



Miro Forestry Plantations Operations in Ghana and Sierra Leone

Environmental and Social Review Report

Prepared for

Miro Forestry & Shareholders

By

Earth Systems



EARTH SYSTEMS
Environment · Water · Sustainability

January 2023

Rev2

DOCUMENT INFORMATION

Project Title	Miro Forestry Plantations Operations in Ghana and Sierra Leone
Document Title	Environmental and Social Review Report
Document Name	Environmental and Social Review Report
Document Version	Rev1
Version Date	January 2023
File name	MIRO2422_Environmental and Social Review Report_Rev0
Prepared for	Miro Forestry & Shareholders
Project ID	MIRO2422

DOCUMENT REVISION HISTORY

Revision	Issue Date	Status	Approved by
0		Rev0	Nigel Murphy
1		Rev1	Nigel Murphy
2		Rev2	Nigel Murphy

DISTRIBUTION RECORD

Copy Number	Company / Position	Name
1	Miro / Shareholders	
2	Earth Systems	Library

© Earth Systems

This report is not to be used for purposes other than that for which it was intended. Environmental conditions change with time. The site conditions described in this report are based on observations made during the site visit and on subsequent monitoring results. Earth Systems does not imply that the site conditions described in this report are representative of past or future conditions. Where this report is to be made available, either in part or in its entirety, to a third party, Earth Systems reserves the right to review the information and documentation contained in the report and revisit and update findings, conclusions and recommendations.

Earth Systems

ABN 42 120 062 544
14 Church St
Hawthorn, Victoria 3122
Australia
Tel: +61 (0)3 9810 7500
Fax: +61 (0)3 9853 5030
Web: www.earthsystems.com.au

CONTENTS

1. SUMMARY	5
1.1 Introduction	5
1.2 ESG Risk Overview	6
2. OVERVIEW OF THE E&S REVIEW	8
2.1 Objectives of the E&S Review	8
2.2 Objectives of the E&S Review	8
2.3 Methodology for the E&S Review	8
2.3.1 Applicable Standards used for this assessment	9
2.4 Project Overview	9
2.4.1 Project Location and Area of Influence	10
2.5 Project Description, Design and Management	13
2.5.1 Management Structure	13
2.5.2 Project Activities (Operational Facilities and Plantation Operations)	17
3. ENVIRONMENTAL AND SOCIAL MANAGEMENT - MIRO OPERATIONS	26
3.1 Assessment and Management of Environmental and Social Risks and Impacts	27
3.1.1 Current Context and Findings	28
3.1.2 Actions Required for Compliance with the Applicable Standards	32
3.2 Labour and Working Conditions	33
3.2.1 Current Context and Findings	33
3.2.2 Actions Required for Compliance with the Applicable Standards	36
3.3 Resource Efficiency and Pollution Prevention	37
3.3.1 Current Context and Findings	37
3.3.2 Actions Required for Compliance with the Applicable Standards	41
3.4 Community Health, Safety, and Security	41
3.4.1 Current Context and Findings	41
3.4.2 Actions Required for Compliance with the Applicable Standards	43
3.5 Land Acquisition and Involuntary Resettlement	43
3.5.1 Current Context and Findings	44
3.5.2 Actions Required for Compliance with the Applicable Standards	45
3.6 Biodiversity Conservation and Sustainable Management of Living Natural Resources	45
3.6.1 Current Context and Findings	46
3.6.2 Actions Required for Compliance with the Applicable Standards	49
3.7 Cultural Heritage	49
3.7.1 Current Context and Findings	49
3.7.2 Actions Required for Compliance with the Applicable Standards	51
4. CONCLUSIONS	52

5. ACTION PLAN TO ADDRESS COMPLIANCE GAPS WITH THE APPLICABLE STANDARDS 55

FIGURES

Figure 3-1: Location of Project operational facilities and current plantations 11
Figure 3-2: Miro’s Summary Organisational Structure for Sierra Leone 14
Figure 3-2: Miro’s Summary E&S Organisational Structure 16
Figure 3-2: Miro Summary Organisational Structure **Error! Bookmark not defined.**
Figure 3-2: Miro Land Development Policy Implementation Framework 51

TABLES

Table 5-1: Summary of actions Required for compliance with the Applicable Standards 55

ATTACHMENTS

- Attachment A: ESAP Progress Review
- Attachment B: Greenhouse Gas Assessment

1. SUMMARY

1.1 Introduction

This environmental and social review (E&S Review) of Miro Forestry Developments Ltd operations has been prepared by Earth Systems on behalf of Miro Shareholders and the ESG Committee. The E&S Review provides an assessment of the company's overall E&S performance, progress against outstanding elements of previous ESAP reports and performance concerning areas highlighted by the recent ESG committee site visit. This full Project report includes details of the audit criteria and scope, methodology, contextual risk evaluation, and key findings and gaps benchmarked against the 'applicable standards' set out in the Terms of Reference.

Miro Forestry Developments Limited (hereafter "Miro") is a commercial forestry and timber products group operating in West Africa in Ghana and Sierra Leone. Miro is focused on the production of plywood for the construction market (both regional and overseas), transmission poles for electrification and sawn timber panel products for export markets predominantly in Europe (Glued Edge Boards). Miro has established and expanding plantations of fast-growing exotic timber.

In Ghana Miro operations are in Boumfuom, Chirimfa, Awura and Abrimasu and South Formangso Forest Reserves in the Asante Akim North district, Sekyere Afram Plains district and Mampong municipality and Asante Akim South district respectively, in the Ashanti Region. The total land holding is 19,733 hectares (ha), made up of c.12,000 ha planted (i.e., Eucalyptus species, Acacia, Gmelina and Teak) and 6,993 ha of conservation area which have been leased from the government through the Forestry Commission. Ghana has a mixture of mechanical and manual harvesting operations and most timber is processed into plywood at the Company's plywood factory in Ghana. Energy is a mixture of solar, grid and generators. Miro runs its own nursery and workshop which are located near the plantation. The HQ, where the plywood mill is situated at Drobonso. There are currently more than 1,500 employees.

The Sierra Leone operations are located near Mile 91 in the Tonkolili District (Yoni and Masimera Chiefdoms), where the total developed plantation land area is currently approximately 9,200 hectares (ha) leased from landholders with traditional land ownership rights under legally recognised customary laws. In Sierra Leone, a further 1279 hectares are managed as conservation areas. All harvesting in Sierra Leone is manual, all timber is processed on site at a Chromated Copper Arsenate (CCA) pole treatment plant and Edge Glue Board plant. In Sierra Leone the company is currently building a 60,000m³ output capacity Plywood mill plant to complement the operation. To supply these combined operations the company is planning to expand plantation land by approximately 1,000 ha per year for the next four to five years, with a target full plantation area of circa 14 to 15,000 ha and annual programme of harvesting / replanting of 1,500 ha per year. Miro has a R&D facility / nursery on site with a focus on seedling production from clones and seed. The nursery currently produces two million seedlings per year. Miro also has an increasing conservation programme which aims to target carbon markets and invests in replanting High Conservation Value buffer areas within the plantation estate with indigenous species produced by the company's R&D / nursery operation. All power is from diesel generators and a recently commissioned c.350kw of solar. All operations are centralised, with workshops and nurseries on site. There are currently over 1,400 employees, mostly from local surrounding communities who host plantation lands.

Miro obtained Forest Stewardship Council™ (FSC™) certification for 100% of its operations in 2017. All plantations and conservation areas are certified through FMU and all industry operations through CoC certification. In 2022, Miro obtained ISO 9001:2015 certification for its industrial operations.

Miro rolled out a smallholder outgrower programme in 2020, which now equates to approximately 200 hectares of planted smallholder plots across both countries. The scheme follows an agroforestry approach where farmers are provided with plants, tools, training and inputs for intercropping of trees on food crop farms. The main objective of this Environmental and Social Review is to independently review and verify the Company against the ESG reference

framework set out the TOR and clarify implementation of outstanding items of the previous review Environmental and Social Action Plan (ESAP) and aspects highlighted by the recent ESG committee due diligence visits.

Our review aimed to identify any potential E&S risks, compliance gaps, necessary mitigation and follow-up actions, and outline potential additional management / monitoring regimes to address any shortcomings.

The key objectives of this E&S Review are to:

- ▶ Assess progress against outstanding elements of the previous Environmental and Social Action Plan (ESAP) review;
- ▶ Investigate E&S aspects highlighted by the recent ESG committee due diligence visits;
- ▶ Provide a holistic E&S performance review and identify any key environmental and social risks associated with the Project; and
- ▶ Recommend actions for achieving and maintaining compliance with the 'Applicable Standards' used to benchmark the Project (refer to the 'Applicable Standards in Section 2.3.1).

1.2 ESG Risk Overview

Key positive aspects

Miro clearly adopts a proactive approach to the identification and management of perceived EHS risks. The company has a competent management team for E&S management and has a clear safety culture and attitude for continuous identification of E&S risks, non-conformance and improvement. Miro has clear processes for contractor compliance checks set out in the Third-Party Management Manual. These are also currently undergoing updates for social and environmental compliance to align with gaps raised this year by the ESG committee. Furthermore, the company has addressed many of the issues raised by previous lender ESAP reviews in a timely fashion.

Contextual GBVH Risks

Country contextual risks for GBVH are present in both Ghana and Sierra Leone with societal gender inequality, inherent stereotypes, and weak legal protection. At the societal level these risks are higher in Sierra Leone than Ghana¹. Miro's Safeguarding Policy sets out the company's principles and procedures on GBV. The company is also developing a Gender Action Plan via an external consultant / gender specialist, but GBVH risk screening is currently not included in the Third-Party Management Manual.

Potential Core E&S Contextual Risks

The main contextual risks concern road safety and fire management. The nature of the roads in Ghana (i.e. steep terrain etc) and driving culture among the population in Ghana present higher contextual risks for serious road traffic incidents. In Sierra Leone, road safety on narrow community roads is also a contextual risk. Fire management also continues to be a key contextual risk in both countries. In Sierra Leone, slash and burn shifting cultivation practices are widespread leading to high risks during the dry season. In Ghana, pastoral groups practice seasonal burning in plantation forest reserves as part of traditional grazing management.

¹ Sierra Leone ranks 155 on the Gender Inequality Index Rank as opposed to Ghana which ranks 135 (UN Women – Global database on violence against women). The Gender Inequality Index is a composite measure reflecting inequality between women and men in three different dimensions: reproductive health (maternal mortality ratio and adolescent birth rate), empowerment (share of parliamentary seats held by women and share of population with at least some secondary education), and labour market participation (labour force participation rate). Sierra Leone has a lifetime physical and/or sexual intimate partner violence rate of 53%, whereas for Ghana this is 24.4% (this is % of ever-partnered women aged 15-49 years experiencing intimate partner physical and/or sexual violence at least once in their lifetime).

Potential Lender/DFI Reputational Risks

Miro demonstrated clear awareness of core E&S risks, a clear safety culture and attitude for continuous identification of E&S risks, non-conformance and improvement. Based on reviews of local and international media / Human Rights reports, interviews with security teams and direct participation in community meetings in the field it is possible to conclude that Miro's operations pose no significant reputational risk for DFIs/lenders.

Potential Opportunities

Miro operates in contexts where inherent societal factors hinder gender equality. The company has an important opportunity to break down these barriers and has already made progress by successfully increasing the percentage of women in its workforce and promoting success stories within local media. Miro is also developing a Gender Action Plan. Miro could further capitalise on these achievements by ensuring the following safeguarding requirements are achieved:

- ▶ Creating gender disaggregated grievance committees / representation within the workforce, particularly separate women's worker representation to ensure equality of rights and working conditions;
- ▶ Identify key gender-based workforce constraints and address these where possible such as offering free menstrual hygiene products at Miro clinic / develop pre-school/nursery facilities; and,
- ▶ Ensure dedicated female representation within the social management team and that regular gender segregated focus group discussions are conducted with affected communities.

2. OVERVIEW OF THE E&S REVIEW

2.1 Objectives of the E&S Review

This environmental and social review has been conducted to assess overall current environmental and social management of Miro operations and evaluate progress in implementing outstanding Environmental and Social Action Plan (ESAP) actions raised by the previous lender review. This review also considered aspects of environmental and social risk management highlighted by the recent ESG committee 2022 due diligence visits. This environmental and social review considered compliance against the 'Applicable Standards' used to benchmark the Project (refer to Section 2.3.1).

2.2 Objectives of the E&S Review

The scope of work for this environmental and social (E&S) review of Miro's operations includes:

- ▶ Collect up-to-date information on the management of social and environmental risks across of Miro's operation in Ghana and Sierra Leone, including operational facilities (tree nursery / R&D facility / Plywood mill / Edge Glue Board Plant / Pole Plant), plantations, outgrower scheme, Project Affected Villages and Local Government Authorities;
- ▶ Identify current or potential future social and environmental issues / risks arising from current operations and future expansion plans;
- ▶ Assess progress against the previous Environmental and Social Action Plan (ESAP) review and investigate E&S aspects highlighted by the recent ESG committee due diligence visits;
- ▶ Provide a holistic E&S performance review and identify any key environmental and social risks associated with the Project;
- ▶ Recommend actions for achieving and maintaining compliance with the 'Applicable Standards' used to benchmark the Project (refer to the 'Applicable Standards in Section 2.3.1); and
- ▶ Provide an Environmental and Social Action Plan (ESAP) to facilitate achievement of obligations related to the Applicable Standards.

2.3 Methodology for the E&S Review

The primary activities undertaken during the E&S Review:

- ▶ Inception meetings with shareholders to discuss the scope of works and the fieldwork plan for the review;
- ▶ Compliance review of key ESMS documentation from Miro (Company policies incl. E&S policies, SOPs, corrective/preventative action register, ESIA's, Biodiversity Studies etc);
- ▶ A short desk-based human rights screening review (i.e. media reports, CSOs sites, national human rights institutions);
- ▶ Conduct of site investigations, consultations and data collection including:
 - Consultations / interviews with key Miro staff including the Planning Managers, HR Managers, Group Compliance Manager, OHS Managers and officers/assistants, Environmental Managers and officers, Social Manager and Community Liaison Officers, and other relevant staff during site investigations and background discussions over aspects of current operations;

- Consultations with Local Government Authorities about Miro operations and their interactions with local government to obtain government stakeholder perceptions on the benefits and impacts of the company;
- Visits to the timber processing and mill sites, nurseries / R&D facilities and plantation operations and discussions with applicable staff at each facility / operation to identify the extent of environmental and social risks, emergency planning, and mitigation management implementation and to identify potential compliance gaps;
- Community consultations with villages, including consultations with stakeholder groups of potentially affected peoples and discussion with villagers participating in Miro operations;
- Interviews with staff in full time employment (plywood mill workers and managers, edge board plant workers and managers, chainsaw operators and plantation managers) and casual employment teams (i.e. plantation brush clearing crews); and,
- Field investigations of plantations and harvesting/pruning/spraying/brush clearing operations.

2.3.1 Applicable Standards used for this assessment

As per the Terms of Reference (TOR), this review is benchmarked against relevant national environmental and social legislation and standards as well as several international best practice standards and guidelines including:

- ▶ The IFC Performance Standards;
 - Performance Standard 1 - Assessment and Management of Environmental and Social Risks and Impacts;
 - Performance Standard 2 - Labor and Working Conditions;
 - Performance Standard 3 - Resource Efficiency and Pollution Prevention;
 - Performance Standard 4 - Community Health, Safety, and Security;
 - Performance Standard 5 - Land Acquisition and Involuntary Resettlement;
 - Performance Standard 6 - Biodiversity Conservation and Sustainable Management of Living Natural Resources;
 - Performance Standard 7 - Indigenous Peoples; and
 - Performance Standard 8 - Cultural Heritage.
- ▶ General and Forest IFC/WB EHS Guidelines and the sector-specific EHS guidelines: Perennial Crop Production, Forest Harvesting Operations, and Sawmilling and Wood-based Products;
- ▶ Applicable local, national and international environmental and social legislation;
- ▶ All ILO conventions signed and ratified by the countries of operation, all ILO conventions covering core labour standards and all ILO conventions covering the basic terms and conditions of employment;
- ▶ UNGPs including Human Rights regional/country context and (potential) impact on and consequences for Miro; and,
- ▶ A gap analysis between current practices and studies in both countries against IFC Principle 6.

2.4 Project Overview

Miro was established in 2009 and is now one of the largest plantation forestry companies in West Africa. Miro initially focused on plantation establishment to FSC standards and established over 20,000ha of forest plantation in Ghana and Sierra Leone planting over 20 million trees. Miro plantation land in Sierra Leone is leased from traditional landowners

through an overall lease agreement signed with chiefdom authorities in 2011 which includes surface rent contributions to local government and traditional authorities (i.e. Chiefdoms) in accordance with national laws. In Sierra Leone, land for developed plantations is also subject to individual landowner agreements that include annual lease payments for customary landowners. In Ghana, Miro plantation land is Forest Reserve land leased from traditional authorities and the government through a Land Lease and Benefit Sharing Agreement with the Forestry Commission. This agreement is registered with the Regional Lands Commission. Miro established an outgrower programme in 2020, which now equates to approximately 200 hectares across both countries.

Miro produces plywood, finger jointed edge glue boards and utility transmission poles from its commercial forests and is the largest Plywood producer / exporter in West Africa. Miro's Ghana Plywood mill started production at the end of 2021 and serves the domestic Ghana market, wider markets in the West Africa region and export markets in Europe, MENA and North America. In 2021, Miro commenced production of treated utility transmission poles for the domestic market in Sierra Leone, along with finger jointed edge glue boards for the export market in Europe. As a group, the company currently employs over 2,500 people across both Ghana and Sierra Leone operations. Miro is currently constructing a new 60,000 m³ annual output capacity Plywood mill plant in Sierra Leone which is planned to be operational at the beginning of 2024. In Sierra Leone, the company has plans to expand its plantation land by at least 1000 hectares a year for the next four to five years to ensure a total plantation area of 14 to 15,000 hectares and annual harvesting / planting regime of 1,500 hectares in order to ensure adequate sustainable production. Miro has similar plans to increase the plantation estate in Ghana.

Miro obtained Forest Stewardship Council (FSC) certification for all operations in 2017. All plantations and conservation areas are certified through FMU and all industry through CoC certification. In 2022, Miro obtained ISO 9001:2015 certification for its industrial operations.

2.4.1 Project Location and Area of Influence

Ghana Miro operations are located in Boumfuom, Chirimfa, Awura and Abrimasu and South Formangso Forest Reserves in the Asante Akim North district, Sekyere Afram Plains district and Mampong municipality and Asante Akim South districts respectively, in the Ashanti Region (Figure 2-2). The total land holding is 15,882 hectares (ha), made up of c.10,000 ha of planted plantation (i.e., Eucalyptus species, Acacia, Gmelina and Teak) and 5,628 ha of conservation area. Miro Ghana's off-reserve facilities include the plywood mill which is situated at Drobonso and the nursery / R&D and Workshop situated near Serebuoso. In Ghana the company employs approximately 1,000 people who predominantly come from the surrounding area. Some of these employees have moved to the area from wider parts of the Ashanti region or other regions to the north of the country. Approximately, 18% of the workforce are women.

In Sierra Leone Miro operations are located near Mile 91 in the Tonkolili District – Yoni and Masimera Chiefdoms (refer to Figure 2-1). The total plantation area is approximately 10,000 ha (9,600 ha reported in 2022 annual report). Miro's operational headquarters includes nursery / R&D facilities, Edge Glue Panel Plant, Pole Plant, offices and management staff guesthouses / accommodation within a fenced 13 ha site. The majority of operations staff (90%) are recruited from local communities where Miro plantations are located (i.e. within 30km of operations site).

Miro Sierra Leone has approximately 1,279 ha of additional conservation land set aside within its plantation area, 150ha of which has been subject to rehabilitation planting of indigenous trees grown within the company's nurseries under a rewilding programme.

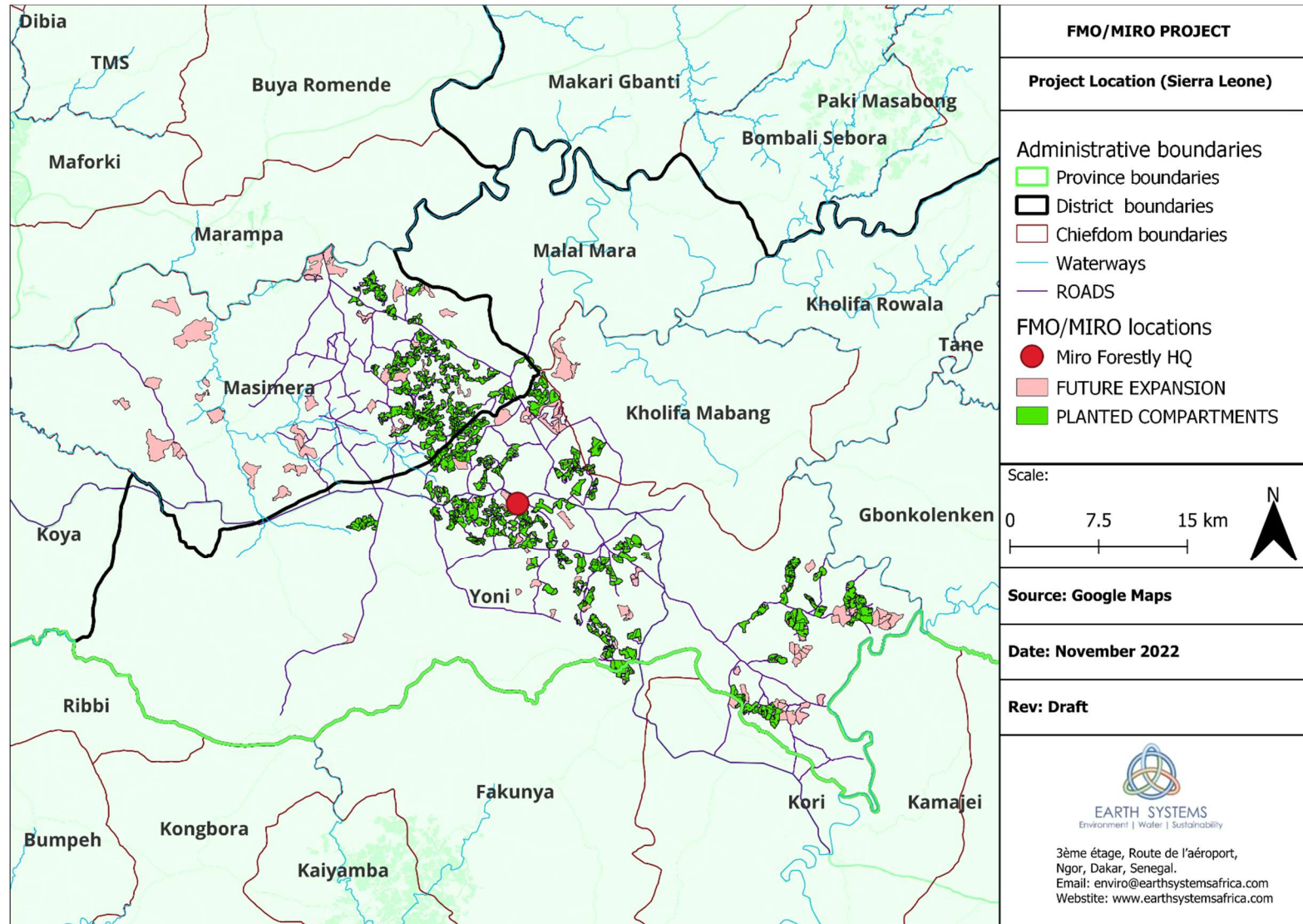


Figure 2-1: Location of Project operational facilities and current plantations in Sierra Leone

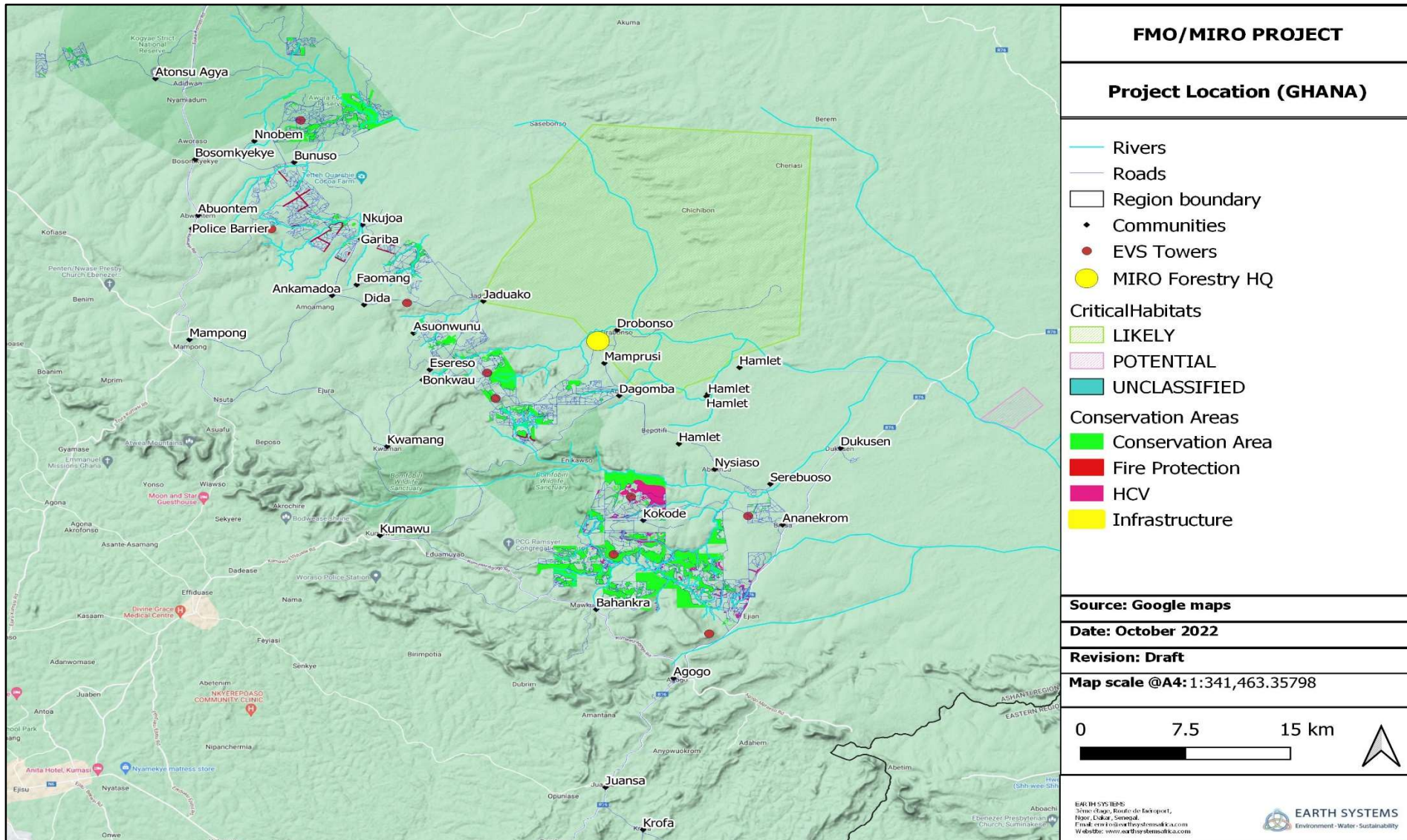


Figure 2-2: Location of Project operational facilities and current plantations in Ghana

2.5 Project Description, Design and Management

2.5.1 Management Structure

Miro's operational management at the country level consists of a series of different management positions including Harvesting Manager, Social Manager, Finance Manager, Silviculture Manager, Planning Manager and Environmental Managers, Nursery Manager, Business Operations Manager, Research and Development Manager, Occupational Health and Safety (OHS) Manager and so on (for the Sierra Leone Organogram see Figure 2-3 and Ghana Organogram see Figure 2-4). While the Group Compliance Manager and the Sierra Leone Environmental Manager positions are held by females, most management positions are currently held by males. These positions report directly to the country General Managers, who in turn report to the CEO, Strategy Director, and Chief Finance Officer. At the company-level 73% of employees in Sierra Leone are male and 27% female.

Miro's EHS compliance management falls to various key management positions (OHS, Social, Environmental) and associated support staff positions within each operational country (Figure 2-5). These managers report to the General Managers and most regularly to the Group Compliance Manager. The Group Compliance Manager reports directly to the CEO and functionally reports to the three General Managers. In Ghana, managers report to either the General Manager Forestry or General Manager Plywood depending on areas of operation. The Environmental Manager position in Ghana has recently been filled which will enable more oversight and active group level E&S management from the Group Compliance Manager position. At the company-level 77% of employees in Ghana are male and 23% female.

E&S KPI metrics are reported internally on a monthly basis (i.e. environment, OHS and social aspects) to the Group Compliance Manager and quarterly to the ESG committee.

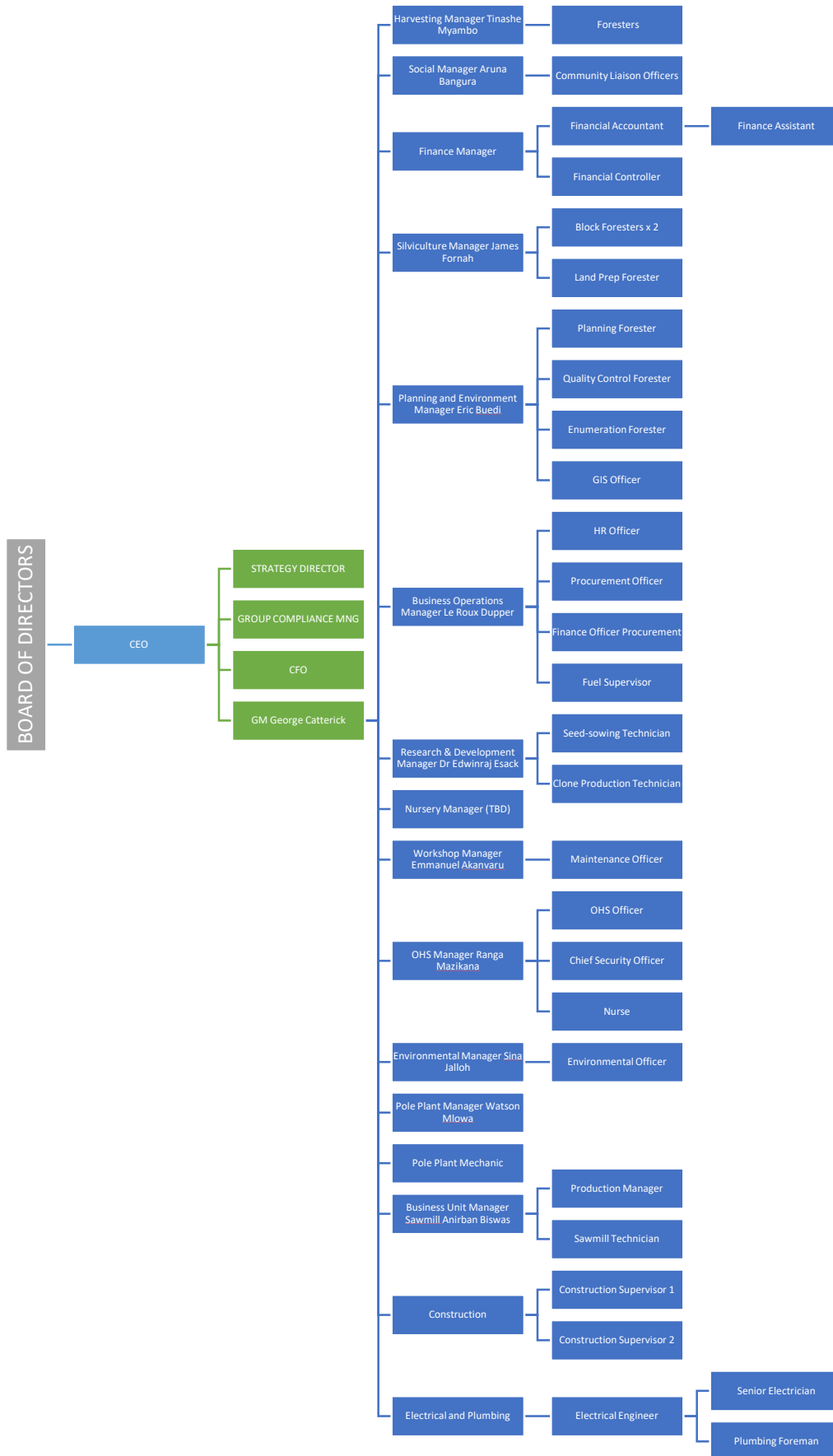


Figure 2-3: Miro's Summary Organisational Structure for Sierra Leone



Figure 2-4: Miro's Summary Organisational Structure for Ghana.

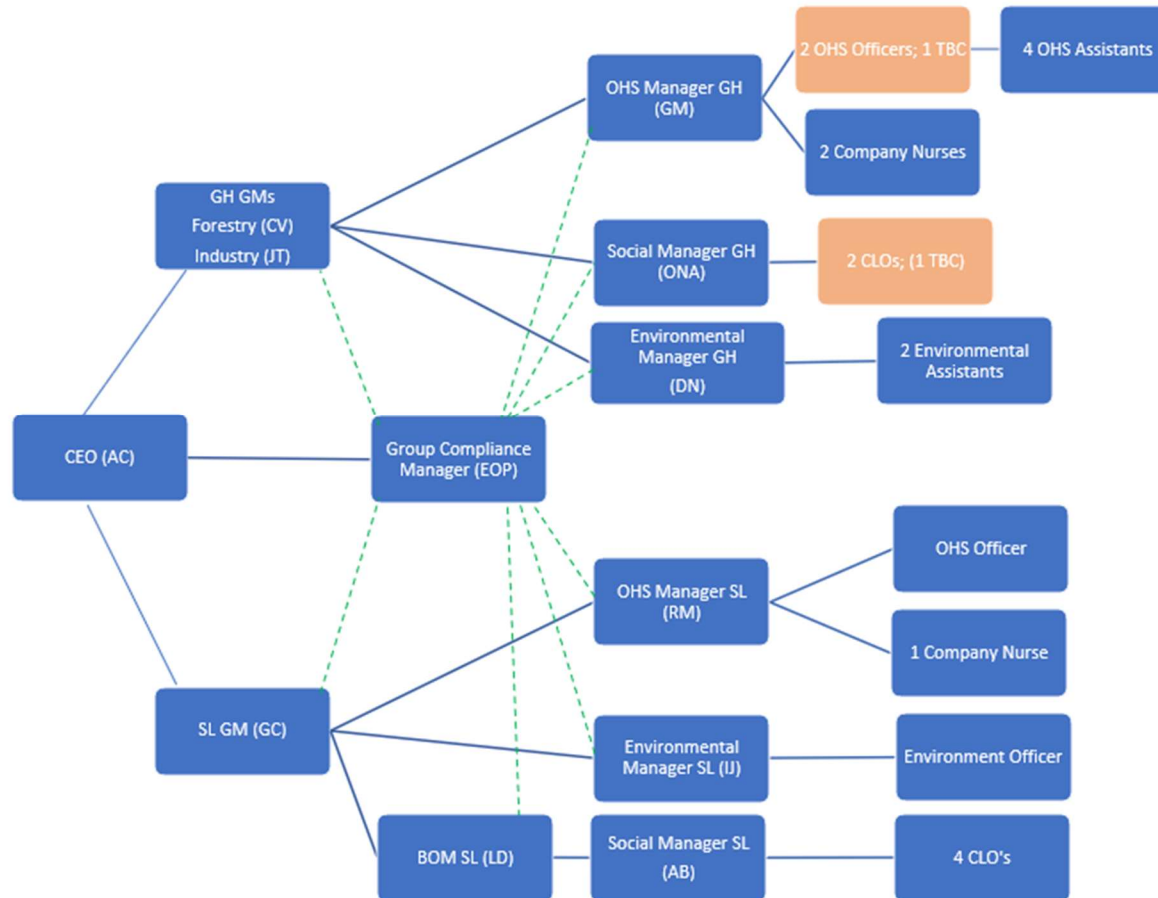


Figure 2-5: Miro's Summary E&S Organisational Structure

2.5.2 Project Activities (Operational Facilities and Plantation Operations)

Miro's operations include plantations, nursery / R&D facilities, workshops and timber processing mills and plants (i.e., plywood mill Ghana, Edge Glue Panel plant Sierra Leone, CCA treated pole plant Sierra Leone). Key observations related to these operations are summarised below.

Nursery and R&D Facilities – Sierra Leone

Miro nursery facilities have the capacity to produce tree seedlings from imported seed and via a sophisticated clone production system.

The Sierra Leone nursery is also trialling and innovating with a polytunnel hydroponic production of clone rootstock which will save land and natural resource requirements for clone hedges. The nursery currently produces around two million seedlings for plantation and conservation rewilding programmes and this includes approximately 600,000 seedlings from clone production, 600,000 from seed and the production of 800,000 seedlings of indigenous trees for the conservation programme. The nursery in Sierra Leone employs 52 full time employees and 11 seasonal workers and a further 20 short term contract workers. The nursery hosts a water treatment plant which draws water from the site borehole and has several stages of water treatment including settling tank, charcoal/sand filters and chlorination to ensure a sterile supply of water for nursery operations and site domestic water network. Some of the key features of the nursery EHS management measures are described below:

- ▶ For plant seedling production from seed the nurseries are using imported cocopeat as a plant germination material which is pre-soaked, fertilized and manually loaded into reusable plastic cells;
- ▶ Germinated seedlings are rotated through a series of polytunnels and hardening off areas;
- ▶ A series of permanent clone beds are located adjacent to the nursery and the nursery has begun using raised hydroponic beds under two polytunnels to reduce the land area required for the production of clonal material;
- ▶ In Sierra Leone, the nursery falls under the leadership of Dr Edwinraj Esack, the Research and Development Manager and an experienced plant scientist, and his senior team who select and trail suitable clonal trees from the active plantation areas;
- ▶ Nursery water is drawn from a borehole on site and treated through settling tanks and sand/charcoal filter before adding chlorine to ensure completely sterile water that will prevent disease infection in seedlings;
- ▶ Irrigation infrastructure has been functioning well and the irrigation system is designed to minimise water use and enhance plant production;
- ▶ In Sierra Leone, maximum water use occurs in the dry season between December to May and typically reaches around 1,400 m³ per month. In the wet season water usage decreases to around 600 to 900 m³ per month;
- ▶ The nursery compound in Sierra Leone contains one chemical store for Glyphosate and Plantacote fertilizer. The store is locked, ventilated and labelled with material safety data sheets on hand but not bunded due to the dry form of these chemicals / fertilizer. In both Ghana and Sierra Leone the nursery only uses plantacote fertilizer and weeding is largely completed by hand or via lawn movers for managed borders; and,
- ▶ Nursery wastewater is minimal and predominantly drains into the water table onsite. Miro report that the cocopeat saturation pits drain into a sealed sump.



Plate 2-5: Irrigation infrastructure at Sierra Leone Miro Nursery



Plate 2-6: Hydroponic Beds at Sierra Leone Miro Nursery

Nursery and R&D Facilities –Ghana

In Miro Ghana, the nursery facilities became operational in 2012 and produce high quality planting stock materials for Miro’s commercial planting programmes. The Ghana nursery is located on a 65ha site close to Ananekrom village which is 25 kms from the main Miro HQ in Drobonso. The nursery was developed under the leadership of Dr Menason Isac, Group R&D Manager and an experienced Tree breeding and clonal programme specialist in commercially important tree species. The nursery currently produces around two million seedlings for commercial plantations and indigenous species for conservation programmes and this includes approximately 850,000 seedlings from clone production, 600,000 from seeds of commercial species and seedlings of indigenous trees for the conservation programme. The Ghana nursery employs 25 full time employees and 25 seasonal workers to produce the seedlings and other maintenance activities according to the yearly target. Miro Ghana nursery is located close to the Ongwam River which supplies water through the year for nursery operations. The nursery also has two boreholes on site and has several stages of water treatment including settling tanks, charcoal/sand filters and chlorination to ensure a sterile supply of water for nursery operations and the site domestic water network.

Some of the key features of the nursery EHS management measures are described below:

- ▶ For plant seedling production from seed the nurseries use imported coco-peat as a growth medium which is 100% organic, pre-soaked, fertilized and manually loaded into reusable plastic cells. The low Electric Conductivity (EC) of coco-peat provides maximum germination with minimal waste;
- ▶ All commercially important tree species seeds are tested for germination and production plans are prepared according to the results; Seedlings are germinated under a 35% shade netting before hardening off;
- ▶ Germinated seedlings were transported to the hardening off areas to get the quality seedlings ready for planting;
- ▶ About 500 clones of Eucalyptus and Gmelina clones are planted in clonal hedges which cover about three hectares. These enable the production of coppice for the clonal deployment programme on yearly basis;
- ▶ Miro Ghana Nursery has well-developed infrastructure including greenhouses for clonal deployment programmes. The site is well managed and clean, with minimal waste produced;
- ▶ Irrigation infrastructure functions well and the irrigation system is designed to minimize water use and enhance plant production;

- ▶ In Ghana, maximum water use occurs in the dry season between November to April and typically reaches around 1,500 m³ per month. In the wet season water usage decreases to around 500 to 900 m³. Nursery wastewater is minimal and predominantly drains into the water table;
- ▶ In Ghana the nursery only uses Plantacote fertilizer and weeding is largely completed by hand (slashing) or via lawn mowers for managed borders;
- ▶ The nursery has an emergency assembly point and the team is trained on emergency drills and to follow instructions. No employees are allowed to work without required PPE; and,
- ▶ The nursery composes all organic waste materials (leaf litters) on site and produces its own additional organic compost for use at the facility.

Timber Processing (Plywood Mill (Ghana))

Timber processing consists of a plywood mill in Ghana situated at Drobonso (plus offices, workshop and management staff guesthouses / accommodation) within a fenced 42ha site. The Plywood Mill operates 24 hours a day on three shift rotations. The Ghana plywood mill became operational in September 2021, producing for the local and export market. Production in 2021 commenced with an initial 1,500m³ and in 2022 is anticipated to be in the region of 22,000 m³. Further expansion to production is planned to take annual output to between 45,000 – 60,000m³. Timber is manually handled at the entry point to the plymill and through various processing steps such as log de-barking, peeling, and sizing / grading during the preparation steps. Manual handling is also required through subsequent steps such as drying, quality control and glue application.

Miro are working to improve timber recovery efficiency. In Ghana, timber recovery rates are currently approximately 57% and the Quality Control Manager is working to improve this through continuous training of staff.

The plymill Energy use at the site for these timber processing operations is currently a mix of onsite generators, grid power and solar.



Plate 2-1: Plywood Mill Ghana



Plate 2-2: Plywood Mill Ghana

Sierra Leone (Edge Glue Panel Plant and Pole Plant)

Timber processing consists of an operational facility in Sierra Leone consisting of an Edge Glue Panel Plant and CCA Pole Treatment Plant (plus offices and management staff guesthouses / accommodation) within a fenced 13 ha site near Mile 91, in Tonkolili District. These facilities operate daily through two shift rotations from 0600 – 1530 and 15.30 to 1200 midnight.

Workers rotate shifts and interviews with staff suggest they consider night time workplace lighting to be adequate. Miro report that lighting levels are periodically tested / surveyed (i.e. via Lux meter) across all lit work areas and conform to ILO guidelines for safe working. According to the OHS Manager the next survey is due to be completed in January 2023. Timber processing operations are currently powered by a mix of onsite generators, grid power and solar. In Sierra

Sierra Leone the operation is off grid and powered by a diesel genset and a recently commissioned 236KWP solar plant with battery storage. Construction has commenced on a new 60,000m³ plywood mill plant in Sierra Leone to extend Miro operations and the company plans to investigate the integration of a 5MW CHP plant into this development. Other key E&S aspects of these timber processing facilities include:

- ▶ Forestry sawn timber is delivered to site via trucks and is directly processed without the need for process water (i.e. cleaning);
- ▶ Water consumption is largely related to domestic use by the workforce and mixing of CCA chemical at the pole treatment plant;
- ▶ In Sierra Leone after initial wet milling both the EGP wood and poles are kiln dried within the current four active kilns which are supplied with 85°C water from a biomass boiler. There are a further two kilns under construction and an external contractor was on site fitting a new control system that aims to significantly improve the operational efficiency of the kilns and reduce the drying times required;
- ▶ Timber processing sites were generally clean, well set out and secure with perimeter fencing and onsite security controlling site access. Security workers do not carry firearms;
- ▶ Miro are working to improve timber recovery efficiency. In Sierra Leone, the EGP timber recovery (excluding pole plant) is currently operating at around 10% efficiency and mill waste stockpiling will be reduced if current plans to improve the efficiency of EGP plant² sawing process are implemented and if a planned 5MW CHP plant comes online as part of the plywood mill development in Sierra Leone;



Plate 2-3: View of EGP plant Sierra Leone



Plate 2-4: EGP plant timber drying area Sierra Leone

² Note the EGP plant is operating at 10% efficiency in terms 90% of timber ends up in wet mill waste stream. The company is planning to implement measures to reach 20 – 25 % efficiency. New sawmill machines will improve efficiency. The new plywood mill will run at 50% efficiency processing 60,000m³ per year with 30,000m³ wet wood waste per year. The company is considering purchasing a CHP plant with 5MW capacity.



Plate 2-5: Timber receiving yard Sierra Leone



Plate 2-6: Dust extraction / dry waste segregation Sierra Leone



Plate 2-7: Wet mill waste stockpile Sierra Leone site (note Soil erosion gully within foreground)



Plate 2-8: Dry mill waste segregation EGP plant Sierra Leone

Plantation Operations (Ghana and Sierra Leone)

In Ghana, Miro total land holding is 15,882 hectares (ha) which includes c.10,000 ha planted (i.e., Eucalyptus species, Acacia mangium, Gmelina arborea, Corymbia torelliana and Teak) and 6,993 ha of conservation area which have been leased from the government through the Forestry Commission. Ghana plantation operations include a mixture of mechanical and manual harvesting operations. The Sierra Leone Miro plantation operations are located in the Tonkolili District, with the total developed plantation land area currently approximately 9,200 hectares (ha). In Sierra Leone, the company has plans to expand the plantation area by 1,000 hectares a year over the next four to five years. In Sierra Leone, the main species planted are also Eucalyptus species, Acacia, Gmelina and Teak.

Two main plantation forest blocks in Sierra Leone and two in Ghana were visited as part of this review. Observations and site interviews were conducted within active plantation harvesting operations, pruning team operations and manual weed clearance operations. Interviews were conducted with full time employees (chainsaw operators/pruning teams/brush clearing teams) and site operations management. A number of conservation areas were also visited. In Sierra Leone, this included a primary / secondary forest patch preserved and a number of wetlands within the plantation blocks. In Sierra Leone, the gently undulating topography and freely draining soils reduces risks of soil erosion from log skid trails and harvesting activities.



Plate 2-9: View of active plantation operations in Sierra Leone



Plate 2-10: Active plantation operations area Sierra Leone



Plate 2-11: Fire water station tank within plantation area Sierra Leone



Plate 2-12: Safety signage within active plantation operation

2.5.3 Project Activities (Expansion, Designs, Plans and Construction Activities)

Miro is currently implementing plans to scale up and grow its operations in both countries. This includes ongoing expanding plantation estate, ongoing construction and forthcoming design phase Plymill processing plant expansion. Key observations related to these expansion plans include:

Operational expansion plans and Plymill development – Sierra Leone

In Sierra Leone, the company has commenced construction on a new 60,000m³ plywood mill plant and plans to investigate the integration of a 5MW CHP plant into this development. At the time of this E&S review, construction had commenced via a third-party contractor, Saturn Amenities Corp. FZCO Dubai. The site occupies land adjacent to the main access road from the mile 91 highway. The development will include truck parking areas, perimeter fencing, laterite service road, concrete bypass road, a weighbridge, staff parking area, plymill (incl wet veneer area, general store, resin store, factory office, finished ply area), log yard, wood chip clamp, diesel storage, boiler room, workshop, clinic, offices, training room, workers toilets and staff canteen. Figure 2-6 provides the site layout plan for the ongoing Sierra Leone Plymill development.

As part of ongoing plantation expansion plans, the company aims to acquire up to 5,000 ha of additional plantation land in Sierra Leone to supply the combined operations and increase the annual planting and harvesting regime to 1,500 ha per year.

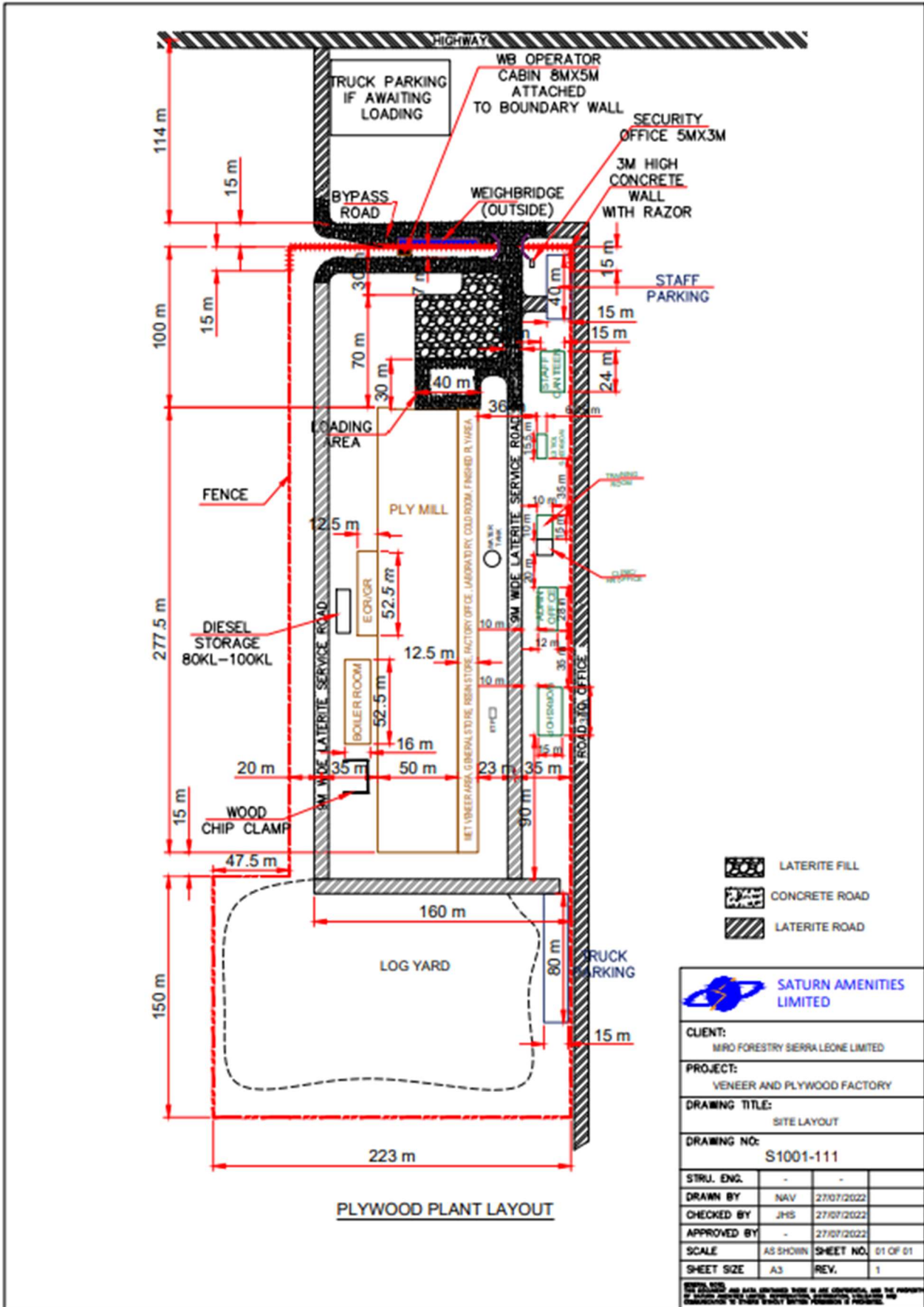


Figure 2-6: Miro Plymill Development Plan Sierra Leone

Operational expansion plans and Plymill expansion – Ghana

Miro is also at the planning stage of an expansion to the existing Plymill in Ghana. So far this expansion is at the design phase with detailed plans prepared by third-party contractor, Saturn Amenities Corp. FZCO Dubai. The development will involve an extension to the existing plymill via the addition of a new peeling plant and ancillary extended boiler room and finished ply store. Figure 2-7 provides the proposed site layout plan for the Ghana Plymill expansion development.

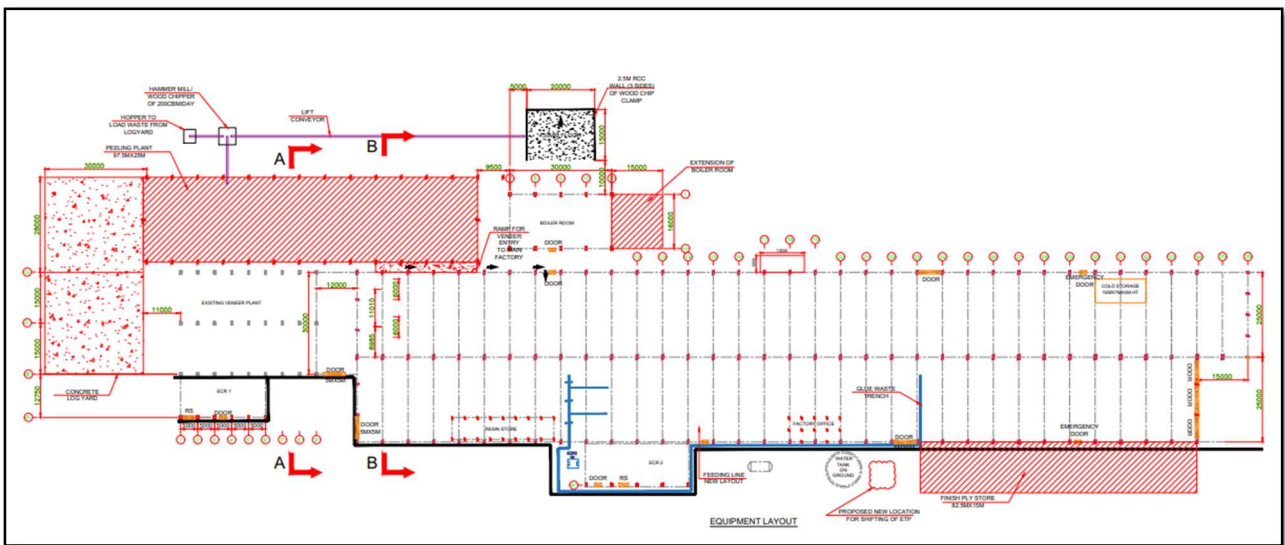


Figure 2-7: Miro Plymill Extension Development Plan Ghana

3. ENVIRONMENTAL AND SOCIAL MANAGEMENT - MIRO OPERATIONS

Overview

Overall, Miro shows good environmental and social governance across its operations with a clear safety culture and attitude for continuous identification of risks, non-conformance and improvement across various areas. This is led by a competent and well qualified E&S management team. The company has due diligence processes / compliance checks set out in the Third-Party Management Manual for the engagement of contractors, and this manual is also currently undergoing updates for social and environmental compliance to align with gaps raised this year by the ESG committee. The company has addressed many of the issues raised by previous lender ESAP reviews in a timely fashion. Any outstanding issues are understood and currently prioritised for follow up actions. A review of measures or corrective actions undertaken by Miro to fulfill previous outstanding lender ESAP requirements and recommendations from the last E&S Review by the ESG committee are detailed below and are also provided in Attachment A. In general, risk exposure and E&S performance for Miro shows acceptable alignment against the applicable standards used for this assessment. Highest levels of risk exposure (medium) are considered to be concerning land acquisition and involuntary resettlement, and biodiversity conservation and sustainable management. E&S performance is assessed as good across most E&S standard areas, with labour and working conditions, resource efficiency, biodiversity conservation and cultural heritage areas highlighted for performance improvements (fair caution). Actions to ensure improved compliance are highlighted in the relevant performance standard sub-sections.

Overview of Main Contextual Risks

Road Safety / Driver Culture

In Ghana, road safety is a primary OHS concern and roads present a high risk of vehicle collisions and there have been previous serious incidents of fatalities associated with personnel transport. In Sierra Leone, road safety is also a contextual OHS risk, especially on narrow community roads, but safety culture among drivers observed appeared strong. However, some grievances related to road safety incidents continue to appear on the Sierra Leone grievance register. In Ghana, further work is required to improve driver safety culture and Miro personnel vehicles were observed driving fast / potentially dangerously despite existing controls. Existing controls include vehicle tracking and driver training within both countries and roll-over protection added to vehicles. In Ghana, even with these controls and claims that continuous monitoring of GPS tracker data occurs a culture for unsafe driving seems to remain.

Contextual Human Rights Risks & Violations

Desk-based human rights screening review (i.e. media reports, CSOs sites, national human rights institutions) revealed no violations of human rights or critical voices against the company. Contextual risks for human rights are higher in Sierra Leone where excessive use of force by police is known to limit freedom of expression and rights to healthcare are restricted. This E&S review found that Miro is operating responsibly within this context, with appropriate background checks on recruited security personnel and security forces awareness of human rights through training.

Contextual GBVH Risks

Country contextual risks for GBVH are present with societal gender inequality, inherent stereotypes, and weak legal protection. As previously mentioned, at the societal level these risks are higher in Sierra Leone than Ghana. Miro's Safeguarding Policy sets out the company's principles and procedures on GBV and the company is also developing a Gender Action Plan. Gender based violence risk screening is currently not included in the Third-Party Management Manual. However, from a GBVH risk perspective the company's operational context presents reduced risk due to:

- ▶ No use of temporary, seasonal, informal or migrant workers in the workforce;

- ▶ No need for drivers to overnight and strict rules preventing night-time driving (all vehicles return to HQ at night); and,
- ▶ Proactive social / community team and outreach programme (using stakeholder meetings and messaging via local radio) to address gender equality and stereotypes.

Plywood Mill and Expansion in Sierra Leone and Ghana

Construction has commenced on a new 60,000m³ plywood mill plant to extend Miro operations in Sierra Leone and in Ghana plans have been prepared for the extension to the existing plywood mill via the addition of a new peeling plant and ancillary extended boiler room and finished ply store. There are plans to investigate the integration of a 5MW CHP plant into the Sierra Leone development and the Ghana development will include extended boiler room capacity. Miro has completed an internal change management plan and environmental assessment for the Sierra Leone plywood mill project. This includes a recommendation to engage an external consultant to develop an air quality monitoring programme. The company also plans to acquire up to 5,000 ha of additional plantation land in Sierra Leone to supply the combined operation and increase the annual planting and harvesting regime to 1,500 ha per year. As operations continue to expand towards full optimum production for the business model, the company will need to ensure any existing and new E&S risks are appropriately monitored and managed. For example, the company will need to ensure national compliance with air quality regulations in both Ghana and Sierra Leone for existing biomass boilers and any planned CHP. In Sierra Leone, plantation expansion may increase biodiversity risks at the wider landscape level requiring an update to the HCV assessment and increased focus on indirect effects on biodiversity.

High Inflation and Cost of Living

Inflation continues to rise sharply, particularly in Ghana. Global increases in demand for sustainable timber in the UK and Europe following the sanctions on Russian timber imports should bolster the company's export market position despite rises in fuel and export costs. Higher food prices are particularly acute for the Ghanaian and Sierra Leonian workforce and communities who depend heavily on imported rice as a staple food. Miro have implemented salary increases in both Ghana and Sierra Leone but may need to increase these further to keep up with the rising costs of living. The company should consider completing a living wage assessment to evaluate the cost of living and based on this assessment set a living wage minimum level for the company. Regular socioeconomic baseline monitoring within communities impacted by land acquisition will be important to ensure evidence of compliance with IFC PS5 (see Section 3.5).

3.1 Assessment and Management of Environmental and Social Risks and Impacts

Sierra Leone legislation – Under the Environmental Protection Agency Act, 2008 First Schedule (Section 24) establishes that EIA licences are required for projects resulting in conversion of land to forestry.

Ghanian legislation – Under the *Environmental Assessment Regulations, 1999, LI 1652 - SCHEDULE 1 (Regulation 1 (1))* forestry services applying pesticides or establishing forest in previously unforested areas require an environmental permit. Under SCHEDULE 2 (Regulation 3) forestry projects that involve land conversion require a mandatory EIA.

IFC Performance Standard 1 - Assessment and Management of Environmental and Social Risks and Impacts requires projects to conduct i) integrated assessment to identify environmental and social impacts, risks and opportunities of the Project; ii) effective management of environmental and social performance throughout the life of the Project; and iii) effective community engagement and management of grievances.

3.1.1 Current Context and Findings

Risk Exposure (high, medium, low)	Performance (exemplary, good, fair caution, unacceptable)
Low	Good

Miro has an ESMS framework consisting of group policies, EIAs, risk assessments, active E&S monitoring programme, Emergency Preparedness and Response Plan, Stakeholder Engagement Plan, stakeholder register, monitoring reports, and compliance / corrective action register. The company ensures national environmental compliance certificates / licences are up to date and monitored by external government agencies. While not all aspects of E&S management outlined in initial ESIA appear to have been implemented, overall the ESMS documents and implementation practices and procedures (i.e. environmental monitoring, OHS risk management practices) are clearly executed across each operational work areas and E&S principles aligned across core documents (i.e. Company Policies and Procedures, Third Party Manual, SOPs, Management Prescriptions). The company also has due diligence processes / compliance checks in place for the engagement/management of contractors, and these are set out in the Third-Party Management Manual which is currently undergoing an update. Air quality monitoring and emissions regulations related to the existing / planned emissions (i.e. potential inclusion of 5MW CHP in SL Plywood Mill development and 4-5 MW CHP in Ghana) should be considered a forthcoming priority. The water monitoring programme should also be updated to include groundwater monitoring in community areas given risks associated with some high-water demanding plantation species (i.e. Eucalyptus).

Miro has an internal Change Management Manual which was updated in 2021 (15.03.21) and sets out company procedures for the management of social and environmental risks associated with any operational changes. This includes the requirement for an internal Rapid Environmental, Safety and / or Social Change Assessment of proposed operational changes. For Miro's current ongoing Plymill expansion development in Sierra Leone, the company has notified EPA SL in writing of the intent to develop the proposed expansion site and EPA completed a site assessment inspection in December 2022 and considers the development to fall under the remit of the original 2014 ESIA/permitting. Miro expects the Plymill development to be authorised in writing by EPA SL upon commissioning. To date, an internal EIA report has been completed (Miro ERA Report August 2022), and in line with the company Change Management Manual a change management plan including a completed Rapid Environmental, Safety and/or Social Change Assessment (RESCA) Checklist has been prepared.

This Change Management process provides an initial screening of E&S risks, impacts and identification of potential mitigation and management measures. However, the Change Management Procedure has no specific checklist for identifying and specifying whether operational changes require updates to the existing ESMS / environmental monitoring programme or whether identified risks and impacts require the development of new monitoring capacity/activities. The procedure could also be improved by including a format for assigning responsibilities for management and mitigation activities, and whether these can be achieved through internal or external expertise.

The internal Miro E&S assessments documented for the Sierra Leone Plymill (i.e. Miro ERA Report, Change Management Plan) state that land developed and cleared for the development was occupied by Miro plantation forest and therefore vegetation clearance is considered of minimal ecological impact. The internal EIA report screens and identified a number of moderate E&S risks related to pre-construction phase land clearance and construction/operations such as soil erosion, soil compaction and changes to surface hydrology/flooding, biomass waste generation, noise, and dust.

It is understood from these documents that the Sierra Leone Plymill development will include a borehole to supply water for the site and water use efficiency will be monitored. However, in general the Project description detail is limited and the projected water demand is not clearly defined in the internal EIA and there are no proposed measures to monitor impacts to groundwater levels. Projected process wastewater quantities are also not defined, although the

log yard design is stated to include impermeable surfaces and runoff containment curbs as per World Bank OHS Guidelines. However, it is not fully clear how process wastewater will be treated once contained or surrounding water quality monitored. The current water quality monitoring programme does not include monitoring of surface water sites surrounding the Miro mill and pole plant operations, for example.³

Miro is exploring the integration of a new 5MW CHP into the development to enable heat and power production from wood waste. This will likely reduce any potential impacts from biomass wood waste and reduce energy demand and GHG emissions from the operation. However, Miro will need to confirm the existing and planned boilers/ CHP in both countries conform to air quality emissions regulation requirements under national and international E&S standards (i.e. Ghana Environment and Health Protection – Requirements for Ambient Air Quality and Point Source/Stack Emissions (GS 1236) 2019 / World Bank EHS Guidelines for Sierra Leone). A Miro AQNV Management Prescription document should be prepared. One key mitigation measure noted in Miro's internal EIA report is the need to engage an external consultant for the established of an air quality monitoring programme.

The Ghana plymill construction remains at the design phase, but this change management / internal E&S risk evaluation procedure should be completed in due course ensuring a similar appropriate level of evaluation for key E&S risks and impacts.

Identification of Risks and Impacts

- ▶ Miro's ESMS consists of a framework of group policies, EIAs, risk assessments, E&S monitoring, Emergency Preparedness and Response Plan, Stakeholder Engagement Plan, monitoring reports, and compliance / corrective action register, and Standard Operating Practices.
- ▶ While there is no formal internal review cycle for key ESMS documents, as the company's activities have evolved key documents from the ESMS such as SOPs are updated and subject to internal review. Targeted external specialist studies have also been commissioned for key aspects (i.e. biodiversity) and E&S performance is subject to monthly KPI internal monitoring (environment, OHS and social aspects⁴) and annual or biannual monitoring reports sent to national regulators.
- ▶ Site-specific risk assessments have been conducted which take into account site-based risks / hazards and provide preventive / management measures. Risk assessments that were observed appeared adequate and Miro OHS team periodically update these.
- ▶ Miro has an active Incident Risk Register which is used to record all lost time injuries and corrective actions. Data / metrics are reported monthly to GM/Senior Management. The Incident Risk Register appeared regularly updated and actively used by OHS management.
- ▶ Miro has a Third-Party Management Manual with E&S compliance obligations for contractors. However, the social compliance obligations and environmental compliance obligations for third party contractors are currently being updated by respective teams (see Section 3.2.1).
- ▶ Rapid Environmental Assessments are completed as part of new developments (i.e. SL Plywood mill development or as part of land acquisition process). While adequate as an initial screening of E&S risks, the REA for the Sierra Leone Plymill provides limited project design information to adequately assess impacts against the IFC standards and sector OHS guidance.
- ▶ Miro's operational licences are reviewed annually in SL and mostly every three years in Ghana. Miro has confirmed with EPA SL that no EIA addendum is required for the Plywood mill development. The adequacy of

³The water quality monitoring programme currently only monitors surface water quality in plantation operation areas

⁴ Key KPIs reported monthly for environment are water extraction/surface water monitoring/quality, E&S assessments, sensitive sites. For social KPIs the grievance register data and CSR activities are reported. OHS KPI reporting is extensive and includes incidents and accidents (lost time and non lost time).

E&S risk identification and management should be assessed for this development to conform with IFC PS1. Miro SL is also contacting the Sierra Leone Standards Bureau regarding national boiler emissions standards.

- ▶ Miro will need to confirm air quality emissions regulation requirements with regard to the existing boiler/site AQ baseline in both countries and proposed new 5MW CHP planned for SL Plywood mill development and 4-5 MW CHP at the Ghana Plywood mill against national and international E&S standards. Miro is planning options to assess stack emissions annually through a third-party specialist contractor. Miro should also establish the planned ambient air quality monitoring programme and baseline assessment in Sierra Leone (Note quarterly ambient air quality monitoring conducted in Ghana).
- ▶ Social risks in SL are assessed through a land acquisition and village mapping process. In Ghana, social risks are assessed through pre-planting assessment interviews with farmers/community and vulnerability assessments and key social risks include higher displacement risks related to the possible presence of illegal farming communities / settlers in government forest reserves (see Section 3.5).

Organisational Capacity and Competency

- ▶ Miro has created a competent management team for E&S management. The company has developed a clear safety culture, corporate attitude to improve gender equality and attitude for continuous identification of E&S risks, non-conformance and improvement. Training needs are regularly assessed by specific managers and employees report regular weekly tool box training sessions and specific training by external specialists where necessary (i.e. contractors providing chainsaw/logging training).
- ▶ Miro's E&S management is led by the Group Compliance Manager who reports to the CEO and GMs. All managers of E&S / OHS report in country to GMs and functionally to the Group Compliance Manager. The Miro social teams are well managed in both countries and resourced with competent staff with relevant backgrounds. However, in Sierra Leone and Ghana there are currently no female CLOs in position, but the team ensures that other female staff attend community meetings.
- ▶ The EHS management team are well qualified in their fields often to postgraduate level and with appropriate forestry sector / E&S management experience.
- ▶ Miro offers support for continuous professional development and has funded key staff to gain additional qualifications relevant to their roles. Miro has an active internship programme and some permanent staff members were recruited through this.
- ▶ Miro recently hired an Environmental Manager/Group Compliance Manager in Ghana which will enable more effectively group level E&S oversight as this position was previously based in the UK and required travel to the region. However, more technical assistance may be required under this position to create time for Group Compliance Management tasks and reduce the workload demand from aspects of Ghanaian E&S Management.

Emergency Preparedness and Response

- ▶ Miro has one Emergency Preparedness and Response Plan & Procedure for both Ghana and Sierra Leone. However, the current plan/procedure for SL now nearly two years old. Fire both at plantations and operational facilities is identified as most important emergency risk but emergency spills are not separated into their own category within the plan/procedure.
- ▶ As part of improving emergency preparedness Miro also conducts and reports performance through regular mock drills.
- ▶ Miro has fully equipped medical facilities and trained medical staff available both in Ghana (Plywood Mill HQ) and Sierra Leone. For all active forestry operations, a trained first aider is present and carries first aid kits.

- ▶ Local communities are involved in emergency planning through engagement in the Miro fire management system. This engagement occurs in both Ghana and Sierra Leone. Miro's fire management crews provide assistance to community fire watch / response teams. The system appeared to be working well according to community / employee interviews.

Monitoring and Review

- ▶ Miro's ESMS review consists of annual updates to environmental risk assessments and other key documents. Senior management are involved in the review process.
- ▶ Miro are monitored by local authorities as per the terms of operational licences in both countries. In Sierra Leone the EPA conduct external monitoring exercises for water consumption, waste, OHS and employee welfare.
- ▶ In Ghana the company's plywood mill and plantation expansion developments are inspected by the EPA in accordance with existing environmental permits. In Ghana, the Water Resources Commission conduct external monitoring of water consumption per the issued Water Use Permits. The Ghana EPA also conduct external monitoring exercises for water consumption, waste, OHS and employee welfare.
- ▶ Miro have maintained FSC certification for the last five years and has been monitored through respective FSC audit cycles.

Stakeholder Engagement

- ▶ Miro have stand-alone Stakeholder Engagement Plans for Ghana and Sierra Leone. These include stakeholder mapping analysis that is updated annually. Miro also keep a stakeholder engagement register, engage regularly with communities prior to forestry activities. Miro keeps reports from monthly multistakeholder meetings.
- ▶ In Sierra Leone, Miro conduct monthly multistakeholder meetings with affected communities and have developed a clear open-door culture at the Community Office. Local government are represented at multistakeholder meetings. In Ghana, regular community meetings are conducted. In Sierra Leone and Ghana, interviews with communities during the audit confirmed broad community support for Miro.
- ▶ Miro needs more female representation within the social management team and to conduct regular gender segregated focus group discussions in both countries. However, it should be noted that the current social team do involve female employees in monthly multistakeholder meetings. In Ghana, Women's groups have been set up in some of the communities.

Grievance Redress Mechanisms

- ▶ Miro has a formal grievance mechanism including anonymous reporting via email for workplace grievances or formal reporting via a grievance form and suggestion box. In Sierra Leone the social team have developed a community grievance mechanism adapted to the local context (high illiteracy rates) involving regular communication of an open-door policy at the Miro community office, monthly multistakeholder engagement events and sensitisation via radio broadcasts;
- ▶ For both aspects of the grievance mechanism, Miro issues acknowledgement letters and assigns internal responsibility for addressing grievances depending on the nature of any grievance;
- ▶ Communities were clearly aware of the grievance mechanism and open-door policy at Miro's community office and the company appears to have built good stakeholder engagement practices in both countries;
- ▶ Grievance records for 2022 in Sierra Leone showed regular village grievances relating to fire damage to crops or property surrounding the plantation area;

- ▶ In Ghana the main grievance reported by communities concerned complaints regarding drivers and road safety. The other frequent community grievance in Ghana relates to conflicts with Fulani herders when stray cattle move into plantation estates and graze on/damage certain species of seedlings. ⁵A number of village grievances were raised during this E&S review related to land compensation in Sierra Leone and requests by the community for Miro to extend the eligible developed plantation compensation area to include the 10-metre fire break land cleared around the plantation area each year (see Section 3.5).

3.1.2 Actions Required for Compliance with the Applicable Standards

Management and Monitoring Programmes

- ▶ Miro should update the Sierra Leone Change Management Plan and Internal EIA Report to include more Project description detail on projected process water demand and wastewater discharge to surrounding environment;
- ▶ Miro should consider updating the 2021 Change Management Manual to include specific E&S risk checklist for identifying and specifying whether operational changes require updates to the existing ESMS / environmental monitoring programme or whether identified risks and impacts require the development of new monitoring capacity/activities. Miro should also consider including a format for assigning responsibilities for management and mitigation activities, and whether these can be achieved through internal or external expertise.
- ▶ Miro should confirm air quality emissions regulation requirements related to the existing boilers/site AQ baseline, and in relation to ongoing Plymill constructions and develop their air quality management prescriptions/monitoring programme (real time / regular monitoring) against national and international E&S standards;
- ▶ Miro should update socioeconomic baselines more regularly to monitor important social indicators (i.e. food security/nutrition/vulnerability) among impacted communities.
- ▶ The water monitoring programme should also be updated to include groundwater monitoring in community areas given risks associated with some high-water demanding plantation species (i.e. Eucalyptus).
- ▶ Miro should develop measures to monitor impacts to groundwater levels from operational site extraction activities and measures to monitor surface water quality in areas where process wastewater will be discharged from operational sites.

Organisational Capacity and Competency

- ▶ Miro should improve capacity of social teams by hiring dedicated mid-level female CLOs in both countries and ensure women's focus group discussions are regularly conducted.

Stakeholder Engagement

- ▶ Miro should continue engagement with community and local authorities on emergency planning / fire management and seek options to reduce risks to community crops and livelihoods;

⁵ Herders perceive that Miro reacts only after cattle stray onto plantation estates, rather than warning villages when stray/unattended cattle are seen near the plantation boundaries.

3.2 Labour and Working Conditions

Sierra Leone Legislation - Company obligations associated with employee rights and working conditions are specified in the *Constitution of Sierra Leone 1991/ Employers and Employed Act 1962/70; Regulations of Wages and Industrial Relations Act 1971 /National Employment Policy (2015-2018)*

Ghanian Legislation - Company obligations associated with employee rights and working conditions are specified in the *Ghanaian Constitution 1992 and Labour Act No 651 of 2003*

IFC Performance Standard 2 - Labour and Working Conditions requires projects to ensure: i) fair treatment, non-discrimination and equal opportunity of workers; ii) effective worker-management relationships; iii) promote compliance with national employment and labour laws; iv) protection of workers including vulnerable workers such as children, migrant workers, workers engaged by third parties and workers in the client’s supply chain; v) safe and healthy working conditions for workers; and vi) avoidance of the use of forced labour. A number of specific requirements are also outlined in the standard.

ILO Conventions and Labour Standards - The ILO Conventions and Labour Standards provide guidance on all aspects of best practice HR management and employee protection. This includes specific guidance on employee rights, labour and working conditions, retrenchment, child labour and forced labour. Also includes ILO Basic Terms and Conditions of Employment (contracts, (living)wages and benefits, working hours, Worker accommodations),

BII Policy of the Responsible Investing (2022) - including safeguarding requirements and prevention of GBVH.

3.2.1 Current Context and Findings

Risk Exposure (high, medium, low)	Performance (exemplary, good, fair caution, unacceptable)
Low	Good to Fair caution

Miro has a series of key policies that confirm a corporate commitment to international and national labour standards and rights. This includes the *Anti-Corruption, Whistleblowing and Business Integrity Policy* and *Labour and Human Rights Policy*. The company has a formal grievance mechanism including anonymous reporting via email for workplace grievances or formal reporting via a grievance form and suggestion box. However, on the ground, given the custom for verbal discussion of grievances a culture of open discussion and reporting of workplace concerns via line management was observed and verified as acceptable to the workforce.

Workforce interviews confirm strong satisfaction with employee entitlements, prompt payment of salaries, supporting food security bonus scheme (i.e. monthly rice bags) and maternity leave benefits. One concern for the workforce is the cost of living given high levels of inflation (in Sierra Leone the price of imported rice has increased 50% over the last 12 months/ CPI in Ghana increased 43 points over the last 12 months). However, Miro has provided two 10% pay increases this year. Miro currently has no retrenchment or systematic succession planning. Promotion opportunities for local staff could be improved particularly in Ghana.

The main overall observations of this E&S Review concerning working conditions include:

- ▶ An employee induction programme is compulsory for new employees prior to commencing their duties. This extends to third party contractors via the Third-Party Management Manual;
- ▶ Employee interviews across all areas confirm awareness of rights to association and grievance mechanism.
- ▶ Employee interviews confirm less awareness of whistleblowing mechanism and formal grievance mechanism is not clearly displayed and there are no elected workplace representatives for men and women.

Working conditions and Management of Worker Relationships

Human Resource Policies and Procedures

- ▶ Miro has a series of policies and plans related to human resources that are compliant with country legislation in Ghana and Sierra Leone, and IFC PS2 / ILO Standards and Conventions;
- ▶ This includes Labour and Human Rights Policy, OHS Policy, the Safeguarding Policy and the Anti-Corruption, Whistleblowing and Business Integrity Policy. These policies establish company standards for OHS, Child Labour, training and development, equal opportunities / non-discrimination, drugs and alcohol. The employee handbook applies to full time employees above supervisor level and the Collective Bargaining Agreement (CBA) applies to full time and casual employees at supervisor level and below. They outline all employee rights and responsibilities, and sets out the grievance mechanism and whistle-blower policy.

Non-Discrimination and Equal Opportunity

- ▶ Miro's Labour and Human Rights policy sets out the company's commitment to non-discrimination and equal rights for employees;
- ▶ In Sierra Leone the company's social team provides equal community rights to employment benefits on the basis of village lands allocated to plantation development and the system appears to be well received by community stakeholders;
- ▶ In both Sierra Leone and Ghana, significant contextual barriers exist at the community level which continue to restrict the volume of nominations of women to employment calls. Miro is actively trying to break these down via radio messaging and has hired an external consultant to develop a Gender Action Plan.
- ▶ There are five Gender Champions in Ghana. However, there is currently no elected womens or mens workforce representatives in Sierra Leone to create safe avenues for reporting concerns or raising collective needs.

Protecting the workforce

Child Labour and Discrimination

- ▶ There has been no evidence of forced child labour during this E&S Review and Miro has a clear HR policy ensuring age checks are carried out for all new employees.
- ▶ Miro's safeguarding policy states the company's position on anti-discrimination and protection of vulnerable members of the workforce, However, discriminatory contextual barriers are present in both countries with regard to LTBTQ+ rights (i.e. considered illegal in law).

Indigenous peoples

- ▶ Risks with regard to indigenous peoples is low in both countries. In Sierra Leone, Miro operates in areas known to be strongholds for the dominant Temne and Mende ethnic groups that would not be considered indigenous people distinct from national society (IFC PS7).
- ▶ Similarly, in Ghana Miro operations are in areas with low risk of impact on ethnic groups considered indigenous people distinct from national society (IFC PS7).

Forced Labour

- ▶ There is no evidence that forced labour has occurred across any of Miro's operations. Miro's Labour and Human Rights Policy explicitly states the company will respect international core labour standards and eliminate forced labour.

Occupational Health and Safety

Miro is continuing to create a strong safety culture across operations. In Sierra Leone and Ghana, field investigations and review of documentation indicate that the key OHS incidents resulting in lost time injuries is trapped hands/finger

related to the manual handling of logs at the EGP plant. In Ghana road safety and vehicle accidents are also a key OHS concern. Miro's SL OHS Manager is currently exploring a solution to manual handling, potentially using log handling tongs. Further observations related to OHS include:

- ▶ Active use of Incident Register record for all lost time injuries, near misses and corrective actions. This data is reported monthly to GM/Senior Management;
- ▶ Miro currently has no dedicated rest facilities for mill staff in Sierra Leone but construction has commenced on a locker room/rest area;
- ▶ Miro Environment Team conduct periodic noise monitoring;
- ▶ In both Ghana and Sierra Leone the use of PPE is widespread across Miro operations;
- ▶ Workforce OHS at Miro nurseries is considered through provision of seating and raised work areas for any repetitive tasks;
- ▶ Air quality at Miro operations not currently monitored to ensure conformity to national or international standards in Sierra Leone. Boiler emissions and future CHP stack emissions are main sources of concern in both Sierra Leone and Ghana.

OHS at Miro Mill Operations (Plywood mills, EGP Plant, Pole Plant)

- ▶ Both Miro mill sites are secure with perimeter fencing, clear segregation of PPE zones and onsite security controlling site access;
- ▶ The raw timber receiving yard in Sierra Leone is not hard standing or covered and therefore becomes potentially difficult for workers with mud after rains. Timber currently requires manual handling onto sawmill beds at the EGP which results in a high level of hand/finger injuries through accidental trapping and this issue is known by the OHS manager and senior management who are currently seeking options to procure /trial timber manual handling tongs as a solution to this problem;
- ▶ In Sierra Leone the use of three-wheeled log loaders presents a hazard for improved management. These vehicles have fast unrestricted movement which presents hazard to surrounding workers and Miro currently does not have procedures to cordon off active unloading areas;
- ▶ In Ghana, air quality at the plywood mill is a health and safety concern for the workforce. AQNV monitoring is completed every three years and the last report, according to Miro, showed levels below permissible international standard limits. However, workers report glue vapour causes eye/throat irritations despite PPE usage. The plant has a spray area which is not enclosed and a large volume of paint dust covering surfaces;
- ▶ There is currently no dedicated work force rest room for workers in Ghana or Sierra Leone but a locker / rest room is under construction in Sierra Leone;
- ▶ Miro mills have dust extraction systems which separates dry timber waste. And the operation therefore segregates wet mill waste from dry mill waste as per World Bank guidelines for sawmills and wood-based products. Both wet and dry mill waste is used as biomass fuel for the kiln boiler in both Ghana and Sierra Leone. However, there is currently excessive amount of wet mill waste stockpiling in both countries. In the lower yard in Sierra Leone this stockpile is not covered. Site rainwater drains through this lower yard potentially discharging wet mill waste associated contamination into surrounding wetland streams. Some of this excessive wet mill waste is transported to community charcoal makers;
- ▶ Log decks were of a low height and the use of appropriate safety stops was observed;
- ▶ Stormwater / site drainage systems could be improved and there is visible soil/erosion/gullyng at the Sierra Leone pole plant / wet mill waste yard;

- ▶ Working conditions within the Miro operational plants can become excessively hot. In Ghana, particularly at the Plywood mill hot press operation employees can suffer from excessive heat issues. This issue is currently not being managed.

Miro Plantation Operations

In Sierra Leone, two main plantation forest blocks were visited as part of this review. In Ghana, one main forest block was visited and surveyed. Observations and site interviews were conducted in both counties within active plantation harvesting operations, pruning team operations and manual weed clearance operations. A number of conservation areas were also visited. In Sierra Leone, the company currently has 9,200 hectares of plantation forest and has plans to expand the plantation area by 1,000 hectares a year over the next four to five years. Active plantation operations were observed and interviews conducted with full time employees (chainsaw operators/pruning teams/brush clearing teams) and site operations management.

Key observations in relation to plantation operations include:

- ▶ Plantation operations OHS planning and risk management systems are clearly well established and well planned. A strong safety culture was evident, and all teams were equipped with appropriate PPE of their level of risk, first aiders were present and covered worker rest stations were set up. These appeared to be adequately resourced with shade, drinking water and first aid. Active harvesting areas had clear safety signage established and flag marshals at key entry and exit points. Interviews confirmed regular weekly toolbox safety training sessions are held and specific high-risk roles (chainsaw operators, chemical sprayers) receive external training from experts working to certified training standards. The plantation harvesting is conducted in a well-planned manner with pre-harvesting surveying resulting in directional felling, planned spaces for landings and extraction plans for skid trails. Clear safety procedures were noted for hang-ups and employees aware of these.
- ▶ It was not possible to inspect active spraying operations but it is understood spray teams receive regular training equivalent to agricultural standards. The company BOP (Best Operating Procedure) for spraying includes conditions when herbicide spraying can occur including maximum wind conditions.

Workers Engaged by Third Parties

Contractor/Third Party Management

- ▶ Miro has due diligence processes / compliance checks in place for the engagement/management of contractors, and these are set out in the Third-Party Management Manual.
- ▶ The manual is currently undergoing updates for social and environmental compliance to align with gaps raised this year by the ESG committee. For social compliance this includes ensuring contractors provide a grievance mechanism and incident register, OHS induction training for all employees, contractors comply with both national laws and customary norms related to labour, and that longer term contractors implement training and development plans for employees.
- ▶ The environment team have also completed an Annex for the Third-Party Management Manual outlining the requirements for environmental compliance with Miro policies including specific details on requirements for inductions, risk assessment, registration certification / licences, training and appointments, and incident register.

3.2.2 Actions Required for Compliance with the Applicable Standards

Working Conditions and Terms of Employment

- ▶ Given the high CPI increases in Ghana and Sierra Leone, the company should complete a living wage assessment to evaluate the cost of living and based on this assessment set a living wage minimum level for the company;

- ▶ Miro should consider establishing designated elected workplace representatives for both women and men within each operational area in order to create safe avenue for reporting concerns or raising collective needs, especially in Sierra Leone;
- ▶ Miro should conduct more employee sensitisation on the whistle-blower policy and create visible notices for the employee grievance mechanism, despite the low level of literacy among the workforce;
- ▶ Completion of the restroom facility developments to improve working conditions in both Ghana and Sierra Leone is also a high priority.
- ▶ Miro should implement management measures to avoid excessive heat stress at the Ghana plywood mill (i.e. potentially more frequent rotations for staff to limit exposure or use of cooling fans).

Occupational Health and Safety

- ▶ Finding a solution to improve manual handling of logs at Sierra Leone EGP plant and in Ghana should remain a high priority given the lost time injuries related to hand injuries;
- ▶ Miro should develop and commence air quality monitoring programme to confirm compliance with WB General OHS air quality standards in Sierra Leone. Stack monitoring is also required for boilers and future CHPs in both countries.
- ▶ In Sierra Leone Miro should develop safety procedures to cordon off active unloading areas used by three-wheeled log loaders to reduce OHS hazards.

3.3 Resource Efficiency and Pollution Prevention

Sierra Leone Legislation - Key legislation regarding resource efficiency and pollution prevention include *Environment Protection Agency (EPA) Act 2008 (and Amendment Act of 2010)*

Ghanian Legislation - Key legislation regarding resource efficiency and pollution prevention include Ghanaian Constitution 1992, Environmental Protection Act 1994 Environmental Assessment Regulations, 1999 (Li 1652)

Requirements of the IFC Performance Standards and IFC Environmental, Health, and Safety Guidelines are significantly robust to meet and exceed national requirements.

IFC Performance Standard 3 - Resource Efficiency and Pollution Prevention requires projects to: (i) promote more sustainable use of resources including energy and water and the reduction of project related GHG emissions; and (ii) avoid or minimise pollution from project activities.

3.3.1 Current Context and Findings

Risk Exposure (high, medium, low)	Performance (exemplary, good, fair caution, unacceptable)
Low	Fair caution

Resource Efficiency

Greenhouse Gases

- ▶ A greenhouse gas (GHG) emissions estimate for Miro operations has been conducted as part of this E&S review (refer to Attachment B). The assessment estimate covers Scope 1 (direct) and Scope 2 (indirect) emissions associated with the operation of the sites in Ghana and Sierra Leone for a typical year based on

information provided by the company on recent annual energy/resource use across all aspects of plantation operations, associated infrastructure, mill operation and vehicle transport. The assessment does not include emissions associated with construction activities at the new Plywood mill site in Sierra Leone. For this assessment, only Scope 3 emissions associated with fertiliser and herbicide application are included due these being the main significant supply chain inputs for the Project.

- ▶ Ghana Operations: The GHG emission assessment concluded that the Scope 1 and Scope 2 emissions alone accumulate to approximately 3,929 tCO₂e / year or 90% of total emissions. Scope 3 emissions associated with fertilizer, herbicide and insecticide application equate to approximately 413 tCO₂e / year or 10% of emissions. Top emissions include diesel transport and heavy equipment fuel consumption (Scope 1) at 3,872 tCO₂e / year; fertiliser use (Scope 3) at 174 tCO₂e / year; and insecticide (Scope 3) at 164 tCO₂e / year.
- ▶ Sierra Leone Operations: The GHG emission assessment concluded that the Scope 1 and Scope 2 emissions alone accumulate to approximately 2,805 tCO₂e / year or 93% of total emissions. Scope 3 emissions associated with fertilizer, herbicide and insecticide application equate to approximately 202 tCO₂e / year or 7% of emissions. Top emissions include diesel transport and heavy equipment fuel consumption (Scope 1) at 1,960 tCO₂e / year; generator use (diesel) at 755 tCO₂e / year; and fertiliser (Scope 3) at 116 tCO₂e / year.

Resource consumption at Nursery and R&D facility

Water usage at Miro's nurseries and R&D facilities in Ghana and Sierra Leone account of the highest use of water across the operation. The R&D Manager in Sierra Leone continues to implement measures to reduce land and water requirements which will provide important efficiencies as the plantation area expands to full production. This includes investment in two hydroponic trial tunnels for clonal production, with a further two planned. Other seedling production poly tunnels have minimised water use through the use of highly efficient sprinkler systems.

Key details of water use at the nursery / R&D facilities include:

- ▶ The nursery hosts a water treatment plant which draws water from the site borehole and has several stages of water treatment including settling tank, charcoal/sand filters and chlorination to ensure a sterile supply of water for nursery operations and site domestic water network;
- ▶ For plant seedling production from seed the nursery is using imported cocopeat as a plant germination material which is pre-soaked, fertilized and manually loaded into reusable plastic cells;
- ▶ A series of permanent clone beds are located adjacent to the nursery and the nursery has begun using raised hydroponic beds under two polytunnels to reduce the land area required for the production of clonal material;
- ▶ Irrigation infrastructure has been functioning well. The irrigation system is designed to minimise water use and enhance plant production;
- ▶ In Sierra Leone, maximum water use occurs in the dry season between December to May and typically reaches around 1,400 m³ per month. In the wet season water usage decreases to around 600 to 900 m³;
- ▶ In Ghana, maximum water use occurs in the dry season between November to April and typically reaches around 1,500 m³ per month. In the wet season water usage decreases to around 500 to 900 m³. Nursery wastewater is minimal and predominantly drains into the water table;
- ▶ Nursery wastewater is currently minimal and predominantly drains into the water table onsite. The cocopeat saturation pits drain into a sealed sump.

Mill Waste

- ▶ Wet and dry mill waste is effectively segregated at Miro operations. In Sierra Leone, the_EGP plant has a dust extraction system which separates dry timber waste and both wet and dry mill waste are used as biomass fuel for the onsite kiln boiler. Similarly, in Ghana the plywood mill has a dust extraction system which separates dry

timber waste for use as a biomass fuel for the onsite kiln boiler. In Sierra Leone, there is currently excessive amount of wet mill waste stockpiling in the lower yard which is not covered or engineered with drainage / surface water collection. Site rainwater drains through this lower yard potentially discharging wet mill waste associated contamination into surrounding wetland streams. Some of this wet mill waste is transported to community charcoal makers. This wet mill waste stockpiling will also be reduced if current plans to improve the timber recovery efficiency of EGP plant milling processes and if a planned 5MW CHP plant is integrated into the Plywood mill development.

- ▶ Miro use reusable plastic planters / trays within the nursery and reuse cocopeat growing medium as a means to improve resource efficiency.

Chemical Usage

- ▶ In Sierra Leone, Miro has been reducing Glyphosate usage through increased use of manual weed clearance teams (slashing crews).

Pollution Prevention

Wastes

- ▶ During site visits, chemical and fuel storage areas were observed at both the nursery and at the timber mill Sites. Waste segregation practices at Miro are implemented and operation sites across both countries have appropriate waste storage areas and composting regimes for organic wastes.
- ▶ Key hazardous wastes include CCA waste from the pole treatment plant in Sierra Leone, and in both countries workshop wastes (used oil, oil filters, vehicle batteries etc), used fluorescent light tubes, and medical waste from clinics. Miro keeps a waste register and records of any waste disposal offsite. Currently, the company uses licenced third-party disposal companies for hydrocarbon wastes in both countries. The company ensures these are licenced by national regulators but does not audit these as part of ongoing due diligence. Used Glyphosate and fertilizer sacks are stored in locked containers and bailed.
- ▶ Clinic wastes are disposed of through an MoU with the local hospital where they are incinerated with other medical waste.
- ▶ Miro operations have covered and bunded storage areas for waste hydrocarbons and have identified licenced disposal options. Both countries have dedicated fenced waste storage compounds. Only organic wastes are disposed of in landfill pits. Miro has an Emergency Preparedness and Response Plan but accidental spills are grouped with fire emergency response. However, active use of spill kits and soil bioremediation pits was observed on site.
- ▶ Emergency spills of hydrocarbons at workshops is a risk in Sierra Leone and Ghana that is frequently subject to corrective actions (lack of waste segregation, washbay separator clogged). In both countries soil in-situ bioremediation pits are used for contaminated soils. Soil in-situ bioremediation pits in Sierra Leone are currently at full capacity and increased capacity is required.
- ▶ General waste from Miro operations is segregated and potential material for recycling is sorted and stored in a fenced waste compound before collection by national recycling contractors (metals, glass, plastic etc). Glass is typically returned to suppliers for recycling. Organic wastes are composted on site. No waste is landfilled or burnt on site. Sewage waste is contained in on site septic tanks and periodically pumped by national companies licenced by the regulator (EPA).
- ▶ In Sierra Leone, the pole treatment plant has deep bunding, is covered and has hazard washdown shower. However, the CCA store is partially bunded and not covered. Miro is planning to build a covered extension to include the CCA store. Within the pole plant bund, residue contaminated soil and CCA is currently collected in plastic tanks. Miro is planning to construct a concrete bunker as a permanent solution to hazardous waste issues (fluorescent tubes, CCA residue, bails of plastic sacks etc) due to the lack of licenced contractors within

the country who can dispose of this waste. Used CCA containers are currently shredded to ensure no risk of these ending up in community use. Miro plans to return these shredded containers to an international licenced recycling supplier and is currently pursuing options.

- ▶ All CCA spent containers are shredded on site to ensure no risk of community use and stored in a covered area in Sierra Leone. Miro are exploring licenced international recycling contractor options.
- ▶ The boiler plant in Sierra Leone currently discharges a small amount of wood vinegar (pyroligneous acid) to the surrounding environment due to the high moisture content of the fuel feedstock.
- ▶ Stormwater / site drainage systems appeared to be limited, and erosion was observed, particularly at the Sierra Leone site. In Ghana stormwater drainage systems were also poor, particularly around the workshop where stormwater currently drains through the workshop area potentially washing contamination downstream. In both countries, there appears to be no perimeter water channel leading to a sedimentation pond.



Plate 3-1: CCA store at pole plant (note minimal front side bunding or cover from elements)



Plate 3-2: Stockpiled CCA waste residue at pole plant



Plate 3-3: Sierra Leone general waste storage compound



Plate 3-4: Organic waste composting area Sierra Leone

3.3.2 Actions Required for Compliance with the Applicable Standards

- ▶ Continue to seek ways to reduce wet mill stockpile via conversion efficiency investments
- ▶ Build additional soil bioremediation pits and increase frequency of environmental training within toolbox talk sessions for workshop workforce
- ▶ Improve bunding of CCA chemical store in SL Confirm CCA container recycling option
- ▶ Further reduce the use of Glyphosate where possible and seek more targeted application of chemicals

3.4 Community Health, Safety, and Security

IFC Performance Standard 4 - outlines requirements for Community Health, Safety and Security and requires projects to: i) avoid or minimise adverse impacts on the health and safety of project affected communities; ii) ensure safeguarding project property and personnel is carried out in accordance with relevant human rights principles and in a manner that avoids or minimises risks to project affected communities.

UN Guiding Principles on Business and Human Rights – outlines corporate foundational and operational principles for the respect of human rights, including measures taken to prevent, mitigate and where appropriate remediate adverse impacts to human rights.

BII Policy of the Responsible Investing (2022) including safeguarding requirements on GBVH

3.4.1 Current Context and Findings

Risk Exposure (high, medium, low)	Performance (exemplary, good, fair caution, unacceptable)
Low	Good

Miro has developed a strong safety culture and attitude for continuous identification of risks, non-conformance and improvement which extends across affected community lands throughout operational plantation areas. Measures to improve community safety around active harvesting operations were observed, including safety signage and flag marshalls at key entry and exit points. Harvesting management teams conduct regular sensitisation with nearby communities to keep them apprised of active operational areas.

In Sierra Leone communities have previously raised concerns over the use of Glyphosate herbicides and the company now completes regular testing of surface water as part of the environmental monitoring programme. Previous ESG Committee reviews highlighted the importance of groundwater monitoring of aquifers, particularly those proximal to high water demand species (i.e. Acacia Mangium/Eucalyptus) and the environment team are preparing a monitoring plan. Some vehicle safety related incidents on community roads and fire damage to crops / property continue to be reported on the community grievance register. Important observations and areas for improvement include:

Community Health and Safety

- ▶ Miro SL provides regular community sensitisation through radio broadcasts and events on road safety targeted at Okada (motorcycle taxi) drivers.
- ▶ However, some Miro driver safety related grievances still occurring in SL on 2022 register.
- ▶ In Ghana, road safety is main OHS concern with high risks of vehicle collisions and further work required to improve driver safety culture. Personnel vehicles were observed driving fast / dangerously despite existing controls (i.e vehicle tracking and driver training).

Community Programmes and Livelihoods

- ▶ Miro has an active CSR community programme that invests in agricultural livelihood projects. This includes over 150 ha of rice farming assistance, investment in community boreholes, scholarships, feeder road upgrades and bridge infrastructure.
- ▶ These community investments provide a positive impact on livelihoods. The company also has rice bonus schemes for employees.

GBVH Risks

- ▶ From a GBVH risk perspective the company's operational context presents reduced risk due to (i) no use of temporary, seasonal, informal or migrant workers in the workforce; (ii) no need for drivers to overnight and strict rules preventing night-time driving (all vehicles return to HQ at night); (iii) and, proactive social / community team and outreach programme (using stakeholder meetings and messaging via local radio) to address gender equality and stereotypes.

Hazardous Waste

- ▶ All spent CCA containers at the Sierra Leone pole plant are shredded and stored under cover awaiting a licenced disposal / recycling contractor option. This is to eliminate the risk of CCA container waste ending up in communities. The Environment team are currently pursuing an option with a US company.

Ecosystem Services

- ▶ Communities in Sierra Leone are permitted to collect non-timber forest products (NTFP's) from within plantation areas or conservation areas via a permitting system. Some plantation compartments contained preserved indigenous trees, where present, and species of potential NTFP value to communities (i.e. Giant Bamboo in Sierra Leone);
- ▶ A high number of people were also observed making charcoal (Timber forest products - TFP's) from residue timber within clear felled post-harvested compartments. Although not formally sanctioned, Miro allows this practice to continue;
- ▶ In Ghana, some villages are also permitted to make charcoal from dead trees and waste within plantation areas. However, a few villages have been forbidden to continue this practice after starting to cut down healthy trees.
- ▶ Miro SL also arranges the delivery of wet mill timber waste to charcoal makers who pay a small fee to cover fuel costs.

Security & Human Rights

- ▶ Miro operational sites (plywood mill, EGP plant / pole plant, nurseries etc)_ are effectively fenced and the security force provides 24hr services to secure the site. External contractors, X3 in Ghana and G4S in Sierra Leone are currently providing security for the Plywood mill development and camera system in Sierra Leone. Miro ensures contractors and internal security team conduct background checks on employed security staff which includes police clearance checks and letters of endorsement from their chiefdom.
- ▶ Miro Security team Chief Officer reports that training has been provided on human rights by external experts. No firearms are carried by Miro security teams in either country.

Emergency Preparedness and Response

- ▶ Miro communities are involved in emergency response through participation in the fire management system;

- ▶ In Sierra Leone, the community fire management system consists of customary by-laws established within participating chiefdoms, stakeholder engagement / agreement on how to address fire risks, development of community fire management plans, establishment of 10m fire breaks around plantations and community payments to clear these fire breaks of vegetation on an annual basis;
- ▶ In both countries communities also elect fire marshals, and are paid incentives through bonus payments for controlling/preventing fires;
- ▶ In Ghana, community fire watchers are hired and provided with binoculars to watch for smoke from fires and report fires in the dry season.
- ▶ Miro fire standby crews also respond to and support community efforts to control fires.
- ▶ However, community grievances related to fire damage to crops and property remain high.

Ecosystem Services / Health

- ▶ Miro Environment and Sustainability Policy promotes HCV protection and protection of fragile / unique ecosystems;
- ▶ Priority ecosystem services identified and protected through village mapping exercises at land acquisition stage.
- ▶ Community interviews confirm that permit system enables continued community access to medicinal / food plants within both conservation and plantation areas.
- ▶ Community boreholes have been provided as part of CSR investments in both countries, but groundwater levels are not currently monitored as part regular environmental monitoring (only streamflow).

3.4.2 Actions Required for Compliance with the Applicable Standards

- ▶ Improve driver related safety through investment in audible reversing devices, dash cams / near miss monitoring and reinforced safety training through toolbox sessions;
- ▶ Improve protocols for involvement and sensitization of communities in controlled burn operations and planning;
- ▶ Improve support for community emergency fire control through increasing support from Miro standby crews and more community training on effective fire control.
- ▶ Conduct groundwater monitoring in community areas subject to plantation development.

3.5 Land Acquisition and Involuntary Resettlement

Sierra Leone Legislation – Key legislation related to land acquisition and involuntary resettlement includes the *SL Environment Protection Regulations 2013*, the *Constitution of Sierra Leone 1991 (as amended in 1997, 2001, 2008, 2013 and 2016)*, and the *National Land Policy 2005 (amended 2015)*.

Ghana Legislation - Key legislation related to land acquisition and involuntary resettlement includes the *Constitution of the Republic of Ghana (1992)*, *Administration of Lands Act 1962, Act 123*, *The Ghana Land Policy 1999* and *The State Lands Act*.

IFC Performance Standard 5 - Land Acquisition and Involuntary Resettlement, requires projects to: i) avoid and/or minimise the displacement of project affect people; ii) avoid forced eviction; iii) anticipate, avoid / or minimise adverse social and economic impacts from land acquisition or restrictions on land use; and iv) improve or restore livelihoods and standards of livings of displaced persons.

UN Guiding Principles on Human Rights.

3.5.1 Current Context and Findings

Risk Exposure (high, medium, low)	Performance (exemplary, good, fair caution, unacceptable)
Medium	Good

No direct current evidence of involuntary physical or economic displacement within Miro operations was found in Sierra Leone during this E&S Review. However, landowner grievances related to a lack of compensation for lands used as a 10 metre fire break buffers around the Miro developed plantation land area were noted during stakeholder interviews. In Ghana, during the development of forest compartments, Miro continues to encounter illegal farming activities prior to plantation development in leased Forest Reserve land. Under current practice in these situations, Miro notifies the Forestry Commission who engages with Project Affected Persons and manages the economic displacement process. The Miro Ghana social team then complete their own social risk and vulnerability assessment which includes surveying impacted farms, recording lists of land users (Project Affected Persons) and settlement of origin, and basic details on area of land lost, crops cultivated and awareness of plantation development. As part of this, the social team also complete a vulnerability assessment to identify especially vulnerable PAPs (such as those with no alternative land access, those with limitations related to legal access (female headed) or those with limited employment prospect (elderly)). Miro is planning to continue to monitor the socioeconomic vulnerability of these PAPs after economic displacement and is preparing a monitoring framework. Miro's social vulnerability monitoring of displaced illegal farmers does not include a detailed household census of impacted persons (only household heads are recorded) or detailed inventory of any lost assets on land beyond basic details of the main crops cultivated. Similarly, there is no available information on economic losses to land based assets (i.e. economic trees and other land based assets), although Miro report that economic displacement tends to impact cultivated crops only.

Going forward, to address the gaps between the current national process and IFC PS5, Miro should develop measures to record lost assets on land, restore livelihoods (i.e. livelihood support package for alternative legitimate farmland or transitional livelihoods) and an IFC PS5 social monitoring framework. In accordance with IFC PS5, the company will need to develop and specify these measures within an Environmental and Social Action Plan to complement the national process and provide additional compensation for lost assets and actions to restore livelihoods where necessary. It is recommended that the company engage a specialist consultant to complete this assessment on the current gaps between this existing process and develop specific recommendations concerning mitigation measures and livelihood restoration strategies to ensure conformity to IFC PS5.

Compensation and Benefits for Land Owners

- ▶ Miro Land and Development Policy commits to protect rights of landowners and cultural heritage, and includes guidelines and an Implementation Framework outlining the land acquisition due diligence process;
- ▶ In Sierra Leone, where Miro plans to extend the plantation estate within its overall lease area the social management team lead a land and village mapping process, and the company maintains a 30% rule for total village lands leased from each community to protect food security;
- ▶ During participation in the multistakeholder engagement in Sierra Leone some Section Chiefs raised concerns over the lack of compensation for lands used as fire break buffers around the Miro developed plantation land area. Miro has been implementing a Cassava buffer zone project on this land as a means of providing benefits and communities are contracted / paid to clear the firebreak each year;
- ▶ Miro has a five-year cycle for socioeconomic monitoring with the last monitoring in Sierra Leone completed in 2019. Survey teams record data on livelihoods, income, expenditure, infrastructure, health, water access. Regular monthly multistakeholder forum meetings are conducted by the Miro SL social team with impacted landowners.

Displacement

- ▶ Displacement risks higher in Ghana with future expansion due to the presence of farming communities / settlers in government forest reserves.
- ▶ During the development of forest compartments, Miro continues to encounter illegal farming activities prior to development in leased Forest Reserve land. The Forestry Commission is engaged to manage the economic displacement process and Miro completes its own socioeconomic risk and vulnerability assessments.

3.5.2 Actions Required for Compliance with the Applicable Standards

- ▶ Miro should update socioeconomic baselines more regularly and implement periodic food security/nutrition/vulnerability monitoring in impacted communities in order to monitor the impacts of land acquisition.
- ▶ In Sierra Leone, Miro should ensure landowners are fairly compensated for lands utilised by fire breaks in cases where the fire breaks are established outside of the boundaries of the Miro lease areas.
- ▶ For past cases of economic displacement Miro should ensure the forthcoming social monitoring framework clearly identifies all Project Affected Persons (i.e. household level census) and includes specific monitoring measures to track socioeconomic status and livelihood restoration to IFC PS 5. The current Miro social vulnerability monitoring and mitigation measures for displaced farmers should be elaborated into an Environmental and Social Action Plan which documents actions to restore livelihoods where necessary to IFC PS5 standard.
- ▶ For future cases of illegal farming in Ghana, Miro should engage a specialist consultant to develop measures / procedures to record lost assets on land, restore livelihoods (i.e. livelihood support package for alternative legitimate farmland or transitional livelihoods) and a social monitoring framework to ensure compliance with IFC PS5.

3.6 Biodiversity Conservation and Sustainable Management of Living Natural Resources

Sierra Leone Legislation – the main applicable legislation related to biodiversity conservation includes the *Environment Protection Agency (EPA) Act 2008 (and Amendment Act of 2010)*, *Forestry Act 1988*, *Forestry Policy 2010*, *Forest Regulations 1989*, *Wildlife Conservation Act 1972 (reviewed in 2013)* and *Conservation and Wildlife Policy 2010*.

Ghanian Legislation – The main applicable legislation related to biodiversity conservation includes *The Forest Protection (Amendment) Act, 2002. Act 624.*, *Timber Resource Management and Legality Licensing Regulations, 2017*, and the *Ghana Forest and Wildlife Policy 2012*.

IFC Performance Standard 6 - provides for Biodiversity Conservation and Sustainable Natural Resources Management and requires projects to: i) protect and conserve biodiversity; ii) maintain benefits from ecosystem services; and iii) promote sustainable management of living natural resources by integrating conservation needs and development priorities into project practices.

Forest Stewardship Council - FSC Principles and Criteria – is comprised of 10 Principles that are generally well aligned with IFS PS, but provide more specific obligations with respect to plantation forestry. The FSC Principles include: 1) compliance with laws; 2) workers' rights and employment conditions; 3) indigenous peoples' rights; 4) community relations; 5) benefits from the forest; 6) environmental values and impacts; 7) management planning; 8) monitoring and assessment; 9) high conservation values; and 10) implementation of management activities. FSC Forest Management Standards and FSC Forest Management certification requires the conduct of a High Conservation Value

Forest Assessment, in-line with FSC and the High Conservation Value Resource Network framework for required information.

3.6.1 Current Context and Findings

Risk Exposure (high, medium, low)	Performance (exemplary, good, fair caution, unacceptable)
Medium	Fair Caution

Protection and Conservation of Biodiversity

Miro shows clear commitment to protecting and enhancing High Conservation Values (HCV) across their plantation development areas. Biodiversity management measures within the ESMS are documented in the company's Natural Resources Manual / HCV Area Management Prescriptions. In Sierra Leone, Miro engaged external specialist ecologists to conduct a HCV Assessment in 2016 which included recommendations for the management and enhancement of biodiversity / HCV both within and beyond the development plantation area. The resulting report is well aligned with HCV regulations (FSC IGI) and IFC PS6. In both countries, FSC certification has been secured, demonstrating conformance with the 10% rule. Specialist supplementary external biodiversity studies have been completed in both Sierra Leone (2021) and Ghana (2022). These studies appear scientifically robust and provide important detail on the key biodiversity values. The main observations from our E&S review include:

- ▶ Miro has a Land Development Policy which includes guidelines and an Implementation Framework whereby the company considers the results of the overall HCV assessment which identified the key HCV priorities, maps out any HCV sites based on prior HCV assessments, areas for potential restoration (i.e. secondary forest regrowth) and cultural sites before completing an internal Rapid Environmental Assessment prior to land development;
- ▶ Miro's 2019 HCV Management Prescriptions and HCV assessments include details of the key HCV values across categories 1-6 requiring active monitoring and management. In Ghana, the 2019 HCV Management Prescriptions include active protection and monitoring of 100m buffer areas around protected areas for species diversity, and protection, monitoring and enrichment planting for key priority ecosystems, ecosystem services and habitats. This follows the findings of the specialist HCV assessment and the Management Prescriptions acknowledge the potential use of external expertise where necessary. However, external experts are engaged for monitoring exercises at five-year intervals only under current practice;
- ▶ In Sierra Leone, plantation areas developed to date have been largely modified habitat within highly degraded farmland, and in line the 2016 HCV assessment Miro sets aside for conservation any significant areas of secondary forest regrowth or areas with sufficient diversity of species for recovery. Sacred forest shrines and wetlands are the other key HCV areas subject to Miro protection under the SL HCV Management Prescriptions.
- ▶ Miro completes quarterly and biannual monitoring of HCV sites in both countries. Monitoring includes flora and fauna, and signs of disturbance, and condition of HCV boundaries. Species monitoring guides and lists have been reviewed. The field monitoring forms appear to be organised by IUCN red list status and record location data. However, the species list database for HCV sites appears to only include flora species and no combined species list database has been shared that segregates species according to rare, threatened, endemic, nationally / internationally protected status;
- ▶ The Miro Planning and Environment team complete GIS analysis and Rapid Environmental Assessments to identify and map HCV areas during land expansion (i.e. riparian zones, wetland, secondary forest, fragment forest). The Planning and Environment team integrate findings from prior HCV assessments and external

biodiversity studies into this mapping process. The prioritised HCV areas shows good alignment and implementation of the results of prior HCV assessments and external biodiversity studies;

- ▶ Wetlands and fragmented indigenous forests within plantation estate are surrounded by cleared 10m buffer areas. Biodiversity reserves and high conservation value areas were visited. This includes primary / secondary forest remnant patches and a number of wetlands within the plantation blocks. These areas were separated via appropriate buffer zones, particularly around riparian areas;
- ▶ In Sierra Leone sacred forest shrines or groves are the main cultural heritage sites that contain indigenous forest and HCV, and these are protected with 10m buffer zones. Wetlands are surrounded by 10m buffer zones and riparian areas are segregated by a 30m buffer which conforms to national legislation. This was confirmed during the field assessment. As mentioned previously, any secondary forest regrowth older than 5 to 6 years is considered to contain conservation value and is therefore set aside from the developed plantation area and prioritised for restoration;
- ▶ Miro has an emerging rewilding / restoration planting programme (indigenous species) ongoing in Sierra Leone with 500ha planned to be planted next year. The restoration programme is not driven by any systematic assessment of priority sites or suitable species. There is currently no consideration of landscape connectivity and sites for rehabilitation are selected on the basis of the presence of secondary forest regrowth. In the future carbon financing may form part of the approach and may ensure a sustainable source of financing for conservation measures;
- ▶ Fire management is also conducted on conservation areas as part of the company's HCV management prescriptions, including thinning to reduce understorey fuel loads. This is an advisable practice to ensure maximum recruitment of understorey trees and reduce intensive fire damage;
- ▶ Restoration activities are also currently not guided by a systematic assessment of restoration priorities / potential or suitability of species for restoration based on former forest state/soils

Critical Habitat

- ▶ Miro has investigated potential impacts to Critical Habitat qualifying potential biodiversity values through completion of HCV assessments in both countries and supporting specialist biodiversity studies. The HCV assessments reveal that no Critical Habitat qualifying biodiversity values are located within current Miro concession areas in either country. Our assessment is that this is sufficient to ensure risks to CH are investigated in compliance with IFC PS6⁶.
- ▶ The highest risk Critical Habitat qualifying potential biodiversity values are in Miro's operating region in Sierra Leone and concern the Critically Endangered Western chimpanzee. The HCV assessment reported that it is unlikely this species is present in or near the Miro concession area. Any future HCV assessment updates should focus on analysis of risks to this species at the landscape scale, including any updates to national census monitoring data and any opportunities to create ecological corridors should fragmented populations exist at the regional level.

No-net loss

- ▶ Miro has managed impacts to biodiversity and risks of impacts to natural habitat in a robust way, resulting in a likely significant net-gain to biodiversity through the company's HCV conservation programme.

⁶ Critical habitats are typically legally protected and internationally recognised areas with globally or nationally Critically Endangered or Endangered species, or restricted-range or endemic species, or concentrations of migratory and congregatory species or highly-threatened and unique ecosystems; or areas critical to key evolutionary processes. While not a specific CH assessment, both HCV assessments essentially align with an IFC PS6 assessment of CH and the risks of non conformance are low.

- ▶ Plantation development ESIA demonstrate no impacts to natural habitats through land clearance for both countries and describe measures to minimise/avoid impacts on biodiversity (i.e. riparian zone/conservation area protection). Through HCV assessments, specialist studies and creation and monitoring of conservation areas, along with enrichment planting in conservation areas the company is likely to have created a significant net-gain to biodiversity.

Threats to biodiversity management

- ▶ Miro Sierra Leone management team observe informally that road network development can lead to unintended impacts on biodiversity beyond the Miro developed area (i.e. increased hunting or illegal logging of remnant riparian forest);
- ▶ No monitoring is conducted to date of these indirect residual impacts as they occur outside the development area and Miro restoration programme / rewilding programme does not focus on conservation enforcement outside the developed area. Miro could seek to encourage biodiversity protection outside of its concession through conservation / environmental awareness creation in surrounding communities.

Legally Protected and Internationally Recognised Areas

- ▶ Miro specialist biodiversity studies in both countries identify specific areas that qualify as legally protected under national law. In Sierra Leone, this includes legal protection for sacred forest groves and wetlands / riverine forests. In Ghana, this includes an adjacent protected wildlife reserve which is included as a HCV category 1 site and protected via a 100m buffer within the Ghana HCV Management Prescription.
- ▶ These areas are well protected within the relevant Miro ESMS documents such as the HCV Management Prescriptions for Sierra Leone and Ghana, and the company Conservation Management Prescription.

Invasive Alien Species

- ▶ In Sierra Leone, Miro's recent specialist biodiversity study in 2021 identified no potential alien invasive species within the Miro concession areas. While the Ghana ESIA recognises Miro plantations introduce some exotic species, the risk of the introduction of invasive species is recognised in the prescribed monitoring framework;
- ▶ Miro HCV Management Prescriptions include the specification that enrichment planting species selection should consider the threat/risk of species invasion. While the HCV Management Prescriptions acknowledge the need to engage external expertise where necessary, specialists are not currently engaged under current practice with regard to the planning and prioritisation of HCV restoration activities;
- ▶ Miro's Natural Resources Manual Conservation Management Prescriptions include prescribed measures for the prioritisation and control of invasive alien weeds within forest plantation compartments.

Management of Ecosystem Services

- ▶ Miro has identified priority ecosystem services through its EIAs, specialist biodiversity studies and HCV assessments in both countries and is actively targeting and setting aside HCV 4 zones such as riparian areas and wetlands in both countries after specialist HCV assessment and in line with Miro HCV Management Prescriptions.
- ▶ In both countries, Miro's plantation developments currently target highly modified ecosystems which due to historic deforestation now fall below the national forest definition threshold. Adverse impacts upon priority provisioning, supporting and regulating services are limited under this scenario and Miro's identification and protection of priority ecosystem services within developed concessions such as riparian zones, wetlands, secondary forest, sacred forest groves aligns with IFC PS6

Sustainable Management of Living Natural Resources

- ▶ Miro’s operations are FSC certified demonstrating strong adherence to sustainable management and high industry standards of environmental, social and economic performance.
- ▶ Miro’s plantations observed were well established with appropriate riparian and wetland buffers. Fire breaks between the mosaic of plantation compartments were well maintained and appropriate.
- ▶ Plantation road network well designed and constructed to reduce erosion and sedimentation. Road design teams are well qualified and deliver to a high standard with culverts, and drainage channels created to minimise sediment transport and erosion.

3.6.2 Actions Required for Compliance with the Applicable Standards

Protection and conservation of biodiversity

- ▶ Consider monitoring indirect impacts on biodiversity at the landscape level outside of Miro developed area that result from Miro road development / improved access and raising community conservation / environmental awareness;
- ▶ Miro should improve the organisation of the HCV species list database and segregates species according to rare, threatened, endemic, nationally / internationally protected status;
- ▶ Miro should update HCV Management Prescriptions to specify when external specialist ecologists should assist with the planning and prioritisation of HCV land restoration sites or enrichment planting activities to improve the systematic targeting and performance of habitat restoration activities.

3.7 Cultural Heritage

IFC Performance Standard 8 - Cultural Heritage recognises cultural heritage for current and future generations and requires projects to: i) protect cultural heritage from adverse impacts of Project activities and support its preservation; and ii) promote equitable sharing of benefits from the use of cultural heritage.

In Sierra Leone, the Heritage Legislation (No. 12, 1946) law outlines regulations for the protection of archaeological and cultural heritage.

In Ghana The National Museums Decree (1969) NLCD 387, the Executive instrument (EI 118) of 1969 and the National Museums Regulation (EI 29) of 1973 law outlines regulations for the protection of archaeological and cultural heritage.

3.7.1 Current Context and Findings

Risk Exposure (high, medium, low)	Performance (exemplary, good, fair caution, unacceptable)
Low	Fair Caution

Protection of Cultural Heritage in Project Design and Execution

Miro has various company policies related to the protection of cultural heritage. The Miro Land and Development Policy states commitment to rights of landowners and cultural heritage, and also states external experts are engaged to complete ESIA and audits to ensure compliance with national laws, and the relevant prescribed principals of FSC and the IFC for all company land. A specialist cultural heritage report was completed for Yoni Chiefdom in 2014 as part of the first Miro Sierra Leone 2014 ESIA. However, the 2014 ESIA failed to identify any cultural heritage sites.

In Sierra Leone the social team manages a land evaluation process that includes village mapping whereby cultural sites are identified and protected via buffer area along with other conservation areas / HCV sites (Figure 3-1). Interviews with the team confirmed that where such sites are identified, the team works with local secret society leaders to complete spiritual 'appeasement' ceremonies (libation ceremony) prior to any development of surrounding plantation.

In Ghana, no cultural heritage resources were identified (incl. cemetery sites) within the 2018 ESIA for Miro plantation expansion into the Chirimfa and Awura Forest Reserves. However, the 2014 ESIA reported that Miro Boumfum Forest Reserve plantation expansion areas cover access roads that lead to some traditional shrine sites identified outside the developed area. In Ghana whenever a new land allocation is given and 'River god' is identified, the traditional authorities request cash compensation and may perform rites to appease the gods before any operational activity commences. Community interviews during the audit confirm that no direct impacts on cultural heritage or indirect accessibility impacts are reported. Risks to cultural heritage will need to be assessed

Community Access

Interviews with affected communities in Sierra Leone confirmed that a permit system exists allowing the collection of NTFPs from forest compartments/ conservation areas and that protection and access to any sacred sites / cultural heritage is maintained and respected by Miro. Community members are allowed to collect NTFPs in Miro Ghana's compartments on subsistence basis. However, they require a permit from the Forestry Commission if they want to collect wood for charcoal/fuelwood.

Chance Find Procedure

Miro currently has no chance find procedure related to the detection and safeguarding of objects and sites of cultural or archaeological significance in the field. While the likelihood of disturbance to hitherto unknown archaeological sites or artifacts may be low due to the highly disturbed nature of the land, small artifacts are known to be found in Sierra Leone, for example (i.e.Nomoli).

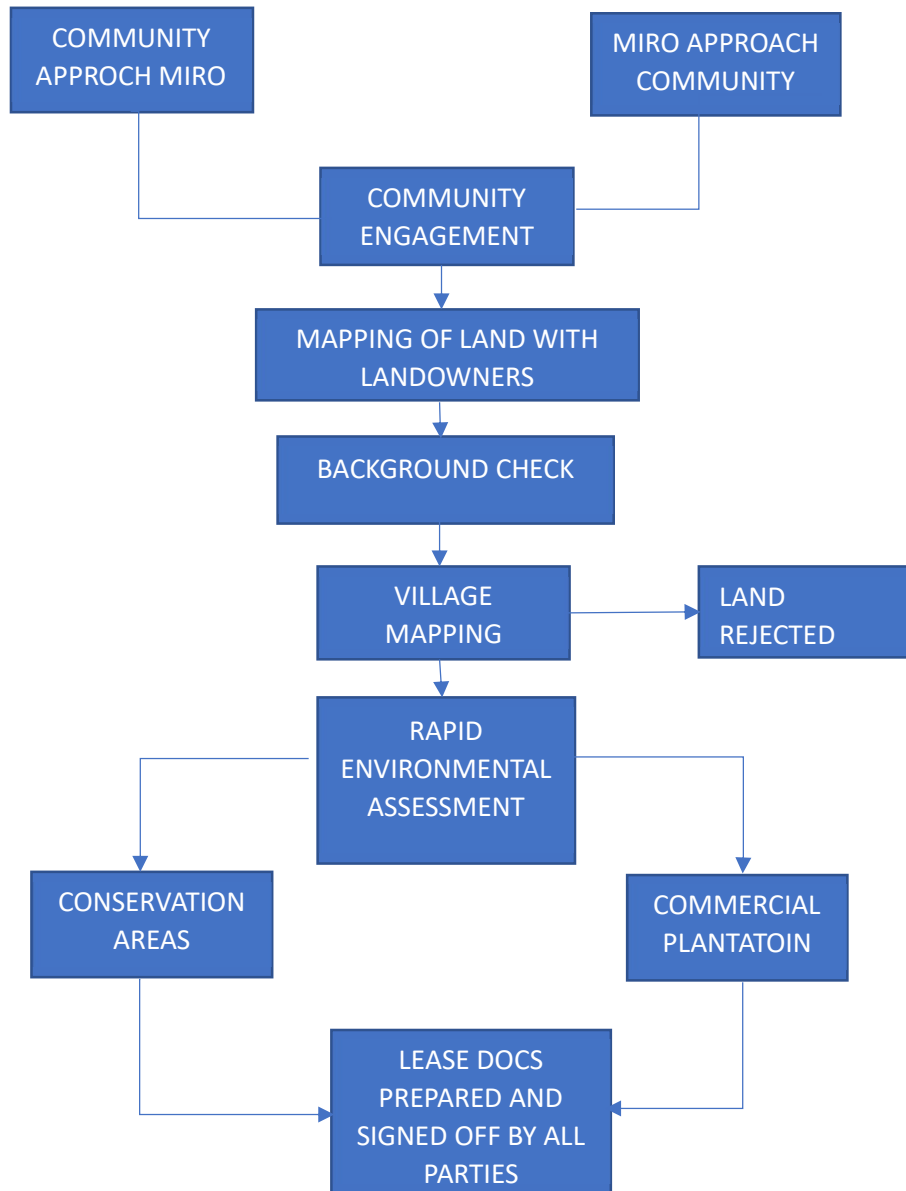


Figure 3-1: Miro Land Development Policy Implementation Framework

3.7.2 Actions Required for Compliance with the Applicable Standards

Cultural Heritage

- ▶ Continue to consider identification of cultural heritage sites as part of Implementation Framework of the Land Development Policy and associated village land mapping process;
- ▶ Consider engaging an external expert in Sierra Leone to complete another specialist study on Archaeology / Cultural Heritage within the Miro forthcoming expansion area;

Chance Find Procedure

- ▶ Develop a chance find procedure for plantation operations.

4. CONCLUSIONS

Miro demonstrates a high level of environmental and social governance across its operations with a clear safety culture and attitude for continuous identification of risks, non-conformance and improvement across various areas. The company has built a strong management team for environmental and social risk management and demonstrates a commitment to supporting the continuous professional development of these key staff. Commitment to continued improvement of environmental and social governance across Miro operations is evidenced by the team addressing points raised in the last lender environmental and social action plans (ESAP) and immediate planning to address some of the findings of the recent 2022 ESG committee performance review. Over at least five years, the company has also successfully secured FSC certification for all operations. Where the company engages contractors, there are due diligence processes / compliance checks set out in the Third-Party Management Manual which is also currently undergoing updates for social and environmental compliance to align with gaps raised this year by the ESG committee.

The company has commenced construction of a new plywood mill in Sierra Leone and has plans to investigate the integration of a 5MW CHP plant into this development. The company also plans to acquire up to 5,000 ha of additional plantation land in Sierra Leone to supply the combined operation and increase the annual planting and harvesting regime to 1,500 ha per year. As operations continue to expand towards full optimum production for the business model, the company will need to ensure any existing and new E&S risks are appropriately monitored and managed. Some of the key recommended actions are provided below and all recommended actions are detailed in Table 5-1.

Identification of Risks and Impacts

- ▶ The company will need to check stack emissions for key infrastructure in Ghana and Sierra Leone (i.e. existing boiler/site AQ baseline and any new 5MW CHP planned for Plywood mill development and 4-5 MW CHP planned for Ghana's plywood mill) against national and international E&S standards (i.e. Ghana Environment and Health Protection – Requirements for Ambient Air Quality and Point Source/Stack Emissions (GS 1236) 2019 / World Bank EHS Guidelines for Sierra Leone);
- ▶ Miro should design and implement an ambient AQ monitoring programme in SL and Ghana to ensure real time / regular confirmation of air quality emissions regulation requirements and ambient AQ monitoring against World Bank EHS Guidelines.
- ▶ Update the water monitoring programme to include groundwater monitoring and in community areas given risks associated with some high-water demanding plantation species (i.e. Eucalyptus).
- ▶ Miro should consider monitoring impacts to groundwater levels from operational site extraction activities and measures to monitor surface water quality in areas where process wastewater will be discharged from operational sites.
- ▶ Miro should update the Sierra Leone Change Management Plan and Internal EIA Report to include more Project description detail on projected process water demand and wastewater discharge to surrounding environment.
- ▶ Miro should consider updating the 2021 Change Management Manual to include specific E&S risk checklist for identifying and specifying whether operational changes require updates to the existing ESMS / environmental monitoring programme or whether identified risks and impacts require the development of new monitoring capacity/activities. Miro should also consider including a format for assigning responsibilities for management and mitigation activities, and whether these can be achieved through internal or external expertise.

Emergency Preparedness and Response

- ▶ Miro should consider continuing to improve engagement with communities and local authorities on emergency planning / fire management and seek options to reduce risks to community crops and livelihoods and reduce fire damage related grievances.

Organisational capacity and competency

- ▶ The current E&S management team contains strong technical skills in GIS / social risk management / environmental monitoring. Miro should consider supplementing the E&S management team in Ghana with more E&S technical assistance to create time for the Group Compliance Manager to complete group level compliance tasks and reduce the workload demand from aspects of Ghanaian E&S Management.
- ▶ Miro should improve capacity of social teams by hiring dedicated mid-level female CLOs in both countries and regularly conducting women's focus group discussions.

Working Conditions and Terms of Employment

- ▶ Given the high CPI increases in Ghana and Sierra Leone, the company should complete a living wage assessment to evaluate the cost of living and based on this assessment set a living wage minimum level for the company.
- ▶ Given the strong contextual barriers to gender equality, the company should establish designated workplace representatives for both women and men within each operational area.
- ▶ Miro should also complete the Gender Action Plan development process and begin implementing recommended actions;
- ▶ More employee sensitisation on whistle-blower policy is required and visible notices for the employee grievance mechanism, despite the low level of literacy among the workforce.
- ▶ Miro need to complete restroom facility developments to improve working conditions in both Ghana and Sierra Leone.
- ▶ Miro should implement management measures to avoid excessive heat stress at the Ghana plywood mill (i.e. potentially more frequent rotations for staff to limit exposure or use of cooling fans).
- ▶ In Ghana further activities are recommended to improve driver road safety including , investment in audible reversing devices, dash cams / near miss monitoring and reinforced safety training through toolbox sessions

Resource Efficiency and Pollution Prevention

- ▶ Miro should seek ways to reduce wet mill stockpiles via investments in improved conversion efficiency or via the planned biomass plant (i.e. 5MW CHP in Sierra Leone).
- ▶ The company should also build additional soil bioremediation capacity, and increase frequency of environmental training within tool box talk sessions particularly for the workshop workforce.
- ▶ Miro should seek to improve bunding/raincover of CCA chemical store in Sierra Leone at the treated pole plant and confirm a viable international licenced solution for recycling stockpiled shredded CCA container waste.

Land Acquisition and Involuntary Resettlement

- ▶ In Sierra Leone, Miro should ensure landowners are fairly compensated for lands utilised by fire breaks in cases where the fire breaks are established outside of the boundaries of the Miro lease areas.
- ▶ For past cases of economic displacement Miro should ensure the forthcoming social monitoring framework clearly identifies all Project Affected Persons (i.e. household level census) and includes specific monitoring measures to track socioeconomic status and livelihood restoration to IFC PS 5. The current Miro social vulnerability monitoring and mitigation measures for displaced farmers should be elaborated into an Environmental and Social Action Plan which documents actions to restore livelihoods where necessary to IFC PS5 standard.
- ▶ For future cases of illegal farming in Ghana, Miro should engage a specialist consultant to develop measures / procedures to record lost assets on land, restore livelihoods (i.e. livelihood support package for alternative

legitimate farmland or transitional livelihoods) and a social monitoring framework to ensure compliance with IFC PS5.

Biodiversity Conservation

- ▶ Miro should consider monitoring indirect impacts on biodiversity outside of Miro developed plantation area given the indirect impacts of road network development and should improve the organisation of the HCV species list database according to national / international protected status.
- ▶ Miro should improve the organisation of the HCV species list database and segregates species according to rare, threatened, endemic, nationally / internationally protected status;
- ▶ Miro should update HCV Management Prescriptions to specify when external specialist ecologists should assist with the planning and prioritisation of HCV land restoration sites or enrichment planting activities to improve the systematic targeting and performance of habitat restoration activities.

Cultural Heritage and Archaeology

- ▶ Miro should consider engaging an external expert to complete another specialist study on Archaeology / Cultural Heritage within the Miro forthcoming expansion area.
- ▶ Miro should consider developing a chance find procedure for plantation operations despite inherent low risks of chance finds.

5. ACTION PLAN TO ADDRESS COMPLIANCE GAPS WITH THE APPLICABLE STANDARDS

Table 5-1: Summary of actions Required for compliance with the Applicable Standards

IFC PS Nr.	Standard Requirement	Other applicable compliance req.	Findings	Recommended follow-up	Completion
PS 1	Assessment and Management of Environmental and Social Risks and Impacts				
	<i>Identification of Risks and Impacts</i>				
1	<p>IFC PS Guidance note 1, Clause 5 - The client, in coordination with other responsible government agencies and third parties as appropriate, will conduct a process of environmental and social assessment, and establish and maintain an ESMS appropriate to the nature and scale of the project and commensurate with the level of its environmental and social risks and impacts. The ESMS will incorporate the following elements: (i) policy; (ii) identification of risks and impacts; (iii) management programs; (iv) organizational capacity and competency; (v) emergency preparedness and response; (vi) stakeholder engagement; and (vii) monitoring and review.</p> <p>IFC PS Guidance note 1, Clause 7 - The client will establish and maintain a process for identifying the environmental and social risks and impacts of the project</p>	<ul style="list-style-type: none"> EIA legislation in SL and Ghana FSC Principles and Criteria for Forest Stewardship, Principles 6.3, 7.2, 8.1 and 10.9 	<ul style="list-style-type: none"> Miro's ESMS consists of a framework of group policies, EIAs, risk assessments, E&S monitoring, Emergency Preparedness and Response Plan, Stakeholder Engagement Plan, monitoring reports, and compliance / corrective action register. Rapid Environmental Assessments are completed as part of new developments (i.e. SL Plywood mill development or as part of land acquisition process). In SL, Miro's EPA licence is reviewed annually and Miro has confirmed with EPA that no EIA addendum is required for the Plywood mill development. Miro SL is also contacting the Sierra Leone Standards Bureau regarding boiler emissions standards. Social risks in SL are assessed through a land acquisition and village mapping process. Requirement for more systematic recording / reporting of social programme noted by ESG committee. Social baseline in SL needs updating more regularly. Monitoring and review process includes monthly OHS stats / GM review meetings. Several years ago Miro merged environment and OHS management into one department 	<ul style="list-style-type: none"> Miro should update the Sierra Leone Change Management Plan and Internal EIA Report to include more Project description detail on projected process water demand and wastewater discharge to surrounding environment; Miro should consider updating the 2021 Change Management Manual to include specific E&S risk checklist for identifying and specifying whether operational changes require updates to the existing ESMS / environmental monitoring programme or whether identified risks and impacts require the development of new monitoring capacity/activities. Miro should also consider including a format for assigning responsibilities for management and mitigation activities, and whether these can be achieved through internal or external expertise. Confirm air quality emissions regulation requirement and ambient AQ monitoring programme (i.e. existing boiler/site AQ baseline and in relation to ongoing Plymill constructions incl. new 5MW CHP planned for the SL Plywood mill developments and 4-5MW CHP planned for Ghana) against 	tbc

IFC PS Nr.	Standard Requirement	Other applicable compliance req.	Findings	Recommended follow-up	Completion
			<p>to address safety compliance issues and since then environmental monitoring and management has received less focused review and improvement.</p>	<p>national and international E&S standards (i.e. Ghana Environment and Health Protection – Requirements for Ambient Air Quality and Point Source/Stack Emissions (GS 1236) 2019 / World Bank EHS Guidelines) and develop an air quality management prescriptions/monitoring programme (real time / regular monitoring) against national and international E&S standards.</p> <ul style="list-style-type: none"> • Update socioeconomic baselines to monitor important social indicators (i.e. food security/nutrition/vulnerability) among impacted communities and prepare/finalise social monitoring framework aligned with IFC PS5 for displaced illegal farmers in Ghana. • The water monitoring programme should also be updated to include groundwater monitoring in community areas given risks associated with some high-water demanding plantation species (i.e. Eucalyptus). • Miro should consider monitoring impacts to groundwater levels from operational site extraction activities and measures to monitor surface water quality in areas where process wastewater will be discharged from operational sites. • 	
2	<p><i>IFC PS Guidance note 1, Clause 16</i> - The management programs will establish environmental and social Action Plans, which will define desired outcomes and actions to address the issues raised in the risks and impacts identification process, as measurable events to the extent possible, with elements such as performance</p>	<ul style="list-style-type: none"> • FSC Principles and Criteria for Forest Stewardship, Principle 4.4, 6.3, 8.1 and 10.9 	<ul style="list-style-type: none"> • The new Plywood mill development in SL will require additional E&S monitoring and management, and an extension of the existing E&S programme • Air quality monitoring is a current gap in both country monitoring programmes 	<ul style="list-style-type: none"> • Check stack emissions for key infrastructure in Ghana and SL (i.e. existing boiler/site AQ baseline and new 5MW CHP planned for Plywood mill development in SL and 4-5 MW CHP planned for Ghana) against national and international E&S standards (i.e. Ghana 	tbc

IFC PS Nr.	Standard Requirement	Other applicable compliance req.	Findings	Recommended follow-up	Completion
	indicators, targets, or acceptance criteria that can be tracked over defined time periods, and with estimates of the resources and responsibilities for implementation.		<ul style="list-style-type: none"> No groundwater monitoring conducted in community areas subject to plantation development – only streamflow 	Environment and Health Protection – Requirements for Ambient Air Quality and Point Source/Stack Emissions (GS 1236) 2019 / World Bank EHS Guidelines for Sierra Leone) <ul style="list-style-type: none"> Design management prescription for AQ and implement an ambient AQ monitoring programme in SL and Ghana Implement community ground water monitoring programme within plantation development area 	
	<i>Management Program and Organisational Capacity and competency</i>				
3	<p>IFC PS 1, Clause 17. The client, in collaboration with appropriate and relevant third parties, will establish, maintain, and strengthen as necessary an organizational structure that defines roles, responsibilities, and authority to implement the ESMS. Specific personnel, including management representative(s), with clear lines of responsibility and authority should be designated. Key environmental and social responsibilities should be well defined and communicated to the relevant personnel and to the rest of the client's organization. Sufficient management sponsorship and human and financial resources will be provided on an ongoing basis to achieve effective and continuous environmental and social performance.</p> <p>IFC PS 1, Clause 18. Personnel within the client's organization with direct responsibility for the project's environmental and social performance will have the knowledge, skills, and experience necessary to perform their work.</p>	<ul style="list-style-type: none"> FSC Principles and Criteria for Forest Stewardship, Principle 2.5 	<ul style="list-style-type: none"> Miro has a competent management team for E&S management and has a clear safety culture and attitude for continuous identification of E&S risks, non-conformance and improvement. Miro's management team are well qualified in their fields often to postgraduate level and with appropriate forestry sector / E&S management experience. Miro offers support for continuous professional development and has funded key staff to gain additional qualifications relevant to their roles Miro recently hired an Environmental Manager in Ghana which will enable more group level E&S oversight by Group Compliance Manager 	<ul style="list-style-type: none"> Miro should consider supplementing the E&S management team with more E&S technical assistance in Ghana to create time for the Group Compliance Management to complete group level compliance tasks and reduce the workload demand from aspects of Ghanaian E&S Management Improve capacity of social teams by hiring dedicated mid-level female CLOs in both countries and regularly conducting women's focus group discussions 	tbc
	<i>Emergency Preparedness and Response</i>				

IFC PS Nr.	Standard Requirement	Other applicable compliance req.	Findings	Recommended follow-up	Completion
4	<p>IFC PS 1, Guidance Note 1, Clause 20. The emergency preparedness and response requirements of Performance Standard 1 refer to (i) the contingencies that could affect personnel and facilities of the project to be financed, (ii) the need to protect the health and safety of project workers (as noted in Performance Standard 2) and (iii) the need to protect the health and safety of the Affected Communities (as noted in Performance Standard 4). The client should address emergency preparedness and response in an integrated way. Where the project (greenfield or existing) involves specifically identified physical elements, aspects and facilities that are likely to generate impacts, the client should address contingencies associated with potential process upset and accidental circumstances through the use of emergency preparedness and response plans or other similar tools appropriate to the specific industry sector, as part of its management system. Where the consequences of emergency events are likely to extend beyond the project property boundary or originate outside of the project property boundary (e.g., hazardous material spill during transportation on public roadways), the client is required to design emergency preparedness and response plans based on the risks to community health and safety identified during the risks and impacts identification process.</p>	<ul style="list-style-type: none"> FSC Principles and Criteria for Forest Stewardship Principle 7.6 	<ul style="list-style-type: none"> Miro has Emergency Preparedness and Response Plan & Procedure, and also conducts regular mock drills. Fire identified as most important emergency risk. However current plan for SL now nearly 2 years old. Communities in SL involved in emergency fire management through role as fire watchers, contracts to slash and burn fire breaks and reward scheme for fire management Social team in SL has Cassava fire belt programme and reward scheme for chiefdoms who control fires Miro has standby fire crews who work with community to control fires that get out of hand Accidental burning of community farmland / crops from fires emerging from Miro Plantations/controlled burns registered as a common grievance by affected communities 	<ul style="list-style-type: none"> Miro to continue engagement with community and local authorities on emergency planning / fire management and seek options to reduce risks to community crops and livelihoods 	tbc
	<i>Stakeholder Engagement</i>				
5	<p>IFC PS 1, Clause 29. Disclosure of relevant project information helps Affected Communities and other stakeholders understand the risks, impacts and opportunities of the project. The client will provide Affected Communities with access to relevant information on: (i) the purpose, nature, and scale of the project; (ii) the duration of proposed project activities; (iii) any risks to and potential impacts on such communities and relevant mitigation measures; (iv) the</p>	<ul style="list-style-type: none"> FSC Principles and Criteria for Forest Stewardship, Principle 4.5 and 4.6 	<ul style="list-style-type: none"> Stakeholder mapping, analysis and engagement plans established and annual stakeholder mapping Social teams in SL conduct monthly multistakeholder meetings with affected communities and have developed open door grievance mechanism. Affected communities awareness of grievance mechanism strong Communities involved in emergency planning through fire management system. 	<ul style="list-style-type: none"> Miro to improve documentation and involvement of stakeholders in emergency fire management planning 	tbc

IFC PS Nr.	Standard Requirement	Other applicable compliance req.	Findings	Recommended follow-up	Completion
	envisaged stakeholder engagement process; and (v) the grievance mechanism.		Involvement in emergency planning not systematically documented. Unclear if local government involvement in emergency planning is carried out.		
PS 2	Labor and Working Conditions				
6	<i>IFC PS 2, Clause 10.</i> Where the client is a party to a collective bargaining agreement with a workers' organization, such agreement will be respected. Where such agreements do not exist, or do not address working conditions and terms of employment, the client will provide reasonable working conditions and terms of employment.	<ul style="list-style-type: none"> Ghanaian Constitution 1992 / Labour Act No 651 of 2003 Ghana Constitution of Sierra Leone 1991/ Employers and Employed Act 1962/70; Regulations of Wages and Industrial Relations Act 1971 /National Employment Policy (2015-2018) ILO Conventions FSC Principles and Criteria for Forest Stewardship, Principle 2.1 and 2.4 	<ul style="list-style-type: none"> Miro's Labour and HR Policy / and Safeguarding Policy – includes respect for labour standards and rights. The company has assisted in the establishment of labour unions in both countries. Miro has Anti-Corruption, Whistleblowing and Business Integrity Policy Employee interviews confirm awareness of rights to association and grievance mechanism. Less awareness of whistleblowing mechanism and grievance mechanism not clearly displayed No female specific workplace rights focal points for key gender specific issues such as GBVH Cost of living significantly increasing through CPI rise, especially in Ghana. Miro implemented two pay rises so far in 2022 equalling 20% and provides monthly rice bonus scheme for all employees. Employees report Miro always pays promptly at month end. However employee interviews request cost of living review. Female workers report that maternity leave pay entitlements are strong benefit of Miro employment. 	<ul style="list-style-type: none"> Complete a living wage assessment and set minimum living wage for the company Provide more regular employee sensitisation on whistle-blower policy and visible notices for employee grievance mechanism Create both men and women's worker representatives (Grievance committees) to improve management of stafeguarding risks (esp. related to GBVH) Identify key gender-based workforce constraints and address these where possible (i.e. offer free menstrual hygiene products at Miro clinic / develop pre-school/nursery facilities) Miro to complete the existing internal Gender Action Plan development process currently underway and ensure GBVH has been evaluated and begin implementing recommended actions 	tbc
7	<i>PS 2, Clause 23.</i> The client will provide a safe and healthy work environment, taking into account inherent risks in its particular sector and specific classes of hazards in the client's work areas, including physical, chemical, biological, and radiological hazards, and specific threats to women. The client will take steps to prevent accidents, injury, and disease arising from,	<ul style="list-style-type: none"> Constitution of SL 1991 SL National Employment Policy (2015-2018) 	<ul style="list-style-type: none"> Miro has Labour and HR Policy / and Safeguarding Policy. Incident Register records all lost time injuries and corrective actions. Reported monthly to GM/Senior Management 	<ul style="list-style-type: none"> Miro should implement management measures to avoid excessive heat stress at the Ghana plywood mill (i.e. potentially more frequent rotations for staff to limit exposure or use of cooling fans). 	tbc

IFC PS Nr.	Standard Requirement	Other applicable compliance req.	Findings	Recommended follow-up	Completion
	<p>associated with, or occurring in the course of work by minimizing, as far as reasonably practicable, the causes of hazards. In a manner consistent with good international industry practice.</p>	<ul style="list-style-type: none"> Labour Act No 651 of 2003 (Ghana) ILO Conventions FSC Principles and Criteria for Forest Stewardship, Principle 2.3 	<ul style="list-style-type: none"> Hand injuries in EGP plant at timber receiving side is most common injury / area of hazard. Timber receiving area not covered or hard standing and therefore slippery. Miro exploring timber manual handling tongs as a solution for safer manual handling Miro currently has no dedicated rest facilities for mill staff in SL but construction has commenced Noise monitoring conducted and PPE usage strong. Air quality at Miro operations not currently monitored to ensure conformity to international standards. Boiler emissions and future 5MW CHP in SL and 4-5 MW CHP in Ghana main sources of concern. In Ghana road safety remains a high risk area for personnel transport given inherent driving culture and the high risk nature of the roads. 	<ul style="list-style-type: none"> Miro to complete worker restroom facilities for mill staff and improved rest facilities for drivers Miro to find solution to improve manual handling of logs at SL EGP plant Miro to commence ambient air quality monitoring programme and ensure compliance with WB EHS Guidelines In Ghana further activities are recommended to improve driver road safety including investment in audible reversing devices, dash cams / near miss monitoring and reinforced safety training through toolbox sessions In Sierra Leone Miro should develop safety procedures to cordon off active unloading areas used by three-wheeled log loaders to reduce OHS hazards. 	
PS 3	Resource Efficiency and Pollution Prevention				
8	<p>IFC PS 3, Clause 6: The client will implement technically and financially feasible and cost effective measures for improving efficiency in its consumption of energy, water, as well as other resources and material inputs, with a focus on areas that are considered core business activities. Such measures will integrate the principles of cleaner production into product design and production processes with the objective of conserving raw materials, energy, and water.</p>	<ul style="list-style-type: none"> SL Environment Protection Regulations 2013 Environmental Assessment Regulations, 1999 (Ghana) FSC Principles and Criteria for Forest Stewardship, Principle 6.3 	<ul style="list-style-type: none"> Miro SL recently commissioned a 236KWP solar plant with battery storage and are investigating a 5MW CHP as part of Plywood mill development. Miro GH is planning for 4-5MW CHP. Miro SL are investing in improved mill machinery within EGP plant to enhance conversion efficiency/recovery rates reduce wet mill waste. However, wet mill waste stockpile is a site concern. Wet and dry mill waste is segregated. Some of this waste fuel is used by the on site boiler. A 5MW CHP is planned as 	<ul style="list-style-type: none"> Continue to seek ways to reduce wet mill stockpile via conversion efficiency investments 	tbc

IFC PS Nr.	Standard Requirement	Other applicable compliance req.	Findings	Recommended follow-up	Completion
		<ul style="list-style-type: none"> • IFC EHS Guidelines 	<p>part of SL Plywood mill project and 4-5 MW CHP in Ghana.</p> <ul style="list-style-type: none"> • Process water use minimal due to debarking at harvesting site and no need for pre-washing. Nursery usage of water improved via hydroponic trials and efficient watering systems 		
9	<p><i>IFC PS 3, Clause 13.</i> Hazardous materials are sometimes used as raw material or produced as product by the project. The client will avoid or, when avoidance is not possible, minimize and control the release of hazardous materials. In this context, the production, transportation, handling, storage, and use of hazardous materials for project activities should be assessed.</p>	<ul style="list-style-type: none"> • SL Environment Protection Regulations 2013 • Environmental Assessment Regulations, 1999 (Ghana) • FSC Principles and Criteria for Forest Stewardship, Principle 10.12 • IFC EHS Guidelines • GIIP 	<ul style="list-style-type: none"> • Miro SL CCA Pole Plant has adequate covered bunded area – but CCA chemical store has minimal bunding at front • Some CCA residue from pole plant operations in SL is currently stockpiled in bund awaiting safe disposal options • All CCA spent containers are shredded on site to ensure no risk of community use and stored in a covered area in SL. Miro are exploring licenced recycling contractor options • Emergency spills of hydrocarbons main risk at workshops and workshop frequent subject of corrective actions (lack of waste segregation, wash bay separator clogged). Soil in-situ bioremediation pits in SL currently full. 	<ul style="list-style-type: none"> • Build additional soil bioremediation pits and increase frequency of environmental training within toolbox talk sessions for workshop workforce • Improve bunding / rain cover for CCA chemical store in SL • Confirm licenced CCA container recycling option 	tbc
10	<p><i>IFC PS 3, Clause 15.</i> When pest management activities include the use of chemical pesticides, the client will select chemical pesticides that are low in human toxicity, that are known to be effective against the target species, and that have minimal effects on non-target species and the environment.</p>	<ul style="list-style-type: none"> • SL Environment Protection Regulations 2013 • Environmental Assessment Regulations, 1999 (Ghana) • FSC Principles and Criteria for Forest Stewardship, Principle 10.7 	<ul style="list-style-type: none"> • Miro have been reducing the application of Glyphosate in SL and increasing the use of manual slashing teams for understorey control 	<ul style="list-style-type: none"> • Further reduce the use of Glyphosate where possible and seek more targeted application of chemicals 	tbc

IFC PS Nr.	Standard Requirement	Other applicable compliance req.	Findings	Recommended follow-up	Completion
		<ul style="list-style-type: none"> • IFC EHS Guidelines • GIIP 			
PS 4	Community Health and Safety				
11	<p><i>IFC PS 4, Clause 11:</i> In addition to the emergency preparedness and response requirements described in Performance Standard 1, the client will also assist and collaborate with the Affected Communities, local government agencies, and other relevant parties, in their preparations to respond effectively to emergency situations, especially when their participation and collaboration are necessary to respond to such emergency situations.</p>	<ul style="list-style-type: none"> • Decree on Occupational Health and Safety (2019) • FSC Principles and Criteria for Forest Stewardship, Principle 4.5 	<ul style="list-style-type: none"> • Communities involved in Emergency Response Planning through fire management system – community grievances related to fire damage to crops remain high • Community safety around active forestry harvesting operations strictly enforced via sensitisation, signage and flag marshals • Some driver safety related grievances still occurring in SL on 2022 register and driving culture/roads inherently unsafe in Ghana • Env. and Sustainability Policy promotes HCV protection and protection of fragile / unique ecosystems, and priority ecosystem services identified and protected through village mapping exercises at land acquisition stage. Permit system in SL enables continued community access to medicinal / food plants 	<ul style="list-style-type: none"> • Improve driver related safety through investment in audible reversing devices, dash cams / near miss monitoring and reinforced safety training through toolbox sessions • Improve protocols for involvement and sensitisation of communities in controlled burn operations and planning • Improve support for community emergency fire control in Sierra Leone through increasing support from Miro standby fire crews and more community training on effective fire control. • Conduct groundwater monitoring in community areas subject to plantation development. 	tbc
PS 5	Land Acquisition and Involuntary Resettlement				
12	<p><i>IFC PS5, Clause 10:</i> The client will engage with Affected Communities, including host communities, through the process of stakeholder engagement described in Performance Standard 1.....Disclosure of relevant information and participation of Affected Communities and persons will continue during the planning, implementation, monitoring, and evaluation of compensation payments, livelihood restoration activities, and resettlement to achieve outcomes that are consistent with the objectives of this Performance Standard.</p>	<ul style="list-style-type: none"> • SL Environment Protection Regulations 2013 • FSC Principles and Criteria for Forest Stewardship, Principle 4 • GIIP 	<ul style="list-style-type: none"> • Miro Land and Development Policy commits to protect rights of landowners and cultural heritage – also states external experts to complete ESIA and audits to ensure compliance for all company land • Stakeholder engagement plans in place and regular multistakeholder forum meetings conducted by Miro SL social team with impacted landowners • Displacement risks higher in Ghana emphasizing importance of livelihood 	<ul style="list-style-type: none"> • Update socioeconomic baselines more regularly to monitor important social indicators (i.e. food security/nutrition/vulnerability) among impacted communities • In Sierra Leone, Miro should ensure landowners are fairly compensated for lands utilised by fire breaks around the plantation developed land area. • For past cases of economic displacement in Ghana Miro should ensure the forthcoming social monitoring framework 	tbc



IFC PS Nr.	Standard Requirement	Other applicable compliance req.	Findings	Recommended follow-up	Completion
			<p>programmes for affected communities through CDP</p> <ul style="list-style-type: none"> 30% village lands rule in Sierra Leone to maintain food security, and investment in upland rice farming through CDP and five-year systematic socioeconomic monitoring. However, inflationary pressures high and therefore likely shifting socioeconomic baseline requiring more regular data monitoring. 	<p>clearly identifies all Project Affected Persons (i.e. household level census) and includes specific monitoring measures to track socioeconomic status and livelihood restoration to IFC PS 5. The current Miro social vulnerability monitoring and mitigation measures for displaced farmers should be elaborated into an Environmental and Social Action Plan which documents actions to restore livelihoods where necessary to IFC PS5 standard.</p> <ul style="list-style-type: none"> For future cases of illegal farming in Ghana, Miro should engage a specialist consultant to develop measures / procedures to record lost assets on land, restore livelihoods (i.e. livelihood support package for alternative legitimate farmland or transitional livelihoods) and a social monitoring framework to ensure compliance with IFC PS5. 	
PS 6	<i>Biodiversity Conservation and Sustainable Management of Living Natural Resources</i>				
13	<p><i>IFC PS 6, Clause 7.</i> As a matter of priority, the client should seek to avoid impacts on biodiversity and ecosystem services. When avoidance of impacts is not possible, measures to minimize impacts and restore biodiversity and ecosystem services should be implemented. Given the complexity in predicting project impacts on biodiversity and ecosystem services over the long term, the client should adopt a practice of adaptive management in which the implementation of mitigation and management measures are responsive to changing conditions and the results of monitoring throughout the project's lifecycle.</p>	<ul style="list-style-type: none"> National EIA / Environmental Protection Laws for SL / Ghana FSC Principles and Criteria for Forest Stewardship, Principles 6.3 to 6.8 GIIP 	<ul style="list-style-type: none"> ESIA conducted for Miro lease areas as initial baseline HCV assessments (2016) and external specialist biodiversity studies completed in Ghana and SL Miro HCV Management Prescriptions 2019 require Planning and Environment team to complete GIS analysis and Rapid Environmental Assessment to identify and map HCV areas / areas for restoration during 	<ul style="list-style-type: none"> Miro should consider monitoring indirect impacts on biodiversity outside of Miro core developed area and raising community conservation / environmental awareness; Miro should improve the organisation of the HCV species list database and segregates species according to rare, threatened, endemic, nationally / internationally protected status; 	tbc

IFC PS Nr.	Standard Requirement	Other applicable compliance req.	Findings	Recommended follow-up	Completion
			<p>land expansion (i.e. riparian zone, wetland, secondary forest, fragment forest)</p> <ul style="list-style-type: none"> • Rewilding / restoration planting programme (indigenous species) ongoing in SL with 500ha planned next year and carbon financing part of plan • Wetlands conserved and fragmented indigenous forests surrounded by buffer areas within plantation estate. Fire management conducted on conservation areas, including thinning to reduce understorey fuel load • Plantation road network well designed and constructed to reduce erosion and sedimentation • Miro HCV Management Prescriptions 2019 for HCV restoration site selection includes no consideration for habitat connectivity at landscape level • Miro SL observe informally that road network development can lead to unintended impacts on biodiversity (i.e. increased hunting or illegal logging of remnant HCV riparian forest) – no monitoring conducted to date of these indirect residual impacts as they occur outside the core plantation development area 	<ul style="list-style-type: none"> • Miro should update HCV Management Prescriptions to specify when external specialist ecologists should assist with the planning and prioritisation of HCV land restoration sites or enrichment planting activities to improve the systematic targeting and performance of habitat restoration activities. • Miro HCV Management Prescriptions 2019 for HCV restoration site selection updated to include assessment for habitat connectivity 	
PS 8	Protection of Cultural Heritage in Project Design and Execution				
14	<ul style="list-style-type: none"> • IFC PS 8, Clause 8. The client is responsible for siting and designing a project to avoid significant adverse impacts to cultural heritage. The environmental and social risks and impacts identification process should determine whether the proposed location of a project is in areas where cultural heritage is expected to be found, either during construction or operations. In such cases, as part of the client's ESMS, the client will develop provisions for managing chance finds 	<ul style="list-style-type: none"> • Forestry Regulations 1989 & Monuments and Relics Legislation 1946 (Sierra Leone) • FSC Principles and Criteria for Forest Stewardship, Principle 3.5 	<ul style="list-style-type: none"> • Miro SL Land Development programme includes village mapping exercise and extensive consultations which identifies cultural heritage sites and establishes buffer areas around these sites. • Communities are allowed continued and unrestricted access to these sites. • Interviews confirmed community satisfaction with the protection of cultural heritage by Miro SL. 	<ul style="list-style-type: none"> • Continue to consider identification of cultural heritage sites as part of village land mapping process • Consider engaging external expert to complete another specialist study on Archaeology / Cultural Heritage within the Miro forthcoming expansion area • Consider developing a chance find procedure for plantation operations despite low risks 	tbc

IFC PS Nr.	Standard Requirement	Other applicable compliance req.	Findings	Recommended follow-up	Completion
	through a chance find procedure which will be applied in the event that cultural heritage is subsequently discovered.				

ATTACHMENT A: SUMMARY OF E&S PROGRESS REVIEWS

Table A-1: Progress status against outstanding recommendations from previous lender Environmental and Social Action Plan (ESAP) and ESG Committee 2022 Review Report

IFC PS Nr.	Measure and/or Corrective Actions (Action Description)	Deliverable (Report/Measurement)	Review (Date/Event)	Situation observed, including gaps	Recommended Actions / Follow-up / Indication of Completion	Progress Status	
						Complete 	Incomplete 
PS 1 - Assessment and Management of Environmental and Social Risks and Impacts							
	<i>Management Programs (incl. Monitoring and Reporting)</i>						
	Some baselines are not regularly updated, such as the socioeconomic baseline in Sierra Leone where the ESG risk assessment is informed by old ESIA baseline	ESG Committee Review Report Oct 2022	Earth Systems October 2022 E&S Review Audit	<p>Gap confirmed. Only limited social vulnerability risk assessments and monitoring periodically completed for economically displaced Ghana.</p> <p>In SL village mapping and land tenure verification exercises record data on population and village land impacts</p> <p>Periodic socioeconomic surveys recommended focused on food security/nutrition/vulnerability monitoring esp. within communities impacted by land acquisition / economic displacement.</p>	<p>Miro Social teams complete updated baseline socioeconomic surveys in plantation villages and report findings.</p> <p>Miro Ghana team to commence detailed socioeconomic monitoring of economically displaced farmers.</p>	<ul style="list-style-type: none"> Miro Ghana Social team preparing socioeconomic monitoring framework for displaced illegal farmers 	

IFC PS Nr.	Measure and/or Corrective Actions (Action Description)	Deliverable (Report/Measurement)	Review (Date/Event)	Situation observed, including gaps	Recommended Actions / Follow-up / Indication of Completion	Progress Status	
						Complete	Incomplete
	Implement a community groundwater monitoring programme given risks associated with plantations of exotic timber species (i.e. Acacia Mangium)	ESG Committee Review Report Oct 2022	Earth Systems October 2022 E&S Review Audit	Miro confirmed as recognised gap. Identification of priority monitoring sites confirmed as next step.	Miro to identify priority sites for groundwater monitoring programme	<ul style="list-style-type: none"> Miro should prepare map of ground bores for monitoring programme and SOP for groundwater monitoring programme 	<input type="checkbox"/> <input type="checkbox"/>
	<i>Identification of Risks and Impacts</i>						
	<p>Measurement of the air emissions from the boilers and incinerators and check on compliance with national laws and WB EHS Guidelines.</p> <p>Plywood mill in Ghana will be commissioned. We have a boiler in SL which should be commissioned in January.</p>	ESG Committee Review Report Oct 2022	Earth Systems October 2022 E&S Review Audit	Gap recognised by Miro. Miro environment team currently investigating AQ monitoring options and developing monitoring plan. According to Miro, EPA SL currently not able to oversee monitoring due to capacity.	Miro to develop and confirm air quality emissions regulation requirement and ambient AQ monitoring programme (i.e. existing boiler/site AQ baseline and new 5MW CHP planned for the SL Plywood mill development and 4-5MW CHP planned for Ghana) against national and international E&S standards (i.e. Ghana Environment and Health Protection – Requirements for Ambient Air Quality and Point Source/Stack Emissions (GS 1236) 2019 / World Bank EHS Guidelines for Sierra Leone. A Miro AQNV Management Prescription document should be prepared.	<ul style="list-style-type: none"> Miro SL Environ. Team have begun to investigate AQ monitoring equipment and are preparing a letter to EPA Regulatory gaps should be confirmed and a Miro AQNV Management Prescription document should be prepared. 	<input type="checkbox"/> <input type="checkbox"/>
PS 2	Labor and Working Conditions						

IFC PS Nr.	Measure and/or Corrective Actions (Action Description)	Deliverable (Report/Measurement)	Review (Date/Event)	Situation observed, including gaps	Recommended Actions / Follow-up / Indication of Completion	Progress Status	
						Complete	Incomplete
	Based on the results of the external OHS assessment focusing on industrial operations and driver safety. Update policies and procedures including training calendar and enforcement mechanisms. Identify where a change in management practices and safety culture is needed.	ESG Committee Review Report Oct 2022	Earth Systems October 2022 E&S Review Audit	Miro report driver vehicle tracking routinely in both countries. Driver safety could be improved, particularly in Ghana where driving culture/road safety is a concern	Continue to update policies and procedures focused on driver safety. Identify and implement measures to improve vehicle safety (i.e. audible reversing devices, tracker monitoring/dash cams). Improve monitoring and management such as accurate near miss monitoring/corrective actions and enforcement mechanisms for non-compliance. Reinforce revised policies and procedures via safety training through toolbox sessions	Complete	Incomplete
	Currently no dedicated rest facilities for workers but construction is ongoing	ESG Committee Review Report Oct 2022	Earth Systems October 2022 E&S Review Audit	Gap recognised by Miro and construction ongoing in both Ghana and SL Rest facility in SL partially complete during ES audit (Nov 2022)	Miro completion of staff rest facilities in Ghana and SL	Complete	Incomplete
PS 4	Community Health, Safety, and Security						
	Gender risk management in communities by ensuring gender balance in the social team through recruitment of full-time, at least mid-level and dedicated CLOs. Ensure systematic focus group meetings separately for women	ESG Committee Review Report Oct 2022	Earth Systems October 2022 E&S Review Audit	Gap recognised by Miro Social Team. Gender Action Plan under development and Miro have contracted an external consultant/gender specialist for this. Absence of women reps in	Ensure that the GAP is completed and endorsed by Senior management. Ensure dedicated female CLOs recruited. Ensure dedicated female	Complete	Incomplete

IFC PS Nr.	Measure and/or Corrective Actions (Action Description)	Deliverable (Report/Measurement)	Review (Date/Event)	Situation observed, including gaps	Recommended Actions / Follow-up / Indication of Completion	Progress Status	
						Complete	Incomplete
	and youth. The discussion with women should be led by the female CLOs to be hired.			each area of operation a key gap / opportunity for SL. In Ghana there are regular Monthly worker representative forums and 6 women are part of this forum (However, no dedicated forum for women / gender specific issues). Village level women's groups have been established in Ghana.	workplace representatives are created and forums established.	disaggregated focus groups taking place	<ul style="list-style-type: none"> Dedicated workplace forums for women workers should be established
PS 5	Land Acquisition and Involuntary Resettlement						
	Assess the process for compensation of economically displaced farmers, particularly in Ghana, to ensure best practice and compliance with WB standards	ESG Committee Review Report Oct 2022	Earth Systems October 2022 E&S Review Audit	Miro Ghana report that economic displacement / compensation processes occur via government partners prior to Miro allocation of plantation land within forest reserve. Miro acknowledge that illegal farmers are economically displaced and are conducting vulnerability surveillance and planning livelihood restoration support.	Miro should develop specific / measurable monitoring programme to ensure livelihood impacts are understood and monitored. A gap analysis should be completed to determine the gaps between the Ghanaian process and IFC PS5. Livelihood restoration measures and a monitoring programme should be established to address any gaps	<ul style="list-style-type: none"> Miro to complete IFC PS5 gap analysis Miro to develop livelihood restoration measures and a monitoring programme to address any gaps 	
PS 6	Biodiversity						

IFC PS Nr.	Measure and/or Corrective Actions (Action Description)	Deliverable (Report/Measurement)	Review (Date/Event)	Situation observed, including gaps	Recommended Actions / Follow-up / Indication of Completion	Progress Status	
						Complete	Incomplete
	Better assessment and monitoring of HCVs and selection based on biodiversity values and potential for enhancement	ESG Committee Review Report Oct 2022	Earth Systems October 2022 E&S Review Audit	Miro HCV and species monitoring could be improved as species lists appeared not to indicate systematic monitoring / poorly organised. HCV management prescriptions 2019 require mini assessment of restoration sites status and potential. No assessment of potential for landscape level restoration / enhancement / connectivity	Systematic species list / records based on organisation according to national / international protected status. HCV management prescriptions 2019 updated to specify external expert assistance required for HCV restoration site mini-assessment / species selection defined for HCV restoration sites. based on restoration potential and landscape scale connectivity	<ul style="list-style-type: none"> Systematic species list / records organised according to national / international protected status. HCV management prescriptions 2019 updated 	<div style="display: flex; justify-content: space-around;"> Complete Incomplete </div>

MIRO FORESTRY: ENVIRONMENTAL AND SOCIAL ACTION PLAN – REVISED 2023

[*Items directly from or based on original ESAP]

Note: Unless otherwise specified, actions relate to operations in both Sierra Leone (SL) and Ghana

#	Topic	Required Action	Deliverable	Target Date
1. PS1 – Assessment and Management of Environmental and Social Risks and Impacts				
1.1.	*Change Management Manual	Update the 2021 Change Management Manual to include specific E&S risk checklist for identifying and specifying whether operational changes require updates to the existing ESMS / environmental monitoring programme or whether identified risks and impacts require the development of new monitoring capacity/activities.	i. Revised Change Management Manual ii. E&S risk checklist	i. September 2023
1.2.	*Change Management Plan (SL)	Revise the Sierra Leone Change Management Plan and Internal EIA Report to include more Project description detail on projected process water demand and wastewater discharge to surrounding environment.	i. Revised Change Management Plan for SL	i. April 2023
1.3.	EHS Team Capacity (Ghana)	Fill vacant ESG Management positions in Ghana with suitably qualified and experienced individuals.	i. Signed Letter(s) of Appointment ii. CV(s) of hired ESG Managers	i. March 2023
1.4.	EHS Team Capacity	Improve capacity of social teams by hiring dedicated mid-level female CLOs in both countries and regularly conducting women’s focus group discussions.	i. Signed Letters of Appointment ii. Minutes / records of focus group discussions	i. March 2023 ii. For two quarters starting in April 2023 and then incorporated to the AMR
1.5.	Emergency & Fire Management	Continue engagement with community and local authorities on emergency planning / fire management (including controlled burns) and seek options to reduce risks to community crops and livelihoods. Where relevant, communities to be trained on emergency response.	i. Stakeholder engagement records ii. Training records	i. For 2 quarters starting in November 2023 and then incorporated to the AMR ii. For 2 quarters starting in December 2023 and then incorporated to the AMR
2. PS2 – Labour and Working Conditions				
2.1.	*Living Wage Assessment	Complete a living wage assessment and set minimum living wage for the company.	i. Living Wage Assessment (and recommendations) ii. Evidence of implementation of recommendations	i. June 2023 ii. January 2024
2.2.	Succession Planning	Complete a succession planning assessment to detail career progression opportunities for local staff in Ghana.	i. Local content and career progression assessment (and recommendations) including proposed local recruitment KPIs for monitoring	i. August 2023 ii. December 2023

			ii. Evidence of implementation of recommendations	
2.3.	Grievance Management	Provide more regular employee sensitisation on whistleblower policy and visible notices for employee grievance mechanism.	i. Awareness / training material and records	i. For 2 quarters starting in July 2023 and then incorporated to the training calendar 2x a year
2.4.	Grievance Committees	Create a gender balanced Grievance Committee dedicated to safeguarding risks (esp. related to GBVH). Actively and clearly communicate GBVH grievance channels to all staff.	i. Committee membership lists ii. Meeting records iii. Communication pieces/recordsin	i. May 2023 ii. For 2 quarters starting in June 2023 and then incorporated to the AMR iii. For 2 quarters starting in June 2023 and then incorporated to the AMR
2.5.	Safeguarding	Conduct a gap analysis between Miro's ESMS and LDNF's Safeguarding Policy to identify where safeguarding risks are covered by existing policies/procedures/activities and/or where gaps exist followed by ESG Committee agreement on actions and implementation timeline.	i. Gap analysis ii. Safeguarding plan to ensure full coverage of identified risks iii. Evidence of implementation	i. May 2023 ii. May 2023 iii. June 2023
2.6.	Gender Action Planning	Complete the development of Organisational Gender Action Plan considering, amongst other things, GBVH risks and gender-based workforce constraints. Develop and demonstrate continued progress against a clear implementation plan.	i. Quarterly implementation updates	i. Every quarter starting in July 2023?
2.7.	OHS Risk Management (1)	Develop and implement plans to improve the management of the following OHS risks. Implementation will include increased spot checks, ... and inspections. <ul style="list-style-type: none"> o Manual log handling o Log yard safety (particularly related to 3-wheel loaders) o In-field sanitation at harvesting areas o Heat stress (indoor processing areas) o Driver road safety / vehicle safety o Ambient air quality (SL) o Lighting conditions (Ghana plywood factory) 	i. OHS Improvement Plans (SL and Ghana) ii. Quarterly implementation updates	i. August 2023 ii. Every quarter starting in July 2023?
2.8	OHS Risk Management (2)	Miro to ensure health checks are conducted and recorded consistently to monitor occupational illnesses, particularly for lung and musculoskeletal diseases. This should also be reflected in the employment contracts.	i. Health check update (number of workers and summary findings) ii. Example of updated employee contracts	iii. June 2023

2.9	Restrooms	Complete worker restroom facilities for mill staff and improved rest facilities for drivers.	i. Confirmation of completed facilities	i. June 2023
2.10	Emergency Response	Enhance basic emergency response capabilities by (i) appointing a trained paramedic (and standby) for the operation (considering need for this service for all working hours) and (ii) purchasing a site ambulance. The ambulance should have 4x4 capabilities to enable reasonable access during the wet season.	i. Appointment of paramedic(s) ii. Confirmation of ambulance on site	i. April 2023 ii. June 2023
3. PS3 – Resource Efficiency and Pollution Prevention				
3.1	Air Emissions	Confirm quality of the air emissions from the boilers and incinerators and status of compliance with national laws and relevant IFC EHS Guidelines.	i. Emission analysis of the boilers and incinerators incl. compliance check national laws and IFC EHS Guidelines.	i. September 2023 and air emission tests to be incorporated to the AMR afterwards
3.2	Air Emissions	Implement annual air emissions monitoring for all point sources at all operations. Where emissions do not comply with the national laws and/or IFC EHS Guidelines, implement remedial measures within agreed timeframe.	i. Air emission tests (all sources; all sites)	i. July 2023 and then incorporated in the AMR
3.3	Integrated Pest Management	Redesign IPM system and formalize trials for alternatives including biological alternatives especially for glyphosate and imidacloprid. Demonstrate efforts to reduce glyphosate use.	i. Updated IPM and set up of (biological) alternative pesticides trials. ii. Annual update on efforts to reduce use of synthetic herbicides / pesticides	i. September 2023 ii. September 2024 and incorporated to the AMR as part of annual reporting requirements
3.4	Water Resources Management	Develop and implement a separate Water Resources Management & Monitoring Plans for SL and Ghana operations. The plans will include (i) Standard Operating Principle on Water Monitoring and Sampling (i) the identification and assessment of water consumption and effluent discharge from both operations, (ii) measures to mitigate negative impacts, and (iii) detailed monitoring plans for water quality and quantity.	i. Water Resources Management & Monitoring Plans ii. SOP on Groundwater Monitoring and Sampling iii. SOP on Water Effluent Monitoring and Sampling	i. April 2023 ii. April 2023 iii. April 2023
3.5	Water quality	Monitoring effluent quality aligned with the requirements of the IFC and WHO comply with national limits and those of the IFC EHS Guidelines.	i. Quarterly effluent quality monitoring data	i. For two quarters starting in [June 2023] and then incorporated to the AMR
3.6	*Groundwater monitoring	Establish groundwater level monitoring network at defined strategic locations within the Project areas with the aim of enabling early detection of potential negative impacts on community water access and the ecological reserve.	i. Installation of groundwater monitoring units ii. Groundwater level trend analyses (annual)	i. March 2023 i. April 2023 and then incorporated to the AMR

3.7	Integrated Waste Management	Develop and implement a clear plan to identify and implement measures for the safe disposal of hazardous wastes. Where external waste disposal contractors / recycling agents are used for this purpose, they must hold all requisite licences / authorisations.	i. Waste management improvement plan	i. April 2023
3.8	Off site disposal	Maintain accurate records of off-site disposal. Waste Management Plans must be updated to reflect new requirements.	i. Progress reports ii. Revised Waste Management Plans	For 2 quarters starting in [April 2023] and then incorporated to the AMR ii. April 2023
3.9	Raw material-use efficiency (SL)	Develop and implement plan (with measurable targets) to improve raw material conversion efficiency and reduce waste wood stockpile. This should consider alternatives for use of sawdust and other timber waste, in addition to current burning.	i. Raw material efficiency plan ii. Progress updates	i. November 2023 ii. For 2 quarters starting in [March 2024] and then incorporated to the AMR
3.10	CCA Facility (SL)	Improve bunding / rain cover for CCA chemical store.	i. Confirmation of improvements	i. March 2024
4. PS4 – Community Health, Safety and Security				
4.1.	*Community Trusts	Design Community Trusts taking into account: governance, code of conduct, solid agreement on involvement of Miro, and how to represent different groups in the community incl. vulnerable groups etc where relevant. Agree budget, authorization, planning, on reporting and monitoring etc.	i. All-inclusive agreement(s) on Trust(s) with relevant community groups and other Stakeholders	i. As soon as Miro is profitable.
4.2	Agro-forestry	Conduct a cost benefit analysis for community and company for different scenarios for agro-forestry/forestry/agriculture for cash crops, taking into account community priorities, ownership and workers and overall community livelihood requirements for land, to decide on investment.	i. Cost benefit analysis	i. July 2024
5. PS5 – Land Acquisition and Involuntary Resettlement				
5.1.	Involuntary Resettlement (Ghana)	Revise and enhance Land Acquisition Procedure for Ghana to ensure that all land acquisition is fully aligned with the requirements of national legislation and IFC PS5. The scope of this procedure will be applicable even in cases where resettlement is government-led.	i. Revised Land Acquisition Procedure (Ghana)	i. 30 April 2023
5.2	Resettlement specialist	Contract an independent resettlement specialist to conduct a PS5 Gap Analysis and prepare a detailed report and Action Plan.	i. Terms of Reference for Independent PS5 Gap Analysis (Ghana only) ii. Report and Action Plan.	i. June 2023 ii. July 2023
5.3	Recommendation implementation	Implement all recommendations within an agreed timeframe, acceptable to the Investors.	i. Evidence of implementation of revised procedure (Ghana) ii. Payment of all outstanding compensation (as per the Gap Analysis Report)	i. July 2024 ii. To be mutually agreed from

				September 2024.
5.4.	Compensation for fire breaks (SL)	Revise the Land Acquisition Procedure for SL to ensure that landowners are fairly compensated for lands utilised by fire breaks around the plantation developed land area.	i. Revised Land Acquisition Procedure (SL)	i. June 2023
6. PS6 – Biodiversity Conservation and Sustainable Management of Living Natural Resources				
6.1.	High Conservation Value (HCV) areas and species lists	Improve and formalise assessment and monitoring of biodiversity and HCV areas. Ensure that HCV data is applied during plantation planning to enhance the biodiversity value of HCV areas.	i. Procedure for monitoring biodiversity and HCV areas	i. July 2024
6.2	Species list	Maintain up-to-date species lists for project areas (according to national / international protected status).	i. Species lists	i. July 2023
7. PS8 – Cultural Heritage				
7.1.	Village Mapping	Ensure that identification of cultural heritage sites is included in the village land mapping process.	i. Revised procedure for village mapping	i. November 2023
8. Monitoring				
8.1.	Social / Community Monitoring	Accurate socio-economic baselines are required when assessing options for land acquisition and tracking impacts (positive and negative) of the Project on communities. Maintain up-to-date socio-economic baselines for communities within the Project's sphere of influence. These baselines, based on a sound scientific approach, should include key socio-economic KPIs e.g. food security, health and other appropriate livelihood metrics.	i. Procedure for maintaining baselines ii. Updated socio-economic baselines (SL and Ghana)	i. September 2023 ii. December 2023
9. Other				
9.1.	*Annual Impact Reporting	Harmonise required impact KPI's across investors, including methodology and reporting timelines.	i. Revised AMR (ESG) Template, completed for 2023 and ii. including all future AMR items as indicated in this ESAP.	i. March 2023 ii. March 2024
9.2.	*Land Value Reviews	Annual review of land lease amount and market value.	i. Annual Land Lease Report	i. May 2023
9.3.	*LDN Impact Reporting	Prepare annual Land degradation Neutrality (LDN) reports using the standardised LDN impact methodology (land cover and land productivity change).	i. Annual LDN Impact Reports	i. May 2023

ATTACHMENT B: GREENHOUSE GAS ASSESSMENT

The assessment focuses on annual Scope 1 (direct) and Scope 2 (indirect) emissions associated with Miro operations. The assessment is based on the data provided by the company covering aspects of energy and resource use for plantation operations, associated infrastructure, mill operations and vehicle transport.

Scope 1 emissions result from the consumption of fuel and release of emissions on-site (direct emissions from owned or controlled sources), while Scope 2 emissions are indirect emissions from the generation of purchased energy, i.e. the consumption of grid electricity (only applicable to the Ghana Operations).

Scope 3 emissions are indirect GHG emissions which occur as a result of sources not owned or controlled by the Client in relation to the operational activities (i.e. emissions that occur in the supply chain, including both upstream and downstream emissions). For this assessment, only Scope 3 emissions associated with fertiliser and herbicide application is included due to these being the main supply chain inputs for the Project.

Methodology and Literature

Methodology and emission factors (EF) to estimate the GHG emissions are primarily based on the following:

- ▶ Australian National Greenhouse Accounts Factors (2021); and
- ▶ 2006 Intergovernmental Panel on Climate Change (IPCC) Guidelines for National Greenhouse Gas Inventories (with refinements made in 2019).

Other specific emission factors not available from the above sourced from the following:

- ▶ IGES Grid Emission Factors - Ghana (2021)⁷.
- ▶ EF for fertiliser and herbicide – EF is based on a life cycle assessment of fertilisers and herbicides including manufacturing, processing, and transport. Sourced from Silalertruksa & Kawasaki (2015)⁸.

Assumptions

The assumptions applied in carrying out the GHG assessment include:

⁷ Institute for Global Environmental Strategies, List of Grid Emission Factors. Link: <https://www.iges.or.jp/en/pub/list-grid-emission-factor/en> (last accessed online: 31 October 2022)

⁸ Silalertruksa, T. and Kawasaki, J., (2015), Link: <https://www.researchgate.net/file.PostFileLoader.html?id=584fe767dc332d54293c738b&assetKey=AS%3A438808853389315%401481631591268> (last accessed online: 31 October 2022)

- ▶ Daily fuel usages have been estimated for the site using averages across the heavy vehicle equipment, vehicles and stationary equipment (e.g. chainsaws) which have then been extrapolated to calculate annual fuel usages during operational days only;
- ▶ Fertiliser Blend (10:45:0) emissions are calculated for each of the main components of N-P-K. It is assumed that 2.6% of b (Boron) is negligible in relation to GHG emissions due to its small amount and are not included in the assessment; and
- ▶ Emissions for fertilisers, insecticides and herbicide (glyphosate) are classified as Scope 3 emissions as the EFs include emissions from manufacturing, processing, and transport (Scope 3).

Greenhouse Gas Emissions

Based on the above methodology and assumptions, the greenhouse gas emissions are as follows.

Estimated Annual Emissions associated with the Ghana Operations

Component		Scope 1 (tCO ₂ e / year)	Scope 2 (tCO ₂ e / year)	Scope 3 (tCO ₂ e / year)	% of total Emissions
Heavy Equipment	Diesel	1,871	-	-	43.10%
Transport	Diesel	2,000	-	-	46.07%
	Petrol	20	-	-	0.45%
Nursery	Generator Use	11	-	-	0.26%
	Herbicide Manufacturing	-	-	75	1.72%
	Insecticide Manufacturing	-	-	164	3.78%
	Fertiliser Manufacturing	-	-	174	4.01%
	Vehicle / machinery use	2	-	-	0.05%
Office / Facilities	Electricity (Grid)	-	1	-	0.03%
	Generator Use	23	-	-	0.53%

TOTAL	3,928	1	413	100%
TOTAL Scope 1 and 2	3,929		-	
TOTAL Scope 1, 2, and 3	4,342			

Estimated Annual Emissions associated with the Sierra Leone Operations

Component		Scope 1 (tCO2e / year)	Scope 2 (tCO2e / year)	Scope 3 (tCO2e / year)	% of total Emissions
Heavy Equipment	Diesel	938	-	-	31.20%
Transport	Diesel	1,021	-	-	33.97%
	Petrol	88	-	-	2.93%
Nursery	Herbicide Manufacturing	-	-	50	1.66%
	Insecticide Manufacturing	-	-	36	1.21%
	Fertiliser Manufacturing	-	-	116	3.86%
Office	Generator use	755	-	-	25.12%
Other	R410a, Cooking Gas & R22	2	-	-	0.06%
TOTAL		2,805	-	202	100%
TOTAL Scope 1 and 2		2,805		-	
TOTAL Scope 1, 2, and 3		3,007			

ATTACHMENT C: EXTERNAL STAKEHOLDERS CONSULTED

Country	Stakeholder Meeting	Date	Details / Context
Sierra Leone	Mapoli Village – Interview with all section chiefs from Miro Forestry Block D	13/10/22	Discussion / interview to check possible grievances, overall perception of company (positive and negative). Discussion on how company could improve community benefits
Sierra Leone	Mapoli Village – Interview with local councillor / government representative for area covered by Miro Forestry Block D	13/10/22	Discussion / interview to check possible grievances, overall perception of company (positive and negative).
Ghana	Nhyiaeso Village – Interview with village leaders	12/10/22	Discussion / interview to check possible grievances, overall perception of company (positive and negative). Discussion on how company could improve community benefits
Ghana	James Town - Interview with village leaders Nomadic herdsman interview	12/10/22	Discussion / interview to check possible grievances, overall perception of company (positive and negative).
Ghana	Drobonso – Local government meeting with Sekyere Afram Plains District Assembly	13/10/22	Discussion / interview to check possible grievances, overall perception of company (positive and negative).

ATTACHMENT D: LIST OF KEY DOCUMENTS / DATASETS REVIEWED

Key Document Reviewed	Details
Miro Policies and Procedures 2021	Miro company policies approved September 2021
Grievance Procedure for External Stakeholders	Group Grievance Procedure 2020
Natural Resources Manual	HCV Management Prescriptions
2022 Miro ESAP	Miro ESAP 2022.docx
MFD Third Party Management Manual	Miro Group 2020
Sierra Leone Documents and Datasets	
2007 ESIA – Miro Forestry	GeoData Sierra Leone
Final Sierra Leone HCV Report 2016	Unique Forestry and Land Use
Biodiversity Assessment Survey for Miro Forestry (SL) Ltd 2021	Edward Aruna – Reptile and Amphibian Specialist Report
Internal Plymill Development E&S Risk Assessment	Sierra Leone
Sierra Leone – Species Data 2021	2021 Species Monitoring Database
Corrective Action / Continuous Improvement Register	Sierra Leone (2022)
Sierra Leone OHS Risk Assessments / SOPs	<ul style="list-style-type: none"> - Bus transportation and employees - Stores and Procurement <ul style="list-style-type: none"> - HR and Clinic - Security Operations - EGP Risk assessment - Harvesting Risk Assessment - Nursery Risk Assessment - Planning Risk Assessment - Pole Plant Risk Assessment - Silviculture Risk Assessment - Workshops Risk Assessment
Incident Register	Sierra Leone
Stakeholder Mapping and Analysis	Sierra Leone
Stakeholder Engagement Record	Sierra Leone 2022
Grievance Record 2022	Sierra Leone (up to May 22)
Change Management Manual	15.03.21 Miro OHS Change Management Procedure
Key documents related to Sierra Leone Miro Plymill Development	Including EPC contractor proposal and third party agreement, site designs for SL Plymill expansion development, EPA SL letter of intent from Miro, and the full Internal MIRO rapid EIA report
Ghana Documents and Datasets	
ESIA 2018	4,428 ha development in Chirimfa and Awura Forest Reserves

Key Document Reviewed	Details
ESIA 2014	5,000 ha Boumfum Forest
Environmental Management Plan	2015
Waste Management Prescriptions	Ghana 2016
Waste Management Plan	2014
Stakeholder Mapping and Analysis	Ghana
Corrective Action / Continuous Improvement Register	Ghana (2017-2022)
2022 Biodiversity Assessment Report	Ghana – HERP – Ghana - Ofori-Boateng et al 2022.
Species Record List 2022	Ghana
Ghana OHS Risk Assessments / SOPs	<ul style="list-style-type: none"> - Plywood Mill Risk Assessment - Silviculture Risk Assessment (fire fighting) - Harvesting Risk Assessment (fast fell & revised 2022) <ul style="list-style-type: none"> - Pruning Risk Assessment - Weed Control Risk Assessment (incl. Spraying) <ul style="list-style-type: none"> - Security Operations Risk Assessment - Nursery Risk Assessment - Planning Risk Assessment - Workshops Risk Assessment
Risk Register	Ghana 2022
Incident and Near Miss Register	Ghana 2022
2022 Stakeholder Engagement Calendar	Ghana 2022
Grievance Records	Ghana 2022
Employee Handbook	Ghana 2018
CSR summary	Ghana 2017
Emergency Response Plan	Ghana 2014/2015/2016
HCV Assessment Ghana	2016 Doig et al.
Social Risk and Vulnerability Assessment – Illegal Land Use	Registers of landowners and vulnerability assessment for illegal land users in Ghana 2021 - 2022
Ghana Vaneer / Plymill Extension Plans	Saturn Amenities Ltd

Earth Systems is a multi-disciplinary environmental and social science and engineering firm that provides specialist advice and hands-on capabilities in water management and treatment, environmental and social management and impact assessments, waste management, international development, energy and carbon, climate change, sustainability and environmental information. Earth Systems has successfully completed hundreds of projects in Australia, Asia, Africa, South America, North America and the Pacific since the company's establishment in 1993. We serve a wide range of sectors including mining, energy, oil and gas, infrastructure development, urban and rural development, water and waste water, and aid and international development.

Our reputation is built on high quality, objective and value-adding service that reflects environmental expectations of the present and anticipates those of the future. Professional excellence and integrity, high standards of business ethics and quality service are the foundation of our commitment to our clients.

ENVIRONMENTAL & SOCIAL MANAGEMENT SERVICES

- › Environmental and social impact assessment
- › Environmental and social management and planning
- › Compliance monitoring, auditing and permitting
- › Emissions modelling
- › Biodiversity assessment and offset planning
- › Rehabilitation and closure

WATER QUALITY & GEOCHEMICAL SERVICES

- › AMD risk assessment
- › Mine waste management
- › Geochemical engineering
- › Forensic geochemistry
- › Mine drainage management, treatment and modelling
- › Hydrology and pollutant load assessment and modelling
- › Water treatment equipment
- › Geochemical laboratory and analytical services

WASTE-TO-RESOURCE & ENERGY SERVICES

- › Bioenergy technologies
- › Energy efficiency
- › Waste to energy
- › Carbon consulting
- › Mobile pyrolysis technology
- › Biochar and char production
- › Safe hazardous waste destruction services and technologies

www.earthssystemsglobal.com

enviro@earthssystemsglobal.com

BRISBANE BRISTOL DAKAR KIGALI MELBOURNE PERTH SHANGHAI VIENTIANE