GHANA DEDICATED GRANT MECHANISM FOR LOCAL COMMUNITIES
PROJECT G-DGM

ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

PREPARED FOR THE IMPLEMENTATION OF SUB-PROJECTS

Solidaridad

Contents

LIST OF FIGURES

LIST OF TABLES

ANNEX

ACRONYMS AND ABBREVIATIONS

DA	District Assembly
EPA	Environmental Protection Agency
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
E&S	Environment and Social
G-DGM	Ghana Dedicated Grant Mechanism
GOG	Government of Ghana
GRM	Grievance Redress Mechanism
IDA	International Development Agency
IUCN	International Union for Conservation of Nature
LI	Legislative Instrument
MA	Municipal Assembly
MMDA	Metropolitain Municipal and District Assembles
MCE	Municipal Chief Executive
MLNR	Ministries of Land and Natural Resources
MLGRD	Ministry of Local Government and Rural Development
MDA	Municipal and District Assembly
OP	Operational Procedures
PPE	Personal Protective Equipment
CWSA	Community Water and Sanitation Agency
SS	Social Safeguard specialist
ToR	Terms of Reference
WB	World Bank

EXECUTIVE SUMMARY

The Ghana DGM (G-DGM) project is designed to promote the inclusion of forest-rich-communities in efforts to reduce deforestation and degradation through capacity building in REDD+. The strategy is to strengthen participation in and understanding of FIP and REDD+. The project development objective (PDO) is to strengthen knowledge and practices of targeted local communities in REDD+ processes and sustainable forest management. The Ghana project seeks to support capacity building and finance the demand-driven provision of grants to communities, individuals, and community-based organizations (CBO) within local communities in the Western North, Bono, and Bono East Regions. The main beneficiaries of the G-DGM are local communities and their representative community-based organizations in the Western North, Bono and Bono East Regions. The selection criteria were based on complementarity to the G-FIP, so these were selected communities off-reserve of the FIP catchment area. This project is targeting 53 communities in these three regions

Solidaridad West Africa, operating as the National Executing Agency (NEA) of the G-DGM implementation over a five-year period (2017 -2022), has developed this Environmental and Social Management Plan (ESMP) guiding the execution of specific environmental and social safeguard issues relating to the project Environmental and Social Management Framework (ESMF), any associated compliance with World Bank Safeguard Policies and applicable national legislation/regulations.

The Project has 2 main components:

- Component 1 is directed at implementing capacity-building activities aimed at improving local communities' capacity to understand the FIP, REDD+, the impact of local and global activities on climate change and links to livelihoods.
- Enable communities, through grants, to engage in more sustainable forest landscape practices

Therefore, the G-DGM is expected to contribute to the strengthening of local and traditional communities in the project areas by:

- enhancing the capacities needed to strengthen their participation in the FIP and other REDD+ processes at the local, national, and global levels.
- promoting the sustainable management of forest and natural resources through grant funded sub-projects.
- promoting coping and adaptive strategies/livelihoods that will make them more resilient to man-made pressures and climate change (also through the grant-funded sub-projects); and
- promoting synergies with the FIP project.

The component 2 implementation primarily finances goods, as well as related operational costs, for (a) eligible communities (community-level initiatives); (b) individuals living in these communities (individual initiatives); and (c) CBOs (who have been working in Bono, Bono East, and Western North Regions in climate change/REDD+ thematic areas for more than five

years), to undertake small-scale sustainable initiatives that fall under predetermined themes related to climate change and REDD+.

In the implementation of component 2 grant activities, eligible communities, individuals, and CBOs have selected subprojects to be implemented. These grant activities on which the environmental and social screening was conducted include the following initiatives:

1. Establishment of cashew plantation
2. Sacred site protection sub-projects
3. Watershed protection sub-projects
4. Woodlot establishment
5. Cocoa rehabilitation
6. Community Ecotourism Centre development
7. Community reforestation sub-project
8. Community solar powered mechanized boreholes
9. Community solar lighting

Potential Environmental and Social Impacts of the Implementation Activities

The implementation of the proposed subprojects has potential for environmental and social impacts which include loss of flora and fauna from a possible removal of vegetation, operational and maintenance cost associated with community borehole management, dust and noise pollution from drilling and construction of boreholes, land tenure and ownership conflicts resulting from claim of land to be used for subprojects, sanitation issues resulting from improper waste management, noise nuisance from the construction equipment during excavation and haulage of construction waste materials, soil erosion at construction site which may result from loosening of soils and consequent mobilisation of the loosened soil particles during rainfall, injury and accidents involving construction workers slip, fall and injury of community members near the construction sites resulting from exposure to excavated drainage channels and speeding construction equipment, risk of social conflicts, child labour, and sexual exploitation and abuse have also been identified.

However, the significance of the impacts has been evaluated to range from minor to moderate and mitigation measures have been proposed to manage the impacts during the implementation stages. The mitigation measures include use of well- maintained construction equipment and limiting the speed of haulage trucks in order to reduce noise generation; immediate backfilling of disturbed areas to reduce soil erosion; use of Personal Protective Equipment (PPEs) by workers during construction activities in order to protect them from injury and accidents; provision of signages that informs the community members about dangers around the construction sites and how injury and accidents could be avoided; zero tolerance for child labour, immediate collection and disposal of construction and housekeeping wastes from the construction sites at approved waste dumps by the communities, respecting community traditional laws, protection of natural habitats and employing conservative agriculture practices that protects the environment.

World Bank Environmental and Social Safeguard Policies triggered by the G-DGM Project

The G-DGM project by its implementation has triggered the following World Bank safeguard policies (Bank and operational policies):

OP/BP 4.11-Physical Cultural Resources, OP 4.12 - Involuntary Resettlement, OP 4.01-Environmental Assessment; OP 4.04 -Natural Habitat; OP 4.09 Pest Management; OP 4.36-Forest. This requires that the potential environmental and social impacts be identified, and mitigation measures are proposed for managing the adverse impacts during the project implementation.

The Ghana national laws and regulations on environmental assessment LI 1652 of 1999 also requires that environmental and social impacts of proposed undertakings should be assessed and mitigated. Other institutional requirements demand actions to be taken on some project activities. Such actions include water quality analysis and water abstraction permit for the constructions of boreholes in some 37 communities as required under Water Resources Commission WRC Act 1996 (Act 522), L.I 1692 Water use regulations, 2001

Objectives of the ESMP Preparation

The Environmental and Social Management Plan (ESMP) is to provide guidance to the NEA on procedures to be followed and standards to be met in implementing the projects which should follow the national and World Bank safeguard provisions. It provides for the roles and responsibilities of the environmental and social safeguard specialists and other designated officers as well as monitoring protocols to be followed to ensure that the required provisions are adhered to.
This ESMPs is built on the environmental and social screening report's recommendation to develop a detailed plan for the avoidance, prevention, mitigation and/or management of potential risks resulting from the implementation of subprojects.

The ESMP outlines mechanisms for:

- Mitigative measures for the potential environmental and social impacts associated with sub-projects' implementation and management of safeguard policy implications.
- Arrangements by the NEA, local communities and other relevant institutions for implementation and their capacity building.
- Monitoring ESMP measures implementation.
- Community consultations.

The methodology and approach for the preparation of the ESMP involved stakeholder consultation, field visits, project site inspections, workshops, meetings, interviews, and desk top study for similar projects.

The project activities will have some project affected persons (PAPs) in some communities due to the allocation of communal land on which they (PAPs) occupy for a community subproject. Cautiously, the project will work with appropriate community leaders to ensure no one has a livelihood challenge resulting from the implementation of subprojects.

Environmental and Social Mitigation Plan

An environmental and social management plan aims at avoidance, prevention, mitigation and/or management of potential risks during pre-implementation, implementation phase, and the operational and or maintenance phase of the subprojects. The plan includes measures such as dust suppression at the drilling and construction sites, replanting of destroyed vegetation around the construction sites, occasional backfilling of drilled boreholes, appropriately ensuring PAPs livelihoods are not affected by ensuring they are given place to cultivate their crops, replanting old and unproductive cocoa farms through improved cocoa agroforestry system, community afforestation and cashew plantations on degraded lands, watershed planting to protect river bodies.

Environmental and Social Monitoring Plan

A Plan for monitoring the effectiveness of the mitigation measures' implementation in the Environmental and Social Management Plan is also in the Report. The plan provides for each identified activity, an approach to be used by the appropriate team to monitor the progress of the implementation for feedback. It comes with the data to be taken as part of the reports to be generated from the field visit.

Grievance Redress Mechanism

The project has developed and instituted a functional GRM system in all project communities to report and offer resolution to any possible grievance that may arise out of project implementation. The processes include a community level grievance registration, cohort level and National level grievance resolution system termed Central Grievance Redress Committee (CGRC). The preparation of this ESMP took a consultative and participatory approach, however, it is important that a grievance resolution procedure which aims at addressing and resolving grievances or complaints from affected persons promptly, fairly, and acceptable to all parties during the project implementation is provided for in the ESMP.

The grievance redress process will use the already existing three-tier Project Grievance Redress framework to address complaints that may arise because of the subproject activities. The first tier is at the local community level with project team and community focal persons as the recipients of grievances and dispute resolution.

Grievance Redress Committee formed at every Cohort Level as the second tier would be the one which would address the grievance in the next level if the issue or the problem is not solved at the first tier and to be chaired by the district manager or representation from the forestry commission with members from the traditional authority, area council, member of a clergy and representative of the NGO/CBO working in the area. They will coordinate on getting proper and timely information to the affected persons, resolve grievances and provide support to the affected persons.

The Central Grievance Redress Committee (CGRC) which is the third tier will be constituted from the NSC (Chairman), FC (legal officer) and NEA Project manager (Secretary). They are to address project specific complaints that may be referred by the first and second tier redress processes.

Throug negotiation, mediation and other available technique, complaints or disputes would be settled and where perhaps the conplainant is dissatisfied, the redress action will be verified and Alternative Actions applied

Capacity Building Plan

Capacity building will be carried out for all relevant stakeholders including contractors and their workers, community level subproject committees, community focal persons. NEA staff who will be involved in the implementation, monitoring, supervision and reporting on the ESMP compliance will undergo a 2-day training to create understanding on the ESMP requirements and the roles and responsibilities of the stakeholders and effective safeguards delivery on the project.

1. INTRODUCTION

1.1 Background and Justification

The Ghana Dedicated Grant Mechanism (G-DGM) follows the framework guidelines and set of activities covered under the components designed for the Global DGM. In Ghana, the project seeks to support capacity building and finance the demand-driven provision of grants to communities, individuals, and community-based organizations within local communities (LCs) in the Western North, Bono, and Bono East Regions, to strengthen their understanding of the Forest Investment Program (FIP) and other REDD+ processes at the local, national, and global levels, as well as to increase their capacity to adapt to climate change. The G-DGM prioritizes its actions in the Western North, Bono, and Bono East Regions to promote synergies with the FIP, which also operates in these three regions, and Forest Carbon Partnership Framework projects. The G-DGM project has been designed to be implemented through its two main components

Component 1: Capacity Building for Local Communities

i. Capacity building will occur through a funnel approach in Twi, the local language. General awareness and REDD+ training will focus on 53 targeted communities, most of which are also FIP communities. This outreach will be followed by 'basic training' as the first step by community members, community-based organizations (CBOs), and individuals to have a deeper, more understanding of REDD+, and the linkage with livelihood. Basic training must be undertaken to access the grant financing. The logic for this requirement is that knowledge will bring a higher level of commitment to FIP and REDD+ goals and subsequently to the funded activities on the ground. Capacity-building activities will do the following:

   (a) Improve LCs capacity to understand the FIP, REDD+, the impact of local and global activities on climate change and links to livelihoods (target: Basic training participants).

   (b) Provide on-farm and household-level training for dedicated training participants to demonstrate the links between livelihoods and REDD+ goals, showcase sustainable and climate smart practices, promote farmer-to-farmer training on farms that practice climate smart practices. Dedicated training will be hands-on, field-focused, practical, and largely out of the classroom setting (target: Dedicated training participants).

   (c) Improve extension service providers' ability to incorporate climate smart practices and REDD+ principles into their activities by targeting them for basic training (e.g., COCOBOD - cocoa grower's extension service), assemblymen, Community Resource Management Areas (CREMAs), district officers, school children, and others) to make them more effective trainers to the communities over the long-term (target: extension service providers plus schoolchildren).

   (d) Improve the ability of traditional authorities to effectively combat threats from within and without by providing basic training for them, which will allow them to understand the consequences of threats to the LCs such as illegal surface mining, illegal chainsaw operations.

   (e) Target those whose livelihoods are not sustainable (illegal chain saw operators, illegal miners, charcoal producers, etc) with a view to educate them on the long-term impacts of their practices and to look for more sustainable solutions, including alternative livelihoods

through the grant program.

(f) Improve the depth of perception about local actions which have a global impact; trips (national and international) should be arranged for selected community members to learn how local action related to REDD+/climate change can make the difference to lives and livelihoods in a community setting (subset of basic training participants).

ii. For participants who have fully grasped key concepts from basic training and who have personalized its messages, the NEA will seek out each year local, national, or global venues related to REDD+ and climate change that key proponents can attend and participate in, which, in turn will further build capacity and allow community members to practice what they have learned and understood. This result is expected under the project and will be prioritized.

iii. Component 1 will, in addition, finance the necessary training for grant proposal writing. All potential grantees who have completed basic training and passed the oral test (with a signed certificate of completion) can receive grant proposal training under Component 1 before submitting their grant proposals.

Component 2: Sustainable and Adaptive Community Initiatives

i. This subcomponent will primarily finance goods, as well as related operational costs, for (a) eligible communities (community-level initiatives); (b) individuals living in these communities (individual initiatives); and (c) CBOs (who have been working in Bono, Bono East, and Western North Regions on climate change/REDD+ thematic areas for more than five years), to undertake small-scale sustainable initiatives that fall under predetermined themes related to climate change and REDD+. Those who have benefited from initiatives under the FIP project will not be allowed to benefit from Component 2 under the DGM, to avoid doubling up on benefits.

ii. Examples of initiatives that that are being supported include, establishment of cashew plantation, sacred site protection sub-projects, watershed protection sub-projects, woodlot establishment, cocoa rehabilitation, community ecotourism centre development, community reforestation sub-project, community solar powered mechanized boreholes

These initiatives are broken down into seven thematic areas related to livelihoods, biomass coverage, soil and water conservation, reduction of carbon emissions, climate proofing agricultural investments, and scale-up of related investments

1.2 Objectives of the ESMP

The implementation of the subprojects has potential for safeguards concerns, some of which are waste generation, soil erosion, occupational health, and safety, removing of vegetation, public health and safety, interruption of income and livelihoods of farmers, land rights, and child labour etc.

The Environmental Protection Agency Act 490, of 1994, and the Ghana's Environmental Assessment Regulation, 1999 (LI 1652) require that for any project which has the potential to impact negatively on the environment and people, the undertaking should be assessed for its environmental and social impacts and the appropriate mitigation measures identified prior to the undertaking.

Water Resources Commission (WRC): The WRC is responsible for granting licenses for any water use activity and the procedures as laid down in the WRC Act 1996 (Act 522) will be followed. All project activities requiring such license will receive assistance from the WRC and the Commission will therefore provide adequate guidance to ensure that the proper procedures are used. The G-DGM project makes use of the L.I 1692 (Water use regulations, 2001) Regulation 10 of the L.I gives permit exemption to the use of water for the purposes for which the project is being implemented. However, the project is mandated to register with the respective District assemblies.

The G-DGM project also triggers these World Bank Safeguard Policies, namely the Environmental Assessment OP/BP 4.01, Natural Habitat Policy OP/BP 4.04, Pest Management OP/BP 4.09, the Involuntary Resettlement Policy OP 4.12, Physical Cultural Resources OP/ BP 4.11 and Forest OP/BP 4.36 requiring that any potential environmental and social issues arising from any proposed subproject should be identified and a management plan prepared to mitigate the potential impact.

The purpose of the national environmental laws and the World Bank Policies are to ensure that the environmental and social impacts associated with any undertaking under the project are avoided where possible, managed and or effectively mitigated.
In seeking to comply with the G-DGM project Environmental and Social Management Framework (ESMF) and other relevant national laws, this ESMP has been prepared.

1.3 Purpose of the ESMP

The purpose of the Environmental and Social Management Plan (ESMP) is to guide the project implementation process in a way that will ensure that the potential environmental and social impacts akin to the proposed project are identified and appropriate measures for mitigating the impacts are integrated into project planning and implementation arrangements and processes.

The specific objectives of the ESMP are to:

- Address potential environmental and social impacts that may arise from the implementation of the subprojects
- Provide management actions that need to be implemented to mitigate the negative environmental and social impacts resulting from the subproject activities
- Propose environmental and social monitoring programs that will ensure that mitigation measures are implemented and are effective during project implementation

- Propose institutional arrangements, incorporating roles and responsibilities of stakeholders involved in management actions and monitoring
- Ensure that all World Bank safeguard policies and national level regulations are observed and complied with in the implementation of subprojects.

1.4 Scope of the ESMP

The project operational implementation has been organized into five cohorts based on community locations and administrative districts. Therefore, the scope of work for the ESMP preparation has been structured based on subprojects in each of the five operational cohorts and will be focusing on the following:

- Cohort level description of subproject location.
- Description of subproject activity and subcomponents.
- Description of subproject site: reference to project baseline environmental and social conditions.
- Review policy, legal and institutional framework related to environmental management of the subproject.
- Proposal of an Environmental and Social Management Plan (ESMP) which summarizes the (a) mitigation measures for all the impacts identified, (b) appropriate indicators for monitoring and frequency of monitoring; (c) persons and institutions responsible for the proper implementation of the mitigation measures; and (d) the mitigation measures implementation costs.
- Consultation of stakeholders

1.5 Methodology for Developing the ESMP

The ESMP has been developed through a participatory process and series of activities and engagements. The activities include project community visits, subproject sites visit, engagement with traditional authorities and queen mothers, engagements with community subproject committees, interviews, and desk studies. These activities provided the opportunity to gather baseline data including environmental and social scenarios in the project communities and in and around subproject sites. The consultative activities provided opportunities to engage extensively with traditional authorities, families, landowners, and land users to understand all issues and activities on-going on proposed sites to which the preparation of the report.

1.5.1 Review of Available Literature/Project Documents

Desk review of various literature was conducted to gather background information related to the sites, the proposed subprojects and to identify potential environmental and social impacts of subprojects. In this context, the documents reviewed include the following:

- Environmental and Social Management Framework (ESMF) of FIP/DGM
- The environmental and social screening report of the proposed subprojects
- World Bank Safeguards Policies
- Ghana Environmental Assessment Regulation 1999 LI 1652 and
- Water Resources Commission Act 1996 (Act 522)

1.5.2 Site Visits

For each of the proposed subprojects, the team visited the selected sites to identify what is available on the sites and what the situation of the site was as at the time of visit. The visit did not only look at the field but also the traditional leaders of the communities were also visited including in some cases, the need to meet not only the person given out lands for subprojects activity but the family heads and family members.

On the proposed subproject lands, the team conducted preliminary inspection of the proposed sites and interacted with persons in and around the area to assess and gather the necessary information.

1.5.3 Stakeholder Consultations

Stakeholder consultations were undertaken to gather and share information about the proposed subproject and its objectives, its scope and the potential environmental and social risks and impacts.

The stakeholders consulted include the following:

i. Forest Service Division (FSD) of Forestry Commission (FC)
ii. Cocoa Health and Extension Division (CHED) of Ghana Cocoa Board
iii. District/Municipal coordinating directors, works engineers at the project participating districts and Community Water and Sanitation Agency (CWSA)
iv. The project beneficiary communities:
    - Community Elders and Opinion Leaders, Assembly Members, community members, Community-Based Organizations, Farmer-Based Organizations and others who may have interest in subproject implementation

The consultations were used to inform stakeholders about the proposed subproject and its aims, project scope, and the need for stakeholder involvement in the proposed subproject implementation process. The meetings provided opportunities for the stakeholders
to raise their concern about the subproject implementation processes which were all factored in the subproject implementation processes as well as the preparation of this ESMP and the subproject planning and implementation.

1.5.4 Potential Environmental and Social Impacts Identifications

Overall, the environmental and social impacts of the proposed subprojects were identified through the following:

- Reports submitted by the responsible teams and contractors
- Field and site inspection and interaction with the people related to the subproject
- Observations and experts' judgements at project beneficiary communities

1.6 Reporting

The information gathered during field visits and stakeholder consultations were compiled into this ESMP report.

2 DESCRIPTION OF PROPOSED SUBPROJECT

2.1 Proposed subprojects' locations

Solidaridad has successfully rolled out the grant phase of the Ghana Dedicated Grant Mechanism for Local Communities project in the project communities. The project communities fall within 18 Municipal and District Assemblies (MDAs) in Bono, Bono East, and Western North Regions. The grant component supports individuals, communities, and community-based organizations to undertake sustainable climate-smart initiatives that reduce deforestation and build their resilience to the adverse impacts of climate change.

To increase local communities' understanding of sustainable natural resource management and climate change issues, Solidaridad employs a community-based participatory approach to generate effective climate responses based on a community's climate change vulnerability context. This approach to implementing climate support interventions guarantees ownership and sustainability of the initiatives. Through the participatory approaches adopted by Solidaridad, project communities selected subprojects that response to their climate vulnerability need. Below (*Table 1, Annex 4, and Annex 5*) present selected subprojects of communities, individuals and CBOs and their locations. Access to potable water is a problem in most of the rural communities in Ghana. This therefore affirms the overwhelming selection by 38 communities to use their grant to provide a solar-powered borehole system for the communities to help them directly deal with the water scarcity problem and again to support the use of clean energy by adopting solar as the source of energy to power the borehole mechanisation and for lighting.

With the knowledge gained from the capacity building phase of the project, some communities, individuals, and CBOs have opted to use their grant support to undertake tree planting activities. These activities are with the aim of helping create more carbon sinks and to also have positive effects on the microclimate of their area. Community afforestation and woodlots dominate the tree planting activities. Again, cashew agro-forestry systems are being established to create an enabling economic condition for these communities, individuals, and CBOs while at the same time acting as a carbon sink. There are also activities of watershed planting to protect river bodies that through degradative activities have been exposed to direct sunlight.

Cocoa agro-forestry system is to be established using a climate-smart approach which dominates subprojects in the Western North projects communities. Through the climate-smart practices, old and unproductive cocoa trees are to be removed and replaced with a hybrid and fast-growing cocoa. The practice will also ensure an optimum combination of timber tree species that will benefit the farmer and the farm through environmental services and economic returns in the future.

Table 1: project communities' location and selected subprojects

G-DGM PROJECT BENEFICIARY COMMUNITIES AND SELECTED SUBPROJECT						
SN	**Community**	**District**	**District_Capital**	**Operational Cohort**	**Region**	**Selected Subproject**
1	Adabokrom	Bia East	Adabokrom	IV	Western North Region	solar powered borehole
2	Camp 15	Bia East	Adabokrom		Western North Region	solar powered borehole
3	Kumkumso	Bia west	Debiso		Western North Region	solar powered borehole
4	Elluokrom	Bia West	Debiso		Western North Region	solar powered borehole
5	Obeykrom	Bia west	Debiso		Western North Region	solar powered borehole
6	Adwumam	Juabeso	Juabeso		Western North Region	solar powered borehole
7	Asempaneye	Juabeso	Juabeso		Western North Region	solar powered borehole
8	Benchima	Juabeso	Juabeso		Western North Region	solar powered borehole
9	Juaboso Nkwanta	Juabeso	Juabeso		Western North Region	solar powered borehole
10	Nkatieso	Juabeso	Juabeso		Western North Region	solar powered borehole
11	Sefwi Asafo	Sefwi Wiawso	Sefwi Wiawso		Western North Region	Afforestation project
12	Suiano B	Sefwi Wiawso	Sefwi Wiawso		Western North Region	Improved Cookstoves
13	Datano	Sefwi Wiawso	Sefwi Wiawso		Western North Region	solar powered borehole
14	Kankyiabo	Sefwi Wiawso	Sefwi Wiawso		Western North Region	solar powered borehole
15	Bodi	Bodi	Bodi		Western North Region	solar powered borehole
16	Suiano A	Bodi	Bodi		Western North Region	Improved Cookstoves
17	Asantekrom	Aowin	Enchi	II	Western North Region	solar powered borehole
18	Damoakrom	Aowin	Enchi		Western North Region	solar powered borehole
19	Fahiakotwere cluster	Aowin	Enchi		Western North Region	solar powered borehole
20	Jomoro Enchi	Aowin	Enchi		Western North Region	solar powered borehole
21	Nyamebekyre	Aowin	Enchi		Western North Region	solar powered borehole
22	Abease	Pru West	Yeji	V	Bono East Region	solar powered borehole
23	Zabrama	Pru West	Yeji		Bono East Region	Cashew agroforestry
24	Benim	Pru West	Yeji		Bono East Region	solar powered borehole
25	Beposo	Pru West	Yeji		Bono East Region	solar powered borehole

26	Baaya (Prang)	Pru West	Yeji		Bono East Region	solar powered borehole
27	Praprabon	Atebubu Amantin	Atebubu		Bono East Region	solar powered borehole
28	Menko	Sene West	Kwame Danso		Bono East Region	solar powered borehole
29	Kanto	Sene West	Kwame Danso		Bono East Region	solar powered borehole
30	Akyeremade	Sene West	Kwame Danso		Bono East Region	Cashew agroforestry
31	Mpatasie	Berekum	Berekum	III	Bono Region	solar powered borehole
32	Nkyenkyemanmu	Berekum West	Jinijini		Bono Region	solar powered borehole
33	Namasua	Berekum	Berekum		Bono Region	solar powered borehole
34	Kotaa	Berekum	Berekum		Bono Region	Improved Cookstoves
35	Koradaso	Dormaa East	Wamfie		Bono Region	solar powered borehole
36	Asunso no.1	Dormaa East	Wamfie		Bono Region	solar powered borehole
37	Nsuhia	Dormaa	Dormaa Ahenkro		Bono Region	solar powered borehole
38	Duasidan	Dormaa	Dormaa Ahenkro		Bono Region	solar powered borehole
39	Twumkrom	Dormaa	Dormaa Ahenkro		Bono Region	Cashew agroforestry
40	Boffourkrom	Sunyani West	Odumase		Bono Region	solar powered borehole
41	Adoe	Sunyani West	Odumase		Bono Region	solar powered borehole
42	Abirikaso	Jaman South	Japekrom		Bono Region	solar powered borehole
43	Ampoma	Kintampo south	Jema	I	Bono East Region	Afforestation project*
44	Nante	Kintampo south	Jema		Bono East Region	Afforestation project
45	Anyima	Kintampo south	Jema		Bono East Region	Cashew agroforestry
46	Krabonso	Kintampo south	Jema		Bono East Region	Improved Cookstoves
47	Hyereso	Kintampo south	Jema		Bono East Region	solar powered borehole
48	Dawadawa no 2	Kintampo North	Kintampo		Bono East Region	Cashew agroforestry
49	Babato Kuma	Kintampo North	Kintampo		Bono East Region	Cashew agroforestry
50	Bawa Akura	Kintampo North	Kintampo		Bono East Region	Improved Cookstoves
51	Bonte	Nkoranza North	Busunya		Bono East Region	Cashew agroforestry
52	Dromankese	Nkoranza North	Busunya		Bono East Region	Cashew agroforestry
53	Asekye Krokese	Nkoranza North	Busunya		Bono East Region	solar powered borehole

3. ENVIRONMENTAL AND SOCIAL BASELINE OF PROJECT PARTICIPATION LANDSCAPE

3.1 INTRODUCTION

This chapter describes the baseline conditions of the project landscape. The project landscape is grouped into 5 cohorts (table 1) for operations purposes based largely on the locations of the communities. These are Cohorts I which consist of 11communities, Cohort II made of 5 communities, Cohort III consist of 12 communities, and Cohort IV and V consisting of 16 and 9 communities, respectively. In terms of landscape similarities, cohort I and V belong to the same landscape and possess similar characteristic ecologically and sociocultural. Similarly, the remaining cohorts all belong to the high forest zone with the same ecological characteristics.

3.2 PROFILE OF COHORT I AND V

3.2.1 Introduction

Cohort I and V are in the Bono East region of Ghana, with Techiman as the region's capital. The region lies between longitudes 1° 49` East and 2° 30` West and latitude 8° 00` North and 7° 35` South. The Bono East Region borders on the north the Savannah Region, on the west the Bono Region, on the south the Ashanti region and on the east the Volta Lake. Kintampo North Municipal, Kintampo South and Nkoranza North districts form Cohort I whereas Atebubu Amantin Municipal, Pru West and Sene West Districts Forms Cohort V (*see Table 1: for list of project operation cohorts and the communities and districts the fall*)

3.2.2 Topography

The land is generally plain with rolling and undulating land surface. Land elevation is generally between 60 m to 300 m above sea level with the highest point being a little over 300 m above sea level.

3.2.3 Geology and Soils Characteristics

The geological structure roughly divides the region into two main parts. Voltarian formation of Palaeozoic origin that is quartzite, shale, arkose, and mudstones and lower Birimian (Middle Pre-Cambrian) origin with some intrusive of upper Birimian and lower Pre-Cambrian formations. Large volumes of valuable rocks for quarrying are found in the Techiman and Wenchi Municipalities.

The region has good soils developed under Savanna vegetation. Compound associations are fine textured, ranging from fine sandy loams and mostly poorly drained. Its soils are agriculturally important and support cultivation of yam, cassava, maize, rice, groundnuts, garden eggs, okro, tomatoes, watermelon, and pepper and other perennial crops like cashew, mongo and citrus.

3.2.4 Climate and Rainfall

The region, which falls between the wet semi-equatorial and tropical continental climatic regions of Ghana, experiences a rainy season which begins in May and ends in October and a long dry season from November to April. Generally, rainfall ranges between 900 mm to 1,089 mm. The region is characterized by high temperatures throughout the year with a mean annual

temperature of about 27 ºC. The relative humidity of the area is quite high, averaging over 75%. Though, these climatic conditions adversely affect agricultural activities in the region, cashew and mango production are hugely favoured and gradually dominating the landscape.

3.2.5 Relief and Drainage

The region lies within the Sene-Obosom and the Voltain basin. The major rivers: Volta Lake, Sene, Nyomo, Tanfi, Nwansi and Pru surround the region. In addition to these major rivers, there are streams which have the potential for water transport, irrigation and domestic use especially during the dry season.

3.2.6 Flora and Fauna of Cohort I and V Landscape

The region has three main vegetation zones - the guinea-savanna woodland, located in the north-west, the semi-deciduous zone in the south and the transitional zone, which stretches from the south-east and west up to the north of the region. The area is home to some economic trees that are indigenous tree species that include shea nut tree, Dawadawa, Baobab, Mahogany, Papao, Senya, Kane, Onyina, Kubre, Kyenkyen, Watapuo, Wama and Neem. Generally, tall grasses such as the elephant grass and varieties of anthropogenic species coexist with these trees in the region.

The region also serves as home to many animals such as the Boabeng-Fiema Monkey Sanctuary which is 22 kilometers away from the Nkoranza North District of the Bono East. The forest houses many birds, reptiles, deer, and monkeys, two of which are the Geoffrey's Pied Colobus and Campbell Mona monkey. It is a home for about 700 monkeys where the monkeys and inhabitant live together and are protected by the traditional laws of the area. The Buoyem Caves and Bats colony, which are within the locality of Buoyem in Techiman municipality of a dry semi-deciduous forest, house a large colony of rosetta fruit bats, caves, sandstone rocks and waterfalls. The Tano River which is located at Tanoso near Techiman houses a pool of sacred fish with golden crowns which are jealously protected by the community.

3.2.7 Quality of Built Environment

The built-up area of the Bono East region is made up of both the planned communities and inadvertent communities. The residential areas (both well planned and squatter settlements) form about 35% of the total land area of the region with agricultural, forestry, industrial and commercial areas making up the remaining 65% of land cover (GSS, 2015).

3.2.8 Population and Household

There is a female dominance of 51.5% out of 594,712 inhabitants of the area according to GSS, 2020 report. A greater percentage of the population (64.5%) live in rural areas as compared with 35.5% in the urban areas. Household population in the region is 126,534 with household size of 4.7 persons per household, which is greater than the national average of 4.4 persons per household.

3.2.9 Dominant Religion and Ethnicity

A little over two-thirds are Christians. Other religions in the Region are Islam and adherents of African Traditional religions. Catholics are about one-fifth of the Region's population.

Whereas Pru and Sene are the only Districts where adherents of African Traditional religions are relatively high, the Islamic faith is predominant in Techiman and Atebubu-Amantin.
The predominant ethnic group across Districts is Akan, except for Pru, Sene and Kintampo North where the dominant ethnic groups are Gurma, Guan, and Grusi respectively.

3.2.10 Tradition and Culture

The Bono East region upholds chieftaincy as an honoured and development institution. There are several Paramount chiefs within the region, with some owing allegiance to the Asantehene while others govern themselves. Traditionally, drumming and dancing are a medium of entertaining and unifying the population. Several traditional drumming and dancing groups are found in virtually all Districts.
The people from traditional areas in Bono East region, like other Akan societies, have a variety of festivals with the most prominent ones being the Apoo Festival of Wenchi, Techiman and Nkoranza, the Yam Festival (Fo-Yawowo) of Atebubu.

3.2.11 Occupation

Agriculture and its related work are the major occupation in all districts, accounting for 66.4% of the region's economically active population. The proportion of self-employed without employees in the region is 74.6%, mainly engaged in small scale economic activities operated by individuals while others are also peasant farmers engaged in subsistence agriculture. The percentage of employees within the economically active population is 9.7 relatively lower than the national proportion of 15.2% (GSS, 2020).

3.2.12 Sanitation

The most widely method of solid waste disposal is by public dump in containers accounting for 52.5%. About 17.4% of households use public dump (open space) and 10.7% of households burn their solid waste. About 11.0% of the population within the region, notably from rural areas indiscriminately dispose their solid waste off in open places. House to house waste collection accounts for 8.5%. For liquid waste disposal, throwing waste onto the compound (36.6 %) and onto the street (22.9 %) are the two most common methods used by households in the region (GSS, 2020).

3.3 PROFILE OF COHORT II

3.3.1 Introduction

Cohort II is within the Aowin Municipality with Enchi as the municipal capital. The Cohort is in the southern part of the Western North Region of Ghana between latitude 5° 251 N and 6° 141 N longitude 2° 301 W and 3° 051 W. It shares boundaries to the south with Jomoro district, East with Wassa Amenfi, North with Suaman and West with the Republic of La Cote D'Ivoire. The total land area of the district stands at 2,610.3 square kilometers

3.3.2 Topography

Generally, the district has an undulating terrain with hills rising to heights 35m and 366m above sea level. The terrain of the district is described as a Forest dissected land with hills and valleys.

3.3.3 Geology and soils Characteristics

Lower and upper birimian rock formation underlay the area. The geology formation of the district is richly endowed with gold deposit, which is found in rock formations, and alluvia deposit in places such as Achimfo, Sewum, Acquah Allah, Asantekrom and Jomoro.
The most widespread is the forest Ochrosols and Oxysols, which support the cultivation of cash and food crops, such as cocoa, palm tree, cola, coffee, cashew, plantains, cocoyam, cassava, and maize, which give high yields in the Municipality.

3.3.4 Climate and Rainfall

The district experiences wet semi-equatorial climatic conditions. Temperature is generally high with an annual average of 26° C. The hottest months are March and April i.e., before the onset of the first rains. The district experiences bimodal rainy seasons in a year, which occur from May to July and the minor season experienced in September and October. The average annual rainfall is between 15,000 mm and 18,000 mm in the district. The relative humidity in the district is generally high between 75% and 80% during the wet season and about 70% for the rest of the year.

3.3.5 Relief and Drainage

Several rivers and streams traverse the district. The Tano and Bia rivers and their tributaries, notably Boi and Disue respectively are the major rivers, which drain the district. Disue River for instance meanders considerably in its progress throughout the district.

3.3.6 Flora and Fauna of Cohort II Landscape

The vegetation covers are moist-semi-deciduous forests, found in the central and northern parts of the district and Rainforests located along the eastern and western fringes. The Rainforest is normally constituted by forest reserves and sacred groves, Mahogany, Odum, Dahoma etc. Trees found in the forests are of great economic value hence a high number of timber firms are operating in the district. The area has diverse community of small mammals like squirrels, fruit bats, pangolins, mouse, rats etc, and they are particularly high abundance in swamp forest which is a notable roosting place for local and migrant birds.

3.3.7 Quality of Built Environment

The built-up area of the Aowin Municipality is made up of both the well-planned communities and inadvertent communities. The residential areas (both well planned and squatter settlements) form about 25% of the total land area of the municipality. Agricultural and forest lands make up the largest portion 80% of land cover. As a result of large tract of wetlands within the municipality, alluvial gold mining has sprung up within the landscape polluting most of the water bodies and degrading large tracts of the forest and its resources.

There are two main types of dwelling units in the district, i.e., separate house (48.5%) and compound house (35.4%). About three quarters (74.9%) of the houses in the district are owned by household members. House owned by relative not a household member and those own by private other individual constitute 9.3 percent and 9.2%, respectively. Less than one percent (0.8%) of dwelling units in the district are owned through mortgage schemes.

3.3.8 Population and Households

The population of Aowin District, according to the 2010 Population and Housing Census, is 154, 661 (GSS, 2020). Males constitute 52.0 percent and females represent 48 percent. More than 90.0 percent of the population in the district live in rural areas. The district has a youthful population with 40.8 percent of the population below 15 years. Consequently, the population pyramid of the district has a very broad base which tapers off with a small number of elderly persons (4.4%). The total age dependency ratio for the district is 77.8. The district has 35, 155 total number of households with average household size 4.4 persons. Household sizes are higher in rural localities (4.6) compared to urban.

3.3.9 Dominant Religion and Ethnic Groups

Christians form a major part (68.7%) of the population in this Cohort. In terms of denominational affiliations of the population in the District, Pentecostals form the majority (25.6%) followed by Protestants (23.3%) and Catholic (19.8%). Persons of Islamic faith constitute 13.0 percent.

The Brusas are the main indigenous ethnic group in the Aowin District. The other people in the district belong to the Ashanti, Fante, Akuapem, Akyem, Ewe, Ga and Sisala ethnic groups. The major traditional language spoken in the district is Brusa.

3.3.10 Tradition and Culture

The Aowin District has one traditional council called Aowin with its seat at Enchi. The head of the Traditional council is the Paramount Chief who rules with the support of other divisional chiefs. Ellue or Yam Festival is the traditional festival celebrated by the chiefs and people of Aowin Traditional Council. This festival is celebrated annually and ushers in the new farming season while thanking the gods and praying for another bumper harvest.

3.3.11 Occupation

In terms of occupation of the employed population, overwhelming majority (80.3%) are engaged as skilled agricultural, forestry and fishery workers. The second commonest (6.6%) occupation of the employed is service and sales. The major industry engaging majority (79.7%) of the workers in the district is agriculture, forestry, and fishing. This is followed by wholesale and retail trade (6.5%). Manufacturing engages only 3.8 percent of the working people (GSS, 2020).

3.3.12 Sanitation

Many households in the district use pit-latrine as their main toilet facility. This is followed by those using public toilet accounting for about one quarter of households. As high as 15.0% of households, do not have toilet facilities in their homes. The most widely method of solid waste disposal is by public dump in the open space accounting for 49.4%. About one fifth (21%) of the households in the district dispose their solid waste off by dumping indiscriminately. Households who dump their solid waste into containers, and those whose solid waste is collected, form 7.0% and 7.2% respectively. For disposal of liquid waste mostly from domestic activities, throwing waste onto the compound (53.8%) and onto the street (24.6%) are the two most common methods used by households in the district (GSS, 2020).

3.4 Profile of Cohort III

3.4.1 Introduction

Cohort III is situated in the Bono region of Ghana with Sunyani as the region's capital. It lies between Latitudes 7° 20' N and 7° 05' N and Longitudes 2° 30' W and 2° 10' W. The region shares border with Savannah region to the North, Bono East region to the East, Ashanti and Western North to the South and Cote D' Ivoire to the West. Sunyani West, Berekum Municipal, Dormaa Central Municipal, Jaman South and Berekum West Districts form the Cohort III *(Table 1).*

3.4.2 Topography

The topography is generally undulating and rises between 180 m and 375 m above sea level. The high range can be found near Asunsu in the north-western part of the region, most of which is occupied by the Pamu Forest Reserve. The highest point is a little over 375 m above sea level.

3.4.3 Geology and Soils Characteristics

The Bono region is underlined by Precambrian Birimian formations which are believed to be rich in mineral deposits. Associated with the Birimian formations are extensive masses of granite. The Cape Coast Granite Complex is what pertains in the region. The rich minerals deposit underlain in Precambrian Birimian and the Birimian presents a great potential for investment in mineral exploitation.

Two main soil groups are found within the region. The Forest Ochrosols, covering the south-western part, and the Ground water Laterite Ochrosols. This intergrades in the northern parts of the Region. Besides these, there are some small patches of Oxysols and Rubrisols, which intergrades to the south of Sunyani.

3.4.4 Climate and rainfall

The region falls within the wet Semi-Equatorial Climatic Zone of Ghana. The monthly temperatures vary between 23 ºC and 33 ºC with the lowest around August and the highest being observed around March and April. The relative humidity is high averaging between 75% and 80% during the rainy seasons and 70% and 80% during the dry seasons of the year which is ideal for luxurious vegetative growth.

The average rainfall for the region is around 2009 mm. These areas experience double maxima rainfall pattern. The main rainy season is between March and September with the minor between October to December. This offers two farming seasons in a year which supports agricultural production in the region. However, the rainfall pattern is changing over the years because of deforestation and depletion of water bodies resulting from human activities.

3.4.5 Relief and Drainage

The region lies within the middle belt of Ghana with heights from 229 m to 376 m above sea level. The topography of the region is largely flat thus suitable for large scale agricultural mechanization. Cost of constructing houses and roads is relatively minimal due to the nature of the topography. The drainage is basically dendritic with several streams and rivers, notably Tano, Amoma, Bia, Tain, Kankam, Benu, Yaya and Bisi. Most of the water bodies are seasonal.

This often creates water shortage in the region during the dry season for both domestic and agricultural purposes.

3.4.6 Flora and Fauna of Cohort III Landscape

The region falls largely within the Moist-Semi Deciduous Forest Vegetation Zone. Most of the primary vegetation can be found in patches around the north-west, east, and southern parts. These include the Yaya and the Amoma forest reserves. This vegetation zone also contains most of the valuable timber species such as Wawa, Odum and Mahogany. As indicated by the characteristics of the vegetation cover, tree crops such as cocoa, cashew and citrus thrive well in this zone. As a result of lumbering and farming practices, most of the forest areas have been degraded. Re-afforestation is therefore being undertaken in the forest reserves to reverse the trend.

Present in the landscape is the Bui National Park. The Park, which is 1,821-kilometer square and covers part of the Black Volta River, is endowed with several species of antelopes and a variety of birds and well known for its hippopotamus population. The Duasidan Monkey Sanctuary, located 10 km southwest of Dormaa Ahenkro, hosts a rare breed of Mona Monkeys. The community forest which hosts these monkeys have recently gained attraction with efforts to develop it into an eco-tourism site.

3.4.7 Built Environment

In Bono region, the built environment experiences sheet and gully erosion on roads and residential areas. The built-up area of the Bono region is made up of both the well-planned communities and inadvertent communities. Agricultural and forest lands cover major of the total land cover within the Bono region.

3.4.8 Population and Household

It has a population of about 1,168,807, with an estimated growth rate of 2.2% as against the national rate of 2.4% (GSS, 2020). Males constitute 47.8 percent and females represent 52.2%. About 61.0% of the population reside in rural localities. Average household size ranges from 3.9 to 5.6 for the districts with the lowest recorded for Sunyani Municipal. Apart from the Sunyani Municipal Area, the remaining districts in the region have average household sizes greater than 4.0. The Dormaa East, Sunyani West districts and the Berekum municipality have average household sizes lower than the national average of 4.4. The remaining eight districts have average household sizes greater than the national average.

3.4.9 Religion and Ethnicity

The Region is inhabited mainly by the Bono people who belongs to the Akan stock. There are, however, other minor ethnic groups in the Region. These minor groups speak the Bono or Asante dialect only as a second language, for example, around the Volta bend; the north-western corner of the region, there are Gur speaking people – Nafana of Sampa, the Koulango of Seikwa and Badu, and the Hwela and Numu of Namasa and Nsawkaw. Also, in the region are the Nchumuru of Atebubu and Sene. The rest are settler farmers from the Northern regions such as Wangara, Dagomba, Fulani, Grunshies and Sisala.

With regards to religious affiliation, Christians, Islamists, and Traditionalists inhabit this area, with the Christians having the largest percentage of the population. Traditional religion constitutes the least. Apart from these, are the populations who do not belong to any of the

groups. Despite the diversity in ethnicity and religious affiliation, inhabitants in the municipality live in peace and harmony.

3.4.10 Tradition and Culture

Various aspects of Akan culture stem from the Bono state, including the umbrella used for the kings, the swords of the nation, the stools, goldsmithing, blacksmithing, Kente Cloth weaving, and gold weighing. There are several Paramount chiefs within the region, with some owing allegiance to the Asantehene while others like the Berekum, Dormaa, Tain and Sunyani Paramountcy, etc. govern themselves. Following the Adinkra tradition of the Kingdom of Gyaman, visual arts are a common practice of the people of the Region.

There are several cultural practices and festivals within this region. Kwafie is celebrated by the Dormaa, Berekum and Nsoatre people, and Munufie by Drobo. They are celebrated to cleanse and feed the stools and gods, respectively. It is climaxed with a large bonfire in the palace courtyard. It is believed that the people of Dormaa Ahenkro (Aduana) brought fire to present day Ghana, hence this is legendarily symbolically re-enacted. Akwantukese is celebrated by the people of Suma in March.

3.4.11 Occupation

Of the employed population, about 25.5 percent are engaged as skilled agricultural, forestry and fishery workers, 28.1 percent in service and sales, 15.0 percent in craft and related trade, and 16.2 percent are engaged as managers, professionals, and technicians (GSS, 2020).

3.4.12 Sanitation

The most widely method of solid waste disposal is by public dump in containers accounting for 52.5 percent. About 17.4 percent of households use public dump (open space) and 10.7 of households burned their solid waste. House to house waste collection accounts for 8.5 percent. For liquid waste disposal, throwing waste onto the compound (36.6 %) and onto the street (22.9 %) are the two most common methods used by households in the district.

3.5 PROFILE OF COHORT IV

3.5.1 Introduction

Cohort IV is in the Western North region of Ghana, with Sefwi Wiawso as the region's capital. The region lies between latitudes 6° N and 6° 30' N and Longitudes 2° 45' W and 2° 15' W and is bounded by the Ivory Coast (Comoé District) on the west, the Central region in the southeast, and the Ashanti, Ahafo, Bono East and Bono regions in the north. A total of 5 MMDAs make up the Cohort IV with 16 project communities (table 1).

3.5.2 Topography

Most part of the region is generally undulating and lies between 152.4 m - 510 m above sea level. The highest point, the Krokoa peak which is 510 m above sea level lies roughly to the South-West of region.

3.5.3 Geology and Soils Characteristics

Much of the region is covered by Pre-Cambrian rocks notably the "Birimian" and "Tarkwaian" series, underlain with gold, manganese and diamonds and bauxite. The occasional granite intrusions give the region its undulating nature and form part of the long hill ranges known as the Bibiani range.

The soil type of the region is the forest Ochrosols, which covers most of the Northern and Western parts of the region. The forest Ochrosols and Oxysols are rich soils, which support the cultivation of cash and food crops, such as cocoa, palm tree, cola, coffee, plantains, cocoyam, cassava, and maize, with high yields in the region.

3.5.4 Climate and Rainfall

The region falls under two main climatic types: the south-western equatorial and the wet semi-equatorial. The south-western equatorial climatic type roughly coincides with the evergreen forest and the wet semi-equatorial climatic type with the semi-deciduous forest, with temperatures between 25°C and 30°C throughout the year and moderate to heavy rainfall pattern between 1524 mm and 1780 mm per annum. It comes with double maxima characteristics in June-July and September-October as its peaks.

Humidity is relatively high, which is about 90% at night falling to 75% during the day. The rainfall pattern of this area is unique and suitable for agricultural activities in the region. It has two long wet seasons separated by relatively short dry season. The dry season is marked by relatively low humidity with hazy conditions occurring from December to February. The region experiences fewer bushfire outbreaks. The region often experiences concentrated downpours up to 178 mm rainfall in a day, which often causes widespread flooding at some settlements due to the nature of the soil.

3.5.5 Relief and Drainage

The relief of the Western region falls in the physiographic type as the forest dissected plateau. The main drainage features in the region are the Tano and Bia River and their tributaries. Other river bodies that drain through the region are Krokosue, Yoyo, Disue, Sui, Suhien, Kunuma.

3.5.6 Flora and Fauna of Cohort IV Landscape

The region falls within the moist semi-deciduous forest zone of Ghana, which covers most of Ashanti, Western, Ahafo and Eastern Regions and the Wet Evergreen Forest type to the South-Western part of the region. The forest type consists of the Celtic triplochiton association. Common species found are Onyina, Odum, Wawa, Mahogany, Sapele, Emire, Asamfina, Red cedar, among others. There is a high degree of depletion of the original forest as large sections of the forest are now secondary due to encroachment by farmers for cocoa cultivation and illegal logging activities.

The area has diverse community of small mammals, and they are particularly high abundance in swamp forest which is a notable roosting place for local and migrant birds. Three species (Cercopithecus diana, Colobus polykomos and Cephalophus dorsalis) are both IUCN and CITES listed. The most threatened species is Cercopithecus diana (diana monkey), categorized as endangered by the IUCN. Twenty-six species (65%) are of national conservation significance (Ghana Wildlife Conservation Regulations). In the recent past, the presence of Mastomys natalensis (multimammate mouse), a typical savanna species, and the commensal Mus spp. (common mice) in rain forest suggests some level of degradation through anthropogenic influences. Intense hunting and poaching activities in the area and the expansion of human settlements could have also reduced the population of large mammals or driven them from their original range to refuge areas.

3.5.7 Quality of Built Environment

Except in new and developing areas, especially in urban areas, most of the settlements are unplanned because of the undulating nature of the landscape. Due to the nature of the land, erosion is predominant in the region giving rise to gullies and big trenches that serve as breeding sites for mosquitoes.

3.5.8 Population and Household

The population of the region is 1,168,235, with 50.1% males and 49.9% females (GSS, 2020). The population aged less than 15 years constitute 39.6 percent of the total, while those aged 15 - 64 make up 57.0 percent and persons 65 years and older make up the remaining 3.4 percent. The proportion of the urban population is 13.6 percent. Average household size within the region is 4.4 persons per household which is higher for urban areas (4.1) than rural areas (4.7).

3.5.9 Dominant Religion and Ethnic Group

The predominant religion of the Western North Region is Christianity (82%) followed by Islam (9.3%). Despite the traditional nature of the region's social structure, people that belong to the Traditional religion are the minority.
With regards to ethnicity, the Sefwi's (Akan) form about 78.6 percent. Other minority groups include Mole-Dagbani, Krobos, Ewes and Nzemas form the remaining 21.4 percent.

3.5.10 Tradition and Culture

The region has four traditional councils, that is, the Sefwi Wiawso Traditional Council, Aowin Traditional Council, Suaman Traditional Council, Bibiani Traditional Council, Sefwi Bekwai Traditional Council and Ahwiaso Traditional Council, which are headed by the various Paramount Chiefs of the Traditional Areas.

The cultural practice of the people of the region is not different from the rest of the Akan speaking communities in the country. The inheritance system is matrilineal. The various traditional areas celebrate Yam Festival or ('Aluelue') which is celebrated in December.
The indigenous people of the region exhibit a high degree of cultural homogeneity in areas of lineage organization, inheritance, and succession. However, the enstoolment of Safohene and Okyeame follows the double unilineal system of succession, where an individual can be enstooled as Safohene or Okyeame through the mother's or father's line. There are also non indigene settlers in the region whose grandparents had migrated several years back from different parts of Ghana into Western North region primarily for economic reasons. These groups of people have been subsequently absorbed into the indigenous population. These are the Ashantis, Bonos, Ewes, Akuapems, Gas and people from the three northern regions who migrated into the region to cultivate cocoa.

3.5.11 Occupation

According GSS, 2020 report, Two-thirds (67.1%) of the population 15 years and older are skilled agricultural, forestry and fishery workers and a small proportion are professionals (3.6%), managers (1.2%) and clerical works. Females dominate the service and sales workers while males dominate plant and machine operators and assemblers, technicians, and associate professionals. Males have a slight edge over females in the skilled agricultural, forestry and fishery workers, and clerical support workers groups.

3.5.12 Sanitation

Majority of households within the Western North region (71.0%) dispose of solid waste at the public dump (open space) with a proportion of 72.7 percent in the urban areas and 69.9 percent in the rural areas. Also, it is observed that 16.4 percent of the households in the urban areas dump solid waste at the public dump (container) compared to 3.4 percent in rural area. In the rural area about 12.0 percent of households dump solid waste indiscriminately as compared with 2.7 percent in the urban area.
With regards to liquid waste, 28.4 percent of liquid waste generated is thrown onto the street/outside, and this is higher in the rural areas (31.2%) than in the urban area (24.0%) (GSS, 2020).

4.0 POLICY, LEGAL AND INSTITUTIONAL FRAMEWORK

4.1 Introduction

The relevant policies, laws, and regulations to guide the designing and planning of all the subprojects as well as construction, operation, and maintenance of the solar powered boreholes, including monitoring are presented below**.**

4.2 Policy Framework

The relevant national policies to guide the implementation of the proposed subprojects include the following:

The National Gender Policy (2015)

Ghana's goals towards achieving gender equality targets are guided by its commitment to International Instruments, its Constitution and national development frameworks. Article 17(1) and (2) particularly of the 1992 Constitution of Ghana guarantees gender equality and freedom of women and men, girls, and boys from discrimination based on social or economic status among others.

The Goal of this Policy is to mainstream gender equality concerns into the national development processes by improving the social, legal, civic, political, economic, and socio-cultural conditions of the people of Ghana, particularly women, children, the vulnerable and people with special needs, persons with disability and the marginalized.

Within the context of Ghana's constitutional requirements, its development frameworks as well as International Instruments, the National Gender Policy focuses on mainstreaming gender equality, women empowerment and social protection concerns by strongly concentrating on the implementation of the following five policy commitments (representing policy objectives):

1. Women Empowerment and Livelihood
2. Women 's Rights and Access to Justice
3. Women 's Leadership and Accountable Governance
4. Macroeconomics, Trade, and Industries
5. Gender Roles and Relations

The Forest And Wildlife Policy (2012)

The Ghana Forest and Wildlife Policy 2012, is a paradigm shift from the past policies, placing emphasis on non-consumptive values of the forest and creating a balance between timber production and marketing to satisfy particularly domestic wood demands. The policy also seeks to:

1. Consolidate good governance through accountability and transparency.
2. Enhance active participation of communities and landowners in resource management and addressing issues on tree tenure and benefit sharing
3. Promote small and medium forest and wildlife enterprises as a means of job creation for the rural and urban poor
4. Increase biodiversity conservation
5. Promote sustainable management of savannah woodland
6. Promote ecotourism development
7. Increase government commitment to degraded landscape restoration through massive forest plantation development schemes
8. Improve research and application of modern and scientific technology in resources management (ix) develop climate change adaptation and mitigation measures
9. Secure sustainable financing for the forest and wildlife sector

The National Environment Policy (2012)

The Ghana National Environmental Policy was formulated in 1995 and revised in 2012. The aim of the Policy is to improve the surroundings, living conditions and the quality of life of the entire citizenry, both present and future. It seeks to promote sustainable development through ensuring a balance between economic development and natural resource conservation. The policy thus makes a high-quality environment a key element supporting the country's economic and social development.

National Land Policy (1999)

The Land Policy of Ghana aims at the judicious use of the nation's land and all its natural resources by all sections of the Ghanaian society in support of various socio-economic activities undertaken in accordance with sustainable resource management principles and in maintaining viable ecosystems. The specific objectives of this policy include: -

- Ensure that every socio-economic activity is consistent with sound land use through sustainable land use planning in the long-term national interest.
- Protect the rights of landowners and their descendants from becoming landless or tenants on their own lands.
- Ensure the payment, within reasonable time, of fair and adequate compensation for land acquired by government from stool, skin or traditional council, clan, family and individuals.
- Instil order and discipline into the land market to curb the incidence of land encroachment, unapproved development schemes, multiple or illegal land sales, land speculation and other forms of land racketeering.

The key aspects of the policy relevant to the project include:

- The use of any land in Ghana for sustainable development, the protection of water bodies and the environment and any other socioeconomic activity will be determined through national land use planning guidelines based on sustainable principles in the long-term national interest.

All land and water resources development activities must conform to the environmental laws in the country and where Environmental Impact Assessment report is required this must be provided. Environmental protection within the 'polluter pays' principle will be enforced.

Riparian Buffer Zone Policy (2013)

The Water Resources Commission (WRC) has developed a national policy document on Buffer Zone Protection for managing freshwater bodies in the country. It aims at providing comprehensive measures and actions that would guide the creation of vegetative buffers for the preservation and functioning of the nation's water bodies and vital ecosystems.

The recommended buffer widths provided in the riparian buffer zone policy document are:

- Major perennial rivers/streams: 10 to 60 meters (e.g. Volta, Tano, and Offin)
- Minor perennial streams: 10 to 20 meters
- Important seasonal streams: 10 to 15 meters
- Streams within forest reserves: 10 to 50 meters; and
- Wetlands: 30-meters around the perimeter as defined from the high-water elevation.

National Water Policy (2007)

The National Water Policy objective is to "promote an efficient and effective management system and environmentally sound development of all water resources in Ghana." The highlight of the document is the recognition that water resources have competitive and conflicting uses and is organised around three themes namely water resources management, urban water supply and community water and sanitation.

The water resources management theme discusses issues relating to flood abatement under focal areas 1 and 6 that cover integrated water resource management and climate change/variability, respectively. The plan recognises the need to integrate water resources planning with land use planning activities and adopt river basins as planning units. Finally, water resources were to be protected from human activities.

4.3 National Regulatory Framework

The relevant legal and institutional frameworks are subsequently described below:

The National Labour Act, 2003 (Act 651)

An ACT to amend and consolidate the laws relating to labour, employers, trade unions and industrial relations; to establish a National Labour Commission and to provide for matters related to these.

Land Use and Spatial Planning Act 2016 (Act 925)

An ACT to revise and consolidate the laws on land use and spatial planning, provide for sustainable development of land and human settlements through a decentralised planning system, ensure judicious use of land in order to improve quality of life, promote health and safety in respect of human settlements and to regulate national, regional, district and local spatial planning, and generally to provide for spatial aspects of socio-economic development and for related matters.

Local Governance Act 2016, Act 936

This Act repeals the Local Government Act 1993, Act 462 and re-establishes and regulates the local government system and gives authority to the Regional Coordinating Council (RCC) and the District Assembly to exercise political and administrative power in the Regions and District, provide guidance, give direction to, and supervise all other administrative authorities in the regions and district respectively. The Assembly is mandated to initiate programmes for the development of basic infrastructure and provide municipal works and services as well as being responsible for the development, improvement and management of human settlements and the environment in the district. The project cannot lose fact of this and must at all costs collaborate with the respective assemblies in the project landscape.

Ghana Disability Act, 2006 (Act 715)

To ensure inclusivity in the development aspirations of all citizens of Ghana, the rights of disabled persons is protected in accordance with article 29 of the Constitution. This enjoins the authorities to establish a National Council on Disabled Persons to attend to the interests of disabled persons and to provide for related matters. Example,

1. No person shall in any manner

(a) exploit a disabled person

(b) discriminate against a disabled person or

(c) subject a disabled person to an abusive or degrading treatment.

2. (1) NO person shall subject a disabled person to a differential treatment in respect of his residence other than that required by his conditions or by the improvement which he may derive from the treatment.

(2) No person shall prevent a disabled person from participating in any social, creative or recreational activity unless such participation will be detrimental to the health of the disabled person etc.

Forestry Commission Act, 1999 (Act 571)

This act establishes a Forestry Commission in order to bring under the Commission the main public bodies and agencies implementing the functions of protection, development, management, and regulation of forests and wildlife resources and to provide for related matters. Amongst others, the FC

- regulate the utilization of forest and timber resources
- manage forest reserves and protected areas
- assist the private sector to implement the Forest and Wildlife Policy
- undertake the development of plantations

The act continues by identifying the members of the FC, of whom one should be a representative of non-governmental organizations involved in the forest and wildlife sector. The members are eligible for renewable periods of 4 years. Voting is done with a minimum of 6 members present and by simple majority. The commission can appoint committees to which it can delegate some of its functions.

Administratively the FC may establish such divisions as it considers necessary, as well as additional units to its secretariat. The Chief Executive's appointment procedure and functions are also included in the act.

Land Act, 2020 (Act 1036)

The Act's stated object is to ensure sustainable land administration and management, and effective and efficient land tenure and it seeks to achieve this by, inter alia, establishing a broad-based framework for registering land rights and interests, a customary land rights framework and enhancing transparency and accountability in land governance institutions.

Environmental Assessment Regulations 1999, LI 1652

The Environmental Assessment Regulations, LI 1652, was promulgated in 1999 to give comprehensive legal cover to the Ghana Environmental Impact Assessment procedures. These Regulations require that all developmental activities likely to impact adversely on the environment must be subject to Environmental Assessment. The objective of the LI is to ensure that such development activities are carried out in an environmentally sound and sustainable manner. The requirements of the LI, however, place enormous responsibilities on all stakeholders involved in development in Ghana. The nature of the responsibilities varies for different stakeholders, depending on their statutory functions, areas of jurisdiction and interests such as policy makers, implementing or regulatory agencies, planning authorities, financial intermediaries or institutions providing training or consultants providing services in EIA.

Environmental Protection Agency Act 1994, Act 490

The Environmental Protection Agency Act 1994 (Act 490) gave mandate to the Agency to ensure compliance of all investments and undertakings with laid down Environmental Assessment (EA) procedures in the planning and execution of development projects, including compliance in respect of existing ones.

Water Resources Commission Act 1996, Act 522

The Water Resources Commission Act 1996 (Act 522) establishes and mandates the Water Resources Commission as the sole agent responsible for the regulation and management and the utilisation of water resources and for the co-ordination of any policy in relation to them. All project activities requiring such license will receive assistance from the WRC and the Commission will therefore provide adequate guidance to ensure that the proper procedures are used.

Section 13 prohibits the use of water (divert, dam, store, abstract or use water resources or construct or maintain any works for the use of water resources) without authority. The Act states under Section 24 that any person who pollutes or fouls a water resource beyond the level that the EPA may prescribe, commits an offence and is liable on conviction to a fine or a term of imprisonment or both.

Water Use Regulations L.I 1692 (2001)

This is the first Regulations developed and adopted by Parliament through the Legislative Instrument (L.I.) 1692 in 2001. It sets out regulations for the issuance of water use permits or grant of water rights for various water uses including Domestic, Commercial, Industrial, Agricultural, Power generation, Fisheries (aquaculture), Recreational, and Under water (wood) harvesting through an application process administered by the WRC. In relation to the construction of solar-powered boreholes to communities, regulation 10 of the L.I gives permit exemption to the use of water for the purposes for which the project is being implemented. However, the project is mandated to register with the respective District assemblies. Again, Koradaso community borehole which is also being used to raised seedlings is also exempted under sub-regulation (1b) since the site is less than 1 hectare.

Wetlands Management (Ramsar Sites) Regulation-LI 1659 (1999)

The Convention on Wetlands is an intergovernmental treaty that provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources.

Under the Ramsar Convention, a wide variety of natural and human-made habitat types ranging from rivers to coral reefs can be classified as wetlands. Wetlands include swamps, marshes, billabongs, lakes, salt marshes, mudflats, mangroves, coral reefs, fens, peat bogs, or bodies of water - whether natural or artificial, permanent, or temporary. Water within these areas can be static or flowing; fresh, brackish, or saline; and can include inland rivers and coastal or marine water to a depth of six metres at low tide. The Ramsar Convention encourages the designation of sites containing representative, rare, or unique wetlands, or wetlands that are important for conserving biological diversity

4.4 Institutional Framework

The Ministry with responsibilities for forest and its related activities is the Ministries of Lands and Natural Resources which has devolved responsibilities for forest protection to the Forestry Commission and to the local level assemblies, and regulations on environmental assessments and permitting to the environmental protection agency.

Environmental Protection Agency

The Environmental Protection Agency is the body responsible for regulating the environment and ensuring the implementation of government policies on the environment. The functions of the Agency include:

- Ensuring compliance with any laid down environmental impact assessment procedures in the planning and execution of development projects, including compliance in the respect of existing projects
- Promoting effective planning in the management of the environment
- Imposing and collecting environmental protection levies in accordance with the Environmental Assessment Regulations 1999 (LI 1652) and in liaison and co-operation with government agencies, District Assemblies and other bodies and institutions to control pollution and generally protect the environment.

World Bank Safeguards Policies

The World Bank has developed 10 +1 environmental and social safeguard policies which are used to guide the safe development of projects that the Bank funds. They are OP 4.01 Environmental Assessment; OP 4.04 Natural Habitats; OP4.11; Physical Cultural resources; OP 4.12 Involuntary Resettlement; OP 4.09 Pest Management; OP 4.10 Indigenous Peoples; OP 7.6 Projects in Disputed Areas; OP 4.36 Forests; OP 4.37 Safety od Dams; and OP 7.50 Projects on International Waterways.

For the DGM project, based on the identified potential risk and impacts, the following World Bank environmental and social safeguard policies were triggered for the implementation of the subprojects. These included OP 4.01 Environmental Assessment, OP 4.04 Natural Habitat, OP 4.09 Pest Management, OP 4.12 Involuntary Resettlement, and OP 4.36 Forests.

1. Environmental Assessment OP/ BP 4.01. The project was expected to engage in several activities that could use forest resources in selected sites and could potentially adversely impact on other environmental areas. The activities for which this ESMP has been prepared could have moderate adverse environmental impacts on a limited scale. The FIP ENFAL prepared an Environmental and Social Management Framework (ESMF) which was consulted upon and disclosed. The ESMF provides guidance for the screening of subproject activities and preparation of site-specific safeguards instruments including this ESMP.

2. Natural Habitats OP/BP 4.04. Some of the forest and woodlands the project targeted were envisaged to potentially contain critical ecosystems; the project was designed to enhance the quality of management of these critical ecosystems and reduce risks associated with potential economic development.

The ESMF provided guidance on avoiding or mitigating impacts on natural habitats.

3. Forests OP/BP 4.36. Forest policy and management are a primary focus of this project, in addition to trees in the agroforestry landscape. The ESMF included guidance on managing forestry issues.

4. Pest Management OP 4.09. This Policy supports integrated approaches to pest management and requires projects to identify pesticides that may be financed under the project and develop appropriate pest management plan to address the risks.

5. Involuntary Resettlement OP/BP 4.12. No involuntary resettlement is anticipated. However, potential cases of restricted access and use of resources due to changes in forest management and resource management plans were anticipated. Therefore, a Process Framework has been prepared.

5.0 STAKEHOLDER CONSULTATION AND PARTICIPATION

5.1 Introduction

This chapter presents various stakeholder consultations held to discuss proposed subprojects with major stakeholders in the project landscapes.

The more the subproject beneficiaries at the local level are involved in the planning and implementation of subproject activities, the greater the likelihood that the concerns and interest of the local people will be captured and integrated into the proposed project processes to the benefit of the local communities.

Stakeholder consultation is fundamental in preparation of Environmental and Social Management Plans (ESMPs) for the proposed subproject activities as it facilitates an effective dialogue amongst the major stakeholders including project affected persons and other interested parties in:

i. Identifying critical environmental and social issues of concern to stakeholders
ii. Ensuring that the views of the proposed subproject beneficiaries are captured, and their concerns taken care of in the ESMP and the subproject design
iii. Reducing negative environmental and social impacts of the proposed subproject including unnecessary disputes between local project communities and subproject management and enhancing benefits from the subproject in a way that is environmentally and socially friendly.

5.2 Specific Objectives of the Stakeholder's Consultation and Participation

The specific objectives of the stakeholders' consultation and participation are:

- To discuss the proposed subprojects and its scope with key stakeholders including the people who are in the immediate environs of the interventions
- To exchange information to identify stakeholder interests regarding the development of the ESMP
- To discuss the subproject's perceived and real potential impacts
- To receive feedback and to provide opportunity for participation in ESMP planning and decision- making in a meaningful, timely, accessible, and culturally appropriate manner

In this context, the stakeholder consultations helped to:

- Provide timely information to subproject beneficiaries about the proposed activities, the scope, process, and its related activities
- Gain the confidence of the traditional and local authorities of the respective subproject areas.
- Solicit cooperation and participation of subproject beneficiaries and other stakeholders in planning and implementation of activities
- Provide avenues for the stakeholders to table their views and concerns regarding the proposed subprojects
- Create understanding about the needs and priorities of PAPs regarding the subprojects potential impact on their livelihoods and other activities to be undertaken

5.3 Stakeholders Consulted

Key stakeholders consulted during the ESMP consultation covered the following:

A. The Municipal and District Assemblies (MDAs) (who are the local government heads of the districts) through:
   - The Municipal/District Chief Executives
   - The Municipal/District Coordinating Directors
   - The Municipal/District Works engineers
   - The Municipal/District planning officers

B. Community Water and Sanitation Agency
   - Extension Service Specialist

C. The Environmental Protection Agency
   - The Regional Environmental Officer

D. Forestry Commission (District office)
   - The District Forest Officer

E. Ghana COCOBOD
   - Cocoa Health and Extension Division (CHED)

F. Project Beneficiary communities and representatives
   - Community Chiefs, Queen mothers, and Opinion leaders
   - Assembly members and committee members of the communities
   - Community Subproject committees
   - Project affected persons (PAP)
   - Community Based Organization leaders and group members
   - Individual subproject grant winners

5.4 Methodology for the Stakeholder Consultation Activities

The methods used for the stakeholder consultation involved preliminary visitations to the offices and Department, project beneficiary communities, the proposed subproject locations, field observations, one-on-one interviews, introduction of the ESMP consultant to the stakeholders, and consultation meetings. Telephone calls were employed as follow-ups when appropriate. Community workshops and meetings were held for project beneficiary communities.

5.5 Consultation Activities

The results of the consultation activities, the main findings and feedback from the events are summarised in the sections below.

The officials of the GDGM led by the Environmental and Social Safeguards Specialists in the visitations and interactions with various stakeholders shared information on the Project background, the World Bank safeguards policies relevant to the Project, and ongoing subprojects and their safeguards implementation arrangements. Also, information on the requirements of the respective agencies and departments to help in the implementation of the subprojects were discussed in each meeting.

The project team has had series of consultative meetings with the lead persons of the institutions and departments involved.

The safeguard team, and officers of DGM visited relevant authorities in the Dormaa Municipal Assembly (DMA) to discuss subproject activities being implemented in the municipality. Present in the meeting was the Municipal Chief Executive, Municipal Coordinating Director, and the Municipal Planning Officer.

Consultation meetings with officials of Dormaa Municipal Assembly

Issues surrounding the scope of the subproject, the ESMP for the proposed subprojects and the roles and responsibilities of the Municipal Assembly and community stakeholders were discussed. They were informed of the need to collaborate with the project to mobilize the communities towards owing the subprojects and helping identified potential beneficial and adverse environmental and social impacts of the subproject. In that meeting, the construction and operational activities of community boreholes, visitor's reception centre for Duasidan monkey sanctuary, apiculture activities at Koradaso were also discussed. The need for regular monitoring of the ESMP by the Assembly to ensure the contractor's compliance during the construction and operation phases were stressed.

A field visit was scheduled for later time. The names of the stakeholders consulted during the consultation activities are listed in the table below.

Table 2:Dormaa Municipal Assembly Management and DGM Officials consulted

Name	Designation
Hon. Drissah Ouattara	Municipal Chief Executive (MCE)- Dormaa Municipal Assembly
Mr. S. K. Addo	Municipal Coordinating Director- Dormaa Municipal Assembly
Mr. Combert Inussah	Municipal Planning Engineer
Edward Kyere	Environmental Safeguard Specialist – Solidaridad
Alfred Fosu	Regional Coordinator DGM – Bono Region

Both the social and environmental safeguard specialists have engaged communities benefiting from the projects at the community level on different occasions. In attendance of the community engagement were Opinion Leaders, Assembly Members, Unit Committee members, representatives of Queen mothers, PAPs (if any), subproject committee members, and community members.

The community members were informed about the need for them to raise their concerns about the environmental and social issues that in their opinion will be important for the success of the proposed subprojects. This is to help in the project leads considered these concerns for the development of the design and implementation of the subproject in general and for the implementation of the ESMP. At any gathering, the safeguard specialists took the participants through the scope and details of the proposed subprojects.

The community members were given the opportunity to ask questions and seek clarifications especially on how they are to maintain and sustain the subprojects after the DGM support has terminated with the end of the project. Also, on potential environmental impacts from the implementation of the subprojects.

Again, social impacts including managing the proceeds from the sales of water from the water system, maintenance culture of the water facility, benefit sharing and utilization of produce/proceeds from cashew plantation and other relevant matters to the subproject were discussed.

Community members took turn to ask questions, share their experiences regarding similar interventions, potential managerial issues and benefit sharing regimes of the various subprojects. Their questions and request for clarifications were noted and answers and clarifications were provided to them by the safeguards term. The team stressed on maintaining a good relationship amongst themselves and to see the subproject as their own property. The team encouraged communities to adopt the grievance redress mechanism and to make it available for communities to us them.

The team also on some occasions conducted focus group meetings as well as one-on-one meetings were also conducted at the communities. Some of the issues raised during the consultation activities are presented in Table below.

Table 3: Summarized community consultation activities and issues raised

Name	Designation	Consultation Issues	Responses to issues
Hon. Drissah Ouattara	Municipal Chief Executive (MCE)-Dormaa Municipal Assembly	The Dormaa Municipal Assembly is dominated by agricultural activities, and it is important to deal with climate change and its impacts on the livelihoods of community people. it is a major priority to alleviate the people from the impacts of climate change. I believe that the ESMP will help the project communities to prepare and undertake the proposed intervention activities properly and efficiently. The Assembly will ensure that the borehole construction activities at all the project communities within the municipality are carried out in accordance with the ESMP and will be maintained in a sustainable way for communities to benefit from it in a long term.	The team assured the MCE and his team of the importance the ESMP will add to the safeguarding of the subprojects in the area and also added that, the assembly after the project should continue to assist the communities in maintaining the facilities.
Mr. S. K. Addo	Municipal Coordinating Director-Dormaa Municipal Assembly	The Assembly will give all the necessary support to the DGM in the preparation of the ESMP and during all follow-up processes that will be required so that the overall activities of the proposed subprojects will follow the safeguards policy requirements and to the benefits of the communities.	

Mr. Combert Inussah	Municipal Planning Officer	He explained the selected communities are good as boreholes at this time is going to serve them well. The assembly has had plans to support communities with such facilities, but financial support has been the issue for so long. Yes, the facilities are going to serve the communities well, but what is important is the mainstreaming of the facility into the assembly system for proper oversight. He also pointed out the need for the contractors to always report to assemble anytime they are around so they will monitor and ensure they do a very good work.	The team outlined steps to be taken to ensure there is enough coordination between the project and the assembly system. Amongst others is a proposed technical training on the operation and maintenance of the solar-powered boreholes. This training will include officers from the assembly who will at the end supervise the activities of community-level Water and Sanitation Committees. The assembly team was reassured of the reporting protocol of the borehole contractors which mandates then to always report the assembly member at the community who should lead them to the planning and works department. However, the team pleaded with the assembly officers to also make a conscious effort to follow up on activities.

Table 4: Summary of key issues from communities in Western North, Bono, and Bono East during the consultation

Name of community participant	Issues/ concerns raised	Response by the consultant
Sarah Awudzi Asantekrom Community	When the project supports communities to establish a cocoa farm by providing support for weeding, labour, seedlings, and maintenance, what will the project benefit from. Will the project buy the cocoa or take part of the cocoa?	The project is only interested in supporting beneficiaries build resilience towards climate change through the adoption of climate smart practices. No project officer could come later for a proceed from the farm.
Frank Nkoah Okumdom - Asafo Community	Why are the grantees made to sign contract forms to work on their own farms? Is the project going to take share of the trees we are planting?	The contract is signed between the team and the farmer only to ensure that both parties go according to the best practices and protocols set. E.g., No farmer is to burn or apply weedicide. The trees are properties of the farmer and no one else. The contract is just setting the things to be done and what not to be done by either party
Yakpeba Tidela - Baaya Community	Are the funds for the subproject well secured already? This is because if the work is not done to completion, communities might lose trust in institutions/NGOs and may not participate in project activities again.	Yes, the funds are secured for this critical part of the project. Thus, to ensure the knowledge gained through the capacity building phase is put into practices. So, the people would have more reason to trust us. The World Bank is very much interested in the livelihood changes that will come because of the project intervention.
Bismarck Mbosan (Assemblyman for Babator-Kuma community)	I want to know who will own the plantation which is a community project. This is because, the chief and the family signed the contract form meaning they own the plantation.	The plantation is a community project. The chief is the leader of the community, and it deems it right for him to agree to the land being given to the community for such project. The family head also agrees to that decision so in future no person can claim it as a family property. A benefit sharing arrangement has been agreed as to how proceeds from the

		plantation are to be shared in the future. This is to ensure that no one person takes control of the plantation.
Hon. Adu Blankson Jnr. (Assemblyman for Juaboso Nkwanta)	As an assembly member of this area, I am responsible for the water facility, I have to report to the assemble for support to repair and maintain it when there is a fault. But I was not involved in the process of designing the project. I don't have any document on the project to speak to when reporting the general assembly of this excellent work.	The design is a unique one that is same across all the project communities. What is good is that you were involved in the siting of the point sources at the appropriate areas where people will benefit from. The project will make available all the necessary documents on the facility available to the committee for future reference.
Hon. Simon Amoh Amoah (Assemblyman for Nkatieso)	Can the community extend pipelines to other places of the community so that people will not walk too much to fetch water?	What you should know is that the system runs on solar to pump the water and again it uses just gravity to distribute the water from the tank to the point sources, if you extend it to further places, it may reduce the flow and that will also put a lot of pressure on the pump to be working every time. So, for now, we will plead with you to work with the 2-point sources.

Table 5: Summary of one-on- one interviews with project Community members.

NAME	Occupation	Name of community	CONCERN	Responses
Akosua Manu	Farmer	Kankyibo	I want to know who is supposed to collect money at the pipe point and how much is to be collected. Also, how will be money be used	The water and sanitation management committee will select somebody and present the person to the community to be accepted to collect money at the fetching point. The committee will decide with the community how much is to be collected per liter and whether a monthly or annually levy. The motive of collecting the money is to be able to safe funds for repairs and maintenance of the facility.
Mad. Agnes Amoateng	Farmer	Nkatieso	Why is the project not giving money to farmers to enable them weed around tree seedlings supplied to them by the project?	It was clarified that farmers have 100% ownership rights over the trees, so they should consider them as their investment and maintain them from their own resources. It is expected that out of the knowledge gain and the importance to have trees around, farmers should take the responsibility to care for the tree seedlings. Few members are supported with cash to establish projects that will be a learning centre for all
Daniel Koboori	Farmer	Zabrama	The timelines for community sub projects are unfair; projects have started in some communities long ago while other communities are still	It was clarified those differences in timelines are often more technical and strategic as determined by contractors and not project staff. But the most important part is that by the end of the timelines in the contract, the work would be completed by the contractors

NAME	Occupation	Name of community	CONCERN	Responses
			waiting. We have been waiting for long.	
Mohammed Shaibu	Farmer	Praprabon	My fear is that the mapping of farms and the contract that have been signed gives Solidaridad the power to claim ownership of the farm in future.	Mapping was explained again as an exercise to generate a database of the farms of the and all who were supplied with tree seedlings. This is to help the project report on where seedlings were planted and how the seedlings are surviving. It has nothing to do with taken over farms in the future.
Adoma Kufour	Farmar / Trader	Mpatasie	I am disappointed and don't want to take part in the project activities again, because I was not selected as part of the grantees after dedicating our time for training and the community project.	The selection criteria to award grantees was done by the World Bank and the NSC members did the selection of grantees. However, the project only wants to try and see how people are going to use the knowledge gained from the training. If this goes well, we may have other support in the future. Again, because we know the grant would not benefit everybody, that is why the community project is there for all community members to benefit from.
Hon. Eric Boame	Assemblyman	Abease	The youth in the community should be considered for employment in the proposed construction activities	The ESMP will recommend strongly that the contractor should consider employing some of the youth in the project communities.

5.6 Plans for Further Stakeholder and Public Consultation on the ESMP Preparation and Implementation:

There are concerns (Table 5) that have been raised from the community level bordering on subprojects implementation processes, maintenances, and the overall sustainability of the subprojects. For these reasons, the key stakeholder consultation and engagement will continue throughout the life of the project to ensure that the community is kept informed about the progress of ESMP completion and the mitigation measures contained in the report. The following are some future stakeholder consultation and engagements to be taken:

i. Disclosure of the ESMP Document at Local Levels:

Following the completion and approval of the ESMP by the World Bank, the ESMP document will be publicly disclosed at the community level to inform the public and project beneficiaries of the completion of the ESMP document. This is also to allow stakeholders verify if the concerns raised during the consultation stages are addressed in the document, among others.

ii. Disclosure of the ESMP Document at the World Bank External Website:

Following the disclosure of the ESMP at the local and national levels, the DGM project team will forward the evidence of disclosure of the ESMP document to the World Bank to be disclosed at the Bank's external website.

iii. Stakeholder Engagement during the implementation of Subprojects:

Compliance with the ESMP during the establishment of plantations/farms, construction and operation of the proposed solar mechanized boreholes, apiculture activities, watershed protection amongst others requires involvement of key stakeholders who have the responsibility to ensure that the ESMP measures are implemented as provided for in the document. The communities and for that matter all persons of interest will be informed about the subproject implementation activities and progress of work at the community level through community meetings with community leaders, other identified stakeholders, the larger community members, community announcements via community information centers, engagement in visits to subproject sites with major stakeholders. Similarly, flow of information during the completion and maintenance of the subprojects will be communicated and prioritized to major stakeholders through the appropriate means.

Stakeholder group	Proposed medium of engagement
Community	Community information centre / Community Durbar
Chiefs, Queen mothers and elders	Community Meeting (Focus group) / Sub-project site visit
Opinion leaders and unit committee	Community Durbar / Sub-project site visit
District Assembly	Meeting / Sub-project site visit
Sub-project committee	Community Meeting / Sub-project site visit
Sub-project contractors	Meeting / Sub-project site visit

6.0 POTENTIAL ENVIRONMENTAL AND SOCIAL IMPACTS OF PROJECT

6.1 Introduction

This chapter presents the potential environmental and social impacts that may be occasioned during the preparatory phase, implementation phase, and operations and maintenance phase of the proposed subprojects. The potential impacts have been gathered through interactions between the project communities, field visits to the subproject areas, desktop studies, the results of public consultation and meetings, interview, and the environmental conditions of the proposed subprojects. Following the identification of the potential impacts, the appropriate mitigation measures are prescribed for each of the impacts. A plan for monitoring the implementation of the mitigation measures, are also presented. The mitigation measures and monitoring activities are then costed and the stakeholder responsibilities for the implementation of the mitigation measures and compliance monitoring activities within the Environmental and Social Management Plan (ESMP), are also assigned as appropriate.

6.2 Potential Beneficial Environmental and Social Impacts of the Proposed Subprojects

While the implementation of the subprojects in the communities may have some potential adverse environmental and social impacts which must be mitigated, on the positive side, it will lead to environmental and social benefits at the local levels as well. Among others, it will help individuals adopt well to the impacts of climate change on their livelihood aspirations. Some potential positive influence will include:

- It will result in improved vegetative or tree cover in the project communities
- It will improve environmental integrity of the project landscape
- Lead to livelihood improvement of beneficiary communities
- Communities will build resilience to climatic shocks
- Integrity of degraded water bodies will be restored through the watershed protection subprojects
- Beneficiaries will be able to diversify their livelihood activities to be more climate resilient
- Encourage knowledge sharing among beneficiaries and communities
- Improved livelihood and economic activities of beneficiary communities
- Reduced water borne diseases
- Enhanced health standards
- Good time management for productive activities
- Reduced conflicts and enhance peaceful co-existence amongst community members
- Accelerated development of communities
- Create conducive environment for quality education
- Enhanced safety and security with water closer to homes
- Improved income for farmers

6.3 Potential adverse environmental and social impacts of the proposed subprojects

Potential adverse environmental and social risks and impacts during preparatory phase, implementation phase and operational and maintenance phases for the proposed sub-projects in the project beneficiary communities have been identified. These potential risk and impacts are presented below with the intervention area that are likely to experience these risks.

Table 6: Potential Environmental & Social risks and impacts associated with interventions

Potential Environmental & Social risks and impacts associated with interventions	
Potential Risks and Impact	**Intervention Area**
Dust generation	Borehole construction sub-projects
Noise nuisance	Borehole construction sub-projects
Temporally or permanent loss of vegetation cover	Cashew Agroforestry sub-projects
	Cocoa Rehabilitation sub-project
	Afforestation sub-projects
	Borehole construction sub-projects
Soil erosion at construction site	Borehole construction sub-projects
Temporally loss of income	Cashew Agroforestry sub-projects
	Cocoa Rehabilitation sub-project
	Afforestation sub-projects
Obstruction of movement at the construction sites	Borehole construction sub-projects
Occupational health and safety	Borehole construction sub-projects
	Cashew Agroforestry sub-projects
	Cocoa Rehabilitation sub-project
	Afforestation sub-projects
Public health and safety	Borehole construction sub-projects
Solid waste generation and disposal	Borehole construction sub-projects
Increased risk of Sexually Transmitted Diseases (STDs)	Borehole construction sub-projects
Risk of social conflict	Borehole construction sub-projects
	Cashew Agroforestry sub-projects
	Cocoa Rehabilitation sub-project
	Afforestation sub-projects
Child labour	Borehole construction sub-projects
Labour influx	Borehole construction sub-projects
Gender Based Violence (GBV)	Borehole construction sub-projects
Non-participation of women	Borehole construction sub-projects
	Cashew Agroforestry sub-projects
	Cocoa Rehabilitation sub-project
	Afforestation sub-projects
Disruption of livelihood and income sources	Borehole construction sub-projects
	Cashew Agroforestry sub-projects
	Cocoa Rehabilitation sub-project
	Afforestation sub-projects

Dispossession of farmland from tenant farmers	Borehole construction sub-projects
	Cashew Agroforestry sub-projects
	Cocoa Rehabilitation sub-project
	Afforestation sub-projects
Bee attacking people	Apiculture sub-project
Fire outbreak could potentially destroy plantations	Cashew Agroforestry sub-projects
	Cocoa Rehabilitation sub-project
	Afforestation sub-projects
Improper wading off children from playing around the solar panels and standpipes	Borehole construction sub-projects

a) Potential preparatory phase impacts

This involved the surveying and screening of potential subproject site to align the situation with the safeguard protocols. Community members and Project Affected Persons (PAPs) must be notified in advance or may assume negative perception and react negatively. This can negatively affect the acceptance and smooth implementation of the proposed subproject activities on the ground. Again, if they are not educated about the safeguards related activities on the subproject such as stakeholder consultation and disclosure of the instruments, the project might suffer from ill support from community folks.

As a result, the following are identified as potential adverse environmental and social impacts of the preparatory phase of the proposed subprojects

- Occupational health and safety during survey and demarcation of proposed sites
- Negative perception among the project beneficiary community members about the objectives and adequacy of the scope of works for the proposed subprojects
- Conflict over land to be allocated for subprojects by chiefs, families, and individual community members.

b) Implementation phase adverse environmental and social impacts:

The implementation of the proposed subprojects will require removing some vegetation cover, removing some old and unproductive cocoa trees, excavation works and disposal of excavated materials. Civil works will require transportation and use of machinery for excavation, trenching and haulage of construction and waste materials to destinations. Civil works could have temporary interference with the access routes of residents (whose houses are at the frontline of the borehole drilling sites) to their homes, among other activities. These have the potential for adverse environmental and social impacts on the environment and the people. These include:

- Dust generation
- Noise nuisance
- Temporally or permanent loss of vegetation cover
- Soil erosion at construction site
- Temporally loss of income
- Obstruction of movement at the construction sites
- Occupational health and safety
- Public health and safety

- Solid waste generation and disposal
- Increased risk of Sexually Transmitted Diseases (STDs)
- Risk of social conflict
- Child labour
- Labour influx
- Gender Based Violence (GBV)
- Non-participation of women
- Disruption of livelihood and income sources
- Dispossession of farmland from tenant farmers

c) Potential operational and maintenance phase impacts

Once subprojects have been completely established, they will require regular maintenance. At least three-times of scheduled cultural maintenance for plantations, formation pruning and all the phytosanitary activities and dry season fire preventive strategies to be carried out regularly. Also, for those keeping bees, beehives must be kept well and safe from human interference. Again, mid-yearly or yearly maintenance of borehole systems which may include cleaning of solar panels, removing weeds at the chamber site and overhead water storage areas. Again, where cracks develop on the water infrastructure, they must be repaired or patched up in a standard manner. The regular maintenance activities have potential for environmental and social impacts as follows:

- Improper wading off children from playing around the solar panels
- Public health risks resulting from poor waste management practices
- Operation and maintenance costs. This will, however, be minimal
- Bushfire outbreak potentially could destroy the plantations
- Occupational health and hazards
- Pollution of water
- Insect attack on beehives
- Bee attacking people

6.4 Evaluation of the severity of the potential environmental and social impacts

In this section, the identified potential negative environmental and social impacts are evaluated for their significance impacts on the people and environment in the project communities. The evaluation is to indicate if the impact is major, moderate and minor.

Impacts severity

- Major impact: when repercussions on the environment are very strong and cannot easily be reduced.
- Moderate impact: if repercussions on the environment are substantial but can be reduced through specific measures.
- Minor impact: repercussions on the environment are significant but subdued and may or may not require application of mitigation measures.

From the evaluation, it will be easy to determine the exposures of the people and environment to negative environmental and social impacts due to the proposed subproject. This is especially

useful for taking decisions in developing the mitigation measures and their appropriateness, and monitoring plan. The evaluation of the exposure of the environment and people to the risks of subproject implementation and its operational phases are summarised in table below.

Table 7: Evaluation of Negative Environmental and Social Impacts of the Preparatory Phase

Potential impact	Key receptor	Evaluation	Significance of the impact
Occupational health and safety during survey and demarcation of proposed sites	Personnel	The project preparation stage will involve in some cases walking through vegetations, farmlands, water course to survey and demarcate sites for subprojects. The personnel might experience slip, fall, and injury, as they go about these activities. At places where the proposed sites are bushy and silted, there is the risk of animal bites from snakes and scorpion. However, compliance with standard safety practices through use of proper protective gear by the personnel will prevent injury and ensure occupational health and safety. For example, use of hard boots will prevent slip, fall, injury, and animal bites. First Aid Box stocked with relevant drugs will be helpful to provide first aid before transporting any personnel who might be a hurt on the field.	Minor
Negative perception among the project beneficiary community members about the objectives and adequacy of the scope of works for the proposed subprojects	Public, community members	If the project community are not consulted about the subprojects' aims and objectives, the proposed scope of activities and consider their concerns and experiences regarding implementation, communities may express negative perception about the subproject planning process even into the project implementation, and operation phases. These can negatively affect the successful implementation of the project. However, as part of this ESMP preparation, extensive consultation between the local community people, Municipal and District Assemblies have been undertaken. In addition, the future ESMP stakeholder consultations and engagement will deepen this engagement and awareness of the proposed subproject among the different stakeholder groups. In effect, these activities will combine to create the needed awareness and consultation among beneficiary	Minor

		stakeholders to ensure a successful project planning and implementation.	
Conflict over land to be allocated for subprojects by chiefs, families, and individual community members.	Elders/community members	If appropriate consultation and openness are not encouraged from the onset in allocation of land for the subprojects, conflicts may arise in the communities. Any parcel of land donated or submitted to be use for subproject must be officially announced in the community and record any grievance that may come up. A community chief or elders may decide arbitrary to allocate parcel of land that a community member is using for a livelihood activity. A participatory process and due diligence must be taken up on any land to be used for subproject implementation to avoid elite capture and a group of persons laying claim for any part or whole of the subproject.	Major

Table 8: Evaluation of Negative Environmental and Social Impacts of the Implementation Phase

Potential impact	Key receptor	Evaluation	Significance of Impact
Dust generation:	Residents living close to drilling and construction areas and haulage streets, construction workers, monitoring staff	Drilling of boreholes and clearing of construction sites and trenching of channel have potential to generate dust at the construction areas. Other activities such as movement and over speeding of construction trucks conveying construction materials to sites, construction trucks carrying construction wastes to dump sites, and movement of backhoe to trenching sites can also lead to airborne particulate matter in the surroundings. The same applies to mixing of cement, sand and chippings, exhaust emissions from construction vehicles and concrete mixers which can also pollute the atmosphere. However, the construction activities are of short duration, temporary and limited in scope. The dust generation can easily be managed through good construction practices.	Minor
Noise nuisance:	Residents, workers.	Borehole drilling activities, Excavation of trenches to lay pipeline will be a source of noise and vibration. Noise and vibration can result from movement of construction trucks carrying cement, stone chippings, water, sand, wood, and concrete mixers meant for the construction activities. The noise making activities are limited in scope. The construction related noise will be intermittent, temporary, and localized. Also, the construction workers will be protected by providing them with appropriate working gears to prevent noise impacts.	Moderate
Loss of vegetation (temporary / permanent)	Soil, flora, fauna	Site preparation for borehole construction and planting based subproject activities will require some land clearing and movement of heavy machinery. However, for the boreholes, the construction sites are within built areas with limited vegetation. Where vegetation exists are the areas for plantations. Activities are mostly in degraded areas	Minor

		therefore, the site clearing, and construction related vegetation loss will therefore not be significant.	
Soil erosion at construction site	Borehole embankment, soil.	Excavation and trenching of channels for laying of borehole pipelines will expose land surface and loosen soil, making the affected areas prone to soil erosion. The land surface that will be disturbed during the trenching is minimal. Soil erosion impact will be temporary and can be managed by avoiding indiscriminate land clearance and good construction practices as has been highlighted in this ESMP.	Moderate
Obstruction of movement at the construction sites	Public, workers	Residents might experience temporary loss of access to homes during the borehole drilling and construction periods because of the works and materials on site However, consultation by the contractor to the community people will help to identify alternative ways of access to homes.	Moderate
Temporally loss of income	People and livelihoods	The implementation of some of the subprojects might temporarily pass on some economic stress on beneficiaries. For example, beneficiaries undertaking cocoa rehabilitation will have to cut off their old and unproductive cocoa trees to make space for the introduction of improved seedlings and practice of climate-smart cocoa agroforestry system. Also, spaces where community and small-scale traders undertake their livelihoods activities may be hindered with the drilling of borehole and construction activities. Although participating in the subprojects is voluntarily there is the need to identify all potential project affected persons at the early stages of the work and the appropriate measures factored into the activities, this is to help avoid suffering of any livelihood losses.	Moderate

Occupational health and safety	Workers	The plantation establishment, drilling and construction workers might be injured or involved in accidents during land clearing, drilling, excavation of trenches, handling of construction materials and equipment, movement of planting materials and movement of construction trucks. Workers might experience trip/slip/fall, injury from stepping on sharp objects and cleaning of working implements, etc. Workers are again at risk of being knocked down by construction equipment and trucks at the construction sites. The impact could be temporary or permanent if good construction practices are not put in place and protective equipment used (PPEs).	Moderate
Public health and safety	Public, residents	Residents of the construction community can be exposed to slip and fall and injury resulting from restriction of access at the general construction works. Some access roads might be blocked with construction materials and wastes and can result in injury and hurt. The impacts can be temporary or permanent but can be managed through standard construction practices including display of appropriate signage and education, provision of barriers/fencing around unsafe trenches etc.	Moderate
Solid waste generation and disposal	Residents,	Indiscriminate disposal and improper handling of construction wastes including excavated soils and debris/silt, used/spent cement paper, spent wood, spent iron rods, spent concrete materials, will pose danger to community members especially children and elderly. Uncollected concrete and excavate debris can pile up and block community access routes and cause injury to residents, uncollected excavated wastes can flow back into existing and ongoing channels to restrict flows and result in floods during heavy rainfall.	Major

		Poor housekeeping at the construction site (leftover food wrappers, water sachet, fruit pills, etc) can create aesthetic nuisance and odour at the construction sites. The impact can be temporary or permanent and can last even after the construction activities if good construction practices are not put in place.	
Labour Influx:	Residents, public, workers, traditional authorities	Construction works associated with about 37 solar mechanized boreholes is anticipated to involve at least about 12 construction workers and 5 solar technicians at the site at a time. Some of these workers could either be from the project community or come from outside the project communities and could bring along social vices which hitherto was not present in the project community. The social vices may include increased sexually transmitted disease, sexual harassment, sexual exploitation etc. However, the construction works are limited in scope and is of short duration and so, large labour force will not be required. There is a lot of youth unemployment in the communities and so employment of local workforce will eliminate labour influx. Again, putting in place a code of conduct for the workers that limits illicit behaviours by workers will help minimise occurrence of social vices among the workers.	Minor
Increased risk of Sexually Transmitted Diseases (STDs):	Workers, residents, public	Construction activities could involve employment of labour from other communities into the project community. Some of the migrant workers may be carrying sexually transmitted disease which may be spread among other workers and even community residents or vice versa through engagement in promiscuous activities. Labour requirements for the construction activities could be met in the project community as there are enough unemployed youth around	Minor

		seeking construction jobs. Migrant labour has little opportunity for engagement in this project construction.	
Risk of social conflict:	Residents, workers	Drilling and construction workers from outside the project beneficiary communities may not respect the local communities' cultural norms, values, and practices and this can lead to agitations and reprisal attacks. There is enough employable workforce available in the beneficiary community and so there might not be the need for external labour force engagement on the works. If a labourer will have to be engaged from outside the beneficiary community, a code of conduct for construction workers and its enforcement will minimize or eliminate the risk of social conflict.	Minor
Child labour:	Children, parents	In situations where children of school going age are on vacation, or where a child sees activities as a source of making an extra income, there could be occurrence of some getting involved in either plantation site activities or constructions of boreholes and its ancillary facilities. Contractors are to ensure strict adherence to the safeguard protocol that restrict the construction areas to children below the require workforce during the construction activities. Additionally, sub-project committee will be charged to monitor the compliance of the above protocol by the contractors. Contractors should always demand age verification documents from job seekers to avoid employing underaged personnel.	Minor
Gender Based Violence:	Women, men, workers	There is a possibility that some construction workers will discriminate or abuse other workers based on their gender and or religious	Minor

		affiliation. Female workers are mostly at risk of sexual exploitation and sexual harassment from their male counterparts. The extent of sexual exploitation and abuse and sexual harassment can be curtailed if a worker's code of conduct provides stiff sanctions for sexual exploitation and abuse and sexual.	

Table 9: Evaluation of Negative Environmental and Social Impacts of the Operational Phase

Potential impact	Key receptor (s)	Evaluation	Significance of impact
Improper wading off children from playing around the solar panels and standpipes	Solar panels, standpipes	The solar panels when destroyed will cut off power supply to pump water from the borehole. Children who play around this installation could be throwing stones which can cause cracks on the panels. This will cause power cut and when not checked can cause the system to malfunction. Fencing of the system is a good step to stop unauthorized entry but this obviously cannot stop a flying stone. Therefore, education could help reduce the tendency of children throwing stones to the panels.	Moderate
Fire outbreak could potentially destroy plantations	Plantations/farms	Plantation could be raised down by fire especially during the dry season. Uncontrolled naked fire from people who go to farm smoking, from Fulani headsmen looking for fresh pastures for their flocks amongst other acts may cause fire that can destroy the planted seedlings. This is mostly prevalent in the dry season where there are more dryer leaves on the ground and even the aboveground biomass. An annual dry season strategy to protect the planted seedlings is very needed. This when implemented will have the potential to stop fire spreading throughout the farms. Creating of fire belts and ensuring green fire belts around plantations and farms are very much needed. Education is also important so people stop activities that can spark fire.	Major
Occupational health and hazards	workers	Workers in attempt to clean water storage thanks might experience trip/slip/fall. Performing cultural maintenance activities in plantation may also expose them to snack bites, scorpion bites, injury by cutlasses.	Moderate

		Workers might cause injury when using faulty equipment; and if the workers are not properly protected by wearing appropriate PPEs.	
Bee attacking people	Community residents	Bees can attack people who go near their hives unprotected. This can cause serious injuries and sometime could be fatal. The beehives must be kept in places people cannot have easy access to while also educating people not to go there without wearing protective gear.	Moderate

6.5 Environmental and Social Mitigation Plan

This plan gives measures to mitigate the identified adverse potential environmental and social impacts of the proposed subprojects as have been described in the section above and details provided in the Environmental and Social Management Plan (ESMP) in the table below. The Plan outlines the potential adverse impacts and the sources of the impacts, the mitigation measures to deal with the impacts and the roles and responsibilities of stakeholders.

Table 10: Environmental and Social Mitigation Plan

LIKELY IMPACT	MITIGATION MEASURES	ASSOCIATED SUBPROJECT	RESPONSIBILITY	COST (GHC)	VERIFIABLE INDICATOR	FREQUENCY
Borehole operational and maintenance	Build adequate capacity for post construction sustainability mechanism through training of CWSMT members in Borehole operational and maintenance	Solar powered borehole subproject	Consultant	129,500 (37 communities at 3,500 per community)	Evidence of training conducted	Annually refresher training for old and new members
	Tariff set in accordance with approved guidelines		Water and Sanitation Management Team		No. of community members who voted to approve tariff	
	Community members involved in tariff setting		Community leaders		No. of community members who voted to approve tariff	
	Exemptions agreed for most vulnerable and poor community members		Water and Sanitation Management Team		Identified persons exempted	

	Establish an efficient and effective operation and maintenance system		Water and Sanitation Management Team		Maintenance schedule	
	Build adequate capacity for post construction sustainability mechanism		Consultant		Evidence of training conducted	
Loss of flora and fauna due to the removal of vegetation	Screen subproject sites and appropriately site subprojects to avoid vegetative areas.	Plantation subprojects and Solar powered borehole subprojects	Safeguard team and Contractor	133,110 (53 communities at 2,610 per site)	No. of trees planted as replacement.	Project life
	Where vegetation clearance cannot be avoided, reinstate landscape and plant appropriate species of trees, shrubs, and grasses in four (4) folds.		Project beneficiaries/DGM team		State of flora and fauna	
	Follow the requirements for the safe transportation of heavy machinery and equipment to avoid destruction to the vegetation		Consultant			
	Plant more trees in areas of impact to cover the loss					
Dust resulting from drilling and construction activities	Implement dust management, including the sprinkling of water	Solar powered borehole subproject	Contractor		No. of times water is sprinkled	Daily

	on access tracks and public warmings					
	Inform community of project activities ahead of time to take precautions				Level of dust from construction work	
	Prevention of excessive dust emissions including cement dust by careful handling and working under moist conditions as much as possible.					
	Provide nose covers, face shields, ear plugs to workers and the public who may be affected by the construction activities		Contractor	66,600 (1,800 per site for 37 sites)	No. of reported cases / infections	
Land tenure conflicts resulting from claim of ownership to land for sub-project	Ensure that the location of proposed infrastructure conforms with the existing and proposed land use plans and zoning	Solar powered borehole subproject and Plantation subprojects	Solidaridad DGM team		Signed Deed to land and functional GRM systems in place	Sub-project life
	Work with community leaders and landowners to secure Deed to land for infrastructural projects					

	Develop and formalize procedures for gaining access to the project sites, especially when physical works will need to be carried out.					
	Deploy GRM in all communities and ensure its been used			85,860 (Cost of training and setting up GRM systems in 53 communities and at 5 operational cohorts)		
Disturbance of soil structure and soil erosion resulting from improper soil management	Deploy appropriate drilling technology with recommended diameter	Solar powered borehole subproject	Contractor		State of soil after operations	Regular and as appropriate
	Excavation works should not be executed under aggressive weather conditions (rains, strong winds).					

	Topsoil should be removed and stored in separate piles and reinstated after refilling of trenches, to enable natural revegetation.					
	Restore construction sites in accordance with specifications as much as possible upon completion of works.					
Public health risks from poor waste management practices resulting from the construction activities and the construction workers attitude	Contractors shall work with community leaders to inform local communities ahead of the construction project.	Solar powered borehole subproject	Contractor		No. of announcements in community	Regular and as appropriate
	Contractor in collaboration with the appropriate authorities shall make adequate provision for the disposal of both solid and liquid waste in ways that do not jeopardize the health of				No. of safe disposal facilities on site	

	communities, especially children.					
	Construction supervisors ensuring workers respect their code of ethics					
Noise pollution from drilling and construction activities	Disseminate public information through appropriate media, including radio on project objectives, interventions and expected impact	Solar powered borehole subproject	Contractor		No. of public education sessions in community	Weekly
	Caution being given on the occasions of undertaking activities with potential noise making				Availability of caution measures	
	Ensure that noisiest activities are not carried out at night.				No. of noise related complaints from communities	
	Regularly service machinery and use machinery and equipment in good working condition.					

	Wearing of appropriate gears to protect workers involved with activities with the potential to produce noise				Availability of protective gears	
Risks of accidents from moving vehicles and machinery and construction activities	Implement all measures necessary including observing speed limits, providing road signs etc. to avoid undesirable adverse environmental and social impacts wherever possible, restore work sites to acceptable standards, and abide by any environmental performance requirements	Solar powered borehole subproject	Contractor		No. of warning signs on site	Daily
	Cordon off drilling and construction site (within acceptable distance) from the reach of children and other community members				No. of public education sessions in community	
	Provide adequate accident and emergency facilities, including the establishment of warning systems and a first aid box with needed materials					

	Construction works should not be executed under aggressive weather conditions (e.g., rains, strong winds, etc.).					
	Adhere to vehicle speed limits not exceeding 50km/hr within project communities and 30km/hr at construction sites					
	Provide banksmen to direct machine operators where necessary.					
Public health risks resulting from poor beekeeping management practices	Keep beehives in a safe environment away from the public	Beekeeping subproject	CBO groups		Storage place of beehives	Weekly and appropriately
	Wear protective gears when performing monitoring activities on the beehives			11,000 (2,750 Cost of 5 set of beekeeping protective suit for per 4 CBO groups)	State of beekeeping protective gears and extraction equipment	

	Keep honey extraction equipment safe and professionally cleaned					
	Sensitisation of community members on the locations of beehives				Reported case of attack	
	Warming signals to the location of beehives to turn off people				No. of warming signs	
Fire outbreak could potentially destroy plantations	Construct bare ground and green fire belt around plantations during the dry season	Plantation subproject	Sub-project Committee	119,000 (17 sites at Minimum of 7,000 per site)	Fire belt created around farms/plantations	Annually (December - March)
	Embark on fire patrol and monitoring during dry season		Sub-project Committee	102,000 (17 sites at Minimum of 1,500 per site for 4 months)	Records of patrol	
	Make provision for water to be access to quench fire		Sub-project Committee	8,160 (17 sites at 480 per site)	Water availability at site	
Potential loss of economic returns and fauna due to the removal of diseased	Replant removed cocoa trees to the optimum number per land size	Grantees in cocoa rehabilitation	Individual grantees		Number of cocoa seedlings and trees seedlings planted	Annually

and moribund cocoa trees	Introduce other annual crops as alternative for the family while replanting cocoa		Solidaridad DGM team		Alternative crops planted	
	Incorporate fast growing tree species to the optimum per land size		Individual grantees / DGM team		Number of seedlings surviving	
Potential use of agrochemicals/pesticides in plantations sub-projects including cocoa	Education on proper storage of agrochemicals to prevent accidental use by unauthorized persons	Planting based sub-project beneficiaries	Solidaridad DGM team / Cocoa health and Extension Division		Proper storage of chemicals	Quarterly
	Sensitization of appropriate use of agrochemicals in farms				Evidence of education	
Electronic waste (e-waste) and other hazardous materials from the solar panels, solar batteries used in the solar-powered boreholes at the end of their use phase?	Keep all parts of the electronic system under good care	Solar powered borehole subproject	Contractors		Storage room	When needed
	Contact the authorised suppliers of parts to replace old ones when needed.		CWSMT		Parts changed	

6.5.1 Project implementation during COVID-19 Restrictions

Undertaking subproject activities during the COVID-19 pandemic will require that various health and safety protocols be always observed to minimize the risks of spread of the virus among the workers and community members. In the light of this, the team will be guided by Solidaridad's COVID-19 Health and Safety protocol and at large the guidelines by the government of Ghana and the World Bank (Annex 3). These protocols are to be followed by the contractors, consultants, workers, all visitors, and project staffs to the subproject sites. This Guideline which is attached in Annex 3 is guided by the national protocols on social distancing due to the COVID-19 pandemic. Implementation and monitoring shall be enforced jointly by the project team and the safeguard team through scheduled field visits.

6.5.2 Project's Public Engagement and Consultation during COVID-19 Restrictions

As the outbreak and spread of COVID-19 increases, there is a need to follow the national protocol to exercise social distancing, and especially to avoid gatherings in large numbers. The Solidaridad West Africa has also provided guidance on how to conduct public consultations in a manner that would minimize the spread of the virus. These protocols and guidelines will be observed during the project activities organised for stakeholders on the ESMP implementation, public disclosure of the ESMP document in local communities and project monitoring.

Specifically, the project's strategy for stakeholder engagement and consultations during the COVID-19 restrictions will ensure that officers:

- Avoid public gatherings (considering national restrictions), including workshops and community meetings
- Conduct consultations in small-group sessions, such as focus group meetings but with appropriate social distancing and safety protocols such as the use of personal protective equipment, handwashing, hand sanitizing etc. Where necessary, meetings through online zoom, WhatsApp, telephone calls will be explored:

7.0 ENVIRONMENTAL AND SOCIAL IMPACTS MONITORING PLAN

Introduction

Environmental and Social mitigation measures monitoring is an important process as it assists in verifying whether the mitigation measures are being conformed with by the stakeholders with the responsibility in the ESMP implementation. Furthermore, it also helps in ascertaining if the mitigation measures for the adverse impacts are adequate or if further mitigation measures are essential in the protection of the environment, workers and people living in the project areas.
The monitoring plan will serve as an early warning system by disclosing unanticipated impacts and allowing further remedial measures to be implemented to arrest the situation and ensure that permanent damage is not caused. It is also likely that the monitoring results will provide useful guidance for the successful planning and implementation of future subproject implementation.

The environmental and social impacts mitigation measures will be monitored during the implementation, and it will be based on visiting to observe and have a visual inspection of the indicators for each impact.

The responsibility for majority of the environmental and social mitigation measures implementation associated with the construction activities will be borne by the contractor. The contractor is required to engage a qualified and experienced safeguards officer among his labour force to ensure implementation, monitoring and compliance of the ESMP requirements, including the environmental, social, health and safety standards and legislations and provide monitoring reports.

Furthermore, as part of his contract to this project, the contractor is required to prepare a specific ESMP for the works, indicating his strategies for implementation and compliance with the ESMP requirements.

However, the Solidaridad team and officers from the assemblies will maintain an oversight responsibility to ensure that the contractor is fulfilling his responsibilities by undertaking regular field visits and inspections in accordance with the Environmental and Social Monitoring Plan and report on observations. The Safeguards Specialists of Solidaridad will continue to provide overall supervision of the safeguard activities implementation and monitoring. The Specialists will conduct regular visits to the subproject sites.

Table 11: Environmental and Social Impacts Monitoring Plan

Potential impacts	Monitoring parameters	Monitoring sites	Frequency	Responsibilities	Estimated cost (GHC)
Preparation phase					
Occupational Health and safety during farm survey and demarcation, weeding, digging of pipeline channels, and construction works	Personnel engaged in survey and demarcation, weeding, digging, and construction wearing PPEs	Subproject sites	Daily within the activity timeframe	Contractors, community, subproject committee, project team	132,500 (53 communities at a minimum of 2500 per community)
Negative perception about the subproject due to lack of community consultation on the subproject	Record of stakeholder consultation meetings	Project communities	Monthly	DGM project team, subproject committee	79,500 (53 communities at 500 per engagement for 3X)
Implementation phase					
Dust generation	Observable dust particles in atmosphere	Construction sites, community	Daily within the activity timeframe	Contractor, Constructors Safeguards Officer, DGM safeguards Specialists	

	Observable 20km/hr speed limit signs				
	Record of watering construction sites				
	Construction workers wearing nose pads				
	Covered haulage trucks.				
Noise nuisance	Workers wearing ear plugs during noise making construction activities	Construction sites	Daily within the activity timeframe	Contractor, Constructors Safeguards Officer, DGM safeguards Specialists	74,000 (37 communities at 2,000 per trip to each community)
	Absence of excavation activities during night,				
	Observable use of light duty equipment for excavation works.				
Loss of vegetation	Replanted vegetation on disturbed areas,	Areas affected by construction works, planting based subproject areas,	Monthly	Contractor, subproject committee, grantees	47000 (3916 per community for 12 communities)
	Four-fold of planted seedlings		Annual survival count	DGM project team	140,000 (cost of seedlings survival count annually

Soil erosion at construction site	Observable backfilling of all boreholes and spaces along channels	Construction sites	Weekly	Contractor, Contractor's safeguards Officer, subproject committees, grantees	
	Absence of construction works during stormy conditions	Borehole embankments			
	Cover crops planted in farms	Farms/plantations	Annually		
Injury and accidents involving residents due to temporary obstruction of access by construction activities.	Number of consultations held between contractor and affected community members	Community	Weekly	Contractor, safeguards Officer, community leaders	
	Availability of alternative routes for the affected areas	Community	within activity phase	Contractor	

	Availability of signage and barricades	construction routes			
	Complaints registered.	Community		Community GRM focal point	
Occupational health and safety	Availability of Contractor's Health and Safety Plan	Construction sites	within activity phase	Contractor, grantees, subproject committee	
	Availability of Contractor's Code of Conduct	Construction sites			
	Workers wearing PPE	Construction sites		Contractor,	54,280 (37 communities at 1,440 per community as cost of PPE)
	Availability of First Aid Box stocked with drugs	Construction sites			
	Record of safety induction trainings held	Construction sites			

	Availability of signage at construction sites warning workers of dangers of the construction works	Construction sites			
Public health and safety	Observable absence of unauthorised persons at active construction areas	Construction site	Daily	Contractor, Safeguards Officer, grantees, subproject committees	
	Availability of alternative routes for road users and signage directing people	Alternative routes			
	Availability of signage warning people of danger	Alternative routes			
	Observable presence of 20km/hr speed limit sign	Alternative routes			

	Observable absence of construction waste & materials & equipment on community walkways.	Alternative routes			
	Wearing of appropriate farming gears	Farm/Plantations			
Labour Influx	Availability of Contractor's code of conduct	Construction site	within activity phase	Contractor, Safeguards Officer,	
	Record of workers who do not sign the Code	Contractor's office		Contractor, Safeguards Officer,	
	Record on trainings held for workers on code of conduct			Contractor, Safeguards Officer,	
	Number of trainings held for workers on the code of conduct			Contractor, Safeguards Officer,	

	Number of labours employed from within the project beneficiary community.	Contractors records		Contractor	
Increased risk of Sexually Transmitted Diseases (STDs)	Availability of Contractor's code of conduct and signed by all employees	Construction communities	within activity phase	Contractor, Safeguards Officer,	
	Record on training of workers on the code of conduct	Contractors records		Contractor, Safeguards Officer,	
	Code of conduct integrated into employment conditions of workers	Contractors' records		Contractor, Safeguards Officer,	

	Complaints by communities	Contractors' records, GRM register		GRM focal point, Contractor, Safeguards Officer,	
Risk of social conflict	Availability of Contractor's code of conduct	Construction communities	within activity phase	Contractor, safeguards Officer,	
	Code of conduct integrated risk social conflict issues	Contractors records		Contractor, Safeguards Officer,	
	Record on training of workers on the code of conduct	Contractors' records		Contractor, Safeguards Officer,	
	Code of conduct integrated into employment conditions of workers	Contractors' records		Contractor, Safeguards Officer,	

	Number of workers charged with disrespect for social community norms	Contractors' records		Contractor, Safeguards Officer,	
	Complaints by residents	Contractors' records, GRM register		GRM focal point, Contractor, Safeguards Officer,	
Child labour	Availability of Contractor's code of conduct	Construction communities	within activity phase	Contractor, safeguards Officer,	
	Code of conduct integrated child labour issues			Contractor, Safeguards Officer,	
	Record trainings held for workers on the code of conduct			Contractor, Safeguards Officer,	
	Code of conduct integrated into employment conditions of workers			Contractor, Safeguards Officer,	
	Number of child labour reported	Contractors' records		Contractor, Safeguards Officer,	

	Complaints by residents	Contractors' records, GRM register		GRM focal point, Contractor, Safeguards Officer,	
Gender based violence	Availability of Contractor's code of conduct	Construction communities	within activity phase	Contractor, Safeguards Officer,	
	Code of conduct integrated GBV issues	Construction sites		Contractor, Safeguards Officer,	
	Record trainings held for workers on the code of conduct	Contractors' records		Contractor, Safeguards Officer,	
	Code of conduct integrated into employment conditions of workers	Contractors' records		Contractor, Safeguards Officer,	
	Number of labours charged with discrimination based on gender considerations	Contractors' records		Contractor, Safeguards Officer,	
	Number of complaints by the residents	Contractors' records, GRM register		GRM focal point, Contractor, Safeguards Officer,	

Grievances associated with sub-projects	Complaints on sub-project implementation	Functional GRM system		GRM focal point, Safeguards Officer,	
	Number of complaints by the residents	Training of stakeholders		GRM focal points	90,100 (1,700 per community for 53 community GRM training)
Operational and maintenance phase					
Public health and safety	Observable presents of maintenance activities	Borehole system	Quarterly	WSMT, Subproject committee, MDAs works Engineer, Assembly Members for the project beneficiary communities,	74,000 (37 communities at 500 per quarterly visit)
	Record of defects and repairs during operation and maintenance	Community areas			
	Complaints from residents	GRM Register	Daily	GRM focal point, WSMT	
Occupational health and hazards	Maintenance workers wearing PPEs	Project community	Quarterly	MDAs, Assembly Members for the project beneficiary communities	

	Availability of First Aid Box for maintenance workers	Community sub-project committee			
	Number of workers injured	Community sub-project committee			
	Complaints by maintenance team	GRM Register	Daily	GRM focal point, WSMT	
Fire outbreak could potentially destroy plantations	Maintenance of the green fire belts and bare ground fire belts	Subproject committees, grantees	Seasonally	MDAs, Assembly Members for the project beneficiary communities	
	Regularly weeding plantations	Subproject committees, grantees	Minimum of 3X within a year		
	Avoidance of unattended fire at or near farms	Subproject committees, grantees	Seasonally		

8.0 REPORTING ON THE ESMP MONITORING ACTIVITIES

Reporting on the mitigation measures and how their implementation is going will be an integral part of the implementation of this ESMP.

As specified above, during subprojects implementation, the monitoring of the safeguards mitigation measures implementation will be carried out by the contractors and their safeguards officers as part of drilling and construction activities and by the community subproject committees as part of planting subprojects. The Solidaridad Team and assembly officers will provide oversight responsibility to ensure that those assigned responsibilities are fulfilling their responsibility under the ESMP.

Reports on the mitigation measures implementation will be produced by the contractor, his/her safeguards officer, and project team/community subproject committee on quarterly bases to the Solidaridad safeguard officer and for subsequent reporting to the safeguard desk at the World Bank. The contractor will submit his/her monitoring reports through the consultant who will validate and forward these to the project manager through the Safeguards Specialists at Solidaridad. All the reports should capture progress and status on implementation of the mitigation measures arising from the ESMP implementation, considering the monitoring indicators. Relevant pictures should be included in the report.

The project team will from time-to-time conduct monitoring field visits to the subproject sites to verify the reports presented by the contractor and consultant and make their findings. They will provide guidance for any remedial actions where the need be to prevent non-compliance and recurrence of inaction on the part of any stakeholder. The project team will compile a quarterly - safeguards monitoring reports for submission to the World Bank as part of the project implementation status report (ISR).
Below is a template for the mitigation measures implementing report.

Table 12: Template for Environmental and Social Impacts Mitigation Measures Reporting

S/N	Monitoring indicator	Date of monitoring	Site location	Status of subproject activity	Motoring Results	Remedial Action Required	Name of Person Monitoring	Comments

Name of Supervisor: ……

Signature: ……

Community: ……

Date: ……

Name of Contractor /Committee Chairman: ……

Signature: ……

Community: ……

Date: ……

9.0 GRIEVANCES REDRESS MECHANISM

9.1 Introduction

To ensure smooth implementation of the Project and timely and effectively addressing of the problems that would be encountered during implementation, a robust Grievance Redressal Mechanism (GRM) is required to enable the Project implementers address the Grievances of the stakeholders of the Project.

9.2 Objectives of the Grievance Redress Mechanism

The following are the objectives of establishing a Grievance Redressal Mechanism. The objectives of the grievance process are to:

- Ensure better safeguards mechanisms for implementation of subprojects.
- Provide affected people with avenues for making a complaint or resolving any dispute that may arise during the implementation and determination of G-DGM project
- Ensure that appropriate and mutually acceptable redress actions are identified and implemented to the satisfaction of complainants and
- Avoid the need to resort to proceedings that may delay the process.
- Build up a relationship of trust amongst the project staff and the affected parties.
- Ensure transparency in dealings amongst stakeholders including affected parties through a proper communication system
- Act as an avenue for continuous citizen engagement throughout the project life span

9.3 Project Stakeholders

The following are the main stakeholders of the G-DGM

- Ministry of Lands and Natural Resources
- The Forestry Commission
- The National Steering Committee
- The National Executing Agency
- The Forest Investment Project (FIP)
- Project Management Unit at FIP
- Municipal and District Assemblies within project landscape
- The 53 Beneficiary Communities
- Selected Community Based Organization (CBO)
- Traditional Authorities of the 53 communities and their paramountcy (allodial title holders)

The activities as adopted for implementation in G-DGM will not involve any resettlement or relocation that may attract preparation of safeguard tools such as ARAP. Citizen's engagement plans are part of activities being run by the NEA. Any related issue would be the responsibility of the National Executing Agency (NEA) in collaboration with the National Steering Committee (NSC) to solve these issues. It will be based on the Grievance Redressal Mechanism (GRM) prepared in relation to the project with notification to the 53 selected communities.

Notices will be placed in all the communities and also educated on the processes through which the key stakeholders will access and apply.

9.4 Key staff coordinating Grievance Redressal Process

1. Social Safeguards Specialist (SS)– in charge of safeguards of the NEA would be designated as the key officer in charge of Grievance Redressal. The SS will be assisted by the NEA's Senior Programme Coordinator to undertake the following responsibilities:
    a. Coordinate formation of Grievance Redressal Committees (GRCs) at the LC level to resolve issues
    b. Act as the Focal Point at NEA/NCS on Grievance Redressal issues and facilitate such activities at the LC level.
    c. Assist in Redressal of all Grievances by coordinating with the concerned parties.
    d. Maintain information of grievances and Redressal.
    e. Monitor the activities of beneficiary communities on Redressal of Grievances.
    f. Prepare the progress for monthly/quarterly reports based on grievances received during the period.

2. Knowledge Manager – Manages the knowledge component of the project and responsible for all knowledge packages of the project.
    a. Create awareness of the Grievance Redressal Mechanism (GRM) amongst all the stakeholders through public awareness campaigns.

3. Senior Programme Coordinator (SPC) (Assist the Safeguards Specialist in coordination of the two regions – Bono, Bono East, and Western North Regions
    a. Coordinate formation of Grievance Redressal Committees (GRCs) at LC level to resolve issues.
    b. Act as the Focal Point on G-DGM on Grievance Redressal issues and facilitate the GRC at the regional level.
    c. Regularly contact all points of receipt of complaints, receive the complaints made and assist in Redressal of all Grievances by coordinating with the concerned parties.

4. Field Coordinators for Bono, Bono East and Western North Regions do coordinate training and operational logistics
    a. Maintain information of grievances and Redressal.
    b. Prepare the progress for monthly/quarterly reports and submit to the SS through the SPC.

5. Field Trainers are responsible for delivering community training under the G-DGM
    a. Receive complaints from affected project beneficiaries/stakeholders
    b. Assist complainants file grievances reported on
    c. Initiate investigations into the complaint
    d. Submit received and investigated complaints to the responsible CGRC within the cohort

9.5 The Grievance Redress Process

A three-tier redress structure is planned to address all complaints in the Project.
The general steps of the grievance process comprise:

- Receipt of complaints
- Determining and implementing the redress action
- Verifying the redress action
- Amicable settlement; or
- Alternative actions for unresolved complaints.

First tier of Redressal

The complaints are to be received at the community level by the field trainers. The stakeholders are informed of various points of making complaints (if any) and field trainers are to collect the complaints from these points on a regular basis and record them. In addition, the chief, queen, focal person, project staff and any other person we collectively agree on by the CGRCs. This is followed by coordinating with the concerned people to redress the Grievances. Grievances or complaints can also be channeled through the NSC representative in the area for onward submission to the project coordinator. The Senior Programme Coordinator of the NEA will coordinate the activities at the respective regional level to address the Grievances and would act as the focal point in this regard.

a) Points of receipt of complaints

The various points of receiving complaints at the beneficiary community level would be:

- The NEA Field Trainers
- Community Focal person for DGM/or as will be approved by the CGRCs

b) Mode of Receipt/Processing of Complaints

Grievance Uptake/Registration

Stakeholders propose that the best way authorities should receive grievances is in an oral format. In that way, poor (illiterate) communities have a chance to access the GRM. It must be noted however, that any oral complaint received by any person for onward submission to the system must be recorded in written format by the recipient to avoid distortions or loss of content. Other modalities proposed are SMS through a dedicated text line, written letter, website, and telephone hotline. Any grievance received through phone call/text line must be followed by the complainant and to transform the issue unto a complaint form before filing for investigation. The latter should ensure that every grievance is recorded.

The complaints can be made in writing, verbally, over the phone, emails, or any other media applicable. As soon as the officer receives a complaint, he /she would issue an acknowledgement. The officer receiving the complaints should investigate to obtain relevant basic information regarding the grievance and the complainant and will immediately inform the respective Regional Coordinator in the format – Grievance Information Form (GIF)

The Regional Coordinators shall keep a Complaint/ Grievance and Redress register at the Regional Level in Bono, Bono East, and Western North Region. The format for entry on such register is presented in table below.

Table 13: Grievances Register

GRIEVANCE REGISTER						
NO.	**DATE**	**NAME OF COMPLAINANT**	**CONTACT**	**SUMMARY OF COMPLAINT**	**LEVEL: (1, 2, 3)**	**REMARKS (resolved/referred)**

Keeping records collected from relevant bodies are the responsibility of respective Regional Coordinators.

After registering the complaint in the **Grievance Registration, Resolution and Referral Form** (***Annex 2)***, the Regional Coordinators would forward it to the Senior Programme Coordinator. He will study the complaint made in detail and forward the complaint to the concerned officer with specific dates (sticking to time limit as proposed in this framework) for replying and redressing the same to the complainant. The necessary channels as prescribed in the redress process will be followed. Proceedings and outcome of meetings will be recorded as such, and summary of outcome recorded in the grievance register. During this stage, the field officers will be actively involved.

If the issue is resolved at this level, the complainant will be informed, and the issue closed. If no resolution is reached, the matter will be referred to the next tier for redress. If the case is however not redressed or attended to within 14 days, it will be transferred to the next higher level of the grievance redress process.

Second tier of Redressal

The Grievance Redress Committee formed at every **Cohort Level** would be the one which would address the grievance in the next level if the issue or the problem is not solved at the first tier.

A Grievance Redress Committee (GRC) will be constituted for every **Cohort** by the circulars issued by the Programme Manager. The Senior Programme Coordinator would be the Chairman of the Committee.

a) The recommended Structure of the GRC would be:
   I. 1 Chairperson – District Manager /Representative of the Forestry Commission
   II. 2 Members of the Area Council (**male** and **female**)
   III. 1 Senior Programme Coordinator (NEA)
   IV. 1 Representative of the NGO/CBO working in the area

V. 1 Member of the clergy
VI. 1 Regional Coordinator of the NEA
VII. 2 Representatives from Focal Persons (male and female)
VIII. 2 representatives from Traditional Leaders (Chief/Queen mother)

The SS of the NEA will coordinate with the respective Regional Coordinators in getting these Committees constituted for each Project Region (BA/WR) and get the necessary dispatches issued in this regard so that they can be convened whenever required.

b) ***Functions of GRC***

The GRC will function along the following lines:

i) Providing support to the affected persons in solving their problems
ii) Prioritize grievances and resolve them at the earliest
iii) Provide information to NEA/NSC on serious cases at the earliest
iv) Coordinate on the Affected Person getting proper and timely information on the solution worked out for his/her grievance.
v) Study the normally occurring grievances and advise NEA and NSC remedial actions to avoid further occurrences.
vi) Periodic (quarterly) review and analysis of recorded and processed grievances.

The Senior Program Coordinator of the NEA will coordinate the convening of the meetings of the GRC, and responsible for briefing the GRC on the deliberations of the first level of Redress and on the outcome or position from the parties (Complainant and the GRC).

The GRC will hold the necessary meetings with the affected party / complainant and the concerned officers and attempt to find a solution acceptable at all levels. GRC would record the minutes of the meeting in the format as approved and adopted. The decisions of the GRC are communicated to the complainant formally and if he accepts the resolutions, the complainant's acceptance is obtained on the disclosure format (see ***Annex 2***: Grievance Registration, Resolution and Referral Form).

If the complainant does not accept the solution offered by the GRC, then the complaint is passed on to the next level / or the complainant can reach the next level. The Chairman of the GRC would require forwarding the issue to the next level through the Senior Programme Coordinator to explore a solution to this at the District Level before transferring it to the Central Grievance Redress Committee (CGRC). If the issue is resolved at this level, the complainant will be informed, and the issue closed. If no resolution is reached, the matter will be referred to the next tier for redress. If the case is however not redressed or attended to within 14 days, it will be transferred to the next higher level of the grievance redress process.

Third tier of Redressal

If the affected party / complainant does not agree for the resolution at the 2nd level, or there is a time delay of more than a month in solving the issue, the complainant can opt to consider taking it to the third level. The Central Grievance Redress Committee (CGRC) will be constituted from the NEA, NSC and the District FC. This body will be constituted as the 3rd

Tier of Redress to look into the problems of the complainant that had not been resolved at the first and second tiers.

The Central Grievance Redress Committee would be formulated with the following Members:

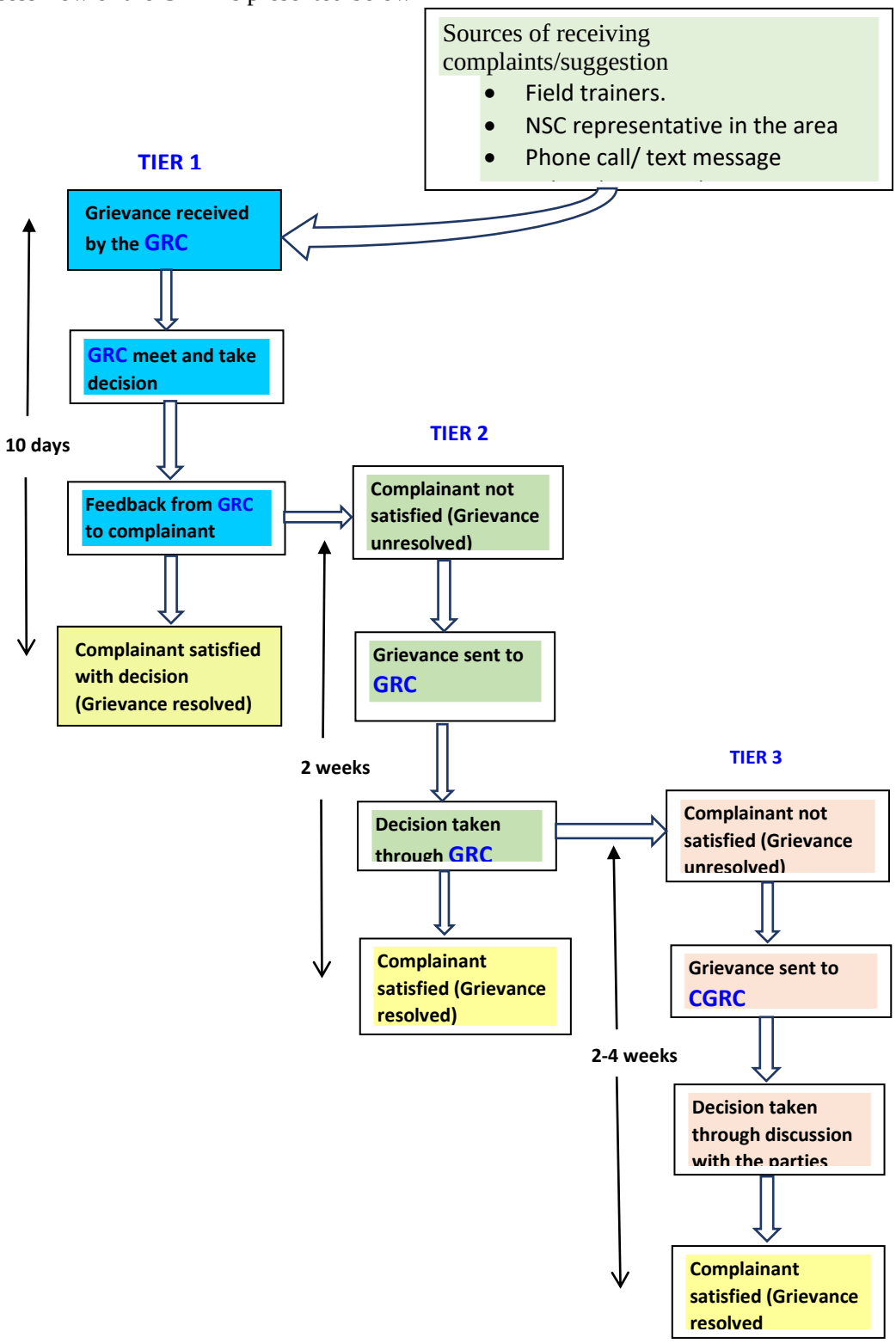
1) NSC Chairman – Chairman
2) Legal Officer, FC – Member
3) Programme Manager, NEA – Member Secretary

The Chairpersons of the respective District GRCs will be the invitees to the Committee meetings to enable the CGRC to understand the deliberations of the GRC at the first two tiers. The Programme Manager of the NEA will collect all the details of the Grievance including the deliberations of first tier and second tier efforts and present it to the CGRC.

The CRGC will deliberate upon the issue and give suitable recommendations. The meetings are recorded in the format as in *Annex 1*. After this the decisions of the CGRC will be communicated to the complainant formally and if he accepts the resolutions, the complainant's acceptance is obtained on the disclosure format as in *Annex 1*. The decisions of the CGRC would be final from the Project side and the Complainant may decide to take a legal or any other recourse if he /she is not satisfied with the resolutions from the deliberations of the three tiers of GRM.

The Mechanism of the Grievance Redress System

The process flow of the GRM is presented below



Complaints received will be sorted into three levels:
Level 1: Complaints and questions that can be responded to immediately.
Level 2: Complex complaints, for example disputes between Community and NEA, NSC, Focal Persons and within the Communities.

Figure 1: Complaint-Resolution Flow Chart

9.6 Schedule Template for Grievance Redress and Responsibilities.

Table 13 presents a summary of the grievance redress procedure with institutional roles and responsibilities.

Table 14: Schedule Template for Grievance Redress and Responsible Persons

Steps	Process	Description	Time frame	Other information	Responsible Agency/ Person
1	Identification of grievance	Face to face; letter, e-mail; phone call; recorded during public/community interaction; others	1 Day	Residential address; Email address (if any); contact number	Projected Affected Beneficiary/Complainant
2	Grievance assessed and logged	Significance assessed and grievance recorded or logged (i.e., in a logbook)	4-7 Days	Significance criteria Level 1 –one off event Level 2 – complaint is widespread or repeated Level 3- any complaint (one off or repeated) that indicates breach of law or policy or the G-DGM provisions	Regional Coordinators of the NEA in BA and WR
3	Grievance is acknowledged	Acknowledgement of grievance through appropriate medium and to ensure documentation and record keeping at all levels	7-14 Days		Senior Programme Coordinator
4	Development of response	• Grievance assigned to appropriate party for resolution • Response development with input from management/ relevant stakeholders	4-7 Days 10-14 Days		Project Coordinator/Regional Coordinator G-DGM
5	Response signed off	Redress action approved at appropriate levels	4-7 Days		GRC Chairman/ Senior Program Coordinator/ Regional Coordinator
6	Implementation and communication of response (feedback)	Redress action implemented and update of progress on resolution communicated to complainant	10-14 Days		Programme Coordinator
7	Complaints Response	• Redress action recorded in grievance logbook • Confirm with complainant that grievance can be closed or determine what follow up is necessary	4-7 Days		Programme Coordinator
8	Close grievance	• Record finals sign off grievance • If grievance cannot be closed, return to Tier 2 or recommend third-party arbitration or • Resort to court of law	4-7 Days		Programme Coordinator
9	Documentation, tracking,	Grievance Redress Mechanism Process is	-		NEA/NSC

Steps	Process	Description	Time frame	Other information	Responsible Agency/ Person
	reporting, and monitoring	documented and monitored			

10.0 THE ESMP TRAINING OF STAKEHOLDERS FOR IMPLEMENTATION

10.1 Introduction

This plan is being put together to help in the implementation of the ESMP in an effective and efficient manner. In doing that, contractors, and their labour force as well as other stakeholders (including community subproject committees, MDA staff, assemblymen, unit committee members, CBO members etc.) who will be engaged in its implementation and monitoring will receive adequate training to help them understand their responsibilities and execute same. The training will seek to provide more understanding and skills required for the implementation of the ESMP. This engagement will be carried out without losing sight of COVID 19 situation in the country.

Key issues to consider for the training will be

- Project Potential Environmental and Social impacts
- Mitigation measures for potential project impacts
- Monitoring of mitigation measures implementation and reporting
- Reporting on mitigation measures implementation
- Managing planted seedlings
- Community Water and Sanitation Management team
- Dry season strategies to protect planted seedlings
- Project Occupational Health and Safety
- Public Health and Safety issues
- Managing solar powered borehole facility at the community level
- Grievance Redress Mechanism of the project
- Project Code of Conduct for contractor and workers
- Roles and responsibilities for the ESMP implementation

Recognising the current restrictions imposed as the country tries to fight the COVID 19 pandemic, training will have to be carried out with considerations to COVID 19 protocols. Therefore, various approaches will be adopted in conducting the training taking into consideration the training needs of the various stakeholders involved. The project will engage the stakeholders like contractors, MDA staffs at their respective offices to avoid having to bring many people together, similar approach will be used for district and community level stakeholders. The project will also consider use of hand bills, illustrations, posters to augment the efforts of the initial engagements. An estimated budget of ninety thousand Ghana Cedis (GHs 90,100.00) will be allocated for these engagements.

11.0 STAKEHOLDER AND INSTITUTIONAL RESPONSIBILITIES IN THE ESMP IMPLEMENTATION

11.1 Introduction

The following is the arrangement for stakeholder responsibilities and roles in the ESMP implementation for DGM subproject activities in the project communities.

Table 15: Roles and responsibilities of the ESMP implementation

Name of stakeholder	Roles and Responsibilities
World Bank	G-DGM Project financier. Review of ESMP report and provision of IDA No Objection. Disclosure of ESMP at the Bank's external website. Occasional ESMP monitoring visits to subproject sites.
Ministry of Lands and Natural Resources (MLNR)	MLNR has the overall responsibility for the G-DGM Project and compliance with the World Bank Safeguards Policies applicable to the Project to ensure the overall successful implementation of this ESMP.
G-DGM NEA (Solidaridad West Africa)	SWA is responsible for the preparation of the ESMP and its disclosure at the country level. Again, the training of stakeholders on the skills and knowledge required for successful implementation of the ESMP. Also, SWA will offer supervision and ensure compliance with the ESMP provisions by the implementing agents at the community level. And monitoring and reporting on the ESMP implementation to the World Bank on regular basis while maintaining a functional Grievance redress mechanism at all levels of subproject implementation.
Municipal and District Assemblies (MDAs)	Responsible for planning and development of infrastructure in its jurisdiction, which structures include potable water systems. The works department of the Assembly is responsible for: • Monitoring of ESMP compliance by contractors • Engagement in grievance redress on the subproject • Support communities in the operation and maintenance of borehole facilities
Project Beneficiary community	• Assemblymen and focal persons help in mobilisation of project communities for project awareness raising and ESMP compliance • Facilitating grievance redresses on the project • Partnering with project stakeholders on awareness creation, reporting illegal behaviour (i.e. stealing of construction materials and equipment, destruction of

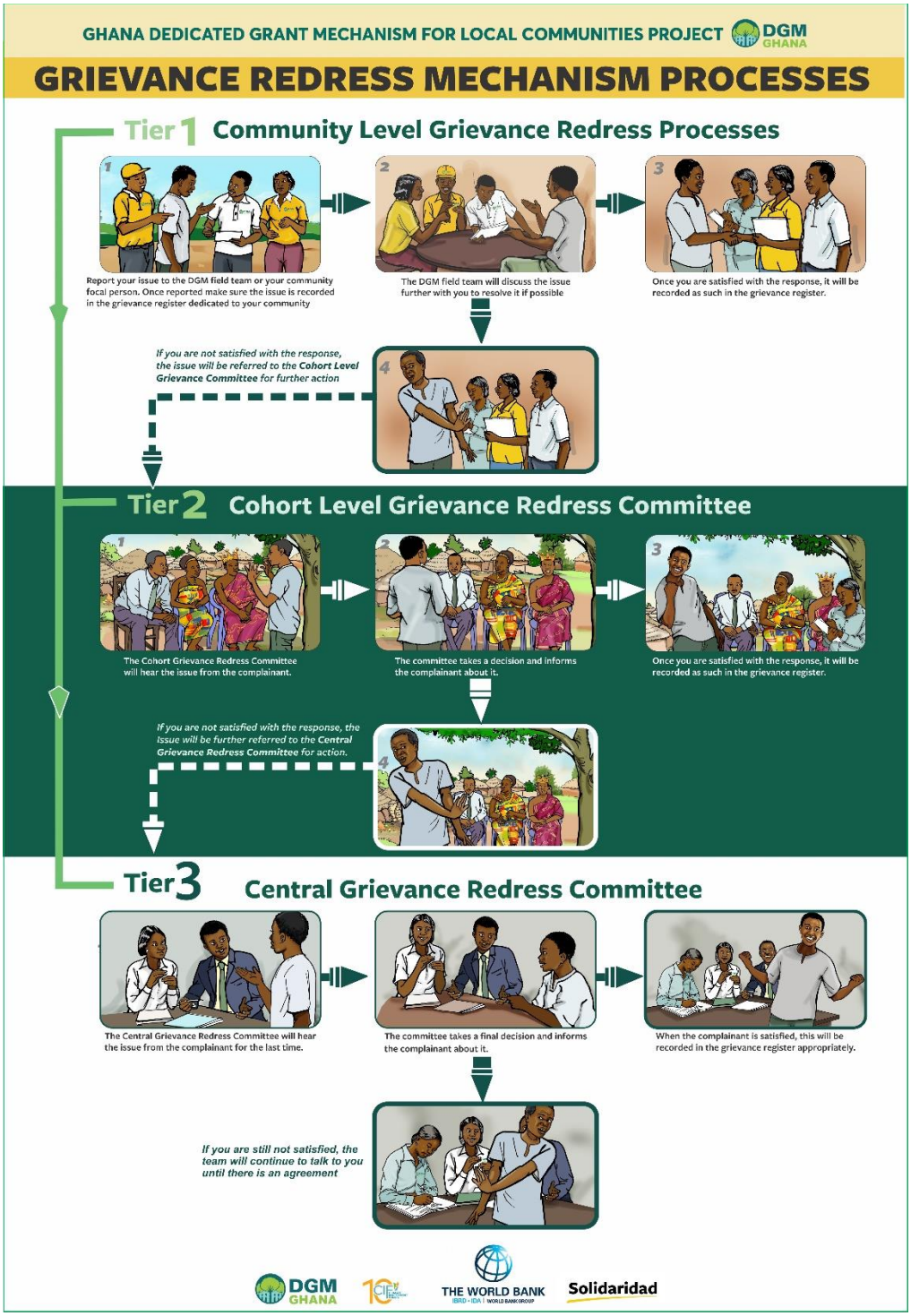
Name of stakeholder	Roles and Responsibilities
	safety signage at construction sites) on the project and creating conducive construction atmosphere. • Reporting grievances through the established GRM structures for the project.
Works' contractors	Responsibility for the actual drilling and construction work. Responsibility for overall implementation and compliance with the ESMP relating to the construction related subprojects. Recruitment of Safeguards Officer to monitor compliance with the ESMP and reporting to the project authorities.

12.0 CONCLUSION AND RECOMMENDATIONS

This ESMP was informed by the potential environmental and social impacts of the subprojects. The management of the E&S impact are of significant important to the project's implementation. These potential environmental and social impacts are of influence for the success of the subprojects and the project in entity. These potential impacts have been identified based on the interactions between the project activities and the environmental status and sensitivities of the various ecological and sociocultural components of the project.

The ESMP would among other things not only ensure those procedures for managing the potential adverse impacts and associated impacts of the proposed subproject on the environment and the society at large are put in place but will also prescribe measures to ensure their enforcement throughout the life of the subproject and the project implementation itself. Also, a monitoring plan for the subprojects has been integrated into the ESMP to ensure that all impact indicators for all the environmental and social components in every phase of the subproject are within limits throughout the life of the project. It is expected that through the implementation of this ESMP, the proposed subprojects activities will have positive impacts on the environmental and social conditions of the project landscape.

Annex 1: Illustration of Grievance Redress Mechanism



Annex 2: Grievance Registration, Resolution and Referral Form

GHANA DEDICATED GRANT MECHANISM FOR LOCAL COMMUNITIES

COMMUNITY GRIEVANCE REDRESS COMMITTEE

Grievance Registration, Resolution and Referral Form

Name of complainant	Community	District

Address of complainant (Hse. number)	Phone number: Date of complaint: Time of complaint:

Complaint received by (Name) Position	Location: Phone number

Nature of complaint or Grievance:

Summary of resolution (if any):

Complaint referred to: *(Please, kindly indicate resolved if applicable or indicate the appropriate level referred to)*

Signature/Thumbprint of complainant	Signature/Thumbprint of Receiver of complaint:	Signature/Thumbprint of Chairman of CGRC: For referral only

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Annex 3: COVID-19 guiding documents

1. Technical Note: Public Consultations and Stakeholder Engagement in WB-supported operations when there are constraints on conducting public meetings March 20, 2020 (https://biwta.portal.gov.bd/sites/default/files/files/biwta.portal.gov.bd/page/f3ca1ff6_95b0_4606_849f_2c0844e455bc/2020-10-01-11-04-717aa8e02835a7e778b2fff46f531a8c.pdf)

2. WHO guidelines and documents (https://www.who.int/emergencies/diseases/novel-coronavirus-2019/technical-guidance)

3. Solidaridad's internal COVID 19 response documents

Annex 4: Individual Selected Subprojects

GHANA DEDICATED GRANT MECHANISM PROJECT INDIVIDUAL GRANT WINDOW BENEFICIARY DATA									
S/N	**Cohort**	**Region**	**Community**	**Dedicated member code**	**Grantee Name**	**Gender**	**M/N Status**	**Proposed sub-project**	**Land size (Acres)**
1	5	Bono East	Abease	AE 16694	Gideon Osei	M	Native	Climate-smart cashew agroforestry	3
2	5	Bono East	Abease	AE 16844	Afia Amoakoah	F	Native	Climate-smart cashew agroforestry	2
3	5	Bono East	Abease	AE 16508	Emmanuel Addae	M	Native	Climate-smart cashew agroforestry	5
4	5	Bono East	Zabrama	ZB 17553	Obed Moja	M	Migrant	Climate-smart cashew agroforestry	4
5	5	Bono East	Zabrama	ZB 17644	Seth Nyarko Asiamah	M	Migrant	Climate-smart cashew agroforestry	5
6	5	Bono East	Zabrama	ZB 17429	Shaharu Sadiq	M	Migrant	Afforestation	5
7	5	Bono East	Benim	BN 17048	Cecilia Baalan	F	Migrant	Climate-smart cashew agroforestry	3
8	5	Bono East	Benim	BN 16873	Robert Biale	M	Migrant	Climate-smart cashew agroforestry	2
9	5	Bono East	Benim	BN 16895	Grace Midibea	F	Migrant	Climate-smart cashew agroforestry	2
10	5	Bono East	Menkor	MK 18233	Robert Manu	M	Native	Afforestation	5
11	5	Bono East	Menkor	MK 18085	Rita Adomako	F	Native	Climate-smart cashew agroforestry	3
12	5	Bono East	Menkor	MK 18239	Charles Yaw Mensah	M	Native	Climate-smart cashew agroforestry	3
13	5	Bono East	Praprabon	PP 15234	Patience Lapah	F	Migrant	Climate-smart cashew agroforestry	4

14	5	Bono East	Praprabon	PP 15345	Magul Banyindo	M	Migrant	Climate-smart cashew agroforestry	5
15	5	Bono East	Praprabon	PP 15309	Kwabena Nakpin	M	Migrant	Climate-smart cashew agroforestry	5
16	5	Bono East	Baaya	BY 16215	Wisdom Nfabi	M	Migrant	Afforestation	5
17	5	Bono East	Baaya	BY 16261	Yakpeba Tidela	M	Migrant	Sustainable yam production systems	3
18	5	Bono East	Kanto	KN 17969	Akosua Yeboah	F	Migrant	Climate-smart cashew agroforestry	2
19	5	Bono East	Kanto	KN 18038	Isaac Narbi	M	Native	Climate-smart cashew agroforestry	3
20	5	Bono East	Kanto	KN 17981	Agnes Agyeiwaa	F	Native	Climate-smart cashew agroforestry	1
21	5	Bono East	Akyeremade	AD 17785	Charles Boadum	M	Native	Climate-smart cashew agroforestry	2
22	5	Bono East	Akyeremade	AD 17667	Abena Sarpomaa	F	Native	Climate-smart cashew agroforestry	3
23	5	Bono East	Akyeremade	AD 17879	Stephen Kwaku	M	Native	Climate-smart cashew agroforestry	2
24	5	Bono East	Beposo	BP 15832	Amos Tafimi	M	Migrant	Climate-smart cashew agroforestry	3
25	5	Bono East	Beposo	BP 15948	Nyaabe Jagri	M	Migrant	Sustainable yam production systems	3
26	1	Bono East	Beposo	BP 15481	Joseph Tamanja C	M	Migrant	Watershed protection	5
27	1	Bono East	Ampoma	AM 1039	Emmanuel Ayensu	M	Native	Climate-smart cashew agroforestry	3
28	1	Bono East	Ampoma	AM 1087	Simon Gyan	M	Native	Afforestation	3
29	1	Bono East	Ampoma	AM 1056	Joshua Attah	M	Native	Afforestation	3
30	1	Bono East	Nante	NT 1472	Victoria Saah	F	Native	Climate-smart cashew agroforestry	3
31	1	Bono East	Nante	NT 1494	Akua Bafoaa	F	Native	Climate-smart cashew agroforestry	3
32	1	Bono East	Nante	NT 1373	Nana Agyare	M	Native	mango plantation	5

33	1	Bono East	Krabonso	KB 2315	S. B. Amponsah	M	Native	Climate-smart cashew agroforestry	3
34	1	Bono East	Krabonso	KB 2054	Akua Yeboah	F	Native	Climate-smart cashew agroforestry	3
35	1	Bono East	Krabonso	KB 2357	Dorcas Amadu	F	Native	Climate-smart cashew agroforestry	3
36	1	Bono East	Hyereso	HS 1233	Francis Piripour	M	Migrant	Sustainable yam production systems	3
37	1	Bono East	Hyereso	HS 1358	Suzanna Kwaa	F	Native	Watershed protection	3
38	1	Bono East	Hyereso	HS 1225	Kwabena Sekyi	M	Migrant	Sustainable yam production systems	3
39	1	Bono East	Dawadawa no 2	DD 4846	Janet Antwi	F	Migrant	Climate-smart cashew agroforestry	3
40	1	Bono East	Dawadawa no 2	DD 4601	James Asampana	M	Migrant	Watershed protection	5
41	1	Bono East	Dawadawa no 2	DD 4690	Philip Kwasi Laar	M	Migrant	Climate-smart cashew agroforestry	3
42	1	Bono East	Babato Kuma	BK 5226	Seidu Abubakari	M	Migrant	Climate-smart cashew agroforestry	3
43	1	Bono East	Babato Kuma	BK 5221	Adams Mohammed	M	Migrant	Climate-smart cashew agroforestry	2
44	1	Bono East	Babato Kuma	BK 5207	Assaw Dramani Kabotor	M	Migrant	Climate-smart cashew agroforestry	5
45	1	Bono East	Bawa Akura	BA 4521	Aboagye Jagri	M	Migrant	Climate-smart cashew agroforestry	4
46	1	Bono East	Bawa Akura	BA 4529	Kwasi Kunde	M	Migrant	Afforestation	2
47	1	Bono East	Bawa Akura	BA 4482	Mabel Tibala	F	Migrant	Climate-smart cashew agroforestry	3
48	1	Bono East	Bonte	BT 2582	Faustina Gyameah	F	Native	Climate-smart cashew agroforestry	3
49	1	Bono East	Bonte	BT 2546	Sampson Appiah	M	Native	Climate-smart cashew agroforestry	3
50	1	Bono East	Bonte	BT 2835	Eric Adu	M	Native	Climate-smart cashew agroforestry	3

51	1	Bono East	Dromankese	DM 3802	Sampson Drau Djan	M	Native	Climate-smart cashew agroforestry	3
52	1	Bono East	Dromankese	DM 3101	Oduro Bediako	M	Native	Climate-smart cashew agroforestry	5
53	1	Bono East	Dromankese	DM 3219	Deborah Dabea	F	Native	Climate-smart cashew agroforestry	4
54	1	Bono East	Asekye	AK 4360	Akua Pokuaa	F	Native	Afforestation	3
55	1	Bono East	Asekye	AK 4380	Kwadwo Ankomah	M	Native	Climate-smart cashew agroforestry	3
56	1	Bono East	Asekye	AK 4421	Kwadwo Ankomah No.2	M	Native	Climate-smart cashew agroforestry	4
57	3	Bono Region	Abirikasu	AB 9020	Sampson Nana Adjei	M	Native	Climate-smart cashew agroforestry	3
58	3	Bono Region	Abirikasu	AB 9163	Thomas Koosono	M	Native	Climate-smart cashew agroforestry	3
59	3	Bono Region	Abirikasu	AB 9029	Oppong Kennedy Kyereme	M	Native	Climate-smart cashew agroforestry	3
60	3	Bono Region	Adoe	AD 10519	Aloko Akurugu	M	Migrant	Climate-smart cashew agroforestry	3
61	3	Bono Region	Adoe	AD 10501	Kofi Dwaa	M	Migrant	Climate-smart cashew agroforestry	3
62	3	Bono Region	Adoe	AD 10574	Hanna Owusua	F	Native	Climate-smart cashew agroforestry	3
63	3	Bono Region	Boffourkrom	BF 10717	Bismark Opoku	M	Native	Climate-smart cashew agroforestry	3
64	3	Bono Region	Boffourkrom	BF 10668	Rose Oppong	F	Native	Climate-smart cashew agroforestry	3
65	3	Bono Region	Boffourkrom	BF 10654	Regina Awaafo	F	Native	Climate-smart cashew agroforestry	3
66	3	Bono Region	Nsuhia	NH 8662	Busanga Adjayobi	M	Migrant	Climate-smart cashew agroforestry	3
67	3	Bono Region	Nsuhia	NH 9704	Nana Kwasi Oppong	M	Native	Climate-smart cashew agroforestry	3
68	3	Bono Region	Nsuhia	NH 8657	Ama Kissiwaa	F	Native	Climate-smart cashew agroforestry	3

69	3	Bono Region	Koradaso	KD 8018	Theresah Abena Yeboah	F	Native	Climate-smart cashew agroforestry	3
70	3	Bono Region	Koradaso	KD 8132	Ophelius Siebekpiir	M	Migrant	Climate-smart cashew agroforestry	5
71	3	Bono Region	Koradaso	KD 8166	John Paul Beyong	M	Migrant	Climate-smart cashew agroforestry	3
72	3	Bono Region	Duasidan	DS 8996	Naweh Kwara	M	Migrant	Climate-smart cashew agroforestry	3
73	3	Bono Region	Duasidan	DS 8878	Ansu Kwasi Junior	M	Native	Climate-smart cashew agroforestry	4
74	3	Bono Region	Duasidan	DS 8902	Kadiga Winifred	F	Native	Climate-smart cashew agroforestry	3
75	3	Bono Region	Asunso No. 1	AS 7964	Fatima Adama	F	Native	Climate-smart cashew agroforestry	3
76	3	Bono Region	Asunso No. 1	AS 7662	Mercy Amponsah	F	Native	Climate-smart cashew agroforestry	3
77	3	Bono Region	Asunso No. 1	AS 7589	Felicity Agyeiwaa	F	Native	Climate-smart cashew agroforestry	3
78	3	Bono Region	Mpatasie	MT 10451	Mutala Agyemang	M	Native	Climate-smart cashew agroforestry	5
79	3	Bono Region	Mpatasie	MT 10246	Felicia Takyiwaa	F	Native	Climate-smart cashew agroforestry	3
80	3	Bono Region	Mpatasie	MT 10290	Rebecca Konoma	F	Native	Climate-smart cashew agroforestry	3
81	3	Bono Region	Namasua	NM 9378	Oppong Dartey	M	Native	Climate-smart cashew agroforestry	4
82	3	Bono Region	Namasua	NM 9567	Comfort Kyeraa	F	Native	Climate-smart cashew agroforestry	3
83	3	Bono Region	Namasua	NM 9437	Isaac Kyereh	M	Native	Climate-smart cashew agroforestry	3
84	3	Bono Region	Kotaa	KT 10172	Nana Kwaku Baah	M	Native	Climate-smart cashew agroforestry	5
85	3	Bono Region	Kotaa	KT 10144	Isaac Henneh	M	Native	Climate-smart cashew agroforestry	3

86	3	Bono Region	Kotaa	KT 10013	Adwoa Appiah	F	Native	Climate-smart cashew agroforestry	3
87	3	Bono Region	Twumkrom	TK 8358	Peter Agbelenyo	M	Native	Climate-smart cashew agroforestry	3
88	3	Bono Region	Twumkrom	TK 8383	Foster Gyamfi	M	Native	Climate-smart cashew agroforestry	3
89	3	Bono Region	Twumkrom	TK 8241	Hanna Asare	F	Native	Climate-smart cashew agroforestry	3
90	3	Bono Region	Nkyenkyenmam	NK 9863	Kwabena Yeboah	M	Native	Climate-smart cashew agroforestry	3
91	3	Bono Region	Nkyenkyenmam	NK 9806	Vida Saah	F	Native	Climate-smart cashew agroforestry	3
92	3	Bono Region	Nkyenkyenmam	NK 9773	Stephen Bediako	M	Native	Climate-smart cashew agroforestry	3
93	4	Western North	Camp 15	CP 13909	Adam Osman	M	Migrant	Climate-smart cocoa establishment	3.4
94	4	Western North	Camp 15	CP 13889	Mathias Baah	M	Migrant	Climate-smart cocoa establishment	1.4
95	4	Western North	Camp 15	CP 13760	Justice Azure	M	Native	Climate-smart cocoa establishment	2
96	4	Western North	Kumkumso	KK 14566	Nicholas Lartey	M	Migrant	Climate-smart cocoa establishment	1.8
97	4	Western North	Kumkumso	KK 14669	Elizabeth Arthur	F	Native	Climate-smart cocoa establishment	1.3
98	4	Western North	Kumkumso	KK 14582	Yaw Yeboah	M	Migrant	Afforestation	1.1
99	4	Western North	Elluokrom	EL 15157	Dora Mansoh	F	Native	Climate-smart cocoa establishment	1.5
100	4	Western North	Elluokrom	EL 14922	Thomas Mensah	M	Migrant	Afforestation	1.8
101	4	Western North	Elluokrom	EL 14794	Peter Osei	M	Native	Climate-smart cocoa establishment	1.7
102	4	Western North	Obeykrom	OB 14455	Daniel Akuoku	M	Migrant	Climate-smart cocoa establishment	1.6

103	4	Western North	Obeykrom	OB 14484	Linda Nimakoah	F	Migrant	Climate-smart cocoa establishment	0.5
104	4	Western North	Obeykrom	OB 14469	Kwadwo Yeboah	M	Migrant	Climate-smart cocoa establishment	1
105	4	Western North	Adwumam	AD 10786	Simeon Lartey	M	Migrant	Climate-smart cocoa establishment	2
106	4	Western North	Benchima	BC 11141	Philip Asamoah	M	Native	Afforestation	0.8
107	4	Western North	Benchima	BC11129	Samuel Badu	M	Native	Afforestation	1.5
108	4	Western North	Benchima	BC10979	Agartha Ofori	F	Native	Afforestation	1.5
109	4	Western North	Juaboso Nkwanta	JN 12043	Dominic Eshun	M	Migrant	Climate-smart cocoa establishment	2
110	4	Western North	Juaboso Nkwanta	JN 11806	Ama Serwaa	F	Migrant	Climate-smart cocoa establishment	1.4
111	4	Western North	Juaboso Nkwanta	JN 11921	Agnes Mensah	F	Native	Climate-smart cocoa establishment	0.9
112	4	Western North	Nkatieso	NK 12190	Agnes Amoateng	F	Native	Afforestation	1.1
113	4	Western North	Nkatieso	NK 11221	Elizabeth Ase	F	Native	Climate-smart cocoa establishment	0.9
114	4	Western North	Nkatieso	NK 11313	Simon Kofi Twumasi Ankrah	M	Native	Climate-smart cocoa establishment	4.2
115	4	Western North	Sefwi Asafo	AF 13476	Beatrice Aidoo	F	Native	Climate-smart cocoa establishment	0.2
116	4	Western North	Sefwi Asafo	AF 13457	Yaa Ackaah	F	Native	Climate-smart cocoa establishment	1.1
117	4	Western North	Sefwi Asafo	AF 13313	Frank Nkoah Okumdom	M	Native	Climate-smart cocoa establishment	2.3
118	4	Western North	Suiano B	SB 13045	Yaw Tweneboah	M	Native	Climate-smart cocoa establishment	2.1
119	4	Western North	Suiano B	SB 13063	Joyce Akua	F	Migrant	Afforestation	1.4

120	4	Western North	Suiano B	SB 13012	Daniel Frimpong	M	Native	Climate-smart cocoa establishment	2.8
121	4	Western North	Datano	DT 13249	Monica Asamoah	F	Native	Climate-smart cocoa establishment	0.9
122	4	Western North	Datano	DT 13123	Veronica Gyamporah	F	Native	Climate-smart cocoa establishment	2.1
123	4	Western North	Datano	DT 13173	Isaac Kojo Owusu	M	Native	Climate-smart cocoa establishment	2.5
124	4	Western North	Suiano A	SA 11363	Yaw Gyasi	M	Native	Climate-smart cocoa establishment	1.6
125	4	Western North	Suiano A	SA 11392	Richmond Asiedu	M	Native	Afforestation	2.2
126	4	Western North	Suiano A	SA 11423	Evans Tano	M	Native	Climate-smart cocoa establishment	1.5
127	2	Western North	Asantekrom	AS 6371	Sarah Ewudzi	F	Migrant	Climate-smart cocoa establishment	2.2
128	2	Western North	Asantekrom	AS 6397	Comfort Nyaletase	F	Migrant	Climate-smart cocoa establishment	2.9
129	2	Western North	Asantekrom	AS 6426	Diana Cobbinah	F	Native	Climate-smart cocoa establishment	0.9
130	2	Western North	Damoakrom	DK 6807	Rebecca Mochia	F	Migrant	Climate-smart cocoa establishment	2.5
131	2	Western North	Damoakrom	DK 6825	Cecilia Asorkoh	F	Native	Climate-smart cocoa establishment	1
132	2	Western North	Damoakrom	DK 6798	Lydia Coffie	F	Native	Climate-smart cocoa establishment	6
133	2	Western North	Nyamebekyere	NB 6854	Kwame Asare	M	Migrant	Climate-smart cocoa establishment	2.6
134	2	Western North	Nyamebekyere	NB 6870	Diana Asabea	F	Migrant	Climate-smart cocoa establishment	2.5
135	2	Western North	Nyamebekyere	NB 6853	Juliana Ayebea	F	Migrant	Climate-smart cocoa establishment	3.1
136	4	Western North	Adabokrom	AO 14417	Takyi Mintah Cornelius	M	Native	Climate-smart cocoa establishment	2.5

137	4	Western North	Adabokrom	AO 14373	Osei Boakye Bernard	M	Native	Climate-smart cocoa establishment	2.8
138	4	Western North	Adabokrom	AO 14301	Janet Ago	F	Native	Climate-smart cocoa establishment	3
139	4	Western North	Asampaneye	AP 14803	Priscilla Gyabeng	F	Native	Climate-smart cocoa establishment	1
140	4	Western North	Asampaneye	AP 14817	Veronica Arthur	F	Native	Afforestation	3.2
141	4	Western North	Asampaneye	AP 14767	Afia Fofie	F	Native	Climate-smart cocoa establishment	1.1
142	4	Western North	Kankyiabo	KY 12808	Nana Kwaku Duah	M	Native	Afforestation	1.3
143	4	Western North	Kankyiabo	KY 12877	Akosua Manu	F	Native	Climate-smart cocoa establishment	2.1
144	4	Western North	Kankyiabo	KY 12932	Faustina Mintah	F	Native	Climate-smart cocoa establishment	2.5
145	4	Western North	Bodi	BD 18301	Florence Addae	F	Native	Climate-smart cocoa establishment	5.2
146	4	Western North	Bodi	BD 18288	Mary Ampomah	F	Native	Climate-smart cocoa establishment	1.4
147	4	Western North	Bodi	BD 18310	Patricia Tandoh	F	Migrant	Climate-smart cocoa establishment	1
148	2	Western North	Fahiakotwere	FT 7018	Kwasi Nalibo	M	Migrant	Climate-smart cocoa establishment	0.6
149	2	Western North	Fahiakotwere	FT 6978	Francis Teye A made	M	Migrant	Climate-smart cocoa establishment	1.2
150	2	Western North	Fahiakotwere	FT 6979	Listowel I. Tetteh	M	Migrant	Climate-smart cocoa establishment	3.1
151	2	Western North	Fahiakotwere	FT 7084	Daimata Seidu	F	Migrant	Climate-smart cocoa establishment	0.8
152	2	Western North	Fahiakotwere	FT 7072	Mary Nyansom	F	Migrant	Climate-smart cocoa establishment	4
153	2	Western North	Fahiakotwere	FT 6998	James Kwame	M	Migrant	Climate-smart cocoa establishment	1.3

154	2	Western North	Jomoro	JM 6550	Kwasi Wireko	M	Native	Afforestation	1.6
155	2	Western North	Jomoro	JM 6667	Ruth Sidani	F	Native	Afforestation	1.3
156	2	Western North	Jomoro	JM 6576	Joseph Kwaku Boakye	M	Migrant	Afforestation	1.9

Annex 5: Selected CBO Subprojects

CBO Prioritized Sub-Projects						
S/N	**Cohort**	**Region**	**Community**	**CBO**	**Selected sub-project**	**Hectares**
1	1	BBE	Bonte	Bonte Charcoal producers and tree planters' association	wood lot and cashew plantation	8
2	1	BBE	Dromankese	Dromankese Tree planters, Charcoal burners, and buyers' association	wood lot and cashew plantation	8
3	3	BR	Koradaso	Koradaso Peaceful tree growers' association	Tree Nursery establishment and Apiculture	
4	3	BR	Duasidan	Duasidan Community ecotourism management centre	Enhance protection and development of the community monkey sanctuary	24
5	5	BBE	Kwame Danso	Kwame Danso Charcoal producers and tree planters' association	Woodlot and cashew establishment	16
6	4	WN	Kunkumso	Kunkumso Farmers Association	Apiculture and watershed protection	3.2
7	4	WN	Elloukrom	Elloukrom Rainforest Alliance & CREMA	Apiculture and watershed protection	3.5
8	2	WN	Jomoro	Jomoro Agroforestry Group	CBO-Sacred site planting and Apiculture	3.2
9	3	BR	Nsuhia	Nsuhia famers group	Cashew plantation	2