages. High temperatures in northern Ghana already contribute to reduced water-retention capacity and frequent drying of water bodies — such as wells, dams, and streams — that serve as sources of water for both livestock and household use, including for dry season gardening. Increased temperatures linked to climate change exacerbate the problem through the expansion of ranges of the weeds, pests and fungi that cause food spoilage.

Breaches of small reservoir dams cause flood risk in all districts, especially when dams are poorly constructed, maintained or treated Extreme rainfall events often result in severe flooding across many areas of northern Ghana, destroying crops, taking lives and damaging assets and public infrastructures, as well as reducing storage capacity of reservoirs in northern Ghana, causing them to dry-up quicker in the dry season as well as increase the risk of dam collapse, leading to downstream flooding.

At the farm level, a variety of nature-based solutions or nature-based infrastructure can be implemented, including reforestation efforts through tree planting to reduce soil erosion and increase infiltration capacity and establishing riparian buffer zones along the riverside to reduce flood impacts. Encouraging the adaptation of flood-based farming measures to store flood water to be used during dry spells and drain the land after rainfall or floods will preserve agricultural production. During the project lifespan, agroforestry and restoration interventions will be implemented in 120 communities. Estimating ~1000 people per community, the direct beneficiaries of these interventions have been calculated by assuming that all 1000 individuals in each of the 120 target communities will benefit. In addition, 2000 hectares in the 8 Districts will restore 2000 hectares of riparian land.

The climate change adaptation interventions identified within this menu have been specifically chosen to circumvent and/or disrupt climate change impact pathways threatening agricultural production of smallholder farmers at the plot, farm and landscape levels (see Annex 2: Feasibility Study, Section 5).

Table 5 Description of recommended climate change adaptation interventions and the climate change impact that they disrupt.

Climate change adaptation Intervention	Climate change impacts addressed	Description
Ecosystem-based adaptation interventions		
Agroforestry	• Increased frequency and severity of floods • Reduced crop and livestock production • Reduced length of the agricultural growing season • Increased soil erosion	• Trees used in agroforestry reduce the impact of intense rainfall, increasing infiltration and reducing soil erosion. This will lessen the impacts of flooding on crops. • Leaf litter from trees provides natural mulching functions, increasing soil moisture and nutrient content. This will improve crop yields. • Increased soil moisture content, combined with microclimate regulation, from agroforestry will allow farmers to grow crops over a longer period. • Tree roots secure the soil, further restricting erosion.
Small-scale communal fodder banks	• Reduced length of the agricultural growing season • Reduced crop and livestock production • Increased drought frequency and intensity • Increased soil erosion	• The reduced length of the agricultural growing season, combined with more frequent and intense drought, will reduce fodder availability for livestock during the dry season. Fodder banks supplement the diet of livestock during the dry season, resulting in reduced losses. • Nutrient-rich plants used in fodder bank reduce the impact of intense rainfall, increasing infiltration and reducing soil erosion. Plant roots also secure the soil, further restricting erosion.
Riverbank restoration	• Increased frequency and severity of floods • Reduced crop and livestock production • Increased soil erosion	• Restoring riparian vegetation will reduce the effect of intense rainfall and flooding on the riverbanks and surrounding fields. • Increased flood protection will reduce crop losses, while the restored vegetation will provide fodder for livestock. • Restoring riparian vegetation with indigenous species will bind soil and reduce erosion.
Fire management	• Increased frequency and severity of bushfires	• High wet season rainfall would result in the enhanced build-up of biomass in agro-ecological systems which will persist into the dry season. The effects of: i) high temperatures; ii) evapotranspiration; and iii) dry conditions, along with this abundant fuel load, will result in bush fires becoming more frequent and severe. These fires pose a threat to the livelihoods of smallholder farmers who rely on natural resources for their

		livelihood. Effective fire management is therefore necessary to control the effects of these fires and limit damage to crops and property.
Alternative climate-resilient livelihoods		
Shea butter production	• Reduced crop and livestock production • Increased soil erosion	• Shea butter production will provide alternative livelihoods and additional sources of income during periods where climate change impacts, such as floods and droughts, affects supply and production of other crops. • Trees used for shea butter production reduce the impact of intense rainfall, increasing infiltration and reducing soil erosion.
Small ruminant rearing	• Reduced crop and livestock production • Increased drought frequency and intensity	• Small ruminant rearing will provide alternative livelihoods and additional sources of income to farmers, reducing the negative impact of climate change-induced crop failure on their food and income security. • Small ruminants are well adapted to the arid conditions and are more tolerant to drought conditions than other livestock, therefore can reduce the negative impacts of dry seasons on livestock farming.
Other alternative climate-resilient livelihoods, such as beekeeping; bamboo farming; soap making; cane rat/rabbit rearing; chicken /guineafowl farming; juice-making; and aquaculture.	• Reduced crop and livestock production	• Alternative climate-resilient livelihoods provide income during periods where climate change impacts, such as floods and droughts, affects supply and production of other crops. This allows communities to purchase food and other essentials when required. Furthermore, income from alternative climate-resilient livelihoods will allow smallholder farmers to purchase the inputs required to adopt climate-resilient agricultural techniques.

Output 4: Increased access of smallholder farmers to financial resources and engagement with the private sector

Lack of financial resources is a barrier to the effective implementation of climate adaptation strategies by smallholder farmers in northern Ghana[72]. Many adaptation interventions – e.g. improved crop varieties – are costly and most smallholder farmers lack the financial resources to adopt

[72] Antwi-Agyei P. 2012. Vulnerability and adaptation of Ghana's food production systems and rural livelihoods to climate variability. DPhil, University of Leeds, Leeds.

them[73,74]. A means through which smallholder farmers in northern Ghana can access financial resources to fund crucial adaptation interventions is agricultural credit. However, LFIs in Ghana are generally unwilling to give out loans to individual smallholder farmers for agricultural activities. This is because individual smallholder farmers in northern Ghana generally: i) have limited financial literacy; ii) have limited credit history; iii) lack the collateral to secure loans[75]; and iv) rely on unpredictable rain-fed agriculture for their income, which means that loans are deemed high-risk [76,77].

In an effort to overcome this barrier, instead of lending to individual farmers, LFIs employ joint liability lending structures for their loans and lend to registered farmer-based organisations (FBOs)[78]. Indeed, the AFAWA project[79] (see Section 9 of the Feasibility Study for further details) is adopting a similar approach by only lending to established micro, small and medium enterprises (MSMEs) and female-led FBOs. However, this approach does not target the most vulnerable smallholder farming communities who lack the capacity to establish FBOs.

Output 4 will bridge this gap by increasing the capacity of the most vulnerable smallholder farmers to form FBOs and manage finances, and thereafter access agricultural credit and insurance. In doing so, this Output will contribute to GCF Outcome A7.0 — Strengthened adaptive capacity and reduced exposure to climate risks.

Activity 4.1: Establish farmer-based organisations (FBOs), Nucleus Farm Models and Village Savings and Loans Associations (VSLAs) that can access credit and insurance for farming and non-farming livelihood activities.

Activity 4.2: Connect FBOs, Nucleus Farm Models and local financial institutions to improve access of beneficiary communities to credit and insurance products.

Activity 4.3: Establish blended finance credit lines to support climate resilient agriculture.

Output 5: Knowledge and awareness of climate threats to agricultural livelihoods and available adaptation options increased to inform the upscaling of climate change adaptation across northern Ghana.

To promote the upscaling and replication of project interventions, Output 4 will focus on activities that contribute to knowledge sharing and awareness raising at national and local levels. By promoting the upscaling and replication of project interventions outside of beneficiary

[73] Antwi-Agyei P, Quinn CH, Adiku SGK, Codjoe SNA, Dougill AJ, Lamboll R & Dovie DBK. 2017. Perceived stressors of climate vulnerability across scales in the Savannah zone of Ghana: a participatory approach. *Regional Environmental Change* 17: 213–227.
[74] Antwi-Agyei P. 2012. Vulnerability and adaptation of Ghana's food production systems and rural livelihoods to climate variability. DPhil, University of Leeds, Leeds.
[75] Bawa A. 2019. Agriculture and food Security in northern Ghana. *Asian Journal of Agricultural Extension, Economics & Sociology* 31: 1-7.
[76] Fearon J. 2000. Economic analysis of soil conservation practices in northern Ghana. MPhil, University of Ghana, Accra.
[77] Antwi-Agyei P. 2012. Vulnerability and adaptation of Ghana's food production systems and rural livelihoods to climate variability. DPhil, University of Leeds, Leeds.
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communities, the project will facilitate widespread and sustained behavioural transformation in smallholder farming communities in northern Ghana.

Activity 5.1: Generate and disseminate knowledge products capturing best practice and lessons learned to inform the upscaling of climate change adaptation across northern Ghana.

Activity 5.2: Conduct community-level knowledge-sharing and awareness-raising events.

Activity 5.3 Conduct district awareness and training workshops with District Assemblies to integrate CCAPs and EbA in District development plans and District environment plans and budgets.

2.2. Implementation arrangements

The Environmental Protection Agency (EPA) of the Ministry of Environment, Science, Technology and Innovation (MESTI) will serve as the Executing Entity of the project in close collaboration with the Directorate of Crop Services of the Ministry of Food and Agriculture (MoFA). The EPA will assume overall responsibility for the effective delivery of required inputs in order to achieve the expected project outputs. At the national level, the EPA will receive guidance from a Project Steering Committee (PSC) chaired by MESTI and comprising representatives from the: i) MoFA; ii) MoF; iii) Forestry Commission; iv) Water Resources Commission; v) Ministry of Local Government; vi) Ministry of Land and Natural Resources; and vii) SADA. National implementing entities from Ghana currently seeking accreditation with the GCF, namely Social Investment Fund and EcoBank, may also be invited to observe PSC meetings. Additionally, the EPA will receive guidance from the National Climate Change Committee.

All elements of the proposed project will be assessed according to the screening processes as described ESMF prior to implementation. The ESMF provides a framework to assess any potential environmental or social risks associated with project activities as well as recommended strategies and actions to minimise any unintended negative environmental and social impacts associated with the project. Depending on the screening results, other subplans may be developed as necessary (i.e. Health and Safety Plan, Emergency Response Plan, etc.). The EPA – as Executing Entity – will be responsible for coordinating the environmental and social management efforts, distributing responsibility across all levels of governance as part of Ghana's decentralisation process. The principles outlined below will guide the implementation of the ESMF.

- The responsibilities of implementing agencies should be in line with existing statutory mandates and relative skills and knowledge capacities of the agencies. Capacity investments should be made on the basis of a clear mandate and commitment for long-term action and managed transfer of implementation responsibilities.
- Logistical costs should be minimised by placing support functions close to the implementing parties working on the ground.
- Competition between service providers at various levels should be encouraged where it may credibly lead to efficiency gains.
- Synergies should be identified and built with on-going government and donor programs, with flexibility to exploit new opportunities during implementation.

- Community participation and individual choice will be supported.

At the request of the GoG and the NDA, UNEP will serve as the Accredited Entity for the proposed GCF project. A Funding Activities Agreement will be drafted between UNEP and the GoG to establish clear responsibilities for both entities in terms of implementing project activities. As a GCF accredited entity, UNEP will be responsible for overseeing the project formulation, start up, implementation, evaluations (including M&E reports, MTR and TE) and closure through its African headquarters in Nairobi, Kenya. UNEP will also be responsible for ensuring that the proposed project activities are well coordinated, aligned with national priorities and comply with GCF's safeguard standards. A Programme Officer (PO) from UNEP will sit on the Project Steering Committee (PSC) as an observer, ensuring consistency with GCF and UNEP policies and procedures.

3. Potential environmental and social impacts

3.1. Positive environmental and social impacts

The proposed project will deliver several positive impacts that will enhance climate resilience and sustainable development across Ghana. By strengthening early warning systems (EWS), building institutional capacity for climate adaptation, improving community-level adaptive practices and restoring degraded ecosystems, the project will enable rural communities to effectively reduce climate-related risks. The proposed interventions are designed to address immediate vulnerabilities and create long-lasting improvements in agricultural productivity, food security and ecosystem health, ensuring that local communities are more resilient to projected climate challenges. A description of how the project will have a transformative impact is included below.

Enhanced EWS and information dissemination
The project will enhance Ghana's EWS, benefiting 377,000 rural crop farmers (124,410 women and 252,590 men). Improvements include expanded hydrometeorological and groundwater monitoring networks, and a comprehensive national framework for disseminating climate hazard information. In addition, a mobile-based application will be developed for efficient hazard information dissemination, enabling farmers to optimise planting times, adopt climate-resilient crops and strategically relocate agricultural activities to minimise losses. This enhanced system will facilitate access to improved information on floods and droughts, expand monitoring observation networks, and establish a robust framework for disseminating climate-related hazard management information to local communities. The system's proactive approach will empower farmers to effectively plan for and respond to drought and flood hazards, thereby reducing food insecurity and increasing overall agricultural resilience.

Strengthened institutional capacity for climate adaptation

Regional and district-level capacity building will be implemented through the UNDCF's LoCAL mechanism[80], enhancing adaptation planning capabilities and incentivising performance through performance-based grant financing channelled through the government fiscal transfer mechanism. A comprehensive monitoring system with annual performance assessments against established metrics will also be established to ensure effective oversight and continuous improvement. Regional and district institutions — including the EPA and the District Agricultural Offices — will receive necessary equipment for effective delivery and monitoring of climate change adaptation (CCA) and agricultural extension services. Extension officers in target districts will undergo extensive training in climate-resilient agricultural processes, ecosystem-based adaptation (EbA), and alternative climate-resilient livelihoods. This knowledge will be extended to smallholder farmers in target communities and beyond. By combining capacity building, technical assistance for adaptation mainstreaming, and a country-based, progressively institutionalised local adaptation financing mechanism, an integrated strategy will be created to address climate finance deployment at the sub-national level. This approach will also enhance resilience-building efforts at the community level.

Enhanced community adaptive capacity
Climate-resilient agricultural practices will be introduced across 120 communities, benefiting 120,000 individuals (56,400 men and 63,600 women). These interventions will cover a wide range of techniques, including crop rotation, intercropping, slash and mulch, conservation tillage, contour ploughing and bunding, vegetative barriers, ridging, organic composting, zai pits, cover cropping, climate-resilient seed varieties, adapted planting calendars and dry season gardening. To further enhance the project's reach, an extensive awareness campaign will be implemented in both beneficiary and non-beneficiary communities. Using locally appropriate methods such as video documentaries and radio phone-ins, the campaign will encourage the adoption of these adaptive practices beyond the target sites. A qualified national organisation will tailor the campaign to local contexts, considering literacy levels and access to media. This approach will raise communities' awareness of effective climate change adaptation methods and promote widespread adoption, extending the project's impact throughout northern Ghana.

Reduced degradation through improved land and natural resource management
The project aims to restore 20,000 hectares of vulnerable ecosystems, including 6,000 hectares of agricultural land through climate-resilient practices and 14,000 hectares of degraded savanna using EbA. Restoration interventions will involve agroforestry, communal fodder banks, riverbank rehabilitation, flood risk reduction, and fire management. These site-level efforts are expected to substantially enhance the resilience of ecosystems and their services. Economic modelling shows that restoring 14,000 hectares across four districts could reduce flood risk by 46%. This integrated approach aims to strengthen ecosystem resilience, improve agricultural productivity, and reduce the vulnerability of local communities to climate-related hazards. Beyond addressing immediate environmental challenges, these restoration interventions will contribute to long-term sustainable development across the region.

[80] The LoCAL mechanism, designed by the UN Capital Development Fund, provides a country-based mechanism to integrate climate change adaptation into local governments' planning and budgeting systems in a participatory and gender-sensitive manner, and increases the amount of finance available to local governments for climate change adaptation.

3.2. Potential Adverse Social and Environmental Impacts

The project will result in overall positive outcomes, as described above. However, there are some specific risks that are associated with the project activities. These risks, as well as the various approaches taken to assessing each risk and its significance in relation to project activities is described below.

The overall project has been screened using the UNEP Safeguard Risk Identification Form (see Annex VI: SRIF), which **classified the proposed project as Moderate risk or category B**, with potential impacts that are less adverse, limited, site-specific, likely reversible and readily mitigated through the application of good practice as well as targeted assessments and mitigation measures. This classification has been supported through an activity level assessment (Table 7) and a targeted assessment describing the different positive outcomes and potential impacts associated with each activity that triggers a moderate risk rating (Table 8).

The project triggers several UNEP safeguards standards. The risks associated with these standards range from low to moderate significance. The standards triggered, and the significance of the associated risks are detailed below in Table 6.

Table 6. UNEP Environmental and Social Safeguards Standards triggered by the proposed project.

UNEP Safeguards Standard	**Overview of risks**
SS1: Biodiversity, Ecosystems and Sustainable Natural Resource Management	This standard is triggered with moderate significance risk profile, as the project involves activities such as reforestation plantation development and the installation of infrastructure that may generate biodiversity risks. While potential adverse impacts from any single intervention is expected to be minor, the project will implement a significant number of interventions, which contributes to the overall risk rating. To mitigate any potential adverse impacts, the project has been designed to avoid the selection of sites within or near protected habitats, endangered species, and areas of high conservation value thereby avoiding potential impacts. Additionally, while the project will support agricultural production, this will only be undertaken in lands that are already used by communities. Integrated pest management is another intervention being promoted that will reduce the potential for potential adverse outcomes. Similarly, the project will strictly avoid the promotion or distribution of harmful synthetic fertilisers, pesticides, and chemicals, instead promoting organic and environmentally sustainable alternatives to ensure soil health, biodiversity protection, and long-term ecosystem resilience. The project will also align with existing management plans that are focused on restoring degraded ecosystems and avoid activities that could cause soil erosion or water quality challenges.

	Additionally, it will not introduce invasive species or genetically modified organisms.
SS2: Climate Change and Disaster Risks	This standard is triggered but is considered to have a low risk significance. The project, which includes the installation of climate monitoring infrastructure and the implementation of climate-resilient strategies to strengthen small-scale agricultural production, may be vulnerable to climate and disaster risks, particularly droughts, in the context of Ghana. While the infrastructure and agricultural strategies will enhance resilience, prolonged periods of drought could compromise their effectiveness. For example, drought conditions may limit water availability, reducing the ability of climate-resilient crops to thrive and potentially hindering the productivity of dry-season gardening or other water-dependent interventions.
SS3: Pollution Prevention and Resource Efficiency	This standard will be triggered with low level of risk. The project may involve activities that have the potential, albeit low, to impact resource efficiency and pollution prevention. The project will not directly release pollutants, but there is a possibility that beneficiaries may purchase increased quantities of herbicides or synthetic fertilisers. To mitigate this, the project will include capacity building on proper management, storage, application, and disposal of such materials. Moreover, the project will minimise the usage of these materials through promotion of integrated pest management. The project does not involve the manufacture, trade, release, or use of hazardous materials and will not use chemicals subject to international bans or phase-outs. In addition, waste generation may occur indirectly through agricultural activities, but this will be managed within the project's scope. Lastly, there will be no substantial consumption of energy, water, or other material inputs associated with the project.
SS4: Community Health, Safety and Security	The project will trigger this safeguard with a presumed low level of risk. While there are some proposed interventions that include potential safety risks to communities, including the installation of a radar system and several Automatic Weather Stations (AWS), these risks are minimal. The project will not result in an influx of workers, use of security services or medium-to-large-scale construction. This standard is additionally triggered because of the minor potential for intergroup conflict that may emerge should sedentary and pastoral groups benefit differentially from the project interventions. This risk will need to be assessed and addressed at a local level through the IPPF and development of any associated plans. Additional risk considerations under this standard have been reviewed and are assessed to be limited in scope. While Burkina Faso is classified as a Fragile

	and Conflict-Affected State (FCAS), the regions experiencing active conflict are primarily located in the north and east of the country. The project area in northern Ghana is geographically distant from these zones, and direct spillover risks are considered low. Tensions between pastoralist and sedentary land users are acknowledged and addressed in both the ESMF and IPPF; such tensions are longstanding but are typically managed through customary land-sharing practices, which the project will reinforce through participatory planning processes. Health and safety risks related to livestock rearing are minimal, as the project does not involve the provision or scaling-up of animal husbandry activities, and no increase in animal populations is anticipated. Likewise, the project does not include large-scale water infrastructure or open water sources; where boreholes are installed, they will be small-scale and screened to ensure they do not generate additional risks related to water-or-vector borne diseases. Given the nature of the interventions, emergency preparedness or response planning is not considered necessary at this stage. However, should the need for such plans be identified during implementation, these would be developed as required.
SS5: Cultural Heritage	This safeguard risk is not triggered by the project because it does not involve any activities that would impact cultural heritage. The proposed activities are not situated within or adjacent to Cultural Heritage sites, and there are no anticipated adverse effects on sites, structures, or objects with historical, cultural, artistic, traditional, or religious significance, nor on intangible forms of cultural heritage. In addition, the project will not use Cultural Heritage for commercial purposes. Although the project includes interventions to restore and protect landscapes, stakeholder consultations will ensure that these efforts do not affect areas of cultural significance. Additionally, the project does not entail significant land clearing, demolitions, excavations, or flooding, and there is no expectation of identifying or protecting cultural heritage sites or intangible forms of cultural heritage.
SS6: Displacement and Involuntary Resettlement	This standard is triggered at a low significance, but more as a precautionary measure, and at a low significance because the project may require public or private land for the installation of Automatic Weather Stations (AWS). Although these stations are planned to be placed on government land where possible, in instances where they are implemented on private land, a formal lease or land access will be reached through a fully consultative process, with FPIC being

undertaken in the case of Indigenous Peoples. However, full or partial physical displacement or economic displacement of people is not anticipated as a direct result of the proposed interventions. In addition, all interventions will be conducted in compliance with legal and traditional ownership structures and will ensure any existing land-use access agreements and patterns are respected. Although there is a potential for minor competition for resources between pastoralists and sedentary farmers, the project will not support activities that negatively impact land use or result in changes in land tenure arrangements or change existing land-use restrictions, such as those that apply to grazing of livestock on agricultural land during the growing season. Adopting the precautionary approach ensures that potential risks, such as competition for land between different groups, are proactively managed to minimise adverse effects.

SS7: Indigenous Peoples

This standard is triggered whenever pastoral communities that fall under globally recognised criteria used to defined Indigenous Peoples are impacted. Although the term "Indigenous Peoples" is not widely used in Ghana, the AE will systematically monitor to identify groups that may fall under the definition of Indigenous Peoples in the GCF's IP Policy. The project will focus on communities comprising these Indigenous Peoples, with interventions being selected and supported by the Indigenous Peoples themselves. There are no anticipated direct impacts on the human rights or resources of these groups. The project will not engage in the use or commercial development of natural resources on lands claimed by these communities without their full support gained through an FPIC procedure. While engagement with local communities and traditional governance structures has been conducted to ensure the project does not adversely affect their development priorities, decision-making mechanisms, or forms of self-government, studies and engagements with Indigenous Peoples are planned through the implementation of an IPPF to ensure this is the case.

Within the project footprint, Indigenous Peoples notably include as the Fulani, who have traditionally experienced exclusionary practices. While there is some potential for tension between sedentary farmers and the Fulani, the project aims to mitigate this risk by implementing a range of management measures, including the implementation and monitoring of the Stakeholder Engagement Plan (SEP), Indigenous Peoples Planning Framework (IPPF) as described and Grievance Redress Mechanism (GRM), which will be tailored to the respect the traditional authorities of the Fulani and other Indigenous Peoples through the implementation of the IPPF.

SS8: Labour and Working Conditions	The project submission includes an IPPF, which will guide the project's approach to ensure appropriate management and engagement is undertaken during the inception phase. These engagements will inform the development of Indigenous Peoples Plans (IPP) for every community involved. These IPPs will act as an overarching plan to ensure engagement undertaken with all Indigenous Peoples throughout implementation is compliant with UNEP and GCF requirements, including those related to FPIC. Additionally, it is important to note that long-term benefits may influence social dynamics or competition over land resources. This risk has been assessed to be minor in the context of the project as a whole and will be handled through preventative mitigation measures in the IPP. This standard is triggered but considered to have a low risk significance. The project will adhere to good practices in road safety and any minor construction works, ensuring compliance with local regulations. Any hiring or contracting project staff will be done in compliance with national labour laws and international commitments, such as ILO conventions, ensuring that staff are not subjected to adverse working conditions, occupational health and safety risks, or forced labour. All appointments will align with these standards. Additionally, the project procurement plan will follow UNEP and GCF principles and national laws to prevent forced or child labour. Although no significant occupational health and safety risks are anticipated, measures will be in place to address any potential risks through EPA regulations and good practice. The project is expected to generate employment opportunities in target communities, thereby potentially reducing local or regional unemployment. Procurement activities will meet Ghanaian regulations, including minimum working and safety standards for suppliers of goods and services. The project's design also emphasises equitable access to economic opportunities and gender-sensitive working conditions, ensuring fair treatment for all staff.
SS9: Financial Intermediaries	This safeguard is not triggered as it does not apply to the proposed project.
Note on GBV and SEAH Risks	The project is designed to be gender-responsive at all levels, incorporating direct actions for women's empowerment. The Gender Assessment and Action Plan (GAAP, Annex 8) addresses gender concerns comprehensively and allocates a dedicated budget for effective implementation. While Ghana does not experience high levels of conflict-related GBV, evidence indicates that gender-based violence and sexual exploitation, abuse and harassment (SEAH) remain present, particularly in contexts of poverty, power asymmetries and weak protection

systems. Although Ghana does not experience systemic SEAH at a national level, context-specific vulnerabilities—such as rural poverty, informal grievance resolution, and gendered control of resources—are relevant. Project implementation—particularly where labour is contracted or where interactions between workers and communities occur—may inadvertently increase SEAH/GBV risks if safeguards are not adequately applied.

An initial SEAH risk screening has been conducted in line with the GCF SEAH Risk Assessment Guideline (included in, including contextual and project-level risk analysis. Based on this assessment, the overall SEAH risk is considered Moderate. This reflects the project's engagement in rural and gender-unequal environments, decentralised delivery mechanisms, and potential power asymmetries related to resource access, balanced against the project's institutional safeguards, limited labour influx, and community-based implementation model.

To manage grievances related to GBV and SEAH, a parallel process will be implemented alongside the project-level GRM. This includes automatic eligibility for grievances, anonymisation and prioritisation of survivor privacy, and referral to local specialist NGOs for support services. The project ensures that survivors receive necessary support through a survivor-centred approach, involving investigation, disciplinary action, and monitoring. While a comprehensive SEAH risk assessment will be undertaken during project inception, the current screening establishes a baseline and informs preliminary mitigation measures. This process will inform project-level actions, including institutional responsibilities, capacity-strengthening needs, codes of conduct, reporting protocols, and referral pathways. The Terms of Reference for the SEAH risk assessment are included in Annex I and provide further detail on scope and methodology. Support services will be provided by a local NGO with expertise in GBV and SEAH challenges, identified during project inception. All measures will be consistent with UNEP's ESSF, particularly Standards SS4 and SS8, and aligned with the GCF's Revised Policy on SEAH.

3.3. Need for assessment and management of environmental and social risks

The proposed project is categorised as moderate risk overall and does present some potential environmental and social risks that require further assessment and management measures. here are risks are associated with on-the-ground activities and infrastructure development under Outputs 1, 2 and 3. Under Outputs 2 and 3, there are risks of environmental impacts from activities such as ecosystem-based adaptation (EbA), nature-based flood risk reduction, and climate-resilient agricultural practices. These activities may also lead to social disruptions or conflicts because of changes in land use or resource management practices, with the risk of exclusion, exacerbation of conflict or inequitable distribution of project benefits among community members. Under Output , the development of small-scale infrastructure, including the installation of monitoring wells and solar energy systems for hydrometeorological and groundwater observation networks, presents potential environmental impacts and minor land use changes or displacement. These risks are further expounded in Table 7 and Table 8 below.

To address these risks, the project will conduct screenings to determine whether any Initial Environmental Assessment (IEA) process is needed in compliance with the EPA's regulations for small infrastructure to be installed under Output 2. For interventions proposed under Output 2, the project will conduct detailed environmental and social screenings at a site level, and these screenings will inform the final selection of climate adaptation strategies and highlight where any specific risk mitigation measures may be needed. These assessments will ensure that all project activities are implemented in an environmentally and socially responsible manner, effectively minimising risks while maximising benefits to the target communities and ecosystems.

Table 7. Activity level risk assessment and recommended mitigation actions

Activity	Risk rating	Assessment	Recommended Mitigation Actions
1.1: Implement a new early warning data information and management system to provide access to improved data sources and new datasets on floods and droughts	Low	The activities under 1.1 are primarily technical in nature and carry risks of low significance. The main risk potential under this activity relates to the potential exclusion of vulnerable groups or Indigenous Peoples in the development and use of the data information and management system (SS7). Additionally, the provision of CIEWS may present a minimal risk if the weather and hydrological early warning system does not deliver timely and clear warnings, potentially affecting vulnerable communities during extreme weather events (SS4). Finally, there is a minor risk related to the sub-activity associated with water resource allocation models, should they fail to consider ecological water need while prioritising allocations for agricultural purposes (SS1).	As the majority of interventions associated with Activity 1.2 are technical and/or enabling in nature, there are no specific actions that are required to manage any associated risks. However, it is recommended that the project ensure that Indigenous Peoples and vulnerable communities are involved in the development and validation of the data management system and early warning services to ensuring and inclusive design that is responsive to the needs of all potential users. The project seeks to leverage the traditional knowledge of local farmers, rather than Indigenous Peoples' knowledge. Should Indigenous Peoples' Knowledge be identified for use during implementation, any uptake would be managed through the IPP and would ensure both FPIC and appropriate benefit sharing mechanisms are in place. Additionally, clear communication protocols should be established to ensure timely and accurate warnings reach all stakeholders, particularly those in remote areas. Finally, the water resource allocation model should integrate ecological considerations to ensure water management decisions also protect biodiversity and natural habitats. Collaboration with stakeholders at national and local levels will ensure that these measures are effectively implemented.
1.2: Enhancing hydrometeorological and groundwater monitoring observation networks	Moderate	Activity 1.2. is one of the two major on-the-ground activities being implemented under the project. It will include installation of climate monitoring equipment such as automated weather stations, rainfall gauges, an S-band radar, monitoring wells and solar energy systems. The establishment of this infrastructure, although generally small in size, could potentially disturb ecosystems if equipment is installed in or nearby sensitive area (SS1). Similarly, some of the infrastructure would require minor construction works — such as the platform for the S-band radar or fencing to secure the Automatic Weather Stations (AWS) or solar	As described, Activity 1.2. includes the most significant number of on-the-ground interventions. While the Activity as a whole is rated as moderate, no of the specific interventions trigger the need for a comprehensive and in-depth environmental and social impacts assessment (ESIA) as per UNEP, GCF or Ghanaian national regulations. However, in accordance with the precautionary principle site-specific environmental and social screenings should

		systems. Such constructions could conceivably expose communities or workers to health and safety risks (SS4; SS8). Additionally, there is a small risk that the preferred sites for this project infrastructure may be in communal or private, rather than government-owned land, which could trigger concerns relating to access restrictions or economic displacement (SS6). While each of the individual interventions under Activity 1.2. pose only minor, low significance risks[81], the number of installations, diverse range of risks and lack of site-specific data justifies a moderate risk rating for this activity as a whole. This approach is in line with inherent risk reasoning and the application of the precautionary principle. Table 8 includes additional information relevant.	be conducted before the installation of monitoring infrastructure, wells and solar systems to ensure sensitive ecosystems are identified and appropriately managed. The S-band radar will similarly undergo an Initial Environmental Examination (IEE) in accordance with the Ghanian Environmental Assessment Regulations (1999) as this infrastructure in particular justifies such an assessment (as a likely schedule 1 installation). While it is not expected that it will trigger the need for a more detailed EIA, the EPA will assess the IEE report and make an appropriate determination. Should the need for an EIA be identified, one will be undertaken that aligns with the requirements of the EPA and meets the Safeguards Standards of UNEP. In terms of community safety, clear safety protocols and communication measures must be established during construction activities to minimise potential impacts on remote communities. For worker safety, all labour and safety standards must be strictly followed and will be supported by a mandatory code of conduct to be signed by all contractors and project staff, with appropriate training, equipment, and safety measures in place, especially considering the uncertainty around site conditions in accordance with national regulations and the conventions of the ILO. In terms of risks related to Indigenous Peoples, the IPP to be developed under the project will ensure that any infrastructure established on land that is claimed or used by Indigenous Peoples only proceeds once FPIC has been secured and only as long as existing access for Indigenous Peoples can be secured.
1.3: Capacitate key technical staff at national, regional	No appreciable risk	The activities under 1.3, which involve the production of technical documentation, capacity-building workshops, and dissemination of outreach materials, carry low significance	No specific requirements or recommendations.

[81] The radar installation represents the most significant infrastructure to be established under this activity. However even this piece of equipment has minimal construction requirements, with the need for a concrete base, power supply and nearby control room, while the radar itself is unlikely to be more than 5m in height and would be assembled and installed by the Original Equipment Manufacturer (OEM) as part of the purchase agreement.

and district levels, including GMet, HYDRO and WRC, for drought and flood services delivery		risks. The focus on training government staff and producing outreach materials presents no substantial environmental or social risks. However, ensuring inclusivity remains an overarching goal of the project that should be followed, particularly to avoid the potential for any exclusion of Indigenous Peoples or marginalised groups from accessing the DSS platform (SS7).	
1.4: Establishing a robust communication framework for disseminating DSS and climate-related hazard management to communities	Low	The activities under 1.4, focused on training, capacity building, and awareness raising related to climate and drought hazard management, present low significance risks. These activities primarily involve knowledge transfer, which, from a risk perspective, has minimal environmental or social impacts. However, it is essential to ensure inclusivity and gender responsiveness during the training sessions and outreach campaigns to avoid any unintentional exclusion of vulnerable groups (SS7). Additionally, while the risks related to the use of DSS tools and mobile applications are low, ensuring equitable access to these technologies is critical to avoid marginalizing communities with limited digital literacy or access to mobile services (SS8).	No specific requirements or recommendations.
1.5: Implement national action plan for coordinating drought and flood hazard management in the agricultural sector	Low	The activities under 1.5, focused on policy development, coordination, and training, are assessed to have no appreciable risks. However, there is a minor potential for downstream risks associated with the updating of policies and plans, particularly regarding how these policies will be formulated and implemented. These downstream risks, while assessed to be minimal at this stage, could arise in later phases, particularly if inclusivity, gender considerations, or environmental safeguards are not fully integrated. These potential risks will need to be addressed as part of the formulation of the activity outputs themselves, ensuring that policy implementation is both equitable and sustainable.	As with the other low-significance risks under this project, no specific management measures are required to address identified risks under Activity 1.5. However, coordination mechanisms established under the project should be designed to involve representatives from vulnerable groups, ensuring that Indigenous Peoples and women are part of the decision-making processes related to drought management. The Action Plan developed under this Activity should similarly include provisions for gender mainstreaming and ensure that long-term planning responsibilities are clearly defined with specific roles for vulnerable groups. The gender analysis will further help in refining the project implementation, ensuring gender-responsive policies and strategies are integrated at all levels. Additionally, adequate resources and technical support must be provided to ensure that any policy work is undertaken in a manner that considers potential upstream and downstream impacts.

2.1:: Train extension officers on climate-resilient agricultural practices EbA and alternative climate-resilient livelihoods.	Moderate	Activity 2.1 is primarily focused on developing and delivering training for extension officers and demonstrates risks that are of low significance and manageable through good practice built into the project design. The most relevant risk is the potential for insufficient inclusion of women, Indigenous Peoples, and other vulnerable groups in the training process, which could affect the broader participation and representation in climate adaptation strategies (SS7). Additionally, there is a minor risk that the training materials might not fully incorporate gender-responsive strategies or address biodiversity conservation adequately, which could slightly reduce the effectiveness of the interventions in promoting sustainable practices (SS8, SS1). Overall, the risks are limited in scope and easily mitigated with proper planning.	Given the low significance of these risks, there are no specific mitigation measures proposed. However, it is recommended that training materials be carefully developed with a focus on ensuring that they will support participation from women and marginalised groups, ensuring that climate adaptation approaches are inclusive and relevant to all communities, including those who rely on pastoral livelihoods or transhumance. Incorporating basic biodiversity conservation and risk management practices into any training materials is also a recommendation that will further enhance the long-term sustainability of climate-resilient agriculture.
2.2 Train beneficiary communities in northern Ghana on climate-resilient agricultural practices, EbA and alternative climate-resilient livelihoods	Low	The activities in 2.2 are focused on community engagement, training, and the establishment of demonstration sites. While most of the training and sensitisation activities pose low risks, the establishment of demonstration sites introduces moderate risks. The most significant risks arise from the potential impacts on biodiversity and land access related to the siting of these demonstration sites. Improper site selection could lead to disturbance of local ecosystems and habitats, posing risks to biodiversity (SS1). In addition, there is a moderate risk that the process of securing land for these sites may affect community land access or create tension if communal or individually used lands are selected without proper consultation (SS6). Further, there are moderate risks related to the health and safety of workers and community members during the establishment of the demonstration sites. Construction activities or changes in land use could create hazards if proper safety measures are not implemented, particularly in remote or vulnerable communities (SS4). Moreover, there is a risk that Indigenous Peoples and other vulnerable groups may not be adequately included in the training or in the	As discussed in the risk description column, the moderate risk rating assigned to this activity is primarily due to the potential impacts of establishing physical sites and the associated risks of land access and health and safety concerns. By applying appropriate mitigation measures aligned with good practice, these risks can be effectively managed without a requirement for detailed management plans or processes. For example, it is essential that site selection for demonstration plots follows biodiversity conservation principles, ensuring that no sensitive habitats or ecosystems are disturbed. Site assessments could be conducted to identify potential biodiversity impacts and avoid high-risk areas, although given the limited presence of high-value biodiversity areas within the proposed project landscape this is deemed to be unlikely. In terms of land access, ensuring early engagements are undertaken in a transparent manner with the local community is critical, with attention to avoiding any physical or economic displacement. This will minimise conflicts and ensure that land access is managed equitably. These engagement

		decision-making processes for land access and site selection, which could result in exclusion from climate adaptation benefits (SS7).	should be conducted with consideration to the participation of Indigenous Peoples and should be governed in accordance with the Indigenous Peoples Plan (IPP) to be developed after project inception. For community health and safety, basic safety protocols, with regard to use of sharp tools, fertiliser and pesticides[82] must be presented and followed during the operation of the demonstration sites. Additionally, to ensure inclusivity, the training programs and decision-making processes must actively involve minority groups and other vulnerable groups wherever possible. This will ensure equitable access to the benefits of the climate adaptation interventions and involvement in discussions about land access and site selection. Where Indigenous Peoples are present, the project will apply targeted engagement measures aligned with the IPP and ensure that participation in training and site selection processes are undertaken through culturally appropriate methods, if they choose to participate. In addition, FPIC procedures will be applied prior to the siting of any demonstration plots on land used or occupied by Indigenous communities. Finally, the development and use of a training scorecard under this activity will help measure the effectiveness of the training and ensure that it is reaching all relevant stakeholder groups.
2.3: Develop community climate action plans (CCAPs) in collaboration with beneficiary communities.	Low	Activity 2.3, and its associated sub-activities, which involve organising workshops to develop and finalise Community Climate Adaptation Plans (CCAPs) and reviewing these plans against evaluation criteria, present low significance risks overall. However, due to the nature of the planning and decision-making processes, there are some minor potential risks that could arise. In the proposed workshops, there is a low risk	Activity 2.3 demonstrates a limited, low significance risk profile, which can be largely addressed through good practice measures. Such measures would include ensuring that all stakeholders, including women, Indigenous Peoples, and vulnerable groups are meaningfully involved in the workshops for developing CCAPs. This will contribute to overall inclusivity as well as the overall adoption of the CCAPs and ensure that local

[82] Although the project will not support or promote the use of pesticides, their use on the landscape is widespread, and the project will support dissemination of proper safety protocols as part of capacity building interventions.

		that vulnerable groups, such as women and Indigenous Peoples, may not be adequately included in the development of the CCAPs, which could lead to unequal representation and exclusion from decision-making processes (SS7). Additionally, there is a minor risk that the adaptation interventions proposed in the CCAPs may overlook biodiversity considerations, especially if they involve land-use changes or agricultural interventions (SS1). Furthermore, the process of reviewing adaptation interventions in the CCAPs carries a minimal risk of excluding relevant stakeholders if the review criteria or processes are not transparent or if required groups are not adequately consulted, particularly local community representatives who may be most affected by the adaptation plans (SS4).	knowledge and community perspectives are integrated into the plans to enhance their relevance and sustainability. In terms of biodiversity, the CCAPs should additionally assess potential environmental impacts of proposed adaptation interventions, ensuring that biodiversity and ecosystem considerations are not overlooked. When reviewing the adaptation interventions (2.3.2), it is important to use transparent evaluation criteria that are communicated to all relevant stakeholders as required, ensuring that the process includes local community input and addresses any concerns related to health, safety, and environmental impacts. Regular consultation with community representatives and relevant ministries will additionally help ensure that the adaptation plans are well-rounded and address the main concerns of all stakeholders.
2.4: Implement climate change adaptation interventions, including climate-resilient agricultural practices, EbA and alternative climate-resilient livelihoods, identified in the CCAPs in beneficiary communities.	Moderate	Activity 2.4 and its associated sub-activities, which involve the implementation of climate change adaptation interventions, including Ecosystem-based Adaptation (EbA) and climate-resilient agriculture is another of the other more significant activities being implemented under the project. Overall this activity is assessed to have a moderate risk profile due to the direct nature of the interventions, in accordance with the precautionary principle. While it is expected that the risks are relatively straightforward and easy to manage, the lack of site specific detail, as well as a large suite of interventions suggest that enhanced safeguards should be considered for this activity. For example, the implementation of these interventions may affect local ecosystems if not carefully managed, particularly in areas where natural habitats could be altered by agricultural practices or EbA activities. This poses a moderate risk to biodiversity and natural habitats (SS1). Additionally, changes in land use or agricultural practices could affect local livelihoods and community resource	While this activity is rated as having a moderate risk profile overall, most of the risk mitigants have already been incorporated into the project process. To address potential risks associated with biodiversity, the project will only support low impact adaptation interventions and will implement site selection processes that consider potential biodiversity impacts. Planning and support for certain communities and interventions will also consider potential impacts on community resource access and livelihoods, with efforts made to engage community members and avoid disruptions. To address the moderate risk associated with this activity, in relation to potential exclusion or unequal distribution of benefits, the project will develop an IPP, which will guide engagement and the implementation of all on-the-ground activities, to ensure the needs of Indigenous Peoples, Indigenous Peoples, and other vulnerable groups are included in the implementation of interventions. The application of the IPP will ensure FPIC is secured where required and will additionally ensure that any existing land-

		access (SS6) as well present a minor risk to community safety and wellbeing (SS4). Providing technical support for the implementation and maintenance of these interventions carries a moderate risk of excluding vulnerable groups, such as Indigenous Peoples, from equitable access to this support, which could limit the effectiveness of the interventions (SS7). Moderate risks related to exclusion and Indigenous Peoples are of particular concern for this activity, because enhancing the productivity or scale of sedentary communities may impact the livelihoods of pastoralists or their traditional access to pastureland (SS6). There is also a minor risk associated with ensuring safe and fair working conditions during the implementation process (SS8), particularly if there are gaps in ensuring compliance with safety standards for workers.	use practices are ensured in the development of the CCAPs or implementation of various alternative climate resilient livelihood strategies. For technical support (3.3.2), efforts should be made to ensure that all community members, including Indigenous Peoples and vulnerable groups, have equitable access to the support provided. This will ensure that the interventions are implemented effectively across the entire community. Additionally, strict adherence to national labour standards and international good practices as required will help mitigate risks related to worker safety and fair treatment.
2.5: Develop a monitoring and evaluation strategy for climate advisory services in northern Ghana to improve the accuracy and appropriateness of advisories for smallholder farmers.	Low	The activities under 2.5, which focus on developing an M&E framework for climate advisory services, conducting community surveys, and establishing feedback mechanisms, are assessed as having no appreciable risks. These activities primarily involve data collection, monitoring, and knowledge integration, all of which are related to policy and management rather than physical interventions. However, attention to good practice is important to ensure the inclusivity and effectiveness of the frameworks being developed. The project seeks to leverage traditional, rather than indigenous knowledge. However, potential inclusion of the knowledge of Indigenous Peoples (2.4.3) presents a minor potential risk related to cultural sensitivity and ensuring that Indigenous communities are meaningfully engaged in the process (SS7). The remaining activities (2.4.1, 2.4.2, 2.4.4) involve data collection and feedback mechanisms that pose no significant environmental or social risks. However, care should be taken to ensure that data collection is inclusive and represents the views and needs of all community members	While no significant risks are identified in relation to this activity, it is recommended that the development of the M&E framework and any surveys conducted under this activity should ensure the inclusion of Indigenous Peoples and other vulnerable groups. Additionally, when integrating traditional knowledge into climate advisories, due consideration should be given to intellectual property rights, whereby it will be essential to maintain cultural sensitivity and engage in meaningful consultations with such communities to avoid any exclusion or misrepresentation. While the use of Indigenous knowledge is not expected, should such knowledge be shared between groups under the project is will not be extended to any third party, and any use will be managed under mutually agreed processes included under the IPP and will only be done after obtaining agreement via FPIC. Finally, the feedback mechanism established under the activity should be designed to be accessible to all stakeholders, ensuring that the voices of smallholder farmers and local communities are heard and acted upon.

		(SS7), and that the monitoring and evaluation system is robust enough to accurately reflect the realities of the communities involved.	
Activity 3.1: Implement land restoration on communal land in 120 communities as per CCAPs	Low	The implementation of restoration activities (3.1.1, 3.1.2 and 3.1.3) is expected to have major positive impacts as follows: • Contribution to safeguarding landscape integrity. • Contribution to watershed maintenance and productivity. • Contribution to the maintenance of water-related ecosystem services. • Contribution to soil conservation and maintenance. • Contribution to the improvement of water quality and quantity reaching downstream. Nevertheless, negative impacts can be generated as a result of mismanagement practices in some of the project activities. Such practices include: • Temporary changes to land and watersheds during the watershed related interventions. • Temporary impacts on water availability during the watershed related interventions. Some challenges, if not mitigated, are expected to reduce the magnitude of this positive impact. These key challenges include: • Availability of information necessary for the overall restoration effort; • Sufficient involvement by related stakeholders and, in particular, local communities. • Adopting centralised decision-making processes rather than bottom-up approaches. • Adequate selection of sites and localities for the implementation of the restoration interventions. • Enforcement of appropriate policies, regulations and incentive structures that support restoration of	Ensure that detailed baseline assessments of the target watersheds are conducted prior to intervention implementations and are used as the basis for decisions related to intervention design and plans of work. The baseline assessments should include consultations with local resource users to ensure a participatory approach and FPIC before the implementation of interventions: -During the inception phase of the project's implementation, UNEP will consult Indigenous Peoples in the area to find out their customary use of the area and resources. In case the land and resources located in the area in which the nature-based infrastructures would be placed, securing FPIC will be required. -Set clear monitoring of changes related to ecosystems with a set of specific ecological indicators. -Train staff and workers on ecosystems monitoring and assessments. - Removal of native vegetation should be prohibited or kept to an absolute minimum. - Include specific instructions and safeguards for natural vegetation in all contracts and work orders; - Put up signs on the prohibition of all types of wildlife killing in project sites; - Induct workers, contractors and staff on the importance of wildlife and birdlife and the way to deal with sightings.

		communal land; and resolving ambiguity of responsibilities and/or lack of well-equipped law enforcement tools. • Adequate coordination and cooperation among relevant government institutions.	
4.1: Establish farmer-based organisations (FBOs) and Village Savings and Loans Associations (VSLAs) that can access credit and insurance for farming and non-farming livelihood activities	Low	Activity 4 and its associated sub-activities, which focus on establishing FBOs and VSLAs, present few appreciable risks. The primary risk relates to ensuring that the newly formed FBOs and VSLAs are inclusive and accessible to all community members, including women, vulnerable groups, and Indigenous Peoples, to avoid any exclusion or inequitable access to financial opportunities (SS7). There is a low risk of minor administrative issues related to the establishment and operation of the FBOs and VSLAs, particularly if governance structures are not robust or inclusive (SS8). However, these risks are limited in scope and easily mitigated with proper training and capacity building, as included in the activity design.	No specific requirements or recommendations.
4.2: Connect FBOs and local financial institutions to improve access of beneficiary communities to credit and insurance products	Low	The activities under 4.2 involve connecting FBOs with local financial institutions (LFIs) to improve access to financial products, which presents minimal risks overall. The main concern is ensuring that financial services are equitably distributed and that vulnerable groups are not excluded from access to credit and insurance products (SS7). The planned roadshow (4.2.2) carries low risk related to logistics and effective communication between LFIs and communities, though these are not considered significant (SS4). Overall, risks are minor and focused on ensuring transparency and inclusivity in access to financial services.	No specific requirements or recommendations.
4.3: Establish blended finance credit lines to support climate-resilient agriculture	No appreciable risk	The activities under 4.3, including the establishment of credit lines, logistical support for Business Advisory Centres (BACs), and technical assistance to local financial institutions (FIs), present no appreciable risks. The main low significance risk is related to ensuring that credit lines are appropriately managed and that FBOs, BACs, and their members have the necessary financial literacy and support to handle blended finance products (SS8: Labour and	No specific requirements or recommendations.

		Working Conditions). Another minor risk is ensuring that credit score databases and actuarial data (4.3.5, 4.3.6) are developed and maintained in a transparent and inclusive manner, avoiding any biases that could disadvantage vulnerable groups (SS7). However, these risks are not fully covered under the project, since the sub-activities under Activity 4.3. relate more to the enabling environment for a blended finance facilitate, rather than the establishment and operation of such a facility using project funds.	
5.1: Generate and disseminate knowledge products capturing best practice and lessons learned to inform the upscaling of climate change adaptation across northern Ghana.	No appreciable risk	The activities under 5.1, which focus on designing and implementing a monitoring program and disseminating knowledge products, present no appreciable risks. The development of monitoring programs (5.1.1) and production of knowledge products (5.1.4) are largely administrative and technical, with minimal risk of negative environmental or social impacts. However, it is important to ensure that the knowledge products disseminated are accessible to all stakeholders, including Indigenous Peoples, women and vulnerable groups, to avoid exclusion (SS7). Additionally, ensuring the monitoring programme (5.1.1) incorporates gender and socio-economic considerations will help address potential minor risks related to inclusivity.	No specific requirements or recommendations.
5.2: Conduct community-level knowledge-sharing and awareness-raising events.	No appreciable risk	The activities under 5.2, which focus on community awareness-raising campaigns and knowledge-sharing events, also carry no appreciable risks. These activities involve communication and outreach to share knowledge on climate adaptation (5.2.1, 5.2.2), and the primary consideration is ensuring that the awareness-raising efforts are inclusive and culturally appropriate to reach all segments of the community, particularly Indigenous Peoples and vulnerable groups (SS7:). There is a low risk associated with the installation of signboards at project intervention sites (5.2.3), mainly related to logistics and ensuring that the information is accessible and understood by the local community (SS4). However, these risks are very minimal, and the project's design already incorporates measures such as locally-appropriate communication strategies to mitigate them.	No specific requirements or recommendations.

Table 8. Impacts of the larger more complex interventions under the proposed project[83]

Output 1: Improved climate data and early warnings made available to facilitate proactive drought and flood management.

Activity	Social and environmental benefits	Social and environmental impacts	Safeguard Standard(s)Triggered	Probability (P) Impact (I)	Significance
Expansion of hydrometeorological and groundwater monitoring observation networks. (Activity 1.2)	• Enhancing hydrometeorological and groundwater monitoring networks provides essential data on water availability and soil conditions. • Increased institutional capacity for climate data will enable technical staff to deliver accurate, localised data on droughts and floods. • Real-time environmental data will institutions to issue early warnings or advisories that help farmers adjust their agricultural practices, leading to better crop health, reduced soil erosion, and sustainable use of natural resources.	• Installation of small infrastructure could cause localised soil and vegetation disturbance, requiring careful site selection and minimal-impact construction. • Small-scale construction may temporarily disrupt local activities with noise or dust. • There is a risk of contaminating nearby water sources if runoff or waste from installation is not managed properly, especially near groundwater. • There may be a requirement for systems to be installed on private or community land[84]	Biodiversity Conservation and Sustainable Management of Living Natural Resources Land Acquisition, Restrictions on Land Use, and Involuntary Resettlement Resource Efficiency and Pollution Prevention Labour and Working Conditions	P = 3 I = 2 P = 1 I = 3 P = 2 I = 2 P = 3 I = 1	Moderate Low Low Low
Implementation of a new early warning data information and	• Timely access to early warning information will enable farmers to adjust planting schedules and adopt drought-resistant	• Exclusion of most vulnerable groups — such as those in remote areas or	Indigenous Peoples	P = 3 I = 1	Low

[83] SAL Consult 2010. EAMP for Sustainable Land and Water Management Project. Final Report.

[84] Any infrastructure installed on pastoralist grazing land will be done only after securing FPIC from affected Indigenous Peoples

management system (Activity .4)	crops, stabilise agricultural productivity and reducing vulnerability to climate shocks, directly enhancing food security and livelihoods. • Improved communication frameworks will support small-scale farmers to better prepared, reducing the immediate impacts of droughts and floods. • Increased reliability of data on climate risks will reduce the application of environmentally harmful coping strategies, such as charcoal production and overgrazing, enhancing soil health, reducing land degradation and contributing to the long-term health of the ecosystem.	without access to technology • Over-reliance on early warnings, or dependent on early warning systems, • Environmental pressure from increased productivity through the intensification of farming.	Climate changes and disaster risks	P = 2 I = 2	Low
Output 2: Climate-resilient agricultural practices implemented in beneficiary communities.					
Activity	**Social and environmental benefits**	**Social and environmental impacts**	**Safeguard Standard(s)Triggered**	**Probability (P) Impact (I)**	**Significance**
Climate resilient agricultural technologies (Activity 2.3)	• Optimised and stable crop yields. • Reduced need for commercial inputs. • Increased profitability of agriculture. • Increased food security. • Continuous use of same piece of land. • Improved soil chemical and physical properties. • Carbon sequestration. • Reduced soil erosion. • Reduced shifting of cultivation. • Reduced land degradation.	• Potential increase in crop pest and disease problems linked to the residues left in the field. • Improved agricultural systems could increase water demand. • New farming practices could encourage conversion of natural or semi-natural habitats. • Productive agricultural systems could encourage increased	Biodiversity Conservation and Sustainable Management of Living Natural Resources Resource Efficiency and Pollution Prevention Indigenous Peoples	P = 2 I = 3 P = 2 I = 2 P = 2 I = 3	Moderate Low Moderate

	• Improved water use efficiency. • Reduced poverty.	use of fertilisers or pesticides. • Expansion of agricultural systems could disintermediate those who depend on pastoral livelihoods. • Secondary processing activities may expose community members to hazardous chemicals[85] • Promotion of climate-resilient varietals could include Genetically Modified Organisms (GMOs).			
	•	•			
Output 3: Restoration of landscape to reduce drought and flood risk					
Activity	• **Social and environmental benefits**	• **Social and environmental impacts**	**Safeguard Standard(s)Triggered**	**Probability (P) Impact (I)**	**Significance**
Dry season gardening and protection of riverbanks (Activity 3.3)	• Productive use of seasonally flooded land. • Benefit from periodic nutrient replenishments. • Increased food security. • Increased income during the dry season. • Improved water quality. • Permanent vegetation cover along rivers for carbon sequestration.	• Potential increase in salinity of rivers. • Potential access restrictions for pastoralists to water resources[86] • Potential conflicts between up-stream and downstream water users. • Social exclusion for farmers without land along rivers.	Biodiversity Conservation and Sustainable Management of Living Natural Resources Resource Efficiency and Pollution Prevention Indigenous peoples	P = 2 I = 3 P = 2 I = 2	Moderate Low

[85] Potential processing activities may require hazardous inputs or generate harmful waste, posing risks under PS3. Examples include: shea butter processing (smoke, organic waste, wastewater), aquaculture (nutrient-rich effluent, fertilisers, antibiotics), soap-making (caustic soda, alkaline wastewater, chemical containers).
[86] Access to key natural resources, such as water will need to be secured for pastoralists as part of any riverbank restoration

	• Reduced erosion and reduced sediment loads in rivers. • Regulated river flow. • Reduction in seasonal north-south migration of youth. • Reduction in flooding potential.	• Unwillingness to protect riverbanks due to land shortage.			
Fire management in agricultural landscapes (Activity 3.3)	1. Increased availability of native species. 2. Reduced losses associated with bush fires. 3. Protection of sacred groves. 4. Increased growing of annual crops. 5. Recovery of native vegetation and animal species. 6. Reduction in wind erosion; 7. Reduction in soil erosion at the start of rains. 8. Increased carbon sequestration in farms and pastures. 9. Reduced negative cultural practices associated with bush burning.	• Conflicts as herders & hunters may favour annual burns. • Interference with traditional believes regarding bush fires. • Reduced authority of traditional institutions, for example chiefs. • Suppression may be expensive or dangerous – limited ability to suppress fires. • Overly rigorous fire suppression could alter natural fire-adapted ecologies. •	Indigenous peoples Biodiversity Conservation and Sustainable Management of Living Natural Resources Land Acquisition, Restrictions on Land Use, and Involuntary Resettlement	P = 2 I = 2 P = 2 I = 3 P = 3 I = 1	Low Moderate Low

4. Legal and Institutional Frameworks

4.1. National Legislation

4.1.1. The Constitution of the Republic of Ghana, 1992

The Constitution of Ghana ensures the right of all individuals, including women, ethnic minorities, and persons with disabilities, to own private property, either individually or collectively (Article 18). This provision guarantees that marginalised groups are equally protected under the law, helping to address historical inequalities in access to land and resources. The right to property is a necessary aspect of economic empowerment and social justice, particularly for vulnerable populations who have traditionally been excluded from land ownership and inheritance.

Article 20 outlines the conditions for the compulsory acquisition of property by the State in the public interest, such as for public safety, health, or development. This process requires clear justification to prevent undue hardship, with specific consideration given to the unique circumstances of marginalised groups. The Constitution mandates that compensation must be fair and inclusive, ensuring that vulnerable groups — such as women, children and ethnic minorities — are not disproportionately impacted by the loss of land or resources required for their livelihoods or cultural practices.

4.1.2. The State Lands Act, 1963

Act 125 vests the authority to acquire land for the public interest in the President of the Republic. It also gives responsibility for registering a claim on the affected person or group of persons and provides details of the procedure to do this. The State Lands Act, 1962, provides some details to be taken into consideration when calculating compensation such as definitions for, *inter alia*, the: i) cost of disturbance; ii) market value; and iii) replacement value.

4.1.3. The Lands (Statutory Wayleaves) Act, 1963

The Lands Act makes provisions for and describes the process involved in the occupation of land for the purpose of construction, installation and maintenance of works of public utility, and for creation of rights of way for such works. Details of these provisions are given below.

- The owner/occupier of the land must be formally notified at least a week in advance of the intent to enter and be given at least 24 hours' notice before actual entry.
- Any damage caused by entry must be compensated in accord with the procedures established by the Minister unless the land is restored or replaced.
- In the case of highways, no compensation shall be paid unless the land taken is more than one fifth of the total holdings of an affected person.
- Where a right of way must be established in the public interest, the President may declare the land to be subject to such statutory wayleave.
- On publication of a wayleave instrument specifying the area required, and without further assurance, the land shall be deemed to be subject to wayleave. Compensation is then determined and paid, with the right of appeal to a tribunal established by the President, in parallel with the Lands Act, 1962.

4.1.4. Water Resources Commission (WRC) Act, 1996 (Act 522)

The act establishes and mandates the WRC as the sole body responsible for the regulation and management of water resources and for the coordination of any policy in relation to them. The WRC has the power to grant water rights to potential users, as well Drilling Licenses to contractors engaged in borehole drilling activities. A National Water Policy has been developed to support the use of environmental assessments for the protection and conservation of water resources and encourages its application to all water usage. The Policy also promotes the rational allocation of water resources through Water Demand Management (WDM), which improves the efficiency and sustainability of the use of water resources, considering economic, social, environmental, regional and national considerations.

4.1.5. Lands Commission Act, 2008 (Act 767)

The Lands Commission Act supports matters related to the management of public lands. The Commission manages public lands and any other lands vested in the President by the Constitution or by any other enactment or the lands vested in the Commission. The act advises the Government, local authorities and traditional authorities on the policy framework for the development of particular areas to ensure that the development of individual pieces of land is co-ordinated with the relevant development plan for the area concerned.

The commission formulate and submit to Government recommendations on national policy with respect to land use and capability; advise on, and assist in the execution of, a comprehensive programme for the registration of title to land throughout the Republic in consultation with the Title Registration Advisory Board established under section 10 of the Land Title Registration Act, 1986; The Minister may, with the approval of the President, give general directions in writing to the Commission on matters of policy in respect of the management of public lands. The commission comprises the following divisions: i) Survey and Mapping; ii) Land Registration; iii) Land Valuation; iv) Public and Vested Lands Management, and v) Any other Division the Commission may determine.

4.1.6. Forestry Commission Act, 1999 (Act 571)

This act provides for the management of the forest and wildlife resources in the country. The Forestry Commission is responsible for: i) regulating the use of forest and wildlife resources; ii) conserving and managing forest and wildlife resources; iii) coordinating policies; and iv) assisting the private sector and the other bodies with the implementation of forest and wildlife policies. The support for the private sector includes: i) advising stakeholders of market intelligence pertaining to the timber and wildlife industries; ii) supporting the development of forest plantations for the restoration of degraded forest reserves, the increased production of industrial timber and the expansion of the country's protected forest cover; and iii) the provision of training management and technical skills to related industries.

4.1.7. Environmental Protection Agency Act 1994, (Act 490)

This act establishes and mandates the EPA to seek and request information on any undertaking that, in the opinion of the Agency, can have adverse environmental effects. The EPA is then empowered to instruct the proponent to take necessary measures to prevent the adverse impacts. The Environmental Assessment Regulations (1999), LI 1652 list activities for which an environmental assessment is mandatory and describe the procedures to be followed to obtain

permits for both existing and proposed undertakings. These processes include the conducting of environmental impact assessments and preparation of environmental management plans. The Fees and Charges (Amendment) Instrument, 2015 (LI 2228) sets out the fee regime for processing and environmental permits, associated with the Environmental Assessment Regulations 1999, (LI 1652)[87]. The Environmental Assessment (Amendment) Regulations, 2014 (LI 2216) has been replaced by this new instrument. In accordance with the LI 2228, a proponent will be required to pay for processing and permit fee for the issuance of the Environmental Permit by EPA.

4.1.8. Local Government Act, 2016 (Act 936)

The Local Governance Act, 2016 (Act 936) replaced the Local Government Act 1993 (Act 462). The Act mandates Metropolitan, Municipal and District Assemblies (MMDAs) to take charge of the overall development of their respective areas, making them representatives of the central Government at the local level. Under Act 936 the Assembly:

- is the planning authority and therefore responsible for physical/spatial planning of customary land in conjunction with the Stools;
- is responsible for the development of plans of the district to the National Development Planning Commission for approval;
- approves schemes before it can take effect within the district; and
- is responsible for development control through the grant of permit for development.

4.1.9. Ghana Labour Act, 2003 (Act 651)

The Ghana Labour Act, 2003 (Act 651) provides the legal framework for labour relations, employment conditions, occupational safety and health, and protection of workers' rights in Ghana. It consolidates all existing labour laws and sets minimum standards for employment, including hours of work, remuneration, leave entitlements, termination procedures, and protections against unfair dismissal and discrimination. The Act applies to both the formal and informal sectors and provides for the establishment of collective agreements and workers' unions. It prohibits forced labour and child labour and outlines provisions for the employment of young persons. The Act also requires employers to provide a safe and healthy working environment and mandates the reporting and investigation of workplace injuries.

While the Act provides comprehensive protections, enforcement challenges remain—particularly with regard to informal or subcontracted workers, including those engaged through public works programmes or small-scale infrastructure projects. The Act does not explicitly mandate access to workplace grievance mechanisms, and while it provides general OHS obligations, enforcement is typically limited by institutional capacity at the district level.

4.1.10. Ghana National Fire Service Act, 1997

This act re-establishes the National Fire Service to provide for the management of undesired fires and to make provision for related matters. The National Fire Service is responsible for: i) organising public fire education programmes to create and sustain awareness of the hazards of fire and heighten the role of the individual in the prevention of fire; and ii) providing technical

[87] The Environmental Assessment (Amendment) Regulations 2002, LI1703 have been repealed.

advice for building plans in respect of machinery and structural layouts to facilitate escape from fire, rescue operations and fire management.

4.1.11. Wildlife Conservation Regulation, 1971 (L.I. 685)

The Wildlife Conservation Regulation provides for hunting restrictions in relation to different species of animals, which are classified, into wholly and partly protected animals. The Regulation further prohibits hunting without a license and exporting game or trophies without a permit and provides for rules and procedures in relation to game licenses and export permits. Lastly rules of operation for game officers are included in the regulation. The 1971 Regulation was amended by the Wildlife Conservation (Amendment) Regulations, 1983 (L.I. 1284). The amendments concerned the inclusion of a specific offence in relation to the possession or trade in ivory and the replacement of the penalties on offences included in the original regulations. New templates for licenses and permits were also introduced. The Regulation was further amended in 1988 (LI 1357) to insert fees to be paid in relation to the possession of ivory and in relation to trophy export licenses. The lists with classifications of different types of protected animals were also amended.

4.1.12. Wildlife Reserves Regulations, 1971 (L.I. 710)

This Legislative Instrument provided for the establishment of six (6) new wildlife reserves. It also outlined entry specifications for persons entering a wildlife reserve with the requirement that such entry must be with the consent of the Chief Game and Wildlife Officer. The Regulations further provided for the protection of fauna and flora by prohibiting hunting, capturing or destroying animals, plant life and amenities and by including wildlife related offences.

L.I 710 has been amended by the Wildlife Reserves (Amendment) Regulations, 1974 (L.I.881) to establish a new wildlife reserve known as the Bia National Park. The Regulation was further amended in 1975 by the introduction of Wildlife Reserves (Amendment) Regulations (L.I.1022), which established three new reserves namely, Bomfobiri Wildlife Sanctuary, Kalakpa Game Production Reserve and Gbele Game Productions Reserve.

4.1.13. Wild Animals Preservation Act (1961) Act 43

Act 43 provides for the protection of selected animals through restrictions on export and hunting of scheduled species. This empowers the President to exercise the overall control over wildlife and also provides for the creation of Wildlife Reserves.

4.2. Relevant International Legal Frameworks and Agreements

4.2.1. United Nations Framework Convention on Climate Change (UNFCCC), 1992

The UNFCCC sets an international framework for addressing climate change and provides the basis for subsequent protocols and agreements, including the Paris Agreement. Ghana ratified the UNFCCC in 1995. The Convention obliges Parties to take national action to mitigate climate change and adapt to its impacts, particularly in vulnerable sectors such as agriculture and water. The project aligns with Ghana's commitments under the UNFCCC, including through the implementation of adaptation measures consistent with the country's Nationally Determined Contribution (NDC).

4.2.2. United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP), 2007

UNDRIP affirms the rights of Indigenous Peoples to land, culture, identity, and participation in decisions affecting them, including the principle of Free, Prior and Informed Consent (FPIC). Ghana did not vote against the adoption of the Declaration but does not legally recognise Indigenous groups. However, ethnic minority groups with distinct identities and customary systems may fall within its scope for safeguard purposes. The project applies UNDRIP principles through UNEP's ESSF Standard SS7 and the Indigenous Peoples Planning Framework (IPPF).

4.2.3. Convention on Biological Diversity (CBD), 1992

The CBD promotes the conservation of biological diversity, sustainable use of its components, and fair and equitable sharing of benefits arising from genetic resources. Ghana ratified the Convention in 1994. Under the CBD, Parties must develop national strategies for conservation and integrate biodiversity considerations into relevant sectoral or cross-sectoral plans. This project supports CBD implementation through ecosystem-based adaptation (EbA) and biodiversity-sensitive land restoration activities.

4.2.4. United Nations Convention to Combat Desertification (UNCCD), 1994

The UNCCD focuses on combating desertification and mitigating the effects of drought through sustainable land management. Ghana ratified the Convention in 1996. It is particularly relevant to the project's objectives, as northern Ghana is affected by land degradation and drought risk. The Convention commits states to develop national action programmes and restore degraded land, which the project advances through its focus on soil rehabilitation and climate-resilient agriculture.

4.2.5. Stockholm Convention on Persistent Organic Pollutants, 2001

This convention aims to eliminate or restrict the production and use of persistent organic pollutants (POPs), which are harmful to human health and the environment. Ghana ratified the convention in 2003. The project aligns with its obligations by promoting the safe and sustainable use of agricultural inputs and avoiding the use of banned substances such as certain pesticides.

4.2.6. Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW), 1979

This convention is often referred to as the international bill of rights for women and aims to eliminate all forms of discrimination against women. It provides a framework for national action to end discrimination and promote gender equality. Ghana ratified this convention in 1986. Under CEDAW, states are responsible for ensuring women's equal access to education, employment, healthcare, and participation in political and public life, as well as eliminating gender-based violence and stereotypes.

4.2.7. Protocol to the African Charter on Human and Peoples' Rights on the Rights of Women in Africa (Maputo Protocol), 2003

The Maputo Protocol is a regional instrument that advances the rights of women in Africa. It addresses issues such as gender equality, reproductive rights and violence against women, and ensures women's economic, social and cultural rights. Ghana ratified this protocol in 2007. The

protocol obliges states to promote gender parity, eliminate harmful practices such as female genital mutilation, and ensure women's access to education, health and property rights.

4.2.8. Convention on the Rights of the Child (CRC), 1989

The CRC is a comprehensive international legal instrument that sets out the civil, political, economic, social, and cultural rights of children. Ghana ratified the CRC in 1990. It emphasises the rights of children to protection from exploitation, access to education and healthcare, and participation in decisions affecting their lives. The state is responsible for ensuring that children's best interests are prioritised in all policies and actions.

4.2.9. African Charter on the Rights and Welfare of the Child, 1990

The African Charter is a regional instrument specifically tailored to African contexts, focusing on children's rights. Ghana ratified the charter in 2005. It highlights the importance of children's welfare and protection from practices like child labour, early marriage and exploitation. States are responsible for ensuring that children have access to education, healthcare and a safe environment.

4.2.10. Convention on the Rights of Persons with Disabilities (CRPD), 2006

The CRPD is an international convention aimed at protecting the rights and dignity of persons with disabilities. Ghana ratified the convention in 2012. It obligates states to promote the full and equal participation of persons with disabilities in society, including access to education, employment, healthcare and public spaces, while combating discrimination and ensuring accessibility in all areas of life.

4.2.11. International Covenant on Civil and Political Rights (ICCPR), 1966

The ICCPR guarantees fundamental civil and political rights, including the right to life, freedom from torture, freedom of speech and the right to a fair trial. Ghana ratified the covenant in 2000. States are responsible for respecting and protecting these rights, ensuring non-discrimination, and enabling citizens to participate freely in the political process.

4.2.12. International Covenant on Economic, Social and Cultural Rights (ICESCR), 1966

The ICESCR protects individuals' economic, social, and cultural rights, including the right to education, work, healthcare, and an adequate standard of living. Ghana ratified the covenant in 2000. States are responsible for taking steps to progressively achieve these rights, ensuring that all citizens have access to essential services and opportunities for economic and social development.

4.2.13. African Charter on Human and Peoples' Rights (Banjul Charter), 1981

This charter promotes and protects human rights in Africa, addressing civil, political, economic, social, and cultural rights. Ghana ratified the charter in 1989. It emphasises the protection of individuals from abuse and discrimination, while also addressing collective rights such as the right to development, and environmental protection, and recognising the rights of vulnerable groups, including women, children and persons with disabilities.

4.3. Institutional Frameworks

4.3.1. UNEP Environmental and Social and Sustainability Framework (ESSF)

The United Nations Environment Programme (UNEP) has established Environmental and Social Safeguards Standards that are enforced across all UNEP projects. These standards are operationalised through UNEP's Environmental and Social Sustainability Framework (ESSF), which was updated in 2020 to align with global sustainability goals and ensure a stronger integration of environmental and social considerations into its projects. The ESSF provides clear procedures for identifying, mitigating, and managing environmental, social, and economic risks while enhancing opportunities for positive outcomes. It emphasises UNEP's commitment to inclusive stakeholder engagement, transparency and accessible grievance redress mechanisms, particularly for vulnerable and marginalised groups.

The ESSF is built on eight safeguard standards, including biodiversity conservation, community health and safety, Indigenous peoples' rights, and climate change and disaster risks. These standards reflect UNEP's dual commitment to "do no harm" and "do good," ensuring that projects contribute to long-term sustainability and resilience. The framework promotes the human rights-based approach and gender equality as core principles, aligning UNEP's projects with the Sustainable Development Goals (SDGs) and enhancing project outcomes.

This project has been designed in compliance with the ESSF and fulfils the requirements of the Green Climate Fund (GCF)'s Environmental and Social Safeguards Policy. The GCF requires its accredited entities, including UNEP, to integrate environmental and social safeguards into project design, ensuring that projects contribute to climate resilience, safeguard the rights of affected communities, and promote equitable and sustainable development. The ESSF ensures that UNEP's projects not only meet GCF safeguard policies but also support its overarching mandate of funding projects that advance global climate action

The ESSF's requirements are addressed primarily by the process of environmental and social screening, assessment and management of potential environmental and social risks and impacts associated with project activities. Safeguard standards have been classified into eight Performance Standards and are guided by principles derived from the 2030 Agenda for Sustainable Development - including principles of Leave No One Behind and human rights, gender equality and women's empowerment.

The safeguard standards will be enforced as part of the ESMF to minimise the potential adverse impacts throughout the project timeline. They are as follows:

SS1: Biodiversity Conservation, Natural Habitats, and Sustainable Management of Living Resources

This standard ensures the protection of biodiversity by avoiding or minimizing harm to natural habitats and ecosystems during project implementation. It promotes sustainable management of living resources to conserve biodiversity and enhance ecosystem services, supporting long-term environmental health.

SS2: Climate Change and Disaster Risks
The standard aims to build resilience against climate change and reduce the risks of disasters associated with natural and human-induced hazards. It ensures that projects are designed to adapt to climate impacts, promoting sustainability and preparedness to mitigate potential future risks.

SS3: Pollution Prevention and Resource Efficiency
This standard promotes cleaner production processes and the efficient use of resources such as water and energy. It emphasizes reducing pollution by managing waste and emissions, promoting technologies and practices that minimise environmental harm and improve resource sustainability.

SS4: Community Health, Safety, and Security
This standard protects local communities from health and safety risks posed by project activities, particularly exposure to hazardous materials. It also focuses on safeguarding communities from security threats during project implementation, ensuring that operations do not adversely impact their well-being.

SS5: Cultural Heritage
The goal of this standard is to protect cultural heritage, both tangible and intangible, from potential negative impacts of projects. It requires respect for cultural diversity and the preservation of sites, practices, and traditions that hold historical, cultural, or social significance to local communities.

SS6: Displacement and Involuntary Resettlement
This standard seeks to minimise involuntary resettlement caused by project activities and ensure that affected individuals receive fair compensation. It emphasizes restoring livelihoods and living conditions, helping displaced persons rebuild their lives with minimal disruption.

SS7: Indigenous Peoples
This standard protects the rights of Indigenous peoples, ensuring that projects respect their land, resources, and cultural heritage. It emphasizes obtaining free, prior, and informed consent (FPIC) from Indigenous communities before undertaking any project activities that may affect them.

SS8: Labour and Working Conditions
The standard ensures fair labour practices, prohibiting child and forced labour, and guaranteeing safe working conditions. It promotes compliance with international labour standards, including protecting workers' rights, providing fair wages, and ensuring workplace safety.

SS9: Financial Intermediaries (FIs)
This standard ensures that financial intermediaries involved in UNEP projects adhere to environmental and social safeguards. FIs are required to assess and manage risks, incorporating sustainability into their operations and ensuring that projects financed through them comply with UNEP's safeguard standards.

In terms of the GCF project risk categorisation scale, the proposed Project is deemed as a **Category B** or **Moderate Risk Project**.

4.3.2. Green Climate Fund Interim Environmental and Social Safeguards Policy

The project will additionally adhere to the GCF Environmental and Social Management System and any obligations UNEP would incur in the Accreditation Master Agreement and the Funded Activity Agreement. The GCF currently utilises the IFC framework as their interim safeguards' framework, which broadly aligns with UNEP's own Safeguards Standards. These standards are as follows:

- PS 1: Assessment and Management of Environmental and Social Risks and Impacts;
- PS 2: Labour and Working Conditions;
- PS 3: Resource Efficiency, Pollution Prevention and Management of Chemicals and Wastes;
- PS 4: Community Health, Safety, and Security;
- PS 5: Land Acquisition and Involuntary Resettlement;
- PS 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources;
- PS 7: Indigenous Peoples; and
- PS 8: Cultural Heritage.

Given the alignment between the UNEP and GCF Safeguards Standards, and the role of UNEP as the AE, the project has been assessed against UNEP, rather than GCF Standards in this document. In terms of the GCF project risk categorisation scale, however, the proposed project is deemed to be a Category B (Moderate risk) Project, whereby there are some potential for minor, moderate and generally reversible impacts that can be mitigated through good practice and the implementation of discrete and specific risk management processes. This characterisation, its justification and further information on the risk screening process is covered in a subsequent chapter.

The project development has also been undertaken with cognisance of the following GCF guidance:

- GCF Interim Environmental and Social Safeguards Standards (2015);
- GCF Environmental and Social Policy (2018);
- GCF Gender Policy (2019);
- GCF Indigenous Peoples Policy (2019);
- GCF Information Disclosure Policy (2019);
- GCF Programming Manual (2020);
- GCF Procedures and Guidelines of the Independent Redress Mechanism (2019);
- Sustainability guidance note: screening and categorizing GCF financed activities (2019); and
- Sustainability guidance note: designing and ensuring meaningful stakeholder engagement on GCF-financed activities (2022).
- Sexual Exploitation, Abuse and Harassment (SEAH) risk assessment guideline (2023)

4.4. Comparative Review of National Laws and UNEP Environmental and Social Safeguard Standards

This section presents a comparative analysis between Ghana's national legal and institutional frameworks and the safeguard requirements outlined in the UNEP ESSF. It focuses specifically on the safeguard standards triggered by the project and highlights key areas where national legislation may be silent, less comprehensive, or inconsistently applied in comparison to UNEP policies, which are aligned with GCF's ESS Policy. In such cases, the project will apply the more

stringent standard as a gap-filling measure to ensure full compliance with international safeguards. The table below summarises the relevant legal provisions, identified gaps, and corresponding measures to ensure alignment throughout project implementation.

Table 9: Comparative Assessment of UNEP and Ghanian Legislation

UNEP Safeguards Standard	Relevant Ghanaian Legal Instruments	Identified Gaps and Required Gap-Filling Measures
SS1: Biodiversity, Ecosystems and Sustainable Natural Resource Management	EPA Act, 1994 (Act 490); Forestry Commission Act, 1999; Wildlife Conservation Regulations, L.I. 685; Wildlife Reserves Regulations, L.I. 710	National law protects biodiversity but does not explicitly require safeguards for ecosystem services or cumulative biodiversity impacts. Habitat screening for critical natural habitat and modified areas is not routine. UNEP SS1 will apply to ensure site-level biodiversity risk screening, exclusion of protected areas, and integration of ecosystem-based approaches and pest management strategies.
SS2: Climate Change and Disaster Risks	EPA Act, 1994; WRC Act, 1996; National Water Policy	Climate and disaster risk considerations are not systematically integrated into permitting or project design under Ghanaian law. UNEP SS2 will apply to ensure that risks from drought, flood, and other hazards are factored into intervention planning, particularly for agriculture and infrastructure components.
SS3: Pollution Prevention and Resource Efficiency	EPA Act, 1994; Environmental Assessment Regulations, L.I. 1652	While core pollution and permitting rules exist, they do not include proactive screening for pollution risks from small-scale agricultural inputs. Enforcement of pesticide and chemical safety is uneven. UNEP SS3 will apply to guide safe use of agrochemicals, minimise waste generation, and promote integrated pest management (IPM) at the community level.
SS4: Community Health, Safety and Security	Local Government Act, 2016 (Act 936); National Fire Service Act, 1997	Ghanaian law does not require community health and safety screening or site-level risk assessment unless associated with major infrastructure. UNEP SS4 will apply to identify minor risks (e.g. from radar, AWS) and ensure inclusion of SEAH/GBV mitigation and access to grievance redress mechanisms for all community members.
SS5: Cultural Heritage	Constitution of Ghana (Art. 39); Wildlife Reserves Regulations (L.I. 710)	There is no national system for identifying or managing risks to cultural heritage unless within gazetted reserves or protected monuments. UNEP SS5 will apply to ensure screening for local spiritual sites, avoidance of known areas of cultural significance, and engagement with traditional authorities where applicable.
SS6: Displacement and Involuntary Resettlement	Constitution (Art. 20); State Lands Act, 1962; Lands (Statutory Wayleaves) Act, 1963	Ghanaian law provides for compensation only to legal/formal landholders. Customary users or those without legal title are not guaranteed compensation. UNEP SS6 will apply to ensure that persons with informal or customary use rights are consulted and compensated, and that all access arrangements are guided by FPIC principles.
SS7: Indigenous Peoples	Constitution of Ghana (non-discrimination); no specific national legislation on Indigenous Peoples	Ghanaian law does not define or recognise Indigenous Peoples or protect their rights in accordance with international standards. UNEP SS7 and the IPPF will apply to ensure FPIC-aligned engagement, cultural safeguards, and equitable inclusion of groups such as the Fulani in project design and benefit-sharing.
SS8: Labour and Working Conditions	Ghana Labour Act, 2003 (Act 651)	The Labour Act provides general protections, but enforcement gaps exist regarding contractor obligations, workplace grievance mechanisms, and OHS standards. UNEP SS8 will apply to ensure that all workers, including those employed by contractors, are covered by basic labour protections, grievance access, and anti-SEAH measures.

5. Environmental and Social Management Framework

5.1. Purpose of the ESMF

The ESMF provides a framework to identify potential environmental and social risks associated with project interventions and outline institutional and administrative pathways to mitigate or manage these risks. The purpose of this is to minimise potential negative environmental and social impacts of the project. The framework also identifies important environmental and social indicators and outlines the monitoring guidelines and reporting criteria for each of them.

5.2. Institutional arrangements for the ESMF

The Environmental Protection Agency (EPA) of the Ministry of Environment, Science, Technology and Innovation (MESTI) will serve as the Executing Entity (EE) of the project in close collaboration with the Directorate of Crop Services of the Ministry of Food and Agriculture (MoFA), the Forestry Commission, and District Assemblies (DAs). The EPA will assume overall responsibility for the effective delivery of project inputs and the implementation of the Environmental and Social Management Framework (ESMF).

At the national level, the EPA will receive guidance from a Project Steering Committee (PSC) chaired by MESTI and comprising representatives from: i) MoFA; ii) Ministry of Finance (MoF); iii) Forestry Commission; iv) Water Resources Commission; v) Ministry of Local Government Chieftaincy and Religious Affairs (MLGCRA); vi) Ministry of Land and Natural Resources; vii) Savannah Accelerated Development Authority (SADA); viii) GMet; ix) NADMO; x) Ministry of Gender, Children and Social Protection (MoGCSP); xi) UNCDF; and xii) Civil Society Organizations (CSOs) in Agriculture . Gender balance will be ensured in the PSC, and women's associations, ethnic minority groups and Indigenous Peoples will be represented through inclusion of CSOs advocacy groups[88], or directly by traditional authorities identified during the inception period. National implementing entities from Ghana accredited, or currently seeking accreditation, with the GCF, namely the Social Investment Fund and EcoBank, will also be invited to observe PSC meetings. The EPA will be the Secretariat to the PSC.

At the request of the Government of Ghana and the National Designated Authority (NDA), the United Nations Environment Programme (UNEP) will serve as the AE for the project. A Funding Activities Agreement will be signed between UNEP and the GoG to establish the institutional arrangements for project implementation. UNEP will oversee the formulation, start-up, implementation, and closure of the project, including evaluations (e.g. MTR and TE), and will ensure that project activities are aligned with national priorities and comply with GCF safeguard requirements. UNEP will also serve on the PSC as an observer.

The management of environmental and social impacts will be fully integrated into the implementation arrangements. All project activities will be subject to environmental and social screening prior to implementation. Screening will be carried out by locally based officers from the EPA's regional and zonal offices using UNEP's a risk screening based on UNEP's screening checklist. These tools are annexed to the ESMF (Annex II). The results will be reviewed and

[88] Such as the Centre for Indigenous Knowledge and Organizational Development (CIKOD) and the Pastoral Rights Protection Network Ghana. These organisations would only be included based on a clear and formal nomination from traditional traditional authorities respresenting potentially affected Indigenous Peoples. If IP groups prefer representation by other traditional authorities on the PSC, these will be prioritised by the project.

validated by the national-level PMU where a qualified Environmental and Social Safeguards Specialist (the Gender and Safeguards Specialist) will oversee the screening process, support the preparation of any required instruments (such as Initial Environmental Examinations or site-specific Environmental and Social Management Plans), and ensure that social risks—including those relating to land use and Indigenous Peoples—are adequately addressed. Where required, the EPA will determine if permitting procedures under the Environmental Assessment Regulations are triggered.

Each Executing Entity will designate an E&S focal point responsible for safeguards implementation at the operational level. These focal points will receive training and technical support from the EPA and the Project Gender and Safeguards Specialist, who will be embedded within the PMU. The Gender and Safeguards Specialist will provide technical guidance to the EEs, monitor compliance with the ESMF, and consolidate reporting. The focal points will also support grievance redress, document safeguard actions at the field level, and liaise with district structures.

The EPA will maintain oversight of the grievance redress mechanism (GRM). Its Regional and Zonal Offices will establish and operate a complaints and response database, ensuring timely handling of all grievances. District Environmental Management Committees (DEMCs), under the DAs, will provide first-tier resolution and escalate unresolved cases. Complaints and responses will be reported upwards through the PMU and shared with the PSC as needed.

The implementation of the ESMF will involve coordination across multiple institutions and governance levels. MESTI, with support from the EPA, will ensure the appropriate integration of safeguards into project manuals, review of investment plans, and monitoring of overall safeguards performance. The EPA will ensure that safeguards content is embedded into training materials and that operational personnel at district level are supported in their responsibilities.

Three national institutions will provide additional coordination and oversight of land, watershed, and climate-related safeguards:

- The **National Sustainable Land Management Committee (NSLMC)** provides policy and coordination support for sustainable land management at the national level. Led by the EPA, it includes senior representatives from MESTI, MoFA, Ministry of Finance and Economic Planning, Ministry of Land and Natural Resources (through the Forestry Commission), Water Resources Commission, and Ministry of Energy.
- The **National Climate Change Policy Steering Committee (NCCPSC)** provides strategic direction for implementing Ghana's Climate Change Policy, ensuring coordination among stakeholders in the areas of adaptation, mitigation, and social development.
- The Savannah Accelerated Development Authority (SADA), currently being restructured into the Northern Accelerated Development Authority (NADA), promotes long-term and sustainable development in the Northern Savanna Ecological Zone. NADA's mandate includes poverty reduction, gender equality, and support for vulnerable groups.

At the district level:

- The **District Assemblies (DAs)** will be responsible for implementing project activities on the ground. Under guidance from the Regional Environmental Management Committees (REMCs) and the District Planning Coordination Units (DPCUs), DAs will lead participatory planning, supervise implementation, and ensure adherence to ESMF procedures.

- The **District Environmental Management Committees (DEMCs)** will conduct regular inspections, compile mitigation compliance reports, and provide training to raise awareness of environmental and social safeguards.
- The **District Departments of Agriculture (DDoAs)** will sign and monitor sub-project agreements, deliver extension services, and provide technical inputs on EbA activities.

The project has identified moderate institutional capacity at the district level and within some implementing partners. To ensure effective implementation of safeguards and the GRM, targeted capacity strengthening will be undertaken. These needs will be identified during the inception phase of the project by the EE-level focal points, district officials, and extension officers. The Gender and Safeguards Specialist will lead this process and monitor progress throughout implementation.

5.3. Administration of ESMF

As the executing entity, the EPA is responsible for assessing all project activities according to the ESMF, working in conjunction with the national, regional and district institutions described above. Through these institutions, the measures outlined in the ESMF will be incorporated into any tender documentation, training material and action plans developed under the proposed project. The EPA will be overseeing the implementation/monitoring of the ESMF and provide technical guidance and specialist advice on environmental and social issues to all stakeholders[89]. Furthermore, all potential delivery organisations – including private contractors – will be vetted by the EPA in terms of their environmental and social performance to ensure they have the necessary systems in place to comply with the requirements of the ESMF.

On the ground, the DEMCs – with the aid of district extension officers – will be responsible for overseeing regular environmental inspections of project sites, compiling the findings into mitigation compliance reports. Further independent reviews may be conducted to ensure compliance with the ESMF where deemed necessary. The DEMCs will also provide training and advice to raise awareness of effective environmental management practices for all stakeholders to promote compliance with the ESMF guidelines.

5.3.1. Environmental and Social incident reporting

Any social or environmental incidents observed or reported during implementation – including non-compliance with the ESMF guidelines – will be registered with the EPA. In cases where the incident may cause serious environmental harm, it must be reported immediately to the EPA and the contractor/beneficiary involved must cease work until the incident has been resolved. Corrective actions will be tracked by the designated authority and reported to the EPA. Work may only be resumed once corrective actions have been implemented and approval has been given by the designated authority.

5.3.2. Review of ESMF guidelines

The guidelines in the ESMF will be reviewed regularly by the EPA and UNEP to ensure that the document is updated based on lessons learned during project implementation or in response to specific risks out impacts as they are identified. This adaptive approach will account for:

- changes in the environmental or social conditions in the project areas;

[89] Funds will be allocated to the EPA for the implementation and monitoring of the ESMF.

- newly identified environmental or social risks;
- changes in legislation; and
- problems or inefficiencies identified during monitoring and evaluation of ongoing activities.

5.4. Public participation

5.4.1. Community Selection and Consultations

Extensive on-the-ground public consultations and stakeholder engagements were conducted during the design of the proposed project to identify the needs of the beneficiary communities and the potential social risks that project activities may generate. These consultations will continue throughout the project lifespan (see Annex 7h: Stakeholder Engagement Plan). Furthermore, the inclusion of community members in the development and validation of Community Climate Action Plans (CCAPs) will facilitate the identification of community needs. Given the presence and designation of most beneficiary communities as ethnic minorities with some known to be constituted of Indigenous Peoples as per GCF and international definitions, these engagements will be undertaken by a process that is compliant with Free, Prior and Informed Consent (FPIC) where required, which will be guided by the Indigenous Peoples Planning Framework (IPPF).

The combination of community consultations, stakeholder engagement and the inclusive development of CCAPs utilizing approaches that are consistent with FPIC will ensure acceptance of project activities from the beneficiary communities.

Within each district, 15 communities will receive direct support from the proposed GCF project. Each community will receive support for three consecutive years. Across the 9 districts, the project will, therefore, support 120 communities over a period of seven years. The direct beneficiary communities have been selected based on a rigorous set of selection criteria and comprehensive consultations at the national, regional, district and community levels. The selection criteria includes inter alia: i) high vulnerability to climate change; ii) close proximity to at least five other vulnerable, non-beneficiary communities; iii) a willingness to participate; and iv) favourable land availability and access[90]. Beneficiary communities are selected to ensure a representative geographic coverage across each district and consideration will be given to the ethnic composition of each beneficiary community to ensure the equitable distribution of project benefits. The selection process has involved consultations with: i) representatives from MESTI, MoFA and the NDA at the national level; ii) EPA and Department of Agriculture staff from the Northern, Upper East and Upper West regional offices; iii) zonal EPA officers within target districts; iv) District Assemblies (DA) from the eight target districts; v) leaders from potential beneficiary communities; and vi) beneficiary community members.

At the time of writing, four communities within each district have been selected based on the criteria described above. These communities were selected for detailed community consultations (see Annex 7h: Stakeholder Engagement Plan) that took place during the development of the proposed project. Three of the four communities already identified will receive support during the first year of project implementation. The remaining community, as well as the additional communities that will also be identified through the selection process described above, will receive support from the second year of project implementation onwards.

[90] Favourable land availability and access refers to unencumbered land of sufficient size, located close enough to ensure equitable community use. This approach reduces the risk of reinforcing inequalities or creating land-related conflict.

5.4.2. Information disclosure

Information disclosure is a critical component of safeguards implementation and stakeholder engagement. In accordance with UNEP's Environmental and Social Sustainability Framework (ESSF) and the Green Climate Fund's Information Disclosure Policy (IDP) and Revised Environmental and Social Policy (ESP), the project will ensure that environmental and social information is made available to stakeholders in a timely, accessible, and culturally appropriate manner.

The following documents will be disclosed both centrally and at the community level, as relevant to the project stage and the nature and scale of the activity:

- The project's purpose, nature and scale, duration, and potential environmental and social risks and impacts;
- Environmental and Social Management Framework (ESMF);
- Indigenous Peoples Planning Framework (IPPF), and any Indigenous Peoples Plans (IPPs) developed during implementation;
- Environmental and Social Impact Assessments (ESIAs), site-specific Environmental and Social Management Plans (ESMPs),
- The Grievance Redress Mechanism (GRM).

In line with GCF requirements, any ESIA and associated ESMP prepared for Category B interventions will be disclosed at least 30 calendar days prior to GCF Board decision or Accredited Entity approval, whichever is earlier. Disclosure will take place on both the GCF and UNEP websites and via appropriate local mechanisms.

The ESMF, IPPF, and any future IPPs will be made available in English at district centres across the project landscapes, recognising English as the national language of Ghana. At the district and sub-district levels, summaries of safeguards documents will be translated into appropriate local languages to support accessibility. This approach reflects Ghana's high degree of linguistic diversity—home to over 80 languages—and aims to maximise inclusion within feasible operational limits.

Specifically, for any subproject identified during implementation, the Environmental and Social Impact Assessment (ESIA) and the Environmental and Social Management Plan (ESMP) must be made publicly available in both English and the relevant local language, where applicable. A subproject may comprise a specific intervention/activity or a set of intervention/activities from outputs 1 to 4.

At the local level, information will also be shared through community meetings, printed materials, and oral briefings. All communication methods will be designed to be accessible to women, persons with disabilities, and other marginalised groups, including Indigenous Peoples. During project inception, the PMU will prepare a Disclosure Implementation Plan to confirm roles, timing, language needs, and appropriate dissemination channels. Progress on disclosure will be tracked and reported through safeguards monitoring and evaluation processes.

5.4.3. Complaints register and grievance mechanism

To guarantee effective implementation of the project and to address complaints and/or grievances that may arise as a result of the project, a Grievance Redress Mechanism has been established

that complies with the requirements of UNEP and the GCF. In the event that the implementation of project activities has an adverse effect on a person or group of people[91] – either directly or indirectly – the affected party may file a complaint with the relevant authority. Local level grievance mechanisms will be established in each district, and information provided on the complaints procedure and the redress mechanisms for eligible grievances[92]. This process is intended to provide a simple and effective mechanism for community members to raise their concerns, through which their complaints may be addressed by external bodies outside of the legal system. This mechanism aims to resolve grievances — as far as possible — based on terms that are mutually acceptable to all affected parties. The eligibility of the complaint will be assessed based on several factors, including:

- the perceived negative environmental or social impact or potential threat; and
- the kind of impact identified and the explanation of how the project has caused or will potentially cause such an impact.

The Grievance Redress Mechanism (GRM) for this project builds on an existing GRM structure, adapting it to project-specific needs while continuing to use traditional conflict resolution channels. By combining institutional processes with customary practices, the mechanism ensures a culturally appropriate and effective system for addressing grievances at various levels, from the community to the national stage.

Community level

At the community level, the project will use existing grievance management committees, which are already familiar to local communities. These committees, supported by extension officers, form the basis of the GRM and will be expanded to include project-specific representatives. Local Climate Change Action Groups, tied to the project, will receive and register complaints. Traditional authorities such as Chiefs, Tindaanas, and Queen Mothers will continue to mediate conflicts, upholding the use of customary dispute resolution. Community-level committees will address complaints through interpersonal communication and mediation, ensuring that solutions are negotiated and agreed upon by all parties involved. Members will receive targeted training on project-specific grievances and solutions to enhance their capacity.

District level

At the district level, the project will integrate its grievance management process with the existing district-level grievance committees. These committees — comprising District Assembly members and EPA representatives — already handle grievances within their jurisdiction and will be adapted to manage project-related issues. Project liaisons will participate in the district committee meetings to address project grievances. This structure ensures that unresolved complaints from the community level are handled within an established framework, benefiting from local knowledge and institutional oversight.

Regional level

The regional level plays a necessary role in coordinating between districts and addressing grievances that span multiple areas. The project will use existing regional coordination offices, which represent the primary stakeholders such as EPA and other technical institutions. These offices will manage grievances that arise from broader, cross-district project activities, particularly those involving environmental and social impacts. This layer of the GRM ensures that issues

[91] In the event of a community grievance about not being selected for support, the selection criteria will be shared with the community to clarify the matter and address any doubts which may exist.

[92] Eligible grievances include but are not limited to: i) unequal access to project resources; ii) corruption; iii) issues of gender inequality; iv) lack of delivery of project interventions; v) exclusion of minority groups; and iv) unspecified environmental or social grievances related to the project, project staff or associated activities.

affecting multiple communities or districts are resolved effectively. Unresolved grievances will be escalated from the regional offices to the national level, maintaining a clear chain of accountability.

National level
At the national level, the GRM will align with the national steering committee and central EPA Office. These bodies provide oversight and ensure that grievances are handled in accordance with both project-specific needs and institutional procedures. Regular reporting from district and regional levels will keep national stakeholders informed about trends and grievance outcomes. Any unresolved cases will be referred to the national steering committee, ensuring that even the most complex grievances are addressed in a timely and transparent manner.

By building on the existing GRM framework and integrating traditional conflict resolution practices, this mechanism provides a multi-tiered, community-centric approach to managing grievances throughout the project, ensuring accountability, inclusivity, and responsiveness at all levels.

SEAH and GBV-Related Grievances

Sexual Exploitation, Abuse, and Harassment (SEAH) require a dedicated and survivor-centred grievance mechanism that operates alongside the broader project-level GRM. SEAH cases will be handled through a parallel process to ensure confidentiality, accessibility, and access to survivor support services. This system will be implemented in alignment with Ghana's legal framework, including the Criminal Offences Act (Act 29), Domestic Violence Act (Act 732), Labour Act (Act 651), and Children's Act (Act 560), which provide mandates on SEAH-related offences, survivor protections, and reporting obligations.

Due to the sensitivity of SEAH grievances, they will bypass community-level structures and be handled directly at the district level by the District Environmental Management Committees (DEMCs). This ensures confidentiality while integrating SEAH grievance handling into the established project GRM governance structure. Each DEMC will designate a Gender Focal Point, responsible for managing SEAH grievances, facilitating survivor referrals, and ensuring appropriate case handling. Also see reference to the SEAH and GBV-related Grievance mechanism detailed in Annex 7 – SEP.

Methods for Lodging a SEAH Grievance

To ensure accessibility, multiple confidential reporting mechanisms will be established at the district level and above. These will allow survivors to report grievances safely and without fear of retaliation. The available mechanisms will include:

- Direct reporting to the DEMC Gender Focal Point: Survivors may report grievances directly to the designated Gender Focal Point within the DEMC, ensuring confidential handling.
- Hotlines and text-based reporting: A dedicated SEAH hotline and SMS-based reporting platform will be established where feasible.
- Direct referral to DOVVSU: Survivors may also approach the Domestic Violence and Victim Support Unit (DOVVSU) for legal intervention.
- Anonymous reporting: Options will be provided for survivors to lodge complaints anonymously.
- NGO-supported mechanisms: Where available, SEAH grievances may also be reported through partner NGOs with demonstrated experience in supporting survivors of GBV and SEAH.

The DEMC Gender Focal Points will be responsible for ensuring that grievances are separately recorded, processed with confidentiality, and referred to the appropriate support services.

Addressing SEAH Incidents: Support, Escalation & Investigation

Upon lodging a grievance, survivors will be provided with immediate access to professional support services, ensuring they receive assistance regardless of the outcome of the grievance process. These services will include:

- Medical care, including forensic examinations where applicable.
- Psychosocial support, such as trauma-informed counselling.
- Legal assistance, including guidance on available options.
- Protection and reintegration support, ensuring survivors do not face social stigma.

Victim support services will be provided by NGOs active in the area with experience in SEAH/GBV. These organisations will be identified during project inception, ensuring that all service providers have the necessary expertise in providing such support services, including trauma-informed survivor support, legal guidance, and psychosocial care. Where additional long-term survivor support services (such as shelter, reintegration assistance, or extended psychosocial care) are required, the Ministry of Gender, Children and Social Protection (MoGCSP) will be engaged to facilitate referrals to government-coordinated GBV response services.

The DEMC Gender Focal Points will coordinate grievance handling at the district level, ensuring that all SEAH cases are appropriately managed. However, DEMCs will not conduct investigations. DOVVSU will serve as the designated government entity responsible for legal investigation and law enforcement referral. Where required, cases may be escalated to regional or national authorities. Cases will only be referred to law enforcement with survivor consent, unless Ghana's legal framework mandates compulsory reporting. Survivors will be provided with legal guidance before any formal action is taken.

To prevent future SEAH incidents, the project will conduct root cause investigations, identifying whether project structures, staff conduct, or community practices contributed to reported grievances. Where project personnel, contractors, or affiliated individuals are implicated, appropriate disciplinary measures will be implemented, ranging from warnings to contract termination and legal referral.

Monitoring, Reporting & Accountability

All SEAH grievances will be tracked separately from general project complaints, ensuring strict confidentiality. The EPA will oversee SEAH-related reporting, compiling biannual reports that will include:

- The number of SEAH grievances received and response times.
- The types of survivor support services accessed.
- Systemic risks identified and mitigation actions taken.

To ensure effective monitoring, DEMCs will submit anonymised reports to the EPA, which will consolidate findings for national-level oversight. Such oversight will be undertaken by the Project Steering Committee (PSC) with additional support and review requests from MoGCSP, where relevant, to ensure alignment with national GBV response frameworks and policies. MoGCSP's involvement will focus on periodic reviews of SEAH case management, ensuring that grievance handling mechanisms remain consistent with established national standards for survivor protection and support.

As per the considerations outlined above, the parallel process in the GRM will operate through a structured and confidential approach that prioritises survivor safety and access to support services. SEAH grievances will be handled separately from general complaints, with reporting directed to Gender Focal Points within the DEMCs to ensure appropriate case management and referral. All processes beyond the initial report will be anonymised, and grievances will be referred to DOVVSU where legal intervention is required. Survivor support services, including medical care, psychosocial assistance, and legal guidance, will be provided by local specialist NGOs operating in the project area. These NGOs will be identified during project inception by the ESS Officer in collaboration with the PMU, ensuring that all service providers have a history of working in the region and the necessary expertise in supporting survivors of GBV and SEAH

5.4.4. UNEP Stakeholder Response Mechanism (SRM)

The United Nations Environment Programme has established the Stakeholder Response Mechanism (SRM) to ensure that individuals and communities affected by projects that are subject to UNEP's ESSF have access to a reliable process for resolving concerns and disputes. This mechanism serves as an additional or alternative pathway to the project-level GRM, providing stakeholders the opportunity to submit complaints directly to UNEP if local or project-level solutions have not resolved their issues satisfactorily.

The SRM operates under the following guiding principles:

- **Adherence to the Environmental and Social Sustainability Framework (ESSF):** The SRM addresses potential breaches of the ESSF in UNEP-funded projects and works to resolve complaints related to environmental and social safeguards.
- **Neutral and Proactive Mediation:** As an independent third party, the SRM facilitates dispute resolution in a fair and impartial manner.
- **Transparency and Accessibility:** The SRM maintains a public record of complaints and progress while safeguarding the confidentiality of complainants and minimizing any risk of retaliation.
- **Cost-Free Access:** The SRM is free of charge and widely advertised to ensure awareness and ease of use for all stakeholders.

How Stakeholders Can Access the UNEP SRM

Stakeholders who believe they have been adversely affected by UNEP-funded projects or activities and have already utilised local or project-level grievance mechanisms can submit complaints to the UNEP SRM. This ensures that concerns are escalated when local solutions are not satisfactory.

To file a complaint, stakeholders can access the SRM in several ways:

1. **Online Form:** Complaints can be submitted through an online project concern form, available in English, Arabic, Chinese, French, Russian, and Spanish, on the UNEP website.
2. **Email:** Complaints can be sent via email to the Independent Office for Stakeholder Safeguard-Related Response (IOSSR) at: unep-iossr@un.org.
3. **Mail:** Complaints can also be submitted by mail to:

Independent Office for Stakeholder Safeguard-related Response (IOSSR)
Corporate Service Division, UNEP
P.O. Box 30552, 00100
Nairobi, Kenya

While anonymous complaints are not accepted, complainants can request that their identity remains confidential, and appropriate measures will be taken to prevent retaliation.

Complaint Processing and Resolution Pathways
Once a complaint is received, it is acknowledged within 10 business days and screened for eligibility within 30 business days. Eligible complaints can proceed through one of two pathways:

1. **Compliance Review:** A thorough investigation into whether UNEP activities comply with the ESSF.
2. **Dispute Resolution:** A process designed to resolve disputes through neutral mediation or other resolution methods.

The IOSSR manages these processes and engages independent experts where necessary. Throughout the process, complainants are kept informed, and relevant reports and decisions are made publicly available through the SRM's public registry.

5.4.5. GCF Independent Redress Mechanism (IRM)

In addition to the project level GRM and the UNEP SRM, project-affected persons will also have access to the GCF independent redress mechanism (IRM). While the GCF IRM operates independently from the proposed project GRM, it also serves to address complaints and grievances from persons adversely impacted by projects or programmes of the GCF. After verifying eligibility, the IRM engages with the relevant parties to explore options for resolving the problems that are raised in the complaint, with an aim to reaching a mutually satisfactory outcome. If parties are unwilling or unable to resolve the issues, the IRM conducts a compliance appraisal to determine whether a compliance investigation is merited, and if so, carries out an investigation to identify any non-compliance with GCF policies or procedures in relation to the complaint and recommends appropriate redress. The IRM monitors any problem-solving agreement or compliance recommendations that result from its processes.

Based on discussions with the primary stakeholders in a complaint or request, the IRM will work with them to develop a jointly agreed problem-solving process. This is intended to address the issues raised or, where there is no space for a problem-solving process, refer the case for IRM compliance review. The IRM conducts independent compliance appraisals and investigations of GCF projects and programs and their adherence to GCF policies and procedures. It makes recommendations to the GCF board based on its review with the intention of ensuring compliance and providing redress.

5.5. Risk assessment, management and monitoring

As identified in the project risk screening (Table 7) and UNEP Safeguard Risk Identification Form (SRIF), Outputs 1, 2 and 3 include activities that have intrinsic risk factors and may result in adverse impacts. The potential risks associated with these activities are limited, the currently variability of identified potential risks, as well as some degree of uncertainty in relation to how activities will be implemented has resulted in these Outputs being screened as having a moderate risk significance, based on the application of the precautionary principle.

Although these activities have been pre-screened, there are site-specific contextual factors that need to be considered to ensure the pre-screening is accurate at a site level. This is of particular relevance for adaptation interventions to be implemented under Outputs 2 and 3, as well as the climate monitoring equipment to be installed under Output 1. The specific process that will be followed in terms of assessment and management are described below.

5.5.1. Assessment and management of monitoring equipment installed under Output 1

As identified in the pre-screening, Output 1, has a range of risks associated with the installation of a radar, numerous automatic weather stations as well as rain and river gauges.

While almost all of this equipment is small in size[93] and will generally not exceed a footprint of 3m x 3m, some vegetation may need to be cleared to enable installation. Similarly, some sites may need to be fenced, to protect the climate monitoring equipment from vandalism and ensure long-term sustainability. Additionally, and while equipment will be installed on government land whenever possible, private land may have to be utilised to ensure adequate coverage of the installed systems.

Project staff will undertake an initial screening to assess the potential risks against the standards underpinning UNEP's ESSF in the context of the pre-screening in this ESMF and will additionally identify whether any activities trigger the need for an Initial Environmental Assessment (IEA), as per Ghanian legislation. Under the Environmental Assessment Regulations, 1999 (LI 1652), the installation of meteorological and hydrological infrastructure is classified as a Schedule 1 listed activity, which requires registration with the Environmental Protection Agency (EPA) and may trigger the requirement for an IEE and the issuance of an environmental permit, including as required for any activities that are implemented within buffer zones of protected areas[94]. The template for this initial screening will be developed during project inception and in accordance with the regulations of the EPA as well as the UNEP Safeguards Standards to ensure potential site-specific risks are identified and classified against all relevant frameworks and criteria.

Should this initial screening identify that the installation of monitoring equipment at any specific site demonstrates risks that: i) are of moderate significance according to UNEPs ESSF; or ii) fall under Schedule 1 of LI 1652 and meet the requirements for an IEE a secondary detailed assessment will be undertaken in compliance with national regulations and the policy of UNEP.

[93] This is true for all the proposed monitoring equipment excepting the s-band radar. However, given the size, cost and sensitivity of this equipment, it will be installed within an established government institution by the service providers furnishing the equipment. This is considered to reduced potential risks associated with siting or construction/installation.
[94] Such activities would require authorization and permits granted by the relevant authority. In this case the EPA in consultation with the Wildlife Division or Forestry Commission.

In every case where the IEE[95] or additional assessment is required, a site-specific mitigation plan will be developed, providing a clear description in terms of any: i) mitigation actions required to address identified risks; ii) delegation of responsibility for implementing said actions; and iii) mechanism to monitor and report on implementation of such measures as part of the project's annual reporting to the GCF.

Wherever private land, or grazing land is used to house monitoring equipment, this will be through the shared willingness of landowners and traditional authorities and only through a formal land-use agreement gained via a FPIC aligned engagement process where required. Sites will also be selected to ensure that no equipment is installed in a manner that may disrupt existing livelihood practices (such as agricultural production) or inhibit access to resources on which community members may rely. All sites will be screened against the exclusion criteria outlined in Section 5.5.4 to ensure that no activities inconsistent with the project's Category B classification are undertaken.

5.5.2. Climate change adaptation interventions implemented under Outputs 2 and 3

The screening of climate change adaptation interventions to assess their compliance with environmental and social safeguards has been conducted by the EPA in coordination with UNEP as per their ESSF (Table 6). These Mitigation actions have also been identified for interventions that demonstrate risks requiring specific targeted actions (Table 7). These mitigation measures will be further detailed in the implementation manuals and training materials developed for the project and appropriate training effected at district levels (for project staff) as well as at local levels as part of capacity building for beneficiary communities.

Acknowledging that the impacts of a specific intervention may be dependent on the local situation, further screening will take place during the validation of the CCAPs and prior to the implementation of any on-the-ground activities under Outputs 2 and 3. If private contractors are engaged in the implementation of an intervention – for example by providing on-farm earthworks – the details of the mitigation actions will be included in their contracts. District staff and any private contractors involved in on-the-ground implementation will then be responsible for ensuring that the interventions are implemented in accordance with the ESMF guidelines.

5.5.3. Activity Exclusion Criteria and Prohibited Activities

To ensure consistency with the project's Category B classification under the Green Climate Fund and UNEP risk classification systems, the following activities will be explicitly excluded from support under this project:

1. Activities requiring full Environmental Impact Assessments (Category A under GCF/UNEP criteria), including those likely to cause significant, long-term, or irreversible adverse environmental or social impacts.
2. Large-scale infrastructure development, including:
    - Construction of dams, reservoirs, or irrigation schemes exceeding 50 hectares;
    - Access routes or infrastructure that traverse protected areas or critical habitats.

[95] Criteria for the IEE will be assessed on a case-by-case basis, but generally requires the risk screening to be submitted to the EPA alongside an IEE form and a site level plan. The EPA will assess this information and provide approval for installation or request further detailed assessments to be undertaken before granting approval. In instances where it is pre-determined that an IEE will be required (e.g., should an intervention fall under schedule 1 of LI 1652), the IEE and screening can be conducted as a single exercise.

3. Production or activities that **impinge on the lands** owned, or claimed under adjudication, by **Indigenous** Peoples, without full documented free, prior and informed consent of such peoples
4. Activities involving physical resettlement or economic displacement (beyond voluntary, small-scale land sharing agreements, obtained via FPIC where impacting Indigenous Peoples).
5. Activities that negatively impact land use or result in changes in land tenure arrangements or change existing land-use restrictions, such as those that apply to grazing of livestock on agricultural land during the growing season
6. Subprojects that may interfere with Indigenous Peoples customary rights, existing land tenure, or impede existing land-use practices without obtaining free, prior, and informed consent (FPIC), where required under UNEPs ESSF.
7. Activities likely to generate significant greenhouse gas emissions, or pollution beyond permissible limits, including uncontrolled burning or industrial emissions.
8. Mining, sand winning, or extractive activities, including quarrying for road base or building materials.
9. Introduction of invasive alien species, or monoculture practices that degrade soil or ecosystem resilience.

All proposed subprojects will be screened against this exclusion list during the initial screening phase, and those found to trigger any of the above criteria will be rejected or redesigned to comply with the project's risk classification.

5.5.4. Training and sensitisation

Environmental and social sensitisation will be included in training for all staff involved in project implementation at the national, regional and district levels. The objectives of the training will be to: i) support communities and the DAs to mainstream environmental and social issues into project activities; ii) ensure the district staff have the capacity to supervise and assist communities in the implementation of activities; iii) ensure that project staff in the REMCs have the capacity to supervise and monitor the ESS compliance of activities on the ground; and iv) disseminate information on SEAH risk management and the code of conduct that will apply for all project staff.

5.6. Monitoring strategy for the ESMF

The compliance of interventions with the ESMF guidelines and mitigation measures will be continually monitored throughout the project lifespan. This will allow project managers to assess the effectiveness of environmental and social safeguards which will feed back into the reviews of ESMF guidelines. This will help reduce the overall environmental and social impact of the project by accounting for issues as they are identified. Monitoring on the interventions will be done by district extension officers and be based on four topics, namely: i) the implementation of EbA interventions according to ESMF guidelines; ii) the maintenance of natural land and no conversion of natural habitats; iii) the use of agricultural chemicals and pesticides; and iv) the balance of water-use. Additional monitoring areas will include: v) community health and safety, including SEAH/GBV-related risks where applicable; vi) the implementation of stakeholder engagement activities as per the Stakeholder Engagement Plan; vii) the operation of the project grievance redress mechanism, including the number and resolution status of grievances received, with SEAH-related cases tracked separately under confidential protocols; and viii) the implementation of the Indigenous Peoples Planning Framework (IPPF), including the development and application of site-specific Indigenous Peoples Plans (IPPs) in Year 1 and their subsequent monitoring to ensure the safeguarding of the rights of Indigenous Peoples, including land access.

Monitoring responsibilities will be shared across multiple levels. District extension officers and implementing partners will conduct routine field-level monitoring, while the Project Management Unit (PMU) will oversee safeguards compliance, consolidate reporting, and implement corrective actions where needed. Contractors will also be required to submit regular reports on safeguards compliance as part of their contractual obligations.

Safeguards monitoring will be integrated into the project's overall Monitoring and Evaluation (M&E) system. Tools to be used include compliance checklists, site monitoring reports, contractor progress reports, field visit documentation, grievance redress logs, and stakeholder engagement records. These tools will be elaborated and used as required by the relevant members of the PMU The following sample indicators act as guidance for the PMU and illustrate the types of information that may be collected and reported:

Table 10: ESMF Monitoring Indicators

Thematic Area	Sample Indicator	Source / Tool
Safeguards compliance	Number and percentage of activities screened and approved against ESMF requirements	Compliance checklists
Contractor obligations	Number of contractor reports including E&S compliance updates, including confirmation of labour contracts and adherence to Code of Conduct	Contractor reports
Field-level implementation	Number of site visits completed by district officers and PMU staff	Site monitoring reports
Land use and habitat protection	Number of reported cases of unauthorised land clearance or habitat disturbance	Field visit records, GIS analysis
Agrochemical management	Proportion of sites with appropriate chemical storage and usage practices	Monitoring checklists, extension officer records
Water-use management	Number of sites with water-use balance assessments conducted	Site monitoring reports
Stakeholder engagement	Number of stakeholder engagement activities conducted as planned	Stakeholder engagement records
Grievance redress	Number and resolution rate of grievances logged through GRM	GRM database / grievance logs
SEAH/GBV risk monitoring	Number of SEAH-related complaints received and referred, per agreed protocol	SEAH incident log (confidential)
Capacity building	Number of staff, contractors, and partners trained in E&S safeguards and SEAH prevention	Training attendance sheets, PMU reports
IPPF / IPP implementation	Number of IPPs developed; percentage of IPP commitments implemented	PMU monitoring reports; field verification
Indigenous Peoples engagement	Number of culturally appropriate consultations held with Indigenous communities	Stakeholder engagement log; IPP reports

Safeguards monitoring results will be reflected in annual reporting and incorporated into mid-term and final evaluations. Where monitoring identifies gaps or non-compliance, corrective actions will be developed in consultation with relevant partners and documented through the E&S reporting system.

5.7. Environmental and Social Management Plan

The actions necessary to carry out the avoidance, minimisation and mitigation measures for the environmental and social risks identified during the screening process are provided in Table 10 below.

Table 11. Mitigation measures for potential environmental and social safeguard impacts.

Potential environmental/social impact	Avoidance / mitigation measure	Relevant national regulations/policies applicable	Responsibility	Cost
Requirements for private land use (SS5). *Relevant for activities under Output 1*	• The project will in all instances seek to use government owned land for the installation of monitoring equipment. • Any requirement for private land, or the installation of infrastructure on pastoralist grazing areas usage will be negotiated in good faith and secured via a process aligned with free-prior and informed consent (FPIC). • No monitoring equipment will be installed on land that is used or may be used for productive purposes in the future as per community input. • Any land-use/access agreements will be recorded via a shared land-use agreement or record of donation and submitted to the GCF. • No activities that may impede existing land-use practices, or access to livelihood resources, or result in land-use conflict will be supported	Land Act, 2020 Office of the Administrator of Stool Lands Act, 1994 Forestry Commission Act, 1999 Customary Land Secretariat Regulations, 2019 Local Government Act, 2016 (Act 936) Environmental Protection Agency Act, 1994 Land Use and Spatial Planning Act, 2016	MLNR – EPA Office of the Administrator of Stool Lands DA's Traditional Authorities (TAs)	Salaries
Impacts on marginal groups, Indigenous Peoples or inequitable distribution of project benefits (SS5; SS7)	• The project will include the development of an Indigenous Peoples Plan (IPP) in consultation with affected Indigenous Peoples, including the Fulani. • The project will include E&S screenings for all on-the-ground activities, to ensure that these activities are implemented in a manner that is consistent with current local practices and does not prejudice one groups over	Land Act, 2020 Environmental Protection Agency Act, 1994 National Climate Change Policy Local Governance Act, 2016	MLNR – EPA DA's Traditional Authorities (TAs)	Salaries Additional budget included under the IPP implementation ($10,000 annual).

Relevant to activities under Output 1, Output 2 and Output 3	another or inhibit access to resources, such as water, on which Indigenous Peoples or pastoralists rely. • The project will ensure that FPIC is gained prior to the installation of any infrastructure on land used for grazing by pastoralists or Indigenous Peoples. • The IPP will ensure the project will utilises FPIC process for these engagements with Indigenous Peoples and ensure FPIC engagement reports and agreements are available for submission to the GCF. • The project will include an accessible GRM, with dedicated considerations for access for Indigenous Peoples, vulnerable groups and a dedicated SEAH grievance channel. • Project staff and contractors will be required to sign and abide by a code of conduct. • Project staff and contractors will be sensitized to SEAH risk management.	Customary Land Secretariat Regulations, 2019 Chieftaincy Act, 2008 Right to Information Act, 2019 Development Planning Systems Act, 1994	ESS focal points (district level and national level roles)	GRM Budget ($5,000 annual).
Construction related risks, including those pertaining to biodiversity impacts, health and safety and labour practices (SS1; SS3; SS4; SS8) *Relevant for activities under Outputs 1, 2 and 3*	• Environmental and Social Screenings will be undertaken for each selected site and will consider risks covered under UNEPs Safeguards Standards. • If required, an IEE will be undertaken (in compliance with national regulations and appropriate management plans implemented. • All construction works will utilise local labour if labour is required. • Construction standards will comply with national regulation, including for minimum safety standards. • All procurement will be implemented according to UNEP policies and national regulations, ensuring no child labour, forced	Land Act, 2020 Environmental Protection Agency Act, 1994 Building Regulations, 1996 Land Use and Spatial Planning Act, 2016 Labour Act, 2003 Public Procurement Act, 2003	MLNR – EPA DA's Traditional Authorities (TAs) ESS focal points (district level and national level roles)	Salaries Discretionary Safeguards fund (estimated at $60,000 across entire project[96])

[96] For ESMF updates, screenings, IEA and any need for specialist studies, ESIA's or development of capacity building material – budgeted at $10,000 annually in year 1 – 5 with half budget in year 6 and 7.

	labour or coercive labour practices occur under the project. • Project sites will be subject to regular monitoring and spot checks by EPA. • Contractors and workers will be formally contracted and required to sign and abide by a code of conduct. • Boreholes, when installed will consider appropriate siting to reduce likelihood of contamination and potential water quality issues (in cases where communities will use boreholes for drinking water). • Communities receiving boreholes will receive training on proper operation and management to reduce risks of contamination or vector/water borne disease.	Occupational Health and Safety Policy Ghana Building Code, 2018		
Introduction of harmful species including genetically modified organisms (GMOs) (SS1) *Relevant for activities under Output 2 and Output 3*	• All species to be included in the menu of interventions — including any proposed genetically modified organisms (GMOs) — will be screened (based on behaviour in the northern savanna and similar environments) to ensure that they are not invasive, highly water demanding, likely to negatively impact other crops grown nearby, or require substantial application of fertiliser or pesticides. • Mixed farming systems will be encouraged, as opposed to extensive mono-cropping, to reduce pest and market vulnerability. • If GMOs are proposed, their use will be subject to regulatory review in accordance with Ghana's national biosafety procedures and with due regard to the Cartagena Protocol on Biosafety.	Forestry Commission Act, 1999 Environmental Protection Agency Act, 1994 The Tree Crops Policy Biosafety Act, 2011 (Act 831)	Forestry Commission MLNR – EPA	Staff Salaries (co-finance)[97]

[97] Under Activity 2.2, existing government staff working on the project (salaries paid by in-kind contributions) will review all interventions proposed in the individual CCAPs against evaluation criteria set by DEMCs, REMCs, the PMU and Directorate of Crop services. One of the evaluation criteria will be to ensure that the proposed interventions do not violate any of the social and environmental safeguards put in place by the proposed project. The reviews will take place for the first 5 years of the project as CCAPs are developed in each of the beneficiary communities. This cost is captured in budget note B16.

Habitat conversion (SS1) *Relevant for activities under Output 2 and Output 3*	• Agricultural EbA interventions will only be supported on existing farmlands. • The project will not finance conversion of natural habitats to cropland or plantation, nor directly finance large-scale irrigation. • The project will finance improved natural habitat management and improved fire management. • The project excludes the development of monocropping systems and will ensure that any perennial crops (e.g. cashew, mango) are integrated into diversified or mixed cropping systems. • Training and extension support provided under the project will promote intercropping, agroforestry, and climate-resilient diversified farming systems, in line with the project's exclusion of monocropping.	Forestry Commission Act, 1999 Land Use and Spatial Planning Act 2016 The Office of the Administrator of Stool Lands Act 1994 Environmental Protection Agency Act 1994 Ghana National Fire Service Act, 1997 Lands Commission Act, 2008 The National Environment Policy, 2014	Forestry Commission MLNR – EPA Office of the Administrator of Stool Lands	Staff Salaries[98]
Overly rigorous fire suppression (SS1) *Relevant for activities under Output 3*	• The project will support improved fire management through controlled early burning, rather than outright fire suppression. • Village fire volunteers may receive training and basic equipment but will not be encouraged to directly tackle large and dangerous fires.	Ghana National Fire Service Act, 1997 National Wildfire Management Policy, 2006	MLNR – EPA Ghana National Fire Services (NFS) DA's Traditional Authorities (TAs)	**$19,200 per year for the first five years of the project (Included in project activity budget)[99]

[98] Under Activity 2.2, existing government staff working on the project (salaries paid by in-kind contributions) will review all interventions proposed in the individual CCAPs against evaluation criteria set by DEMCs, REMCs, the PMU and Directorate of Crop services. One of the evaluation criteria will be to ensure that the proposed interventions do not violate any of the social and environmental safeguards put in place by the proposed project. The reviews will take place for the first 5 years of the project as CCAPs are developed in each of the beneficiary communities. This cost is captured in budget note B16.

[99] Under Activity 2.1, target communities will be trained on climate change impacts and the menu of adaptation interventions. Within this activity, target communities will be trained on appropriate fire management. This training will take place for the first five years of the project. This cost is captured in budget note C7.

Harvesting of wild species (SS1) *Relevant for activities under Output 2 and Output 3*	• Increased extractive use of natural resources will only be supported where populations are sufficiently robust, and subject to community monitoring systems. • Interventions to support harvesting of wild species will only be supported where this is traditional activity and only on land in which the community has existing access or tenure (for example within community managed forestry plots).	Environmental Protection Agency Act, 1994 Forestry Commission Act, 1999 Ghana Food and Agriculture Sector Development Policy (FASDEP II), 2007 Ghana Forest and Wildlife Policy, 2012	MLNR – EPA Forestry Commission	**$24,000 per year[100]
On-farm earthworks (SS1; SS4) *Relevant for activities under Output 3*	• Only as part of EbA interventions selected by landowners and users. • Only within existing fields, or in near-field sites involving habitats that are degraded and/or common within the agricultural landscape. • Water-harvesting structures (e.g. dugouts) may be constructed along ephemeral streams or eroded drainage lines, but not within well-vegetated, perennial watercourses. • Training of farmers on the use of climate decision-support system will include provisions on how to utilise the tools in a sustainable and responsible manner that will not result in negative impacts to groundwater resources, the balance of surface water and water quality.	Lands Commission Act, 2008 The Lands (Statutory Wayleaves) Act, 1963 Environmental Protection Agency Act, 1994 Local Government Act, 2016 The Office of the Administrator of Stool Lands Act 1994 The Ghana Strategic Investment Framework for Sustainable Land	MLNR – EPA DA's DDoA Office of the Administrator of Stool Lands	**$80,000 per year[101]

[100] Under Activity 4.1, local intervention monitor will be designated in each target community to monitor progress and the socio-ecological impacts of the climate change adaptation interventions. Within this monitoring framework, the intervention monitors will monitor the populations of species targeted for NTFPs to ensure that extraction rates are sustainable. Monitoring will take place throughout the lifespan of the project. This cost is captured in budget note E3.

[101] Under Activity 2.3, national consultants will provide technical assistance in the implementation and maintenance of adaptation interventions. These consultants may be drawn from government departments (e.g. department of water to oversee riverbank stabilisation interventions), academia or specialised research institutes. Amongst other technical advice, these consultants will provide specialised guidance to ensure that interventions adhere to all relevant environmental and social safeguards and standards. This will take place throughout the lifespan of the project as interventions are implemented in different target communities This cost is captured in budget note B23.

	• Only local-labour construction techniques will be use, no work camps will be established. • If any heavy equipment is required, it must be used and under qualified supervision. • Earthworks must be conducted during the dry season, as required • For excavations: i) spoil should be used for bunding if possible, or otherwise left in low mounds (<1m height) at least 10m from water courses; and ii) topsoil must be piled separately and used to cover spoil. • Chance finds of artefacts suspected to have cultural or historical value will result in: i) immediate cessation of work and notification of a project officer; ii) inspection by TCO to determine if genuine artefact; and if so iii) notification of Ministry of Chieftaincy & Culture to determine appropriate steps before work may continue. • Code of conduct for all contractors and project workers	Management (GSIF), 2011–2025		
Increased use of agricultural chemicals (SS3; SS4) *Relevant for activities under Output 2*	• Species dependent on high pesticide or fertiliser use will not be introduced. • The project will not finance pesticides. • Integrated pest and nutrient management approaches will be included within EbA interventions and capacity building programs as appropriate.	Part Two of the Environmental Protection Agency Act, 1994 Ghana Food and Agriculture Sector Development Policy (FASDEP II), 2007	MLNR – EPA DDoA	**$47,295 per year for the first five years of the project provided by in-kind contributions[102]

[102] Under Activity 2.2, existing government staff working on the project (salaries paid by in-kind contributions) will review all interventions proposed in the individual CCAPs against evaluation criteria set by DEMCs, REMCs, the PMU and Directorate of Crop services. One of the evaluation criteria will be to ensure that the proposed interventions do not violate any of the social and environmental safeguards put in place by the proposed project. The reviews will take place for the first 5 years of the project as CCAPs are developed in each of the beneficiary communities. This cost is captured in budget note B16.

Increased demand for irrigation (SS1; SS3) *Relevant for activities under Output 2*	• The project will not finance large-scale or diesel pump irrigation. • The project may finance improvement of existing irrigation schemes or those being introduced by other projects, e.g. through application of more efficient technologies such as drip or pot irrigation, or through capacity building of water user groups for better management and maintenance of irrigation systems, and resolution of water use disputes.	Environmental Protection Agency Act, 1994 Water Resources Commission (WRC) Act, 1996 National Action Programme to Combat Drought and Desertification The Ghana Irrigation Policy, 2011	DDoA GIDA MOFA – Agricultural Extension Services Directorate MOFA – Women in Food and Agricultural Development Directorate	**$80,000 per year[103]
Pollution and hazardous waste risks from small-scale processing by beneficiaries (SS3; SS4) *Relevant for activities under Output 2*	• Provide training to beneficiaries on safe handling, storage, and disposal of materials used in small-scale processing activities (e.g. caustic agents in soap-making, by-products from shea processing). • Disseminate good practice guidance on pollution prevention, resource efficiency, and environmentally sound waste disposal tailored to common livelihood activities. • Promote the use of low-input, low-pollution processing techniques through technical support and extension services.	Environmental Protection Agency Act, 1994 Hazardous and Electronic Waste Control and Management Act, 2016 (Act 917) Ghana Food and Agriculture Sector Development Policy (FASDEP II), 2007	EPA MOFA – Agricultural Extension Services Directorate MOFA – Women in Food and Agricultural Development Directorate	Staff Salaries (co-finance)

[103] Under Activity 2.3, national consultants will provide technical assistance in the implementation and maintenance of adaptation interventions. These consultants may be drawn from government departments (e.g. department of water to oversee riverbank stabilisation interventions), academia or specialised research institutes. Amongst other technical advice, these consultants will provide specialised guidance to ensure that interventions adhere to all relevant environmental and social safeguards and standards. This will take place throughout the lifespan of the project as interventions are implemented in different target communities This cost is captured in budget note B23.

5.8. ESMF Budget

Table 12. Budget for implementing the ESMF.

Budget Item	Total
Staff Salaries for screenings, oversight and monitoring activities (In-kind co-finance)	N/A
Capacity building and training workshops (assigned to project activities in the budget. Notes are provided in the ESMF budget).	N/A
Safeguards Implementation Fund: To enable oversight visits, spot checks, communications and safeguards support from safeguards focal point at national level ($10,000 per year in yr.2 – yr.7).	$60,000
Safeguards discretionary fund, with a limit of $12,000 per year (Max $12,000 in yr.1 – yr.6 with half amount available in yr.7) for external assessments, specialist inputs, NGO implementation support, development of capacity building materials (including SEAH related materials) or contribution of safeguards specialists to workshops, external monitoring or other activities as required.	$78,000
Independent safeguards review and recommendations – Parallel Process to MTR (Yr. 3)	$15,000
Local level SEAH and GBV Risk Assessment, Spatial Report and Integration with GAAP	$45,000
GRM Budget ($6000 per year in yr.1 – yr.7)	$42,000
IPPF and IPP Budget (see IPPF for breakdown)	$118,500
Total (excluding in-kind staff cost and costs already ascribed to activities)	**$358,500**

5.9. ESMF and IPPF Disbursement Schedule

Table 13. Disbursement schedule for the ESMF and IPPF

	Yr.1	Yr.2	Yr.3	Yr.4	Yr.5	Yr.6	Yr.7	Total
Safeguards Implementation Fund		$10,000	10,000	10,000	10,000	10,000	10,000	$60,000
Safeguards Discretionary Fund	$12,000	$12,000	$12,000	$12,000	$12,000	$12,000	$6,000	$78,000
GRM Budget	$6,000	$6,000	$6,000	$6,000	$6,000	$6,000	$6,000	$42,000
ESMF/Safeguards Review			$15,000					$15,000
SEAH Risk Assessment	$45,000							$39,000
IPPF Implementation	$46,500							$46,500
IPP Implementation		$12,000	$12,000	$12,000	$12,000	$12,000	$12,000	$72,000
Total per year	$109,500	$40,000	$55,000	$40,000	$40,000	$40,000	$34,000	$358,500

6. Grievance Redress Mechanism

The GRM will integrate traditional practices with formal institutional processes to create a comprehensive and culturally appropriate system that addresses stakeholder concerns effectively while supporting the overall success of the project. The GRM will be equally open to all project stakeholders, including contractors or contracted labourers and as part of the IPPF, an IP specific GRM process will be designed, in a consultative processes with potentially affected IP groups. Based on stakeholder engagements with community members, at the community level, disputes are initially addressed through direct interpersonal communication, escalating to mediation by

traditional authorities such as Chiefs, Tindaanas, and Assembly-men when necessary. Unit Committees and Queen Mothers play supportive roles, particularly in advocating for marginalised groups. For more complex challenges, including gender-based violence or child abuse, resolution pathways extend from family and community support systems to religious leaders and formal institutions, such as police or social welfare services. In the context of the project, community members will be encouraged to raise any project-related grievances first with project-supported community grievance committees or designated extension officers, who will be trained to receive and document grievances. These actors represent the first level of entry into the project grievance redress mechanism.

Building on the experiences of previous donor-funded projects, an institutional GRM has been established with a tiered structure. The system initiates with community committees supported by extension officers, progresses to district-level steering committees comprising District Assembly members and EPA representatives, and culminates at the national steering committee and central EPA Office. If a grievance is not resolved at the community level within a reasonable period, it will be escalated to the district level, and subsequently to the national level if needed. This structure ensures grievances are managed at each level with precision, supported by regular reporting mechanisms that enhance accountability and transparency. The project's GRM establishment strategy aims to integrate these traditional and institutional mechanisms into a comprehensive system. This integration will involve clearly defined escalation criteria, enhanced inclusivity measures for marginalised groups, and specialised protocols for complex cases. At each level, the EPA will oversee the process, and unresolved issues may be referred to the UNEP for further review, where necessary. The strategy emphasises a community-centric approach, focusing on negotiated, problem-solving methods that benefit the community as a whole. To ensure effectiveness, the project will implement capacity-building initiatives for community leaders and committee members, alongside robust monitoring and evaluation processes.

Information about the grievance redress mechanism will be actively disseminated to all project stakeholders, including affected communities, contractors, and implementing partners. Dissemination methods will include oral briefings during community entry and mobilisation meetings, printed posters and flyers in local languages posted at community centres, assembly halls, and extension offices, as well as inclusion in training sessions and district planning forums. Where appropriate, local radio announcements and social mobilisation campaigns will be used to enhance awareness. Project implementers and extension officers will be trained to explain the GRM process and entry points during all relevant field engagements.

The institutional GRM described above provides a foundation for managing grievances across multiple levels. Rather than creating a different system, the project aims to adopt and build upon these existing structures, tailoring them to meet its specific needs. This strategy ensures that the project benefits from proven mechanisms while maintaining consistency with local practices and institutional frameworks.

Community level structures

At the community level, the project will use the existing community committees supported by extension officers as the foundation for its local grievance management. These committees, already familiar to community members, provide an excellent starting point for the project's GRM. They will serve as the first point of contact for any project-related grievances. To adapt this structure to project needs, the composition of these committees will be augmented to include project-specific representatives with a particular focus on including representatives from vulnerable or marginalized groups, ensuring relevance to project activities. Committee members

will receive training on project-related issues and resolution techniques specific to potential project-induced grievances. Clear communication channels between these committees and project management will be established to facilitate efficient information flow. Grievances that cannot be resolved at the community level will be escalated to the district level. For projects involving Indigenous Peoples, a local-level GRM adapted to IP structures, conflict management and customary law will be developed.

District level structures
At the district level, the project will integrate its grievance management processes with the existing district-level steering committees. This integration will involve appointing project liaisons to participate in relevant district steering committee meetings and developing protocols for handling project-related grievances within the existing committee structure. District Assembly members and EPA representatives on these committees will be briefed on project specifics to facilitate informed decision-making. District-level committees will also be responsible for coordinating with the Executing Entity (EPA) where additional guidance is required, and for escalating unresolved cases to the regional level. This level will also serve as the primary channel for receiving and addressing grievances submitted by project contractors, labourers, and other implementation partners. This approach ensures that project-related grievances are addressed within the established framework while benefiting from the expertise and authority of the district-level structures.

Regional level structures
The project will leverage regional coordination offices to ensure effective grievance management and information flow between district and national levels. In the context of northern Ghana, these offices will play a crucial role in addressing environmental and social issues related to climate-resilient agriculture and EbA interventions. Regional structures will include technical coordination offices that represent relevant stakeholders such as EPA and other institutions. These offices will facilitate grievance resolution by managing issues that arise across multiple districts, particularly those related to project activities that span large geographic areas. Unresolved grievances or those requiring further action will be escalated to the EPA's Client Relations Unit (CRU) at the national level, ensuring systematic documentation and resolution. Where cases remain unresolved at the regional level, or raise systemic concerns, they may be referred by the EPA to UNEP for review and appropriate oversight. This regional layer will enhance the project's ability to address cross-district challenges, minimising delays and ensuring the effective implementation of climate-resilient strategies.

National level structures
The project will coordinate closely with the national steering committee and central EPA Office. This coordination will involve regular reporting of project-specific grievance data to the central EPA Office and participation in relevant national steering committee meetings. These interactions will provide opportunities to update national stakeholders on project GRM activities and seek guidance on complex cases. At this level, the EPA will ensure that all grievances escalated from lower levels are resolved or referred to the UNEP where required. The project will align its GRM procedures with national standards while maintaining flexibility to address project-specific needs, ensuring consistency with broader governance frameworks.

GRM Timelines
Indicative timelines for grievance resolution at each level will be defined and validated during project inception. At this stage, it is expected that grievances raised at the community level will be addressed within 10 working days. Where resolution is not possible, complaints may be escalated to the district level for resolution within an additional 10–15 working days. Regional-

level cases should be addressed within 15 working days of escalation, and unresolved cases at the national level (EPA) are expected to be reviewed within 20 working days. If necessary, cases may be referred to UNEP, or to external mechanisms such as the UNEP Stakeholder Response Mechanism or the GCF Independent Redress Mechanism, according to their procedures.

Table 14: Indicative GRM Timelines

Level	Indicative Resolution Period
Community level	Within **10 working days** of complaint receipt
District level	Within an **additional 10–15 working days** if unresolved at community level
Regional level	Within **15 working days** of escalation from district level
National level (EPA)	Within **20 working days** of escalation from regional level
Referral to AE (UNEP) or external mechanisms	As per respective mechanism's procedures

Specialised protocols and inclusivity

Building on the existing GRM structure, the project will develop and implement specialised protocols for handling grievances related to project activities, ensuring they complement existing procedures. Additional inclusivity measures will be tailored to the project's stakeholder groups, particularly focusing on those who may be impacted by project activities. Clear escalation criteria will be defined to determine when and how grievances move from project-specific handling to the broader institutional GRM, ensuring a seamless interface between project and institutional mechanisms.

Capacity building initiatives

To ensure effective adoption of the existing GRM structures, the project will implement targeted capacity building initiatives. These will include training for community committee members on project-specific aspects and how they integrate with existing GRM processes, workshops for district and regional level officials on the project's activities and potential impacts, and orientation sessions for national-level stakeholders on how the project's GRM activities align with and support broader institutional mechanisms. These initiatives will enhance the overall capacity of the GRM while ensuring its effectiveness for project-specific needs.

Monitoring and evaluation

The project will also implement a robust monitoring and evaluation system to track the effectiveness of adopting existing GRM structures for project-specific needs. This system will identify areas where further adaptation may be necessary to meet project goals and provide regular feedback to all levels of the existing GRM structure on project-related grievance trends and resolutions. This continuous assessment and improvement process will ensure that the adopted GRM remains responsive to both project and broader community needs.

In alignment with international best practices, the project-level GRM will address community concerns promptly through dialogue and engagement. The mechanism will employ an understandable and transparent process that is culturally appropriate, rights-compatible, and readily accessible to all stakeholders at no cost and without retribution. Particular attention will be paid to ensuring the GRM is gender- and age-inclusive, responsive to the needs of women, the elderly, persons with disabilities, youth, and other potentially marginalised groups. The GRM's design will specifically address potential access barriers for these groups, tailoring approaches as appropriate to the project context. Moreover, while providing an effective means of resolution, the GRM will not impede access to judicial or administrative remedies that may be relevant or applicable.

SEAH and GBV related grievances

As a result of the sensitivity regarding grievances related to GBV or SEAH, all reported grievances of this nature will be managed through a specific and dedicated process that will be implemented alongside the project level GRM. While grievances related to SEAH/GBV will still follow the procedure described above, an additional parallel process will be instituted to ensure the safety of the survivor and prioritise access to support services.

The core considerations of this process include the following:

- Automatic eligibility of grievances.
- Anonymisation and/or prioritisation of protection and privacy of the victim in all official documentation and processes.
- Prioritisation of support services for the victim through referral to local active specialist NGOs/CBOs (to be identified during project inception). Support will be provided for as long as required, and at the expense of the project.
- Investigation of the root cause of the grievance and appropriate disciplinary action undertaken.
- Monitoring and reporting of all SEAH/GBV grievances in a separate and anonymised register for inclusion in biannual project reports.
- Adequate restitution and/or reporting of the event and perpetrator to appropriate legal bodies/institutions (as required by law and/or policies of the AE/IP).

As per the considerations outlined above, the parallel process in the GRM will operate in a victim-centred structure. This will ensure that the safety of the victim/survivor and the need to provide support to them is prioritised above all other considerations. All processes beyond the initial report will be anonymised, and access to support services will be provided alongside the receipt of the grievance. Support services will be provided by a local specialist NGO that operates in the vicinity of the project sites. These specialist NGOs will be identified by the ESS Officer in collaboration with the PMU. These NGOs should have a history of working in the region and specialised expertise in supporting survivors of GBV and SEAH.

GCF Independent Redress Mechanism

In addition to the project-level GRM and the UNEP SRM, project-affected persons will also have access to the GCF Independent Redress Mechanism (IRM). The IRM operates independently from the project and serves to address complaints and grievances from individuals, groups, or communities who believe they have been or may be adversely affected by a GCF-funded project or programme, including projects under active consideration.

Any affected person, or their authorised representative (including government or civil society actors), may submit a complaint to the IRM. Complaints can be filed through various channels:

- By email or mail;
- By voice or video recording; or
- By completing the online complaint form available on the IRM website: https://irm.greenclimate.fund.

Submissions are accepted in any language, and the IRM will arrange for translation where needed. Complaints can also be submitted confidentially, and the IRM will consult complainants before disclosing any identifying information if confidentiality is requested.

Once eligibility is verified, the IRM may engage the parties in a jointly agreed problem-solving process. If resolution is not possible, the IRM conducts an independent compliance appraisal and,

where warranted, a compliance investigation to assess whether GCF policies or procedures were violated. Based on its findings, the IRM makes recommendations for appropriate redress and monitors their implementation. More information, including submission guidelines, is available at: https://irm.greenclimate.fund.

If Indigenous Peoples are involved, the Indigenous Peoples Specialist at GCF, Mrs Jennifer Rubis can also be contacted at jrubis@gcfund.org

Annex I: Terms of Reference (ToR) for the SEAH Risk Assessment in Northern Ghana

1. Background & Rationale

Sexual Exploitation, Abuse, and Harassment (SEAH) risks are of particular concern in rural agricultural, financial, and market sectors, where power imbalances and informal work arrangements may expose women to coercion and exploitation. In the context of this project, SEAH risks may arise within:

- Farmer cooperatives, where hierarchical leadership structures could create vulnerabilities for members.
- Agricultural training programs, where trainers and supervisors may hold influence over trainees.
- Financial inclusion initiatives, where access to loans and credit could be exploited.
- Market interactions, where informal labourers, traders, and transporters may be at risk of harassment and abuse.

To ensure effective safeguards and mitigation measures, a district- and sub-district-level SEAH risk assessment will be conducted during implementation. The findings will be used to:

- Identify geographic areas where SEAH risks are elevated based on socio-economic and institutional factors.
- Classify sub-districts into low, moderate, and high-risk categories to guide targeted interventions.
- Develop a spatial risk map, visualizing SEAH risk levels at a sub-district level.
- Inform the Gender Action and Assessment Plan (GAAP) to ensure responses are tailored to risk severity.

2. Objectives of the SEAH Risk Assessment

The main objectives of this assessment are to:

1. Map SEAH risks at a sub-district level, identifying geographic and sectoral vulnerabilities.
2. Assess key risk factors, including economic dependence, institutional gaps, and informal labour structures.
3. Engage key stakeholders, including women's groups, farmer cooperatives, financial service users, and market actors.
4. Develop a SEAH risk categorization framework, assigning risk levels (low, moderate, high) based on evidence.
5. Produce a spatial risk map, visualizing SEAH risk distribution across project districts.
6. Ensure integration into the project's GAAP, guiding targeted mitigation measures.

3. Scope of Work

The SEAH risk assessment will focus on the district and sub-district levels rather than individual project sites. It will cover all areas where project interventions interact with vulnerable populations, particularly women in agriculture, finance, and market activities.

The assessment will include:

3.1 <u>Desk Review & Data Collection</u>

- Review existing GBV and SEAH reports at the national, regional, and district levels.
- Analyse socio-economic data on labour force participation, cooperative membership, and financial access among women.
- Identify institutional support structures (DOVVSU, MoGCSP, civil society organizations) available at the sub-district level.

3.2 Stakeholder Consultations & Field Engagement

- Conduct key informant interviews with district-level stakeholders, including gender officers, law enforcement, and financial service providers.
- Hold focus group discussions with women in farmer cooperatives, agricultural training programs, and informal market settings.
- Survey perceptions of SEAH risks among project beneficiaries and local community members.

3.3 SEAH Risk Mapping & Categorization

- Develop a risk classification framework to assign sub-districts into low, moderate, and high-risk categories based on stakeholder input, socio-economic conditions, and institutional support capacity.
- Identify key SEAH risks associated with project activities, including risks linked to farmer cooperatives, agricultural training programs, financial inclusion initiatives, and market interactions.
- Map specific SEAH risk factors, such as power imbalances, economic dependence, and vulnerabilities in informal labour structures.
- Prepare a spatial map demonstrating risk categories at a sub-district level across the various project landscapes.
- Ensure findings are cross-referenced with GAAP interventions, guiding targeted responses and mitigation measures.

4. Deliverables & Outputs

The assessment will produce the following outputs:

Deliverable	Description	Timeline
Inception Report	Outlines methodology, data sources, and stakeholder engagement plan.	Month 1
Desk Review Report	Summarizes existing SEAH risk data, institutional frameworks, and socio-economic analysis.	Month 2
Stakeholder Consultation Summary	Key findings from focus groups, interviews, and surveys.	Month 3
SEAH Risk Map & Categorization Report	Mapping of different SEAH risks associated with project activities and classification of sub-districts into low, moderate, and high-risk categories.	Month 4
GIS-Based Spatial Risk Map	A map or other visual representation of spatial SEAH risk levels at a sub-district level.	Month 4
Final SEAH Risk Assessment Report	Comprehensive findings with recommendations for GAAP integration.	Month 5

5. Responsibilities & Institutional Arrangements

The SEAH risk assessment will be implemented under the oversight of the Project Management Unit (PMU), with coordination across key institutions:

Institution	Role & Responsibilities

PMU Safeguards Team & Gender Specialists	Lead overall implementation, ensure alignment with project safeguards.
Gender Focal Points in DEMCs	Support data collection, coordinate stakeholder consultations at the district level.
MoGCSP	Provide guidance on policy alignment, assist with institutional mapping.
DOVVSU	Provide data on SEAH-related cases and institutional response capacity.
Project Steering Committee (PSC)	Review findings, integrate risk categorization into project monitoring.

6. Risk Categorization & Integration into GAAP

- Districts will be classified as:
- Low Risk: No significant SEAH concerns reported; existing institutional frameworks are strong.
- Moderate Risk: Some SEAH vulnerabilities identified; institutional response capacity exists but needs strengthening.
- High Risk: SEAH risks are elevated; additional mitigation measures and targeted interventions are required.
- The GAAP will define tailored interventions for each risk level including recommended capacity building and risk management strategies, ensuring appropriate SEAH safeguards at different project locations.

7. Timeline & Implementation Plan

The SEAH risk assessment will be conducted within the first year of project implementation, ensuring findings inform project activities. The proposed timeline is as follows:

Activity	Month 1	Month 2	Month 3	Month 4	Month 5
Inception & Desk Review	x				
Stakeholder Consultations & Fieldwork		x	x		
Risk Mapping, Categorization & Sub-district Level Risk Map			x	x	
Final Report & GAAP Integration				x	x

8. Budget Considerations

A budget allocation will be made for:

- Field data collection (transportation, surveys, and engagement sessions).
- GIS mapping services.
- Technical expertise for risk classification and reporting.

Category	Description	Estimated Cost (USD)
Consultant Fees	Lead Consultant (International, $650/day, 20 days)	$13,000
	Support Staff (National Consultant, $300/day, 30 days)	$9,000
Travel & Accommodation	In-country transport ($100/day, 30 days)	$3,000

Annex II: Environmental and Social Screening Process and Template

2. Environmental and Social Screening Form

Project: Climate-Resilient Landscapes for Sustainable Livelihoods in Northern Ghana

Template for Field-Level E&S Screening – To be validated/further developed during project inception

Part 1: Overview and Summary of Findings

This section serves as both the administrative record and decision summary of the environmental and social screening process. It captures key information about the activity being screened, including its location, implementation partners, and the individuals responsible for screening and review. It also provides a summary of the screening outcome, including the assigned risk category, any exclusion criteria triggered, and the need for follow-up actions such as the preparation of a site-specific ESMP or Initial Environmental Examination (IEE). This combined overview and summary ensures that each intervention is screened consistently in line with UNEP's Environmental and Social Sustainability Framework (ESSF) and the Green Climate Fund Risk Guidelines, and that clear documentation is maintained for compliance and oversight.

A. General information

Item	Description
Title of Activity / Intervention	
Output Number	☐ Output 2 ☐ Output 3 ☐ Other (specify):
Location (Region/District/Community)	
GPS Coordinates (if available)	
Implementing Entity / Partner	
Site Focal Point / Contact Person	
Date of Screening	

B. Screening Responsibility

Role	Name and Title	Institution	Signature
Screened by	☐ EPA District Officer ☐ PMU Safeguards Specialist ☐ Other:		
Reviewed and Approved by	☐ PMU Safeguards Specialist ☐ EPA National Office ☐ UNEP Safeguards Focal Point ☐ Other:		

C. Screening Outcome Summary (please fill last)

Item	Tick ✓ or Fill
Does the activity trigger any exclusion criteria?	☐ Yes ☐ No (If Yes → Not eligible)
Risk Category (per UNEP/GCF)	☐ Low ☐ Moderate ☐ Category A (Not eligible)
Further Action Required	☐ None ☐ Site-specific ESMP ☐ Initial Environmental Examination (IEE) ☐ Environmental Permit (EPA)
Referral Required	☐ Refer to EPA ☐ Refer to UNEP Safeguards Team ☐ Other:
Comments / Notes	

Part 2: Risk Screening Questions

(To be completed for each intervention site/activity

This section of the screening form is designed to identify potential environmental and social risks associated with individual project interventions. It draws directly from UNEP's Environmental and Social Sustainability Framework (ESSF) and includes questions covering general safeguard principles (GPs) and the eight thematic safeguard standards. The responses will help determine the nature and severity of potential risks and whether additional assessments or mitigation measures are required. All interventions will be screened using this form prior to implementation, and results will inform categorisation, permitting, and safeguards planning processes.

A. General Safeguard Principles (GP)

No.	Screening Question	Yes	No	N/A	Comments
GP1	Have stakeholders who may be positively or negatively affected been identified?	☐	☐	☐	
GP2	Have vulnerable or marginalised groups (e.g. persons with disabilities) been engaged meaningfully?	☐	☐	☐	
GP3	Have human rights or gender concerns been raised during engagement?	☐	☐	☐	
GP4	Is there gender-balanced representation in project design and implementation?	☐	☐	☐	
GP5	Has a gender-responsive approach been developed?	☐	☐	☐	
GP6	Is a project-level grievance redress mechanism in place and accessible?	☐	☐	☐	
GP7	Has project information (including E&S documents) been disclosed?	☐	☐	☐	
GP8	Have affected communities been informed of the GRM?	☐	☐	☐	
GP9	Could short-term gains create long-term burdens for communities?	☐	☐	☐	
GP10	Could benefits be unequally distributed, excluding vulnerable groups?	☐	☐	☐	

B. Safeguards Standards Principles Checklist

No.	Screening Question	Yes	No	N/A	Comments
Safeguard Standard 1: Biodiversity, Ecosystems and Sustainable Natural Resource Management					
SS1.1	Could the activity lead to conversion or degradation of habitats, or losses to biodiversity or ecosystem services?	☐	☐	☐	
SS1.2	Could the activity impact legally protected areas or areas recognised by local communities?	☐	☐	☐	
SS1.3	Could the activity affect habitats of high conservation value?	☐	☐	☐	
SS1.4	Does the activity conflict with recognised land use or management plans?	☐	☐	☐	
SS1.5	Could the activity pose risks to endangered species or critical habitats?	☐	☐	☐	
SS1.6	Could the activity lead to soil erosion or land degradation?	☐	☐	☐	
SS1.7	Could the activity reduce surface or groundwater quality or quantity?	☐	☐	☐	
SS1.8	Does the activity involve reforestation, plantations or forest harvesting?	☐	☐	☐	
SS1.9	Does the activity support agriculture, aquaculture, or animal production?	☐	☐	☐	
SS1.10	Could the activity introduce or spread invasive species?	☐	☐	☐	
SS1.11	Does the activity involve use or handling of GMOs?	☐	☐	☐	

SS1.12	Does the activity involve collection or use of genetic resources?	☐	☐	☐	
Safeguard Standard 2: Climate Change and Disaster Risks					
SS2.1	Does the activity improve long-term resilience to climate risks?	☐	☐	☐	
SS2.2	Is the area subject to hazards like floods, droughts, or extreme events?	☐	☐	☐	
SS2.3	Are the expected results sensitive to climate change impacts?	☐	☐	☐	
SS2.4	Are local communities highly vulnerable to climate or disaster risks?	☐	☐	☐	
SS2.5	Could the activity lead to increased GHG or black carbon emissions?	☐	☐	☐	
SS2.6	Does the activity promote mitigation or carbon sequestration?	☐	☐	☐	
Safeguard Standard 3: Pollution Prevention and Resource Efficiency					
SS3.1	Could the activity release pollutants with adverse environmental impacts?	☐	☐	☐	
SS3.2	Could the activity generate hazardous or non-hazardous waste?	☐	☐	☐	
SS3.3	Does the activity involve use of hazardous materials or chemicals?	☐	☐	☐	
SS3.4	Does the activity involve chemicals subject to international bans?	☐	☐	☐	
SS3.5	Does the activity involve pesticides or fertilisers that could harm health or biodiversity?	☐	☐	☐	
SS3.6	Does the activity involve high consumption of energy, water, or resources?	☐	☐	☐	
Safeguard Standard 4: Community Health, Safety and Security					
SS4.1	Does the activity involve new construction or decommissioning of public structures?	☐	☐	☐	
SS4.2	Could it lead to air/noise pollution, vibration, runoff, or other hazards?	☐	☐	☐	
SS4.3	Could it expose people to waterborne or vector-borne diseases?	☐	☐	☐	
SS4.4	Could it adversely affect community-relevant natural resources or ecosystem services?	☐	☐	☐	
SS4.5	Does the activity involve hazardous material transport or storage?	☐	☐	☐	
SS4.6	Does the activity involve security personnel or patrols?	☐	☐	☐	
SS4.7	Could it involve an influx of labour or security forces?	☐	☐	☐	
Safeguard Standard 5: Cultural Heritage					
SS5.1	Is the activity near or within a known cultural heritage site?	☐	☐	☐	
SS5.2	Could it impact tangible or intangible cultural heritage?	☐	☐	☐	
SS5.3	Does it involve the use of cultural heritage for commercial purposes?	☐	☐	☐	
SS5.4	Could it alter culturally significant landscapes or features?	☐	☐	☐	
SS5.5	Does it involve land clearing, excavation, or flooding?	☐	☐	☐	
SS5.6	Have cultural heritage sites or practices been identified and protected?	☐	☐	☐	
Safeguard Standard 6: Displacement and Involuntary Resettlement					
SS6.1	Could the activity result in physical displacement of people?	☐	☐	☐	
SS6.2	Could it lead to economic displacement (e.g. loss of land or livelihoods)?	☐	☐	☐	
SS6.3	Could it restrict access to resources used by communities or with customary rights?	☐	☐	☐	
SS6.4	Is there a risk of forced eviction?	☐	☐	☐	
SS6.5	Could it change land tenure or disrupt communal/customary systems?	☐	☐	☐	
Safeguard Standard 7: Indigenous Peoples					
SS7.1	Is the activity located where Indigenous Peoples live or claim territory?	☐	☐	☐	
SS7.2	Could it affect land or resources claimed by Indigenous Peoples?	☐	☐	☐	

SS7.3	Could it impact the human rights or self-determination of Indigenous Peoples?	☐	☐	☐	
SS7.4	Does it involve use of natural resources from Indigenous territories?	☐	☐	☐	
SS7.5	Could it undermine Indigenous governance, culture, or livelihoods?	☐	☐	☐	
SS7.6	Could it impact traditional knowledge, practices, or cultural heritage?	☐	☐	☐	
Safeguard Standard 8: Labor and working conditions					
SS8.1	Will the activity involve hiring or contracting workers?	☐	☐	☐	
SS8.2	Could it involve working conditions that breach national law or ILO standards?	☐	☐	☐	
SS8.3	Is there any risk of forced or child labour?	☐	☐	☐	
SS8.4	Could workers face OHS risks, violence, or harassment?	☐	☐	☐	
SS8.5	Could it contribute to local unemployment or social tension?	☐	☐	☐	
SS8.6	Could suppliers pose labour-related safety risks?	☐	☐	☐	
SS8.7	Could there be unequal working conditions for men and women?	☐	☐	☐	

Part 3: Exclusion Criteria Screening

To ensure consistency with the project's Category B risk classification under the UNEP Environmental and Social Sustainability Framework (ESSF) and the Green Climate Fund Risk Guidelines, all proposed activities will be screened against the exclusion criteria listed below. These criteria are used to identify activities that are ineligible for support under the project, including those that would require classification as Category A due to their potential for significant, irreversible, or widespread adverse environmental or social impacts. Any activity that triggers one or more exclusion criteria will be automatically excluded or must be redesigned to comply with project safeguards.

Exclusion Criteria	Yes	No	Comments
Does the activity require a full ESIA (i.e. classified as Category A)?	☐	☐	
Does the activity involve involuntary physical resettlement?	☐	☐	
Does the activity affect land or resources used by Indigenous Peoples without FPIC?	☐	☐	
Is the activity located in a legally protected area or critical habitat where impacts are irreversible or cannot be mitigated?	☐	☐	
Does the activity involve land disputes or areas with contested tenure?	☐	☐	
Does the activity require conversion of natural forests or significant habitat clearance?	☐	☐	
Does the activity involve extractive industries (e.g. mining, sand winning)?	☐	☐	
Does the activity involve fencing, enclosures, or exclusions that could restrict traditional/existing land or water access?	☐	☐	
Is the activity inconsistent with national law or UNEP/GCF safeguard standards?	☐	☐	
Is the activity likely to generate conflict due to exclusion or unequal distribution of benefits?	☐	☐	

Annex III: Initial SEAH Risk Screening and Mitigation Framework

This annex presents the SEAH risk screening undertaken at pre-submission stage, in accordance with the GCF SEAH Risk Assessment Guideline. It covers both contextual risk conditions and project-specific risk factors. This SEAH risk screening can be used as a baseline for the full SEAH and GBV risk assessment to be undertaken during the project inception period.

Section 1: SEAH Risk Screening

Table 15: Screening of Contextual SEAH Risk Factors

Item	Comments
Does the country have laws prohibiting sexual harassment / stalking generally?	**Yes** – The *Criminal Offences Act, 1960 (Act 29)* prohibits indecent assault and offensive sexual conduct. The *Labour Act, 2003 (Act 651)* recognises sexual harassment as misconduct. However, there is no comprehensive anti-sexual harassment legislation, and enforcement is weak, particularly in informal and agricultural sectors. A marked rural–urban divide exists, with greater institutional oversight and recourse mechanisms concentrated in urban areas. In rural districts, cases are often resolved informally or remain unreported.
Do labour laws prohibit sexual harassment in the workplace?	**Partially** – The *Labour Act* addresses non-discrimination and fair treatment, and public sector codes prohibit sexual harassment. Yet, enforcement is uneven, and informal workers—especially women in agriculture and markets—are often excluded. Most cases go unreported due to fear of retaliation, social stigma, and lack of trusted reporting mechanisms.
Does the country have laws prohibiting intimate partner violence (IPV)?	**Yes** – The *Domestic Violence Act, 2007 (Act 732)* criminalises physical, sexual, psychological, and economic abuse within domestic relationships, including intimate partnerships. However, **IPV remains a widespread and underreported issue** across the country. The *Ghana Demographic and Health Survey (2014)* found that 24% of ever-married women had experienced physical violence by a partner, with rural prevalence often higher. **During community consultations**, participants indicated that such issues are **rarely reported to formal authorities** and are instead addressed internally through **patriarchal family or community structures**, such as elders or traditional leaders. Social pressure to maintain family unity and the absence of trusted reporting channels often deter formal complaints.
What is the prevalence of GBV in the country?	**Moderate to High** – National data shows that approximately one in three women experiences physical or sexual violence during her lifetime, with rates significantly higher in some regions. GBV is both systemic and often normalised, particularly in rural areas where access to services and rights-based education is limited. **During consultations**, several women stated that **if they were victims of intimate partner violence**, they would be **more likely to confide in their father or male relative** than report the case to the police. This reflects widespread **distrust of formal systems**, fear of reprisal or stigma, and the influence of family-based dispute resolution mechanisms that prioritise reconciliation over justice.
What is the legal age a person can marry?	**18 years** – Defined by the *Children's Act, 1998 (Act 560)* and the *Marriage Ordinance*. However, child marriage remains prevalent, especially in northern Ghana and among poorer households. **UNICEF (2022)** reports that 1 in 5 girls is married before age 18. During consultations, participants

	acknowledged that early marriage "still happens," though they claimed it does not occur "in their communities." **Religious and customary practices**, particularly those involving arranged unions, continue to enable child marriage in some regions, despite legal prohibitions.
Despite any laws, what is the prevalence of child marriage in the country?	**Moderate** – Nationally, 19% of girls are married before 18, with figures exceeding 30% in parts of the north. Contributing factors include poverty, low secondary school attendance for girls, and **customary and religious practices** that permit or encourage early marriage. Enforcement is inconsistent, and social norms often discourage intervention.
What is the income level of the country?	**Lower-middle income** – As per the World Bank. Regional disparities are stark: while southern regions benefit from greater infrastructure and services, many districts in the north experience multidimensional poverty, seasonal food insecurity, and reliance on precarious livelihoods. These conditions deepen gendered economic vulnerability and can increase exposure to SEAH, especially where access to resources is mediated by gatekeepers.
Where does the country rank on global gender indices?	**Moderate to low** – Ghana ranked 107th out of 146 countries in the *2023 Global Gender Gap Report* (WEF). Gaps persist in labour force participation, access to productive assets, political representation, and education. These disparities are more acute in rural areas and among marginalised groups.
Is there a national action plan on GBV and/or sexual harassment?	**Yes** – Ghana has a *National Gender Policy (2015)* and a *Strategic Framework on Ending Child Marriage (2017–2026)*. However, coordination and implementation are challenged by budget constraints, weak decentralised systems, and the absence of comprehensive SEAH-specific legislation.
Does the country have specialized services for survivors of GBV (at both the national and local level)?	**Limited** – The *Domestic Violence and Victim Support Unit (DOVVSU)* provides some police response, but comprehensive survivor services—such as shelters, trauma care, legal aid, and psychosocial support—are largely unavailable outside major cities. Rural survivors may have to travel long distances or rely on informal networks, creating barriers to disclosure and justice. NGOs fill critical gaps but are unevenly distributed.
Is the country currently experiencing war, internal conflict or humanitarian disaster?	**No active conflict**, but structural and climate-related vulnerabilities are high. In northern regions, **climate-induced shocks** such as prolonged droughts and erratic rainfall have contributed to displacement, migration, and livelihood insecurity. Tensions over access to land and water occasionally escalate into localised conflict. These conditions can amplify existing power asymmetries and increase exposure to SEAH—particularly for women, girls, and other marginalised groups dependent on external aid, technical support, or resource allocation by project actors.

Table 16: Screening of project-specific SEAH risk factors

Item	Comments
Are women concentrated in lower paid roles and mostly	**Yes** – Consultations confirmed that women are primarily engaged in informal, lower-paid roles such as small-scale agriculture, food processing, and trading. They are often supervised by men, especially in extension services or district-level project structures. These patterns

line-managed and supervised by men?	reflect entrenched gender hierarchies that persist across most rural areas.
Are piece-rate systems or other performance-related pay structures used where individuals are in control of how much other workers get paid?	**No** – The project does not utilise piece-rate or incentive-based pay. Project workers, facilitators, and consultants will be compensated through fixed daily or monthly rates under standardised contract arrangements.
Will project workers have control over life-changing resources such as the allocation of compensation for displacement or access to basic or highly sought-after resources?	**Yes** – While the project does not involve direct compensation or resettlement, staff and partners may control access to critical project benefits, such as early warning information, climate-resilient inputs, training opportunities, or technical support. **Decisions on resource allocation will be made at central or regional levels** based on predefined criteria, with protocols to ensure transparency and accountability.
Will security personnel be used? Will they be armed?	**Possibly** – Although not part of the core project design, **public security personnel may be present during specific field activities**, particularly early warning system (EWS) installations or events involving equipment handover. This would be limited, **unarmed**, and subject to confirmation during inception. No private or armed security personnel will be engaged by the project.
Will there be an influx of male workers into the project area (as opposed to only using local labour)?	**No** – The project is designed to work through local institutions and staff. However, occasional travel by national or regional technical teams may occur. This is not expected to constitute labour influx, and risk of related SEAH concerns is low.
Are local communities poor and lacking basic resources?	**Yes** – Target communities are characterised by **low income levels, limited public services, and high dependence on rainfed agriculture**. These conditions exacerbate vulnerability to exploitation, especially where access to project benefits is perceived to be discretionary or competitive.
Will migrant workers be employed by the project, especially those who may not speak the local language? Will they be employed on a temporary or daily basis?	**No** – The project will not engage migrant or itinerant labour. Staff will be locally recruited wherever possible, and communication will occur in local languages through community-based facilitators.
Will project workers all have formal contracts?	**Yes** – All UNEP and implementing partner staff will operate under formal agreements. **Sub-contractors will also be required to provide formal contracts to their workers**, including clear terms on conduct, grievance procedures, and SEAH prohibitions. These contracting standards will be defined and rolled out during the inception phase.
Will goods frequently be transported over long distances, especially through poor and/or remote communities?	**Only to a limited extent** – Transport of equipment and materials (e.g. hydromet devices, training kits) will occur, but this is expected to be **infrequent, low-volume, and supervised**. SEAH risk is **minimal** for these activities but will be monitored through field logistics protocols.

Are worksites or project activities based in remote locations? Will worksites be spread out, with isolated spaces?	**Yes** – Some project activities, such as EWS installation and climate field school demonstrations, will occur in remote or semi-remote areas. However, **most activities will be community-based, involving public events and group trainings**, which limits isolation-related risks.
Will project workers live in the community or in worker housing? If in worker housing, is it mixed sex?	**Not applicable** – The project does not include worker camps or communal accommodation. Project personnel will reside in their home communities or use standard travel arrangements for field missions.
Will workers be required to travel long and potentially unsafe distances, and at times of day when transport options may be limited?	**Possibly** – Some staff may need to travel early in the morning or return late in the evening during fieldwork in distant communities. This is **not frequent**, and operational planning will include **safe travel protocols and team-based field deployment** to reduce exposure.
Will the project operate in highly pressurised work environments, with tight seasonal deadlines?	**No** – While some activities (e.g. agricultural fieldwork or seasonal training) may be time-sensitive, the overall project delivery model is not deadline-driven. Tasks are designed around capacity building and knowledge exchange rather than production targets.

Section 2: SEAH Risk Rating Summary

The overall risk of sexual exploitation, abuse, and harassment (SEAH) for this project is assessed as **Moderate**, in line with the overall safeguards risk of the project. This rating is based on the preliminary screening conducted using the GCF SEAH Risk Assessment Checklist, which identified relevant contextual and project-level risks. These include:

- the presence of entrenched gender norms;
- limited availability of survivor support services in rural areas;
- the potential for power asymmetries where project staff mediate access to resources, and;
- the implementation of activities in remote communities where reporting pathways may be informal or inaccessible.

At the same time, the risk is mitigated by several structural factors:

- the absence of large-scale infrastructure or labour camps;
- the reliance on local staffing through formal contracts;
- a predominantly community-based implementation model, and;
- clear institutional safeguards in place.

The Moderate risk rating has informed the development of a proportionate mitigation and monitoring framework, drawing on the GCF SEAH recommended mitigation checklist, and aligned with UNEP's Safeguard Standards SS4 and SS8. The corresponding measures are presented below and included into the ESAMF Mitigation measures where appropriate. These measures will be updated based on the outcomes of the full SEAH risk assessment being undertaken during the inception period.

Table 17: SEAH Risk Mitigation Framework

Measure	Project Action / Response
Does the AE have a SEAH policy which covers the project?	UNEP's Code of Ethics and Conduct includes SEAH provisions that apply to this project and all UNEP personnel. This policy is part of UNEP's ESSF
Does the project have a Code of Conduct prohibiting SEAH by workers?	A project-specific Code of Conduct will be required for all project workers, including community-level facilitators. It will include SEAH prohibitions and be reinforced through training and sensitisation (see ESMF Section 5.5.4). A draft code of conduct is included as Annex IV.
Are clauses included in procurement contracts which commit contractors, subcontractors, suppliers, drivers and security personnel (if applicable) to adhere to the AE Code of Conduct (or EE equivalent)?	SEAH clauses will be included in all TORs and contracts for service providers. Templates will be developed during inception. Implementation will be monitored as part of safeguards oversight (ESMF Section 5.7).
Is there a trained SEAH specialist in the project team?	The PMU will include a gender and safeguards specialist.
Does the project plan to train all project workers on the Code of Conduct, SEAH and what is prohibited behaviour?	Training on SEAH and the Code of Conduct will be delivered to all project staff and partners during onboarding, with annual refreshers. Training activities are included in both the GAAP (Annex 8) and ESMF Section 5.5.4.
Are recruitment procedures in place, with interview panels staffed by at least two people?	Recruitment procedures will be established during the project inception period, and will follow standard UNEP and/or Ghanian processes.
Are candidates' identities checked at interview and are references requested?	Yes – mandatory ID checks and at least one professional reference will be required for all long-term staff and consultants.
Are all workers required to be hired on formal contracts?	Yes – all project roles will be governed by written agreements, including community facilitators. This is linked to SEAH risk mitigation under labour standards (ESMF Section 5.7, SS8).
Are written procedures in place for performance appraisals, promotions, and any performance-related pay increases (if applicable)?	Not applicable
Does the project have a GRM for community members to raise SEAH-related complaints and concerns and is it confidential and survivor-centred, with multiple reporting channels?	The GRM includes SEAH-specific channels and will ensure confidentiality and survivor safety. This is detailed in ESMF Section 5.4.3 and will be aligned with UNEP's SRM (Section 5.4.4) and GCF IRM (Section 5.4.5).

Does the project have a GRM for project workers to raise SEAH-related complaints and concerns and is it confidential and survivor-centred, with multiple reporting channels?	Yes – project workers will be informed of reporting options separate from their direct supervisors. This is integrated into GRM implementation (ESMF Section 5.4.3).
Are the staff who manage the GRMs equipped and trained to respond to SEAH reports in a safe and effective way?	GRM focal points (including DEMCs) will be trained during inception in SEAH response and survivor-centred principles. Training is planned under the GAAP (Annex 8).
Are persons, communities and countries affected or potentially affected by the activities consulted and that effective SEAH GRMs to receive complaints and feedback are established and function in a collaborative manner and in a way that is complementary to GCF independent Redress Mechanism, and requiring that any gaps or weaknesses be addressed?	Community consultations included questions on grievance access. Further feedback will be gathered during stakeholder re-engagement. GRM design will be adjusted as needed (ESMF Sections 5.4.1 and 5.4.3).
Are affected communities informed about SEAH GRMs at the earliest opportunity and in an understandable format and in all relevant languages?	Yes – community facilitators will deliver oral briefings and distribute translated materials during early project engagement. This is reflected in the GAAP (Annex 8) and ESMF Section 5.4.2.
Are there written procedures for dealing with SEAH complaints or concerns and a dedicated and trained female staff member to deal with these (if no specialist is available)?	Complaint response procedures will be finalised during inception. Each sub-district has a dedicated gender officer, who will act as a focal point.
Has a service provider mapping been undertaken to identify which services are available for survivors of SEAH?	Mapping and referral linkages will be established during project inception and incorporated into GRM protocols.
If there are no public or private service providers in the area, has the project identified and budgeted for outside providers?	Yes – there are budget provisions for the GRM, which would include provision of support services, if government support services are unavailable. Additionally the ESMF budget includes a discretionary budget line as a buffer, which would be implemented should the GRM budget prove insufficient.
Will/have gender-sensitive and culturally appropriate outreach materials been prepared (such as posters, signage, etc.) on SEAH in all relevant languages?	Outreach materials will be developed during Year 1 and tested with women's groups and community leaders. Development is coordinated with the GAAP (Annex 8).
Has the community been informed about potential SEAH risks for the	Initial consultations included discussion of GBV and grievance systems. More targeted SEAH communication will follow during project roll-out (ESMF Sections 5.4.1 and 5.4.2).

project and how to prevent them and use the GRM?	
Have any rapid mobile surveys or text surveys been developed to regularly obtain feedback from workers and/or the community?	No – digital access is limited. Informal feedback mechanisms through community groups and facilitators will be used instead. Responses will feed into GRM review processes.
Have SEAH prohibitions and mitigation measures been included in procurement documents?	Procurement templates will include standard SEAH language from inception onward. Similarly the Code of Conduct includes specific language regarding SEAH. This is part of safeguards integration under ESMF Section 5.7.
Are there clauses in the EE contract requiring them to prohibit SEAH in their workforce?	Yes – implementing partner contracts will include SEAH provisions aligned with UNEP's ESSF. These will be reviewed by the PMU prior to execution.
Will separate facilities for men and women be provided at all work sites?	This is not technically relevant to the project as there is no expectation of worksites outside of existing community settings. However, the provision of separate facilities will be ensured at community workshops or larger gatherings.
Are SEAH risks included in workplace safety assessments, including worker accommodation and transportation?	This is not relevant to the project as there are no formal workplaces, however SEAH criteria would be included under any risk screenings for project demonstration sites or sites where community-led activities will be undertaken.
Are project workers informed of areas that are off-limits, for example areas around schools (or other places where children are present)?	This is not relevant to the project, as there will be no influx of external labour or long-term consultants/project workers.

Annex IV: Draft template for Code of Conduct

This Code of Conduct applies to all persons engaged under this project, including staff, consultants, contractors, service providers, and community-based facilitators. It outlines minimum standards of personal and professional behaviour, in line with UNEP's Environmental and Social Safeguard Standards (particularly SS4: Community Health, Safety and Security; SS8: Labour and Working Conditions) and the GCF Revised SEAH Policy.

By signing this Code of Conduct, I agree to the following commitments:

1. Respect and professionalism
- Treat all individuals — colleagues, community members, project participants — with dignity and respect, regardless of age, gender, ethnicity, religion, disability, sexual orientation, or social status.
- Avoid discrimination, harassment, or behaviour that may cause harm, offence, or discomfort.

2. Prevention of sexual exploitation, abuse, and harassment (SEAH)
- I will not engage in any form of sexual exploitation, abuse, or harassment.
- I will not request or accept sexual favours in exchange for access to project services, benefits, or opportunities.
- I understand that any sexual activity with a child (person under 18 years of age) is prohibited, regardless of national laws or customs.
- I will report any suspected SEAH incidents through the appropriate project channels and maintain confidentiality.

3. Prevention of abuse of authority and labour exploitation
- I will not use my position to pressure or exploit colleagues, community members, or project beneficiaries.
- I will ensure that all work I supervise is carried out voluntarily, fairly, and in decent working conditions.
- I will not tolerate child labour, forced labour, or unpaid work in any form under this project.

4. Safe and appropriate conduct in communities
- I will respect local customs, values, and leadership structures.
- I will avoid entering private or sensitive areas (e.g. schools, homes, or gender-specific spaces) without consent or accompaniment.
- I will communicate respectfully and avoid coercion, manipulation, or intimidation in all community interactions.

5. Health, safety, and environmental responsibility
- I will follow all project health and safety protocols, including those related to transport, fieldwork, and COVID-19 or other public health risks.
- I will report any accidents, injuries, or unsafe conditions to the relevant supervisor.
- I will respect environmental guidelines, avoid causing harm to natural resources, and support the project's environmental goals.

6. Reporting and accountability

- I will report any violations of this Code of Conduct, whether committed by myself or others, using the project's grievance mechanism or designated focal points.
- I will not retaliate against anyone who reports concerns in good faith.
- I understand that failure to comply with this Code of Conduct may lead to disciplinary action, including termination of contract and referral to legal authorities, where appropriate.

Acknowledgement

I, the undersigned, confirm that I have read and understood this Code of Conduct. I agree to uphold these commitments while engaged in any project activity. I understand that these obligations apply to all locations and interactions related to the project.

Full Name: _____
Role / Position: _____
Signature: _____
Date: _____

Annex V: Indicative Outline of a Fit-for-Purpose ESIA/ESMP

This indicative outline provides the structure for a fit-for-purpose Environmental and Social Impact Assessment (ESIA) and associated Environmental and Social Management Plan (ESMP) for moderate-risk project activities. It is suitable for small-scale infrastructure, earthworks, and other on-the-ground interventions requiring site-specific safeguards analysis. The assessment is designed to meet both national regulatory requirements and international obligations under UNEP's Environmental, Social and Sustainability Framework (ESSF) and the Green Climate Fund (GCF) safeguards policy. Where applicable, assessments may be initiated through national screening processes (e.g. Initial Environmental Examination) and consolidated into a single, harmonised document.

Environmental and Social Impact Assessment (ESIA)

Executive Summary: Provides a concise overview of the proposed activity, key findings, safeguards triggered, stakeholder feedback, and recommended mitigation and management measures.

Legal and Institutional Framework: Describes the relevant national environmental and social legislation, institutional responsibilities, and applicable UNEP and GCF safeguard policies, as well as any other donor requirements. May include a brief comparison or gap analysis.

Project/Sub-project Description: Outlines the project rationale, objectives, components, and implementation arrangements. Includes geographic scope, timelines, maps, and any associated infrastructure or ancillary works.

Baseline Environmental and Social Conditions: Summarises the existing environmental, ecological, social, and land use conditions in the project area that are relevant to understanding the potential impacts of the activity.

Identification and Assessment of Environmental and Social Risks and Impacts: Identifies potential environmental and social impacts by project phase. Screens risks under the UNEP ESSF, including:

- SS1: Biodiversity and Natural Resources
- SS2: Climate Change and Disaster Risks
- SS3: Pollution Prevention and Resource Efficiency
- SS4: Community Health, Safety and Security
- SS5: Cultural Heritage
- SS6: Displacement and Involuntary Resettlement
- SS7: Indigenous Peoples and/or Ethnic Minorities
- SS8: Labour and Working Conditions

Assesses magnitude, likelihood, duration, reversibility, and classifies risk level (Low / Moderate / High[104]).

[104] Given that the proposed project has been rated as having a moderate risk rating (category B), and in accordance with UNEP′s accreditation status, no high-risk activities would be permitted under this GCF-financed project.

Analysis of Alternatives: Presents technically and environmentally viable alternatives to the proposed project or siting. Compares environmental and social implications of the alternatives, including the 'no project' scenario.

Environmental and Social Management Plan (ESMP):

Mitigation Measures: Identifies specific actions to avoid, reduce, or compensate for impacts. Includes responsible parties, implementation conditions, and linkages to other safeguards instruments.

Monitoring Plan: Establishes indicators, methods, frequency, and responsibilities for monitoring mitigation effectiveness and compliance.

Capacity Development and Training: Identifies institutional roles, current capacity, and training or resourcing required to implement safeguards measures.

Stakeholder Engagement: Summarises engagement conducted during assessment, planned activities during implementation, and linkages to the Stakeholder Engagement Plan.

Grievance Redress Mechanism (GRM): Describes the mechanism for receiving and resolving grievances. Refers to UNEP's Stakeholder Response Mechanism (SRM) and GCF's Independent Redress Mechanism (IRM).

Implementation Schedule and Budget: Provides a timeline and cost estimates for mitigation, monitoring, stakeholder engagement, and capacity support activities.

Conclusions and Recommendations: Summarises the key residual risks and impacts, confirms the feasibility of mitigation, and recommends safeguards compliance steps.

Annexes: Includes supporting materials such as screening forms, site maps, baseline data, stakeholder consultation records, ESMP matrices, chance finds procedures, and grievance reporting templates.

Annex VI: Project SRIF

Safeguard Risk Identification Form (SRIF)

Section 1: Project Overview

Identification	Insert Project ID# from Programme Framework Table
Project Title	Climate-resilient landscapes for sustainable livelihoods in northern Ghana
Managing Division	Climate Change Division
Type/Location	National
Region	Africa
List Countries	Ghana
Project Description	The proposed project objective is to enhance the climate resilience of vulnerable smallholder farming communities in northern Ghana by improving food security and enhancing the agro-based rural economy. The project strategy is three-fold comprising the improved climate data and early warnings made available to facilitate proactive drought and flood management, the adoption of climate-resilient agriculture and water storage to enable dry season farming, and investments in landscape restoration (such as riverbank restoration, agroforestry, reforestation and fire management) to improve soil integrity, water retention and protect physical assets from flooding. The project will work at three levels: community level on planning and implementation systems, at the regional level on strengthening weather forecast capability that will serve the Northern Sector, complementing investments in forecasting capability in the South of the country as well as national level in establishing a national action plan for drought and flood hazard management. The community level integrated ecosystem-based adaptation approach will inform the District level planning and budgeting systems, through building capacity and awareness of District planning officers to scale up the project approach. Combined with associated community training, extension services and awareness-raising, this will increase opportunities for

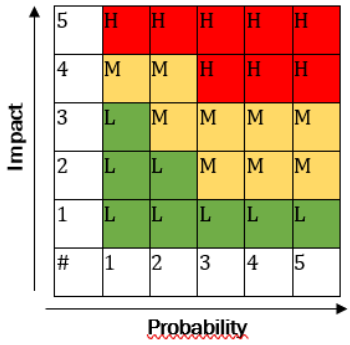
	knowledge and technology exchange between communities and thereby promote autonomous upscaling of these interventions. The proposed project will be implemented in the North East, Upper East and Upper West Regions of northern Ghana, in eight districts in northern Ghana that have been specifically chosen because of their high vulnerability to climate change impacts. Across the eight districts, the project will provide agricultural and livelihood support for 120 communities over seven years as well early warning advisories for the entire population in the 8 Districts. The EPA is the main executing entity, that will work in partnership with Ministry of Food Security and Agriculture together with the Ghana Meteorological services and Water Resources Commission to deliver an integrated, ecosystem-based adaptation strategy that will transition the smallholder farming communities of northern Ghana more climate-resilient, productive and sustainable livelihoods.
Relevant Subprogrammes	Climate Action
Estimated duration of project	7 years
Estimated cost of the project	USD 70,120,774 GCF Grant: USD 63,211,141
Name of the UNEP project manager responsible	Alex Forbes, Climate Change Adaptation Unit
Funding Source(s)	GCF Co-financing sources
Executing/Implementing partner(s)	Government of Ghana through: 1) Environment Protection Agency (EPA) 2) Ghana Meteorological Agency (GMet) 3) Ministry of Food and Agriculture (MOFA) 4) Water Resource Commission (WRC)
SRIF submission version	If it is not the first time, mark the time of your previous submission Concept Review [ ] During Project development [ ] PRC [ ] Other _____✓_____
Safeguard-related reports prepared so far *(Please attach the documents or provide the hyperlinks)*	• Feasibility report [✓] • Gender Action Plan [✓] • Stakeholder Engagement Plan [✓] • Safeguard risk assessment or impact assessment ✓] • ES Management Plan or Framework [ ] • Indigenous Peoples Plan [ ] • Cultural Heritage Plan [ ]

- Others _____

Section 2: Safeguards Risk Summary

A. Summary of the Safeguards Risk Triggered

Safeguard Standards Triggered by the Project	Impact of Risk[105] (1-5)	Probability of Risk (1-5)	Significance of Risk (L, M, H) *Please refer to the matrix below*
SS 1: Biodiversity, Ecosystems and Sustainable Natural Resource Management	2	3	M
SS 2: Climate Change and Disaster Risks	2	2	L
SS 3: Pollution Prevention and Resource Efficiency	2	2	L
SS 4: Community Health, Safety and Security	2	2	L
SS 5: Cultural Heritage	1	1	L
SS 6: Displacement and Involuntary Resettlement	3	1	L
SS 7: Indigenous Peoples	3	3	M
SS 8: Labor and working conditions	2	2	L



B. ESS Risk Level[106] -

[105] Refer to UNEP Environmental and Social Sustainability Framework (ESSF): Implementation Guidance Note to assign values to the Impact of Risk and the Probability of Risk to determine the overall significance of Risk (Low, Moderate or High).

[106] **Low risk**: Negative impacts minimal or negligible: no further study or impact management required.
Moderate risk: Potential negative impacts, but limited in scale, not unprecedented or irreversible and generally limited to programme/project area; impacts amenable to management using standard mitigation measures; limited

Refer to the UNEP ESSF (Chapter IV)

and the UNEP's ESSF Guidelines.

Low risk ☐

Moderate risk ☑

High risk ☐

Additional information required ☐

C. Development of SRIF and Screening Decision

Prepared by

Name: _____ Date: _____

Screening review by

Name: _____ Date: _____

Signature	Cleared[107]

environmental or social analysis may be required to develop a Environmental and Social Management Plan (ESMP). Straightforward application of good practice may be sufficient without additional study.

High risk: Potential for significant negative impacts (e.g. irreversible, unprecedented, cumulative, significant stakeholder concerns); Environmental and Social Impact Assessment (ESIA) (or Strategic Environmental and Social Assessment (SESA)) including a full impact assessment may be required, followed by an effective comprehensive safeguard management plan.

[107] This is signed only for the full projects latest by the PRC time.

D. Safeguard Review Summary (by the safeguard team)

E. Safeguard Recommendations (by the safeguard team)

- No specific safeguard action required ☐
- Take Good Practice approach[108] ☐
- Carry out further assessments (e.g., site visits, experts' inputs, consult affected communities, etc.) ☐
- Carry out impact assessments (by relevant experts) in the risk areas and develop management framework/plan ☐
- Consult Safeguards Advisor early during the full project development phase ☐
- Other _____

Section 3: Safeguard Risk Checklist

[108] Good practice approach: For most low-moderate risk projects, good practice approach may be sufficient. In that case, no separate management plan is necessary. Instead, the project document demonstrates safeguard management approach in the project activities, budget, risks management, stakeholder engagement or/and monitoring segments of the project document to avoid or minimize the identified potential risks without preparing a separate safeguard management plan.

Screening checklist		Y/N/ Maybe	Justification for the response (please provide answers to each question)
Guiding Principles (these questions should be considered during the project development phase)			
GP1	Has the project analysed and stated those who are interested and may be affected positively or negatively around the project activities, approaches or results?	Y	Stakeholder analysis and engagement processes have been undertaken throughout project development. This includes engagement with stakeholders at an institutional level during the initial phases of project development and engagements with a representative sample of intended community beneficiaries during the FP development phase in 2017 (as the project will only finalize site selection during implementation). Given the long development period (7+ years) and reconfiguration of the funding proposal (through the incorporation of an additional CIEWS component), there has been a need to re-engage with communities and national level stakeholders as a part of the project finalization process in August 2024. These most recent engagements demonstrated both the continued relevance of the project and broad level of support across all national and local stakeholders. Overall local level stakeholders in 9 districts have been engaged to inform the design of the project and undertaken the necessary due diligence to reduce potential project risks. At this stage of project development, specific Indigenous Peoples—as defined under the GCF Indigenous Peoples Policy—were not identified or engaged directly due to the absence of confirmed site locations and the mobility of relevant groups such as the Fulani. These groups will be identified, consulted, and engaged through FPIC procedures once implementation begins and site-level screening is conducted, in accordance with the IPPF developed for the project. This comprehensive process undertaken during the project development period will be supported by ongoing stakeholder engagement during project implementation

		(see the Stakeholder Engagement Plan in Annex 7 for further details).
GP2 Has the project identified and engaged vulnerable, marginalized people, including disabled people, through the informed, inclusive, transparent and equal manner on potential positive or negative implication of the proposed approach and their roles in the project implementation?	Y	The project has engaged with marginal communities across a representative sample of sites. While these engagements did focus on ensuring the inputs and needs of all vulnerable groups (including ethnic minorities, disabled persons, elderly persons and women) there are certain segments of the population — such as nomadic pastoralists known as the Fulani — who, as Indigenous Peoples, need to fully be considered during the project design and implementation. Initial engagements with these groups has been challenging during the development of the project. While these groups are not directly impacted by the project or associated with the planned project interventions, their presence on the landscape in the context of potential resources competition necessitates comprehensive mapping and consultation processes to be undertaken during implementation. Their FPIC needs to be ensured for certain activities. This will be addressed through the implementation of an Indigenous Peoples Planning Framework (IPPF) and subsequent development of an Indigenous Peoples Plan (IPP), in consultation with Indigenous Peoples themselves. Operationalization of the IPP will ensure that all Indigenous Peoples are included in project processes (such as engagement and participatory design) and that no individual group is adversely impact by the project outputs. The outcome of the IPPF will include spatial representation of areas in which Indigenous Peoples are present and thus where conflict and/or exclusion are most likely to occur, as well as providing the recommended strategies to address conflict, leveraging existing practices such as land-sharing agreements and traditional conflict resolution mechanisms.

GP3	Have local communities or individuals raised human rights or gender equality concerns regarding the project (e.g. during the stakeholder engagement process, grievance processes, public statements)?	N	The consulted communities did not raise specific concerns relating to human rights or gender equality in the context of this proposed project or other donor funded initiatives. While communities did acknowledge that within the small-scale agriculture sector women were often disadvantaged through an inability to own land, the situation was acknowledged to have been improving as a result of a long-term gender mainstreaming process implemented through capacity building conducted by MoFA. This shift was well represented during engagements, where women spoke both about their challenges and their more recent successes and support afforded through donor-funded projects. Although not stated outright, as described above, there were inferences made to the Fulani Pastoralists, and how they may periodically come into conflict with the targeted beneficiaries of the project (sedentary small-scale farmers). This implies the project may have the potential to infringe on their rights and/or result in increased conflict over land resources.
GP4	Does the proposed project consider gender-balanced representation in the design and implementation?	Y	Yes. The project has a target of 40% of direct beneficiaries being women, with specific actions targeted towards empowering women through livelihood development. Gender responsiveness has been integrated into the project design and implementation.
GP5	Did the proposed project analyse relevant gender issues and develop a gender responsive project approach?	Y	Yes, the project has been designed to ensure opportunities for gender-responsiveness at each level, including direct actions for women's empowerment. The Gender Assessment and Action Plan (GAAP) incorporates an assessment of these concerns and considerations, which have influenced the project design. Additionally, a dedicated budget within the GAAP has been allocated to ensure the implementation of a gender-responsive approach throughout the project.

GP6	Does the project include a project-specific grievance redress mechanism? If yes, state the specific location of such information.	TBD	Yes, the project will implement a Grievance Redress Mechanism (GRM) that was initially developed and implemented for a World Bank funded initiative. This GRM is already well integrated into the practices of the Executing Entities and includes well established reporting lines. The outline of the GRM is included in the project ESMF.
GP7	Will or did the project disclose project information, including the safeguard documents? If yes, please list all the webpages where the information is (or will be) disclosed.	Y	Project information will be disclosed on UNEP platforms following the submission of the full proposal. The proposal will also be made available to the GCF 30 days prior to consideration by the board and be posted in convenient locations in Accra and each of the target districts at the same time (30 days prior to board meeting). This public disclosure will be made in English on request of the Government of Ghana (GoG), as this is the official working language of the government and in three local languages shared across 8 districts.
GP8	Were the stakeholders (including affected communities) informed of the projects and grievance redress mechanism? If yes, describe how they were informed.	Not Yet	This will happen during implementation.
GP9	Does the project consider potential negative impacts from short-term net gain to the local communities or countries at the risk of generating long-term social or economic burden?[109]	Y	Yes, the opportunity costs of shifting to alternative livelihoods have been considered during project design. All of the proposed interventions — those related to alternative livelihoods and improved production practices — are based on proven approaches that have been successfully implemented over the last decade in Ghana. Additionally, the design of interventions will include a specific focus on ensuring long-term sustainability. For example, the project has a strong focus on improving the financial literacy of the targeted beneficiaries and enhancing their capacity to access financial products to improved saving and access to loan facilities. Further detailed information on

[109]For example, a project may consider investing in a commercial shrimp farm by clearing the nearby mangrove forest to improve the livelihood of the coastal community. However, long term economic benefit from the shrimp farm may be significantly lower than the mangroves if we consider full costs factoring safety from storms, soil protection, water quality, biodiversity and so on.

		the economic and financial assessments can be found in Annex 3.
GP10 Does the project consider potential partial economic benefits while excluding marginalized or vulnerable groups, including women in poverty?	Y	The project development process has been undertaken with consideration for marginalized and vulnerable groups. The inital project design is skewed towards a specific type of livelihood strategy (sedentary small-scale farming) thereby generating potential risks for the small number of mobile nomadic pastoralists known as the Fulani. The potential for these risks to result in adverse impacts is largely unquantified, as there are a range of diverse relationships that govern interactions, integration and competition between sedentary farmers and pastoralists in Ghana. These relationships can be differentiated at a highly localized level. This existing gap in the safeguards that could be addressed at the design stage has been identified and the implementation of the IPPF and IPP are expected to largely address this risk through ensuring FPIC is obtained as required and that the project is able to better identify and predict which project sites are most at risk of resulting in exclusionary benefits, generating conflict or resulting in access or economic restrictions to enable the EE to implement proactive engagements and ensure existing access or land use patterns can be secured through land-use or sharing agreements or the modification of proposed interventions to ensure the project is implemented in an inclusive manner.
Safeguard Standard 1: Biodiversity, Ecosystems and Sustainable Natural Resource Management		
Would the project potentially involve or lead to:		
1.1 conversion or degradation of habitats (including modified habitat, natural habitat and critical natural habitat), or losses and threats to biodiversity and/or ecosystems and ecosystem services?	N	The proposed project targets the restoration of degraded ecosystems and the protection of habitats and ecosystem services. No natural habitats will be converted or degraded.
1.2 adverse impacts specifically to habitats that are legally protected, officially proposed for protection, or recognized as protected by traditional local	N	The proposed project will not involve any conversion of protected land or other areas with high biodiversity. Communities will be

	communities and/or authoritative sources (e.g. National Park, Nature Conservancy, Indigenous Community Conserved Area, (ICCA); etc.)?		supported to conserve and protect ecosystems to enhance the ecosystem services on which they depend.
1.3	conversion or degradation of habitats that are identified by authoritative sources for their high conservation and biodiversity value?	N	The proposed project targets the restoration of degraded ecosystems and the protection of habitats and ecosystem services. No natural habitats will be converted or degraded.
1.4	activities that are not legally permitted or are inconsistent with any officially recognized management plans for the area?	N	Alignment between any management plans proposed under the project and any existed management plans or land use plans will be ensured as part of the project development and implementation process.
1.5	risks to endangered species (e.g. reduction, encroachment on habitat)?	N	No natural habitats will be converted or degraded under the proposed habitat.
1.6	activities that may result in soil erosion, deterioration and/or land degradation?	N	The project has been developed to enhance the management of agricultural land, reversing the degradation brought about through poor land management practices. The project will not include any activities that may result in such impacts.
1.7	reduced quality or quantity of ground water or water in rivers, ponds, lakes, other wetlands?	N	The project does not include any activities that may directly impact water resources. However, it is feasible that communities who benefit from the project may have improved access to synthetic fertilizers and other chemical inputs (which they have indicated to be their preference to secure higher yields) through improved buying power or access to credit. This risk is largely mitigated through the regenerative techniques prioritized under the project, as well as capacity building on risks associated with fertilizers and use within wetland or riverine environments.
1.8	reforestation, plantation development and/or forest harvesting?	Y	The project may include the establishment of small-scale plantations such as Mango or Cashew Plantations. These would only be established on existing agricultural land rather than community 'forest' land.
1.9	support for agricultural production, animal/fish production and harvesting	Y	The project will support alternative, sustainable livelihoods for local communities that may include production of agricultural and animal products.

1.10	introduction or utilization of any invasive alien species of flora and fauna, whether accidental or intentional?	N	The project will not introduce alien invasives that are not already present on the landscape. Some economic species favoured for production such as cashew trees are not native, however they are not included on any IAS watchlist for the country. Any plants that are already listed as IAS or have the potential to become invasive species will not be used under the project.
1.11	handling or utilization of genetically modified organisms?	Maybe	The project may enhance access for communities to receive or purchase climate-resilient seed varietals. The specific types of seedstock to be sourced has not been determined but will comply with relevant national legislation and international good practice.
1.12	collection and utilization of genetic resources?	N	The project will not directly engage in the collection and utilization of genetic resources. While communities may engage in medicinal herb collection and distribution with support from the project, these would be continuation of existing livelihood and cultural practices.
Safeguard Standard 2: Climate Change and Disaster Risks			
Would the project potentially involve or lead to:			
2.1	improving resilience against potential climate change impact beyond the project intervention period?	Y	The project will result in long-term benefits through enhancing access to finance, weather information and enhanced land management and agricultural strategies to enable communities to better cope with current and projected climate impacts
2.2	areas that are now or are projected to be subject to natural hazards such as extreme temperatures, earthquakes, extreme precipitation and flooding, landslides, droughts, severe winds, sea level rise, storm surges, tsunami or volcanic eruptions in the next 30 years?	Y	The regions of northern Ghana in which the project is to be implemented is subject to extreme temperatures in summer as well as occasional to regular drought periods. Riverine areas are also subject to annual or interannual flood risks. These flood risks are both direct (as a result of rainfall) and indirect (as a result of upstream dams periodically releasing water during the rainy season.

2.3	outputs and outcomes sensitive or vulnerable to potential impacts of climate change (e.g. changes in precipitation, temperature, salinity, extreme events)?	Y	Alternative livelihoods and the kinds of agricultural strategies being promoted under the project may be vulnerable to the impacts of climate change. The project works to ameliorate this risk through its design, whereby the second component will ensure improved access to local climate information. This will enable project beneficiaries to better plan for and respond to extreme climate events the exhibit as a result of climate change.
2.4	local communities vulnerable to the impacts of climate change and disaster risks (e.g. considering level of exposure and adaptive capacity)?	Y	The small-scale agricultural producers targeted by this project are particularly vulnerable to these hazards. The project includes this group as the primary beneficiaries in response to these existent vulnerabilities.
2.5	increases of greenhouse gas emissions, black carbon emissions or other drivers of climate change?	N	The proposed project will not increase emissions or black carbon.
2.6	Carbon sequestration and reduction of greenhouse emissions, resource-efficient and low carbon development, other measures for mitigating climate change	Y	While the project is not focused on directly generating carbon benefits, the mitigation benefits associated with the proposed interventions (including restoration of xxx ha) will result in estimated reduction of 1,2 Million tCO_2 e.
Safeguard Standard 3: Pollution Prevention and Resource Efficiency			
Would the project potentially involve or lead to:			
3.1	the release of pollutants to the environment due to routine or non-routine circumstances with the potential for adverse local, regional, and/or transboundary impacts?	Maybe	The project will not directly result in the release of any pollutants. As described above, communities that benefit from the project may purchase increased quantities or herbicide or synthetic fertilizer. While the project will introduce and promote integrated pest management, it cannot prevent beneficiaries purchasing such potentially harmful substances. However, general capacity building around proper management, storage, application and disposal of such materials will be included in any formal trainings implemented under the project.
3.2	the generation of waste (both hazardous and non-hazardous)?	Maybe	Project activities may be associated with the generation of waste (bags and containers through agricultural and landscape

		restoration activities for instance). It is expected that any waste will be non-hazardous and minimal. The project will establish protocols for waste management as part of its operations and embedded in training, with a focus on 4-Rs (Reduce, Reuse, Recycle, and Recover)
3.3 the manufacture, trade, release, and/or use of hazardous materials and/or chemicals?	Y	See above.
3.4 the use of chemicals or materials subject to international bans or phase-outs? (e.g. DDT, PCBs and other chemicals listed in international conventions such as the Montreal Protocol, Minamata Convention, Basel Convention, Rotterdam Convention, Stockholm Convention)	N	Chemicals and materials subject to international bans and phase-outs will not be used during the proposed project interventions.
3.5 the application of pesticides or fertilizers that may have a negative effect on the environment (including non-target species) or human health?	Y	See above. Hazardous pesticides and fertilizers are not promoted through the project but are currently used by project beneficiaries within the project landscape.
3.6 significant consumption of energy, water, or other material inputs?	N	The project does not include any activities that will result in significant consumption of any natural resources.
Safeguard Standard 4: Community Health, Safety and Security		
Would the project potentially involve or lead to:		
4.1 the design, construction, operation and/or decommissioning of structural elements such as new buildings or structures (including those accessed by the public)?	Y	The project includes the installation of a single larger x-band radar system and numerous Automatic Weather Stations (AWS), Rainfall Gauges and river water meters. All of these structural elements are small in size (excluding the radar), and at most require the installation of a small concrete base and fencing to protect the equipment from vandalism by animals or people (in the case of the AWS). The fencing used is likely to be 3mx4m in size. The radar is the only large piece of equipment that may justify a detailed risk screening related to the siting and construction process. However, as this piece of equipment will be established within an existing government institution. Additionally, given the sensitivity and

			specialization of this equipment, access to the radar site will be closely controlled by necessity, reducing both the potential environmental and social risks associated with its construction and operation.
4.2	air pollution, noise, vibration, traffic, physical hazards, water runoff?	Y	The project is not anticipated to lead to air pollution, noise, vibration, traffic, physical hazards or water runoff. However, the installation of the Radar and the numerous AWS may result in some minor noise or traffic during transport and establishment. As these risks are negligible, they will be managed through good practice.
4.3	exposure to water-borne or other vector-borne diseases (e.g. temporary breeding habitats), communicable or noncommunicable diseases?	N	While Ghana is a high-risk area for malaria, the project does not include any activities that could substantively increase the incidence or likelihood of exposure. While certain interventions such as community check dams could result in increased volumes of standing water, the impact of these on the incidence of vector-borne diseases is expected to be minor.
4.4	adverse impacts on natural resources and/or ecosystem services relevant to the communities' health and safety (e.g. food, surface water purification, natural buffers from flooding)?	N	The project targets the improved delivery of ecosystem services and the protection of natural resources. The project is not anticipated to lead to adverse impacts on natural resources or ecosystem services.
4.5	transport, storage use and/or disposal of hazardous or dangerous materials (e.g. fuel, explosives, other chemicals that may cause an emergency event)?	Y	The project is not anticipated to involve the use or transport of hazardous or dangerous materials.
4.6	engagement of security personnel to support project activities (e.g. protection of property or personnel, patrolling of protected areas)?	N	The project is not anticipated to engage security personnel.
4.7	an influx of workers to the project area or security personnel (e.g. police, military, other)?	Maybe	The project does not include any activities that would result in an influx of workers or security personnel to any of the project sites. While the supplier of the AWS equipment may send staff to oversee the installation of equipment and potentially provide training, this would be on a short-term basis. Any labour requirements for minor construction or installation would be sourced locally.
Safeguard Standard 5: Cultural Heritage			

Would the project potentially involve or lead to:		
5.1 activities adjacent to or within a Cultural Heritage site?	N	The target areas of the proposed project are not within or adjacent to Cultural Heritage sites.
5.2 adverse impacts to sites, structures or objects with historical, cultural, artistic, traditional or religious values or to intangible forms of cultural heritage (e.g. knowledge, innovations, practices)?	N	The proposed project is not anticipated to impact cultural heritage sites or intangible forms of cultural heritage.
5.3 utilization of Cultural Heritage for commercial or other purposes (e.g. use of objects, practices, traditional knowledge, tourism)?	N	The proposed project is not anticipated to use cultural heritage for commercial purposes.
5.4 alterations to landscapes and natural features with cultural significance?	N	While the proposed project will include interventions to restore and protect landscapes, stakeholder consultations will be undertaken to inform the project design and ensure that the project design does not impact areas of cultural significance.
5.5 significant land clearing, demolitions, excavations, flooding?	N	The project does not include any activities that would require significant lang clearing, demolitions excavations or flooding.
5.6 identification and protection of cultural heritage sites or intangible forms of cultural heritage?	N	The proposed project is not anticipated to lead to the identification and protection of cultural heritage sites or intangible forms of cultural heritage.
Safeguard Standard 6: Displacement and Involuntary Resettlement		
Would the project potentially involve or lead to:		
6.1 full or partial physical displacement or relocation of people (whether temporary or permanent)?	N	The project is not anticipated to lead to the displacement or relocation of people.
6.2 economic displacement (e.g. loss of assets or access to assets affecting for example crops, businesses, income generation sources)?	Y	The project does not include any activities that could directly result in economic displacement. However, as described above, the project is being implemented in a mixed use landscape but focuses specifically on sedentary farmers. This may generate the potential for conflict and/or unforeseen displacement, should activities under the project result in the conversion of currently 'unused' rangeland into agricultural land. While this risk is unlikely, the project implementation will include an IPP to ensure all relevant stakeholders are

			engagement in project-related processes, reducing the likelihood of displacement.
6.2	involuntary restrictions on land/water use that deny a community the use of resources to which they have traditional or recognizable use rights?	N	All interventions are being implemented on land which is already owned or claimed by a community according to legal and traditional ownership structures and for the benefits of those community members. However, there is the potential that in some cases these communities currently restrict access of Fulani pastoralists or other nomadic herders to this community / claimed land and particularly during the growing season and these types of restrictions are likely to continue with the implementation of the project. The project will seek, at all times, to ensure the needs of all stakeholders on the landscape are considered during the implementation of project activities and in any instance in which project activities are being implemented on land that is used or claimed by Indigenous Peoples it will secure FPIC prior to the implementation of any activities on said land, and will at all time ensure continued access is ensured and that no economic displacement occurs.
6.3	risk of forced evictions?	N	No forced evictions are anticipated to result from the proposed project.
6.4	changes in land tenure arrangements, including communal and/or customary/traditional land tenure patterns (including temporary/permanent loss of land)?	Maybe	The proposed project is not anticipated to result in any changes in land tenure agreements. However it is important to note that the project will be installing weather monitoring infrastructure. While this infrastructure will preferentially be installed on government-owned land, here is a chance that some infrastructure may need to be installed on private land. In both cases (public or private land), site selection would be undertaken through a participatory process and only through the Free, Prior and Informed Consent (FPIC) of potentially affected Indigenous Peoples communities.

Safeguard Standard 7: Indigenous Peoples		
Would the project potentially involve or lead to:		
7.1 areas where Indigenous peoples are present, uncontacted, or isolated Indigenous peoples inhabit or where it is believed these peoples may inhabit?	Maybe	The term *Indigenous* is not widely used in Ghana. However, the country has a great diversity of different ethnic groups, including ethnic minorities and Indigenous Peoples (as per the definition in the GCF IP Policy). These groups exist within an integrated social patchwork-type landscape and there are differential relationships between groups at a highly localized level. Although these groups use different languages, they are mutually intelligible at a district/regional level. It is also important to note that while the populations targeted under the project are, on the whole, ethnic minorities, there are notable differences between the majority ethnic minorities who practice sedentary farming and a subset who practice semi-nomadic pastoralism, who are recognised as Indigenous Peoples. This group, the Fulani, are differentiated through their livelihood practices and have traditionally been an underserved and underrepresented group in political, economic and social structures within Ghana and West Africa in general.
7.2 activities located on lands and territories claimed by Indigenous peoples?	Yes	The project will implement activities within communities that may be considered to be made up of Indigenous Peoples, however the selection of the specific interventions will be led by the communities themselves, and activities will only be undertaken through a consultation process and when applicable with the FPIC of these landholding communities. Given the high probability of knowledge gaps about land ownership structures, especially for the pastoral Fulani it is possible that activities implemented under the project may affect their access and land tenure. While this is a potential risk, these kind of interventions will be made only when their free, prior and informed consent is secured and the effects will be mitigated through the implementation of a IPPF and subsequent IPP, which will ensure that all existing land access is respected by the project and no interventions will result in economic

			restrictions or restrictions on access to natural resources on which these communities depend.
7.3	impacts to the human rights of Indigenous peoples or to the lands, territories and resources claimed by them?	Maybe	As described above, the Fulani who are an Indigenous People in the context of Ghana are present within the project landscape and may be adversely impacted by the project. The full likelihood and extent of these impacts could not be adequately quantified during the project development period for a number of reasons, including a difficulty in mapping Fulani communities on the landscape and the highly localized differential relationships between groups at a municipal level. This potential risk will be addressed through the implementation of an IPP. The project will in all instances ensure continued access to natural resources and land that is either claimed by or used by the Fulani or other Indigenous Peoples identified through the implementation of the IPPF.
7.4	the utilization and/or commercial development of natural resources on lands and territories claimed by Indigenous peoples?	Maybe	Extensive engagement with local communities and traditional governance structures have been held. However, as described above, engagements with potential Indigenous Peoples was not possible during the development of the Funding Proposal. These engagements will be undertaken during the first year of implementation through the operationalization of an IPPF and will ensure that the utilization and/or commercial development of natural resources on lands and territories claimed by indigenous peoples does not happen without obtaining FPIC and ensuring continued access rights to lands and natural resources on which their livelihoods depend..
7.5	adverse effects on the development priorities, decision making mechanisms, and forms of self-government of Indigenous peoples as defined by them?	Maybe	There have been extensive engagements with local communities and methods of integrating with traditional governance structures is incorporated into the approach of the project. It is not anticipated that the project will adversely affect the self-government of local communities, or ethnic minorities. However, given the presence of Fulani and their identity as

		traditionally underserved, the potential for this risk will have to be further assessed during the implementation of the EMEP.
7.6 risks to the traditional livelihoods, physical and cultural survival of Indigenous peoples?	Maybe	As described elsewhere, there is a certain potential for tension between sedentary farmers and Fulani (pastoral nomads) in the northern regions of Ghana. While the project wont directly exacerbate this potential for conflict, long term benefits accrued by project beneficiaries may impact the existing social balance or alternatively result in greater competition for land (which could exert pressure on the livelihoods of the Fulani). Based on available information the potential for this likelihood of this risk is limited and there are well established understandings of how land may be used (according to both traditional law and municipal bylaws). Although the risk for an adverse outcome here is considered to be limited, the project does include an IPPF, through which all Indigenous Peoples within the project landscape will be mapped and consulted in the development of an IPP. This will enable the project to identify any potential impacts on the traditional livelihoods or physical/cultural survival of these groups and modify project activities to ensure their rights, traditional livelihoods and cultural identities are secured in the context of the project activities.
7.7 impacts on the Cultural Heritage of Indigenous peoples, including through the commercialization or use of their traditional knowledge and practices?	N	The alternative livelihood options are not anticipated to impact the Cultural Heritage of Indigenous peoples, including through the commercialisation or use of their traditional knowledge and practices.
Safeguard Standard 8: Labor and working conditions		
8.1 Will the proposed project involve hiring or contracting project staff ?	Y	
If the answer to 8.1 is yes, would the project potentially involve or lead to:		

8.2	working conditions that do not meet national labour laws or international commitments (e.g. ILO conventions)?	N	Project staff are not anticipated to be subjected to adverse working conditions, occupational health and safety risks or forced labour. All appointments will be governed by national labour laws and international commitments.
8.3	the use of forced labour and child labour?	N	Project staff are not anticipated to be subjected to adverse working conditions, child labour and forced labour. To prevent the potential of forced or child labour, the project's procurement plan will strictly adhere to UNEP and the GCF's procurement principles, as well as all applicable national laws.
8.4	occupational health and safety risks (including violence and harassment)?	Maybe	Project staff are not anticipated to be subjected to adverse working conditions, occupational health and safety risks or forced labour.
8.5	the increase of local or regional unemployment?	N	The project is anticipated to increase employment in target communities.
8.6	suppliers of goods and services who may have high risk of significant safety issues related to their own workers?	N	All procurement will be undertaken according to the regulations of the Government of Ghana. This includes minimum working (and safety) standards for all providers of goods and services.
8.7	unequal working opportunities and conditions for women and men	N	Equitable access to economic opportunities and gender-sensitive working conditions have been considered in the project's design.