REPUBLIC OF LIBERIA
MINISTRY OF PUBLIC WORKS
Infrastructure Implementation Unit (IIU)

LIBERIA ECONOMIC CORRIDORS PROJECT (LECO)

World Bank Project P513497

ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK (ESMF)

Subcomponents 1.3, 1.4, 3.1, 3.2 and 3.3



Aerial view of the Botota–Palala section of the Legacy Corridor through secondary forest (drone image, 4 October 2026).

Final Report
12 November 2026

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Table 1: Document control

Item	Detail
Project	Liberia Economic Corridors Project (LECO), P513497
Instrument	Environmental and Social Management Framework (ESMF)
Client	Infrastructure Implementation Unit (IIU), Ministry of Public Works, Republic of Liberia
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Abbreviations and Acronyms

Acronym	Meaning
AfCFTA	African Continental Free Trade Area
AfDB	African Development Bank
ASM	Artisanal and small-scale mining
BMP	Biodiversity Management Plan
BOD5	Five-day biochemical oxygen demand
C-ESMP	Contractor's Environmental and Social Management Plan
CDA	Cooperative Development Agency
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CLO	Community liaison officer
CLSG	Côte d'Ivoire–Liberia–Sierra Leone–Guinea interconnection
COD	Chemical oxygen demand
E&S	Environmental and social
ECOWAS	Economic Community of West African States
EHS	Environmental, health and safety
EIA	Environmental Impact Assessment
EPA	Environmental Protection Agency of Liberia
ESCOP	Environmental and Social Code of Practice
ESCP	Environmental and Social Commitment Plan
ESF	World Bank Environmental and Social Framework
ESIA	Environmental and Social Impact Assessment
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
ESRS	Environmental and Social Review Summary
ESS	Environmental and Social Standard
EU	European Union
EUDR	European Union Deforestation Regulation
FDA	Forestry Development Authority
FIA	Financial Intelligence Agency
FLY	Federation of Liberian Youth
FONSI	Finding of no significant impact
FUN	Farmers Union Network of Liberia
GBV	Gender-based violence
GHG	Greenhouse gas
GIS	Geographic information system
GM	Grievance mechanism
GPS	Global positioning system

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Acronym	Meaning
HIV	Human immunodeficiency virus
ICT	Information and communication technology
IDA	International Development Association
IIU	Infrastructure Implementation Unit
ILO	International Labour Organization
IPF	Investment Project Financing
IPM	Integrated pest management
KBA	Key Biodiversity Area
LACRA	Liberia Agriculture Commodity Regulatory Agency
LASIP	Liberia Agriculture Sector Investment Program
LDEA	Liberia Drug Enforcement Agency
LECO	Liberia Economic Corridors Project
LIBRAMP	Liberia Road Asset Management Project
LIS	Liberia Immigration Service
LISGIS	Liberia Institute of Statistics and Geo-Information Services
LLA	Liberia Land Authority
LMP	Labor Management Procedures
LNP	Liberia National Police
LRA	Liberia Revenue Authority
M&E	Monitoring and evaluation
MFDP	Ministry of Finance and Development Planning
MGCSP	Ministry of Gender, Children and Social Protection
MIA	Ministry of Internal Affairs (renamed Ministry of Local Government, MLG, in January 2026)
MLG	Ministry of Local Government (former Ministry of Internal Affairs, renamed in January 2026)
MME	Ministry of Mines and Energy
MoA	Ministry of Agriculture
MoCI	Ministry of Commerce and Industry
MoH	Ministry of Health
MoL	Ministry of Labor
MPW	Ministry of Public Works
NBSAP	National Biodiversity Strategy and Action Plan
NCD	National Commission on Disabilities
NDMA	National Disaster Management Agency
NGO	Non-governmental organization
NRF	National Road Fund
NSA	National Security Agency
NTFP	Non-timber forest product

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Acronym	Meaning
OHS	Occupational health and safety
OP	Operational Policy of the World Bank
PAD	Project Appraisal Document
PCB	Polychlorinated biphenyl
PDO	Project Development Objective
PFMU	Project Financial Management Unit
PIU	Project Implementation Unit
PM10 / PM2.5	Particulate matter of less than 10 / 2.5 micrometers
PMU	Program Management Unit (Ministry of Agriculture)
POPs	Persistent organic pollutants
PPE	Personal protective equipment
PUL	Press Union of Liberia
RAP	Resettlement Action Plan (the existing plans of the 10 km Toe Town–Côte d'Ivoire road and of the Coastal Corridor)
RETRAP	Rural Economic Transformation Project
RF	Resettlement Framework
RP	Resettlement Plan (site-specific plan prepared in accordance with the Resettlement Framework)
RSPO	Roundtable on Sustainable Palm Oil
SCNL	Society for the Conservation of Nature of Liberia
SEA/SH	Sexual exploitation and abuse / sexual harassment
SECRAMP	Southeastern Corridor Road Asset Management Project
SEP	Stakeholder Engagement Plan
SESA	Strategic Environmental and Social Assessment
SGBV	Sexual and gender-based violence
SME	Small and medium-sized enterprise
SMS	Short message service (text message)
TAH7	Trans-West African Coastal Highway (Trans-African Highway 7)
ToR	Terms of Reference
TSS	Total suspended solids
UL	University of Liberia
UNCCD	United Nations Convention to Combat Desertification
UTM	Universal Transverse Mercator
VLD	Voluntary land donation (land given by its owner or user without compensation, under the conditions set out in Annex 19)
WHO	World Health Organization

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Executive Summary

The project

The World Bank, through the International Development Association (IDA), will support the Government of Liberia in implementing the Liberia Economic Corridors Project (LECO, P513497). The Project Development Objective is to improve economic corridor connectivity and strengthen agricultural and mining value chains in Liberia. The lead implementing agency is the Ministry of Public Works (MPW) through its Infrastructure Implementation Unit (IIU); the Ministry of Agriculture, through its Program Management Unit and Project Implementation Unit (MoA-PIU), implements the agriculture component, and the Ministry of Mines and Energy (MME) supports the technical assistance of the mining component. The National Road Fund (NRF) is not an implementing entity: it receives technical assistance under Subcomponent 2.2; the Ministry of Transport regulates axle-load control, and the stations will be operated by the agencies designated for that purpose (the station operators). According to the Project Appraisal Document (PAD), the total financing is US$127 million, of which US$75 million IDA and US$52 million from the African Development Bank (AfDB) for the Coastal Corridor.

The project has four components: (1) Backbone Resilient Regional Connectivity – the 10 km Toe Town–Côte d'Ivoire link, the Coastal Corridor Buchanan–Cestos Junction, village access roads with community-based maintenance, and tolling and axle-load control stations at Ganta and Bo Waterside and up to three further axle-load control stations at sites to be selected; (2) Institutional Strengthening and Investment Preparation, including the preparation of the Legacy Corridor (Buchanan–Nimba–Bong) without civil works; (3) Agricultural Value Chains and Climate-Resilient Rural Accessibility – the feed–poultry and tree-crop (cocoa, rubber, oil palm) value chains with their productive infrastructure, the water management systems of rehabilitated oil-palm plantations, spot improvements of rural access roads and four agricultural markets and aggregation centers; and (4) Foundational Mining Sector Development through technical assistance.

Why an ESMF and what it covers

At the design stage, the sites, designs and scope of the village access roads (Subcomponent 1.3), the axle-load control stations (Subcomponent 1.4), the rural access road spot improvements and the agricultural markets and aggregation centers (Subcomponent 3.3) and the value-chain productive infrastructure, including the water management systems of rehabilitated oil-palm plantations (Subcomponents 3.1 and 3.2), have not been firmed up; they will only be known during implementation, when the participatory prioritization of roads and sites, the selection of the station sites and the value-chain investment plans are completed. A framework approach has therefore been adopted for assessing and managing their environmental and social (E&S) risks and impacts, in line with the World Bank Environmental and Social Framework (ESF). This Environmental and Social Management Framework (ESMF) sets out the principles, procedures, roles, tools and budget for screening each subproject and its activities and for assessing its environmental and social risks and impacts; it further guides the preparation of the proportionate site-specific instrument, the obtaining of the Environmental Protection Agency (EPA) permit, the incorporation of the measures in contracts, and the supervision, monitoring and reporting of implementation. It also requires, and guides, the consistency of the outputs of the technical-assistance activities of Components 2, 3 and 4 with the Environmental and Social Standards (ESSs); Component 4 will be further covered by the Strategic Environmental and Social Assessment (SESA) to be prepared under Subcomponent 4.1.

The 10 km Toe Town–Côte d'Ivoire road of Component 1 has its own environmental and social instruments – an ESIA/ESMP, a Biodiversity Management Plan and a Resettlement Action Plan (RAP), which will be revalidated after negotiations – and the Coastal Corridor has its instruments prepared under AfDB requirements, which will be reviewed against ESF requirements, updated as needed and redisclosed; neither is covered by the subproject procedures of this ESMF. This ESMF is accompanied by a Resettlement Framework (RF), Labor Management Procedures (LMP) and a Stakeholder Engagement Plan (SEP); an Environmental and Social Commitment Plan (ESCP) is to be prepared. The works covered by the ESMF will be located in the economic-influence zones of the Monrovia–Ganta–Toe Town corridor (Bong, Nimba and Grand Gedeh Counties), the Coastal Corridor (Grand Bassa and River Cess Counties) and the Legacy Corridor (Grand Bassa, Bong and Nimba Counties); Lofa County is part of the village access road program area, and the Bo Waterside station is in Grand Cape Mount County. Subproject locations will be known progressively from the first year of implementation (2027).

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Risk classification and key risks

The World Bank classified the project at concept stage as High risk overall, with Substantial environmental risk, High social risk and Substantial risk of sexual exploitation and abuse and sexual harassment (SEA/SH).

For the activities covered by the ESMF, the field work of 1–7 October 2026 in Grand Bassa, River Cess, Bong, Nimba and Grand Gedeh Counties confirmed the following key environmental and social risks and impacts, including:

- Vegetation clearance, erosion, sedimentation of streams and wetlands, and disturbance of secondary forest edges and swamp crossings resulting from road rehabilitation, culvert and bridge works, borrow pits and water management structures;
- Dust, noise, construction waste, fuel and oil spills and poor sanitation at work sites and at the stations, markets and processing facilities; effluents from cocoa fermentation, rubber coagulation, livestock and feed facilities;
- Economic displacement of crops, economic trees, roadside stalls and parts of structures within the road reserve, and small areas of land acquisition for stations, crossings, borrow pits and facilities, mostly on customary land with weak documentation;
- Occupational health and safety hazards for contractors' workers and community maintenance workers (excavations, stream crossings, machinery, inadequate tools and PPE), and community safety risks from traffic, open pits and works at crossings used for washing and water collection;
- Labor influx into remote and border communities, SEA/SH, child labor in cocoa, rubber, mining, transport and family farming, and informal local suppliers of sand, laterite and timber;
- Elite capture of benefits, land conflicts, exclusion of women, youth, persons with disabilities and remote hamlets, unmet expectations about employment and compensation, and security risks at the border and for equipment;
- Indirect, cumulative and induced impacts – access to forests opened by improved roads (hunting and bushmeat, charcoal, logging, artisanal mining, agricultural expansion) – and climate hazards (river and flash flooding, washouts) and inadequately sited or sized drainage structures that damage works and interrupt access.

These risks and impacts will be managed following the mitigation hierarchy – anticipating and avoiding them and, where avoidance is not possible, minimizing or reducing them and applying appropriate mitigation measures. Avoidance is achieved first through the project exclusion list (no works in protected areas or critical habitat, no new alignments through primary forest, no dams, no subproject that would physically displace more than 50 households, no activities on disputed land, no mining works, no child or forced labor), through the design principles of Chapter 5 (rehabilitation within existing alignments, climate-resilient drainage, avoidance of sacred sites, graves and water points, siting of facilities on uncontested land) and through the screening of each subproject.

How the risks will be managed

Following the outcome of the E&S screening, the risks and impacts identified for each subproject will be managed through the following instruments, prepared when a subproject is identified and before its works are procured: an ESIA/ESMP for subprojects screened as Substantial risk (expected for the axle-load control stations), a site-specific ESMP for Moderate-risk subprojects (batches of village access roads, rural access road spot improvements, agricultural markets and aggregation centers, plantation water management systems and larger value-chain facilities), an ESMP checklist with the Environmental and Social Codes of Practice (ESCOPs) for Low-risk works (small sheds, nurseries, storage, routine maintenance), and a Resettlement Plan (RP) prepared in accordance with ESS5 and the RF wherever land is acquired or people are physically or economically displaced, including temporarily by detours and works (Annex 18). The generic mitigation and monitoring matrix (Annex 6, Table 29) names, for each impact and risk, the subproject activities concerned, the measures, the indicators, the frequency, the responsibilities and the cost.

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Procedures. The procedures of Chapter 6 follow the subproject cycle in twelve steps: eligibility and screening with a site visit, including the biodiversity screening and, where triggered, a site-specific habitat and species survey; risk classification; screening report and World Bank concurrence; Terms of Reference and preparation of the instruments; the EPA process; World Bank review and disclosure; procurement with the E&S clauses, the site handover and the civil works clearance after compensation; contractor mobilization with an approved C-ESMP; supervision and monitoring; reporting; incident reporting within 24 hours; and audits and completion, followed by the corrective-action and stop-work procedure that applies throughout (Section 6.1.5).

Biodiversity. The exclusion list and the 5 km proximity screen remove the protected areas, KBAs and critical habitat from the subprojects, but they are only the first steps: because the sites are not yet known and the biodiversity baseline is regional, the screening of every subproject assesses the indirect, cumulative and induced impacts of the improved access – logging, charcoal, hunting and bushmeat, artisanal mining and agricultural expansion in the forest areas opened (Section 5.2.3) – and requires, wherever natural habitat, critical habitat features, ecosystem services or an induced-access pathway is identified and for every Substantial-risk subproject, a site-specific habitat and species survey by a qualified biodiversity specialist, the determination of natural and critical habitat, an ecosystem-services assessment and a Biodiversity Management Plan where needed, designed to achieve no net loss and, where feasible, a net gain of biodiversity (Section 6.1.1). The subproject instruments establish the actions of the FDA and the communities on the forest areas opened and the corrective actions that become mandatory when forest loss or exploitation increases, and they distinguish the obligations of the contractor, within the construction footprint, from the actions that the implementing units, the FDA and the communities take outside it.

Residual risks. After the controls of this ESMF, the RF, the LMP and the SEP, no risk of the register is rated High: SEA/SH and a fatality or serious injury remain Substantial because their consequence is Critical by definition, twelve risks are Moderate and six are Low. These are conservative framework-level ratings. The Substantial ratings of the two Critical-consequence risks are retained and are not reduced artificially; the site-specific assessment re-assesses each risk on the actual conditions of the site and determines whether additional mitigation is required. For every risk, the register sets the site-level pathway to a Low rating – avoidance and design measures that limit the exposure, mandatory controls, verification before mobilization and measurable conditions – which is applied at screening, in the subproject instrument, before mobilization and in the quarterly reports; a risk not yet at Low stays on the corrective-action list until its conditions are met, and the two Critical-consequence risks are held as low as reasonably practicable under zero-case and zero-fatality objectives (Section 5.3.2, Table 28).

Corrective action and stop-work. The Major impacts and the Substantial residual risks of Annex 5 are managed through mandatory measures whose non-implementation is a major non-conformance notified the same day, with a corrective action plan within 48 hours and closure verified in the field, and through defined stop-work events – a fatality or serious injury, child or forced labor, a SEA/SH allegation, works in natural habitat not assessed, works on a section not compensated and handed over, an uncontrolled discharge, a chance find, works without an approved C-ESMP or permit – with restart conditions, escalation and sanctions (Section 6.1.5).

Every works contract carries the relevant E&S instruments and requirements – the ESMP, the ESCOPs, the chance-finds procedure, the occupational and community health and safety requirements, the code of conduct and the SEA/SH action plan provisions. In addition, every contractor prepares a Contractor's ESMP (C-ESMP) before mobilization. The MPW/IIU (and the MoA-PIU for Component 3) is required to prepare site-specific RPs in accordance with the RF once the impact locations are identified; compensation is completed, and the compensation completion report cleared by the World Bank, before works start on each section. The EPA permit is obtained before works start. The conditions for commencing works are those of the RF, the LMP and the SEP: a site is handed over only when, in addition, the grievance committee is in place, the workers have signed the code of conduct and the SEA/SH referral arrangements are operational (Section 6.1.3, Step 7).

Social risks, instruments and terms. The activities comply with Liberian law and the ESSs on child and forced labor, labor and working conditions, land acquisition and displacement, GBV and SEA/SH, community health and safety and cultural heritage through the measures set out for each subcomponent in Annex 22, and the baseline, the mitigation measures, the indicators, the targets and the responsibilities for

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these risks are brought together in the social risk mitigation and monitoring plan of Annex 23. The Resettlement Framework (RF) is the project-level instrument; a Resettlement Plan (RP) is the site-specific plan prepared in accordance with it. Negotiated settlements, in which failure to agree would lead to expropriation, are covered by ESS5 and compensated at replacement cost under the RF; voluntary market transactions are documented with the due-diligence checklist of the RF; and voluntary land donation, which is not covered by ESS5, is accepted only under the conditions, the protocol and the consent form of Annex 19 (Section 1.5).

Implementation arrangements. The IIU owns the ESMF and recruits an Environmental Specialist, a Social Specialist with resettlement expertise and a GBV/SEA-SH Specialist within one month of effectiveness; the MoA-PIU appoints a Social Specialist and an Environmental Specialist for Component 3, and the MME designates a social focal point for Component 4; county environmental and social focal points are designated along the corridors; supervision consultants and contractors carry site-level responsibility; the EPA, the Liberia Land Authority (LLA), the Ministry of Gender, Children and Social Protection (MGCSP), the Ministry of Labor, the Forestry Development Authority (FDA), the Ministry of Local Government and county administrations provide regulatory and local functions. A qualified biodiversity specialist, retained under the ESMF budget, carries out the site-specific surveys and designs the outcome monitoring, and the FDA, the supervision consultants and the contractors have defined biodiversity responsibilities (Section 6.4).

A cascading training program (national, county, contractor and community levels) is costed in Chapter 6. The indicative ESMF implementation budget is about US$1.26 million over five years (range US$1.1–1.5 million), excluding the cost of staff financed under project management, the contractors' ESMP costs included in works contracts and the compensation budget of the RF; the budget is indicative and will be confirmed at appraisal.

E&S compliance monitoring. Contractors report monthly, while the supervision consultants and county focal points verify compliance through site visits, using a mobile data application with georeferenced photographs. The IIU and the MoA-PIU are responsible for consolidating the quarterly environmental and social reports to the World Bank. Monitoring measures outcomes as well as compliance: habitat loss and condition, vegetation recovery, invasive species, evidence of hunting, logging, charcoal and mining and forest-cover change along the improved roads are tracked against baselines and targets established at screening (Annex 6). Serious incidents are notified to the World Bank within 24 hours, and independent environmental and social audits are carried out at mid-term and completion.

Consultation and disclosure

Stakeholders were consulted during the preparation of this ESMF between 22 September 2026 (National Road Fund, Monrovia) and 5 October 2026 (county authorities, line ministries, cooperatives, agribusinesses, transport operators and the joint border agencies in Grand Bassa, River Cess and Grand Gedeh Counties, with site observations in Bong and Nimba), and at the national stakeholder consultation convened by the IIU on Friday, 9 October 2026 at the Ministry of Public Works, Monrovia, at which 22 national institutions – ministries and agencies, the Inter-Religious Council, civil society, farmers' and transport organizations – were represented by 38 participants, and 16 of the institutions returned 22 questionnaires; 54 persons signed the attendance sheet and, by the count of the IIU, about 32 men and 22 women were present.

The institutions welcomed the project and asked, in particular, that road safety, accessibility for persons with disabilities, truck parking and flood resilience be built into the designs; that detours be maintained and the police informed of works; that dust and working hours be controlled; that biodiversity surveys, forest-product permits and the involvement of the Liberia Land Authority, the Ministry of Labor, the Ministry of Gender, Children and Social Protection and the National Commission on Disabilities be secured from the design stage; and that a project steering committee coordinate the institutions.

The views expressed by the stakeholders have duly been taken into account in the design considerations (Section 5.6), the implementation arrangements (Section 6.4), the grievance mechanism (Section 7.3), the contractor requirements (Annexes 9 and 10) and, for land, labor and engagement matters, in the RF, the LMP and the SEP; the record of the consultation and the responses are in Section 7.1 and Annexes 16 and 17. In accordance with ESS10, the ESMF will be disclosed in Liberia and on the World Bank website by 16

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November 2026. Chapter 7 sets the protocols for consultation and disclosure on each subproject – consultation at prioritization, at screening, on the draft instrument, before works and during works, with separate sessions for women and vulnerable groups, records and feedback within 30 days, and disclosure of the draft and final instruments in the communities – and the design of the grievance mechanism: three tiers with representative community committees, service standards of 10, 20 and 30 working days, a confidential and survivor-centered SEA/SH channel, appeal, protection against reprisal and performance targets. Grievances are received by the IIU at the Ministry of Public Works, Lynch Street, Monrovia (telephone +231 778 442 885; e-mail office@iiu-mpw.org), and gender-based violence can also be reported through the hotline 9696.

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1. Introduction

The Government of Liberia, through the Infrastructure Implementation Unit (IIU) of the Ministry of Public Works (MPW), will implement the Liberia Economic Corridors Project (LECO, P513497), financed by the World Bank through Investment Project Financing, to improve economic corridor connectivity and strengthen agricultural and mining value chains in Liberia. Its civil works are located along the economic corridors of Bong, Nimba, Grand Gedeh, Grand Bassa, River Cess, Lofa and Grand Cape Mount Counties.

This Environmental and Social Management Framework (ESMF) follows the World Bank Environmental and Social Framework (ESF) and Liberian legislation and supports the environmental and social due diligence of the project activities whose sites are not yet known.

1.1 Rationale of the ESMF

The project finances a program of subprojects whose precise locations, designs and scope of works cannot be determined before appraisal. For instance: (i) the village access roads will be selected within the economic-influence zones of the corridors through the community-based maintenance program; (ii) the tolling and axle-load control stations are planned at Ganta and Bo Waterside, with up to three further axle-load control stations at sites to be selected, of which the B'hai border area is one possible site; (iii) the rural access road spot improvements and the agricultural markets and aggregation centers will be selected through the participatory multi-criteria prioritization of the MoA-PIU; and (iv) the productive infrastructure of the tree-crop and feed value chains, including the water management systems of rehabilitated oil-palm plantations, will follow the value-chain investment plans and matching grants. Site-specific Environmental and Social Management Plans (ESMPs) and Resettlement Plans (RPs) will therefore be prepared during implementation, once the specific location of each subproject is known.

The ESMF is, therefore, the overarching framework for screening, assessing and managing the environmental and social risks and impacts of each subproject once it is identified: it identifies the general risks and impacts of the typical subproject types, sets suggested mitigation measures and codes of practice, defines the instruments to be prepared by risk class and allocates roles, training and budget, so that every subproject is implemented consistently with the Environmental and Social Standards (ESSs) and Liberian law.

1.2 Objectives of the ESMF

The ESMF aims to identify, assess, and mitigate the potential adverse environmental and social risks and impacts of the project consistent with the relevant ESSs and national requirements. Specifically, it:

- establishes the procedures for screening, review, approval and implementation of subprojects, including the exclusion list and the subproject risk classification;
- sets out the principles for, and defines, the site-specific E&S instruments required for each risk classification (ESIA/ESMP, ESMP, ESMP checklist with ESCOPs, RP, Biodiversity Management Plan where relevant, Contractor's ESMP) and their content;
- specifies the roles of the implementing entities – the IIU, the MoA-PIU and the MME – and of the EPA and other regulators, county authorities, supervision consultants and contractors, and the monitoring and reporting procedures;
- requires technical-assistance outputs to be consistent with the ESSs;
- identifies staffing, training and capacity-building needs and describes the consultation, disclosure and grievance arrangements, including for disadvantaged and vulnerable groups, the confidential, survivor-centered SEA/SH channel and the workers' grievance mechanism of the LMP;
- presents the indicative ESMF implementation budget and the contractual obligations of contractors with respect to the E&S requirements (Annex 10).

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1.3 Approach and Methodology

The ESMF was prepared through a combination of document review, field observations, stakeholder consultations, and a framework-level assessment of environmental and social risks and impacts. The assessment involved:

- Document review: examination of the project preparation documents, the applicable national policies and legislation, the World Bank ESF and the relevant World Bank Group Environmental, Health and Safety (EHS) Guidelines;
- Review of comparable projects: consideration of the experience and lessons of the Liberian ESF projects of the IIU and the MoA-PIU (LIBRAMP, SECRAMP and RETRAP), particularly on E&S screening, institutional arrangements and implementation;
- Field investigations: visits from 1 to 7 October 2026 in Grand Bassa, River Cess, Bong, Nimba and Grand Gedeh Counties, preceded by the consultation with the National Road Fund on 22 September 2026 in Monrovia;
- Characterization of typical subproject conditions: use of the field observations, photographs, drone imagery, GPS records and the available secondary information to identify representative activities, environmental and social receptors and potential impact pathways;
- Risk and impact assessment: assessment of the potential impacts from magnitude and receptor sensitivity (significance = magnitude × sensitivity) and of event-based risks from likelihood and consequence (risk = likelihood × consequence), taking account of the typical subproject activities, the project phases and the potential mitigation measures;
- Development of management arrangements: identification of screening and assessment procedures, the applicable management instruments, implementation responsibilities, capacity needs, monitoring arrangements and indicative budget requirements.

The environmental and social baseline is presented at regional and county level from the available secondary information, supplemented by field observations at selected locations. These observations characterize typical site conditions and potential risks; they do not constitute comprehensive baseline assessments of all future subproject locations. The ESMF establishes the framework-level assessment and management requirements; subproject-specific baseline conditions, impact assessments and mitigation measures will be determined through screening and the subsequent E&S instruments once locations and designs are sufficiently defined.

The social provisions were prepared in coordination with the RF, the LMP, and the SEP to ensure consistency across the four E&S instruments of the project. Corridor-level maps are provided in Annex 15; site-specific mapping will be undertaken during the screening and assessment of each subproject. The limitations are set out in Section 1.4.

1.3.1 Literature reviewed

- World Bank: the Project Appraisal Document (PAD) of the project; Concept-stage ESRS (1 June 2026); the ESF (2017), ESS1–ESS10 and their Guidance Notes; the ESMF, RF, SEP and LMP templates for Liberia (2026); the Good Practice Note on addressing SEA/SH in civil works; the Environmental and Social Directive for IPF; the Technical Note on Screening and Risk Classification; the General EHS Guidelines (2007) and the EHS Guidelines for Toll Roads, Construction Materials Extraction, Annual Crop Production, Perennial Crop Production and Poultry Production;
- Liberia: Constitution (1986); Environment Protection and Management Law (2002); Environmental Protection Agency Act (2002); EIA Procedural Guidelines (2006); National Environmental Policy (2003); Land Rights Act (2018); Liberia Land Authority Act (2016); Public Lands Law (1973); Decent Work Act (2015); Public Health Law (1976); Children's Law (2011); Domestic Violence Act (2019); Act to amend the Penal Code on rape (2005); National Forestry Reform Law (2006); Community Rights Law with respect to Forest Lands (2009); National Wildlife Conservation and Protected Area Management Law (2016); Local Government Act (2018); National Road Fund Act (2016); Vehicle and Traffic Law; EPA environmental quality standards; National Policy and Response Strategy on Climate Change (2018); Nationally Determined Contribution (2021);

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- Reference instruments and data: the ESMF, LMP and SEP of the Rural Economic Transformation Project (RETRAP, P175263) and the instruments of the Southeastern Corridor Road Asset Management Project (SECRAMP), for structure and institutional practice; the RAP of the CLSG rural electrification line along the Legacy Corridor (compensation practice); LISGIS census results, the 2019–20 Demographic and Health Survey and the Household Income and Expenditure Survey; published descriptions of the Upper Guinean forest, protected areas and key biodiversity areas of Liberia.

1.3.2 Field visits and stakeholder consultations

Field visits were made from 1 to 7 October 2026 to the areas of the proposed project activities: Grand Bassa (Buchanan, Districts 3, 4 and 5, Compound #3, Marqui Town), River Cess (Cestos, Timbo, Doegbon, Zor Town), Bong and Nimba (village access roads and the Legacy Corridor sections Buchanan–Botota–Palala and Yopia Junction–Duo Town–Ganta) and Grand Gedeh (Toe Town and the B'hai border post).

The field visits aimed at characterizing the typology of village and rural access roads, their drainage structures, stream crossings, borrow areas, settlements and right-of-way occupation, the B'hai border area, one possible site of an axle-load control station, and typical value-chain production and processing sites. Thirty-three ground photographs, eleven drone images and GPS points were recorded (Annex 13; Map 4, Annex 15).

In addition, consultations were held with the National Road Fund (22 September 2026, Monrovia) and, between 2 and 5 October 2026, with the Grand Bassa County Attorney and County Agricultural Coordinator, the Ministry of Mines and Energy county office, commercial drivers and motorcycle riders, agricultural cooperatives of Grand Bassa, River Cess and Sinoe, a private agribusiness, the eleven joint security and border agencies at B'hai, and the Toe Town and Grand Gedeh county authorities (issues and responses in Chapter 7; attendance logs in Annex 16).

In the same context, the IIU convened a national stakeholder consultation to present all four E&S instruments (the ESMF, the RF, the LMP and the SEP) on Friday, 9 October 2026 at the Conference Hall of the Ministry of Public Works, Monrovia. Twenty-two national institutions were represented by 38 participants, who received presentations by the Consultants on the project and on the purpose, objectives and relevance of the ESMF, RF, SEP and LMP.

The participants discussed the project's key features and the E&S findings in plenary and completed a structured questionnaire of 14 questions (22 questionnaires returned). Their feedback and responses of this ESMF are recorded in Section 7.1 and Annex 17, and the attendance sheets in Annex 16. After the field work, the Grand Bassa County Agricultural Coordinator also provided the list of 18 feeder roads that serve the main agricultural areas on the Coastal Corridor side of the county (Electoral District 5 and Compound #4), which complements the 14 roads of the Legacy Corridor side recorded during the field work (Annex 14).

1.4 Limitations

The following limitations, largely related to the availability of field information and data, apply to this ESMF. They will be addressed through the screening and site-specific procedures of the relevant instrument, as guided by this ESMF, once the subproject sites are known.

- The sites and rural access roads of Subcomponents 3.1–3.3 are not yet identified. This ESMF uses the indicative lists of 32 feeder roads provided by the Grand Bassa County Agricultural Coordinator – 14 on the Legacy Corridor side (District 3) and 18 on the Coastal Corridor side (Electoral District 5 and Compound #4) – and the 11 feeder-road communities observed between Grand Bassa and River Cess (Annex 14); equivalent lists for the other project counties are not yet available.
- The station sites at Ganta (Nimba County) and Bo Waterside (Grand Cape Mount County) were not surveyed; among the possible sites of the further stations, only the B'hai border area (Grand Gedeh County) was visited. The baseline of each station site, including that of Grand Cape Mount County, is completed at the screening and in the ESIA/ESMP of the station.
- Lofa County was not visited; its village access road program area is characterized from secondary data and the records of the Swedish-supported village access road program (Table 6).

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- No representative segments of the village access road program (Subcomponent 1.3) could be selected because the program's roads are not yet identified. The typology of village access roads was characterized from the roads driven in Bong and Nimba and from the Legacy Corridor sections and village roads around Botota, Palala, Kpoyou Town, Soklo Town and the Yopia Junction–Duo Town–Ganta road.

The site and feeder-road lists of the Ministry of Agriculture, the sites of the stations and the village access road long list of the Ministry of Public Works will be reflected in the screening of each subproject; until then, the estimates of this instrument are presented as ranges and the site-specific screening of each subproject (Annex 1) is the step at which the site data are completed.

1.5 Scope and Application

Activities covered. The ESMF applies to all subprojects and activities financed under Subcomponent 1.3 (village access roads and community-based maintenance), Subcomponent 1.4 (tolling and axle-load control stations at Ganta and Bo Waterside and up to three further axle-load control stations at sites to be selected), Subcomponent 3.1 (productive, aggregation, storage and market infrastructure of the feed–poultry value chain), Subcomponent 3.2 (productive infrastructure of the tree-crop value chains, including the water management systems of rehabilitated oil-palm plantations) and Subcomponent 3.3 (rural access road spot improvements and four agricultural markets and aggregation centers), whatever their size, and to the associated procurement of goods and services. It also applies to the matching grants and outgrower investments of Component 3 through the E&S eligibility and screening conditions of the grant manual (Table 13, Annex 20).

Activities with their own instruments. Three activities are not covered by the subproject procedures of this ESMF because they have, or will have, their own instruments: Subcomponent 1.1 (the 10 km Toe Town–Côte d'Ivoire road) has its own ESIA/ESMP, Biodiversity Management Plan and RAP; the RAP will be revalidated after negotiations, and compensation will be paid to the project-affected persons as soon as the project is approved by the Board and before civil works start; Subcomponent 1.2 (Coastal Corridor Lot I) has the instruments prepared and disclosed under AfDB requirements – the ESF applies to Subcomponent 1.2 as an IDA-co-financed activity: the corridor is co-financed under the World Bank–AfDB Mutual Reliance Framework, procurement is delegated to the AfDB, E&S supervision is not delegated, and the Coastal Corridor instruments will be reviewed against ESF requirements, updated as needed and redisclosed (Section 6.4); and Subcomponent 2.1 (Legacy Corridor) will receive its instruments with its detailed design and investment preparation. These activities are referred to in this ESMF only for institutional consistency; their interfaces with the subprojects, including linked activities and cumulative impacts, are considered under ESS1 (Sections 2.4 and 5.2.3). The activities of the exclusion list (Section 2.2) are not financed under any subcomponent.

Technical assistance. Under ESS1 the ESMF requires the technical-assistance outputs of Components 2, 3 and 4 to be prepared under Terms of Reference consistent with the ESSs (Section 6.2); Component 4 is further covered by the SESA to be prepared under Subcomponent 4.1.

Application. Application of the ESMF is mandatory for every subproject. Screening and assessment (Chapter 6) precede approval and procurement; the E&S instruments required are determined by the outcome of the screening and are proportionate to the risks and impacts; no works start before the instrument is cleared and disclosed, the EPA permit is issued where required, the compensation of the affected persons is completed, the grievance mechanism and the SEA/SH referral arrangements are operational and the site is handed over to the contractor (Steps 7 and 8); and the implementation of the measures is supervised, monitored, reported and audited, with the corrective-action and stop-work procedure of Section 6.1.5.

Relationship with the other instruments. The ESMF is the umbrella instrument of the project. The RF governs land acquisition, restrictions on land use and physical and economic displacement, and the RP of each subproject is prepared in accordance with it; voluntary land donation is not covered by ESS5 or by the RF and is managed under this ESMF (Annex 19); the LMP governs labor and working conditions of all project workers; and the SEP governs stakeholder engagement, disclosure and the grievance mechanism. The ESMF cross-refers to them without duplicating their provisions, and the four instruments are applied together through the screening and the subproject instruments. The conditions for commencing works are

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the same in the four instruments and are brought together in Step 7 (Section 6.1.3). Annex 22 shows how the subproject activities comply with national law and the ESSs on the key social risks, and Annex 23 brings together the baseline, the mitigation measures and the monitoring of these risks.

Instruments and terms. The Resettlement Framework (RF) is the project-level instrument: it sets the principles, eligibility, entitlements, valuation methods, procedures, grievance arrangements and budget for land acquisition, restrictions on land use and involuntary resettlement while the sites are not yet known. A Resettlement Plan (RP) is the site-specific instrument prepared in accordance with the RF once the location and the impacts of a subproject are known; it contains the census, the inventory of assets, the entitlements, the budget and the schedule, is proportionate to the impacts and is cleared, disclosed and implemented before the works start. The term Resettlement Action Plan (RAP) is kept only for the existing plans of the 10 km Toe Town–Côte d'Ivoire road and of the Coastal Corridor.

Three ways of obtaining land are distinguished. (i) A negotiated settlement is an acquisition by the implementing agency by agreement with the owner or user where failure to agree would lead to expropriation or other compulsory procedures; it is covered by ESS5, the land and assets are compensated at replacement cost and it is documented in the RP. (ii) A voluntary market transaction is a purchase or lease in which the seller or lessor is free to refuse and the buyer cannot resort to expropriation; it is outside ESS5 (paragraph 6), provided that no person other than the seller is displaced, and it is documented with the due-diligence checklist of the RF. (iii) A voluntary land donation is land given without compensation by an owner or user who is fully informed, is free to refuse and benefits directly from the facility; it is not covered by ESS5 or by the RF, is assessed under ESS1 and is accepted only under the conditions, the protocol and the consent form of Annex 19, with the prior approval of the World Bank. A transaction that does not meet the conditions of (ii) or (iii) is treated as an acquisition under ESS5 and compensated under the RF.

1.6 Document Structure

This ESMF is organized as follows:

- Chapter 1 introduces the ESMF: its rationale and objectives, the approach and methodology, the limitations, its scope and application and the structure of the document;
- Chapter 2 describes the project, the exclusion list, the geographic scope, linked activities, schedule and beneficiaries;
- Chapter 3 the policy, legal and institutional framework and the applicable standards;
- Chapter 4 the baseline, the general typology of the subproject areas observed in the field and the climate and disaster risk screening;
- Chapter 5 the impact and risk assessment (detailed in Annex 5), including the indirect, cumulative and induced impacts, the suggested mitigation measures, the measures for vulnerable groups and the design considerations for avoidance;
- Chapter 6 the procedures, including biodiversity screening and surveys and the corrective-action and stop-work procedure, the implementation arrangements, training and budget;
- Chapter 7 consultation, disclosure, the grievance mechanism and SEA/SH; and
- Annexes 1 to 23 contain the screening form, the policy, legislation and ESS tables, the impact assessment table and risk register, the ESMP template and mitigation and monitoring matrix, the ESCOPs, the chance-finds procedure, the OHS and community health and safety requirements, the C-ESMP outline and contract clauses, the ESIA/ESMP Terms of Reference outline, the grievance and incident forms, the photographic record, the register of cooperatives and feeder roads, the maps, the attendance logs, the record of the national stakeholder consultation, the requirements for detours and alternative routes, the conditions for voluntary land donation, the inclusion measures for matching grants and outgrower contracts, and the criteria for assessing the capacity of the institutions, the matrix of compliance of the subproject activities with national law and the ESSs on the key social risks (Annex 22) and the social risk mitigation and monitoring plan (Annex 23).

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2. Project Description

2.1 Project Development Objective, Components and Activities

The Government of Liberia, with IDA financing, is preparing the Liberia Economic Corridors Project (LECO, P513497), the first phase of a long-term Economic Corridors Program. The Project Development Objective (PDO) is to improve economic corridor connectivity and strengthen agricultural and mining value chains in Liberia. The total financing of Phase 1 is US$127 million, of which US$75 million from IDA and US$52 million from the African Development Bank (AfDB) for the Coastal Corridor (Subcomponent 1.2), co-financed under the World Bank–AfDB Mutual Reliance Framework. The financing figures and the co-financing arrangement are those of the PAD; if they are modified at appraisal or negotiations, this ESMF will be updated accordingly and redisclosed. Appraisal is planned for February 2027 and Board approval for March 2027.

The project will be implemented by the Ministry of Public Works through its Infrastructure Implementation Unit (IIU) for Components 1 and 2, including the civil works of the backbone roads, the village access roads and the stations; by the Ministry of Agriculture through its Program Management Unit and a strengthened Project Implementation Unit (MoA-PIU) for Component 3; and with the Ministry of Mines and Energy (MME) for the technical assistance of Component 4, under the strategic oversight of an Inter-Ministerial Project Steering Committee co-chaired by the MPW and the MoA (Section 6.4). The National Road Fund (NRF), which mobilizes and manages road-user revenues to finance road maintenance, is not an implementing entity: it receives technical assistance under Subcomponent 2.2. The Ministry of Transport regulates axle-load control, and the stations will be operated by the agencies designated for that purpose, referred to in this ESMF as the station operators. The components and subcomponents are listed in Table 2.

Table 2**: Project components and implementing entities**

Component	Main activities	Implementing entity
1. Backbone Resilient Regional Connectivity (US$43 million IDA; US$95 million with the AfDB co-financing of Subcomponent 1.2)	1.1 Upgrading of the approximately 10 km Toe Town–Côte d'Ivoire missing link on TAH7 to paved road, with road safety improvements and border-area infrastructure (own ESIA/ESMP, Biodiversity Management Plan and RAP; US$10 million); 1.2 Coastal Corridor Lot I, Buchanan–Cestos Junction (about 61 km, with the 5.3 km access road to the Port of Buchanan), co-financed with the AfDB (about US$82 million, of which US$30 million IDA and US$52 million AfDB; AfDB instruments, reviewed against ESF requirements, updated as needed and redisclosed); 1.3 village access roads: continuation and scaling-up of the Village Access Roads program through labor-intensive rehabilitation and maintenance by community-based organizations (US$2 million); 1.4 axle-load and tolling stations: tolling and axle-load control stations at Ganta and Bo Waterside with their ICT systems and operating arrangements, and up to three axle-load control stations with associated systems and facilities (US$1 million).	MPW through the IIU; for 1.2, the MPW's AfDB PIU (procurement delegated to the AfDB; E&S supervision not delegated, each financier applies its own E&S framework)

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Component	Main activities	Implementing entity
2. Institutional Strengthening and Investment Preparation (US$5 million)	2.1 Preparatory activities for the Legacy Corridor, Buchanan–Nimba–Bong (about 242 km): detailed climate-resilient engineering designs, E&S instruments and technical documentation; no civil works in this phase (US$1 million); 2.2 road asset management and trade facilitation: output- and performance-based road contract for the Monrovia–Ganta corridor, technical assistance to strengthen the National Road Fund, pilot vignette tolling for heavy goods vehicles and trade facilitation measures (US$1 million); 2.3 BSc in Urban and Regional Planning at the University of Liberia (US$1 million); 2.4 project management and implementation support to the MPW/IIU, including environmental and social risk management, citizen engagement, grievance redress and SEA/SH prevention and response (US$2 million).	MPW through the IIU; the National Road Fund (2.2) and the University of Liberia (2.3) receive the support and are not implementing entities
3. Agricultural Value Chains and Climate-Resilient Rural Accessibility (US$22 million)	3.1 Feed–poultry value chain development: outgrower-based production of maize and soybean with producer organizations, one-off matching grants, and targeted investments in production, aggregation, post-harvest management, storage, feed supply and market coordination (US$12 million); 3.2 tree-crop competitiveness, traceability and sustainable market access (cocoa, rubber, oil palm): farmer registries and traceability, outgrower schemes, RSPO engagement, and rehabilitation and replanting of aging oil-palm plantations under outgrower schemes with climate-resilient varieties and water management systems (US$2 million); 3.3 rural access and productive connectivity: spot improvements of rural roads (bridges, culverts, drainage, critical sections) selected through participatory multi-criteria prioritization, and four climate-resilient agricultural markets and aggregation centers (US$7 million); 3.4 project management and implementation support to the MoA-PIU (US$1 million).	MoA Program Management Unit and MoA-PIU, with LACRA for regulatory functions and product standards
4. Foundational Mining Sector Development (US$5 million)	4.1 Mining policy and regulatory reform (replacement of the Minerals and Mining Law of 2000, fiscal regime, implementing regulations, ASM licensing, land access and community consultation, mine closure) informed by a Strategic Environmental and Social Assessment (SESA) undertaken early in implementation (US$2 million); 4.2 National Geoscience Information System and expansion of the Mineral Cadastre Administration System to small-scale mining (US$2 million); 4.3 local content and SME supplier development, including women-owned enterprises and SMEs in mining-affected communities (US$1 million); 4.4 project management. Technical assistance only.	MME, with the MFDP for policy coordination

This ESMF and the Resettlement Framework (RF) – a separate instrument of the project, prepared and submitted together with this ESMF, the Labor Management Procedures (LMP) and the Stakeholder Engagement Plan (SEP) – cover the civil works whose sites are not yet known: Subcomponents 1.3, 1.4, 3.1, 3.2 and 3.3. All five subcomponents may involve land acquisition or restrictions on land use – small areas of land for the stations, crossings, borrow pits, facilities and widening at failed crossings, and the economic displacement of crops, economic trees, stalls and parts of structures within the road reserves – which is why the RF applies to each of them, and the RP of each subproject is prepared in accordance with it. The LMP applies to all project workers of the whole project. The SEP applies to the whole project except the Coastal Corridor (Subcomponent 1.2), for which a separate SEP was prepared under the AfDB-supported instruments. The project is classified overall as High risk (environmental risk Substantial, social risk High, SEA/SH risk Substantial).

Progress toward the PDO will be measured, among other indicators, by the number of direct users benefiting from improved access (by sex and youth), the kilometers of village access roads rehabilitated

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and maintained through community-based organizations, the number of spot improvements with climate-resilient features, the number of people living within 2 km of rehabilitated rural access roads, the number of operational axle-load control stations, the number of farmers in outgrower schemes (by sex, crop and county) and of smallholder oil-palm farmers in the RSPO process, and the completion and disclosure of the SESA; the environmental and social compliance and grievance-resolution indicators of the ESCP (to be prepared) will be reported alongside. The activities of each subcomponent covered by this ESMF are described in Section 5.1.

2.2 Exclusion List

The exclusion list defines the activities that the project will not finance under any subcomponent covered by this ESMF, whatever their size or the entity that proposes them. It applies the avoidance step of the mitigation hierarchy of ESS1 and is applied in two stages. Criteria 1 to 12 concern the activity and its location: they are checked for every subproject at the identification stage, in Section B of the screening form (Annex 1), before any other screening question (Section 6.1.1, Step 1). Criterion 13 is risk-based: it is applied only after the risk classification of the subproject, in Section E of the form (Step 2), because it depends on the class assigned; a subproject classified High, or classified Substantial without the screening showing that its risks can be mitigated to an acceptable level, is not eligible. At both stages a proposal that meets a criterion of Table 3 is rejected or redesigned and, where it is redesigned, screened again; the decision is recorded in the screening report, which is submitted to the World Bank for concurrence (Step 3). The criteria are grouped by theme in Table 3; the table also states, for the land-related criteria, the instrument that applies below the threshold.

Table 3: Project exclusion list

#	Theme	Excluded activity
1	Biodiversity and natural habitat	Activities located within, or that would cause significant conversion or degradation of, a gazetted or proposed protected area, a key biodiversity area, critical habitat, primary forest, mangrove or a legally defined buffer zone.
2	Biodiversity and natural habitat	New road alignments or new feeder roads through primary or intact secondary forest, wetlands or swamps. The project rehabilitates existing roads and crossings within their existing alignments; minor local realignments at failed crossings are allowed only where the screening confirms that no sensitive receptor is affected.
3	Biodiversity and natural habitat	Harvesting, sale or trade of timber, charcoal, bushmeat or wildlife, the commercial exploitation of forest resources, or the conversion of forest land to agriculture under the tree-crop activities (consistent with the EU Deforestation Regulation traceability objective of Subcomponent 3.2).
4	Dams and water	Construction or rehabilitation of dams, or water-control structures that depend on a dam. The drains, weirs, bunds, check dams and canals of the water management systems of rehabilitated oil-palm plantations (Subcomponent 3.2) are limited to small structures of at most 2 m height without permanent impoundment of a perennial watercourse.
5	Dams and water	Abstraction from, or discharge into, an international waterway in a manner that triggers the World Bank policy on international waterways (OP 7.50); the works of a station near an international river (the Cavalla at the B'hai border, the Mano at Bo Waterside) are limited to runoff control and involve no abstraction from, or discharge into, the river.
6	Hazardous materials	Use of asbestos-containing materials, polychlorinated biphenyls, persistent organic pollutants or pesticides banned under national law or in WHO Hazard Classes Ia and Ib, or financing of pesticides without an integrated pest management approach.
7	Mining	Mining, mineral processing or quarrying for sale; works serving mining concessions or artisanal and small-scale mining sites; use of materials from unlicensed quarries, borrow pits or pit-sawing operations.

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#	Theme	Excluded activity
8	Land and resettlement	Physical displacement of more than 50 households in a single subproject; an exception is possible only with the prior no-objection of the World Bank. Physical displacement is avoided through design; where it is unavoidable in small numbers, and wherever economic displacement occurs, a resettlement plan proportionate to the magnitude of the impacts is prepared in accordance with ESS5 and the RF. The RF provides the framework until the impact location is known; the site-specific risks are managed in the Resettlement Plan (RP) of the subproject.
9	Land and resettlement	Activities on land whose ownership or tenure is disputed, on land taken by eminent domain, or on land offered by voluntary land donation that does not meet the conditions for a donation to be considered voluntary (ESS5, footnote 11), which are assessed under ESS1 and set out in Annex 19.
10	Cultural heritage	Damage to, removal of, or restriction of access to graves, sacred forests, Poro and Sande sites, shrines, places of worship or known archaeological sites.
11	Labor	Employment of children below the minimum working age of 15 years set by the Decent Work Act (2015) or of persons under 18 years in hazardous work; forced or bonded labor, human trafficking or unpaid compulsory community labor.
12	Other	Weapons, tobacco, alcohol, gambling, radioactive materials or any activity illegal under Liberian law or international conventions, or any activity that restricts the rights of any person to information, participation or access to project benefits.
13	Risk class	Subprojects classified as High environmental or social risk, or as Substantial risk that cannot be mitigated to an acceptable level with the relevant E&S instruments and the capacity provided under this ESMF. This criterion is applied after the risk classification (Section 6.1.1, Step 2; Annex 1, Section E).

2.3 Geographic Scope and Targeting

The civil works covered by the framework instruments will be implemented in the economic-influence zones of the three corridors:

- **Monrovia–Ganta–Tappita–Toe Town–Zwedru corridor (TAH7):** Bong, Nimba and Grand Gedeh Counties, where the village access roads, the Ganta station, possible sites of the further axle-load control stations such as the B'hai border area, and the tree-crop areas are located;
- **Coastal Corridor:** Grand Bassa and River Cess Counties, where the rural access roads and the feed and tree-crop value chains of Component 3 connect to the Buchanan–Cestos Junction road;
- **Legacy Corridor (Buchanan–Nimba–Bong):** Grand Bassa, Bong and Nimba Counties, whose village access roads and feeder roads serve the cocoa, rubber, oil palm and food-crop areas of Districts 3 (Legacy Corridor side) and 4 and 5 (Coastal Corridor side) of Grand Bassa and the lower Bong and Nimba production areas.

Lofa County is part of the village access road program area. Grand Cape Mount County is part of the project area: the project provides for a tolling and axle-load control station at Bo Waterside, on the Monrovia–Bo Waterside corridor at the Mano River border with Sierra Leone. The Ganta station serves the Monrovia–Ganta corridor and the Guinea and Côte d'Ivoire borders. The national institutions of the project are in Monrovia, Montserrado County.

The project area lies within the Upper Guinean forest ecoregion. Rainfall is unimodal, from mid-April to October, exceeding 4,000 mm a year on the coast and declining inland; Nimba County is mountainous with semi-deciduous and montane forest and raphia swamps, while Grand Bassa and River Cess are coastal and inland lowlands of moist evergreen forest with mangroves, rubber and oil-palm estates. More than 60 percent of forested landscapes are degraded by farming, charcoal production, mining and illegal logging.

Flooding of low-lying sections and river crossings, drainage failure, erosion and landslips make unpaved roads impassable for part of the rainy season. More than 70 percent of the population lives in multidimensional poverty, about 80 percent of the workforce is informal, customary land tenure is weakly documented, and women face economic exclusion and high rates of gender-based violence.

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Within these zones, village access roads are selected through the community-based maintenance program (connectivity to the corridors, population served, agricultural production, readiness of community-based organizations); rural access roads, agricultural markets and aggregation centers through the MoA-PIU participatory multi-criteria prioritization (production potential, farmers and cooperatives served, post-harvest losses, seasonal impassability, cost-effectiveness, screening results); the further axle-load control stations from the traffic and axle-load data and the regional corridor logic; and value-chain infrastructure from the cooperative and outgrower investment plans. The corridors, the counties of the civil works and the indicative axle-load control sites are shown on Map 1 (Annex 15); site maps showing the footprint, the receptors and the sensitive features within the subproject's area of influence (Section 5.2.1) are prepared with the screening of each subproject.

2.4 Associated Facilities and Linked Activities

No facility meeting the three conditions of the ESS1 definition of an associated facility – a facility or activity not funded by the project that is directly and significantly related to the project, carried out or planned to be carried out contemporaneously with it, and necessary for its viability and that would not have been constructed or conducted without it – has been identified: the village and rural access roads connect to existing corridors, the stations are built on or beside existing roads and the value-chain facilities use existing or self-contained water and energy supplies.

The screening and cumulative-impact assessment of subprojects consider the following linked activities: the 10 km Toe Town–Côte d'Ivoire road (Subcomponent 1.1), which leads to the B'hai border area, one possible site of an axle-load control station, and whose contractor may be present at the same time; the Coastal Corridor works (Subcomponent 1.2), to which the rural access roads of Grand Bassa District 4 and River Cess connect; the Legacy Corridor (Subcomponent 2.1), in preparation; the CLSG rural electrification line along the Legacy Corridor; the Buchanan–Yekepa railway and the ArcelorMittal Liberia operations that periodically rehabilitate corridor sections and bridges; and the Swedish-supported village access road and community maintenance program in Lofa, Bong and Nimba, which Subcomponent 1.3 scales up. Where a subproject depends on an off-site facility (a licensed quarry, a county-approved waste disposal site, a water source), the screening confirms its licensing and the ESMP assigns the responsibility for its management.

2.5 Implementation Schedule and Phasing

Appraisal is planned for February 2027, Board approval for March 2027 and effectiveness for April 2027, with implementation over five years:

- Year 1 (2027) – staffing of the IIU and MoA-PIU environmental and social functions, designation of county focal points, training, prioritization and screening of the first batches of village access roads and rural access roads, selection of the station sites, preparation of the first site-specific instruments and RPs, EPA permits and designs;
- Years 2–4 (2028–2030) – procurement and construction of successive batches, operation of the community-based maintenance groups, construction and commissioning of the stations and value-chain facilities, continuous supervision, stakeholder engagement and adaptive management;
- Year 5 (2031) – completion of works, site restoration, handover to the station operators, communities, cooperatives and county authorities, completion audit and evaluation. Any subproject identified late in the project remains subject to the full procedure.

2.6 Project Beneficiaries and Benefits

The primary beneficiaries of the activities covered by this ESMF are the rural households of the economic-influence zones of the corridors – smallholder farmers of cocoa, rubber, oil palm, rice, cassava, vegetables and feed crops, their cooperatives and outgrower groups, women and youth engaged in production, processing and petty trade, commercial motorcycle riders and transport operators, and the communities served by the village and rural access roads and their health, education and market facilities – together with the cross-border women traders and the border agencies at the station sites, the users of the corridors and the agencies responsible for road asset management. Secondary beneficiaries are the county administrations and line-ministry offices, the community-based maintenance organizations, agribusinesses and processors, and the national institutions whose capacity is strengthened. The number of direct

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beneficiaries will be set at appraisal in the Results Framework, with indicators disaggregated by sex and youth.

The anticipated benefits are year-round access to markets, schools, clinics and administrative centers; lower transport costs, post-harvest losses and vehicle operating costs; higher farm-gate prices and incomes through aggregation, storage, processing and traceability; safer and more climate-resilient crossings; paid local employment in works and routine maintenance, with targets for women; preservation of the paved corridors through axle-load control; safer and better-serviced stations, and agricultural markets for smallholders and women traders; and stronger county and national capacity to plan, screen, supervise and maintain rural infrastructure. Participation targets for women in maintenance groups and cooperatives, accessible market and station facilities, targeted engagement of female-headed households, older persons, persons with disabilities and remote hamlets, and a grievance mechanism accessible in local languages give the project its gender and social inclusion lens.

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3. Environmental and Social Policies, Legislation and Institutional Frameworks

This chapter identifies the policies, legislation, institutions, standards and international requirements that govern the environmental and social management of the subprojects covered by the ESMF. Only the elements applicable to the project are described; Annexes 2, 3 and 4 give the description and relevance of each policy and law and of the World Bank Environmental and Social Standards (ESSs).

3.1 National Environmental and Social Policy Frameworks and Action Plans

The ESMF has been prepared in accordance with the following national policies and action plans (details in Annex 2):

- National Environmental Policy (2003) and the EPA Environmental Impact Assessment Procedural Guidelines (2006; revision under development) – environmental assessment of all activities likely to affect the environment, public participation, and the administrative procedure of registration, project brief, environmental review, scoping, impact study, consultation and permitting;
- National Biodiversity Strategy and Action Plan (NBSAP II, 2017–2025), National Forestry Policy (2006) and National Forest Management Strategy (2007) – protection of the Upper Guinean forest, key biodiversity areas and the protected-area network; commercial, conservation and community forestry;
- National instruments implementing the biodiversity-related conventions of Section 3.6.1: the NBSAP II for the Convention on Biological Diversity; the National Wildlife Conservation and Protected Area Management Law (2016) and its regulations, under which the FDA acts as the national management authority for CITES and which govern the protected areas, wildlife and the Ramsar sites; the Environment Protection and Management Law (2002), which provides for the conservation of wetlands and under which the EPA acts as the administrative authority for the Ramsar Convention; and the National Action Programme of Liberia under the UN Convention to Combat Desertification and the national land degradation neutrality targets coordinated by the EPA – protection of wetlands and wildlife, control of bushmeat and wildlife trade, and soil conservation and land restoration at the subproject sites (Annex 2);
- National Health Policy and Plan (2011–2021, under revision) and the Essential Package of Health Services – county health systems, disease surveillance, occupational and community health;
- National Gender Policy (2018–2022) and the National Action Plan on Women, Peace and Security – women's economic empowerment, prevention of and response to gender-based violence; National Social Protection Policy (2013) and the national action plan on the elimination of child labor;
- Land Rights Policy (2013) – public, government, customary and private land with equal protection of customary land; Water Supply and Sanitation Policy (2009) and the Integrated Water Resources Management Policy – water and sanitation at facilities, protection of water sources;
- National Policy and Response Strategy on Climate Change (2018) and the Nationally Determined Contribution (2021) – climate-resilient transport and agriculture;
- National Transport Policy and Strategy, the National Road Fund Act (2016) and the axle-load control regime aligned with ECOWAS – road asset preservation, community-based routine maintenance; Liberia Agriculture Sector Investment Program (LASIP II) – value chains, feeder roads, climate-smart agriculture.

3.2 National Legislation

The subprojects are subject to the following legislation, which sets the compliance obligations of the IIU, the MoA-PIU and their contractors during planning, construction and operation (details and relevance in Annex 3):

- Constitution of the Republic of Liberia (1986) – right to property and to just compensation for expropriation, fundamental rights, equality before the law;
- Environment Protection and Management Law (2002) and Environmental Protection Agency Act (2002) – environmental impact assessment, permits, environmental quality standards, pollution

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control, inspectors, Environmental Administrative Court; EPA standards and regulations on air, noise, effluents, waste and hazardous substances (Section 3.4);

- Land Rights Act (2018), Liberia Land Authority Act (2016), Public Lands Law (1973) and the Registered Land Law – categories of land, recognition of customary land, land administration, and the basis of acquisition and compensation applied in the RF;
- Decent Work Act (2015) – employment conditions, minimum age of 15 and prohibition of hazardous work under 18, forced labor, non-discrimination, occupational safety and health, workers' compensation, labor inspection; Public Health Law (1976, as amended) – sanitation, water supply, communicable-disease control;
- Children's Law (2011), the Act to amend the Penal Code on rape (2005), the Domestic Violence Act (2019) and the Act establishing Criminal Court "E" (2008) – protection of children, criminalization and specialized prosecution of sexual and domestic violence;
- National Forestry Reform Law (2006), Community Rights Law with respect to Forest Lands (2009) and National Wildlife Conservation and Protected Area Management Law (2016) – protected areas, community forests, protected species, hunting and bushmeat restrictions, timber permits;
- Local Government Act (2018) – county councils, decentralized service delivery, role of superintendents, district commissioners and chiefs;
- Vehicle and Traffic Law (Title 38, Liberian Code of Laws Revised) and the axle-load regulations under the National Road Fund Act (2016) – vehicle weights and axle loads aligned with ECOWAS Regulation C/REG.14/12/12, enforcement at weighbridges, traffic safety;
- Public Procurement and Concessions Act (2005, amended 2010) – environmental and social requirements in bidding documents and contracts; Minerals and Mining Law (2000) – licensing of mining and quarrying, including the sourcing of construction materials.

3.3 Institutional Frameworks

3.3.1 Environmental Protection Agency (EPA)

The EPA, established by the Environmental Protection Agency Act (2002), holds executive authority for environmental management: it issues environmental impact assessment permits and certificates of approval, sets environmental quality standards and monitors and enforces compliance through its inspectors and county environmental officers. For the project, the EPA screens each subproject on the basis of the project brief submitted by the IIU or the MoA-PIU, decides the level of assessment, reviews the ESIA/ESMP or ESMP, issues the permit with conditions and monitors compliance.

The project will coordinate with the EPA regional and county offices in Buchanan, Gbarnga, Sanniquellie and Zwedru; no EPA personnel are present at the B'hai border post.

3.3.2 Ministry of Local Government and local government authorities

The Ministry of Local Government (MLG) – the former Ministry of Internal Affairs, renamed in January 2026 by the amendment of Chapter 25 of the Executive Law that established the Ministry of Local Government in its stead – supervises county administration under the Local Government Act (2018): the county superintendents, district commissioners, paramount, clan and town chiefs and the county councils. It also oversees traditional and customary affairs, including the Poro and Sande societies and their bush schools, with the National Council of Chiefs and Elders; it is therefore the authority to be involved through its county structures whenever the screening, the chance-finds procedure or a grievance concerns a sacred site, an initiation season or any matter related to the secret societies (exclusion criterion 10, Annex 8). The Ministry was represented at the field consultations at B'hai (Table 21, where the field records use its former name) and is listed with its role in Table 17. These authorities plan and coordinate at county and district level, convene community meetings, witness land agreements, provide first- and second-tier grievance handling (Table 23) and coordinate security with the Liberia National Police.

The ESMF relies on them for community mobilization, the community grievance committees and the witnessing of land agreements under the RF.

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3.3.3 Liberia Land Authority (LLA)

The LLA, established under the Liberia Land Authority Act (2016), is responsible for land governance and administration: deed and land registries, surveys and cadastral mapping, land-use planning, the recognition and formalization of customary land under the Land Rights Act (2018) and the resolution of land disputes through alternative dispute resolution, with decentralized county land offices. For the project, the LLA county offices verify tenure, confirm the absence of disputes, support the valuation and documentation of land transactions and sit on the county grievance committees.

3.3.4 Ministry of Gender, Children and Social Protection (MGCSP)

The MGCSP is the central institution for gender equality, child protection and social protection: it implements the National Gender Policy, coordinates the national GBV referral pathway through its county gender and GBV coordinators, houses the Sexual and Gender-Based Violence Unit and oversees the one-stop centers and safe homes where they exist.

For the project, the MGCSP county coordinators are the entry point of the SEA/SH referral pathway, co-design the community awareness sessions and sit on the county grievance committees.

3.3.5 Ministry of Justice – Sexual and Gender-Based Violence Crimes Unit

The Sexual and Gender-Based Violence Crimes Unit of the Ministry of Justice prosecutes sexual offenses at Criminal Court "E" in Monrovia and at the regional justice and security hubs (including Zwedru for the southeast), serves as secretariat of the GBV Inter-Agency Task Force and works with the Women and Children Protection Section of the Liberia National Police.

Any SEA/SH incident connected with the project that constitutes a crime is referred, with the survivor's consent, to the Police and the Unit; the project does not investigate criminal cases itself.

3.3.6 Ministry of Labor

The Ministry of Labor sets and enforces workplace standards under the Decent Work Act (2015), inspects workplaces, registers work permits for foreign workers, investigates occupational accidents and child-labor cases through its Child Labor Secretariat and administers workers' compensation. The county labor inspectors are informed of each works contract, receive the monthly labor and accident reports and participate in the investigation of serious incidents, as detailed in the LMP.

3.3.7 Forestry Development Authority (FDA)

The FDA manages the forest estate, the protected-area network, community forests, timber and chainsaw-milling permits and wildlife protection under the National Forestry Reform Law (2006), the Community Rights Law (2009) and the Wildlife Conservation and Protected Area Management Law (2016). For the project, the FDA confirms the status of forest land near subprojects, authorizes the felling of trees and the sourcing of timber for bridges and culverts, and is the authority for any chance encounter with protected species; FDA officers at the B'hai border post control the trade in forest products.

3.3.8 Project implementing entities

The IIU of the MPW is the lead implementing agency and owner of the ESMF; it implements Components 1 and 2 and coordinates the MoA-PIU (Component 3) and the MME (Component 4); it works with the Ministry of Transport and the agencies that will operate the stations (axle-load control). Their roles and those of the county focal points, supervision consultants and contractors are set out in Section 6.4. Other institutions with functions for specific subprojects are the Ministry of Transport (vehicle and traffic regulation, road safety), the Ministry of Health and the county health teams (disease surveillance, clinics near sites), the Ministry of Agriculture county offices (crop and tree valuation, extension), the Liberia Revenue Authority, Liberia Immigration Service and Liberia National Police at the border, the Liberia Water and Sewer Corporation where relevant, and the National Disaster Management Agency for flood emergencies.

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3.4 National Environmental Quality Standards

The EPA issues environmental quality standards under the Environment Protection and Management Law, including the Liberia standards on ambient air quality and point-source emissions, ambient noise and effluent discharge. Where a Liberian standard sets a limit for a parameter, the subproject ESMP applies the more stringent of the Liberian limit and the World Bank Group EHS Guidelines value. Table 4 presents the EHS Guidelines reference values that the project applies at a minimum; the corresponding Liberian limits are inserted in each site-specific ESMP from the current EPA standards.

Table 4: Reference environmental quality values applied by the project (World Bank Group EHS Guidelines; Liberian EPA standards apply where more stringent)

Environmental issue and related guidelines	Parameter	Reference value	Application to subprojects
Ambient noise (General EHS Guidelines, 2007, Section 1.7)	Residential, institutional, educational receptors	55 dB(A) LAeq daytime (07:00–22:00); 45 dB(A) night (22:00–07:00); or an increase of no more than 3 dB above background	Works near settlements, schools and clinics along access roads; operation of the stations and of the agricultural markets; mills, dryers and generators at value-chain facilities
	Industrial and commercial receptors	70 dB(A) day and night	Station truck parking and weighbridge areas
Ambient air quality (General EHS Guidelines, 2007, Section 1.1, which refer to the WHO Air Quality Guidelines, global update 2005; the WHO Global Air Quality Guidelines of 2021 apply where a subproject ESMP adopts the more stringent value)	PM10	50 µg/m³ (24-hour); 20 µg/m³ (annual)	Dust from earthworks, laterite haulage and unpaved surfaces near settlements; dust control measures of the ESCOPs
	PM2.5	25 µg/m³ (24-hour); 10 µg/m³ (annual)	Fine dust from earthworks, laterite haulage and unpaved surfaces and smoke from generators, dryers and burning near settlements, schools and clinics; applied with PM10 through the dust-control measures of ESCOP 1 (watering, speed limits, covered loads, no burning) and the dust monitoring of Annex 6 near receptors; measured where complaints arise or where a subproject is within 100 m of a school or clinic
	NO2	200 µg/m³ (1-hour); 40 µg/m³ (annual)	Vehicle and generator emissions at stations and facilities
	SO2	20 µg/m³ (24-hour); 500 µg/m³ (10-minute)	Exhaust of diesel generators, plant and trucks at the stations and at facilities with generators and mills; managed through maintained engines, low-sulfur

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Environmental issue and related guidelines	Parameter	Reference value	Application to subprojects
			fuel where available, generator siting and exhaust orientation away from receptors; exceedances are not expected at the subproject scale and are checked by spot measurement where complaints arise
Effluent discharge to surface water (General EHS Guidelines, 2007, Section 1.3, indicative values for treated sanitary and process effluents)	pH; BOD5; COD; TSS; oil and grease; total nitrogen; total phosphorus; total coliform	pH 6–9; BOD5 30 mg/l; COD 125 mg/l; TSS 50 mg/l; oil and grease 10 mg/l; total N 10 mg/l; total P 2 mg/l; total coliform 400 MPN/100 ml; temperature increase below 3 °C at the edge of the mixing zone	Sanitation at stations, markets and worker camps; wastewater of cocoa fermentation, rubber coagulation, livestock and feed facilities; runoff from fuel and equipment areas
Drinking water	Microbiological and chemical quality	WHO Guidelines for Drinking-water Quality, fourth edition incorporating the first and second addenda (2022), and the Liberian drinking-water quality standard of the EPA (current edition at the time of each ESMP)	Water supply installed at stations, markets and facilities
Occupational noise and exposure (General EHS Guidelines, 2007, Section 2.3)	Worker exposure	85 dB(A) 8-hour equivalent; hearing protection mandatory above 85 dB(A)	Machinery, mills, compactors, generators

3.5 National Permitting and Compliance Pathway

The project meets the national requirements through the following pathway, applied by the IIU for Subcomponents 1.3 and 1.4 and by the MoA-PIU for Subcomponents 3.1–3.3, after the ESMF screening of Chapter 6; the EPA route by subproject type is given in Section 6.5 and the sectoral permits are recorded in the screening form (Annex 1, Section F):

1. Registration and notice of intent: the implementing unit submits the application form and the project brief for the subproject (or batch of subprojects of the same type and county) to the EPA, with a copy to the county environmental officer and the line ministry, and publishes a notice of intent where the EPA requires it (full ESIA route, Section 6.5).
2. EPA screening and class: the EPA evaluates the project brief and determines whether the subproject requires an environmental impact study (full ESIA – expected for the axle-load control stations and any subproject screened as Substantial risk), an environmental review with an ESMP (expected for batches of village and rural access roads, plantation water management systems and larger value-chain facilities), or a finding of no significant impact (FONSI) with a certificate of approval (small facilities, routine maintenance). Statutory fees are paid at registration and permitting.
3. Scoping and assessment: for a full ESIA, the implementing unit submits a scoping report and Terms of Reference, consults the public, prepares the environmental impact study and ESMP and submits them for EPA review, public comment (30 days) and, where the EPA so decides, a public hearing. For an environmental review, the ESMP prepared under this ESMF is submitted with the review.
4. Permit: the EPA issues the environmental impact assessment permit or certificate of approval with conditions (monitoring, reporting, decommissioning, fees), valid for the period stated; conditions are incorporated in the bidding documents and contracts. No works start before the permit is issued.

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5. Sectoral permits and licenses: FDA authorization for tree felling and timber sourcing; licensed borrow pits and quarries (county and, where applicable, Ministry of Mines and Energy); county authorization of waste disposal sites; water abstraction and discharge approvals; Ministry of Labor notification of works contracts and work permits; building permits for station, market and facility buildings where applicable.
6. Compliance monitoring and reporting: the implementing unit monitors compliance with the permit conditions and the ESMP, submits the reports required by the permit to the EPA, facilitates EPA inspections, keeps the records and reports to the World Bank quarterly.

3.6 International Requirements, Conventions and Agreements

3.6.1 International conventions ratified by Liberia

Table 5: International conventions and regional instruments relevant to the subprojects

Convention / instrument	Relevance to the subprojects
Convention on Biological Diversity (1992)	Conservation of the Upper Guinean forest biodiversity; avoidance of protected areas, key biodiversity areas and critical habitat; mitigation hierarchy in the screening and ESMPs.
Ramsar Convention on Wetlands (1971)	Protection of wetlands, implemented nationally through the Environment Protection and Management Law (2002) and the National Wildlife Conservation and Protected Area Management Law (2016) (Section 3.1); Liberia's Ramsar sites (Lake Piso, Marshall Wetlands, Mesurado Wetlands, Gbedin Wetlands in Nimba and Kpatawee Wetlands in Bong) are excluded from works; swamp and wetland crossings and plantation water management systems are screened for wetland functions.
CITES (1973)	Prohibition of trade in protected species, implemented nationally through the National Wildlife Conservation and Protected Area Management Law (2016) with the FDA as management authority (Section 3.1); control of bushmeat and wildlife trade by project workers and at the B'hai border post.
UN Framework Convention on Climate Change (1992), Kyoto Protocol and Paris Agreement (2015); UN Convention to Combat Desertification (1994)	Climate-resilient design of crossings and drainage; GHG accounting at appraisal; adaptation measures of the Nationally Determined Contribution; soil conservation, erosion control and borrow-pit rehabilitation, consistent with the National Action Programme under the UNCCD and the land degradation neutrality targets (Section 3.1).
Stockholm Convention on Persistent Organic Pollutants (2001), Basel Convention (1989) and Minamata Convention on Mercury (2013)	Exclusion of banned substances; management of hazardous waste (used oil, batteries, agrochemical containers); mercury relevance to ASM considered in the SESA.
ILO fundamental conventions ratified by Liberia (C29 and C105 on forced labor, C87 and C98 on freedom of association and collective bargaining, C111 on discrimination, C182 on the worst forms of child labor, C138 on minimum age)	Labor conditions of all project workers under the LMP; prohibition of child and forced labor; equal opportunity for women workers.
Convention on the Elimination of All Forms of Discrimination against Women (1979), Convention on the Rights of the Child (1989) and the Maputo Protocol (2003)	Gender equality, protection of women and children, prevention of SEA/SH and child labor.
ECOWAS Regulation C/REG.14/12/12 on the control of dimensions, weight and axle load of goods vehicles; ECOWAS protocols on free movement and transit; Mano River Union agreements and the	Axle-load limits and enforcement procedures at the control stations; cross-border trade facilitation and engagement at the Cavalla River border; coordination with the Ivorian side and the joint security.

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Convention / instrument	Relevance to the subprojects
African Union Convention on Cross-Border Cooperation	

3.6.2 World Bank Environmental and Social Framework (ESF)

The project is assessed against the ten Environmental and Social Standards (ESSs) of the ESF. ESS1 (assessment and management of risks and impacts, including the consistency of technical-assistance outputs with the ESSs and the ESCP to be prepared), ESS2 (labor and working conditions of direct, contracted, community and primary supply workers, managed through the LMP), ESS3 (dust, noise, waste, effluents, hazardous materials, borrow pits, water and energy use, integrated pest management), ESS4 (traffic and works safety, stream crossings used by communities, labor influx, communicable diseases, security, emergency preparedness), ESS5 (land for stations, crossings, borrow pits and facilities, economic displacement within road reserves, and negotiated settlements where failure to agree would lead to expropriation – the RF provides the framework, and the RP of each subproject manages the site-specific risks once the impact location is known; voluntary land donation (VLD) is not covered by ESS5: the conditions for a donation to be considered voluntary are assessed under ESS1 and set out in Annex 19, and each donation requires the prior approval of the World Bank), ESS6 (secondary forest edges, wetlands and swamps, induced access, sourcing of timber, tree-crop traceability), ESS8 (graves, sacred forests, Poro and Sande sites, chance finds) and ESS10 (the SEP and the grievance mechanism with its confidential, survivor-centered SEA/SH channel) are relevant to the subprojects. ESS7 is not currently relevant, because no community in the project area meets its four characteristics, and ESS9 is not relevant, because the matching grants are administered by the MoA-PIU and not through a financial intermediary. Annex 4 gives the core requirements of each standard and its application to the ESMF subprojects.

3.6.3 World Bank Group Environmental, Health and Safety Guidelines

The World Bank Group General EHS Guidelines (2007) are the technical reference for the performance levels and measures that the project applies: environmental (air emissions and ambient air quality, energy conservation, wastewater and ambient water quality, water conservation, hazardous materials, waste, noise, contaminated land), occupational health and safety, community health and safety (water quality and availability, structural safety, traffic safety, disease prevention, emergency preparedness) and construction and decommissioning.

The industry-sector guidelines for Toll Roads (axle-load control stations – weighbridge and parking operations, traffic management, stormwater, sanitation), Construction Materials Extraction (borrow pits and quarries), Annual Crop Production and Perennial Crop Production (tree-crop and feed-crop activities, nurseries, agrochemicals, processing effluents) and Poultry Production (feed and poultry facilities of Subcomponent 3.1) apply to the corresponding subproject types. Where Liberian standards and the EHS Guidelines differ, the more stringent applies, and any justified deviation is documented in the subproject ESMP.

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4. General Environmental and Social Baseline Conditions

This chapter describes the environmental and social conditions of the country and of the project counties at regional and county level, mainly from secondary sources: the 2022 National Population and Housing Census (LISGIS, preliminary results), the 2019–20 Liberia Demographic and Health Survey, the Household Income and Expenditure Survey, the Concept-stage ESRS (June 2026) and the PAD, the NBSAP II and the published descriptions of the Upper Guinean forest, protected areas and key biodiversity areas of Liberia, the National Policy and Response Strategy on Climate Change (2018) and the Nationally Determined Contribution (2021), and the instruments of RETRAP, SECRAMP and the CLSG line (Section 1.3.1).

It also characterizes the general typology of the areas and sites observed during the field work of 1–7 October 2026: the Legacy Corridor sections Buchanan–Botota–Palala and Yopia Junction–Duo Town–Ganta and the village roads off them in Bong and Nimba, as proxies for the village access roads of Subcomponent 1.3; the feeder roads of Grand Bassa Districts 3, 4 and 5 and River Cess and the Nyana Creek crossing, as proxies for the rural access road spot improvements and crossings of Subcomponent 3.3; the MNC Farms site at Marqui Town and the cooperatives of Grand Bassa and River Cess, as proxies for the value-chain sites of Subcomponents 3.1 and 3.2; and the B'hai border post, one possible site of an axle-load control station of Subcomponent 1.4 (Section 4.6, GPS positions in Table 7). These observations define the receptor types and impact pathways that the screening form (Annex 1) checks and the typical conditions assumed in the impact assessment of Annex 5; they do not replace the site-specific baseline that the screening and the subproject instrument establish for each site once it is known. Quantitative data are given only where they are well established; otherwise, ranges or qualitative statements are used.

The limited baseline data have three implications for this ESMF. First, the impact and risk ratings of Chapter 5 and Annex 5 are indicative: they apply to the typical conditions observed and are confirmed or revised for each subproject. Second, the screening of every subproject must establish its site-specific baseline – receptors, land users, habitat and species, hydrology, cultural heritage and climate exposure – before its classification and instrument are decided, which is why the screening form, the site visit and the surveys of Section 6.1.1 (including the biodiversity surveys) are mandatory and why the exact subproject sites are not described in this chapter. Third, the mitigation measures and the monitoring baselines and targets of Annex 6 are confirmed or tightened in the subproject instrument wherever the site conditions differ from the typical case (Section 5.2.2); the guidance of this ESMF is therefore a minimum, not a substitute for the site-specific assessment.

4.1 General Country Characteristics

The Republic of Liberia lies on the West African coast between about 4°N and 8°N and 7°W and 11°W, bordered by Sierra Leone, Guinea and Côte d'Ivoire and by the Atlantic Ocean along some 580 km of coastline. It covers about 111,000 km² in 15 counties. The 2022 National Population and Housing Census counted about 5.2 million inhabitants, nearly half of them in and around Monrovia and the coastal counties; the interior and southeastern counties remain sparsely populated, and the population is young and growing. Liberia is a low-income, fragility-affected country recovering from the civil conflicts of 1989–2003 and the Ebola epidemic of 2014–2016; its economy rests on agriculture, forestry, mining (iron ore, gold, diamonds), rubber and oil-palm concessions and informal services. Road infrastructure is one of the main constraints to growth: the paved network is limited to the main corridors, and most rural roads are unpaved laterite or earth roads that become impassable for part of the rainy season.

4.2 Physical Environment

4.2.1 Location, relief and geology

The project counties span the four physiographic zones of the country: the coastal plains and rolling hills of Grand Bassa and River Cess (altitudes mostly below 100 m, punctuated by inselbergs), the dissected plateaus of Bong and lower Nimba (200–400 m), and the northern highlands of Nimba and Lofa, culminating at Mount Nimba (1,752 m) on the tri-national border and Mount Wuteve in Lofa. Grand Gedeh, around Zwedru and Toe Town, is an undulating plateau of the southeastern interior draining to the Cavalla River. The geology is dominated by Precambrian crystalline basement (granites, gneisses, schists) with iron-ore

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formations in the Nimba and Bong ranges and gold-bearing greenstone belts worked by artisanal miners in parts of Grand Bassa, River Cess, Nimba and Grand Gedeh. Deep lateritic weathering produces the ferralitic soils and laterite crusts used as road surfacing material; hydromorphic soils occupy the inland valley swamps and the low-lying parts of the plantations where water management structures may be built.

4.2.2 Climate

The climate is humid tropical, governed by the West African monsoon and the Inter-Tropical Convergence Zone. Rainfall is unimodal, from mid-April to October with a peak in June–September, and the dry season runs from November to April with the dusty Harmattan wind in December–February. Annual rainfall exceeds 4,000 mm on the coast of Grand Bassa and River Cess and declines inland to roughly 2,000–2,500 mm in Bong, Nimba, Lofa and Grand Gedeh. Temperatures are warm and stable (daytime 27–32 °C, nights 21–24 °C) and humidity is high. Climate projections for Liberia indicate rising temperatures and more variable and intense rainfall, with greater flood and erosion risks for unpaved roads and crossings and a longer or hotter dry season affecting water availability and crop calendars.

4.2.3 Hydrology and water resources

The project counties are drained by rivers flowing north-east to south-west to the Atlantic: the St. Paul River (Bong, Montserrado); the St. John River, which rises in Guinea, crosses Nimba and Bong and reaches the sea near Buchanan, and is crossed by the Legacy Corridor between Grand Bassa and Bong and between Bong and Nimba; the Cestos River, which drains eastern Nimba and River Cess and reaches the sea at Cestos City, with its tributaries and the Timbo River in River Cess; and the Cavalla River, the longest river of Liberia (about 515 km), which forms the border with Côte d'Ivoire and is crossed by the steel bridge at B'hai, one possible site of an axle-load control station; the Mano River forms the border with Sierra Leone at Bo Waterside. Numerous perennial and seasonal streams, swamps and inland valleys cut the village and rural access roads every few kilometers; they are the sites of the culverts and timber bridges covered by this ESMF, and are used by communities for washing, bathing, water collection, fishing and swamp rice cultivation. Groundwater is shallow and generally abundant; rural water supply relies on hand-dug wells, hand pumps and streams. Surface water quality is affected locally by sediment from erosion and artisanal mining, by agro-processing effluents and by the absence of sanitation.

4.2.4 Environmental quality and natural hazards

Air quality in the project area, which is predominantly rural, is good except for dust from unpaved roads in the dry season, smoke from bush burning and charcoal production, and Harmattan haze; noise is limited to settlements, markets and motorcycle traffic. The main natural hazards are river and flash flooding of low-lying road sections and crossings in the rainy season, washouts of culverts and timber bridges (as observed at Nyana Creek on the Grand Bassa–River Cess road and at Botota on the Legacy Corridor in October 2026), erosion and gullying of steep laterite sections, landslips on cut slopes in Nimba and Lofa, bush fires in the dry season, and windstorms at the onset of the rains. Coastal flooding and erosion affect Buchanan but not the subprojects of this ESMF. Communicable-disease outbreaks (Ebola 2014–2016, Lassa fever in Bong, Nimba and Grand Bassa, cholera, COVID-19) are a recurrent public-health hazard with implications for worker and community health management.

4.3 Biological Environment – Ecosystems and Biodiversity

Liberia lies entirely within the Upper Guinean forest biodiversity hotspot and holds the largest remaining share of this ecosystem, with high levels of endemism among plants, amphibians, birds and mammals, including the western chimpanzee, pygmy hippopotamus, forest elephant, Jentink's and zebra duikers and the white-breasted guineafowl. The vegetation grades from mangroves and coastal savanna on the Grand Bassa and River Cess coast, through moist evergreen forest in the lowlands, to semi-deciduous and montane forest in Nimba and Lofa, with raphia swamps and inland valley wetlands throughout. Most of the land along the corridors and village roads is a mosaic of farm bush, fallow, secondary forest, rubber, oil-palm and cocoa plantations and settlements; more than 60 percent of forested landscapes are degraded by shifting cultivation, charcoal, logging and mining, and intact forest survives mainly in the protected areas and in remote blocks away from the roads. Forest-edge and swamp sections of the roads are used by communities for firewood, bushmeat hunting and trapping, medicinal plants and non-timber forest products.

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The protected areas and key biodiversity areas (KBAs) of relevance to the project counties are all excluded from works and are considered in the biodiversity screening of any subproject whose area of influence (Section 5.2.1) lies within 5 km of them; 5 km is the initial screening distance that triggers the biodiversity assessment, and it is extended wherever an impact pathway reaches further (Map 2, Annex 15, shows forest cover, protected areas, national forests and wetlands). They include: the East Nimba Nature Reserve (Nimba County, part of the Nimba Mountains KBA and adjacent to the Mount Nimba World Heritage Site of Guinea and Côte d'Ivoire), north-east of Sanniquellie and away from the Ganta corridor; the proposed Gbi protected area and the Gbi forest KBA between Nimba and Grand Gedeh; the Grebo-Krahn National Park (gazetted 2017) in southern Grand Gedeh and River Gee, well south of the Toe Town–B'hai area; the Cestos–Senkwehn KBA and proposed protected area in River Cess and Sinoe, east of the Cestos River; the proposed Kpelle protected area in Bong and Gbarpolu; the Wonegizi and Wologizi proposed protected areas and KBAs in Lofa; and the Ramsar wetlands of Gbedin (Nimba) and Kpatawee (Bong). Sapo National Park, in Sinoe County, is outside the project area.

The village and rural access roads and the stations are expected to be located in modified habitat; natural habitat may be affected locally at stream, swamp and forest-edge crossings, and critical habitat is avoided by the exclusion list and the screening. Biodiversity sensitivities relevant to the subprojects are habitat fragmentation and induced access along improved roads, disturbance of riparian and wetland habitat at crossings and water management structures, hunting and bushmeat consumption by workers, sourcing of timber for bridges, and the spread of invasive species through earthworks and material transport.

Each of these sensitivities is addressed in this ESMF: habitat fragmentation and induced access in the assessment of indirect, cumulative and induced impacts (Section 5.2.3), the biodiversity screening and surveys of Section 6.1.1, the induced-access measures of Table 13 and the outcome monitoring of Annex 6 (Table 29); disturbance of riparian and wetland habitat in the design considerations of Section 5.6, ESCOPs 1 and 3 and the wetland screening questions of Annex 1; hunting and bushmeat in the code of conduct, the contract clauses of Annex 10 and ESCOP 6; sourcing of timber in the FDA authorization requirement and the preference for concrete structures (Section 5.6, Table 13); and invasive species in ESCOP 2 and the monitoring of Table 29. The exclusion list (Section 2.2) avoids critical habitat, protected areas and KBAs, but the exclusion list and the 5 km proximity screen are only the first steps: every subproject undergoes the biodiversity screening of Section 6.1.1, and a site-specific habitat and species survey proportionate to the risk is required wherever natural habitat, potential critical habitat features, ecosystem services used by communities or an induced-access pathway is identified, and for every Substantial-risk subproject, to establish whether natural or critical habitat and the ecosystem services are affected, directly or through induced access.

4.4 Socio-Economic and Cultural Environment

The 2022 National Population and Housing Census results published by LISGIS to date are the preliminary population counts by county; the thematic reports by county and district (age structure, education, housing, livelihoods, disability) had not been released when this ESMF was finalized. The indicators below therefore draw on the preliminary census counts, the 2019–20 Demographic and Health Survey and the Household Income and Expenditure Survey. This ESMF relies on the socio-economic information available. The county data of Table 6 will be updated, and the district-level and thematic census data incorporated into the site-specific baseline assessments, as LISGIS releases them (LISGIS has undertaken to provide them, Table 17).

4.4.1 Demography, settlement and ethnicity

The seven project counties (Bong, Nimba, Lofa, Grand Gedeh, Grand Bassa, River Cess and Grand Cape Mount) are home to about 2.2 million people (2022 census). Settlement is dispersed (population density by district and main settlements along the corridors: Annex 15, Map 3, based on the 2008 census pending the district-level results of the 2022 census): county capitals (Gbarnga, Sanniquellie, Zwedru, Buchanan, Cestos City, Voinjama, Robertsport) and corridor towns (Ganta, Tappita, Toe Town, Palala, Botota, Compound #3, Bo Waterside) concentrate services and trade, while most people live in villages and hamlets of farming households along the corridors and village roads. The main ethnic and language groups are the Kpelle in Bong, the Bassa in Grand Bassa and River Cess, the Gio (Dan) and Mano in Nimba, the Krahn in Grand Gedeh, the Lorma, Kissi, Gbandi and Mandingo in Lofa and the Vai and Gola in Grand

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Cape Mount, with Liberian English as the lingua franca; Burkinabè and other migrant farmers are present in the cocoa areas of Grand Gedeh and Nimba, and cross-border populations straddle the Cavalla and Mano Rivers. Community leadership rests with town, clan and paramount chiefs, elders, women's and youth leaders, religious leaders and, increasingly, cooperatives and community-based organizations.

4.4.2 Livelihoods and economy

Agriculture is the main livelihood of the rural population: upland and swamp rice, cassava, vegetables and plantain for food, and cocoa, rubber, oil palm and increasingly maize and soybean as cash crops, grown by smallholders alongside the rubber and oil-palm concessions of Grand Bassa and Nimba. Production is sold in village, district and county markets or to buying agents, processors and cooperatives; motorcycles are the main means of transport for people and produce. Petty trade, charcoal, pit-sawing, fishing, hunting and artisanal gold and diamond mining complement farm incomes; an estimated 30,000 to 100,000 people depend on artisanal and small-scale mining nationally under informal conditions, including along the feeder roads of Grand Bassa District 3 and in parts of River Cess, Nimba and Grand Gedeh. Employment is overwhelmingly informal (about 80 percent of the workforce) and more than 70 percent of the population lives in multidimensional poverty, with the highest rates in the remote and border districts. Seasonal impassability of roads raises transport costs and post-harvest losses and depresses farm-gate prices, as confirmed by the farmers, cooperatives, agribusinesses and transport operators consulted.

4.4.3 Land ownership, tenure and use

Most rural land in the project counties is customary land held by communities, families and lineages and allocated by chiefs and elders; formal deeds are concentrated in towns and concession areas. The Land Rights Act (2018) recognizes customary land as equal to private land and provides for its formalization, but few communities have completed the process, boundaries are rarely surveyed and documentation is weak. Existing road reserves are treated as public land; land for widening, borrow pits, crossings or facilities is negotiated with town chiefs, elders, landowning families and users. Rights-of-way are occupied by seasonal and perennial crops, economic trees, roadside stalls, drying areas and, near settlements, parts of houses and other structures. Land disputes arise between families, between communities and concessions, and between local farmers and migrant cocoa farmers, as reported at B'hai; they are generally resolved by community leadership and county authorities. Women's access to land depends on marriage and lineage and is less secure than men's. The RF sets the eligibility, valuation and compensation rules; the compensation practice on the Legacy Corridor to date has relied on the MoA crop and tree rates (2013) and the MPW structure rates (2019) applied to the CLSG rural electrification line, and no resettlement plan for a road has yet been prepared along that corridor.

4.4.4 Gender, gender-based violence and vulnerable groups

Women provide most of the labor for food-crop production, processing and market trade, dominate the cross-border petty trade at B'hai (organized as the Mano River Cross Border Women) and lead many cooperatives, yet they have less access to land, credit, inputs, equipment and decision-making, and carry the burden of water collection and household care. Gender-based violence is among the highest in the region: according to the 2019–20 Demographic and Health Survey, 60 percent of women have experienced physical violence and 9 percent sexual violence; early marriage, female genital cutting associated with Sande initiation, and transactional sex around mining and trading sites are reported, and survivor services (one-stop centers, safe homes, clinical management of rape) are concentrated in county capitals – at B'hai, cases are referred to Toe Town and Zwedru. Groups likely to be disproportionately affected by the subprojects or less able to benefit are female-headed households, older persons, persons with disabilities, chronically ill persons, orphaned and fostered children, very poor and landless households, tenant and migrant farmers, informal roadside traders, residents of remote hamlets with weak access to leaders and information, and persons dependent on artisanal mining and forest resources.

4.4.5 Cultural heritage

Tangible cultural heritage along the roads consists mainly of graves and family cemeteries, sacred forests and groves, Poro (men's) and Sande (women's) society sites and bush schools, shrines, traditional meeting places, churches and mosques; these are usually away from the village roads but may lie close to

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settlements, crossings and candidate facility sites. Intangible heritage includes the secret-society institutions, initiation seasons during which access to certain areas is restricted, oral traditions, and customary rules on sacred streams and trees. No archaeological site has been identified along the corridors, but earthworks may encounter unknown remains; a chance-finds procedure therefore applies to all works.

4.4.6 Health, education, water and sanitation

Health services are provided by county hospitals in the capitals and by clinics and health posts in larger towns; many villages are more than an hour's walk from a facility and access is cut when roads and crossings fail. Malaria, diarrheal diseases, respiratory infections, Lassa fever and, episodically, cholera and viral hemorrhagic fevers are the main public-health concerns; HIV prevalence is low but higher along transport corridors and in mining areas. Adult literacy is below 50 percent with a wide gender gap, and primary schools exist in most larger villages (one elementary school at B'hai; junior high school in Toe Town). Access to basic drinking water is limited in rural areas and access to basic sanitation is very low; the B'hai border post has no water supply, sanitation or waste disposal facility, and typical value-chain sites rely on wells, hand pumps, streams or rainwater with limited treatment.

4.4.7 Roads, access and transport

All seven project counties are served by one or more of the primary corridors: Bong and Nimba by the paved Monrovia–Gbarnga–Ganta corridor; Nimba and Grand Gedeh by the partly paved Ganta–Tappita–Toe Town–Zwedru corridor (under upgrading); Grand Bassa and River Cess by the unpaved Coastal Corridor Buchanan–Cestos Junction; Grand Bassa, Bong and Nimba by the unpaved Legacy Corridor Buchanan–Botota–Palala–Yekepa alongside the ArcelorMittal railway; Lofa by the Gbarnga–Voinjama road, paved in part; and Grand Cape Mount by the paved Monrovia–Bo Waterside corridor. Away from these corridors, every county depends on village and rural access roads, which are narrow single-lane laterite or earth roads with timber bridges and small culverts, maintained by communities, road committees or cash-for-work groups, the Swedish-supported program in Lofa, Bong and Nimba and occasionally by concession companies. Traffic consists of pedestrians, motorcycles, bicycles, shared taxis, light goods vehicles and occasional heavy trucks, which damage the unpaved corridors; no weighbridge or toll operates in the country. Road accidents involving motorcycles and pedestrians are frequent near settlements, bridges and sharp bends.

4.5 County Profiles

Table 6**: Profiles of the project counties**

County (capital)	Population (2022 census, preliminary results, rounded to the nearest ten thousand)	Main groups	Landscape and environment	Livelihoods and relevance to the subprojects
Bong (Gbarnga)	about 460,000	Kpelle, Mandingo	Plateau of farm bush, secondary forest and swamps; Bong Range iron-ore area; St. Paul and St. John rivers; Kpatawee wetlands; proposed Kpelle protected area to the west	Rice, cassava, vegetables, rubber, cocoa and oil palm; trading centers on the Monrovia–Ganta corridor; village access roads of the Swedish-supported program; Legacy Corridor section Botota–Palala.
Nimba (Sanniquellie)	about 620,000	Gio (Dan), Mano, Mandingo, Krahn	Mountainous north with semi-deciduous and montane forest, East Nimba Nature Reserve and the Mount Nimba iron-ore mines; farm bush and	Most populous rural county; cocoa, rubber, rice, vegetables; Ganta as the commercial hub and indicative axle-load station site on the Monrovia–Ganta–

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County (capital)	Population (2022 census, preliminary results, rounded to the nearest ten thousand)	Main groups	Landscape and environment	Livelihoods and relevance to the subprojects
			plantations in the south; St. John and Cestos headwaters; Gbedin wetlands	Guinea/Côte d'Ivoire corridor; village access roads; artisanal gold mining.
Grand Gedeh (Zwedru)	about 210,000	Krahn, with Burkinabè and other migrant farmers	Southeastern plateau of moist forest and farm bush; Cavalla River border; Grebo-Krahn National Park in the south; Gbi forest to the north-west	Cocoa, rubber, rice and food crops; cross-border trade with Côte d'Ivoire at B'hai (one possible site of an axle-load control station); Toe Town market; regional justice and security hub in Zwedru.
Grand Bassa (Buchanan)	about 300,000	Bassa, Kpelle	Coastal plain and rolling hills; moist evergreen forest, mangroves at the coast; rubber and oil-palm estates; St. John River mouth; Buchanan port and iron-ore railway	District 3 (Legacy Corridor side) and Districts 4 and 5 with Compound #4 (Coastal Corridor side) are the focus of the feeder roads and value chains: oil palm, rubber, cassava, rice, vegetables, piggery and poultry cooperatives; artisanal mining along some feeder roads; MoA county office in Buchanan.
River Cess (Cestos City)	about 100,000	Bassa	Lowland moist forest and swamps; Cestos and Timbo rivers; Cestos–Senkwehn KBA to the east; very limited road network	Least populated project county; cassava, vegetables, swamp rice, piggery cooperatives; access depends on the Grand Bassa–River Cess road and the Nyana Creek crossing.
Lofa (Voinjama)	about 370,000	Lorma, Kissi, Gbandi, Mandingo	Northern highlands and forest-savanna transition; Lofa River; Wonegizi and Wologizi proposed protected areas	Rice, cocoa, coffee and vegetables; Swedish-supported village access road program (195 km with Bong and Nimba since 2024); characterized from secondary data.
Grand Cape Mount (Robertsport)	about 180,000	Vai, Gola, Mende	Coastal plain and low hills; Mano River border with Sierra Leone; Lake Piso Multiple Use Reserve (Ramsar site) on the coast near Robertsport; Gola forest landscape in the north of the county	Rice, cassava, oil palm, fishing and cross-border trade; Bo Waterside border crossing at the end of the paved Monrovia–Bo Waterside corridor (tolling and axle-load control station, Subcomponent 1.4); characterized from secondary data.

Source: Liberia Institute of Statistics and Geo-Information Services, 2022 National Population and Housing Census (preliminary results, rounded to the nearest ten thousand); Concept-stage ESRS (June 2026); field work of 1–7 October 2026.

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4.6 General Typology of the Subproject Areas Observed in the Field

Because the subproject locations are not yet defined, the field work characterized the general typology of the areas in which each subproject type will be implemented and of representative sites of each type – not the actual subproject sites. The sites visited are located on Map 4 (Annex 15), the GPS points are listed in Table 7, the photographic record is in Annex 13 and the register of cooperatives and indicative feeder roads in Annex 14. Site-specific maps and the local baseline of each subproject will be prepared at a later stage, during its screening and assessment, once its exact location is identified (Section 6.1.1).

4.6.1 Village access roads and community-based maintenance (Subcomponent 1.3)

The village access roads and, as a proxy for them (Section 1.4), the Legacy Corridor sections driven in Bong and Nimba (Buchanan–Botota–Palala corridor sections, Yopia Junction–Duo Town–Ganta and village roads off these) are narrow single-lane laterite or earth roads about 3–5 m wide with limited shoulders and intermittent or blocked side drains, carrying motorcycles, pedestrians, bicycles, shared taxis, light goods vehicles and occasional heavy trucks. Streams and swamps are crossed by timber or concrete culverts and small timber bridges, many undersized, damaged or without headwalls (a collapsed corrugated-steel pipe culvert at Botota, timber-deck bridges); low-lying sections are muddy or impassable in the rainy season and steep, poorly drained sections are rutted, gullied and washed out (Figures 1 and 2). Laterite is taken from small informal borrow pits near the road and sand, gravel, rock and timber are sourced locally, with unclear licensing, drainage, fencing and rehabilitation.

The roads cross settlements, smallholder farms, fallow land, secondary forest, rubber and oil-palm plantations, wetlands and swamps; forest-edge and crossing sections are used for firewood, bushmeat, medicinal plants and non-timber forest products, and hunting and trapping are reported. Rights-of-way are occupied by crops, economic trees, roadside stalls and drying areas and, near settlements, by parts of houses; graves and sacred sites were observed away from the road reserve. Community maintenance is organized by chiefs, road committees or cash-for-work groups (brushing, drain clearing, pothole filling, timber bridge repair), with heavier tasks done by youth and men and vegetation clearing, food support and administration by women, paid informally and sometimes from road-user contributions collected from vehicles and motorcycles; tools and personal protective equipment are inadequate, and ArcelorMittal Liberia occasionally rehabilitates sections and bridges it uses. Communities are dispersed farming settlements speaking Bassa, Kpelle, Gio and Mano with Liberian English; access to schools, clinics, markets and administration is reduced in the rainy season, and accident risk is highest near settlements, bridges, sharp bends and motorcycle crossings. Complaints go first to the town chief, elders or road committee, then to the district and county authorities.

4.6.2 Rural access roads, agricultural markets and aggregation centers (Subcomponent 3.3)

The candidate rural access roads of Grand Bassa Districts 3, 4 and 5 and River Cess are of the same type: narrow earth or laterite roads about 3–5 m wide with discontinuous drains, low-lying and swampy sections impassable after heavy rain, and timber bridges and small concrete culverts, some damaged, undersized or without headwalls. The feeder roads observed near Tarr Town and Zoegar Town pass through farms, fallow, secondary forest, rubber plantations, oil palm and wetlands (Figure 3); the Nyana Creek bridge on the Grand Bassa–River Cess road had collapsed and was being reinstated with timber logs and an excavator, cutting the road to River Cess.

Stream crossings are used for washing, bathing and water collection by women and children, and inland valley swamps near the roads are cultivated with rice and vegetables; these are the receptors of the culvert and bridge works. The fourteen indicative feeder roads named by the Grand Bassa County Agricultural Coordinator on the Legacy Corridor side (District 3), the eighteen feeder roads to the main agricultural areas of the Coastal Corridor side (Electoral District 5 and Compound #4) named by the Coordinator after the field work and the eleven feeder-road communities observed on the Coastal Corridor side of District 4 (Annex 14) serve rubber, oil palm, rice, cassava, vegetable, plantain and fishing communities, several of which also host artisanal mining, logging and pit-sawing.

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4.6.3 Tolling and axle-load control stations: Ganta, Bo Waterside and the B'hai border area (Subcomponent 1.4)

The tolling and axle-load control stations are planned at Ganta and Bo Waterside, and up to three further axle-load control stations at sites to be selected; the B'hai border area, visited during the field work, is one possible site and is described here as an example of a border station site. B'hai Town (GPS 0554987 E / 0715163 N) is a small border settlement in Grand Gedeh County at the steel bridge over the Cavalla River, which forms the international boundary; a control gate stands at the bridge approach and the customs examination section of the Liberia Revenue Authority, the immigration, police and other agency offices occupy modest buildings along an unpaved main street of kiosks, shops and houses (Figure 4).

Eleven agencies are present (immigration, revenue, police, national security, drug enforcement, commerce, agriculture, forestry, local government (recorded as internal affairs), health and financial intelligence) with 28 immigration officers on 12-hour shifts and no vehicle, accommodation, terminal, weighbridge, water supply, sanitation, waste disposal or fuel station; there is one elementary school and no clinic (the clinic, junior high school, mini-market and places of worship are in Toe Town, about 10 km away).

Residents are mainly cocoa, rubber and food-crop farmers; cross-border petty trade is dominated by women (Mano River Cross Border Women) using commercial motorcycles ridden by men, and commercial trucks carry goods in both directions; about ten traders and ten motorcycles cross daily because of the road condition, and market days are Saturday in Toe Town and Monday and Saturday on the Ivorian side.

The existing road right-of-way is Government land and the surrounding land is customary land allocated by the community leadership. No major land dispute is reported; occasional disputes over cocoa farmland between local farmers and Burkinabè migrant farmers are reported by the agencies to have been resolved by the chiefs and the county authorities. Documentary evidence of their resolution (minutes or decisions of the chiefs or the county authorities) was not available during the field visit; it will be obtained from the Grand Gedeh county authorities and the Liberia Land Authority county office and verified at the site-specific screening and in the preparation of the instruments of any station site in the area. Land rights and disputes must be satisfactorily resolved, and the resolution documented, before a site is approved for use or land acquisition proceeds: the screening verifies that the land required is free of dispute, as a condition of eligibility (exclusion criterion 9).

General grievances at B'hai are handled by the police (public order, theft and other matters requiring enforcement) and by the immigration service (matters concerning border crossing, foreign nationals and documents), both reporting to the county authorities; for the project this means that the project grievance mechanism (Section 7.3) must be established at a border station site with its own uptake points (the station grievance desk, the community grievance committee and the community liaison officer), that the police and immigration are informed of the mechanism and of the works, and that no project grievance – and no SEA/SH case – is handled by them on behalf of the project.

SEA/SH cases are at present referred to Toe Town (the clinic and the county structures of the MGCSP) and to Zwedru (the county hospital and the MGCSP county office); the agencies interviewed did not name the receiving institutions precisely. The receiving institutions will be confirmed with the MGCSP through the SEA/SH Action Plan of the project and the site-specific assessment of any station in the area, so that the referral pathway names the responsible facilities, and the referral arrangements will be operational before the works, or any other activity that carries a SEA/SH risk, start at the site. There is no one-stop center at B'hai. The access road from Toe Town (Subcomponent 1.1) is upgraded under its own instruments.

The Ganta site, in Nimba County, is characterized from secondary data: a dense commercial junction town on the Monrovia–Ganta corridor at the Guinea border with heavy truck traffic, roadside trading and peri-urban settlement on deeded, leased and customary land. The Bo Waterside site, in Grand Cape Mount County, is also characterized from secondary data: a border town at the Mano River bridge, at the end of the paved Monrovia–Bo Waterside corridor and the main land crossing to Sierra Leone, with the offices of the border agencies, roadside vendors, kiosks and shops along the approach to the border post, cross-border traders, many of them women, transport operators and money changers. Neither site was surveyed: the baseline of each station site is established at screening and in the ESIA/ESMP of the station, and the analysis of mobile versus stationary weighbridges will determine the footprint of each station.

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4.6.4 Value-chain productive infrastructure sites (Subcomponents 3.1 and 3.2)

Candidate sites for cocoa fermentation and solar-drying units, rubber collection and quality-testing points, nurseries, aggregation and collection centers, warehouses, feed stores and small processing units are near farming communities and existing feeder roads; most have no storage, aggregation, processing or feed facility today, and the land is smallholder farmland, fallow, roadside trading space or community land under customary tenure, used by landholding families, tenant farmers, women's and youth groups, cooperatives and petty traders.

Existing facilities visited (cooperative processing points, the MNC Farms livestock and vegetable enterprise at Marqui Town) rely on wells, hand pumps, streams or rainwater with limited treatment and drainage, diesel generators or no electricity, and simple mills, shellers, dryers, presses and feed mixers; they generate organic residues, wastewater (including the open water channels of duck and geese pens), dust, noise and packaging waste, sometimes store agrochemicals in ordinary rooms without secondary containment, and present hazards of moving machinery, fire, fuel spills, poor ventilation, manual handling and inadequate PPE, sanitation and emergency equipment.

Labor is hired through cooperatives, farm owners, community leaders or contractors on daily or task-based wages, with seasonal and some migrant workers; child labor risks exist in cocoa, rubber, mining, transport and family farming; small local suppliers of sand, laterite and timber require screening for licensing, safety and age verification. The fifteen cooperatives and groups and the private agricultural enterprise recorded in Grand Bassa and River Cess (Annex 14) all practice climate-smart production, processing, marketing and input sales with women and youth members and request training in marketing, financial management, leadership and governance and technical skills.

Table 7: GPS points of sites observed during the field work (UTM zone 29N, as recorded)

Point	Easting	Northing	Location	Subproject type	Date
P1	0411987	0640752	Nyana Creek / Saturday Town bridge, Grand Bassa–River Cess road	3.3 (crossing failure; access constraint)	3 Oct 2026
P2	0408653	0640615	Feeder road near Tarr Town, District 4, Grand Bassa	3.3	3 Oct 2026
P3	0402430	0642158	Zoegar Town feeder road, Grand Bassa	3.3	3 Oct 2026
P4	0495766	0640922	MNC Farms Inc., Marqui Town, District 5, Grand Bassa	3.1–3.2	3 Oct 2026
P5	0554987	0715163	B'hai border post, Grand Gedeh	1.4	5 Oct 2026

Figures 1 to 4 illustrate the typology of the subproject sites observed during the field work; the full photographic record is in Annex 13.

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Figure 1: Legacy Corridor section (Botota–Palala), Bong County, used as a proxy for the village access road typology: rutted and eroded laterite section through secondary forest and farm bush (4 October 2026).



Figure 2: Failed corrugated-steel pipe culvert at the Botota crossing, Bong County – undersized drainage structure typical of village access roads (4 October 2026).



Figure 3: Candidate rural access road near Tarr Town, District 4, Grand Bassa County (GPS 0408653 E / 0640615 N): narrow earth track with a waterlogged low-lying section (3 October 2026).



Figure 4: B'hai Town border settlement, Grand Gedeh County: unpaved main street, kiosks and shops near the border post – one possible site of an axle-load control station (5 October 2026).

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4.7 Climate and Disaster Risk Screening

The subprojects are expected to be exposed to the climate-related hazards of Table 8 during construction and operation, depending on their location; the screening of each subproject includes the climate and disaster risk assessment summarized in Table 8, and the designs apply the climate-resilient standards of the MPW and the MoA (culvert and bridge capacity for higher return-period floods, embankment raising, erosion protection, slope stabilization and selective sealing of critical sections, as foreseen in Subcomponent 3.3).

Table 8: Climate and disaster risk screening of the hazards expected to affect the subproject types

Hazard	Subproject types expected to be exposed, and current experience	Trend	Design and management response
River and flash flooding; washout of crossings	Village access roads (1.3), rural access road spot improvements and agricultural markets (3.3), the stations (1.4) and value-chain facilities and plantation water management systems near watercourses (3.1, 3.2): crossings observed washed out at Nyana Creek and Botota; low-lying sections impassable in the rainy season; station platforms near river floodplains (the Cavalla at the B'hai border, the Mano at Bo Waterside)	More intense rainfall events projected; higher flood peaks	Hydrological sizing of culverts and bridges for the design flood with freeboard; embankment raising at low points; scour protection; siting of station and market buildings above flood levels; works programmed in the dry season; emergency access plan for maintenance groups.
Erosion, gullying, landslips	Roads with steep laterite sections in Bong, Nimba and Lofa (1.3, 3.3); cut slopes, borrow pits and exposed earthworks of all works	Increasing with rainfall intensity and vegetation loss	Drainage spacing and lined side drains and turnouts; slope stabilization and bio-engineering; revegetation of borrow pits and embankments; no earthworks left open through the rainy season.
Dry-season drought, dust and bush fires	Roads and haulage near settlements (1.3, 3.3): dust; stores, feed facilities, processing units (3.1, 3.2) and worker camps: fire risk; all works and facilities: water scarcity for construction and operation	Longer or hotter dry season	Dust suppression; fire breaks, extinguishers and no-burning rules; rainwater harvesting and protected wells at facilities and stations.
Windstorms and lightning	Light-roofed sheds, drying units and stores (3.1, 3.2), the market stalls (3.3) and the worker camps of all works	Stable to increasing	Roof anchorage and lightning protection of stations and warehouses; storm procedures at sites.
Heat	Workers on earthworks and roofs (all works); traders at the markets (3.3)	Rising temperatures	Work-rest cycles, shade and drinking water; shaded and ventilated market and rest facilities.
Communicable-disease outbreaks	Worker camps of all works with external contractors and the border stations (1.4); Lassa fever areas of Bong, Nimba and Grand Bassa; cross-border movement at the border crossings	Recurrent	Health screening and hygiene at camps; coordination with county health teams; outbreak response procedures in the contractor emergency plan (Annex 9).

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Hazard	Subproject types expected to be exposed, and current experience	Trend	Design and management response
Failure of water management structures	Small weirs, bunds, check dams and drains of the water management systems of rehabilitated oil-palm plantations (3.2)	Not applicable to large dams (excluded)	Structures limited to 2 m height without permanent impoundment of perennial rivers; design and construction supervised by a qualified engineer, with spillways and freeboard; failure or overtopping flooding fields or houses downstream flagged in the screening of every system (Table 13); maintenance by the producer organization; inspection after major storms.

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5. General Potential Environmental and Social Risks and Impacts and Suggested Mitigation Measures

This chapter identifies the environmental and social risks and impacts of the typical subproject activities and sets the suggested mitigation measures and processes to be applied. It distinguishes impacts – the changes that the subprojects will cause to environmental and social receptors, assessed by significance – from risks – uncertain events that could cause harm to people, the environment or the project, assessed by likelihood and consequence. The measures follow the mitigation hierarchy of ESS1: risks and impacts are anticipated and avoided (exclusion list, Section 2.2; design considerations, Section 5.6); where avoidance is not possible they are minimized or reduced; and residual impacts are mitigated and, where technically and financially feasible, compensated or offset. Each subproject will be assessed at site level through the screening form (Annex 1) and the instrument that follows from it, and each contractor will propose site-specific measures in its C-ESMP (Annex 10).

5.1 Typical Subproject Activities and Risk Profile

The activities financed under the subcomponents covered by this ESMF are:

- rehabilitation of existing village access roads – reshaping, re-graveling with laterite, side drains and turnouts, replacement of culverts and small timber bridges, spot repairs of critical sections – and labor-based routine maintenance by community-based organizations (Subcomponent 1.3);
- construction of the tolling and axle-load control stations at Ganta and Bo Waterside and of up to three further axle-load control stations at sites to be selected, with weighbridges (stationary or mobile), control buildings, ICT systems, parking and storage areas and rest and sanitary facilities (Subcomponent 1.4);
- spot improvements of rural access roads – climate-resilient culverts and small bridges, drainage, slope stabilization, erosion protection, embankment raising and selective sealing of critical sections – and four climate-resilient agricultural markets and aggregation centers (Subcomponent 3.3); the markets and aggregation centers are assessed with the facility rows of Subcomponents 3.1 and 3.2 in Tables 13 and 27;
- small productive infrastructure of the tree-crop value chains – cocoa fermentation and solar-drying units, rubber collection, coagulation and quality-testing points, nurseries – and the water management systems (drains, small weirs, bunds, check dams and canals) of the oil-palm plantations rehabilitated and replanted under outgrower schemes, built and maintained with the producer organizations (Subcomponent 3.2);
- multi-user agro-logistics and market infrastructure of the feed–poultry value chain – aggregation and collection centers, warehouses and covered storage, weighing and grading equipment, water supply and sanitation, and the matching-grant investments of outgrower groups (Subcomponent 3.1).

Associated procurement covers earth-moving and compaction equipment hired by contractors, laterite, sand, gravel, rock, timber and cement, weighbridges and ICT equipment, processing and storage equipment, and hand tools and PPE for community workers.

Most of these activities are minor to moderate civil works and small facilities in rural settings, generally within existing alignments and on modified land, whose individual impacts are localized, mostly temporary and reversible with the suggested measures.

The risk profile is nevertheless raised by the sensitivity of the receptors – stream and swamp crossings, forest edges, settlements along the right-of-way, customary land with weak documentation, remote communities with limited institutional presence, border posts with several agencies and cross-border trade, and a country context of high GBV prevalence, child labor and informal mining – and by the capacity constraints of contractors and supervisors in remote areas. Subprojects are therefore expected to be classified Moderate risk for most road batches, plantation water management systems and small facilities, and Substantial risk for the axle-load control stations and for any subproject with land acquisition affecting many people, works affecting natural habitat beyond existing crossings or opening access to a forest block, or labor influx into a small community; High-risk subprojects are excluded.

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5.2 Impact Assessment

5.2.1 Methodology

The significance of an impact combines the magnitude of the change caused by the activity with the sensitivity of the receptor affected (Significance = Magnitude × Sensitivity). Magnitude is rated Negligible, Small, Medium or Large on the basis of the extent, duration, intensity and reversibility of the change (Table 9); sensitivity is rated Low, Medium or High on the basis of the value, vulnerability and resilience of the receptor (Table 10); the resulting significance classes are Negligible, Minor, Moderate and Major (Table 11). Positive impacts are marked Beneficial. Significance is assessed before mitigation and again after the suggested mitigation measures (residual significance); Moderate and Major residual impacts require site-specific assessment and additional measures in the subproject instrument.

Table 9: Magnitude criteria

Magnitude	Extent	Duration	Intensity	Reversibility
Negligible	Confined to the work site	Days to a few weeks (less than about one month)	Change not discernible from natural or baseline variation	Fully reversible immediately
Small	Site and immediate surroundings (within 100 m)	Construction period or one season (about one to six months)	Discernible change that does not alter the function or use of the receptor	Reversible within one year without intervention
Medium	Local (within 1 km; the community or stream reach)	Several seasons to a few years	Change that alters the function, quality or use of the receptor temporarily	Reversible with mitigation or restoration
Large	Beyond the local area (catchment, district, several communities)	Long term or permanent	Change that alters the function or use of the receptor substantially or permanently	Irreversible or reversible only in the long term

Table 10: Receptor sensitivity criteria

Sensitivity	Value	Vulnerability	Resilience	Typical receptors in the project area
Low	Common, modified, of local importance only	Not dependent on the condition affected	Recovers readily	Farm bush and fallow; road reserve; laterite subsoil; commercial traffic; institutional users
Medium	Of district or county importance; moderately modified	Partly dependent; limited alternatives	Recovers with time or help	Secondary forest edges; seasonal streams; smallholder farms and economic trees; roadside traders; community maintenance workers; schools and markets
High	Of national or global importance; natural or critical habitat; protected by law or custom	Highly dependent; no alternative	Low capacity to recover	Wetlands, perennial rivers and water points used by communities; protected species; graves and sacred sites; female-headed and very poor households; children; persons with disabilities; remote hamlets

Table 11: Impact significance matrix (Magnitude × Sensitivity)

Magnitude \ Sensitivity	Low	Medium	High
Negligible	Negligible	Negligible	Minor
Small	Negligible	Minor	Moderate
Medium	Minor	Moderate	Major

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Magnitude \ Sensitivity	Low	Medium	High
Large	Moderate	Major	Major

Area of influence. For each subproject, the area of influence within which impacts and risks are assessed comprises: (i) the footprint of the works and their ancillary sites – borrow pits and quarries, camps, haul routes, material and waste disposal sites; (ii) the area likely to be affected by direct, indirect, induced and cumulative impacts, such as downstream water users and wetlands, communities along haul routes and detours, and forest areas opened by improved access; and (iii) the linked activities of Section 2.4. Its extent is defined at screening according to the nature and extent of the potential impacts rather than by a fixed distance: 500 m from the footprint is the initial radius for the inventory of receptors and assets, and 5 km from a protected area, proposed protected area or KBA is the initial distance that triggers a biodiversity assessment; both are extended wherever an impact pathway – a watercourse, a haul route, induced access – reaches further.

5.2.2 Results of the impact assessment

The impact assessment table in Annex 5 assesses the impacts of each subproject type by phase (pre-construction and design, construction, operation and maintenance), with the pre-mitigation significance, the suggested mitigation and the residual significance.

Before mitigation, the impacts rated Major are the inadequate siting or sizing of replacement culverts and bridges at the design stage, the erosion and sedimentation of streams and swamps at crossing works, community and worker safety at excavations, crossings and in settlements, and post-rehabilitation traffic accidents (village access roads); land acquisition and the displacement of traders, runoff toward the Cavalla River, labor influx, construction safety near the inspection lane, and security, corruption and harassment at the weighbridge (axle-load control stations); and the inadequate siting, sizing or alignment of culverts, bridges, drains and water management structures at the design stage, the erosion and sedimentation of streams and swamps at crossing works and the community and worker safety of the rural road works, the exclusion or capture of improved land, in-stream works and changes to wetland hydrology (rural access roads and water management structures).

Moderate impacts before mitigation concern cultural heritage and chance finds, induced access to forests, the conditions of community maintenance workers, dust, noise, waste and sanitation at the stations, the borrow pits, dust, noise and waste of the rural road works, standing water behind structures, the use of community land for shared facilities, truck queuing and parking at the stations, processing effluents, occupational hazards at facilities and the expansion of tree crops into forest; the remaining impacts are Minor or Negligible.

With the suggested measures of Section 5.4, Annex 6 and the ESCOPs applied, the residual significance of the adverse impacts of the typical subprojects is indicatively rated Minor or Negligible. These residual ratings are indicative and conditional on the effective implementation of the measures: because most subproject locations, designs and receptors remain undefined, ESS1 requires the actual significance of each impact and the adequacy of its mitigation to be determined through the site-specific screening and assessment of each subproject, and where that assessment rates an impact higher because the receptor is more sensitive than the typical case, additional measures are required in the subproject instrument. The Beneficial impacts – year-round access, lower transport costs and post-harvest losses, local employment, preservation of the paved corridors, serviced stations and markets, and higher incomes through aggregation and traceability – are sustained through the community maintenance contracts, the operation of the stations by the designated agencies and the inclusive membership rules of the value-chain investments.

5.2.3 Indirect, cumulative and induced impacts, including on biodiversity

ESS1 requires the assessment to cover, in addition to the direct impacts of the works, the indirect, cumulative and induced impacts within the area of influence of each subproject. Indirect impacts are changes caused by the subproject at a distance or later in time (for example sediment reaching a fishery downstream of a crossing); cumulative impacts are the incremental effects of the subproject added to those of other existing, planned or reasonably predictable developments in the same area – the Toe Town–Côte

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d'Ivoire road (Subcomponent 1.1) and a station in the border area, the Coastal Corridor (Subcomponent 1.2) and the feeder roads and value-chain sites that connect to it, the Legacy Corridor designs (Subcomponent 2.1), the CLSG transmission line, the rubber and oil-palm concessions, the ArcelorMittal railway and mining operations, and artisanal mining; and induced impacts are the changes in land use and resource use that the improved access makes possible but that the project does not itself undertake.

For the subprojects of this ESMF, the principal induced impacts concern biodiversity and forest resources. An improved village or rural access road, a crossing reinstated after years of impassability or a track opened for a plantation would lower the cost of reaching secondary forest, swamp forest and the forest edges. The experience of the Liberian corridors (Section 4.3) is that this is followed by logging and pit-sawing, charcoal production, hunting and bushmeat trade, artisanal and small-scale mining and the expansion of cocoa, rubber, oil palm and food crops into forest and fallow.

These works themselves may also fragment habitat at forest-edge and swamp crossings and spread invasive plants with earthworks and material transport.

Because most subproject sites are not yet known and the biodiversity baseline of Chapter 4 is regional, the exclusion list and the 5 km proximity screen of Section 4.3 are only the first steps of the assessment: they remove the protected areas, KBAs, critical habitat and primary forest from the subprojects, but they do not establish what the improved access would open or which species, habitats and ecosystem services occur at and around a site.

The screening of every subproject therefore extends the area of influence to the forest and wetland areas that the subproject would make accessible (Annex 1, Sections C and D) and requires, wherever natural habitat, potential critical habitat features, ecosystem services used by communities or an induced-access pathway is identified and for every Substantial-risk subproject, the site-specific habitat and species survey, the determination of natural and critical habitat under ESS6, the ecosystem-services assessment and, where needed, the Biodiversity Management Plan described in Section 6.1.1.

The subproject instrument then assesses the induced and cumulative impacts with the methodology of Section 5.2.1, treating the forest area opened and the species and ecosystem services identified by the survey as the receptors, and sets the measures, the baseline values, the targets and the corrective actions below.

Management of the induced impacts relies on actions that the subproject instrument establishes with the Forestry Development Authority (FDA) and the communities before the works start, and on corrective actions that become mandatory when the monitoring shows that forest loss or exploitation increases.

The instrument records for each road batch, water management system or facility near natural habitat include: (i) the agreement with the FDA and the community forest management bodies or the town and clan chiefs on the use of the forest areas opened – no new farms, charcoal production, logging or mining in the forest areas identified by the survey; the community rules on hunting; the FDA patrols and the checkpoints on the transport of bushmeat, charcoal and timber along the road and at the border post; (ii) the contractor obligations – limits of clearing, no hunting, bushmeat, charcoal or unlicensed timber by workers, revegetation and invasive-species control; (iii) the baseline values established at screening for the outcome indicators of Annex 6 (Table 29) – forest cover within the area of influence, habitat condition at crossings and forest edges, transect counts of hunting, logging, charcoal and mining evidence, invasive-species cover; (iv) the targets and the frequency of the monitoring; and (v) the corrective actions triggered when a target is not met, in particular:

- Trigger: tree-cover loss within the area of influence of an improved road exceeding the baseline trend of the surrounding landscape, or any clearing of natural habitat identified by the survey. Corrective action: joint verification in the field by the FDA, the county focal point and the biodiversity specialist within one month; FDA enforcement and community rules re-activated; review and strengthening of the agreement (patrol frequency, checkpoints, community monitors); additional measures or a Biodiversity Management Plan for the batch; where the loss continues, suspension of the works of the following batches in that area until the measures are in place.
- Trigger: an increase over the baseline in the transect counts of snares, hunting camps, logging or pit-sawing sites, charcoal kilns or mining pits along the road, or evidence of bushmeat, charcoal or timber

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transport by project vehicles or workers. Corrective action: FDA and community enforcement actions within one month; sanctions under the code of conduct and the contract where project workers or vehicles are involved; checkpoints and transport controls; re-assessment of the induced-access risk in the instrument.

- Trigger: new farms, charcoal production or settlement in the forest areas opened, or agricultural expansion into forest by farmers supported under Subcomponents 3.1 and 3.2. Corrective action: FDA and chiefs' intervention under the community agreement; suspension of the traceability registration and of the project support to the farms concerned (Table 13); report to the World Bank.
- Trigger: at 12 and 24 months after completion, revegetation below the targets of Table 29, or an invasive-species infestation on the disturbed areas at completion or at the annual check. Corrective action: replanting and invasive-species control by the contractor during the defects liability period at its expense, verified by the supervision consultant before the defects liability certificate; the defects liability period of the road and crossing contracts is set at 24 months for the revegetation items or, where it is shorter, the 24-month replanting is carried out by the maintenance group under budget item 10.

The corrective actions are taken jointly by the implementing unit, the FDA and the community, are reported to the World Bank in the quarterly report and, for a Substantial-risk subproject or a repeated trigger, within 24 hours as a serious incident where forest loss is significant (Step 11); they are financed from the ESMF budget (item 10) and, where attributable to the contractor, at the contractor's expense under Section 6.1.5.

Responsibilities outside the construction footprint. The measures that address the induced impacts apply largely outside the area in which the contractor works, and they continue after the works contract ends. The subproject instrument therefore assigns each measure to the party that is able to carry it out, and distinguishes the obligations of the contractor from the actions that the implementing unit, the FDA and the communities must take:

- **Contractor.** Its obligations are limited to the construction footprint, the ancillary sites (borrow pits, camps, haul routes, material and waste sites) and the conduct of its workers, subcontractors, suppliers and vehicles, during the contract and the defects liability period: limits of clearing marked and respected; no hunting, bushmeat, charcoal or unlicensed timber by workers and no transport of them in project vehicles; licensed material sources; revegetation and invasive-species control on the disturbed areas; and the cost of the corrective actions attributable to it (Annex 10; Section 6.1.5). The contractor is not responsible for changes in land use made by third parties in the forest areas that the improved access opens.
- **Implementing unit (IIU or MoA-PIU).** It is accountable for the measures outside the footprint. It commissions the survey and the baseline, concludes the agreements with the FDA and the communities before the works start, retains the biodiversity specialist, organizes the outcome monitoring (transects, forest-cover analysis) and finances it from the ESMF budget (item 10), convenes the joint verification when a trigger is reached, decides the suspension of the following batches and reports to the World Bank. The supervision consultant verifies the obligations of the contractor and takes part in the monitoring.
- **Forestry Development Authority.** It acts under its statutory mandate in the forest areas that the improved access opens: patrols; checkpoints on the transport of bushmeat, charcoal and timber; permits; enforcement against illegal logging, hunting and clearing; rangers for the transect monitoring; review of the surveys and BMPs; and the joint corrective actions. Its actions are set out in the agreement recorded in the instrument, and the ESMF budget (item 10) provides for the transect monitoring with the FDA rangers and for an allowance for the corrective actions.
- **Communities.** The community forest management bodies or, where there is none, the town and clan chiefs adopt and apply the rules agreed with the FDA for the forest areas identified by the survey (no new farms, charcoal production, logging or mining, and rules on hunting), designate the community monitors who take part in the transect counts with the county focal point and the FDA rangers, and report breaches to the FDA and the county focal point. The grievance mechanism (Section 7.3) is open to them for any dispute that arises from these rules.

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The detailed mitigation and monitoring arrangements – locations, frequencies, resources and responsible officers – are developed in the site-specific ESIA/ESMP or ESMP of each subproject and, where required, in its BMP; the roles of the institutions are summarized in Section 6.4 and Table 17.

The cumulative impacts of the subprojects with the linked activities of Section 2.4 are assessed in the instrument of the first subproject of each type in a corridor and updated in the annual review of the ESMF; the SESA of Component 4 and the Legacy Corridor ESIA assess the cumulative effects of corridor development and mining reform at the regional scale, and their findings are taken into account in the screening of the subprojects of the same areas (Section 6.2).

5.3 Risk Assessment

5.3.1 Methodology

Risks are uncertain events that could cause harm to people, the environment, the project or the implementing agencies; they are rated by combining the likelihood of the event (Rare, Unlikely, Possible, Likely, Almost certain) with the severity of its consequence (Negligible, Minor, Moderate, Major, Critical) in the matrix of Table 12, which is shared with the RF and the LMP, giving a risk level of Low, Moderate, Substantial or High. Likelihood is judged over the subproject life with the current baseline and capacity; consequence considers the worst credible outcome for people (injury, fatality, abuse), the environment (extent and reversibility of damage), livelihoods and the project (delay, cost, reputation). Risks are rated before controls and again with the controls of this ESMF (residual risk). Substantial and High residual risks require specific management plans in the subproject instrument, and World Bank prior review follows the subproject classification of Table 16; the risk register in Annex 5 is updated at each screening and at least annually.

Table 12: Risk matrix (Likelihood × Consequence)

Likelihood \ Consequence	Negligible	Minor	Moderate	Major	Critical
Rare	Low	Low	Low	Moderate	Moderate
Unlikely	Low	Low	Moderate	Moderate	Substantial
Possible	Low	Moderate	Moderate	Substantial	High
Likely	Moderate	Moderate	Substantial	High	High
Almost certain	Moderate	Substantial	High	High	High

Consequence: Negligible – no injury, nuisance only; Minor – first-aid injury, minor reversible damage or loss, short delay; Moderate – lost-time injury, local reversible damage, loss of a season's income, complaint escalated; Major – serious injury or other abuse of a worker or community member, significant damage reversible only in the long term, loss of livelihood, suspension of works; Critical – fatality; any case of sexual exploitation or abuse or of sexual harassment attributable to the project; systematic abuse; irreversible damage to critical receptors; project cancellation.

5.3.2 Results of the risk assessment

The risk register in Annex 5 identifies twenty risks for the subprojects covered by the ESMF, grouped as social risks and impacts (R1–R11), environmental risks (R12–R15), health and safety risks (R16–R17) and institutional and technical-assistance risks (R18–R20), with the controls and management measures of this ESMF, the RF, the LMP and the SEP and the responsibility for each.

Before management and controls, five risks are rated High: SEA/SH (R1), labor influx into small communities (R2), child labor in works, maintenance groups, material supply and value chains (R3), a fatality or serious injury of a worker or community member (R16) and the weak capacity of the implementing units, county offices, contractors and supervisors in remote areas (R18); eleven are rated Substantial and four Moderate. Based on this preliminary assessment and on the assumed effectiveness of the proposed controls, no risk is rated High at the residual stage; twelve risks remain Moderate and six become Low. R1 (SEA/SH) and R16 (fatality or serious injury) remain Substantial.

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The reason is methodological rather than a weakness of the measures: a risk is the product of likelihood and consequence (Section 5.3.1), and the consequence of a SEA/SH case or of a fatality is Critical by definition (legend of Table 12), so that the controls can reduce the likelihood – from Possible to Unlikely at the framework level – but not the consequence; a Critical consequence with an Unlikely likelihood is Substantial in the matrix of Table 12. The Substantial residual rating of R1 is also consistent with the project-level SEA/SH risk rating of Substantial (Section 2.1), which the site-level assessment of individual subprojects does not change.

These two risks therefore require, on every subproject, the SEA/SH Action Plan and the GBV/SEA-SH Specialist, the OHS and community health and safety requirements of Annex 9, the incident procedures of Section 6.1.4 and the mandatory controls and stop-work triggers of Section 6.1.5, and the following guidance applies to reduce them further at site level: (i) the ESIA/ESMP or ESMP of each subproject re-assesses R1 and R16 for the site, and may rate the residual risk Moderate where the site-specific measures remove the main contributing factors – no worker camp and a locally recruited workforce, no works in or over water, no haulage through settlements or school zones, no security personnel, short works near services – so that the likelihood becomes Rare; (ii) the measures that reduce the likelihood are made mandatory and verifiable (Table 28, R1 and R16: SEA/SH risk assessment and accommodation rules verified before mobilization, monthly verification of code-of-conduct signatures and training, permits to work and daily inspection of excavations and crossings, exclusion zones and traffic management verified weekly) and their non-implementation is a non-conformance with the deadlines and sanctions of Section 6.1.5; (iii) any SEA/SH incident, fatality or serious injury triggers the stop-work and corrective-action procedure of Section 6.1.5 and the 24-hour notification of Step 11; and (iv) the screening (Annex 1, Section D) records the SEA/SH and fatality risk factors of each site so that the measures are proportioned to them.

These residual ratings remain indicative: they will be verified through the subproject-specific screening and assessment and against the monitoring indicators of Annex 6. The twelve risks whose residual rating is Moderate are treated in the same way: the conditions under which each of them is brought to Low are set out below and in the last column of Table 28.

Reducing the residual risks to Low. The residual ratings of Table 28 are framework-level ratings, assigned before the sites are known and deliberately conservative; they are not the level at which the project accepts to operate. The objective of this ESMF is that every risk is brought to Low at the level of each subproject and, for the two risks whose consequence is Critical by definition (R1 and R16), to the lowest rating that the matrix of Table 12 allows and as low as reasonably practicable. The Substantial residual ratings of R1 and R16 are therefore retained at framework level and are not reduced artificially: the site-specific assessment of each subproject re-assesses every risk on the basis of the actual conditions of the site and determines whether additional mitigation is required, and a rating is lowered only where the conditions that justify it are verified.

The last column of Table 28 sets out the pathway for each risk. It combines (i) avoidance and design measures that remove or limit the exposure – the choice of the site, local recruitment, works without a camp, dry-season works, Government or undisputed land – and so lower the consequence or make the event not credible at the site; (ii) mandatory controls with a named responsible party, which lower the likelihood; (iii) verification before mobilization and at fixed intervals; and (iv) the measurable conditions under which the rating is recorded as Low.

The pathway is applied at four points of the subproject cycle. At screening, the risk factors of the site are recorded and the risks of the register that apply are rated for the site, with the exposure factors that siting or design can avoid (Annex 1, Section E). In the subproject instrument, the residual rating after the site-specific measures is stated for each risk, with the conditions for a Low rating (Annex 6); a subproject for which any residual rating would remain Substantial is approved only with additional measures and supervision arrangements agreed with the World Bank, and is otherwise redesigned or excluded (exclusion criterion 13). Before mobilization, the review of the C-ESMP verifies that the conditions are in place (Step 8). During implementation, the residual ratings are reviewed in each quarterly report against the indicators of Annex 6 (Step 10): a risk not yet at Low stays on the corrective-action list of Section 6.1.5 with a dated action until the conditions are met, and a rating that deteriorates triggers the same procedure. The completion audit records the final rating of each risk. With the measures of Section 5.4 applied, the residual significance of the impacts of Table 27 is rated Minor or Negligible (Section 5.2.2).

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5.4 Suggested Mitigation Measures by Subcomponent Activity

Table 13 summarizes, for each subcomponent activity, the risks and impacts and the suggested mitigation measures and processes that apply; they are detailed in the mitigation and monitoring matrix of Annex 6, the ESCOPs of Annex 7, the chance-finds procedure of Annex 8, the occupational and community health and safety requirements of Annex 9 and the contract clauses of Annex 10. Land acquisition, displacement and negotiated land transactions are governed by the RF (with the RP of each subproject), voluntary land donation by Annex 19 of this ESMF, labor by the LMP and engagement by the SEP.

Table 13**: Environmental and social risks and impacts and suggested mitigation measures by subcomponent activity**

Subcomponent activity	Risks and impacts	Mitigation measures
Subcomponent 1.3 – Village access roads and community-based maintenance		
Reshaping, re-graveling, drainage and culvert/bridge replacement of existing village access roads	Economic displacement in the road reserve and temporary economic displacement by detours and works (loss of access to stalls, shops, farms and water points); vegetation loss; erosion and sedimentation; inadequate siting or sizing of replacement culverts and bridges; borrow pits; dust, noise and waste; community and worker safety; chance finds; induced access to forest along the improved road (hunting, charcoal, logging, ASM, farm expansion)	– Works confined to the existing formation; asset inventory and compensation for permanent and temporary economic displacement, including that caused by detours, under the RP prepared in accordance with the RF, completed before works; detour and alternative-route plan (Annex 18); culverts and bridges sited and sized from hydrological and topographic mapping and community knowledge of flood levels (Section 5.6); dry-season crossing works with sediment control; borrow pits sited, licensed and rehabilitated under ESCOP 2; dust suppression and a 30 km/h speed limit for project vehicles in settlements; traffic management and fencing; OHS plan and PPE; chance-finds procedure; biodiversity screening and, where natural habitat or an induced-access pathway is identified, a habitat and species survey with induced-access measures agreed with the FDA and the community forest management bodies and corrective-action triggers (Sections 5.2.3 and 6.1.1); ESMP or ESMP checklist with ESCOPs in every contract
Labor-based routine maintenance by community-based organizations	Injuries with inadequate tools and PPE; informal or unpaid work; child participation; exclusion of women; disputes over road-user contributions	– Written maintenance contracts with the IIU setting tasks, wages, payment records, tools, PPE, first aid and insurance; age verification; target of 40 percent women; training of group leaders; worker grievance mechanism; LMP community-worker provisions
Sourcing of laterite, sand, gravel, rock and timber from local suppliers	Unlicensed pits and pit-sawing; child labor and unsafe work at supply sites; forest degradation	– Supplier screening for licenses, safety and age verification; FDA authorization for timber; preference for concrete decks and culverts; supplier code of conduct; spot checks by supervision consultants
Subcomponent 1.4 – Tolling and axle-load control stations		
Site selection, design and land acquisition	Displacement of traders, crops and structures; land disputes; expectations of the border agencies and the community; flood exposure	– Site selection with the Ministry of Transport, the county authorities and the agencies on Government or uncontested land; avoidance of houses and schools; compensation for physical and economic displacement and income loss through an RP prepared in accordance with ESS5 and the RF; consultation of the women traders and transport operators on the layout and on designated trading and parking areas; siting above flood level; security risk assessment
Construction of platforms, weighbridge, buildings,	Runoff and sediment to nearby rivers and streams (the Cavalla at the B'hai border, the Mano at Bo Waterside); dust	– ESIA/ESMP with EPA permit; stormwater, sediment and oil-interceptor design; 50 m river buffer; self-contained camp; local hiring; code of conduct and SEA/SH measures; traffic management plan of the contractor

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Subcomponent activity	Risks and impacts	Mitigation measures
parking, water and sanitation	and noise at schools and houses; labor influx into a small settlement; SEA/SH risks; construction and worker safety near the inspection lane; waste at a post without disposal facilities	coordinated with the police and immigration; waste transport to a county-approved site; C-ESMP
Operation of the stations by the designated agencies with the border agencies	Truck emissions, noise, oil drips and litter; sanitation; corruption and harassment at the weighbridge; security incidents; diversion of overloaded trucks; disease spread	– Station operating procedures with automated records and posted tariffs; station grievance desk; waste, toilet and water maintenance contracts; code of conduct for station and security staff; designated trading areas agreed with the traders; health screening point; monitoring of alternative routes; operation-phase ESMP handed to the station operator
Subcomponents 3.3 and 3.2 – Rural access road spot improvements and plantation water management systems		
Climate-resilient culverts, bridges, drainage, slope stabilization, embankment raising, selective sealing	Inadequate siting, sizing or alignment of culverts, bridges and drains at the design stage (flooding of fields and houses, scour, backwater, washouts, structural failure); in-stream sedimentation and flow obstruction; disturbance of washing and water-collection points; land take at approaches and temporary economic displacement by detours; borrow pits; safety at crossings; chance finds and sacred streams; induced access to forest along improved roads	– Siting and sizing of culverts, bridges and drains from hydrological and topographic maps, catchment and flood analysis, the MME hydrological data and community knowledge of flood levels, checked at the design review (Section 5.6); dry-season works with diversion and sediment control; alternative water access; design within the alignment; compensation under the RP (RF), including temporary impacts of detours (Annex 18); ESCOPs 2 and 3; traffic management; elder consultation on sacred streams; biodiversity screening and surveys with induced-access measures and corrective-action triggers (Sections 5.2.3 and 6.1.1); ESMP per batch with EPA permit
Drains, weirs, bunds, check dams and canals of the water management systems of rehabilitated oil-palm plantations (Subcomponent 3.2)	Wetland hydrology change and swamp conversion; exclusion or capture of improved land; standing water and vector breeding; backwater flooding; failure or overtopping of a weir, dyke or bund flooding fields or houses downstream (Table 8); agrochemical use	– Systems only within existing plantations under rehabilitation, with wetland screening and no drainage of intact swamp forest, raphia swamp or peat; participatory layout and water-use rules including women and tenants; written land-use agreements; structures limited to 2 m without permanent impoundment; design and construction supervision by a qualified engineer, spillways and freeboard, inspection after major storms; maintenance by the producer organization; integrated pest management training (ESCOP 4)
Subcomponents 3.1 and 3.2 – Tree-crop and feed value-chain productive infrastructure		
Cocoa fermentation and solar drying, rubber collection and quality testing, nurseries	Acidic and odorous effluents; organic waste; land for shared facilities; child labor in cocoa and rubber; forest expansion of tree crops	– Effluent settling and soakaway; composting; siting 50 m from water points; voluntary land donation meeting the conditions of Annex 19, or a documented lease; age verification and child-labor awareness in cooperatives; traceability and no support to farms on recently deforested land; ESMP checklist with ESCOP 5
Aggregation and collection centers, agricultural markets (Subcomponent 3.3), warehouses, feed	Dust, noise and fire; agrochemical and fuel storage; machinery hazards; water demand; sanitation and solid waste; displacement of traders	– OHS requirements as a condition of grants; bunded and ventilated stores; fire equipment; guarding; dedicated water source and toilets; temporary trading space during the works and compensation under the RP (RF); market management committee with women traders and

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Subcomponent activity	Risks and impacts	Mitigation measures
stores, mills, weighing and grading, water supply and sanitation	during the works of a market; unfair allocation of stalls; exclusion of women and youth; elite capture of grants	transparent allocation of stalls; cleaning and waste collection arrangements; open membership and access rules; transparent grant criteria; ESMP checklist; operator training
Matching grants and outgrower contracts	Unfair contract terms; exclusion of vulnerable farmers; labor conditions on outgrower farms	– Grant manual with E&S eligibility and screening (Annex 1) and the inclusion measures of Annex 20 (access of women, youth, vulnerable and remote farmers to matching grants and outgrower contracts); model outgrower contract reviewed by the Social Specialist; LMP provisions for primary supply workers; grievance mechanism
Technical assistance (Components 2, 3 and 4) and cross-cutting		
Feasibility studies, designs, policy and regulatory reforms, information systems, training	Outputs inconsistent with the requirements of the relevant ESSs (ESS1 for the assessment of the environmental and social implications of the recommendations; ESS2 for the labor provisions of the designs; ESS3 and ESS4 for the design and safety standards; ESS5 and ESS6 for the land, resettlement and biodiversity implications of the Legacy Corridor designs and of the mining reforms; ESS8 for cultural heritage; ESS10 for consultation); future resettlement along the Legacy Corridor and ASM risks of the mining reforms; exclusion of stakeholders	– Terms of Reference consistent with the ESSs reviewed by the E&S specialists and cleared by the World Bank; SESA for Component 4; stakeholder consultation requirements in the ToR; instruments prepared with the Legacy Corridor design
All subprojects	Grievances; weak capacity; incidents; cumulative impacts	– Grievance mechanism with SEA/SH channel (Chapter 7); training plan; supervision and monitoring (Chapter 6); 24-hour serious-incident notification; screening of linked activities

5.5 Risks and Mitigation Measures Specific to Disadvantaged and Vulnerable Groups

The field work identified the groups of Table 14 as likely to be disproportionately affected by the subprojects or less able to take advantage of their benefits: women and female-headed households, whose land rights, roadside trading and water-collection activities are most exposed to works and who are under-represented in road committees and cooperatives; older persons, persons with disabilities and chronically ill persons; children; very poor, landless and tenant households, migrant farmers (including Burkinabè cocoa farmers in Grand Gedeh) and informal roadside traders, whose use of land and road reserves is undocumented; residents of remote hamlets with weak links to chiefs and information; women cross-border traders at the border crossings; and persons dependent on artisanal mining and forest resources.

Table 14**: Risks to disadvantaged and vulnerable groups and tailored measures**

Group	Specific risks	Tailored measures
Women and female-headed households	Loss of undocumented land-use rights and roadside trade; exclusion from employment and	– Women's separate consultations and representation on grievance and road committees; compensation paid to women users in their own name under the RP (RF

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Group	Specific risks	Tailored measures
	decisions; SEA/SH; burden of disrupted water points	principles); the project target of 40 percent women in the maintenance groups and in the jobs of the works contracts (LMP, Section 2.4); safe facilities; SEA/SH measures; alternative water access during crossing works
Older persons, persons with disabilities, chronically ill	Exclusion from consultations and jobs; loss of access during works; unsafe crossings	– Home visits and accessible venues; priority in assistance under the RP (vulnerable-persons provisions of the RF); accessible market, station and center designs; pedestrian access maintained at crossings
Children	Child labor; accidents at sites, pits and crossings; sexual exploitation; disruption of schooling near sites	– Minimum-age rules and verification; fenced and guarded sites; school safety awareness; code of conduct; works schedule and haul routes avoiding school hours and the vicinity of schools
Very poor, landless, tenant and migrant households; informal traders	Ineligibility for compensation if undocumented; exclusion from outgrower schemes and grants; displacement without alternatives	– Eligibility based on use rather than title, in accordance with ESS5; cut-off date communicated; land-use agreements covering tenants; targeted inclusion in outgrower schemes and cooperatives; relocation of traders to designated trading areas or into the agricultural markets
Remote hamlets and non-dominant language speakers	Lack of information; exclusion from selection and grievance mechanism	– Meetings in hamlets and in local languages; town criers and radio; county focal point outreach; grievance uptake by phone and through chiefs
Women cross-border traders	Harassment, informal fees and loss of trading space at the station	– Women cross-border traders (for example the Mano River Cross Border Women) consulted on the station rules and represented on the market management committees; posted tariffs; station grievance desk; female station and security staff where possible
Artisanal miners and forest-dependent persons	Restriction of access; conflict with contractors; exposure to enforcement	– Screening of roads near mining and forest-use areas; information and grievance access; coordination with the MME and FDA; livelihood restoration measures in the RP where access is restricted; SESA for Component 4

5.6 Planning and Design Considerations for Avoidance of Environmental and Social Risks and Impacts

Many impacts are avoided or minimized at the identification and design stage. The IIU, the MoA-PIU and their design consultants apply the following considerations before a subproject is screened and designed, and the screening form checks them:

- Rehabilitate within existing alignments and formation widths; avoid new alignments, widening through settlements and realignments across wetlands; where a crossing must be relocated, choose the option with the least land take and the fewest structures affected;
- Apply the exclusion list and the biodiversity screening of the area of influence – the 5 km proximity to protected areas, KBAs and proposed protected areas is only the initial trigger; the biodiversity screening of Section 6.1.1 applies to every subproject, and the site-specific habitat and species survey, the natural and critical habitat determination and the ecosystem-services assessment apply wherever the screening identifies natural habitat, potential critical habitat features, ecosystem services or an induced-access pathway and to every Substantial-risk subproject, including the forest areas that an improved road would open (Section 5.2.3); avoid swamp forest, raphia swamps, riparian strips and large trees; retain marked trees and vegetation buffers at crossings;
- Site stations, markets, centers, warehouses and processing units on Government land or uncontested customary land away from houses, schools, clinics, water points, graves and sacred sites, above flood level, with space for drainage, parking, waste and sanitation; confirm tenure with the LLA and chiefs before design;

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- Design climate-resilient drainage and crossings (design floods, freeboard, scour protection, lined drains and turnouts, embankment raising) and site and size every culvert, bridge and drain on the basis of hydrological and topographic maps (catchment delineation, flow paths and flood extents), the hydrological data of the Ministry of Mines and Energy (MME) and the local knowledge of flood-prone sections collected from communities at screening, as recommended by the MME at the national consultation; the inadequate siting or sizing of drainage structures is itself a design-stage risk, and the drainage design of each subproject is therefore reviewed by the implementing-unit E&S specialists with the design engineers before approval; program crossing works in the dry season and specify revegetation and borrow-pit rehabilitation in the bills of quantities;
- Prefer concrete culverts and decks to timber to reduce forest pressure and maintenance; reuse existing borrow pits; specify licensed material sources;
- Include sanitation, water supply, waste storage, oil interceptors, fire protection and accessible facilities in the designs of stations, markets and centers; size effluent systems of processing units to the EHS Guidelines values;
- Build road safety and accessibility into designs: speed humps, road safety signs, lighting and marked pedestrian crossings in settlements and at work sites, guardrails on bridges, pedestrian and motorcycle provisions at crossings; crossing points, drainage crossings, sidewalks and signs usable by persons with disabilities at stations, markets and in settlements, verified through an accessibility review of the designs by the implementing units with the technical advice of the National Commission on Disabilities (requested at the national consultation);
- Provide for the parking of trucks and commercial vehicles – lay-bys and parking areas at the stations and markets and, on the corridors, at locations agreed with the transport unions, the county and the Liberia National Police – and mark parking and no-parking areas clearly, so that vehicles are not left on the carriageway (a concern raised by the transport unions, the Press Union and the University of Liberia at the national consultation);
- Plan detours and alternative routes in the design of every road subproject so that local movement continues before and during the works, with their maintenance and restoration priced in the bills of quantities (Annex 18). Where a detour or the works temporarily take land, interrupt the access of customers to shops, stalls, markets, farms or water points or reduce the income of roadside businesses, the temporary economic displacement is identified in the census and asset inventory of the subproject and compensated under the RP in accordance with the RF (temporary-use agreements and rent, compensation of crops and trees, net income lost for the period of interruption, temporary trading space); it is not treated as an unavoidable nuisance of the works;
- Plan selection, membership and employment rules that include women, youth, tenants and remote hamlets; publish criteria and results; agree works calendars that respect farming seasons, market days and initiation seasons;
- Prepare for emergencies: flood warnings and maintenance access, outbreak procedures, first aid and evacuation routes from remote sites, and coordination with county health teams, the police and the National Disaster Management Agency.

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6. Procedures and Implementation Arrangements

6.1 Environmental and Social Risk Management Procedures

The environmental and social risk management procedures follow the subproject cycle summarized in Table 15 and detailed in the steps below; they align the national permitting requirements with the ESF, embed stakeholder engagement and the grievance mechanism, and hold contractors and supervising entities accountable for outcomes consistent with good international industry practice. The IIU applies the procedures to Subcomponents 1.3 and 1.4 (with the Ministry of Transport for the stations) and the MoA-PIU to Subcomponents 3.1–3.3; the IIU consolidates the reporting to the World Bank.

Table 15**: Subproject cycle and environmental and social management procedures**

Project stage	E&S stage	Procedures	Responsible	Timing
Identification and prioritization (road batches, station sites, plantation water management systems, facilities, grants)	Screening	– Eligibility check against criteria 1 to 12 of the exclusion list (Table 3) – Screening form (Annex 1) with site visit and consultation – Biodiversity screening; site-specific habitat and species survey, natural and critical habitat determination and ecosystem-services assessment where triggered (Section 6.1.1) – Risk classification, followed by the risk-based exclusion (Table 3, criterion 13); instruments, indicative EPA route (Section 3.5) and permits identified – Screening report to the World Bank for concurrence	County focal point; implementing-unit E&S specialists; World Bank	Within 4 weeks of identification; before final design
Formulation and planning	Assessment and planning	– ToR (Annex 11) and World Bank no objection for an ESIA/ESMP – ESIA/ESMP, ESMP or checklist, RP and specialized plans, with consultation under the SEP – EPA registration, project brief and permit; sectoral permits – World Bank clearance; disclosure in country and on the World Bank website – E&S requirements embedded in bidding documents and contracts (Annex 10)	E&S specialists and consultants; EPA; World Bank; procurement units	Checklist 4–6 weeks; ESMP 2–3 months; ESIA 4–6 months; before bidding
Implementation and monitoring	Implementation	– C-ESMP approved before mobilization; induction of workers – Compensation completed before works on each section – Compensation completion report accepted and cleared by the World Bank before the site handover of each section (Step 7) – Site handover and civil works clearance only when the conditions of Step 7 are met, as in the RF, the LMP and the SEP (community grievance committee and worker grievance mechanism, code of conduct and induction, SEA/SH referral pathway, notification of the works) – Supervision through contractor reports, supervision-consultant inspections, county focal point visits and the mobile monitoring application	Contractors; supervision consultants; county focal points; E&S specialists; EPA	Throughout works; monthly and quarterly reporting

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Project stage	E&S stage	Procedures	Responsible	Timing
		– Non-conformance, corrective-action and stop-work procedure (Section 6.1.5) – Grievance mechanism and a separate, confidential, survivor-centered SEA/SH channel; quarterly reports; serious incidents notified within 24 hours		
Review, completion and operation	Completion	– Inspection of site restoration, borrow-pit rehabilitation and open grievances before final payment. – Handover of operation-phase requirements to the station operators, groups, cooperatives or facility operators, with training – Completion report; annual ESMF review; independent audits at mid-term and completion – Post-closure plan for any E&S obligation not completed at project closing	E&S specialists; supervision consultants; operators; independent auditor	At substantial completion; mid-term and project closing

6.1.1 Subproject screening and risk classification

Step 1 – Eligibility and screening. The county focal point and the implementing unit confirm that the proposed subproject is eligible and meets none of criteria 1 to 12 of the exclusion list (Table 3; Annex 1, Section B); ineligible proposals are returned with the reason. They then complete the screening form of Annex 1 on the basis of a site visit with the county focal point, the county line offices (MoA, MPW, LLA, EPA where present) and the community leadership, including women's and youth representatives and affected land users; the form records the site characteristics and the potentially affected receptors within the subproject's area of influence (Section 5.2.1), including those exposed to downstream, indirect or off-site impacts; land tenure and disputes; the assets and persons likely to be affected; labor and influx risks; cultural heritage; and climate hazards. Where a dispute over the land or over rights to it is recorded, the site is not approved for use and no land acquisition proceeds until the dispute is satisfactorily resolved and the resolution is documented (exclusion criterion 9; due-diligence checklist of the RF). Where several sites are considered for a station, screening is completed for each of them and repeated for the site retained.

Biodiversity screening and surveys. The screening of every subproject includes a biodiversity screening that goes beyond the exclusion list and the 5 km proximity check of Section 4.3, which are only the initial triggers. On the basis of the site visit and of the forest-cover and protected-area maps (Annex 15), the screening officer records in Section D of the form whether the site or the forest and wetland areas that the improved access would open contain natural habitat (secondary or swamp forest, riparian strips, wetlands), potential critical habitat features (protected or threatened species reported by the FDA, the community or the survey, KBA attributes) or ecosystem services used by the communities (bushmeat, non-timber forest products, fish, water).

Where any of these is identified, or where the subproject is classified Substantial, a qualified biodiversity specialist (Section 6.4, Table 18) carries out a site-specific habitat and species survey proportionate to the risk – a rapid walkover and interview survey for a road batch or a water management system in modified habitat, a structured survey with transects, camera traps or species lists and a dry- and wet-season component for crossings and sections in secondary forest or near a KBA – together with the determination of natural and critical habitat under ESS6 and the assessment of the ecosystem services that the communities depend on. The classification is confirmed (Step 2) on the basis of the walkover and of the first seasonal component of the survey; the second seasonal component, where required, is completed before the instrument is finalized (Step 4) and in any case before works start in the habitat concerned, and the biodiversity measures or BMP are updated with its results.

The survey establishes the baseline values of the outcome indicators of Annex 6 (Table 29) for the subproject (forest cover in the area of influence, habitat condition at the crossings, transect counts of hunting, logging, charcoal and mining evidence, invasive-species cover). Its results are attached to the

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screening report (Step 3) and determine the instrument: biodiversity measures within the ESMP where only modified habitat is affected; a Biodiversity Management Plan (BMP) where natural habitat is affected or an induced-access pathway to natural habitat is identified; and, where critical habitat may be affected, the ESS6 requirements for critical habitat, with exclusion of the subproject where they cannot be met (Table 3, criterion 1).

Where natural habitat is affected, the biodiversity measures or the BMP are designed to achieve no net loss of biodiversity and, where feasible, a net gain; where critical habitat may be affected, the conditions of ESS6 for critical habitat apply (no measurable adverse impact on the biodiversity values for which it was identified, no net reduction of any Critically Endangered or Endangered species population, a net gain of those values, and a robust monitoring program). Subprojects in modified habitat with no induced-access pathway are documented as such in the screening report and need no survey; this determination is made only after the biodiversity specialist has reviewed the screening form, the site photographs and the forest-cover map, is confirmed by the World Bank with the classification, and, for any road batch, crossing or water management system within 2 km of secondary, swamp or riparian forest, a rapid walkover by the specialist is the minimum.

Step 2 – Risk classification. On the basis of the screening form (Annex 1, Sections D and E), the implementing unit assigns the subproject one of the classes of Table 16, consistent with the World Bank classification of the project. The classification informs the selection of proportionate E&S instruments, the consultation requirements and the review arrangements, while the applicable EPA process is determined separately under the national procedure (Section 3.5; indicative route in Table 16); it considers the type, location, sensitivity and scale of the works, the nature and magnitude of the risks and impacts, and the capacity of the implementing entities. The risk-based exclusion (Table 3, criterion 13) is applied once the class is assigned: a subproject classified High is not eligible, and a subproject classified Substantial is retained only where the screening report shows that its risks can be mitigated to an acceptable level with the instruments of Table 16 and the capacity provided under this ESMF; otherwise the proposal is returned, or redesigned and screened again. The decision is recorded in Section E of the form. The screening also rates, for the site, the risks of the register that apply and records the exposure factors that siting or design can avoid, so that the instrument sets the conditions for a Low residual rating (Section 5.3.2; Table 28, last column).

Table 16**: Subproject risk classification and instruments**

Class	**Typical subprojects**	**Instrument(s)**	**Indicative EPA process (determined under Section 3.5)**	**Review and disclosure**
Low	Routine community maintenance; nurseries; sheds and stores below about 100 m² on existing cooperative land; equipment supply; small repairs without earthworks	ESMP checklist with the ESCOPs (Annex 7); LMP; grievance mechanism; voluntary land donation record (Annex 19) where land is used; biodiversity screening confirming no natural habitat and no induced-access pathway	Registration and project brief; FONSI or certificate of approval	Implementing-unit clearance; World Bank post review on a sample; disclosed at the site and county
Moderate	Batches of village access roads; rural access road spot improvements and small bridges; plantation water management systems; aggregation centers, warehouses, processing units; facilities with small land take	Site-specific ESMP (Annex 6) with specialized sections (traffic, waste, borrow pits, OHS and community health and safety, influx); biodiversity survey report where the screening identifies natural habitat at crossings or forest edges, wetland works or an induced-access pathway, with	Registration, project brief and environmental review with the ESMP; permit or certificate with conditions	Implementing-unit clearance; World Bank prior review of the first subproject of each type and of all RPs, then post review; disclosed in country and by the World Bank

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Class	Typical subprojects	Instrument(s)	Indicative EPA process (determined under Section 3.5)	Review and disclosure
		biodiversity measures in the ESMP where only modified habitat is affected, or a BMP where natural habitat at existing crossings or forest edges is affected or an induced-access pathway to natural habitat is identified, with the FDA and community agreements and the corrective-action triggers (Section 6.1.1); SEA/SH risk assessment and site measures; detour and alternative-route plan (Annex 18); RP under the RF where land is acquired or persons are displaced; C-ESMP		
Substantial	Tolling and axle-load control stations; any subproject with labor influx into a small community, clearing or degradation of natural habitat beyond existing crossings, any potential critical habitat feature or an induced-access pathway into a forest block identified by the survey, 200 or more economically displaced persons or any physical displacement, or use of security personnel	ESIA/ESMP (ToR in Annex 11) with specialized plans (traffic, waste, OHS, community health and safety, influx, security); site-specific habitat and species survey, natural and critical habitat assessment and ecosystem-services assessment, with a Biodiversity Management Plan where natural or critical habitat may be affected; detour and alternative-route plan (Annex 18); RP under the RF; SEA/SH risk assessment and measures; C-ESMP	Registration, notice of intent, project brief, scoping, environmental impact study, public consultation and permit	World Bank prior review and clearance of the ToR and the instruments; EPA permit; disclosed in country and by the World Bank before bidding
High	Not eligible under this ESMF (Table 3, criterion 13, applied after the classification): the proposal is returned, or redesigned and screened again	–	–	Excluded

Step 3 – Screening report and World Bank concurrence. The implementing unit prepares a short screening report (form, site sketch, photographs, classification, proposed instruments and permits, consultation record) for the World Bank, which confirms or revises the classification and the instruments; Substantial-risk subprojects and the first subproject of each type are submitted individually, the others in monthly batches before their instruments are finalized, with a summary in the quarterly report.

6.1.2 Preparation, review, clearance and disclosure of instruments

Step 4 – Terms of Reference and Preparation. For an ESIA/ESMP and for any RP, the implementing unit prepares Terms of Reference (based on Annex 11 for the ESIA/ESMP and on the RP outline of the RF for the RP) and obtains the World Bank's no-objection; ESMPs and checklists are prepared by the implementing-unit E&S specialists with the design consultants, using the templates of Annex 6. The

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instruments contain the site-specific baseline and site map, the assessment of impacts and risks with the methodology of Chapter 5, the mitigation and monitoring matrix with responsibilities and costs, and the record of the consultation of affected communities, women, vulnerable groups and county authorities under the SEP; the RP is prepared in parallel under the RF with a census and cut-off date.

Step 5 – EPA process. The implementing unit registers the subproject with the EPA, publishes the notice of intent where required, submits the project brief and the instrument, pays the fees and follows the EPA review until the permit or certificate of approval is issued with its conditions (Section 3.5).

Step 6 – World Bank review and disclosure. Substantial-risk subproject instruments, the first subproject of each type and all RPs are submitted for World Bank prior review and clearance; other instruments are cleared by the implementing-unit E&S specialists and the IIU Project Coordinator and are subject to post review. Cleared instruments are disclosed on the MPW/IIU website (and the MoA website for Component 3), at the EPA, the county and district offices and with the town chiefs of the affected communities, in summary form in Liberian English and through community meetings and local radio, and on the World Bank external website; no works start before disclosure.

6.1.3 Incorporation in bidding documents and contracts

Step 7 – Procurement. The implementing unit includes the ESMP (or checklist and ESCOPs), the EPA permit conditions, the chance-finds procedure, the OHS and community health and safety requirements, the LMP provisions, the code of conduct and SEA/SH requirements and the reporting obligations in the bidding documents and the works contract, with the clauses of Annex 10; bidders submit an E&S approach, key E&S staff and a signed code of conduct, and the bill of quantities includes priced E&S items. Grant and maintenance agreements carry the applicable requirements in proportion to their size.

Site handover and civil works clearance. The implementing unit hands over a site or section to the contractor, and the supervision consultant issues the written clearance to start civil works on it, only when the following conditions, which are those of the RF, the LMP and the SEP, are met (Step 8):

(i) the instrument of the subproject is cleared and disclosed and the EPA permit is issued;

(ii) the C-ESMP and the specialized plans, including the labor management plan, are approved and the key E&S staff of the contractor are in place (LMP);

(iii) the compensation of the affected persons of that section is completed, with the assistance due to them, and the compensation completion report is cleared by the World Bank (RF);

(iv) the land is free of unresolved dispute;

(v) the community grievance committee (Tier 1) is established and trained, the signboard with the grievance contacts is in place and the worker grievance mechanism is operating (SEP; LMP);

(vi) the workers have signed the code of conduct and received their induction (LMP);

(vii) the SEA/SH Action Plan is operational and the referral pathway of the site is confirmed with the MGCSP (Section 7.4); and

(viii) the detour and traffic arrangements are in place, the site-entry meeting with the community has been held and the works have been notified in writing to the LNP Traffic Division and the county authorities at least one week in advance (SEP; Annex 9).

Step 8 – Contractor mobilization. Before mobilization the contractor submits its C-ESMP (Annex 10), including the specialized management plans required by the ESMP, for review by the supervision consultant and approval by the implementing unit. Contractors are selected with demonstrated environmental and social management capacity (key E&S staff, methodology and past performance, Annex 10) and are responsible for the competence and training of their own staff, subcontractors and suppliers; the implementing unit and the supervision consultant brief the contractor, its subcontractors and suppliers at mobilization on the project-specific requirements – the ESMP and permit conditions, the LMP, the code of conduct, the grievance mechanism, the chance-finds procedure, the biodiversity measures and the reporting formats – and verify that the contractor inducts every worker. No civil works start on a section before its site handover and civil works clearance (Step 7). Operators, maintenance groups and producer organizations receive operation-phase training before handover. The review of the C-ESMP verifies that the conditions set in the instrument for a Low residual rating of each risk are in place before the works start.

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6.1.4 Supervision, monitoring, reporting and audits

Step 9 – Supervision and monitoring. The contractor keeps daily site records (workers, incidents, waste, complaints) and reports monthly on the C-ESMP; the supervision consultant's environmental and social staff inspect the sites at least weekly, verify the records, issue non-conformance notices and approve corrective actions; the county focal points visit each active site at least monthly and the implementing-unit E&S specialists at least quarterly, recording all visits in a mobile data application with georeferenced photographs and checklists. Environmental sampling (water quality at crossings and stations, noise and dust near receptors) follows the ESMP schedule, and the EPA inspects under the permit.

Monitoring covers the measures and indicators of Annex 6, the permit conditions, OHS and community safety performance, labor conditions (contracts, wages, age verification, worker grievances), RP implementation, stakeholder engagement and the grievance register, and the results indicators of the project. Labor conditions are monitored jointly with the Ministry of Labor through the joint monitoring arrangement of the LMP (requested by the Ministry at the national consultation), and the Ministry of Health county teams are invited to the inspections of worker camps and of the dust and water-quality controls near settlements.

Step 10 – Reporting. County focal points and supervision consultants report monthly to the implementing units; the IIU, with the MoA-PIU inputs, submits a quarterly environmental and social report to the World Bank covering the status of screening, instruments and permits, the implementation of mitigation measures, issues and remedies with timelines, OHS and community health and safety performance including incidents, labor conditions, RP implementation, stakeholder engagement, progress of works and the grievances received, actions taken and cases closed. Annual reports to the EPA follow the permit conditions; an annual review of the ESMF and its risk register is included in the annual project report. Each quarterly report reviews the residual rating of the risks of each active subproject against the conditions of Table 28 and the indicators of Annex 6, and lists the risks not yet at Low with the dated corrective action (Section 6.1.5).

Step 11 – Incident reporting. The implementing unit notifies the World Bank within 24 hours of becoming aware of any serious incident with significant adverse effects on the environment, communities, the public or workers – any fatality, forced or child labor, abuse of community members by project workers (including SEA/SH, without identifying details), violent protest, kidnapping, major spill or structural failure – with the form of Annex 12, followed by a root-cause analysis within 10 days (Annex 12) and a corrective action plan within the time agreed with the World Bank; contractors notify the supervision consultant and the implementing unit immediately and in any case within 24 hours, and the Ministry of Labor and the police are notified as required by law.

Step 12 – Audits and completion. Independent environmental and social audits are carried out at mid-term and at completion of the project, covering a sample of subprojects of each type, the stations, the RPs and the grievance mechanism. At completion of each subproject the implementing unit verifies site restoration, borrow-pit rehabilitation, waste removal, outstanding grievances and compensation and the handover of operation-phase responsibilities before the final payment, and records the final compliance status in the completion report; legacy issues are reported to the World Bank.

6.1.5 Corrective action, stop-work and escalation

The measures of the subproject instruments, the C-ESMPs, the permits and the contracts only reduce the Major impacts and the Substantial risks as reflected in Annex 5, if they are implemented at the time and place required. This section sets out, for all subprojects, when a non-conformance must be corrected, when corrective action is mandatory and cannot be deferred, when the works must stop, under which conditions they restart and how the decisions are escalated. The provisions are included in the works contracts and the grant and maintenance agreements through the clauses of Annex 10.

Non-conformances. The supervision consultant records every deviation from the subproject instrument, the C-ESMP, the permit conditions, the LMP, the code of conduct or the contract clauses as a non-conformance in the register of the site, at two levels. A minor non-conformance is a deviation that has not caused and does not threaten harm to people or the environment (a missing sign, an incomplete record, a late report, a drain not yet lined on a section without rain); it is corrected within seven days or the shorter

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time set by the supervision consultant. A major non-conformance is a measure not implemented with actual or imminent harm, a mandatory control of Table 28 (R1 and R16) not in place, a measure of a Major impact of Annex 5 not implemented before the activity concerned starts, a repeated or uncorrected minor non-conformance, or any event of the stop-work list below; it is notified in writing to the contractor and the implementing unit the same day, requires a corrective action plan with responsibilities and dates within 48 hours and is closed only when the supervision consultant has verified the correction in the field.

Mandatory corrective action. Corrective action is mandatory – it cannot be deferred to the end of the works, replaced by a payment or waived by the implementing unit – in the following cases, which correspond to the Major impacts before mitigation and the Substantial residual risks of Annex 5 and to the outcome thresholds of the monitoring:

- Design-stage Major impacts (inadequate siting, sizing or alignment of culverts, bridges, drains and water management structures; siting of stations, markets or facilities on disputed or flood-prone land): the design review of Section 5.6 and the screening must be completed and documented before the design is approved; a design approved without them is returned.
- Construction-stage Major impacts (erosion and sedimentation of streams and swamps at crossing works, in-stream works and changes to wetland hydrology, runoff toward the Cavalla River, community and worker safety at excavations, crossings and in settlements, construction safety near the inspection lane, labor influx): the corresponding measures of the ESMP and the C-ESMP – sediment control, dry-season programming, diversions, traffic management, fencing, exclusion zones, camp arrangements – are in place and verified by the supervision consultant before the activity starts; the activity does not start, or stops, until they are.
- Social Major impacts (land acquisition and the displacement of traders, the exclusion or capture of improved land, security, corruption and harassment at the weighbridge): the compensation of the affected persons of a section is completed, and its completion report cleared by the World Bank, before the site handover (Step 7); the participatory layout and the water-user and membership rules are agreed before a water management system or facility is built; the operating procedures, the grievance desk and the code of conduct are in place before a station is commissioned.
- Substantial residual risks R1 (SEA/SH) and R16 (fatality or serious injury): the mandatory controls of Table 28 are verified before mobilization and at every weekly inspection; a missing control is a major non-conformance, and the events below stop the works.
- Induced impacts on biodiversity and outcome thresholds: when a trigger of Section 5.2.3 is reached or an outcome indicator of Table 29 misses its target, the corrective actions defined in the subproject instrument are implemented within the time stated there (one month for the field verification and the FDA and community actions; the defects liability period for revegetation and invasive-species control).
- Operation-stage Major or Substantial issues (post-rehabilitation traffic accidents, failure or overtopping of a water management structure, station emissions, sanitation and harassment): the road safety measures, the structural inspection after major storms and the operation-phase ESMP are implemented by the station operators, the maintenance groups, the producer organizations and the facility operators under their agreements, with the same corrective-action obligations.

Stop-work events. The supervision consultant (or, in its absence, the county focal point or the implementing-unit specialist) orders the immediate stop of the works on the section, site or activity concerned – and the contractor stops them on its own initiative – in the following events; the order is confirmed in writing the same day and notified to the implementing unit within 24 hours:

- a fatality or serious injury of a worker or community member, or an imminent-danger condition (unsupported excavation above 1.2 m, work in or over water in high flow, unfenced excavation or pit in a settlement, traffic through a work site without traffic management, unsafe structure);
- a child or forced labor finding on the site, in a maintenance group or producer organization or at a supplier of the subproject, until the worker is removed and the remediation procedure of the LMP is applied;
- a SEA/SH allegation involving a project worker: the activities of the implicated worker stop and the worker is removed from the site pending the outcome of the response protocol, and the works of the

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crew concerned stop where the allegation reveals a missing control (no code of conduct, no training, camp without separation);

- works outside the approved footprint or area of clearing, in natural habitat not assessed in the instrument, without the FDA authorization required for felling or timber, or when a trigger of Section 5.2.3 is reached for the batch in progress and the corrective actions have not been agreed;
- works on a section whose compensation is not completed or that has not been handed over with the civil works clearance (Step 7), or an unforeseen affected person or asset found on a section;
- an uncontrolled discharge, spill or sediment release to a watercourse, wetland or community water point, or works in a watercourse outside the dry-season window without an approved diversion and sediment control;
- a chance find (Annex 8), within the 20 m radius, until the procedure is completed;
- works without an approved C-ESMP, traffic management plan or OHS plan, without the EPA permit or certificate, or during a suspension ordered by the EPA, the Ministry of Labor or the implementing unit;
- a major non-conformance not corrected by its deadline, or a repeated major non-conformance on the same site.

Restart conditions. The works restart on the section or activity concerned only with the written authorization of the implementing unit, on the recommendation of the supervision consultant, after the cause has been corrected and verified in the field: for a fatality or serious injury, after the notification of Step 11, the root-cause analysis within 10 days, the implementation of the immediate remedial measures and the agreement of the World Bank on the corrective action plan; for child or forced labor, after the removal of the worker, the remediation and the verification of the age and recruitment records of the whole workforce; for a SEA/SH allegation, after the response protocol has been applied and the missing controls restored; for works in natural habitat or a biodiversity trigger, after the assessment by the biodiversity specialist and the FDA, the additional measures or the BMP, and the information of the World Bank; for compensation, after the completion of the compensation of the section and its verification; for discharges and spills, after the containment, the clean-up and the restoration of the controls; for a chance find, after the completion of the procedure of Annex 8; and for missing plans or permits, after their approval or issue. The restart authorization and the evidence are filed in the non-conformance register and summarized in the quarterly report.

Escalation and sanctions. Non-conformances and stop-work orders are escalated from the supervision consultant to the implementing unit within 24 hours for major non-conformances and stop-work events, from the implementing unit to the World Bank within 24 hours for the serious incidents of Step 11 and in the quarterly report for the others, and to the EPA, the Ministry of Labor and the police as required by law or by the permit. The sanctions of the contract clauses (Annex 10) apply in sequence: withholding of the payment of the E&S bill items and of the retention; suspension of the works; termination for persistent breach; the contractor bears the cost of the corrective action and is not compensated for the standing time caused by a stop-work order due to its own non-compliance. Contractors that have been the subject of a stop-work order for a fatality, child labor or SEA/SH are reported in the quarterly report and considered in the due diligence of subsequent procurements.

Operation phase and non-contract actors. For the activities carried out without a works contract – community maintenance, the water management systems of producer organizations, matching-grant investments, the operation of the stations and facilities – the maintenance, water management, grant and operating agreements carry the same obligations in proportion to the activity: non-conformances are recorded by the county focal point, the corrective actions are agreed with the group or operator within the same deadlines, payments or grant disbursements are suspended until correction, and the stop-work events (a fatality or serious injury, child labor, works in natural habitat, a structure at risk of failure) stop the activity concerned.

6.2 Technical Assistance Activities

The IIU, the MoA-PIU and the MME will ensure that the consultancies and studies, capacity building, training and other technical-assistance activities under Components 2, 3 and 4 are carried out under Terms

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of Reference acceptable to the World Bank and consistent with the ESSs, and that the outputs comply with them. The studies include the Legacy Corridor feasibility study, designs and instruments, the feeder-road and agriculture preparatory studies, the mining policy and legal reform and the SESA, the geoscience and cadastre work, and the road fund and trade facilitation studies.

The Terms of Reference of each study are reviewed by the implementing-unit E&S specialists before issue to confirm that they require the assessment of the environmental and social implications of the recommendations, stakeholder consultation including affected and vulnerable groups, and the mitigation hierarchy; the draft outputs are reviewed by the same specialists before acceptance.

The SESA of Component 4 will assess the cumulative, indirect and induced effects of the mining-sector reforms and of corridor development, including on artisanal and small-scale miners; its recommendations will be reflected in the reforms and in the Legacy Corridor instruments, which are prepared under Subcomponent 2.1 with the detailed design and are not covered by this ESMF.

6.3 Contingency Emergency Response Component

The project does not include a Contingency Emergency Response Component; this section is not applicable. Should such a component be added by restructuring, an addendum to this ESMF will be prepared, consulted and disclosed in accordance with the component manual.

6.4 Implementation Arrangements

The institutions responsible for the implementation of the ESMF and their roles are summarized in Table 17.

The IIU is accountable to the World Bank for the whole project; the MoA-PIU reports to the IIU on Component 3; the MME acts under the coordination of the IIU; the county focal points report to the IIU and MoA-PIU specialists, the supervision consultants to the implementing units, and the contractors and operators to the supervision consultants. The staffing of the environmental and social functions and the capacity gaps to be addressed are set out in Table 18 and in the training plan of Section 6.6; the criteria and template used to assess the capacity of each institution, at the start of implementation and at each annual review, are in Annex 21.

Biodiversity-specific responsibilities. Biodiversity is managed with the following specific responsibilities, in addition to the general roles of Table 17. The IIU and the MoA-PIU, through their Environmental Specialists, are responsible for the biodiversity screening of every subproject, commissioning the surveys, assessing the quality of the biodiversity measures, facilitating the development of BMPs and other instruments as required, and the annual review of the outcome monitoring.

For this purpose, they retain a qualified biodiversity specialist under the ESMF budget (item 10; Table 18) who carries out the site-specific surveys and the natural and critical habitat determinations, prepares or reviews the BMPs, designs the outcome monitoring (baselines, transects, forest-cover analysis) and advises on the corrective actions.

The FDA participates in the screening site visits and the review of the surveys and BMPs, concludes with the community forest management bodies and the chiefs the agreements on the forest areas opened by the roads, provides the rangers for the transect monitoring and the enforcement actions, and takes the joint corrective actions of Section 5.2.3.

The supervision consultants verify the contractor's biodiversity measures at every inspection, monitor the compliance and outcome indicators of Table 29 with the biodiversity specialist, issue the non-conformance and stop-work notices of Section 6.1.5 and report monthly.

The contractors implement the biodiversity and vegetation management plan of their C-ESMP and bear the cost of the corrective actions attributable to them; their obligations cover the construction footprint, the ancillary sites and the conduct of their workers and vehicles, and the measures outside the footprint are the responsibility of the implementing units, the FDA and the communities (Section 5.2.3). The county focal points and the community forest bodies carry out the semi-annual transect counts with the FDA rangers, and LISGIS provides the geospatial data for the forest-cover analysis.

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The World Bank reviews the surveys and BMPs of the Substantial-risk subprojects and of the first subproject of each type.

Coordination among the institutions was the main institutional concern raised at the national consultation of 9 October 2026: the Ministry of Agriculture, the Ministry of Gender, Children and Social Protection, the Liberia Land Authority, the Forestry Development Authority and LISGIS asked for a project steering committee bringing together all relevant ministries and agencies, and the National Commission on Disabilities asked to sit on it.

This ESMF recommends that the project steering committee to be established for LECO include, for environmental and social matters, the Ministry of Agriculture, the Ministry of Mines and Energy, the Ministry of Transport, the National Road Fund, the Environmental Protection Agency, the Liberia Land Authority, the Ministry of Gender, Children and Social Protection, the Ministry of Labor, the Ministry of Health, the Ministry of Local Government, the Forestry Development Authority, the Liberia National Police, LISGIS and the National Commission on Disabilities, and that it review the environmental and social performance of the project at least twice a year; the membership of the committee will be decided by the Government, and the requests of the MGCSP and the NCD to sit on it are recorded here for that decision. Pending its establishment, the IIU coordinates these institutions through the screening site visits, the county grievance committees and the quarterly reporting of Section 6.1.4.

Table 17: Institutional roles for environmental and social risk management

Institution	Role in environmental and social management
Ministry of Public Works – Infrastructure Implementation Unit (IIU)	Lead implementing agency and project coordinator; owns the ESMF, RF, RPs, LMP and SEP and the ESCP once prepared; screens and clears subprojects of Component 1; recruits the Environmental Specialist, the Social Specialist with resettlement expertise and the GBV/SEA-SH Specialist within one month of effectiveness; manages the project grievance mechanism; reports to the World Bank; coordinates the county-level E&S focal points.
Ministry of Agriculture – Project Implementation Unit (MoA-PIU)	Implements Component 3; screens and prepares the site-specific instruments of the rural access roads and productive infrastructure with the IIU; appoints a Social Specialist and an Environmental Specialist, with M&E and fiduciary functions for the agriculture component; county agricultural coordinators support site identification and community engagement.
Ministry of Mines and Energy (MME)	Supports the technical assistance of Component 4 with the IIU; designates a social focal point; ensures that the regulatory reforms, the SESA and the geoscience system are consistent with the ESSs; participates in the Legacy Corridor institutional engagement.
National Road Fund (NRF)	Not an implementing entity: mobilizes and manages road-user revenues to finance road maintenance, including the routine maintenance that continues after the project; receives technical assistance under Subcomponent 2.2; consulted on the tolling and maintenance financing arrangements and shares its traffic and axle-load data with the IIU.
Ministry of Transport and the agencies operating the stations	The Ministry of Transport regulates vehicle weights and axle-load control; with the MPW, it designates the agencies that operate the stations (station operators), which adopt the station operating procedures, implement the operation-phase ESMP handed over at commissioning, run the station grievance desk and apply the code of conduct with the border agencies (LRA, LIS, LNP and the other agencies at the border stations).
Ministry of Local Government (MLG; former Ministry of Internal Affairs)	Supervision of the county administrations and of traditional and customary affairs under the Local Government Act (2018), including the Poro and Sande societies, with the National Council of Chiefs and Elders; coordination of superintendents, district commissioners and chiefs for community mobilization, the witnessing of land agreements and the first and second tiers of the grievance mechanism (Table 23); consulted through its county structures on sacred sites, initiation seasons and any issue related to the secret societies arising from the exclusion list, the screening or the chance-finds procedure; member of the steering committee proposed in Section 6.4.

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Institution	Role in environmental and social management
AfDB Project Implementation Unit	Implements the Coastal Corridor (Subcomponent 1.2) under the AfDB-supported instruments and the World Bank–AfDB Mutual Reliance Framework: procurement is delegated to the AfDB and E&S supervision is not delegated; the ESF applies to the subcomponent as an IDA-co-financed activity, and the Coastal Corridor instruments will be reviewed against ESF requirements, updated as needed and redisclosed.
Environmental Protection Agency (EPA)	National regulator under the Environment Protection and Management Law (2002): screening, environmental permits, review of ESIAs/ESMPs, monitoring and compliance; county environmental inspectors where present.
Liberia Land Authority (LLA)	Land administration, customary land verification, dispute resolution and valuation support under the Land Rights Act (2018); involved from the design stage of the village and rural access roads on customary and Government land (verification of ownership, awareness, zoning), joint cadastral survey with the MPW, and county land dispute resolution structures linked to the grievance mechanism (Section 7.3).
Ministry of Gender, Children and Social Protection (MGCSP)	GBV/SEA-SH referral pathways and county referral points, county GBV coordinators, protection of vulnerable groups and children; application of its gender and social inclusion policies.
Ministry of Labor (MoL)	Labor inspection, enforcement of the Decent Work Act (2015), occupational safety and health, child-labor prevention; certification of contractors and receipt of their periodic labor compliance reports; joint monitoring of labor conditions with the implementing units under the LMP.
Ministry of Health (MoH) and county health teams	Review of the health risks and mitigation measures of the subproject instruments; worker health surveillance, community health promotion and disease-outbreak procedures; dust, working-hours and water-quality controls near settlements.
Forestry Development Authority (FDA)	Permits for works and farming infrastructure in community forest management areas and for the harvesting of forest products; CITES management authority for the control of wildlife and bushmeat trade, including at the border post; valuation of non-timber forest products affected by the works; involvement of the community forest management bodies. Biodiversity role under this ESMF (Section 6.4): participation in the biodiversity screening site visits and in the review of the habitat and species surveys and the BMPs; agreements with the community forest management bodies and the chiefs on the use of the forest areas opened by the improved roads (no new farms, charcoal or logging; hunting rules; patrols; checkpoints on bushmeat, charcoal and timber transport); FDA rangers in the transect monitoring and the forest-cover verification (Table 29); joint corrective action with the communities and the implementing units when forest loss or exploitation increases (Section 5.2.3).
Ministry of Information, Cultural Affairs and Tourism – Bureau of Culture	Custodian of tangible and intangible cultural heritage; notified of chance finds and advises on the treatment of finds, graves and sacred sites under the chance-finds procedure (Annex 8); consulted on the relocation of cultural property under the RF.
Liberia National Police (LNP) – Traffic Division and county commands	Traffic law enforcement and public security within its statutory mandate; coordination with the project: receipt of the advance notification of the location, dates and hours of works given by the implementing units and contractors (Annex 9), and police response where traffic incidents, accidents, security concerns or other matters requiring police intervention arise during construction or operation. Traffic management planning, road-safety signage and the safety measures at work sites remain the responsibility of the project and its contractors under ESS4 (Annex 9).

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Institution	Role in environmental and social management
National Commission on Disabilities (NCD)	Technical advice on disability inclusion and accessibility in project planning, design and stakeholder engagement; support to the consultation of persons with disabilities and their representative organizations, including the identification of accessibility barriers and of measures that facilitate equitable access to project infrastructure and benefits (sign-language interpretation, accessible venues). Design compliance and construction supervision remain the responsibility of the implementing units and their consultants.
Liberia Institute of Statistics and Geo-Information Services (LISGIS)	Provision of official population, demographic and socio-economic statistics, administrative boundary data, and the available geospatial datasets to inform subproject planning, baseline assessments and E&S screening, as required. Project-specific mapping and construction monitoring remain the responsibility of the implementing units, their supervision consultants and the county focal points.
County administrations (superintendents, district commissioners, chiefs and elders)	Local coordination, community mobilization, first- and second-tier grievance handling (Table 23), security coordination, witnessing of land agreements.
Contractors and supervision consultants	Contractors prepare and implement the C-ESMP, including the biodiversity and vegetation management plan (limits of clearing, no hunting, bushmeat, charcoal or unlicensed timber, revegetation, invasive-species control), the labor and OHS plans, the codes of conduct and the traffic and community safety management; supervision consultants verify the measures, monitor the compliance and outcome indicators of Annex 6 with the biodiversity specialist, issue non-conformance and stop-work notices (Section 6.1.5) and report.
Project Financial Management Unit (PFMU) of the Ministry of Finance and Development Planning (MFDP)	Financial management of project funds, including compensation and E&S budgets through the designated accounts.

Table 18**: Environmental and social staffing and capacity gaps**

Level	Staff and entities	Responsibilities under the ESMF	Capacity situation and gap to address (criteria of Annex 21)
National – IIU	Environmental Specialist; Social Specialist with resettlement expertise; GBV/SEA-SH Specialist (recruited within one month of effectiveness); supported by the IIU M&E and procurement staff	Owner of the ESMF; screening and instruments of Subcomponents 1.3 and 1.4, including the biodiversity screening, surveys and BMPs with the biodiversity specialist and the FDA; EPA liaison; contract clauses and C-ESMP review; supervision missions; grievance mechanism and SEA/SH channel; quarterly reporting and incident notification; training; consolidation of MoA-PIU inputs; review of technical-assistance ToR	LIBRAMP, SECRAMP and RETRAP experience but limited ESF experience with Substantial and High-risk projects; gaps in resettlement planning and timely compensation, OHS, remote-site supervision, SEA/SH management and county coordination, addressed by the capacity-strengthening plan due within six months of effectiveness
National – MoA-PIU	A Social Specialist with resettlement experience and an Environmental Specialist, with a GBV focal point	Screening and instruments of Subcomponents 3.1–3.3 with the IIU; grant and outgrower E&S conditions; plantation water management systems of producer organizations; engagement of county agricultural coordinators; monthly reporting to the IIU	Not yet assessed under the ESF; RETRAP experience with the MoA PMU; to be assessed and strengthened in the first six months

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Level	Staff and entities	Responsibilities under the ESMF	Capacity situation and gap to address (criteria of Annex 21)
National – biodiversity expertise	Qualified biodiversity specialist (individual consultant or institution with field experience of the Liberian forest fauna and flora) retained by the IIU under budget item 10 and shared with the MoA-PIU	Site-specific habitat and species surveys, natural and critical habitat determinations and ecosystem-services assessments at screening (Section 6.1.1); preparation or review of the biodiversity measures and BMPs; design of the outcome monitoring (baselines, transects, forest-cover analysis) and annual review of its results; advice on the corrective actions and on the FDA and community agreements (Section 5.2.3)	No biodiversity specialist in the IIU or the MoA-PIU; expertise procured under the ESMF budget within six months of effectiveness and before the first screening of a road batch, water management system or facility near natural habitat
National – MME, Ministry of Transport and station operators	MME social focal point (SESA); E&S focal point of the Ministry of Transport and of each station operator	SESA and ESS consistency of the mining reforms; station siting with the IIU and operation-phase ESMP of the stations	No ESF experience; focal points trained under the plan
County	County E&S focal points designated by the IIU in the seven project counties, working with the MPW and MoA county offices, the EPA inspectors, the LLA offices and the MGCSP coordinators	Screening site visits; community consultation; monthly monitoring of active sites; first and second-tier grievance handling; witnessing of land agreements; child-labor and SEA/SH alertness; monthly reports	Limited presence and mobility of county offices; EPA absent at the border; allowances, transport and training from the project
Supervision consultants	EHS and social specialists in each supervision team (full time for the stations; shared for road batches)	Review and approval of C-ESMPs; weekly inspections; non-conformance, corrective action and stop-work notices (Section 6.1.5); verification of records; monitoring of the compliance and outcome indicators of Annex 6, including the biodiversity indicators with the biodiversity specialist; monthly reports; incident investigation	Required in the supervision ToR; performance monitored
Contractors, operators, groups	Contractor EHS officer and community liaison officer (full time for Substantial-risk works); facility operators; maintenance group and producer organization leaders	C-ESMP implementation, including the biodiversity and vegetation management plan; labor and OHS management; code of conduct; community safety; grievance uptake; daily records; monthly reports; operation-phase measures	Variable; induction and cascading training; contract sanctions

6.5 National Permitting and Compliance Pathway for Subprojects

The national permitting pathway of Section 3.5 is applied to each subproject; the route expected for each subproject type, subject to the determination of the EPA on the project brief, is the following: batches of village access roads, rural access road spot improvements and plantation water management systems follow the environmental review route with the batch ESMP (certificate of approval or permit); the tolling and axle-load control stations follow the full route of notice of intent, scoping, environmental impact study and permit; small value-chain facilities follow the registration and FONSI or certificate route, and processing units with effluents the environmental review.

The sectoral permits and authorizations of each subproject (FDA, borrow pits and quarries, waste disposal sites, water abstraction and discharge, building permits where applicable, LLA land documentation, Ministry

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of Labor notification, food safety for processing units) are identified in the screening form (Annex 1, Section F); the form also records the coordination required with the county, the Ministry of Transport, the LRA, the MoCI and the border agencies at the border station (Annex 9), which is not a permit. The implementing unit keeps a permit register, pays the statutory fees from the ESMF budget and reports to the EPA as required by each permit.

6.6 Proposed Training and Capacity Building

The capacity needs identified in the ESRS and confirmed in the field – limited ESF experience of the IIU for Substantial and High-risk projects, unassessed capacity of the MoA-PIU and the MME, weak county presence, untrained border agencies, contractors and community groups without OHS culture, and cooperatives requesting training – are addressed through the cascading program of Table 19, coordinated with the capacity-strengthening plan for the MPW/IIU, the MME and the Ministry of Transport (due within six months of effectiveness) and with the training programs of the SEP, the LMP and the RF.

Table 19**: Training and capacity-building plan**

Audience	Topics	Timing	Provider	Indicative cost (US$)
IIU, MoA-PIU and MME staff, with staff of the Ministry of Transport and the NRF (about 20)	ESF and ESSs; the ESMF, RF, LMP, SEP and ESCP (to be prepared); screening and classification; impact and risk assessment; ESMP and ToR preparation; EPA procedures; contract clauses and C-ESMP review; supervision and the monitoring application; incident reporting; SEA/SH; grievance management; resettlement planning and valuation; biodiversity screening, surveys, BMPs and outcome monitoring (with the FDA and the biodiversity specialist)	Within three months of effectiveness; refresher annually	World Bank E&S team; EPA; external trainers	40,000
County focal points and county line offices (MPW, MoA, LLA, EPA, MGCSP, MoL, MLG; about 40 in seven counties)	ESMF procedures and screening; site monitoring and the mobile data application; community consultation; grievance committees; land agreements and the RF; child labor and SEA/SH risk management and response; referral pathways; OHS basics; induced-access transect monitoring with the FDA rangers and the community forest management bodies	Within six months of effectiveness; annually	IIU and MoA-PIU specialists; MGCSP; Ministry of Labor	30,000
Contractors, subcontractors, suppliers and supervision consultants (per contract)	C-ESMP preparation; ESCOPs; OHS and community health and safety plans; traffic, waste, borrow pits and erosion control; biodiversity and vegetation management (limits of clearing, no hunting or charcoal, revegetation targets); LMP; code of conduct and SEA/SH; chance finds; non-conformance, corrective action and stop-work; incident reporting; worker induction cascade	Before mobilization and at each new contract; weekly toolbox talks	Implementing-unit specialists; supervision consultants	20,000
Station staff, joint security and border agencies at the stations (about 60)	Operation-phase ESMP; station procedures and code of conduct; waste, sanitation and water; traffic and community safety; grievance desk; SEA/SH and conduct toward women traders; health screening	Before commissioning; annually	IIU specialists; Ministry of Transport; MGCSP; MoH	15,000
Maintenance groups, producer	Basic OHS and PPE; safe work at crossings; age verification and child-labor	At start of each agreement;	County focal points; MoA	25,000

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Audience	Topics	Timing	Provider	Indicative cost (US$)
organizations, cooperatives and facility operators (per batch and facility)	rules; grievance mechanism; water management system operation and maintenance; effluent and waste management; fire safety; agrochemical safety and integrated pest management	refresher annually	extension; IIU; NGOs	
Communities along the subprojects (meetings in each affected town)	Project scope and eligibility; community health and safety; road safety; code of conduct and SEA/SH; grievance mechanism; land and compensation rules of the RF	Before and during works	County focal points; contractor liaison officers; service provider	Included in the SEP budget (SEP Table 17: community meetings and focus groups at sites, US$48,000, and community awareness on SEA/SH, codes of conduct and reporting channels, US$25,000 – about US$73,000 over five years, not counted in the ESMF total)
Total indicative training and capacity-building budget (ESMF budget item 3, Table 20)				130,000

Costs cover venues, travel, materials and facilitation; trainer time of project staff and the World Bank is not costed; the total of Table 19 is item 3 of the ESMF budget (Table 20).

Initial training for the personnel responsible for subproject screening, E&S assessment, supervision and contractor oversight will be completed before they undertake these functions; refresher training will be provided according to implementation needs and the schedule of Table 19.

6.7 Estimated Budget

The costs of implementing the ESMF are of three kinds: (i) the staff costs of the IIU and MoA-PIU environmental and social specialists and the county focal points, financed under the project-management Subcomponents 2.4 and 3.4; (ii) the site-specific E&S mitigation and management measures, financed through adequately costed provisions in the relevant works contracts, grant agreements and maintenance agreements, based on the requirements of the applicable E&S instruments; and (iii) the costs of the ESMF itself – instruments, permits, training, grievance mechanism, SEA/SH response services, monitoring, biodiversity surveys and outcome monitoring, audits and tools – shown in Table 20. Compensation and livelihood restoration are budgeted in the RF and stakeholder engagement in the SEP. The budget is indicative, based on Liberian-market rates, and will be confirmed at appraisal and adjusted with the number and type of subprojects.

Table 20**: Indicative ESMF implementation budget (US$, five years)**

Item	Basis	Estimate (US$)
1. Site-specific instruments: ESIA/ESMPs for the axle-load control stations (2–3 at US$50,000–60,000) and ESMPs for batches of roads and water management systems and for larger facilities (about 6 at US$30,000–40,000); checklists prepared in-house	Consultants; range US$300,000–400,000	340,000
2. EPA registration, review and permit fees and sectoral permits	About 10 permits; range US$30,000–60,000	40,000
3. Training and capacity building (Section 6.6) and training materials	Section 6.6 basis; six audiences over five years	130,000

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Item	Basis	Estimate (US$)
4. Grievance mechanism operation: registers, telephone line, signboards, committee sittings and allowances, awareness materials (shared with the SEP)	Seven counties over five years	60,000
5. SEA/SH Action Plan implementation: GBV service provider, referral support, community awareness, code-of-conduct materials	Service-provider contract; range US$120,000–180,000	150,000
6. Monitoring and supervision: county focal point allowances and transport, field missions, mobile monitoring application, GPS units, dust and noise meters, drone surveys	Seven counties; range US$100,000–150,000	120,000
7. Environmental sampling and laboratory analysis (water quality at crossings, stations and facilities; noise and dust near receptors)	About 20 campaigns	50,000
8. Independent environmental and social audits (mid-term and completion) and third-party monitoring of a sample of subprojects	Two audits; range US$60,000–100,000	80,000
9. Site mapping, screening surveys and cultural-heritage and biodiversity screening support (GIS, FDA and elders' walkovers)	Per subproject	30,000
10. Biodiversity surveys, Biodiversity Management Plans, outcome monitoring and corrective actions: site-specific habitat and species surveys and ecosystem-services assessments at screening (about 15 road batches, water management systems and facilities, US$60,000 including the specialist's field time); BMPs where required (about 5 at US$9,000); forest-cover change analysis and transect monitoring with FDA rangers (US$6,000 per year); advisory and annual review inputs of the biodiversity specialist (about 60 days, US$25,000); allowance for the FDA and community corrective actions of Section 5.2.3 (US$20,000)	Biodiversity specialist, surveys, BMPs, monitoring and corrective actions; range US$150,000–200,000	180,000
Subtotal		1,180,000
Contingency (about 7 percent)		83,000
Total indicative ESMF budget	**Range US$1.1–1.5 million**	**1,263,000**

Not included: E&S staff financed under Subcomponents 2.4 and 3.4; contractors' ESMP costs priced in works contracts; compensation and livelihood restoration (RF); stakeholder engagement (SEP); labor management (LMP). The IIU and the relevant implementing entities will confirm the availability and allocation of funds for the applicable E&S instruments, mitigation measures, monitoring and any required compensation or livelihood restoration before the corresponding subprojects are approved for implementation; the indicative ESMF budget will be reviewed and adjusted during implementation to reflect the actual number, scope and E&S requirements of the subprojects.

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7. Consultation and Disclosure

7.1 Stakeholders Consulted during Preparation

The stakeholders consulted are those likely to be affected by the subprojects and those with an interest in or influence over them: the national ministries, agencies, faith-based, civil society, farmers' and transport organizations represented at the national stakeholder consultation of 9 October 2026 in Monrovia; the National Road Fund; the Grand Bassa county authorities and the county offices of the Ministry of Agriculture and the Ministry of Mines and Energy; the Toe Town and Grand Gedeh county authorities and line ministries; the joint security and border agencies at B'hai; agricultural cooperatives of Grand Bassa, River Cess and Sinoe; a private agribusiness; and commercial drivers and motorcycle riders. Meetings, interviews and group discussions were held in Liberian English with local-language support (records in Annexes 14, 16 and 17; photographs in Annex 13 and Annex 17; Map 4, Annex 15); Table 21 summarizes them, with details in the SEP. The Coastal Corridor stakeholders are engaged under its own SEP, and the Legacy Corridor through institutional meetings with the MPW/IIU, the MME and the NRF.

Table 21**: Stakeholder consultations and meetings held during preparation of the instruments**

Date	Place	Stakeholders	Main points raised	Response of the ESMF and the project
22 Sep 2026	Monrovia	National Road Fund (NRF)	New axle-load law aligned with the ECOWAS regime; enforcement at the stations once built; weighbridge data collection at Klay Junction and on the Monrovia–Kakata road; no toll in the country; national toll policy in preparation.	Axle-load control stations and the ECOWAS regime in Subcomponent 1.4 (Table 2, Table 5); roles of the NRF, the Ministry of Transport and the station operators (Tables 13 and 17); NRF traffic and axle-load data used in the siting and design of the stations (Section 5.6).
2 Oct 2026	Buchanan, Grand Bassa – MoA county office	County Agricultural Coordinator, Mr. Joseph G. Greaves	Feeder roads will link farmers of Districts 3 and 4 to markets and cut post-harvest losses and transport costs; county MoA will collaborate and support farmer training; engage cooperatives and community leaders directly; indicative list of feeder roads and farms provided.	Indicative feeder roads recorded in Annex 14 as inputs to the participatory prioritization of Subcomponent 3.3; county MoA office, cooperatives and community leaders engaged at screening (Section 6.1.1); farmer and cooperative training in Table 19.
2 Oct 2026	Buchanan – County Administrative Building	County Attorney, Cllr. Paul Philip Jarvah (senior county authority present)	Early engagement welcomed; county to support security of project equipment and a security plan with law enforcement; farmers must be informed of the project and its implications; eligible losses must be compensated; community engagement and local ownership; toll operations must be well coordinated to avoid corruption; joint security proposed to supervise toll gates against illegal cargo.	Security risk assessment and security management plan for the stations and for equipment (Table 13, Annex 9); compensation of eligible losses through the RPs prepared under the RF; community engagement and grievance mechanism (Chapter 7, SEP); station operating procedures with automated records and posted tariffs and a station code of conduct against corruption; coordination with the joint security at the border station (Section 5.4).

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Date	Place	Stakeholders	Main points raised	Response of the ESMF and the project
2 Oct 2026	Buchanan – taxi park	Commercial drivers and motorcycle riders of the Coastal Corridor	Road condition and bridge failures raise fares, journey times and vehicle damage; motorcycles carry most people and produce.	Rehabilitation of crossings and road safety measures in the designs (Section 5.6); motorcycle-rider sensitization and road safety awareness (Table 29); transport operators engaged under the SEP.
3 Oct 2026	Grand Bassa	Ministry of Mines and Energy – regional coordinator and county geologist	No licensed mining site along the Buchanan–Cestos and Big Joe Town–Botota corridors; illegal mining occurs occasionally and is stopped when identified.	Mining-related works and sites excluded (Table 3, criterion 7); screening of roads near artisanal mining areas and measures for forest- and mining-dependent persons (Table 14, Annex 1); SESA for Component 4; MME hydrological data used in the drainage design (Section 5.6).
3 Oct 2026	Marqui Town, District 5, Grand Bassa	MNC Farms Inc. – Mrs. Lorena P. Reeves, Manager, and farm team (private agribusiness: vegetables, poultry, livestock)	Poor roads are the main constraint; livestock feed hard to obtain, veterinary fees and medicines costly; farm-to-market road deplorable; requests seedlings, technical assistance and processing equipment; commercial farms and agribusinesses to be considered alongside smallholders; willing to join future consultations.	Commercial farms and agribusinesses considered among the value-chain stakeholders of the SEP and in the inclusion measures of Annex 20; the feed, veterinary and equipment needs recorded for the MoA-PIU value-chain planning (outside the ESMF); farm-to-market road improvements under Subcomponent 3.3.
3–4 Oct 2026	Grand Bassa, River Cess and Sinoe	Agricultural cooperatives and groups (register in Annex 14)	Value chains, membership and training needs recorded (marketing, financial management, leadership and governance, technical skills).	Register of cooperatives in Annex 14; cooperative and producer-organization training in Table 19; inclusion rules for matching grants and outgrower contracts in Annex 20.
4 Oct 2026	Compound #3, Grand Bassa – MoA office	Wee Oil Palm Farmers' Multipurpose Cooperative Society – Mr. Jesco C. Davis, head	Oil-palm farmers and cooperatives of District 3 face high transport costs and post-harvest losses; Rally Town Road named as urgent; agro-processing equipment and training requested; cooperative will mobilize members; continuous engagement requested.	Rally Town Road and the other roads named recorded in Annex 14 for the prioritization of Subcomponent 3.3; agro-processing facilities under Subcomponent 3.2 screened with the ESMP checklist (Table 16); continuous engagement under the SEP.

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Date	Place	Stakeholders	Main points raised	Response of the ESMF and the project
5 Oct 2026	B'hai border post, Grand Gedeh	Joint security and border agencies (LIS, LRA, LNP, NSA, LDEA, MoCI, MoA, FDA, MLG (recorded as MIA), MoH, FIA) – Mr. Daoude Jond (LNP), Mr. Kennedy N. Kargou (LIS), Mr. Decomso Laway Jr. (LRA) and others	Road condition is the main impediment to trade; no weighbridge, market, water, sanitation, waste site, clinic, terminal or staff accommodation at the post; 28 LIS personnel on 12-hour shifts without a vehicle; about 10 traders and 10 motorcycles cross daily, women traders organized as the Mano River Cross Border Women; grievances handled by police and immigration; SEA/SH referral to Toe Town and Zwedru; requests: bridge expansion, terminal, weighbridge, accommodation.	Station design including water supply, sanitation, waste management, a terminal and staff facilities (Section 5.6, Table 13); grievance uptake at the station desk and the SEA/SH referral pathway confirmed with the MGCSP through the SEA/SH Action Plan before the works start (Section 4.6.3, Chapter 7); training of the border agencies (Table 19); bridge expansion outside the project scope, recorded for the IIU.
5 Oct 2026	Toe Town and B'hai, Grand Gedeh	County authorities and line ministries at the border	Support for the project and the border station; coordination requested.	Coordination through the county E&S focal point and the steering committee proposed in Section 6.4; county authorities involved in the screening site visits and the grievance committees (Table 17).
Friday, 9 October 2026	Monrovia – Conference Hall, Ministry of Public Works, 9:00 a.m.	National stakeholder consultation convened by the IIU: 22 national institutions represented by 38 participants – MoA, NRF, MME; LLA, FDA, MoL, MGCSP, MoH, CDA, LNP (Traffic Division), LRA (Customs), NCD, NDMA, LISGIS and the University of Liberia (College of Engineering); the Inter-Religious Council of Liberia; SCNL, the Federation of Liberian Youth and the Press Union of Liberia; the Farmers Union Network, the Liberia Truckers Union and E-KIMIA Agri Company (farmer cooperative) – with the MPW/IIU, its technical assistance and the Consultants (54 persons signed the attendance sheet; about 32 men and 22 women present by the count of the IIU); 22 questionnaires returned	Road safety, accessibility for persons with disabilities, truck parking and flood resilience in the designs; detours maintained and the police informed of works; dust and working-hours controls; biodiversity surveys; forest-product permits; crop compensation rates being updated; LLA, MoL, MGCSP and NCD involved from the design stage; steering committee; inclusive and media-supported engagement (Section 7.1.1).	Responses to each concern in Table 22 and in the record of the consultation (Annex 17, Table 34).

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7.1.1 National stakeholder consultation of 9 October 2026

The national stakeholder consultation on the ESMF, RF, SEP and LMP was convened by the IIU on Friday, 9 October 2026 at the Conference Hall of the Ministry of Public Works, Monrovia. The Environmental Consultant and the Social Consultant presented the project and the purpose, objectives and relevance of each instrument and invited feedback in a plenary discussion and through a 14-question questionnaire. Twenty-two stakeholder institutions – three ministries and agencies involved in implementation, twelve regulatory and sector agencies including the University of Liberia, the Inter-Religious Council of Liberia, three civil society organizations and three farmers' and transport organizations – were represented by 38 participants; with the MPW/IIU staff, its technical assistance and the Consultants, 54 persons signed the attendance sheet (Annex 16). Twenty-two questionnaires were returned by 16 institutions (7 completed by women, 14 by men, 1 not recorded).

The institutions welcomed the project and the early consultation. Their feedback concentrated on road safety and accessibility for persons with disabilities in the designs, truck parking, flood-resilient crossings designed with hydrological data and local knowledge, detours that are maintained and works notified to the police, dust and working-hours controls, biodiversity surveys and forest-product permits, the updating of crop compensation rates, the involvement of the Liberia Land Authority, the Ministry of Labor, the Ministry of Gender, Children and Social Protection and the National Commission on Disabilities from the design stage, a project steering committee, and inclusive, media-supported engagement. The questionnaires rank erosion and siltation, worker and road-user safety and the flooding of crossings as the most important risks and name the sites to avoid, the permits and data each institution provides and the groups at risk of exclusion. Table 22 summarizes these concerns with the response of the ESMF; the full record of the consultation – participation, questionnaire results, the feedback of each institution with the response given, and photographs – is in Annex 17, and the attendance sheets are in Annex 16.



Figure 5**:** Participants of the national stakeholder consultation during the presentation of the instruments, 9 October 2026



Figure 6**:** Plenary discussion: participants raise their concerns and recommendations, 9 October 2026

7.1.2 Key concerns raised by stakeholders and the response of the ESMF

Table 22 summarizes the concerns raised at the consultations of 22 September and 2–5 October 2026 and at the national stakeholder consultation of 9 October 2026, and how the project and the ESMF address them; land, labor and engagement matters are responded to in the RF, the LMP and the SEP.

Table 22**: Key concerns raised by stakeholders during the field consultations and the national consultation, and the response of the ESMF and the project design**

Stakeholder	Key concern or issue	How the project and the ESMF address it
National Road Fund	Enforcement of the new axle-load law at the stations; weighbridge data	Station operation under procedures aligned with the ECOWAS regime; operation-phase ESMP and

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Stakeholder	Key concern or issue	How the project and the ESMF address it
	collection; no toll exists; toll policy in preparation	code of conduct for station staff; monitoring of alternative routes.
County Agricultural Coordinator, Grand Bassa	Feeder roads must link farmers of Districts 3 and 4 to markets and cut post-harvest losses; engage cooperatives and community leaders directly; county MoA ready to support training	Indicative feeder roads and cooperatives recorded (Annex 14) as input to the MoA-PIU prioritization; county MoA office in screening and training.
County Attorney, Grand Bassa	Security of equipment and a county security plan; inform farmers of the project and its implications; compensate eligible losses; avoid corruption at the stations; joint security at the stations	Security risk assessment and county security plan; SEP information campaigns; RF compensation before works; transparent station procedures, grievance desk and joint security procedures.
Ministry of Mines and Energy county office	No licensed mining along the corridors; illegal mining occurs and is stopped when identified	Exclusion of mining-related works; screening of roads near mining areas; MME coordination; SESA for Component 4.
Cooperatives and MNC Farms Inc.	Poor roads are the main constraint; high transport costs and post-harvest losses; Rally Town Road urgent; feed, veterinary services and processing equipment costly; consider commercial farms and agribusinesses; equipment, training and continuous engagement requested	Rally Town Road in the indicative list; value-chain activities open to cooperatives and agribusinesses under transparent criteria; grant and training provisions; OHS and effluent requirements for facilities; continuous engagement under the SEP.
Joint security and border agencies, B'hai	No weighbridge, water, sanitation, waste site, clinic, terminal or accommodation; understaffing, no vehicles; women traders; grievances handled by police and immigration; SEA/SH referral to Toe Town and Zwedru	Station design with water, sanitation, waste and rest facilities and the market; health screening point; station grievance desk and county committee; SEA/SH referral pathway mapped with the MGCSP; training of agencies; coordination with Subcomponent 1.1.
Communities, commercial drivers and motorcycle riders along the roads	Road condition and crossing failures raise fares, journey times and vehicle damage and cut access in the rainy season; informal and unpaid maintenance with poor tools; crops, trees and stalls in the road reserve; sacred sites and graves near some settlements	Climate-resilient crossings prioritized, built in the dry season; traffic management and motorcycle safety measures; written maintenance agreements with tools and PPE; RF compensation; sacred sites identified at screening; chance-finds procedure.
National consultation – LNP, LISGIS, PUL, NCD, MoA, UL, transport unions	Road safety signs, lighting and pedestrian crossings at work sites and in settlements; crossings, sidewalks and signs usable by persons with disabilities; truck parking and marked no-parking areas; pedestrian safety.	Design considerations of Section 5.6 (safety, accessibility review of the designs with the technical advice of the NCD, truck parking); traffic management and work-site safety in Annexes 9 and 10 and ESCOP 1; NCD advisory role (Table 17).
National consultation – LNP, LLA	Detours are not maintained and the police are not informed of works, causing congestion and accidents; detours and alternative routes needed before and during works.	Detours planned in the design (Section 5.6), opened before the works, maintained and restored; written notification of the LNP and the county before works (Annex 9, Annex 10).

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Stakeholder	Key concern or issue	How the project and the ESMF address it
National consultation – MME, MoH, SCNL, FDA	Flood-prone sections ignored in past designs; use hydrological data and local knowledge; dust control at all times and no night work in communities; stand-alone biodiversity surveys; permits and value of non-timber forest products.	Flood screening and MME data with community knowledge (Sections 4.7 and 5.6, Annex 1); dust and working hours (ESCOP 1, Annexes 9 and 10); biodiversity survey and BMP in the ESIA ToR (Annex 11); FDA permits and NTFP valuation (Table 17, RF).
National consultation – LLA, MoL, MGCSP, NCD, FDA, LISGIS, MoA	Institutions to be involved from the design stage; joint LLA–MPW cadastral survey; LMP in all contracts, contractor certification, labor compliance reports and joint monitoring with MoL; a project steering committee; NCD on the committee; weak coordination.	Institutional roles and the steering committee (Section 6.4, Table 17); LLA in screening and the grievance committees (Sections 6.1.1 and 7.3); contract clauses and joint labor monitoring (Sections 6.1.3 and 6.1.4, Annex 10, LMP).
National consultation – MoA, NRF, LLA, MGCSP, Inter-Religious Council	Crop compensation list obsolete and being updated; compensation for graves paid to landowners, not caretakers; faith-based property; overlapping customary claims; relocation sites before demolition and relocation options, not only cash.	Addressed in the RF (rates and their updating, eligibility of caretakers and faith-based institutions, relocation before demolition); land tenure and disputes recorded at screening (Annex 1); LLA dispute resolution structures (Section 7.3).
National consultation – PUL, transport unions, NCD, Inter-Religious Council, E-KIMIA, FUN	Media involvement and county-level awareness; accessible venues, sign-language interpretation and additional sessions for persons with disabilities; faith-based institutions consulted throughout; farmers reached through cooperatives; local truckers to benefit.	Addressed in the SEP (channels, inclusive consultation, faith-based institutions, cooperatives); accessible grievance mechanism (Section 7.3); register of cooperatives (Annex 14); local procurement of transport services under the LMP.

7.2 Consultation and Disclosure Protocols

Consultation protocol. Consultation on each subproject follows the SEP (Tables 13 and 15) and takes place at five points: (i) at prioritization and preliminary design, so that the views of the communities inform the choice of roads and sites, the design and the measures; (ii) at screening, during the site visit, with the community leadership, women's and youth representatives, persons with disabilities and the affected land users; (iii) on the draft instrument – the screening results, the draft ESMP and, where land is affected, the draft RP with the entitlements, the cut-off date and the options – before the design and the plan are finalized; (iv) at the site-entry meeting before works, on the contractor's ESMP summary, the works schedule, the hiring rules, the code of conduct and the grievance channels; and (v) during works and operation, at the quarterly community meetings.

Each meeting is announced in advance through the county focal point, the community leadership and local radio, is held in the community in Liberian English and the local language at a time and place accessible to women, older persons and persons with disabilities, and is complemented by separate sessions with women, youth and other vulnerable groups, facilitated where possible by a person of the same group. Consultations on SEA/SH never ask individuals about personal experiences. A record is kept of every meeting – date, place, participants by sex, issues raised, responses and commitments – and annexed to the instrument; the implementing unit reports back to the community within 30 days on how the views were taken into account, and the record of commitments is followed up in the quarterly report.

Disclosure protocol. Information is disclosed in a form and language that stakeholders can understand – the full instruments in English, non-technical summaries in Liberian English and verbal presentations in the local languages at the meetings and on local radio (SEP, Table 16). This ESMF is disclosed by 16 November 2026 in Liberia – on the MPW/IIU website, at the EPA and at the county superintendents' and MoA county offices of the seven project counties – and on the World Bank external website; the RF, the LMP, the SEP and the ESCP are disclosed by 15 December 2026. For each subproject, the draft screening results, the draft ESMP and the draft RP are shared with the affected communities during their preparation;

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the final instruments are disclosed after World Bank clearance, before bidding and before the RP is implemented, on the MPW/IIU and World Bank websites, at the county, district and town chief offices and in the community, with the entitlement matrix and the cut-off date notice posted locally (Section 6.1.2). The contractor's ESMP summary, the code of conduct, the hiring rules and the works schedule are disclosed at the site-entry meeting and on the site signboard before mobilization; the station rules, fees and fines are disclosed before operation; and the quarterly progress summaries, the grievance statistics and the monitoring results are reported back at the community meetings. Any material change to an instrument is consulted on and redisclosed in the same way.

7.3 Grievance Mechanism

The grievance mechanism builds on the practice found in the field – complaints go first to the town chief, the elders or the road committee, then to the district and county authorities, and at the border to the police and immigration – and adds a documented procedure, service standards, a county tier with the LLA, the MGCSP and the EPA, a project-level appeal committee and a confidential SEA/SH channel. Because a chief may be a party to a land dispute, the first-level committee is a representative body in which the chiefs and elders take part as members or advisers and do not convene or chair it (Table 23). The design is common to the four instruments and is detailed in the SEP (Chapter 6).

The project operates one grievance mechanism (GM) with three tiers and a separate, confidential channel for SEA/SH complaints; workers use the worker grievance mechanism described in the LMP. The GM is accessible free of charge, in Liberian English and the local languages, to any person or group affected by or interested in the project, and accepts anonymous complaints. It does not replace the right of recourse to the courts or to the World Bank Grievance Redress Service.

Table 23**: Grievance mechanism tiers and service standards**

Tier	Who handles the complaint	Time standard
Tier 1 – Community / site	Community grievance committee convened by the county E&S focal point and made up of members chosen by the community in a public meeting: at least two women, a youth representative, a representative of persons with disabilities or of other vulnerable groups and a representative of the affected persons, with the contractor's community liaison officer. The town or clan chief and the elders take part as members or advisers; they do not convene or chair the committee, which elects its chair. A member with an interest in a complaint steps aside, and a land dispute or any complaint involving a chief or a local authority is referred to Tier 2 or to the IIU Social Specialist. Grievance registers at the site office and with the committee secretary; uptake by phone, in person, suggestion boxes and the IIU telephone line.	Acknowledgment within 3 working days; resolution within 10 working days.
Tier 2 – County / implementing unit	County grievance committee chaired by the county superintendent's office with the IIU or MoA-PIU social specialist, the LLA county office, MGCSP and the EPA inspector, and the county E&S focal point as secretary; handles unresolved Tier 1 cases, land and compensation disputes and complaints against the contractor.	Acknowledgment within 3 working days; resolution within 20 working days.
Tier 3 – Project Grievance Redress Committee	Committee chaired by the IIU Project Coordinator with the MoA-PIU coordinator, the E&S specialists, a representative of the Ministry of Justice and an independent member (civil society); handles appeals and complex cases; may recommend mediation or referral to the courts.	Decision within 30 working days of referral.
SEA/SH channel	Confidential reporting through the GBV/SEA-SH Specialist, a GBV service provider and the MGCSP county GBV coordinator; survivor-centered handling of cases, referral within 24 hours to health, psychosocial, legal and safety services; no investigation by the project of the incident itself; employer action under the code of conduct.	Referral within 24 hours; case handling under the SEA/SH Action Plan.

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Procedure and design features. A complaint may be lodged in person or by phone with the contractor's community liaison officer, the county E&S focal point, the community grievance committee or the district commissioner; by phone call or text message to the IIU (+231 778 442 885); by e-mail (office@iiu-mpw.org); by letter to the IIU at the Ministry of Public Works, Lynch Street, Monrovia, to the MoA-PIU or to the county superintendent's office; or through a suggestion box at the site. Gender-based violence, including SEA/SH, can also be reported through the hotline 9696.

Every complaint is entered in the register within one working day with a unique number and a category, acknowledged within three working days in the complainant's language, verified and investigated by the committee of the tier, and answered with a proposed resolution within 10 working days at Tier 1, 20 at Tier 2 and 30 at Tier 3; the agreed action is implemented within the time agreed with the complainant, normally 30 days, and the complaint is closed with the complainant's signature or recorded consent and a record of satisfaction. A complainant who is not satisfied may appeal to the next tier within 15 working days.

The safeguards of the design are: no cost to the complainant; anonymous complaints accepted; confidentiality of the complainant's identity; no reprisal against a complainant or a witness, which is a breach of the code of conduct; a member with an interest in a complaint steps aside; a land dispute or a complaint involving a chief, a committee member or a local authority goes directly to Tier 2 or to the IIU Social Specialist; SEA/SH complaints never pass through the committees and are handled only through the confidential channel; and the committees are established and trained before works start at each site.

The mechanism is established within one month of effectiveness; until then, grievances about the preparation activities are received through the IIU contacts above and carried over into the project register. Performance is monitored monthly and reported quarterly by category, tier, sex, location and resolution time, against the targets of the SEP: all complaints acknowledged within three working days, at least 90 percent resolved within the standard of the tier, at least 80 percent of complainants satisfied and all SEA/SH cases referred within 24 hours.

All grievances other than SEA/SH complaints are logged in a single register maintained by the IIU with the MoA-PIU, with the date received, the category, the location, the action taken, the date closed and the complainant's satisfaction. SEA/SH complaints are held in the separate secure register of the GBV/SEA-SH Specialist (Annex 12).

The register and, for SEA/SH cases, the number of cases and their status only, are summarized in the quarterly project reports to the World Bank. The GM and its contact details are publicized through the SEP at every consultation, on signboards at every site and on local radio.

Land and compensation grievances use the same tiers, with the LLA county office and the RF valuation committee at Tier 2; complaints about a station are received at the station grievance desk and handled by the station operator with the county committee; workers use the LMP worker grievance mechanism; the grievance log and incident report forms are in Annex 12.

The county-level structures identified at the national consultation are associated with the mechanism: the LLA land dispute resolution structures in all counties for land-related grievances, the county representatives of the Inter-Religious Council of Liberia for grievances concerning churches, mosques and faith-based property, the MGCSP county referral points for SEA/SH and the CDA county assistant registrars for grievances of cooperative members. The mechanism provides reasonable accommodation for persons with disabilities – accessible venues, sign-language interpretation and assistance in lodging complaints – as requested by the National Commission on Disabilities.

7.4 Sexual Exploitation and Abuse and Sexual Harassment

SEA/SH risk is rated Substantial for the project. The project applies the World Bank Good Practice Note on addressing SEA/SH in civil works: the IIU prepares a SEA/SH Action Plan and Accountability and Response Framework within three months of effectiveness, operational before the first works contract mobilizes (to be reflected in the ESCP), and recruits a GBV/SEA-SH Specialist; bidding documents and contracts require codes of conduct signed by every worker, induction and refresher training, worker accommodation standards, separate and safe facilities for women, community awareness sessions and a confidential reporting channel; the screening form flags subprojects that raise the risk (remote sites, labor influx, worker camps, border and mining areas); and the referral pathway per county is mapped with the MGCSP county

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GBV coordinators and is operational before the works or other relevant activities start; the service providers of each site are confirmed in the SEA/SH Action Plan and in the site-specific assessment. Consultations on SEA/SH never ask individuals about personal experiences.

The screening form records the SEA/SH risk factors of each site (distance from services, worker camp, border or mining setting, proximity to a school), and the ESMP sets the site-specific measures: camp location and management, safe and separate facilities, lighting, transport for women workers, community awareness sessions, the referral pathway and the contractor's response protocol; at a border site such as B'hai, where survivor services are in Toe Town and Zwedru, the station ESMP will set the confidential reporting and referral arrangements agreed with the MGCSP, the Ministry of Health and the border agencies, which will be operational before the relevant activities start.

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Annex 1: Environmental and Social Screening Form

Completed by the implementing unit (IIU or MoA-PIU) with the county focal point for every proposed subproject or batch, on the basis of a site visit and consultation with the community leadership, women's and youth representatives and affected land users; attached to the screening report submitted to the World Bank and to the EPA project brief.

A. Subproject identification

Item	Entry	Item	Entry
Subproject title and reference; subcomponent (1.3 / 1.4 / 3.1 / 3.2 / 3.3)		Proposing entity (IIU, MoA-PIU, cooperative, producer organization, community)	
County, district, clan, town(s); GPS (UTM 29N) of site, start and end points; site sketch attached		Estimated cost (US$); start and completion dates	
Nature and scope of works (length, crossings, footprint, water management system area, building size, equipment); earthworks, borrow pits and material volumes		Land required (ha, temporary and permanent); existing use and tenure; structures, crops, trees or businesses affected (number; total or partial)	
Screening officer(s), designation, contact; date of site visit		Persons consulted (chiefs, elders, women, youth, land users, county offices) and date	

B. Eligibility and exclusion check (Section 2.2)

Exclusion criterion	Yes	No	Exclusion criterion	Yes	No
Located within, or causing significant conversion or degradation of, a protected area (gazetted or proposed), KBA, critical habitat, primary forest, mangrove or buffer zone			Physical displacement of more than 50 households; disputed land; eminent domain; voluntary land donation not meeting the conditions of Annex 19		
New alignment or new road through primary or intact secondary forest, wetland or swamp (minor realignment at a failed crossing allowed where screening confirms no sensitive receptor)			Damage or restricted access to graves, sacred forests, Poro/Sande sites, shrines, places of worship or archaeological sites		
Dam, or water management structure above 2 m or impounding a perennial watercourse; abstraction or discharge affecting an international waterway (OP 7.50)			Child labor, hazardous work under 18, forced labor, human trafficking, unpaid compulsory community labor		
Asbestos, PCBs, POPs, WHO Class Ia/Ib or banned pesticides, pesticides without an integrated pest management (IPM) approach; mining or quarrying works, works serving mining or ASM sites, unlicensed material sources			Harvesting or trade of timber, charcoal, bushmeat or wildlife; conversion of forest to agriculture; weapons, tobacco, alcohol, gambling, radioactive materials, other illegal activity		

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Exclusion criterion	Yes	No	Exclusion criterion	Yes	No
Eligible under criteria 1 to 12 of Table 3 (all answers No)? Yes / No – if No, the subproject is rejected or redesigned. Criterion 13 (risk class) is applied in Section E, after the risk classification. Evidence:					

C. Site characteristics

#	Characteristic	Entry
1	Adjoining land uses and land cover; topography, slope, erosion and flooding history (rainy-season impassability, washouts); artisanal mining, logging, pit-sawing, hunting or charcoal in the area	
2	Distance (m) to the nearest stream, river, swamp, wetland or water point and its community uses (washing, drinking, fishing, rice); distance to forest (type), protected area or KBA	
3	Distance (m) to houses, school, clinic, market, place of worship, graves or sacred site; nearest health facility, police post, water source and waste site; linked activities nearby (Subcomponent 1.1 or 1.2 works, CLSG line, railway, concessions, quarries)	
4	Land tenure (Government, public, customary, private deed, community); owner or custodian; any dispute and the documentary evidence of its resolution; current users of the land and road reserve (farmers, tenants, traders, women, migrants)	
5	Area of influence adopted for the screening (Section 5.2.1): ancillary sites (borrow pits, camps, haul routes, material and waste sites), downstream water users and wetlands, communities along haul routes and detours, forest areas opened by improved access; extent adopted beyond the initial 500 m radius and reason	

D. Environmental and social screening questions

Screening question (where Yes, describe receptor, distance, number affected, magnitude; consider the whole area of influence of the subproject – footprint, ancillary sites, haul routes, downstream and off-site receptors – Section 5.2.1)	Yes	No	Description
Biodiversity and natural resources			
Will the works clear natural or secondary forest, swamp or riparian vegetation, fell large trees, affect protected species or forest resources used by communities, or affect a wetland, swamp, stream or river (crossing, drainage, weir, bund, canal) or its flow?			
Will the road or water management system increase access to forest, wildlife or mining areas (hunting, charcoal, logging and pit-sawing, ASM, farm expansion), and which forest areas would the improved access open (extent, distance, current use)? Will timber, laterite, sand, gravel or rock be sourced from new or unlicensed sites?			
Does the site, or the forest or wetland area that the improved access would open, contain natural habitat (secondary or swamp forest, riparian strip, wetland) or potential critical habitat features (protected or threatened species reported by the FDA, the community or a survey; KBA attributes), or ecosystem services used by the communities (bushmeat, non-timber forest products, fish, water)? Has a site-specific habitat and species survey been carried out (date, specialist, attached), and is a Biodiversity Management Plan required (Section 6.1.1)?			
Are the baseline values of the outcome indicators of Table 29 established for the site (forest cover of the area of influence, habitat condition at crossings, transect counts of hunting, logging, charcoal and mining evidence, invasive-			

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Screening question (where Yes, describe receptor, distance, number affected, magnitude; consider the whole area of influence of the subproject – footprint, ancillary sites, haul routes, downstream and off-site receptors – Section 5.2.1)	Yes	No	Description
species cover), and which FDA and community actions and corrective-action triggers of Section 5.2.3 apply?			
Pollution, waste and resources			
Will earthworks generate erosion, sediment or dust near houses, schools, streams or fields? Will generators, mills, dryers or compactors create noise or emissions near receptors?			
Will the activity generate solid or hazardous waste, wastewater or effluents (processing, livestock, sanitation), store fuel or agrochemicals, or abstract water in competition with community supply?			
Land, livelihoods and resettlement			
Will land be acquired or land use restricted, permanently or temporarily? Will houses, structures, shops or kiosks be removed, totally or partially? Will any household relocate?			
Will crops, economic trees, drying areas, stalls or businesses in the road reserve or on the site be affected, permanently or temporarily (including by detours, haul routes and the works themselves, Annex 18), or access to farmland, water points, fishing, forest products or grazing be restricted?			
Is land provided by voluntary donation, lease or purchase, and is the transaction documented and witnessed? Are there tenants, migrants, women users or informal traders with undocumented rights?			
Labor and working conditions			
Which workers will be used (contracted, community, primary supply, direct; numbers, origin)? Will workers come from outside the community and need a camp?			
Is child labor, hazardous child work, forced labor, withheld wages or unpaid community labor present in the activity, the maintenance group, the suppliers or the value chain? Does the operator have OHS arrangements and a worker grievance channel?			
Community health, safety and security			
Will works take place at or near crossings, water points, schools, markets or houses used daily by the community, or increase traffic, speed or heavy vehicles through settlements?			
Will open excavations, borrow pits, standing water or unfenced structures be created? Will communicable-disease risks increase (camps, cross-border movement, outbreaks in the area)?			
Will security personnel be used, or are there security risks (theft, robbery, border incidents, conflict)? Are there SEA/SH risk factors (remote site, camp, border or mining setting, few services, proximity to a school)?			
Social inclusion, cultural heritage and climate			
Could the activity exclude or disadvantage women, youth, older persons, persons with disabilities, poor or landless households, migrants or remote hamlets? Is there a risk of elite capture, or existing tensions (land, leadership, migrants, concessions)?			
Are graves, sacred forests or groves, Poro/Sande sites, shrines, places of worship or historic sites within 500 m (initial radius; extend to the area of influence)? Is the site within 5 km of a protected area, proposed protected			

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Screening question (where Yes, describe receptor, distance, number affected, magnitude; consider the whole area of influence of the subproject – footprint, ancillary sites, haul routes, downstream and off-site receptors – Section 5.2.1)	Yes	No	Description
area or KBA (initial biodiversity trigger, Section 4.3; the habitat and species survey of Section 6.1.1 applies whatever the distance where natural habitat or an induced-access pathway is identified)? Are chance finds possible? Do initiation seasons or customary rules restrict access at times?			
Is the site exposed to river or flash flooding, washouts, erosion, landslips or windstorms? Does the design include climate-resilient features (design flood, freeboard, scour protection, lined drains, raised embankments)?			

E. Risk classification and instruments required

Risk area	Rating (Low / Moderate / Substantial; High = excluded)	Justification
Biodiversity, natural resources and pollution		
Land, livelihoods and resettlement		
Labor and working conditions		
SEA/SH (risk factors of Section D; SEA/SH risk assessment in every ESIA/ESMP and ESMP, Table 28, R1)		
Community health, safety and security; climate and disaster risk		
Social inclusion and cultural heritage		
Residual risk after the site-specific measures (Section 5.3.2): risks of the register (Table 28) that apply to the site; exposure factors that siting or design can avoid; conditions for a Low residual rating to be set in the instrument	Expected residual rating (Low / Moderate / Substantial)	
Overall subproject classification (Low / Moderate / Substantial) and justification:		
Risk-based exclusion (Table 3, criterion 13), applied after the classification: is the subproject classified High, or classified Substantial with risks that cannot be mitigated to an acceptable level with the instruments below and the capacity provided under the ESMF? Yes / No – if Yes, the subproject is not eligible: it is rejected, or redesigned and screened again.		

Instrument or plan required	Tick; timeline	Instrument or plan required	Tick; timeline
LMP and grievance mechanism provisions (all subprojects)		ESMP checklist with ESCOPs (Annexes 6 and 7)	
Site-specific ESMP (Annex 6)		ESIA/ESMP (ToR in Annex 11)	
RP (RF)		Voluntary land donation record (Annex 19) or negotiated land transaction documentation (RF)	

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Risk area	Rating (Low / Moderate / Substantial; High = excluded)	Justification	
Traffic, waste and borrow-pit plans		OHS and community health and safety plan (Annex 9)	
Labor influx and camp plan; SEA/SH site measures and referral pathway		Security risk assessment and management plan	
Cultural heritage measures; chance-finds procedure (Annex 8)		Integrated pest management measures	
Biodiversity survey report; biodiversity measures or Biodiversity Management Plan (BMP) where natural or critical habitat may be affected (Section 6.1.1)		Detour and alternative-route plan (Annex 18); inclusion measures for grants and outgrower contracts (Annex 20)	
Operation-phase ESMP and handover training		Other (specify)	

F. National permits and authorizations (required: yes/no; status)

Authority	Required; status	Authority	Required; status
EPA (registration, project brief, environmental review or impact study, permit); water abstraction or discharge approval		Forestry Development Authority (tree felling, timber, forest land, wildlife)	
Liberia Land Authority (tenure verification, land documentation)		Ministry of Mines and Energy / county (borrow pits and quarries)	
Ministry of Public Works (building permit; road reserve)		County administration (waste disposal site; traffic and security coordination – not a permit)	
Ministry of Labor (notification, work permits)		Ministry of Health / county health team (food safety, outbreak coordination); other (coordination with the Ministry of Transport, LRA, MoCI and border agencies – not a permit)	

G. Signatures (name, designation, signature, date) and World Bank concurrence (date, reference)

Screening officer	County focal point	E&S Specialists	Project Coordinator

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Annex 2: National Environmental and Social Policy Frameworks and Action Plans

Table 24**: National policy frameworks and action plans and their relevance to the project**

Policy / action plan	Description and relevance to the project and the ESMF
National Environmental Policy (2003)	Environmental assessment, public participation, and environment in sectoral planning. Basis of the EPA screening and permitting of every subproject.
EIA Procedural Guidelines (2006; revision under development)	EPA procedures for registration, notice of intent, project brief, environmental review, scoping, impact study, consultation, review and permitting. Followed in Sections 3.5 and 6.5; the subproject instruments serve as the environmental review or impact study.
National Biodiversity Strategy and Action Plan (NBSAP II, 2017–2025)	Implements the Convention on Biological Diversity: protected areas, KBAs, species conservation, biodiversity in transport and agriculture. Exclusion of protected areas and KBAs; biodiversity screening of the area of influence (initial distance 5 km); biodiversity measures of the ESMPs; timber sourcing; control of induced access.
National Wildlife Conservation and Protected Area Management Law (2016) and regulations; Environment Protection and Management Law (2002), wetlands provisions; National Action Programme under the UNCCD and land degradation neutrality targets	National implementation of CITES (FDA as management authority), of the Ramsar Convention (EPA as administrative authority; conservation of wetlands) and of the UNCCD (land restoration and soil conservation). Exclusion of the Ramsar sites and protected areas; wetland screening of crossings and water management systems; no-hunting and no-wildlife-trade rules for workers; control of bushmeat and wildlife trade at the border post; erosion control, revegetation and borrow-pit rehabilitation of all works.
National Forestry Policy (2006) and National Forest Management Strategy (2007)	Forestry development under the "3 Cs" (commercial, conservation, community forestry); FDA management of the forest estate, protected areas and community forests. Rules for forest land near subprojects, tree felling and timber sourcing; community forest agreements where roads approach forest.
National Health Policy and Plan (2011–2021); Essential Package of Health Services	County health systems, disease surveillance, emergency preparedness. Coordination with county health teams on worker and community health and outbreaks.
National Gender Policy (2018–2022) and National Action Plan on Women, Peace and Security	Gender mainstreaming, women's economic empowerment, equal participation, prevention of and response to gender-based violence. Targets for women in maintenance groups, cooperatives, jobs and committees; SEA/SH measures and referral pathways with the MGCSP.
Land Rights Policy (2013)	Public, government, customary and private land; equal protection of customary land and the land rights of women and youth. Basis of the Land Rights Act applied in the RF; customary land users eligible for compensation; documented voluntary land donation and negotiated transactions.
Water Supply and Sanitation Policy (2009); Integrated Water Resources Management Policy	Safe water and sanitation; protection of water sources. Water and sanitation at facilities; protection of water points at crossings and water management systems.
National Policy and Response Strategy on Climate Change (2018); Nationally Determined Contribution (2021)	Adaptation priorities for transport, agriculture and coastal zones; climate-resilient infrastructure; emission reduction. Climate risk screening (Section 4.7); climate-resilient crossings and drainage; GHG accounting at appraisal.
National Transport Policy and Strategy; National Road Fund Act (2016); axle-load regime	Road asset preservation through maintenance financing and ECOWAS-aligned axle-load control; community-based routine maintenance. Framework of Subcomponents 1.3 and 1.4; the NRF finances road maintenance and the Ministry of Transport regulates axle-load control.
Liberia Agriculture Sector Investment Program (LASIP II)	Value chains, feeder roads, food and nutrition security, climate-smart agriculture and farmer organizations. Framework of Component 3; participatory prioritization of feeder roads and market sites; cooperative strengthening.

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Policy / action plan	Description and relevance to the project and the ESMF
National Social Protection Policy (2013); national action plan on child labor	Protection of vulnerable groups, children and the extreme poor; elimination of the worst forms of child labor. Vulnerable-group measures (Section 5.5); child-labor prohibition in all contracts and agreements.

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Annex 3: National Legislation and Relevance to the Project

Table 25: National legislation and its relevance to the project

Legislation	Description and relevance to the project and the ESMF
Constitution of the Republic of Liberia (1986)	Fundamental rights, equality before the law and the right to property; expropriation only for public purposes with just compensation; Article 7 commits the State to manage national resources for the benefit of the people. Basis of compensation at replacement cost under the RF; non-discrimination in benefits and employment.
Environment Protection and Management Law (2002)	Framework environmental law: environmental impact assessment for the projects listed in its Annex I, environmental review and impact study, permits, environmental quality standards, pollution control, waste, inspectors and offences, public participation and the Environmental Administrative Court. Every subproject is registered with the EPA and follows the review or impact-study route of Sections 3.5 and 6.5; permit conditions are incorporated in contracts; the standards of Section 3.4 apply.
Environmental Protection Agency Act (2002)	Establishes the EPA as the regulatory authority with executive authority over environmental management, the County Environmental Committees and the environmental inspectors. EPA role in screening, permitting and compliance monitoring; coordination with county environmental officers.
Land Rights Act (2018)	Defines public, government, customary and private land; recognizes customary land as owned by communities with or without deed; community self-identification, boundary harmonization and formalization; rights of women, youth and minorities; free, prior and informed consent of communities for the use of customary land by third parties. Customary land users along roads, at stations, crossings and facilities are eligible for compensation; community land-use agreements are documented with the LLA; negotiated transactions follow the RF, and voluntary land donation follows Annex 19.
Liberia Land Authority Act (2016)	Establishes the LLA as the land administration, land-use planning, survey and dispute-resolution authority with county offices. LLA county offices verify tenure and disputes at screening, support valuation, witness land agreements and sit on the county grievance committee.
Public Lands Law (1973) and Registered Land Law	Allocation, sale and lease of public land and registration of titles. Status of road reserves as public land; acquisition of Government land for stations; registration of land acquired by the project.
Decent Work Act (2015)	Contracts, wages, hours, leave, minimum age of 15, hazardous work prohibited under 18, forced labor prohibition, non-discrimination, freedom of association, occupational safety and health duties of employers, workers' compensation, labor inspection and dispute resolution. Applied through the LMP to all project workers including community and primary supply workers; OHS requirements of Annex 9; child-labor controls; Ministry of Labor inspection.
Public Health Law (1976, as amended)	Public health and sanitation, water supply, nuisance abatement, communicable-disease control and the duties of health authorities. Sanitation at camps, stations, markets and facilities; outbreak coordination with county health teams; food safety at processing units.
Children's Law (2011)	Domesticates the Convention on the Rights of the Child: protection from exploitation, hazardous labor, harmful practices and violence; child welfare committees. Child-labor prohibition; protection of children at sites and from SEA; referral of child survivors.
Act to amend the Penal Code on rape (2005); Act establishing Criminal Court "E" (2008); Domestic Violence Act (2019)	Criminalizes rape (including gang rape) as a non-bailable offence, creates a specialized court for sexual offences and criminalizes domestic violence with protection orders. Legal basis of the SEA/SH referral and accountability framework; referral of criminal cases to the police and the Ministry of Justice SGBV Crimes Unit.
National Forestry Reform Law (2006); Community Rights Law with respect to Forest Lands (2009)	Management of the forest estate, commercial and community forestry, protected areas, chainsaw milling and timber permits under the FDA; community rights to manage and benefit from community forests through community forest management bodies. FDA authorization for felling and timber; prohibition of unlicensed pit-sawing supplies; forest land status near subprojects; agreements with community forest bodies on access and use.

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Legislation	Description and relevance to the project and the ESMF
National Wildlife Conservation and Protected Area Management Law (2016)	Categories of protected areas, species protection, hunting regulation and bushmeat trade, enforcement. Exclusion of protected areas; no-hunting rules for workers; control of wildlife trade at the border post.
Local Government Act (2018)	County councils and decentralized administration under the Ministry of Local Government (former Ministry of Internal Affairs); roles of superintendents, district commissioners and chiefs. County and community coordination, grievance committees, security plans and witnessing of land agreements.
Vehicle and Traffic Law (Title 38, Liberian Code of Laws Revised) and the axle-load regulations under the National Road Fund Act (2016)	Vehicle registration, dimensions, weights and axle loads, traffic rules and penalties; the new axle-load regime aligned with ECOWAS Regulation C/REG.14/12/12; the NRF mandate for maintenance financing; axle-load control regulated by the Ministry of Transport. Operation of the axle-load control stations; traffic management of works; enforcement procedures and penalties at the stations.
Public Procurement and Concessions Act (2005, amended 2010)	Rules for public procurement, including technical specifications and contract conditions. Inclusion of environmental and social requirements in bidding documents and contracts (Annex 10).
Minerals and Mining Law (2000) and mining regulations	Licensing of exploration, mining and quarrying, including Class C artisanal licenses; to be replaced under Component 4. Licensing of borrow pits and quarries supplying the roads; exclusion of mining-related works; context of ASM along feeder roads.
EPA environmental quality standards and regulations	Liberia standards on ambient air quality and emissions, ambient noise and effluent discharge, and EPA regulations on waste and hazardous substances. Limits applied in the ESMPs with the EHS Guidelines (Section 3.4); waste and hazardous materials management in the ESCOPs.

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Annex 4: Summary of the Environmental and Social Standards and their Relevance

Table 26: Environmental and Social Standards of the World Bank ESF and their relevance to the project

Standard	Core requirements and relevance to the project
ESS1 Assessment and Management of Environmental and Social Risks and Impacts	Borrower responsibilities for assessing, managing and monitoring environmental and social risks and impacts at all stages, applying the mitigation hierarchy, using instruments proportionate to risk, ensuring that technical assistance is consistent with the ESSs and adopting an ESCP. Relevant: the project is classified High risk; this ESMF, the RF, the LMP, the SEP, the SESA and the site-specific instruments of Subcomponents 1.1 and 1.2 implement ESS1; all subprojects are screened and assessed; technical-assistance Terms of Reference are made consistent with the ESSs; the ESCP is to be prepared.
ESS2 Labor and Working Conditions	Fair treatment, non-discrimination and equal opportunity; terms and conditions; child and forced labor prohibitions; worker grievance mechanism; occupational health and safety; application to direct, contracted, community and primary supply workers. Relevant: contracted workers of road, station, water management system and facility works, community maintenance and producer-organization workers, cooperative and SME workers under grants, and suppliers of laterite, sand and timber; OHS hazards at crossings, excavations and machinery; child-labor risks in cocoa, rubber, mining and family farming. Managed through the LMP, Annex 9 and the contract clauses.
ESS3 Resource Efficiency and Pollution Prevention and Management	Efficient use of energy, water and raw materials; management of air emissions, wastewater, hazardous and non-hazardous waste, hazardous materials and pesticides; GHG estimation where relevant; application of the EHS Guidelines. Relevant: dust, noise, erosion and sediment, construction and domestic waste, fuel and oil, borrow pits, effluents of processing and livestock facilities, agrochemicals of the value chains, water and energy use at stations and facilities; GHG accounting at appraisal. Managed through the ESCOPs, the ESMPs and the standards of Section 3.4.
ESS4 Community Health and Safety	Avoidance and minimization of health, safety and security risks and impacts on communities: infrastructure and equipment safety, traffic and road safety, hazardous materials, ecosystem services, communicable diseases, emergency preparedness, security personnel and dam safety. Relevant: works at crossings used for washing and water collection, traffic through settlements, open pits, labor influx and disease transmission, cross-border health at the border stations, security at the border and for equipment, use of guards; small water management structures (dams excluded). Managed through Annex 9, the ESMPs, security assessments and emergency procedures.
ESS5 Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	Avoidance and minimization of involuntary resettlement; compensation at replacement cost; livelihood restoration; eligibility irrespective of title; consultation; grievance mechanism; documented negotiated transactions; resettlement instruments completed before displacement. Relevant: land for stations, markets, crossings, borrow pits, plantation water management systems and facilities; crops, trees, stalls and structures in road reserves; tenants, migrants and informal traders. Managed through the RF and the RPs prepared under it. Voluntary land donation for shared facilities is not covered by ESS5 and is managed under Annex 19.
ESS6 Biodiversity Conservation and Sustainable Management of Living Natural Resources	Protection of modified, natural and critical habitats and protected areas; mitigation hierarchy; invasive species; sustainable management of living natural resources and primary production; community livelihoods dependent on natural resources. Relevant: roads and crossings in a mosaic of modified and natural habitat at forest edges, wetlands and swamps; proximity screening of protected areas and KBAs; induced access; timber sourcing; tree-crop expansion and traceability. Managed through the exclusion list and the 5 km screen as initial steps, the site-specific habitat and species surveys, natural and critical habitat determinations and BMPs of Section 6.1.1, the FDA and community agreements, the outcome monitoring and the corrective actions of Section 5.2.3 and Annex 6, and the no net loss / net gain standard of ESS6 for natural and critical habitat.
ESS7 Indigenous Peoples/Sub-Saharan	Protection of the rights, dignity, culture and livelihoods of communities meeting the four characteristics of the standard; free, prior and informed consent in defined circumstances.

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Standard	Core requirements and relevance to the project
African Historically Underserved Traditional Local Communities	Not currently relevant: no community in the project area meets the four characteristics; the customary communities along the corridors are the mainstream rural population and are covered by ESS5 and ESS10.
ESS8 Cultural Heritage	Protection of tangible and intangible cultural heritage; consultation with communities; chance-finds procedure; legally protected heritage; community access. Relevant: graves, sacred forests, Poro/Sande sites, shrines and places of worship near settlements and crossings; initiation seasons; possible chance finds during earthworks. Managed through screening with chiefs and elders, the exclusion list and the chance-finds procedure of Annex 8.
ESS9 Financial Intermediaries	Requirements for financial intermediaries that on-lend or invest project funds. Not relevant: the project does not use a financial intermediary; matching grants are administered by the MoA-PIU and screened under this ESMF.
ESS10 Stakeholder Engagement and Information Disclosure	Systematic, inclusive and continuous engagement with project-affected parties and other interested parties; disclosure of information; grievance mechanism; SEP. Relevant: corridor communities, farmers, cooperatives, women traders, transport operators, border agencies, county and national institutions; disclosure of this ESMF and of the subproject instruments; the SEP and the grievance mechanism with the confidential SEA/SH channel (Chapter 7).

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Annex 5: Impact Assessment and Risk Register of the Subproject Types

The impact assessment table (Table 27) applies the impact methodology of Section 5.2.1 (Significance = Magnitude × Sensitivity) to each subproject type and phase; the risk register (Table 28) applies the risk methodology of Section 5.3.1 (Risk = Likelihood × Consequence). In the impact table, Magn. = magnitude, Sens. = sensitivity of the receptor, Signif. before = significance before mitigation and Residual signif. = residual significance; where an impact and a risk concern the same event, the mitigation column refers to the controls of the risk (R-number).

Where an impact is rated Major before mitigation or a residual risk remains Substantial (highlighted cells), the measures shown are mandatory conditions of the subproject instrument and of the contract, verified before and during the works; their non-implementation is a major non-conformance with mandatory corrective action, and the events of Section 6.1.5 stop the works until the cause is corrected (Section 5.3.2 explains why R1 and R16 remain Substantial and how they are reduced further at site level). In the risk register, Scope = subprojects and phase, L = likelihood, C = consequence, SC = supervision consultants and MoL = Ministry of Labor. The impact significance and residual risk ratings of Tables 27 and 28 are indicative framework-level assessments based on typical subproject conditions and on the assumed implementation of the proposed mitigation measures; the actual significance, risk levels and residual ratings will be determined and updated through the site-specific screening and assessment of each subproject, considering the characteristics of the affected receptors, the subproject design and the effectiveness of the mitigation measures.

Table 27: Indicative assessment of the impacts of the subproject types by phase (Annex 5)

Potential impact (receptor)	Magn.	Sens.	Signif. before	Suggested mitigation (details in Annex 6, the ESCOPs and the risk register controls)	Residual signif.
A. Village access roads and community-based maintenance (Subcomponent 1.3)					
Pre-construction and design					
Loss of crops, economic trees, stalls, drying areas and parts of structures in the road reserve when width and drains are reinstated (smallholders, traders, households)	Small	Medium	Minor	Works within the existing formation; drains aligned to avoid structures and trees; inventory and compensation at replacement cost under the RP (RF) before works	Negligible
Temporary economic displacement by detours and works: loss of customers and income of stalls, shops and markets, interruption of access to farms and water points, land used temporarily (traders, farmers, households)	Small	Medium	Minor	Detour and alternative-route plan (Annex 18); temporary impacts identified in the census and asset inventory and compensated under the RP (RF: net income lost, temporary trading space, temporary-use agreements and rent); access maintained at all times	Negligible
Land and vegetation loss at new or expanded borrow pits and stockpiles (farmland, fallow, secondary forest)	Small	Medium	Minor	Reuse of existing pits; fallow or degraded land agreed in writing under the RF; none in forest, wetlands or within 50 m of streams; rehabilitation (ESCOP 2)	Negligible
Inadequate siting or sizing of replacement culverts and small bridges at the design stage: flooding of fields and houses, scour, backwater and washouts (road users, downstream farmers and households, the works)	Medium	High	Major	Culverts and bridges sited and sized from hydrological and topographic mapping, catchment and flood analysis and community knowledge of flood levels; freeboard and scour protection; drainage design reviewed by the E&S specialists with the design engineers before approval (Section 5.6; ESCOP 3)	Minor

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Potential impact (receptor)	Magn.	Sens.	Signif. before	Suggested mitigation (details in Annex 6, the ESCOPs and the risk register controls)	Residual signif.
Construction					
Clearing of roadside vegetation and forest edge; disturbance of fauna; felling of trees for timber bridges (forest edge, protected species)	Small	Medium	Minor	Clearing limited to formation and drains; marked trees retained; FDA authorization; licensed timber or concrete decks; no hunting or bushmeat by workers	Negligible
Erosion of exposed earthworks and drains; sediment to streams and swamps at culvert and bridge works (streams, swamp rice fields, aquatic life)	Medium	High	Major	Dry-season crossing works; silt fences, sediment traps, diversions; turnouts and scour checks; immediate revegetation; water-point protection (ESCOPs 1, 3)	Minor
Dust and noise from re-graveling, haulage and compaction near houses, schools and clinics (residents, pupils)	Small	Medium	Minor	Watering of haul routes; 30 km/h speed limit for project vehicles in settlements; daytime hours; maintained equipment; community notice	Negligible
Construction and domestic waste, fuel and oil spills at sites and camps (soil, groundwater, streams)	Small	Medium	Minor	Waste management plan; county-approved disposal; bunded fuel storage; spill kits; no burning or burial	Negligible
Community safety: open excavations and pits, machinery in villages, motorcycle and pedestrian conflicts at crossings, children at sites (residents, road users)	Medium	High	Major	Traffic management plan; barriers, signage and flag persons; fenced pits; night security; safety awareness; no children at sites (Annex 9; R16)	Minor
Injuries of contractors' and community workers at excavations, crossings and vegetation clearing with inadequate tools and PPE (workers)	Medium	High	Major	OHS plan, PPE and tools, toolbox talks, first aid and evacuation (Annex 9); LMP conditions for community workers; insurance	Minor
Damage to graves, sacred sites and chance finds during earthworks (cultural heritage)	Small	High	Moderate	Identification with chiefs and elders at screening; exclusion of sites; chance-finds procedure (Annex 8; R10)	Negligible
Local employment and income for men, women and youth in works and maintenance groups (households)	Medium	Medium	Beneficial	Target of 40 percent women in maintenance groups; transparent local hiring; fair wages and conditions under the LMP	Beneficial
Operation and maintenance					
Year-round access to markets, schools, clinics and administration; lower transport costs and post-harvest losses (communities, farmers, traders)	Large	Medium	Beneficial	Community maintenance contracts and training sustain the benefit	Beneficial
Induced access: hunting, charcoal, pit-sawing and artisanal mining along improved roads; forest encroachment (forest edge, wildlife)	Medium	Medium	Moderate	Exclusion list and 5 km screen as initial steps; site-specific habitat and species survey, natural and critical habitat determination and BMP where triggered (Section 6.1.1); FDA and community agreements, patrols and checkpoints; outcome monitoring with baselines, targets and corrective-action triggers, including suspension of	Minor

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Potential impact (receptor)	Magn.	Sens.	Signif. before	Suggested mitigation (details in Annex 6, the ESCOPs and the risk register controls)	Residual signif.
				the following batches where loss continues (Section 5.2.3, Table 29; R12)	
Higher speeds and traffic; accidents involving motorcycles and pedestrians near settlements and crossings (road users, children)	Medium	High	Major	Speed humps and signage in settlements; bridge guardrails; road safety awareness with schools and motorcycle riders	Minor
Injuries of community maintenance workers; informal payment and child participation (community workers)	Small	High	Moderate	Written maintenance agreements with tools, PPE, first aid and age verification; LMP community-worker provisions; payment records	Negligible
B. Tolling and axle-load control stations (Subcomponent 1.4)					
Pre-construction and design					
Land acquisition for platform, parking and buildings (indicatively 1–3 ha per station, set by the design; peri-urban land at Ganta and border-town land at Bo Waterside); displacement of kiosks, shops, crops and possibly houses (traders, households, landowners)	Medium	High	Major	Siting with the Ministry of Transport and the county authorities on Government or uncontested customary land away from the settlement core; design avoiding houses; RP before works; traders relocated to designated trading areas	Minor
Expectations and tensions among the border agencies, traders and the community on land, jobs and facilities (institutions, community)	Small	Medium	Minor	Early joint planning with the agencies, county authorities and the women cross-border traders' associations; SEP engagement; clear information on benefits and eligibility	Negligible
Construction					
Earthworks, vegetation clearance and runoff from the platform toward the Cavalla River and local streams; siltation; hazardous materials (river, water users)	Medium	High	Major	Stormwater design with sediment basins and oil interceptors; 50 m river buffer; erosion control; bunded fuel and chemical storage; dry-season earthworks	Minor
Noise, dust and construction traffic in the small settlement and at the school (residents, pupils, agencies)	Small	High	Moderate	Working hours; dust suppression; haul routes avoiding the school; noise barriers if works exceed 55 dB(A) at the school	Negligible
Labor influx into a small border town without accommodation, water or sanitation; pressure on services; disease; SEA/SH and transactional sex (community, women and girls, workers)	Medium	High	Major	Self-contained camp outside the settlement with water, sanitation and health screening; local hiring; code of conduct and SEA/SH measures (Chapter 7, LMP); health awareness (R1, R2)	Minor
Occupational and community safety near the bridge approach and the control gate; truck movements (workers, border users)	Medium	High	Major	Traffic management plan of the contractor coordinated with the police and immigration; works separated from the inspection lane; signage; OHS plan	Minor

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Potential impact (receptor)	Magn.	Sens.	Signif. before	Suggested mitigation (details in Annex 6, the ESCOPs and the risk register controls)	Residual signif.
Construction waste, excreta and wastewater at a post without disposal facilities (soil, water, public health)	Small	High	Moderate	Temporary sanitation; waste collected and transported to a county-approved site; soakaways designed to site conditions	Negligible
Operation					
Preservation of the paved corridor; safer and better-serviced stations and border posts; sanitation and designated trading areas for women traders (road users, traders, agencies)	Large	Medium	Beneficial	Station operated by the designated agencies with the border agencies; trading areas and station rules agreed with the women traders	Beneficial
Truck queuing and parking: noise, exhaust, idling, oil drips, litter; sanitation and solid waste of trading and rest facilities (residents, river, public health)	Medium	Medium	Moderate	Paved and drained parking with oil interceptor; waste, toilet and water maintenance contracts financed from the station operating budget; no-idling rules; cleaning schedule of the trading areas	Minor
Security incidents, corruption and conflicts at the weighbridge; diversion of overloaded trucks to unpaved roads; harassment of women traders (drivers, traders, agencies)	Medium	High	Major	Joint security and station operating procedures; automated weighing records and posted tariffs; station grievance desk; code of conduct for station staff; monitoring of alternative routes (R8, R9)	Minor
Cross-border public health: disease spread through increased trade and movement (community)	Small	Medium	Minor	Health screening point and hand-washing facilities at the station; coordination with the county health team and the Ivorian side	Negligible
C. Rural access road spot improvements (Subcomponent 3.3) and plantation water management systems (Subcomponent 3.2)					
Pre-construction and design					
Land take at bridge and culvert approaches, local realignments at failed crossings, borrow pits and canals; loss of swamp rice plots and economic trees (farmers, landowners)	Small	Medium	Minor	Design within the existing alignment; minimum approach widening; inventory and compensation under the RP (RF) before works; agreement of the producer organization on the layout of the water management system	Negligible
Temporary economic displacement by detours and works: loss of customers and income of stalls, shops and markets, interruption of access to farms and water points, land used temporarily (traders, farmers, households)	Small	Medium	Minor	Detour and alternative-route plan (Annex 18); temporary impacts identified in the census and asset inventory and compensated under the RP (RF: net income lost, temporary trading space, temporary-use agreements and rent); access maintained at all times	Negligible
Exclusion of some land users from the rehabilitated plantations and their water management systems; capture of improved land by influential farmers (tenant farmers, women, poor households)	Medium	High	Major	Participatory layout and water-user rules agreed with all plot holders, including women and tenants; land-use agreements witnessed by chiefs and the LLA; grievance mechanism (R5)	Minor

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Potential impact (receptor)	Magn.	Sens.	Signif. before	Suggested mitigation (details in Annex 6, the ESCOPs and the risk register controls)	Residual signif.
Inadequate siting, sizing or alignment of culverts, bridges, drains and water management structures at the design stage: flooding of fields and houses, scour, backwater, washouts and structural failure (road users, downstream farmers and households, wetlands, the works)	Medium	High	Major	Siting and sizing from hydrological and topographic maps (catchment delineation, flow paths, flood extents), the MME hydrological data and community knowledge of flood levels; design floods, freeboard, scour protection and spillways; drainage design reviewed by the E&S specialists with the design engineers before approval (Section 5.6; ESCOPs 3 and 4)	Minor
Construction					
In-stream works for culverts, bridges and weirs: sedimentation, flow obstruction, disturbance of aquatic habitat and of washing and water points (streams, swamps, water users, fish)	Medium	High	Major	Dry-season works; temporary diversion; sediment control; alternative water points maintained and users informed; fish passage and base flow at weirs (ESCOPs 3, 4)	Minor
Drainage, dykes and bunds changing wetland hydrology; conversion of swamp forest or raphia swamp to plantation (wetland habitat, downstream users)	Medium	High	Major	Systems limited to existing plantations under rehabilitation; no drainage of intact swamp forest, raphia swamp or peat; wetland function screening; outlets maintaining downstream flows	Minor
Borrow pits, dust, noise and waste of the rural road works (as for A)	Medium	Medium	Moderate	As for village access roads; ESCOPs 1, 2 and 3	Minor
Erosion and sedimentation of streams and swamps at crossing works, and community and worker safety at excavations, crossings and in settlements (as for A)	Medium	High	Major	As for village access roads: dry-season crossing works with diversion and sediment control, lined drains, revegetation (ESCOPs 1 and 3); traffic management, fencing, exclusion zones, OHS plan (Annex 9); mandatory measures verified before the activity starts (Section 6.1.5)	Minor
Chance finds and sacred streams at crossings (cultural heritage)	Small	High	Moderate	Consultation with elders on sacred streams and groves; chance-finds procedure (Annex 8)	Negligible
Operation					
Year-round access from production areas to the corridors; reduced post-harvest losses; climate-resilient crossings (farmers, cooperatives, communities)	Large	Medium	Beneficial	Maintenance by community groups and county MoA/MPW offices	Beneficial
Standing water behind weirs and bunds and in borrow pits: mosquito breeding, drowning risk for children; backwater flooding of upstream plots (community health, farmers)	Medium	Medium	Moderate	Drainage of pits; water management system operation rules; freeboard and spillways; producer-organization maintenance; malaria awareness	Minor

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Potential impact (receptor)	Magn.	Sens.	Signif. before	Suggested mitigation (details in Annex 6, the ESCOPs and the risk register controls)	Residual signif.
Increased agrochemical use on the rehabilitated plantations; residues reaching streams (water quality, users)	Small	Medium	Minor	Integrated pest management and safe-use training under Component 3; no WHO class Ia/Ib products; container management	Negligible
Induced access through reinstated crossings and improved rural roads: hunting, charcoal, pit-sawing and artisanal mining; forest encroachment (forest edge, wildlife)	Medium	Medium	Moderate	Exclusion list and 5 km screen as initial steps; site-specific habitat and species survey, natural and critical habitat determination and BMP where triggered (Section 6.1.1); FDA and community agreements, patrols and checkpoints; outcome monitoring with baselines, targets and corrective-action triggers, including suspension of the following batches where loss continues (Section 5.2.3, Table 29; R12)	Minor
D. Tree-crop and feed value-chain productive infrastructure (Subcomponents 3.1 and 3.2)					
Pre-construction and design					
Use of community or family land for shared facilities; voluntary donation under pressure; exclusion of non-members and women (landowners, members and non-members)	Small	High	Moderate	Siting on uncontested land with a voluntary land donation meeting the conditions of Annex 19, or a purchase or lease documented under the RF; membership open to women and youth; screening for elite capture	Negligible
Construction					
Small building works: minor vegetation loss, waste, dust, noise, worker safety (site surroundings, workers)	Small	Low	Negligible	ESMP checklist and ESCOP 5; OHS requirements	Negligible
Operation					
Effluents and organic residues from cocoa fermentation, rubber coagulation (acidic, odorous), feed milling, livestock pens and processing reaching streams and wells (water quality, neighbors)	Medium	Medium	Moderate	Effluent collection, settling and soakaway or treatment sized to the facility; composting; siting at least 50 m from wells and streams; EHS Guidelines effluent values; monitoring	Minor
Storage of agrochemicals, fuel and feed additives without containment; fire; dust and noise from mills, dryers and generators (workers, neighbors)	Small	Medium	Minor	Locked, ventilated and bunded stores; fire extinguishers and exits; machine guarding; generator noise control; PPE	Negligible
Hazards of machinery, manual handling, dust and heat at cooperative and SME facilities with weak OHS culture (workers, including women and youth)	Medium	Medium	Moderate	OHS requirements as a condition of the matching grant; training; first aid; guarding; no workers under 18 in hazardous tasks	Minor
Water demand of facilities competing with community water points; sanitation at markets and centers (community)	Small	Medium	Minor	Dedicated protected water source where demand is significant; toilets and hand washing at every facility with maintenance arrangements	Negligible

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Potential impact (receptor)	Magn.	Sens.	Signif. before	Suggested mitigation (details in Annex 6, the ESCOPs and the risk register controls)	Residual signif.
Higher incomes, aggregation and traceability, market access for cooperatives, women and youth; reduced losses (farmers, cooperatives)	Large	Medium	Beneficial	Inclusive membership; training in marketing, financial management, leadership and technical skills requested by the cooperatives	Beneficial
Expansion of cocoa, rubber and oil palm into forest driven by better prices and access (forest, biodiversity)	Medium	Medium	Moderate	Farmer registration and traceability (EUDR); no support to farms on land deforested after the cut-off date; RSPO engagement; FDA community forest rules	Minor

Table 28: Risk register for the subprojects covered by the ESMF (Annex 5)

#	Risk (event and cause)	Scope	L	C	Risk before controls	Controls (this ESMF, RF, LMP, SEP) and responsibility	Residual risk	Site-level pathway to a Low residual rating (conditions verified in the subproject instrument and in monitoring)
Social risks and impacts								
R1	SEA/SH against community members, women traders or workers by project workers, station staff or security personnel; high GBV prevalence, labor influx and limited services	All; construction and station operation	Possible	Critical	High	SEA/SH Action Plan and Accountability and Response Framework within three months of effectiveness; GBV/SEA-SH Specialist; codes of conduct and training; camp standards; GBV service provider; confidential channel; referral pathways mapped with the MGCSP; sanctions. Mandatory and verified at site level: SEA/SH risk assessment in every ESIA/ESMP and ESMP; worker accommodation and site rules verified before mobilization; monthly verification of code-of-conduct signatures and training by the supervision consultant; any allegation triggers the response protocol, the removal of the implicated worker from the site pending the outcome and the 24-hour notification (Section 6.1.5). Residual risk re-	Substantial	Re-rated in each ESIA/ESMP and ESMP. Moderate (likelihood Rare) where no camp is used, workers are recruited locally, no security personnel are engaged and services are within reach. Low only where the exposure is removed – works done by community members living at home, with signed codes of conduct, trained group leaders and a working confidential channel, verified monthly. Elsewhere held as low as reasonably practicable under a zero-case objective.

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#	Risk (event and cause)	Scope	L	C	Risk before controls	Controls (this ESMF, RF, LMP, SEP) and responsibility	Residual risk	Site-level pathway to a Low residual rating (conditions verified in the subproject instrument and in monitoring)
						assessed in the subproject instrument (Section 5.3.2). Responsible: IIU, MoA-PIU, contractors, station operators.		
R2	Labor influx into small communities (border and village road sites): disease, pressure on housing, water and food prices, conflict, transactional sex	1.4; 1.3, 3.3 with external contractors	Likely	Major	High	Local hiring targets; self-contained camps away from settlements; health screening and awareness; code of conduct; community liaison officer; influx section of the C-ESMP; SEP engagement. Responsible: Contractors, IIU, MoA-PIU.	Moderate	Low where the unskilled workforce is recruited locally in line with the local hiring target of the contract, no camp is set up in or next to a settlement, and the monthly monitoring records no influx-related complaint, disease cluster or pressure on prices and services.
R3	Child labor in works, maintenance groups, material supply (sand, laterite, timber) and value chains (cocoa, rubber, feed), reflecting prevailing practice	1.3, 3.1, 3.2, 3.3	Likely	Major	High	Minimum age 15 and no hazardous work under 18 in all contracts and agreements; age verification; supplier screening; monitoring; sanctions; awareness with the Child Labor Secretariat; LMP. Responsible: Contractors, cooperatives, MoA-PIU, MoL.	Moderate	Low where the age registers of workers, group members and suppliers are complete, two consecutive quarterly spot checks with the labor inspector find no child at work, and suppliers and outgrowers have signed the code of conduct. Any finding is a stop-work event (Section 6.1.5).
R4	Forced or bonded labor, withheld wages and unpaid compulsory community labor in maintenance groups	1.3; 3.2 producer organizations	Unlikely	Major	Moderate	Written agreements and wage records for community workers; LMP; worker grievance mechanism; labor inspection. Responsible: IIU, MoL.	Low	Already Low. Kept Low while wage records are complete and no complaint of withheld pay or compulsory labor is open; any finding is a stop-work event.

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#	Risk (event and cause)	Scope	L	C	Risk before controls	Controls (this ESMF, RF, LMP, SEP) and responsibility	Residual risk	Site-level pathway to a Low residual rating (conditions verified in the subproject instrument and in monitoring)
R5	Elite capture of the selection of roads, water management systems, facilities, maintenance contracts and grants; exclusion of women, youth, tenants, migrants and remote hamlets	All; identification and operation	Likely	Moderate	Substantial	Published criteria and participatory prioritization; disclosure of selected sites and beneficiaries; inclusion targets; consultation of vulnerable groups; grievance mechanism; social audit of a sample. Responsible: IIU, MoA-PIU, county authorities.	Moderate	Low where the criteria and the results are published in the communities, the selection is validated in a public meeting attended by women and youth, the social audit of the batch finds no irregularity and no grievance on selection remains open.
R6	Land conflict over customary land for stations, borrow pits, crossings and facilities; local–migrant farmer disputes; undocumented donations; legacy grievances	1.4, 3.1–3.3	Possible	Major	Substantial	Exclusion of disputed land; LLA tenure verification; RF procedures for negotiated transactions and RPs; voluntary land donation only under the conditions of Annex 19; agreements witnessed by chiefs and the LLA; compensation before works; county committee; mediation. Responsible: IIU, MoA-PIU, LLA.	Moderate	Low where the site is Government land or land whose tenure is confirmed in writing by the LLA and the community with no competing claim, legacy disputes are checked with the due-diligence checklist of the RF, agreements are signed and witnessed, and compensation is completed before works. A site with an open claim is replaced or the claim is settled before approval.
R7	Unmet expectations and tensions over jobs, compensation, station fees and benefits; protests or obstruction of works	All	Possible	Moderate	Moderate	Clear communication of scope, eligibility and timelines through the SEP; local hiring; grievance mechanism; timely compensation. Responsible: IIU, MoA-PIU, contractors.	Low	Already Low. Kept Low while information is disclosed before each stage of the works and grievances are closed within the service standards.
R8	Security: theft of equipment and materials, armed robbery on remote roads, incidents at the	1.4; remote sites	Possible	Major	Substantial	Security risk assessment and management plan where guards are used; county security plan agreed with the	Moderate	Low where no armed guards are used, the security risk assessment rates the site Low,

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#	Risk (event and cause)	Scope	L	C	Risk before controls	Controls (this ESMF, RF, LMP, SEP) and responsibility	Residual risk	Site-level pathway to a Low residual rating (conditions verified in the subproject instrument and in monitoring)
	border post, misuse of force by security personnel					County Attorney and the police; vetted, trained guards; rules on the use of force; incident reporting. Responsible: Contractors, IIU, station operators, LNP.		equipment is kept in a yard agreed with the community and the police, the station staff are trained in the code of conduct before commissioning, and no incident is recorded in the quarter.
R9	Corruption and extortion at the weighbridge; informal fees from traders and drivers; harassment of women traders	1.4; operation	Likely	Moderate	Substantial	Automated weighing and receipts; posted tariffs; station and joint security operating procedures; station grievance desk; monitoring of complaints; audit. Responsible: station operators, IIU.	Moderate	Low once automated weighing and receipts operate, tariffs and fines are posted, the first annual audit and the complaint records show no pattern of informal fees or harassment, and the station grievance desk closes complaints within the service standards.
R10	Damage to graves, sacred forests, Poro/Sande sites or chance finds; disruption of initiation seasons by works	All earthworks	Possible	Major	Substantial	Identification with chiefs and elders at screening; exclusion list; works calendar agreed with communities; chance-finds procedure. Responsible: Contractors, county focal points.	Low	Already Low. Kept Low by the walkover with the elders before works, the agreed works calendar and the chance-finds procedure; any find suspends works at the spot.
R11	Delayed or inadequate compensation and livelihood restoration (budget flow, valuation disputes, weak county capacity), delaying works and harming affected persons	1.4, 3.3	Possible	Major	Substantial	RF budget and PFMU flow of funds; replacement-cost valuation; Social Specialist with resettlement expertise; RP completion verified before works; audit. Responsible: IIU, MoA-PIU, PFMU.	Moderate	Low where the RP budget is confirmed and the funds are available before the RP is disclosed, payments are completed and the compensation completion report is cleared before the site is handed over (Step 7), and no

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#	Risk (event and cause)	Scope	L	C	Risk before controls	Controls (this ESMF, RF, LMP, SEP) and responsibility	Residual risk	Site-level pathway to a Low residual rating (conditions verified in the subproject instrument and in monitoring)
								compensation grievance is open beyond the service standard.
Environmental risks								
R12	Encroachment into protected areas, KBAs or natural habitat through borrow sites, timber sourcing or induced access; hunting and wildlife trade by workers	1.3, 3.3	Possible	Major	Substantial	Exclusion list and 5 km screen as initial steps; site-specific habitat and species survey, natural and critical habitat determination and BMP where triggered (Section 6.1.1); FDA authorizations; licensed material sources; no-hunting rules; FDA and community agreements, patrols and checkpoints; outcome monitoring with corrective-action triggers (Section 5.2.3, Table 29). Residual rating Moderate: the consequence remains Major and the likelihood is reduced to Rare only where the agreements and the monitoring are effective. Responsible: IIU, MoA-PIU, FDA, contractors, biodiversity specialist.	Moderate	Low where the screening and the survey confirm modified habitat and no induced-access pathway, or where the FDA and community agreements are signed before works and two consecutive monitoring rounds show no tree-cover loss or exploitation above the baseline. Otherwise the corrective actions of Section 5.2.3 apply, including suspension of the following batches.
R13	Pollution incident: fuel or oil spill into a stream, agrochemical spill, uncontrolled effluent from a facility affecting a water point	All	Possible	Moderate	Moderate	Bunding, spill kits and procedures; effluent systems; siting away from water points; monitoring; incident reporting. Responsible: Contractors, operators.	Low	Already Low. Kept Low while bunds, spill kits and effluent systems pass the monthly inspection and every spill is reported and cleaned up.
R14	Abandoned borrow pits and unrestored sites after	1.3, 3.3; completion	Likely	Moderate	Substantial	Rehabilitation plan and retention money in contracts; completion inspection before	Low	Already Low. Kept Low by the retention money and the completion inspection;

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#	Risk (event and cause)	Scope	L	C	Risk before controls	Controls (this ESMF, RF, LMP, SEP) and responsibility	Residual risk	Site-level pathway to a Low residual rating (conditions verified in the subproject instrument and in monitoring)
	works: stagnant water, erosion, loss of farmland					final payment; county focal point sign-off. Responsible: Contractors, SC.		no final payment before the county focal point signs off the restoration.
R15	Climate: extreme rainfall or flooding destroying works under construction or new crossings; works stalled in the rainy season	All road and water works	Likely	Moderate	Substantial	Climate-resilient design standards; dry-season programming of crossings; contingency in contracts; inspection after major storms. Responsible: Designers, contractors, IIU, MoA-PIU.	Moderate	Low where crossings are designed for the design flood with freeboard and scour protection checked at the design review, in-stream works are completed in the dry season, no earthworks are left open at the start of the rains, and the inspection after the first rainy season shows no damage.
Health and safety risks								
R16	Fatality or serious injury of a worker (excavation collapse, drowning, machinery, falls, traffic) or community member (traffic accident, open pit, child at site)	All; construction	Possible	Critical	High	OHS and community health and safety requirements (Annex 9); traffic management; fenced sites; trained supervisors; emergency procedures; 24-hour notification; root-cause analysis. Mandatory and verified: permits to work for excavations, work in or over water and lifting; daily inspection of excavations and crossings; exclusion zones and traffic management verified weekly by the supervision consultant; stop-work on any imminent-danger condition and after any fatality or serious injury until the root cause is corrected (Section 6.1.5). Residual risk re-assessed in the subproject instrument (Section 5.3.2).	Substantial	Re-rated in each instrument. Moderate (likelihood Rare) where deep excavations, work in or over water, lifting and haulage through settlements are avoided or controlled by permits to work verified daily. Low only for works without these hazards – routine maintenance with hand tools under trained group leaders, small buildings – with no lost-time injury in the period. Elsewhere held as low as reasonably practicable under a zero-fatality objective.

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#	Risk (event and cause)	Scope	L	C	Risk before controls	Controls (this ESMF, RF, LMP, SEP) and responsibility	Residual risk	Site-level pathway to a Low residual rating (conditions verified in the subproject instrument and in monitoring)
						Responsible: Contractors, SC, IIU, MoA-PIU.		
R17	Communicable-disease outbreak (Lassa, cholera, viral hemorrhagic fever, COVID-19) among workers and communities, aggravated by camps and cross-border movement	All; 1.4	Possible	Major	Substantial	Camp hygiene and health screening; outbreak procedures with county health teams; suspension protocols; health awareness. Responsible: Contractors, MoH county teams.	Moderate	Low where no camp is used, or the camp meets the hygiene standards verified monthly, the outbreak procedure is agreed with the county health team before mobilization, and no notifiable-disease alert is active in the district. An alert returns the rating to Moderate and triggers the outbreak procedure.
Institutional and technical-assistance risks								
R18	Weak capacity of implementing units, county offices, contractors and supervisors in remote areas: non-compliance, late screening, poor supervision, unreported incidents	All	Likely	Major	High	IIU specialists recruited within one month of effectiveness; MoA-PIU Social and Environmental Specialists; county focal points; training plan (Section 6.6); SC with E&S staff; monitoring application; audits; ESCP (to be prepared). Responsible: IIU, MoA-PIU, World Bank.	Moderate	Low once the IIU and MoA-PIU specialists are in post, the county focal points are designated and trained, the capacity-strengthening plan is implemented, and two consecutive quarterly reports and the first independent audit show screening, instruments and incident reporting on time.
R19	Technical-assistance outputs (Legacy Corridor designs, mining law and cadastre reforms, road fund and trade reforms) inconsistent with the	Components 2, 3 and 4	Possible	Major	Substantial	ToR reviewed by the E&S specialists and cleared by the World Bank; ESS consistency requirement (Section 6.2); SESA for Component 4; Legacy Corridor instruments prepared	Moderate	Low once every Terms of Reference is cleared by the World Bank with the ESS consistency clause, the SESA is under way before the mining reforms

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#	Risk (event and cause)	Scope	L	C	Risk before controls	Controls (this ESMF, RF, LMP, SEP) and responsibility	Residual risk	Site-level pathway to a Low residual rating (conditions verified in the subproject instrument and in monitoring)
	ESSs or creating downstream social risks and impacts (ASM, future resettlement)					with the design. Responsible: IIU, MME, World Bank.		are drafted, and the outputs are reviewed by the E&S specialists and consulted on before they are finalized.
R20	Cumulative impacts of simultaneous works of the 10 km road, the Coastal Corridor, the stations and the feeder roads on the same communities and rivers	1.4, 3.3 near Toe Town and Cestos Junction	Possible	Moderate	Moderate	Screening of linked activities; coordination with the Subcomponent 1.1 contractor and the AfDB PIU; joint grievance handling where sites overlap. Responsible: IIU.	Low	Already Low. Kept Low by the coordination meetings with the Subcomponent 1.1 contractor and the AfDB PIU; re-rated where works overlap in the same community.

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Annex 6: ESMP Template and Generic Mitigation and Monitoring Matrix

A. Outline of a site-specific ESMP

Each site-specific ESMP (and, in condensed form, each ESMP checklist) follows this outline; the ESIA/ESMP of Substantial-risk subprojects adds the chapters of the Terms of Reference of Annex 11.

1. Subproject description: location, GPS, site map with the receptors of the area of influence (initial radius 500 m, Section 5.2.1), design, quantities, material sources, schedule, workforce and camp arrangements, linked activities.
2. Legal and institutional requirements: EPA class and permit, sectoral permits, applicable standards, ESSs, contract arrangements.
3. Site baseline from the screening and site visit: physical, biological and socio-economic conditions, land tenure and users, vulnerable groups, cultural heritage and climate hazards.
4. Consultation: record of consultations held, issues raised and responses; disclosure arrangements.
5. Impacts and risks: assessment by phase with the methodology of Chapter 5 (significance and risk ratings before and after mitigation); for each risk of the register (Table 28) that applies to the site, the residual rating after the site-specific measures and the conditions verified for a Low rating (Section 5.3.2).

- Indirect, cumulative and induced impacts, including on biodiversity (Section 5.2.3): results of the site-specific habitat and species survey, the natural and critical habitat determination and the ecosystem-services assessment; forest and wetland areas opened by the improved access; measures agreed with the FDA and the community forest management bodies; baseline values, targets and corrective-action triggers of the outcome indicators; Biodiversity Management Plan where natural or critical habitat may be affected.

6. Mitigation and monitoring matrix: the generic matrix below completed for the site, with the outcome indicators, baseline values and targets of Table 29 established from the site survey, and with specialized sections as required (traffic, waste, borrow pits, OHS and community health and safety, labor influx and camp, SEA/SH, security, biodiversity, cultural heritage, pest management, emergency preparedness).
7. Land and resettlement: cross-reference to the RP or the voluntary land donation record (Annex 19).
8. Implementation arrangements and budget: roles of the contractor, supervision consultant, county focal point, implementing unit and operators; reporting; training; grievance contact details; costs priced in the bill of quantities and costs borne by the implementing unit.
9. Annexes: screening form, permits, consultation minutes and attendance, site photographs, code of conduct, chance-finds procedure.

B. ESMP checklist for Low-risk subprojects

The checklist is a two-page version of the ESMP: Part 1 identifies the subproject, the site and the receptors (from the screening form); Part 2 ticks the applicable ESCOPs of Annex 7 and the suggested measures of the matrix below, naming the responsible person and the monitoring frequency; Part 3 records the consultation held, the land arrangement and the grievance contact; Part 4 is signed by the contractor or operator, the county focal point and the implementing unit. The checklist is attached to the contract, the grant agreement or the maintenance agreement.

C. Generic mitigation and monitoring matrix

The matrix is completed for each subproject with site-specific detail; the second column names the subproject activities with which each impact or risk is associated, with the subcomponents in brackets; "in contract" means that the cost is priced in the works contract or the grant or maintenance agreement, "budget item n" refers to the ESMF budget of Section 6.7 and MoL is the Ministry of Labor. Priced E&S items are paid to the contractor against the measures actually implemented at the site and verified by the supervision consultant; a clause to this effect is included in each works contract (Annex 10, Section B).

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Table 29: Generic mitigation and monitoring matrix for the subprojects of the ESMF

Impact / risk	Subproject activities concerned	Mitigation measure	Monitoring indicator	Frequency and timeframe	Responsibility (implementation / supervision)	Cost (US$, indicative)
Pre-construction and design						
Land take, loss of crops, trees, stalls and structures	Road rehabilitation in settled and farmed sections (1.3); station platforms, buildings and parking (1.4); crossings, approaches and market sites (3.3); facility sites and plantation water management systems (3.1, 3.2); borrow pits and detours of all works	Inventory and census, including the temporary impacts of detours and works (Annex 18); RP in accordance with the RF; compensation at replacement cost before works; traders relocated; voluntary land donation documented (Annex 19)	RP approved; affected persons compensated before works; agreements witnessed	Before mobilization on each section; monthly during the RP	Social Specialist / IIU, World Bank	RF budget (RF, Table 18)
Siting near sensitive receptors (water points, schools, graves, sacred sites, forest, wetlands)	Siting and layout of stations (1.4), markets and aggregation centers (3.3), value-chain facilities (3.1, 3.2), crossings, borrow pits, camps and detours (1.3, 3.3)	Screening of the area of influence (initial radius 500 m); site maps; avoidance by design; FDA and elder walkovers; 50 m buffers	Screening form with site map; receptors avoided; FDA/elder confirmation	Once, at screening	County focal point, E&S specialists / World Bank	500–2,000 per subproject

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Impact / risk	Subproject activities concerned	Mitigation measure	Monitoring indicator	Frequency and timeframe	Responsibility (implementation / supervision)	Cost (US$, indicative)
Climate exposure of crossings and sites	Design of culverts, bridges and drainage (1.3, 3.3); station platforms (1.4); markets and facilities near watercourses (3.1–3.3); plantation water management structures (3.2)	Siting and sizing of culverts, bridges and drains from hydrological and topographic maps, the MME data and community knowledge of flood levels (Section 5.6); design flood sizing, freeboard, scour protection, raised embankments, siting above flood level; dry-season programming	Drainage design reviewed by the implementing-unit E&S specialists with the MPW/MoA design engineers before approval; works program	At design review	Design consultant / implementing unit	In design contract
Exclusion and elite capture in selection	Selection of roads, sites, maintenance groups, market stalls, outgrowers and matching-grant beneficiaries (1.3, 3.1–3.3)	Published criteria; participatory prioritization; disclosure of selected subprojects and beneficiaries; inclusion targets	Criteria published; selection minutes; share of women and youth beneficiaries	Per batch, at identification	Implementing units, county authorities / World Bank	SEP budget
Construction						
Vegetation clearance and habitat disturbance (construction)	Clearing and grubbing, widening at failed crossings, borrow pits, camps and access tracks (1.3, 1.4, 3.3); site preparation of facilities and plantation drains (3.1, 3.2)	Clearing limited to the marked formation and sites; marked trees and vegetation buffers at crossings retained; FDA permits; no hunting, bushmeat or charcoal by workers; licensed timber; progressive revegetation with native species; invasive-species control on disturbed areas	Outcome: area of natural habitat cleared (ha) and width of riparian buffers retained at each crossing against the baseline survey of the screening (target: zero clearing outside the approved footprint; buffers at least the designed width); compliance: cleared area vs. design, FDA permits, hunting incidents	Baseline at screening; weekly during works; monthly report; verified at completion	Contractor / supervision consultant, FDA, biodiversity specialist	In contract (1–2 percent of works)

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Impact / risk	Subproject activities concerned	Mitigation measure	Monitoring indicator	Frequency and timeframe	Responsibility (implementation / supervision)	Cost (US$, indicative)
Erosion and sedimentation	Earthworks, reshaping and re-graveling, drains, culvert and bridge works in or near streams (1.3, 3.3); station platforms (1.4); weirs, bunds and canals (3.2)	Dry-season crossing works; silt fences, sediment traps, diversions; lined drains and turnouts; immediate revegetation	Turbidity checks and sampling; controls in place; drains functional	Weekly during works; monthly sampling at crossings	Contractor / supervision consultant, EPA	In contract; sampling about 2,500 per campaign (budget item 7)
Borrow pits and material sources	Extraction and haulage of laterite, sand, gravel and rock; timber supply for bridges and buildings (all works)	ESCOP 2: licensed, agreed sites; fencing; drainage; rehabilitation; none in forest or within 50 m of streams	Borrow-pit register with agreements and licenses; pits rehabilitated before final payment	Monthly during works; completion inspection	Contractor / supervision consultant, county	Retention 5 percent until restored
Dust, noise and emissions	Haulage and earthworks through settlements (1.3, 3.3); compaction, generators and concrete works (1.4, 3.1–3.3)	Watering; 30 km/h speed limit for project vehicles in settlements; daytime hours; maintained equipment; barriers at schools; community notice	Complaints; spot noise and dust measurements; speed observations	Weekly during works; quarterly measurements	Contractor / supervision consultant	In contract; meters in monitoring budget
Waste, fuel and chemicals	Camps, workshops, fuel storage and refuelling, concrete works, demolition of old culverts and bridges (all works)	Waste management plan; segregation; county-approved disposal; bunded storage; spill kits; no burning or burial	Waste records; disposal receipts; spill incidents; storage inspection	Weekly during works	Contractor / supervision consultant	In contract

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Impact / risk	Subproject activities concerned	Mitigation measure	Monitoring indicator	Frequency and timeframe	Responsibility (implementation / supervision)	Cost (US$, indicative)
Community safety and traffic	Works and haulage on roads in use, detours, open excavations and crossings in settlements (1.3, 3.3); site traffic at stations and markets (1.4, 3.3)	Traffic management plan; barriers, signage, flag persons; fenced pits and excavations; night security; school safety awareness	Community incidents and near misses; signage; awareness sessions	Daily records; monthly report during works	Contractor / supervision consultant, county focal point	In contract
Occupational health and safety	Excavation, work in or over water, lifting of culverts and decks, machinery, labor-based works and building works (all works)	OHS plan (Annex 9); PPE; toolbox talks; first aid and evacuation; excavation and crossing safety; competent supervisors	Lost-time injuries, fatalities, near misses; training; PPE compliance	Daily; monthly; serious incidents within 24 h to the supervision consultant and the implementing unit, and within 24 h by the implementing unit to the World Bank (Step 11)	Contractor / supervision consultant, MoL	In contract
Labor conditions; child and forced labor	Employment of contracted and community workers; material supply by local suppliers; work in maintenance groups, cooperatives and outgrower farms (all subcomponents)	LMP; contracts and wage records; age verification; supplier screening; worker grievance mechanism	Workers with contracts; age-verification records; worker grievances; inspection findings	Monthly during works	Contractor / implementing unit, MoL	LMP budget

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Impact / risk	Subproject activities concerned	Mitigation measure	Monitoring indicator	Frequency and timeframe	Responsibility (implementation / supervision)	Cost (US$, indicative)
Labor influx	Works contracts with a non-local workforce or a camp: stations (1.4), bridges and road batches in remote areas (1.3, 3.3)	Local hiring targets; camp standards (ESCOP 6) and camps away from settlements; health screening; community liaison officer; monthly community meetings; influx section of the C-ESMP	Share of local workers; camp inspections passed; community complaints related to workers; health screening records	Monthly, before and during works	Contractor / supervision consultant, IIU	In contract
SEA/SH	All works with contracted workers, camps or security personnel; operation of stations and markets (1.4, 3.3)	SEA/SH risk assessment of the site; code of conduct signed by every worker; training and community awareness; confidential, survivor-centered channel; referral pathway with the MGCSP; GBV service provider; sanctions	Workers trained and codes signed (100 percent before deployment); awareness sessions held; allegations handled under the response protocol and referred within 24 hours; sanctions applied	Before mobilization and monthly during works	Contractor, GBV/SEA-SH Specialist / IIU, MGCSP	SEA/SH budget item 5
Non-conformances, corrective action and stop-work (Section 6.1.5)	All works contracts and maintenance, grant and operating agreements	Non-conformance register; corrective action plans with deadlines; stop-work orders and restart authorizations; sanctions of Annex 10	Non-conformances open beyond deadline (target: none); stop-work events and days; corrective actions verified closed; recurrence	Weekly inspections; monthly and quarterly reports	Supervision consultant / implementing unit, World Bank	In contract; supervision budget
Cultural heritage and chance finds	Earthworks, clearing, borrow pits and crossing works near graves, sacred sites and streams (all works)	Exclusion of identified sites; works calendar respecting customary restrictions; chance-finds procedure (Annex 8)	Chance finds reported and managed; complaints on heritage	As occurs during works; monthly report	Contractor / supervision consultant, county focal point	In contract
Grievances	All activities, from site selection to operation	Grievance mechanism tiers; registers at site and chief; signboards; community liaison officer	Grievances received, resolved within standard, open; satisfaction	Continuous; monthly report	CLO, county focal point / Social Specialist	GM budget item 4

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Impact / risk	Subproject activities concerned	Mitigation measure	Monitoring indicator	Frequency and timeframe	Responsibility (implementation / supervision)	Cost (US$, indicative)
Operation and maintenance						
Induced access to forest, hunting and mining	Improved village and rural access roads and reinstated crossings (1.3, 3.3); plantation access tracks (3.2)	Measures agreed with the FDA and the community forest management bodies (Section 5.2.3): community forest and wildlife agreements; no project road opening new forest; FDA patrols and checkpoints on bushmeat, charcoal and timber transport; corrective actions when the triggers are reached	Outcome: transect counts per km of road of snares, hunting camps, logging and pit-sawing sites, charcoal kilns and mining pits along fixed transects established at screening, against the baseline count (target: no increase over baseline; any increase triggers the corrective actions of Section 5.2.3); reports of hunting, charcoal or ASM; FDA observations	Baseline at screening; during works; semi-annual for the project life	County focal point, FDA rangers, community forest bodies / implementing unit, biodiversity specialist	Budget item 10
Forest-cover change along improved roads (outcome)	Improved village and rural access roads near natural habitat (1.3, 3.3)	Area of influence of each improved road or water management system (1 km on each side of the road, or wider where the survey identifies an access pathway) mapped at screening; measures of Section 5.2.3 agreed with the FDA and the communities	Tree-cover loss (ha and percent) within the area of influence from annual satellite tree-cover loss data and forest alerts, verified in the field, against the baseline map of the screening and the trend of a reference area of the same landscape; target: no project-attributable loss of natural habitat and no tree-cover loss in excess of the reference trend; forest alerts investigated within one month	Baseline at screening; alerts checked quarterly; annual analysis for the project life	Implementing-unit E&S specialists with the biodiversity specialist, FDA and LISGIS / World Bank	Budget item 10

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Impact / risk	Subproject activities concerned	Mitigation measure	Monitoring indicator	Frequency and timeframe	Responsibility (implementation / supervision)	Cost (US$, indicative)
Habitat condition at crossings and forest edges (outcome)	Culvert and bridge works and road sections at forest edges, streams and wetlands (1.3, 3.3)	Vegetation buffers and marked trees retained; works within the footprint; revegetation; species and habitat features identified by the survey (nesting or roosting trees, wetland patches) protected	Buffer width (m), canopy cover and bank condition at each crossing and forest-edge section, and status of the habitat features identified by the survey, against the baseline survey; target: buffers at least the designed width, no loss of identified features, stable banks	Baseline at screening; at completion; annually for two years	Supervision consultant with the biodiversity specialist / implementing unit, FDA	Budget item 10; in contract
Vegetation recovery of disturbed areas (outcome)	Borrow pits, camps, detours, embankments and cut slopes of all works, after completion	Progressive revegetation of formation edges, borrow pits, embankments, camps and stockpile areas with native or non-invasive species; topsoil conservation (ESCOP 2)	Share of the disturbed area (measured at completion) with established vegetation cover; target: 70 percent of the area with at least 70 percent cover at 12 months and 90 percent at 24 months after completion; replanting by the contractor where the target is missed (defects liability period of 24 months for the revegetation items, or replanting by the maintenance group under budget item 10)	Area disturbed recorded at completion; 12 and 24 months after completion	Contractor (defects liability period), county focal point / supervision consultant, FDA	In contract (retention until verified)

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Impact / risk	Subproject activities concerned	Mitigation measure	Monitoring indicator	Frequency and timeframe	Responsibility (implementation / supervision)	Cost (US$, indicative)
Invasive species on disturbed areas (outcome)	Earthworks, material transport and revegetation of all works	Clean equipment and material sources; invasive-species survey at screening; control of invasive plants on disturbed areas during the works and the defects liability period	Extent (m² or percent of the disturbed area) of invasive plant cover (for example Chromolaena odorata) against the baseline survey; target: no new infestation on the disturbed areas beyond the baseline; control within one month where found	Baseline at screening; at completion; annually for two years	Contractor, county focal point / supervision consultant, biodiversity specialist	In contract; budget item 10
Road safety after rehabilitation	Use of the rehabilitated roads and crossings by vehicles, motorcycles and pedestrians (1.3, 3.3)	Speed humps and signage in settlements; guardrails; road safety awareness; motorcycle-rider sensitization	Accidents reported near subprojects; measures installed	Semi-annual after completion	County, LNP / implementing unit	In works contract; SEP for awareness
Community maintenance safety and conditions	Labor-based routine maintenance by community-based organizations (1.3)	Written agreements; tools, PPE, first aid; age verification; payment records; training	Injuries; agreements and payment records; share of women	Quarterly during maintenance	Maintenance groups / IIU	In maintenance agreements
Station operation (emissions, waste, sanitation, security, corruption, harassment)	Weighing, tolling, parking and inspection of trucks; operation of the station buildings and facilities (1.4)	Operation-phase ESMP; waste and sanitation contracts; oil interceptors; automated weighing, posted tariffs; grievance desk; codes of conduct	Waste and sanitation serviced; station grievances; security incidents; audits	Monthly during operation; annual audit	Station operators, border agencies / IIU	Station operating budget

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Impact / risk	Subproject activities concerned	Mitigation measure	Monitoring indicator	Frequency and timeframe	Responsibility (implementation / supervision)	Cost (US$, indicative)
Plantation water management systems (standing water, flooding, water-user conflicts)	Operation and maintenance of the drains, weirs, bunds and canals of rehabilitated oil-palm plantations (3.2)	Operation rules; freeboard and spillways; inspection of weirs, dykes and bunds after major storms and repair before the next season; drainage; producer-organization maintenance; malaria awareness	Inspections after storms and structural condition; wetland area altered beyond the designed water management system area (target: none); water-user complaints; vector control	Seasonal and after major storms, during operation	Producer organizations, MoA county office / MoA-PIU	In outgrower and maintenance agreements
Facility effluents, waste, chemicals, fire, OHS	Operation of fermentation, drying, collection, storage, milling and feed facilities, markets and aggregation centers (3.1–3.3)	Effluent systems; composting; bunded stores; fire equipment; guarding; PPE; operator training	Effluent sampling; incidents; inspections	Quarterly sampling and annual inspection during operation	Operators / MoA-PIU	Grant conditions; sampling budget item 7
Tree-crop expansion into forest	Rehabilitation, replanting and outgrower support for cocoa, rubber and oil palm (3.2)	Traceability system; no support to recently deforested farms; RSPO engagement; FDA rules	Baseline: supported farms registered with geolocation and the forest cover around them at registration (year 1); indicator: deforestation alerts on or adjoining supported farms after the registration cut-off (target: zero); alerts investigated within one month and support suspended under trigger 3 of Section 5.2.3	Registration in year 1; alerts checked quarterly; annual report, project life	MoA-PIU, FDA	Component 3 budget

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Annex 7: Environmental and Social Codes of Practice (ESCOPs)

The ESCOPs are the minimum environmental and social requirements for the small works of the project; they apply to every contractor, maintenance group, producer organization, cooperative and operator in addition to the site-specific ESMP or checklist, the chance-finds procedure (Annex 8), the OHS and community health and safety requirements (Annex 9), the LMP and the code of conduct. The relevant ESCOPs are attached to each contract and agreement.

ESCOP 1 – Small road works (reshaping, re-graveling, drainage, spot improvements, routine maintenance)

Applies to village access roads, rural access road spot improvements and community maintenance.

- Confine works to the existing formation and road reserve; mark the limits of clearing; do not widen through settlements or into farms without the written agreement and compensation required by the RF; retain marked trees outside the formation and obtain FDA authorization before felling any tree.
- Program earthworks and crossing works in the dry season; do not leave exposed slopes or stockpiles unprotected during the rains; revegetate cut and fill slopes and drain outlets immediately; build side drains with turnouts and scour checks discharging onto vegetated ground, never into fields, houses or water points.
- Water haul routes and work areas within 200 m of houses and schools at least twice a day in dry weather; limit the speed of project vehicles to 30 km/h in settlements; work between 07:00 and 18:00 near settlements.
- Keep a traffic management plan: signage, flag persons at single-lane sections and crossings, safe passage for pedestrians and motorcycles, no stockpiles on the carriageway at night.
- Store fuel and lubricants in bunded containers away from streams; refuel on hard standing with drip trays; keep spill kits; collect used oil for disposal by an approved handler; collect all waste in designated containers and dispose at a county-approved site – no burning, burying or dumping in streams or forest.
- Provide every worker with boots, gloves, high-visibility vest and, for machine work, helmet, eye and ear protection; keep a first-aid kit and a means of evacuation at each site; hire locally through published lists; verify age (no worker under 15; no hazardous work under 18); pay wages on time against records.
- Record and report any chance find, accident, complaint or spill the same day to the supervision consultant and the county focal point.

ESCOP 2 – Borrow pits, quarries and material sources

Applies to laterite, sand, gravel and rock sourcing by contractors and community groups.

- Use existing licensed pits where available; open new pits only on fallow or degraded land, never in forest, swamp, wetland, farmland in use, within 50 m of a stream or 200 m of houses, schools or water points.
- Obtain the written agreement of the landowner, the town chief and the district commissioner, with the land arrangement documented under the RF, and the license required by the county or the MME; keep a borrow-pit register.
- Strip and stockpile topsoil separately; limit the depth to the water table; slope the sides to prevent collapse; fence or bund active pits and sign them; prevent access by children and animals; drain pits to avoid standing water; do not wash materials in streams.
- Rehabilitate each pit before final payment (reshape, respread topsoil, revegetate with local species, remove debris, or convert to a community-agreed use with safe access) and obtain the county focal point sign-off.
- Buy materials only from suppliers with licenses and verified age and safety practices; do not accept timber from unlicensed pit-sawing.

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ESCOP 3 – Culverts, small bridges and stream crossings

Applies to culvert and bridge replacement, headwalls, approaches and scour protection.

- Consult elders on sacred streams and groves before works; keep community access to washing and water-collection points or provide an agreed alternative during works.
- Work in the dry season or at low flow; divert flow with sandbags or pipes; never dam the stream; maintain fish passage and base flow; install silt fences or straw bales downstream; excavate from the bank where possible and limit in-stream machine time.
- Site and size culverts and bridges from hydrological and topographic maps and local flood knowledge, to the design flood with freeboard; install headwalls, wingwalls, aprons and scour protection; protect approaches with lined drains and vegetation; prefer concrete pipes, box culverts and decks to timber, and source any timber under FDA authorization from licensed operators.
- Dispose of old culverts, debris and excavated material away from the stream and floodplain; restore banks and revegetate.
- Provide guardrails, signage and safe pedestrian and motorcycle passage; fence open excavations; post a watchman at night in settlements; inspect each crossing after the first rainy season and after major storms and hand over to the maintenance group with instructions.

ESCOP 4 – Water management systems of rehabilitated oil-palm plantations

Applies to the drains, weirs, bunds, check dams and canals of the oil-palm plantations rehabilitated and replanted under outgrower schemes (Subcomponent 3.2), built and maintained with the producer organizations.

- Limit the systems to existing plantations under rehabilitation; do not drain swamp forest, raphia swamps, peat or intact wetlands and do not extend the planted area into forest; screen the wetland functions and downstream users before design.
- Agree the layout and the water-use rules with all outgrowers and plot holders including women, tenants and downstream users; document land-use agreements witnessed by the chief and the LLA.
- Keep structures at most 2 m in height with no permanent impoundment of a perennial watercourse; provide spillways, freeboard and outlets that maintain downstream flow; build in the dry season with materials sourced under ESCOP 2; compact and protect bunds with vegetation.
- Drain canals and pits to avoid standing water; organize malaria awareness; prevent children's access to deep water.
- Adopt integrated pest management and safe-use rules for any agrochemical; no WHO class Ia or Ib products; store containers away from water and return or dispose of them safely; train the producer organization in operation, inspection after storms and maintenance; keep a register of the structures and a complaint book.

ESCOP 5 – Small buildings, storage, markets and processing units

Applies to station buildings, agricultural markets, aggregation centers, warehouses, feed stores, fermentation, drying, collection and processing units and nurseries.

- Site on uncontested land documented under the RF, at least 50 m from wells and streams and away from houses, schools and sacred sites; above flood level; with space for drainage, parking, waste and sanitation.
- Provide toilets, hand-washing, safe water and waste storage at every facility, with a maintenance arrangement named in the agreement; connect sanitary wastewater to a properly sized soakaway or septic system; collect and treat process effluents (fermentation, coagulation, washing, livestock) in settling and soakaway or treatment systems sized to the EHS Guidelines values; compost organic residues.
- Store fuel, agrochemicals and feed additives in locked, ventilated, bunded rooms with signage; keep fire extinguishers, sand buckets and clear exits; no smoking or open fire near stores.

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- Guard moving parts of mills, shellers, dryers and presses; provide PPE, training and first aid; keep generator and machine noise away from neighbors with enclosures and operating hours; design buildings with natural ventilation, lighting and accessible entrances; anchor roofs against storms.
- Apply the labor and age rules of the LMP to construction and operation; keep worker records; display the grievance contact.

ESCOP 6 – Workers' camps and site facilities

Applies to any contractor camp, site office or accommodation of non-local workers.

- Site camps on agreed land outside settlements and at least 200 m from houses, schools and water points, above flood level and away from forest; document the land arrangement; restore the site at demobilization.
- Provide safe water, separate and lockable toilets and bathing facilities for women and men, lighting, cooking areas, waste collection and drainage; no open defecation or burning of waste.
- Apply the camp rules: no weapons, no alcohol abuse, no children, no hunting, no bushmeat, no unauthorized visitors; code of conduct displayed and signed; camp manager accountable.
- Provide a first-aid post, health screening at recruitment, malaria prevention, condoms and health information; agree outbreak procedures with the county health team; provide safe transport between camp and sites, including for women workers.
- Engage a community liaison officer; hold monthly meetings with the host community; operate the grievance register at the camp.

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Annex 8: Chance-Finds Procedure

This procedure is included in every works contract, maintenance agreement and grant agreement that involves excavation or earthworks. It applies to any unexpected discovery of tangible cultural heritage – graves and human remains, pottery, tools, beads, metal objects, old structures, sacred objects, shrines or any item of apparent archaeological, historical, religious or cultural value – during the works.

1. Stop work immediately in the area of the find and within a 20 m radius; mark and fence the area; do not remove, move or disturb the find; suspend machinery nearby.
2. The site supervisor informs the contractor's environmental, health and safety officer, the supervision consultant and the county focal point the same day, and the implementing unit within 24 hours; the implementing unit informs the EPA, the Ministry of Information, Cultural Affairs and Tourism (Bureau of Culture) and, for human remains or graves, the town chief, the elders and the police.
3. The county focal point, the town chief and the elders inspect the find within 48 hours; for graves, sacred objects or sites of community significance, the elders advise on the customary requirements (rites, relocation by the family or society concerned, restricted access); for archaeological or historical finds, the Bureau of Culture or an expert it designates assesses the find and advises on recording, recovery or in situ protection.
4. The implementing unit decides, with the authorities and the community, on the measures – in situ preservation with a change of design, recording and recovery, or customary relocation with the rites and compensation agreed; the decision is recorded and the cost is met from the contract contingency or the ESMF budget.
5. Work resumes in the area only on the written instruction of the implementing unit after the measures have been completed; the contractor is compensated for justified delays under the contract.
6. Every find is recorded in the site register with date, location (GPS), description, photographs, persons informed and measures taken, and reported in the monthly and quarterly reports; workers are briefed on the procedure at induction, and any worker who conceals, damages or removes a find is subject to the sanctions of the code of conduct.

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Annex 9: Occupational Health and Safety and Community Health and Safety Management Requirements for Contractors

These requirements apply to all contractors and, in proportion to their activities, to supervision consultants, maintenance groups, producer organizations, cooperatives and facility operators; they complement the Decent Work Act (2015), the LMP (OHS policy statement and labor procedures), the EHS Guidelines and the site-specific ESMP. Each contractor prepares an OHS plan and a community health and safety plan in its C-ESMP before mobilization.

A. Occupational health and safety

- Organization: a named EHS officer (full time for Substantial-risk works), trained supervisors, daily toolbox talks, weekly safety inspections, an OHS committee with worker representatives for sites with more than 20 workers; induction of every worker (hazards, PPE, emergency, code of conduct, grievance channel), task-specific training and records.
- Hazard identification and risk assessment for every activity (excavation, crossing works, lifting, machinery, haulage, work at height, hot work, confined spaces, cement, fuels and chemicals), with method statements and permits to work for high-risk tasks.
- Excavations and pits: sloping or shoring above 1.2 m depth, ladders, barriers, no work alone or in flooded excavations, daily inspection after rain. Work at and in water: life jackets at crossings and weirs, lifelines, no work in high flow, rescue equipment and trained rescuers.
- Machinery and vehicles: licensed operators, daily checks, reversing alarms and banksmen, exclusion zones, seat belts, speed limits, no passengers on plant, drug and alcohol rules, driver rest. Manual handling and heat: lifting limits, work-rest cycles, shade and water, task rotation.
- PPE (boots, gloves and high-visibility vests for all; helmets, eye, ear and respiratory protection and harnesses as the task requires) issued free, replaced and enforced. Health and welfare: pre-employment and periodic health checks, malaria prevention, first-aid kits and trained first-aiders at every site, an evacuation vehicle and agreement with the nearest health facility, HIV and communicable-disease information, fatigue management; drinking water, sex-separated toilets and washing facilities, shade and rest areas, hygienic food preparation.
- Community and primary supply workers: tools, PPE, first aid and training provided by the contracting entity; age verification; no hazardous tasks for workers under 18.
- Incident management: all injuries, near misses, occupational illnesses and dangerous occurrences recorded, investigated and corrected; monthly statistics (hours worked, lost-time injuries, fatalities); serious incidents notified within 24 hours to the supervision consultant and the implementing unit and within 24 hours by the implementing unit to the World Bank; Ministry of Labor and police notified as required by law.

B. Community health and safety

- Traffic management: a plan for every road and station site prepared by the contractor, approved by the supervision consultant and the implementing unit and coordinated with the county, the LNP Traffic Division and, at the border stations, the police and immigration – written notification of the LNP and the county at least one week before works start on any section, stating the location, dates and hours of the works; detours and alternative routes opened before the works, maintained throughout (grading, drainage, dust control) and restored afterwards; road safety signs, lighting and marked pedestrian crossings at every work site; signage, 30 km/h in settlements, flag persons, safe pedestrian, wheelchair and motorcycle passage at single-lane sections and crossings, haul routes and times avoiding school hours and market days, lighting and barriers at night, driver training, vehicle maintenance, no overloading; works in settlements during normal working hours only, with no night work unless agreed with the community and the county.
- Site security, access and structural safety: fencing or barriers around excavations, pits, stockpiles and plant; watchmen in settlements; no children on sites; warning signs in Liberian English and pictograms; bridges, culverts, buildings, weirs and bunds designed and built by qualified persons and inspected before opening. Water, sanitation and nuisance: no contamination of community water

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points; alternative water access during crossing works; site sanitation; dust and noise controls of ESCOP 1; information on works schedules; no community exposure to fuels, cement dust, bitumen or chemicals.

- Labor influx: camp rules of ESCOP 6; local hiring; community liaison officer; monthly community meetings; prevention of transactional sex and SEA/SH; awareness sessions with the MGCSP and a women-led organization.
- Communicable diseases: health screening of incoming workers; hygiene and hand-washing facilities; malaria and water-borne disease prevention; HIV information and condoms; outbreak procedures agreed with the county health team (Lassa fever, cholera, viral hemorrhagic fevers, COVID-19: isolation, reporting, suspension of works and movement restrictions when ordered by the health authorities); cross-border health coordination at the border stations.
- Security personnel: where guards are used, a security risk assessment and security management plan; vetted, trained and unarmed guards unless the assessment and the police agree otherwise; rules on the use of force; code of conduct; incident reporting; coordination with the county security plan and the joint security at the border.
- Emergency preparedness and response: an emergency plan for each site covering injuries, drowning, fire, spills, flooding and washouts, structural collapse, road accidents, disease outbreaks, civil unrest and security incidents; emergency contacts; first-aid and firefighting equipment; evacuation routes and vehicles; drills at mobilization and every six months; coordination with the National Disaster Management Agency and county authorities for flood emergencies. Grievances: register at every site and camp; signboards with the grievance contacts; community liaison officer; SEA/SH complaints through the confidential channel only.

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Annex 10: Contractor's ESMP Outline and Environmental and Social Clauses for Bidding Documents and Contracts

A. Outline of the Contractor's Environmental and Social Management Plan (C-ESMP)

The C-ESMP is submitted within 28 days of contract signature and before mobilization, reviewed by the supervision consultant and approved by the implementing unit, and updated when the works, sites or risks change and at least annually. It contains:

1. Environmental and social policy, organization and key staff (EHS officer, community liaison officer, camp manager) with curricula vitae and reporting lines; description of the works, sites, camps, material sources, haul routes, equipment, workforce (numbers, origin, skills) and schedule.
2. Legal and contractual requirements (subproject ESMP, EPA permit conditions, ESCOPs, LMP, code of conduct, SEA/SH requirements, chance-finds procedure, Annex 9) and a site-specific risk assessment by activity and location.
3. Management plans: traffic; erosion, sediment and drainage; borrow pits and material sources; waste and hazardous materials; water and effluents; dust, noise and emissions; biodiversity and vegetation (implementing the biodiversity measures or the Biodiversity Management Plan of the subproject: limits of clearing, no hunting, bushmeat, charcoal or unlicensed timber, revegetation with native species to the targets of Annex 6, invasive-species control, and the induced-access measures agreed with the FDA); cultural heritage and chance finds; labor management (recruitment, contracts, wages, age verification, worker grievance mechanism); OHS; community health and safety; labor influx and camp; SEA/SH prevention and response (code of conduct, training, referral pathway, reporting); security where applicable; emergency preparedness; stakeholder engagement and grievances; site restoration and demobilization.
4. Training and induction program; monitoring, inspection and reporting (indicators, records, monthly report format, incident reporting, non-conformance and corrective action); budget and resources.

B. Environmental and social clauses for bidding documents and works contracts

The following provisions are included in the bidding documents (instructions to bidders, evaluation criteria, specifications, bill of quantities) and in the particular conditions of each works contract; grant and maintenance agreements include them in proportion to their scale.

- Contract documents: the subproject ESMP (or checklist), the EPA permit and its conditions, the ESCOPs (Annex 7), the chance-finds procedure (Annex 8), the OHS and community health and safety requirements (Annex 9), the LMP, the code of conduct and the grievance mechanism procedures.
- Bid submission: an environmental and social methodology statement, the names and qualifications of the EHS officer and community liaison officer, a declaration on past environmental, social, health and safety performance and a signed code of conduct; non-responsive bids may be rejected on these grounds.
- C-ESMP: submission within 28 days of signature and approval before mobilization; no works without an approved C-ESMP, traffic management plan and OHS plan. Priced bill-of-quantities items for environmental and social measures (sediment control, dust suppression, waste, borrow-pit rehabilitation, site restoration, camp facilities, PPE, training, signage, community liaison, sanitation), measured and paid against the measures actually implemented and verified by the supervision consultant, with retention until site restoration is certified.
- Labor: compliance with the Decent Work Act and the LMP; written contracts, wage records, no worker under 15, no hazardous work under 18, no forced labor, equal pay, worker grievance mechanism, accommodation standards; local hiring target and the 40 percent target for women (LMP, Section 2.4); notification of the Ministry of Labor, contractor certificate issued by the Ministry of Labor and periodic labor compliance reports to it.

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- Code of conduct and SEA/SH: every worker, subcontractor and supplier signs the code of conduct; induction and refresher training; prohibition of sexual exploitation and abuse, sexual harassment, transactional sex with community members, sexual activity with anyone under 18, violence and discrimination; sanctions up to dismissal; cooperation with the survivor-centered referral and response protocol; confidential reporting; no retaliation.
- Community health and safety and environment: traffic management plan approved by the supervision consultant and coordinated with the LNP, advance notification of works, detours maintained and restored, safety signs, lighting and crossings at work sites, accessible passage for persons with disabilities, site security, sanitation, dust control at all times and noise control, working hours in settlements, protection of water points, camp rules, communicable-disease procedures, emergency plan, security management plan where guards are used; compliance with the ESMP and ESCOPs, licensed material sources, FDA authorizations, no hunting or bushmeat, waste disposal at approved sites, spill prevention, rehabilitation of borrow pits and sites before final payment; chance-finds procedure; customary restrictions agreed with communities.
- Reporting and non-compliance: daily site records; monthly environmental and social report in the agreed format; notification of serious incidents within 24 hours; cooperation with inspections by the supervision consultant, the implementing unit, the EPA, the Ministry of Labor and the World Bank; non-conformance notices with the levels and deadlines of Section 6.1.5 of the ESMF; withholding of payments for unremedied non-compliance; stop-work orders for the events of Section 6.1.5 (fatality or serious injury, child or forced labor, SEA/SH allegation, works outside the approved area or in natural habitat, works on a section without compensation and site handover, imminent danger, uncontrolled discharge, chance find, works without an approved C-ESMP or permit), with the restart conditions of that section and no compensation of the standing time caused by the contractor's non-compliance; suspension of works for serious or repeated breaches; termination for persistent breach; the contractor bears the cost of remedy and passes the requirements down to subcontractors and suppliers, whose licenses are verified.
- Demobilization: site restoration, removal of camps and waste, closure of pits, handover inspection and certificate as a condition of the final payment and the defects liability certificate.

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Annex 11: Outline Terms of Reference for a Subproject ESIA/ESMP

These outline Terms of Reference – drafted for a border station, whose site-specific items (international river, border agencies, cross-border traders) are adapted to each site – are adapted by the implementing unit for each Substantial-risk subproject (the tolling and axle-load control stations and any other subproject so classified) and submitted to the World Bank for no objection before the consultant is engaged. They are consistent with the ESF, the Environment Protection and Management Law and the EIA Procedural Guidelines, so that the study serves both the World Bank clearance and the EPA environmental impact study.

1. Background and objectives: the project, the subproject, the screening result and classification, the purpose of the ESIA/ESMP and its use by the World Bank and the EPA.
2. Scope of the assessment: the subproject footprint and area of influence (including haul routes, material sources, camps, linked activities such as the Subcomponent 1.1 road at B'hai), the phases (design, construction, operation, decommissioning), the receptors, and the indirect, cumulative and induced effects, including the forest areas and resources that the improved access would open (Section 5.2.3).
3. Policy, legal and institutional framework: the ESSs, the EHS Guidelines (General and Toll Roads), the Liberian laws, standards and permits, and the roles of the IIU, the Ministry of Transport, the station operator, the EPA, the border agencies and the county authorities.
4. Project description: location, site map, design options including mobile versus stationary weighbridge, layout of the platform, buildings, parking, market, water, sanitation, waste and drainage, materials, workforce, schedule, operation and maintenance arrangements.
5. Baseline: site-specific physical (topography, soils, hydrology of the Cavalla River and local streams, flood levels, air and noise), biological (habitat, vegetation, protected species, ecosystem services) and socio-economic conditions (population, the border agencies, traders including the Mano River Cross Border Women, land tenure and use, livelihoods, services, health, security, cultural heritage, vulnerable groups), with primary surveys, GPS mapping and photographs; census and asset inventory of affected persons for the RP in coordination with the RF.

- Biodiversity: site-specific habitat and species survey (dry- and wet-season components, the second completed before the final ESIA/ESMP and before works start in the habitat concerned), natural and critical habitat determination under ESS6, ecosystem-services assessment, assessment of the indirect, cumulative and induced impacts of Section 5.2.3 (forest areas opened, hunting, charcoal, logging, mining and agricultural expansion), and a Biodiversity Management Plan where natural or critical habitat may be affected, with the outcome indicators, baseline values, targets, corrective-action triggers and the FDA and community actions of Annex 6.

6. Analysis of alternatives: siting, layout and technology alternatives and the no-project alternative, with environmental and social criteria.
7. Stakeholder engagement: consultations with the community, women traders, the agencies, county authorities, the Ivorian counterparts where appropriate, and vulnerable groups, in accordance with the SEP; record of issues and responses; disclosure plan.
8. Assessment of impacts and risks: the methodology of Chapter 5 of the ESMF (significance = magnitude × sensitivity; risk = likelihood × consequence) by phase; indirect, cumulative and induced impacts (Section 5.2.3); climate risk; SEA/SH risk assessment; security risk assessment.
9. Environmental and Social Management Plan: mitigation and monitoring matrix with measures, indicators, frequency, responsibility, timeframe and cost; specialized plans (traffic, waste, OHS, community health and safety, labor influx and camp, SEA/SH, security, emergency preparedness, operation-phase ESMP for the station operator and the agencies); institutional arrangements, training, reporting and budget; contract clauses.
10. Deliverables and schedule: inception report (2 weeks), draft ESIA/ESMP (10 weeks), consultation and disclosure of the draft, final ESIA/ESMP (14 weeks; World Bank clearance and EPA permit within the 4–6 months of Table 15); EPA submission package; non-technical summary in Liberian English.
11. Consultant qualifications: team leader with ten years of ESIA experience under the ESF or equivalent; environmental specialist; social and resettlement specialist; GBV/SEA-SH specialist; hydrologist or

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engineer; qualified biodiversity specialist (a site-specific habitat and species survey, a natural and critical habitat determination and an ecosystem-services assessment are carried out for every ESIA, and a Biodiversity Management Plan is prepared where natural or critical habitat may be affected); Liberian legal and EPA process experience.

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Annex 12: Grievance Log and Incident Report Forms

A. Grievance registration and log form

Field	Entry
Reference number; date received; channel (in person, phone, hotline, suggestion box, chief, CLO, letter, other)	
Complainant name, sex, age group, contact, language used, accommodation needed (disability, interpretation) and community (or "anonymous"); representative if any; subproject, site and county	
Category (land and compensation; works nuisance; damage; employment and labor; safety; environment; conduct of workers; selection and benefits; station operation; other); description of the grievance and what the complainant requests	
Tier and person responsible; acknowledgment date (standard: 3 working days); investigation and actions taken (dates)	
Resolution proposed and date; complainant's acceptance (yes/no) and signature or mark; date closed, or escalation to the next tier (date); satisfaction; lessons for the project	

The monthly register summary lists, per grievance, the reference, date, site and county, category, tier, status (open, resolved, escalated), days to resolution and satisfaction. SEA/SH complaints are not entered in this log: they are received through the confidential channel and recorded by the GBV/SEA-SH Specialist in a separate, secure register (case number, date, type of allegation, link to the project, referral, status) without any information identifying the survivor.

B. Incident report form

Field	Entry
Incident reference; date and time of occurrence and of reporting; subproject, site, county, GPS; contractor or entity involved	
Type (fatality; serious injury; lost-time injury; near miss; traffic accident; drowning; fire; spill or pollution; structural failure; flood damage; child labor; forced labor; SEA/SH (no identifying details); violence or community conflict; security incident; cultural heritage damage; other); serious incident requiring 24-hour notification to the World Bank (yes/no); persons affected (number, worker or community member, sex, age group; no names for SEA/SH)	
Description of what happened and the immediate causes; immediate actions taken (first aid, evacuation, containment, suspension of works, police or health notification); authorities notified and dates (supervision consultant, implementing unit, World Bank, Ministry of Labor, police, EPA, county health team)	
Root-cause analysis (within 10 days unless otherwise agreed with the World Bank) and corrective and preventive actions with responsible persons and deadlines; follow-up (status of affected persons, compensation or support, verification of corrective actions, closure date)	
Reported by (name, designation, signature); reviewed by (implementing unit E&S specialist)	

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Annex 13: Photographic Record of the Field Work (1–7 October 2026)

Selected ground and drone photographs of the typical subproject sites of the ESMF, taken during the field work of 1–7 October 2026 in Grand Bassa, River Cess, Bong, Nimba and Grand Gedeh Counties; the sites are located on Map 4 (Annex 15). Photograph identifiers refer to the field photo catalog of the consultants.



Plate 1: P16. Rutted and eroded laterite section of the Legacy Corridor (Botota–Palala), used as a proxy for the village access road typology (Section 1.4), through secondary forest and farm bush, Bong County. 4 October 2026.



Plate 2: P23. Timber-deck bridge on a village access road, Bong County. 4 October 2026.



Plate 3: P21. Failed corrugated-steel pipe culvert at the Botota crossing with a log placed across the gap – undersized drainage structure typical of village access roads. 4 October 2026.



Plate 4: P20. Consultants at the damaged crossing on the Botota road (Legacy Corridor, Bong County) where residents were reinstating the bridge with local timber. 4 October 2026.



Plate 5: P22. Loaded heavy trucks on the unpaved Legacy Corridor – axle-load damage on gravel roads. 4 October 2026.



Plate 6: P13. Waterlogged unpaved road section inside a settlement, Grand Bassa – drainage failure typical of feeder and village access roads in the wet season. 3 October 2026.

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Plate 7: P05. Feeder road near Tarr Town, District 4, Grand Bassa (GPS 0408653 E / 0640615 N): narrow earth track with a waterlogged low-lying section. 3 October 2026.



Plate 8: D02. Aerial view of the feeder road near Tarr Town, District 4, Grand Bassa, through farm bush and oil palm (drone image, 3 October 2026).



Plate 9: P09. Zoegar (Zorgar) Town feeder road, Grand Bassa (GPS 0402430 E / 0642158 N): laterite surface, settlement frontage and motorcycle traffic. 3 October 2026.



Plate 10: P07. Nyana Creek crossing between Saturday Town 1 and 2, Grand Bassa–River Cess road (GPS 0411987 E / 0640752 N): collapsed bridge being reinstated with timber logs and an excavator; the road to River Cess was cut. 3 October 2026.



Plate 11: D01. Aerial view of the Nyana Creek crossing, Saturday Town, Grand Bassa–River Cess road: washed-out bridge and temporary timber reinstatement (drone image, 3 October 2026).



Plate 12: P12. Women and children washing at a stream beside a feeder road, Grand Bassa – domestic water use at crossings that spot improvements will affect. 3 October 2026.

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Plate 13**:** P04. Duck and geese rearing pens with open water channel at MNC Farms Inc. – typical water use and effluent conditions of a livestock facility. 3 October 2026.



Plate 14**:** D04. Aerial view of MNC Farms Inc., Marqui Town, District 5, Grand Bassa – cleared farmland, access tracks and livestock sheds (drone image, 3 October 2026).



Plate 15**:** P27. B'hai Town border settlement, Grand Gedeh County – unpaved main street, kiosks and shops near the border post (one possible site of an axle-load control station). 5 October 2026.



Plate 16**:** P29. Bridge over the Cavalla River at the B'hai (Liberia)–Côte d'Ivoire border; the river is the international boundary. 5 October 2026.

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Annex 14: Register of Cooperatives and Indicative Feeder Roads (Field Work and County Agricultural Coordinator)

Registers compiled during the field work of 1–7 October 2026 and completed after it, as inputs to the identification and screening of subprojects under Subcomponents 3.1–3.3. The feeder roads are indicative – named by the Grand Bassa County Agricultural Coordinator (Mr. Joseph G. Greaves) for the Legacy Corridor side (Section A; Rally Town Road also named by the Wee Oil Palm Farmers' Multipurpose Cooperative Society) and for the Coastal Corridor side (Section B), or observed on site by the Consultants (Section C) – and are confirmed through the MoA-PIU participatory prioritization and the screening of this ESMF. Equivalent lists for the other project counties are not yet available (Section 1.4) and are compiled by the MoA-PIU and the IIU during subproject identification.

A. Indicative feeder roads named by the Grand Bassa County Agricultural Coordinator (Legacy Corridor side, District 3)

Table 30**: Indicative feeder roads, Grand Bassa District 3**

No.	Road (location; cooperative or note)	Farming and activities
1	Rally Road (Rally Town Road) – main road to Gbanyan Town and Daniel Town; named as urgent by the Wee Oil Palm Farmers' Multipurpose Cooperative Society	Rubber, oil palm, mining, upland rice, cashew, fishery, cassava
2	Baseegiah to Sawkpa Town – from the main road	Rice, cassava, mining
3	Mlawon Town to Zue Town – major stretch from the main road	Commercial route: logging, transport of goods and services
4	Fetua Junction to Kangbo Town – from the main road	Transport of goods and services
5	Small Saturday Town–Gayam Town – from the main road	Rubber belt, vegetables, plantain, banana
6	Big Saturday Town via Timbo Town–Whekpee Town to St. John River – from the main road	Rubber, fishery, mining
7	Swaniwein to Gayeyan Town via Wleyou Town and George Bride Town – from the main road	Rubber belt, vegetables, plantain, cassava
8	Luuwein to Dolo Town – from the main road; Rural Women Community Grain Multi-purpose Cooperative	Rubber, upland and lowland rice, vegetables
9	Peterluogon Town to Menmam Town – from the main road	Mining, vegetables, rubber, upland rice
10	Wraken Town to Varneywein – from the main road	Mining, upland rice, rubber, vegetables
11	Borbor Village to Friend Dee Town – on the Fetua road	Upland rice, rubber, cassava, pit-sawing
12	Luuwein to Zei Town	Rubber, upland rice, cassava
13	Gia Town to Vanyu Town	Upland rice, rubber, cassava
14	St. John to Daykpee Town – from the main road	Rubber, cassava, upland rice

"Main road" is the Buchanan–Botota section of the Legacy Corridor; roads serving mining, logging or pit-sawing are screened against the exclusion list and for induced access.

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B. Indicative feeder roads to the main agricultural areas named by the Grand Bassa County Agricultural Coordinator (Coastal Corridor side, Electoral District 5 and Compound #4)

List of the feeder roads leading to the main agricultural areas along the Coastal Corridor side of Grand Bassa County, provided by the County Agricultural Coordinator after the field work (Plates 17 and 18). The roads are in Electoral District 5 and the Compound #4 clans (Little Kola and Kpogbain); all farms served are individual farms and no cooperative was named. Roads 13 to 18 correspond to the feeder-road communities observed on site between Grand Bassa and River Cess (Section C). The Coordinator's list uses the electoral district (Electoral District 5) and the Compound #4 clans, whereas the field records of Section C use the administrative district (District 4). Roads 1, 2, 3, 5 and 6 are ticked on the Coordinator's list. Names are transcribed as written; Rally Road (Piakar's Town Compound) is to be distinguished from the Rally Town Road of Section A at the screening stage.

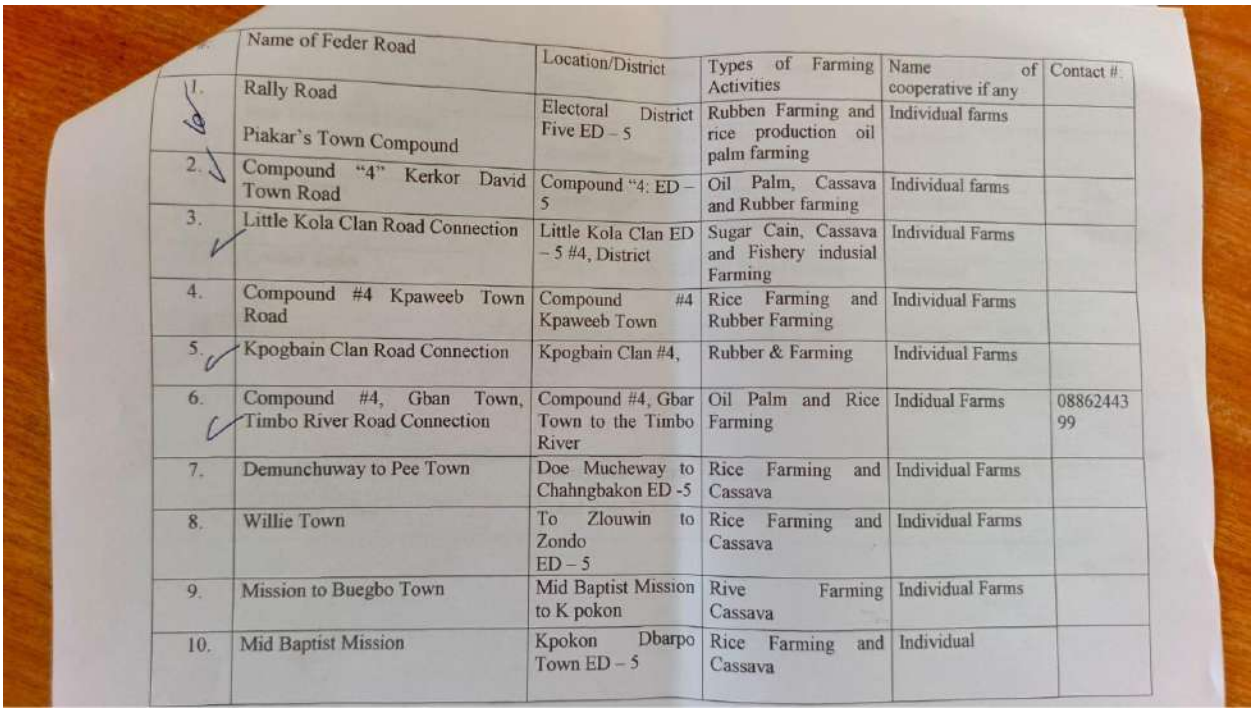
Table 31: Indicative feeder roads to the main agricultural areas, Grand Bassa Electoral District 5 and Compound #4 (Coastal Corridor side)

No.	Feeder road	Location (Electoral District, clan or section)	Farming activities	Cooperative; contact
1	Rally Road – Piakar's Town Compound	Electoral District 5	Rubber, rice, oil palm	Individual farms
2	Compound #4 – Kerkor David Town Road	Compound #4, Electoral District 5	Oil palm, cassava, rubber	Individual farms
3	Little Kola Clan road connection	Little Kola Clan, Compound #4, Electoral District 5	Sugarcane, cassava, fishery (industrial farming)	Individual farms
4	Compound #4 – Kpaweeb Town Road	Compound #4, Kpaweeb Town	Rice, rubber	Individual farms
5	Kpogbain Clan road connection	Kpogbain Clan, Compound #4	Rubber and farming	Individual farms
6	Compound #4 – Gban Town – Timbo River road connection	Compound #4, Gban Town to the Timbo River	Oil palm, rice	Individual farms; contact held by the IIU
7	Demunchuway to Pee Town	Doe Mucheway to Chahngbakon, Electoral District 5	Rice, cassava	Individual farms
8	Willie Town road	To Zlouwin and Zondo, Electoral District 5	Rice, cassava	Individual farms
9	Mission to Buegbo Town	Mid Baptist Mission to Kpokon	Rice, cassava	Individual farms
10	Mid Baptist Mission road	Kpokon – Dbarpo Town, Electoral District 5	Rice, cassava	Individual farms
11	Gueh Town to Pee	Benzehn to Neepue Town, Electoral District 5	Rice, cassava	Individual farms
12	Kpa Town – Bold Dollar	Bold Dollar to Jeremiah Town, Electoral District 5	Rice, cassava	Individual farms
13	Zanto Town road	Guehyee, Electoral District 5	Cassava, sugarcane	Individual farms
14	Geebor Town road	Buegbon Town, Electoral District 5	Oil palm	Individual farms
15	Tin Town road	Dam Dam Town, Electoral District 5	Rice, cassava	Individual farms

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No.	Feeder road	Location (Electoral District, clan or section)	Farming activities	Cooperative; contact
16	Tarr Town road	Trodah to Borad Town, Electoral District 5	Cocoa, sugarcane	Individual farms
17	Neetor – Kono Town road	Electoral District 5	Fishery, coconut	Individual farms
18	Nyonbeen Town road	Grand Kola, Electoral District 5	Oil palm, plantain	Individual farms

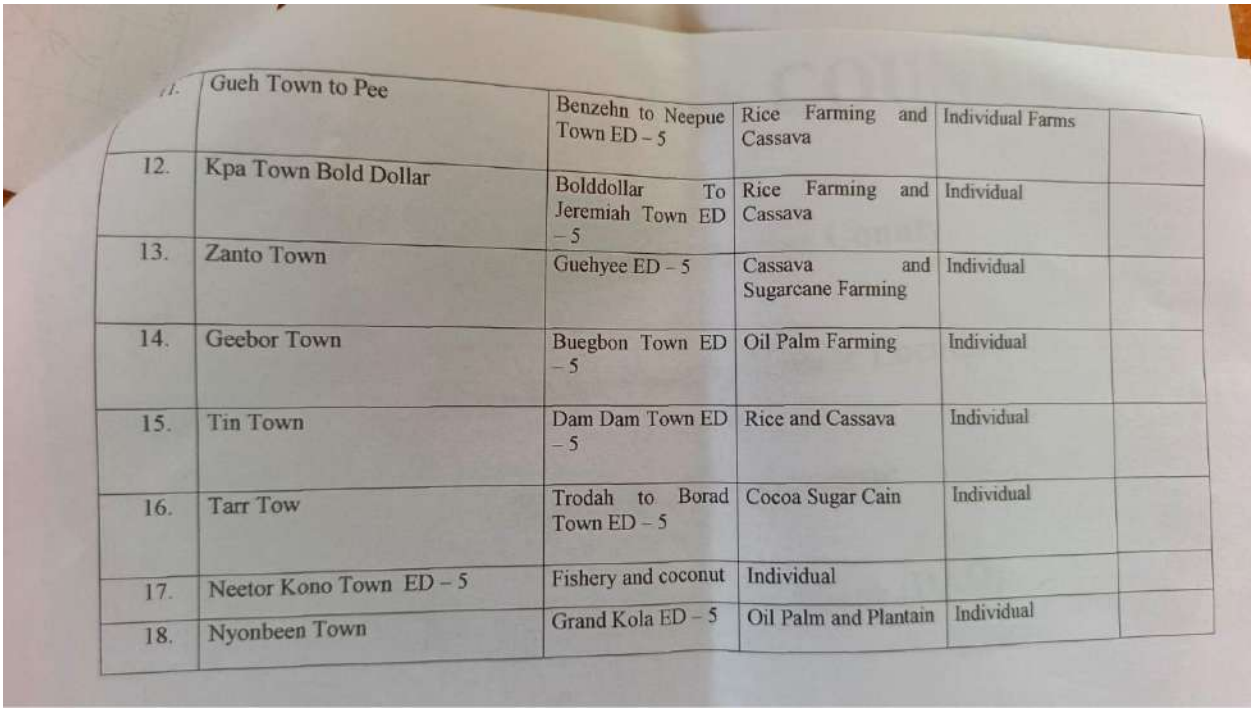
Roads serving fishery and the coast are screened for mangrove, wetland and estuary sensitivity (Section 2.2) and all roads for the Nyana Creek and the other crossings identified in Section C.



	Name of Feder Road	Location/District	Types of Farming Activities	Name of cooperative if any	Contact #
1.	Rally Road Piakar`s Town Compound	Electoral District Five ED – 5	Rubben Farming and rice production oil palm farming	Individual farms	
2.	Compound "4" Kerkor David Town Road	Compound "4: ED – 5	Oil Palm, Cassava and Rubber farming	Individual farms	
3.	Little Kola Clan Road Connection	Little Kola Clan ED – 5 #4, District	Sugar Cain, Cassava and Fishery indusial Farming	Individual Farms	
4.	Compound #4 Kpaweeb Town Road	Compound #4 Kpaweeb Town	Rice Farming and Rubber Farming	Individual Farms	
5.	Kpogbain Clan Road Connection	Kpogbain Clan #4,	Rubber & Farming	Individual Farms	
6.	Compound #4, Gban Town, Timbo River Road Connection	Compound #4, Gbar Town to the Timbo River	Oil Palm and Rice Farming	Indidual Farms	08862443 99
7.	Demunchuway to Pee Town	Doe Mucheway to Chahngbakon ED -5	Rice Farming and Cassava	Individual Farms	
8.	Willie Town	To Zlouwin to Zondo ED – 5	Rice Farming and Cassava	Individual Farms	
9.	Mission to Buegbo Town	Mid Baptist Mission to K pokon	Rive Farming Cassava	Individual Farms	
10.	Mid Baptist Mission	Kpokon Dbarpo Town ED – 5	Rice Farming and Cassava	Individual	

Plate 17: List of feeder roads to the main agricultural areas, Coastal Corridor side of Grand Bassa County, provided by the County Agricultural Coordinator – roads 1 to 10

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11.	Gueh Town to Pee	Benzehn to Neepue Town ED – 5	Rice Farming and Cassava	Individual Farms	
12.	Kpa Town Bold Dollar	Bolddollar To Jeremiah Town ED – 5	Rice Farming and Cassava	Individual	
13.	Zanto Town	Guehyee ED – 5	Cassava and Sugarcane Farming	Individual	
14.	Geebor Town	Buegbon Town ED – 5	Oil Palm Farming	Individual	
15.	Tin Town	Dam Dam Town ED – 5	Rice and Cassava	Individual	
16.	Tarr Tow	Trodah to Borad Town ED – 5	Cocoa Sugar Cain	Individual	
17.	Neetor Kono Town ED – 5	Fishery and coconut	Individual		
18.	Nyonbeen Town	Grand Kola ED – 5	Oil Palm and Plantain	Individual	

Plate 18**:** List of feeder roads to the main agricultural areas, Coastal Corridor side of Grand Bassa County, provided by the County Agricultural Coordinator – roads 11 to 18

C. Feeder roads and communities observed between Grand Bassa and River Cess (Coastal Corridor side, administrative District 4)

Zanto Town–Guehyee; Sand Town; Geebor Town–Buegbon; Tin Town–Playpeh (Tarr Town–Playpeh feeder road discussed on site, GPS 0408653 E / 0640615 N); Trodah–Borah (Borad Town); Paye Town–Soquah; Gio Town–Punchue; Zoegar Town–Clakon (GPS 0402430 E / 0642158 N); Karsuah Town–Neetor/Kono Town; Behn Town–Compound 4; Nyonbeen Town–Grand Kola Town; all depend on the Grand Bassa–River Cess road and the Nyana Creek crossing (GPS 0411987 E / 0640752 N).

D. Cooperatives and agricultural enterprises recorded

All cooperatives practice climate-smart agriculture (production, processing, marketing, input sales) with women and youth members and requested training in marketing, financial management, leadership and governance and technical skills; persons employed (women/men where reported) and member farmers are as reported by the leaders. Sinoe County cooperative leaders were also met; no register entries were recorded. E-KIMIA Agri Company, a farmer cooperative with representation in all 15 counties, was recorded at the national stakeholder consultation of 9 October 2026.

Table 32**: Cooperatives and agricultural enterprises recorded in Grand Bassa and River Cess**

County	Organization (location)	Main activity	Persons employed	Member farmers
Grand Bassa	Bassa Agro Business Cooperative (Diahn-Blae)	Mixed farming	12	12
Grand Bassa	Friends of Farmer Cooperative (Harlandville)	Piggery	86 (42 F / 44 M)	10
Grand Bassa	United Community Agriculture Cooperative Society (Jeremiah Gardee Town)	Cassava	15	10
Grand Bassa	Cephas Agriculture Enterprise (Compound #3)	Oil production	10	15

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County	Organization (location)	Main activity	Persons employed	Member farmers
Grand Bassa	Rise and Shine Multipurpose Cooperative Society (Gorzohn)	Cassava	15 (10 F / 5 M)	6
Grand Bassa	Wee Oil Palm Farmers' Multipurpose Cooperative Society (Wayzohn City)	Oil production	76 (51 F / 25 M)	8
Grand Bassa	Modern Agro Cooperative (Compound #3)	Cassava	15	7
Grand Bassa	Farming for Economic Empowerment and Development (Big Joe Community)	Poultry	12	12
Grand Bassa	Lloydville Poultry Farmers' Cooperative Society (Weah Town, Lloydville)	Rice	64	3
Grand Bassa	Weiekemah Rural Women Multipurpose Cooperative (Luewein Town)	Cassava	43	4
Grand Bassa	MNC Farms Inc., private enterprise (Marqui Town, District 5)	Vegetables, poultry, livestock	–	–
River Cess	Come and See Agriculture Group (Cestos)	Vegetables; swamp rice	40; 25	4; 25
River Cess	Timbo United for Development Inc. (Timbo)	Cassava	60	6
River Cess	Help Yourself Cooperative (Doegbon; Cestos)	Piggery; cassava planting	5; 30	6; 3
River Cess	God is Able Cooperative (Doegbon)	Cassava	72	4
River Cess	United Women Group (Zor Town)	Cassava processing	31	2

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Annex 15: Maps

Corridor-level maps of the project area prepared for this ESMF from published spatial data and the GPS records of the field work of 1–7 October 2026; they are referred to in the text as Maps 1 to 4. Site maps showing the footprint, the receptors and the sensitive features within the area of influence of each subproject (Section 5.2.1) will be prepared with its screening (Annex 1).

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Map 1. Liberia Economic Corridors Project: project corridors, axle-load control sites and counties of the framework instruments

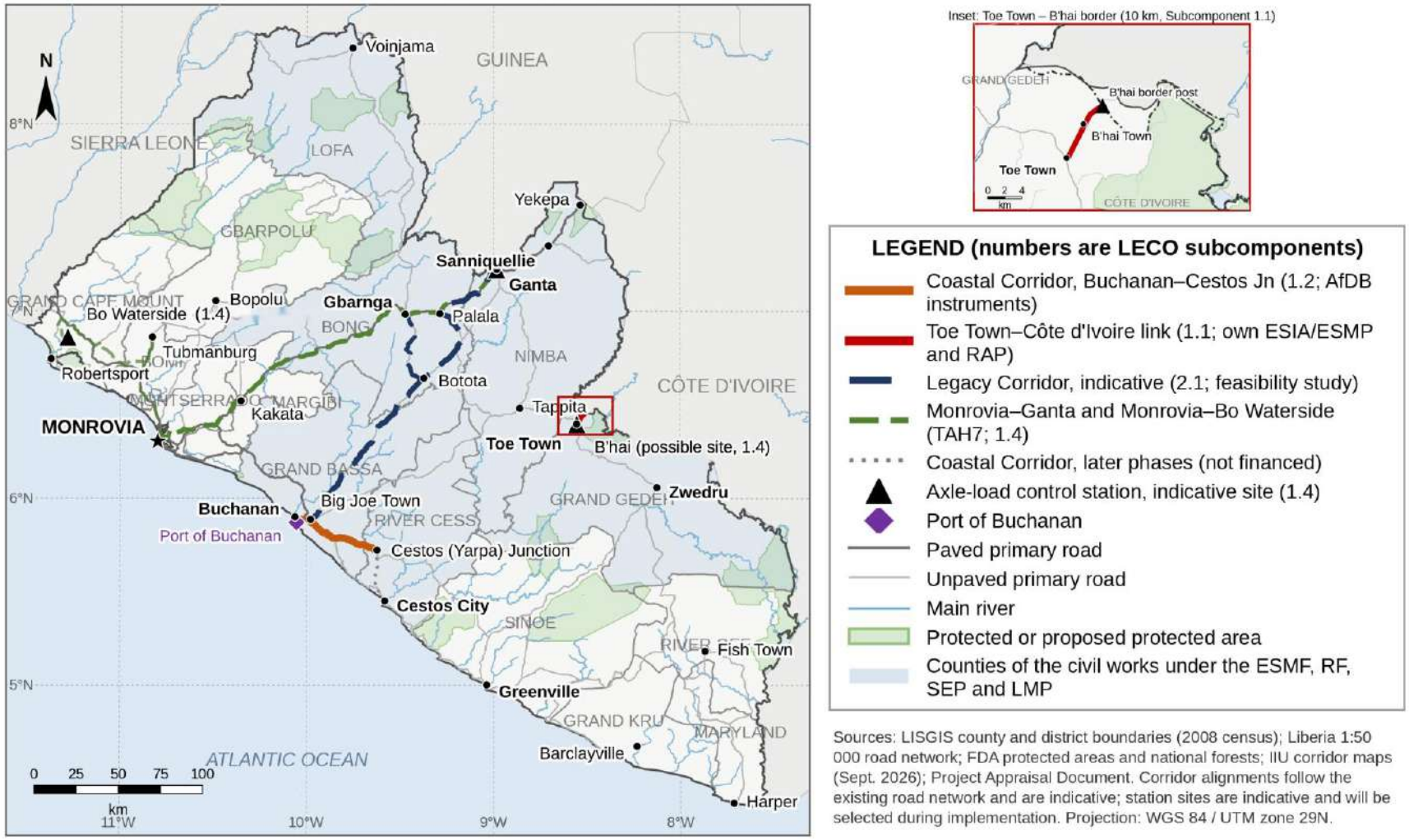
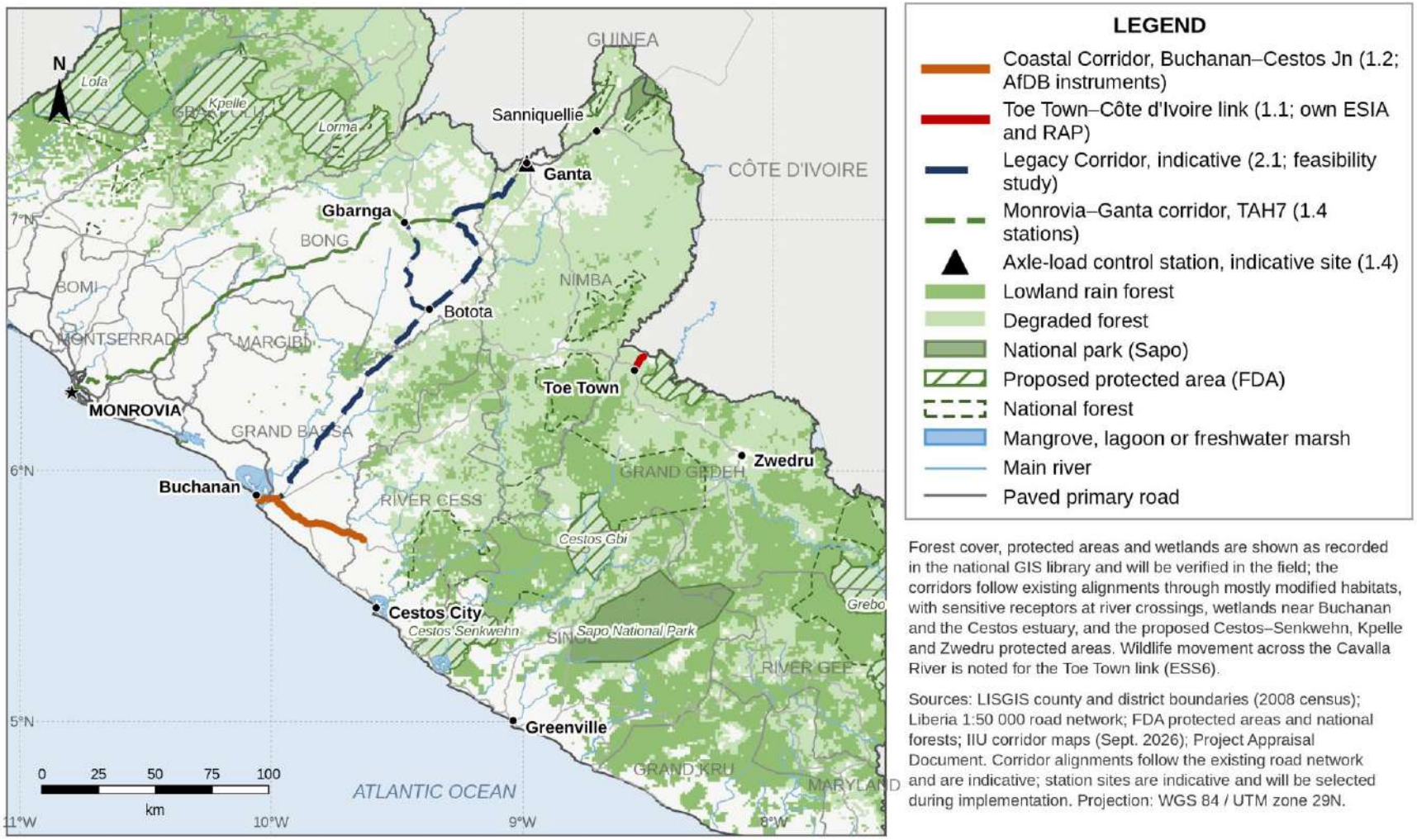


Figure 7: Map 1 – Project corridors, axle-load control sites and counties of the framework instruments

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Map 2. Environmental sensitivities along the corridors: forest cover, protected areas, national forests and wetlands



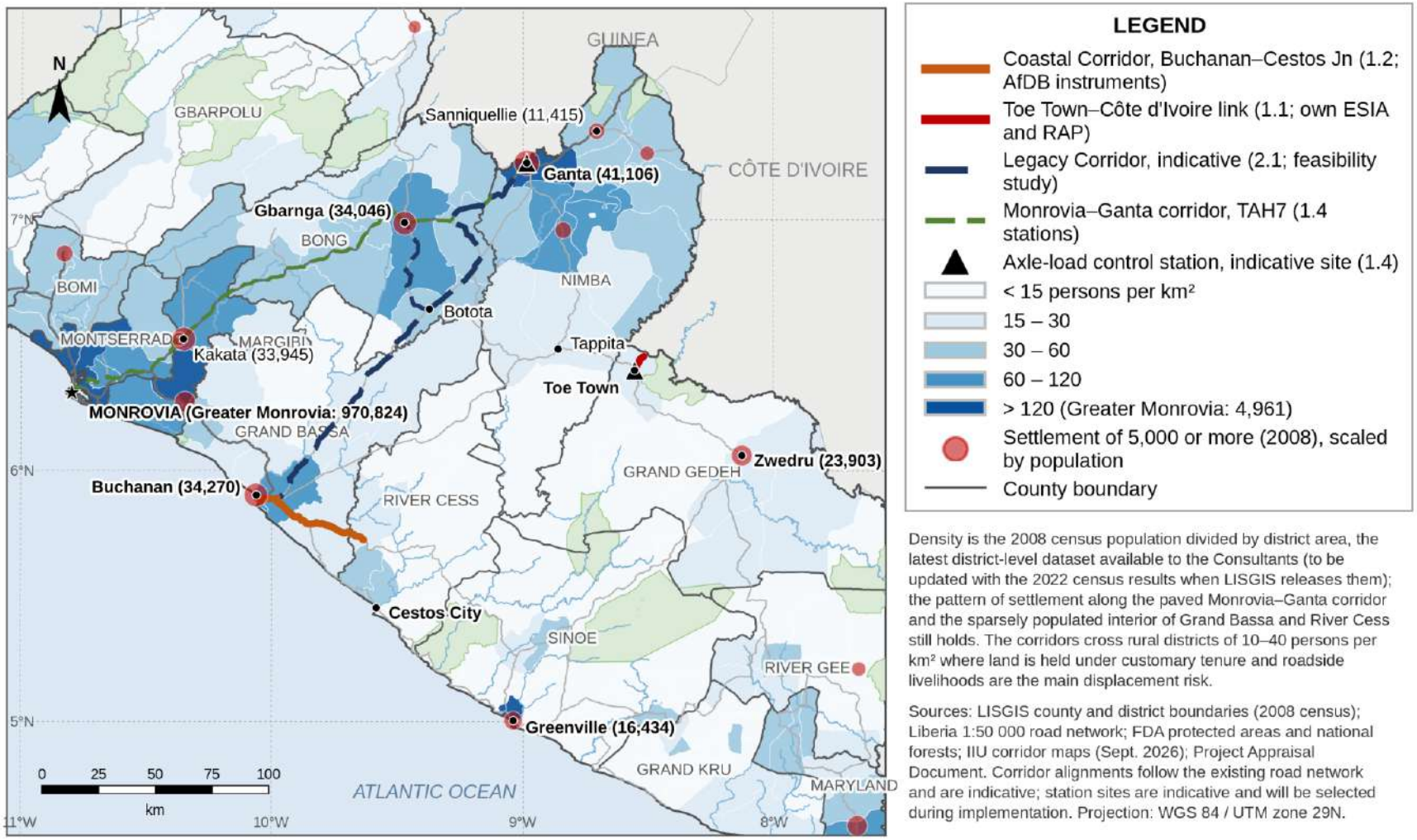
Forest cover, protected areas and wetlands are shown as recorded in the national GIS library and will be verified in the field; the corridors follow existing alignments through mostly modified habitats, with sensitive receptors at river crossings, wetlands near Buchanan and the Cestos estuary, and the proposed Cestos–Senkwehn, Kpelle and Zwedru protected areas. Wildlife movement across the Cavalla River is noted for the Toe Town link (ESS6).

Sources: LISGIS county and district boundaries (2008 census); Liberia 1:50 000 road network; FDA protected areas and national forests; IIU corridor maps (Sept. 2026); Project Appraisal Document. Corridor alignments follow the existing road network and are indicative; station sites are indicative and will be selected during implementation. Projection: WGS 84 / UTM zone 29N.

Figure 8: **Map 2 – Environmental sensitivities along the corridors: forest cover, protected areas, national forests and wetlands**

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Map 3. Population density by district (2008 census) and main settlements along the corridors



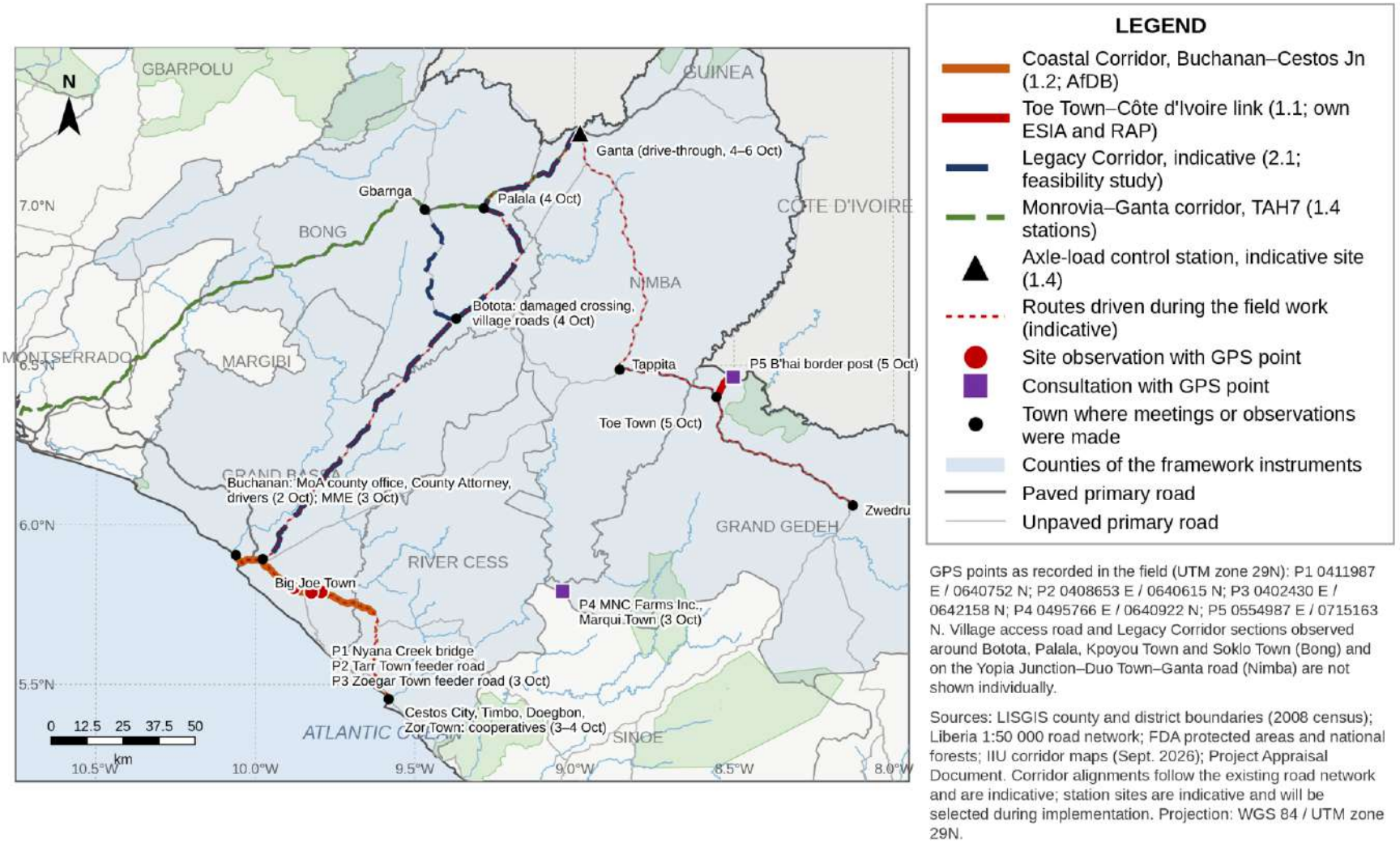
Density is the 2008 census population divided by district area, the latest district-level dataset available to the Consultants (to be updated with the 2022 census results when LISGIS releases them); the pattern of settlement along the paved Monrovia–Ganta corridor and the sparsely populated interior of Grand Bassa and River Cess still holds. The corridors cross rural districts of 10–40 persons per km² where land is held under customary tenure and roadside livelihoods are the main displacement risk.

Sources: LISGIS county and district boundaries (2008 census); Liberia 1:50 000 road network; FDA protected areas and national forests; IIU corridor maps (Sept. 2026); Project Appraisal Document. Corridor alignments follow the existing road network and are indicative; station sites are indicative and will be selected during implementation. Projection: WGS 84 / UTM zone 29N.

Figure 9: Map 3 – Population density by district (2008 census, pending the district-level results of the 2022 census) and main settlements along the corridors

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Map 4. Field work of 1–7 October 2026: sites visited, consultations held and GPS points recorded



GPS points as recorded in the field (UTM zone 29N): P1 0411987 E / 0640752 N; P2 0408653 E / 0640615 N; P3 0402430 E / 0642158 N; P4 0495766 E / 0640922 N; P5 0554987 E / 0715163 N. Village access road and Legacy Corridor sections observed around Botota, Palala, Kpoyou Town and Soklo Town (Bong) and on the Yopia Junction–Duo Town–Ganta road (Nimba) are not shown individually.

Sources: LISGIS county and district boundaries (2008 census); Liberia 1:50 000 road network; FDA protected areas and national forests; IIU corridor maps (Sept. 2026); Project Appraisal Document. Corridor alignments follow the existing road network and are indicative; station sites are indicative and will be selected during implementation. Projection: WGS 84 / UTM zone 29N.

Figure 10**: Map 4 – Field work of 1–7 October 2026: sites visited, consultations held and GPS points recorded**

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Annex 16: Attendance Logs of the Consultations

Scanned attendance sheets of the meetings and consultations held during the preparation of the instruments. The sheets record the names, institutions, contact details, sex and signatures of the participants; the telephone numbers and e-mail addresses written on the sheets are masked on the scans and are held by the IIU with the consultation record. Attendance sheets were not taken at the group discussions with the commercial drivers and motorcycle riders, the MME county office, the cooperatives other than the Wee Oil Palm Farmers' Multipurpose Cooperative Society (Plate 23) and the Toe Town and Grand Gedeh county authorities; their participants and the points raised are recorded in Table 21 and Annex 14. The attendance sheet of the national stakeholder consultation of 9 October 2026 (three pages, 54 participants) follows the sheets of the field consultations.

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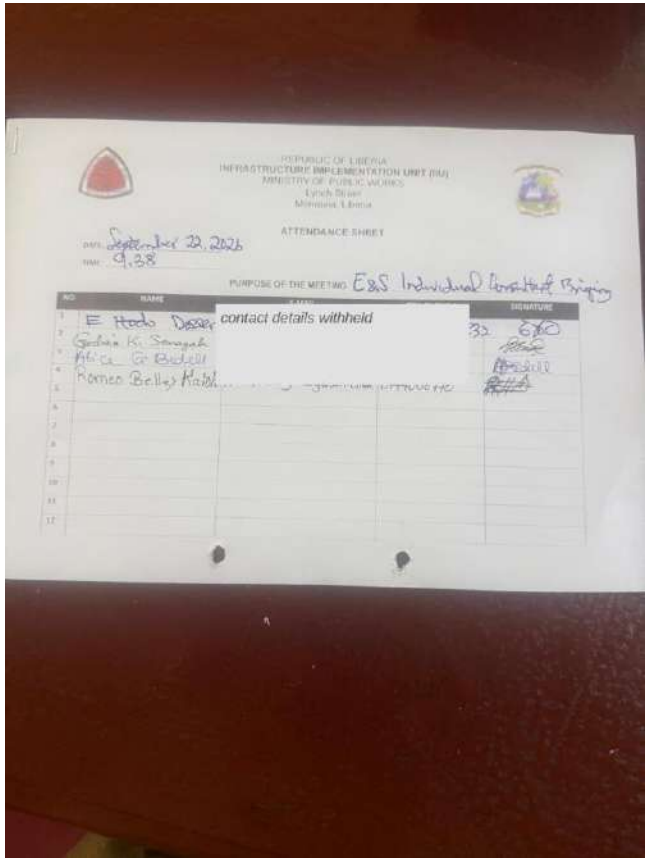


Plate 19**:** Attendance sheet – meeting with the National Road Fund, IIU, Monrovia, 22 September 2026

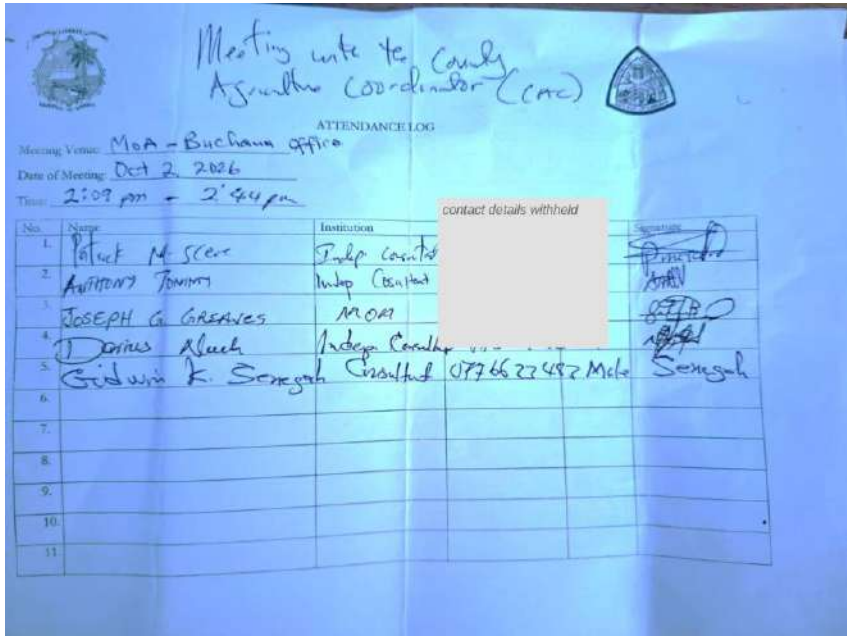


Plate 20**:** Attendance sheet – meeting with the County Agricultural Coordinator, Ministry of Agriculture sub-office, Buchanan, 2 October 2026

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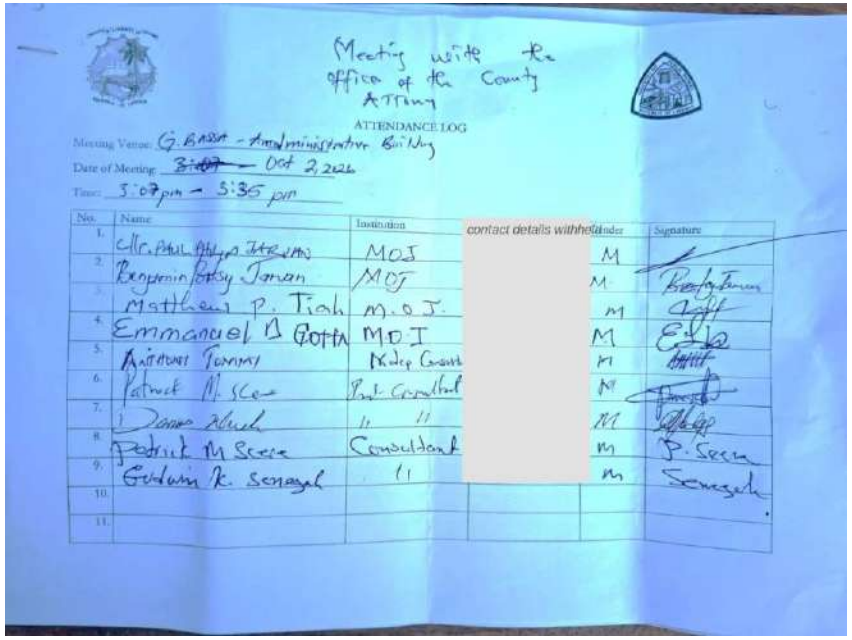


Plate 21**:** Attendance sheet – meeting with the County Attorney, Grand Bassa County Administrative Building, Buchanan, 2 October 2026

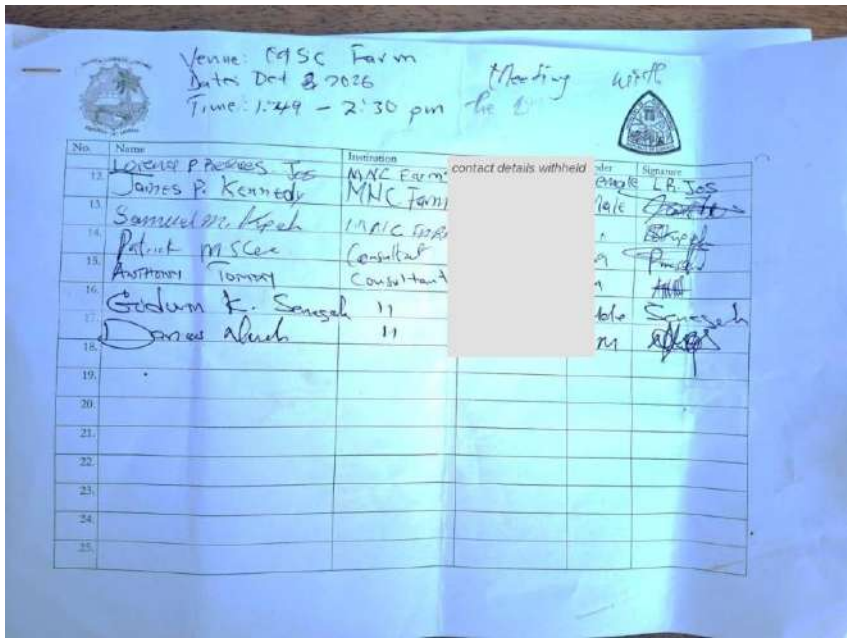
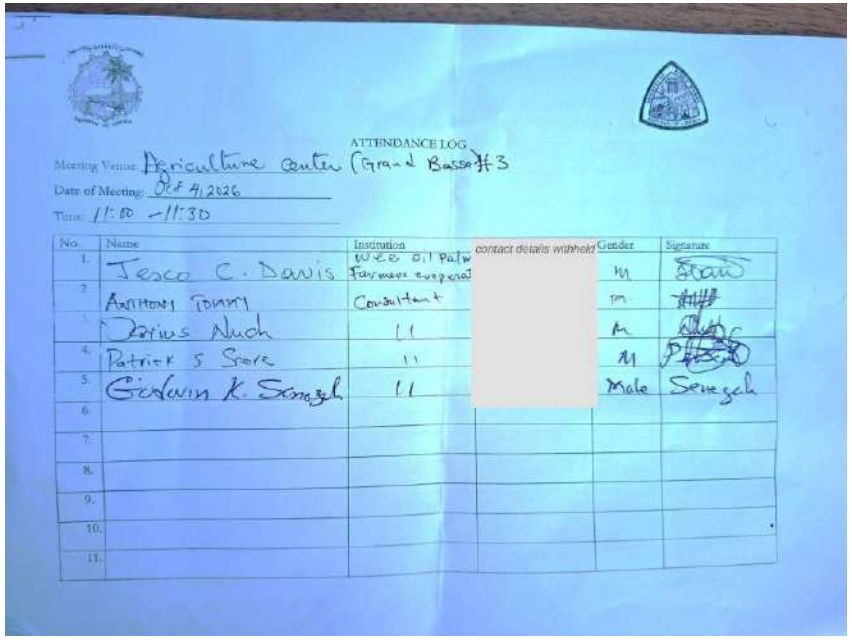


Plate 22**:** Attendance sheet – meeting with MNC Farms Inc., Marqui Town, District 5, Grand Bassa, 3 October 2026

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ATTENDANCE LOG

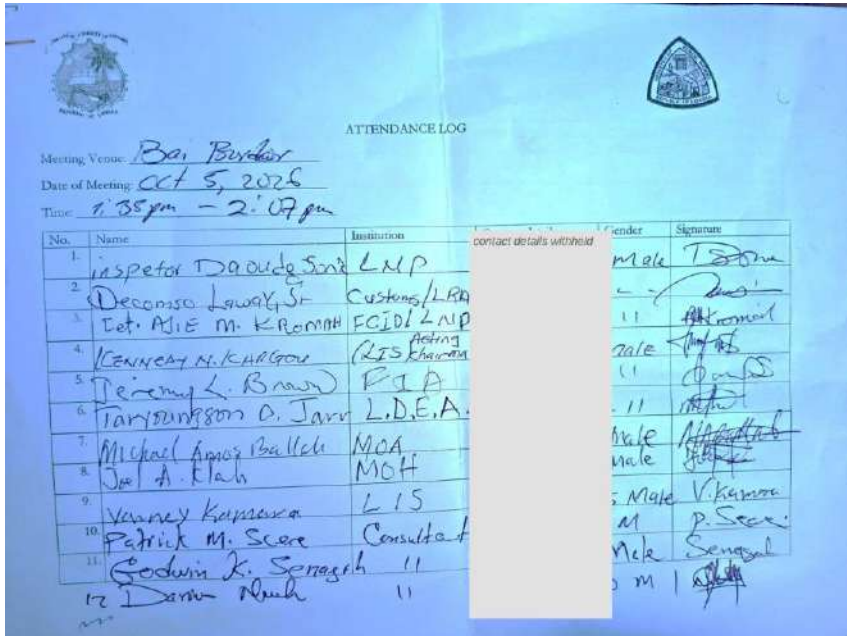
Meeting Venue: Agriculture Center (Grand Bassa) #3

Date of Meeting: Oct 4, 2026

Time: 11:00 – 11:30

No.	Name	Institution	contact details withheld	Gender	Signature
1.	Jesco C. Davis	Wee Oil Palm Farmers cooperative		M	
2.	Anthony Tommy	Consultant		M	
3.	Darius Nuah	"		M	
4.	Patrick S Scare	"		M	
5.	Godwin K. Senegeh	"		Male	Senegeh
6.					
7.					
8.					
9.					
10.					
11.					

Plate 23**:** Attendance sheet – meeting with the Wee Oil Palm Farmers' Multipurpose Cooperative Society, Compound #3, Grand Bassa, 4 October 2026


ATTENDANCE LOG

Meeting Venue: Bai Border

Date of Meeting: Oct 5, 2026

Time: 1:35pm – 2:07pm

No.	Name	Institution	contact details withheld	Gender	Signature
1.	Inspetor Davide Sinn	LNP		Male	
2.	Deconsso Lawaye Jr	Customs/LRA		"	
3.	Det. Mie M. Kromah	FCID/LNP		"	
4.	Kenneay M. Kargbo	(RIS Acting Khanman		Male	
5.	Jeremy L. Brown	FIA		"	
6.	Tarrsungson D. Jarr	L.D.E.A.		"	
7.	Michael Amos Ballah	MOA		Male	
8.	Joe A. Klah	MOH		Male	
9.	Veaney Kamara	LIS		Male	V. Kamara
10.	Patrick M. Scare	Consultant		M	P. Scare
11.	Godwin K. Senegeh	"		Male	Senegal
12.	Darius Nuah	"		M	

Plate 24**:** Attendance sheet – consultation with the joint security and border agencies, B'hai border post, Grand Gedeh, 5 October 2026

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REPUBLIC OF LIBERIA

INFRASTRUCTURE IMPLEMENTATION UNIT

MINISTRY OF PUBLIC WORKS
P.O. BOX 9011
SOUTH, LYNCH STREET
MONROVIA, LIBERIA

INSTITUTION ATTENDANCE SHEET

Date: FRIDAY OCT 9, 2026

Time: 9:01 AM

PURPOSE OF THE MEETING Stakeholder [illegible] Meeting

NO	NAME	INSTITUTION	SIGNATURE
1	ERICSON S. YOLIAN	E-KIMIA AGRI COMPANY	
2	Zoe Horace	PUL	
3	Beatrice Tetee Sieh	PUL	
4	[illegible]	UL	
5	Hannah K.F Ngolloe	LLA	
6	Amna V-Sherif	N.M.C.L	
7	Dickarmeu Ar Deemie	SGK	
8	Anthony T. Sayeh	M&L	
9	Neemu E. Larblah	Farmers Union Network	
19	Abigail Z. Johnny	E.D.A	

contact details withheld

Plate 25**:** Attendance sheet – national stakeholder consultation on the ESF instruments, Ministry of Public Works, Monrovia, 9 October 2026 (page 1 of 3)

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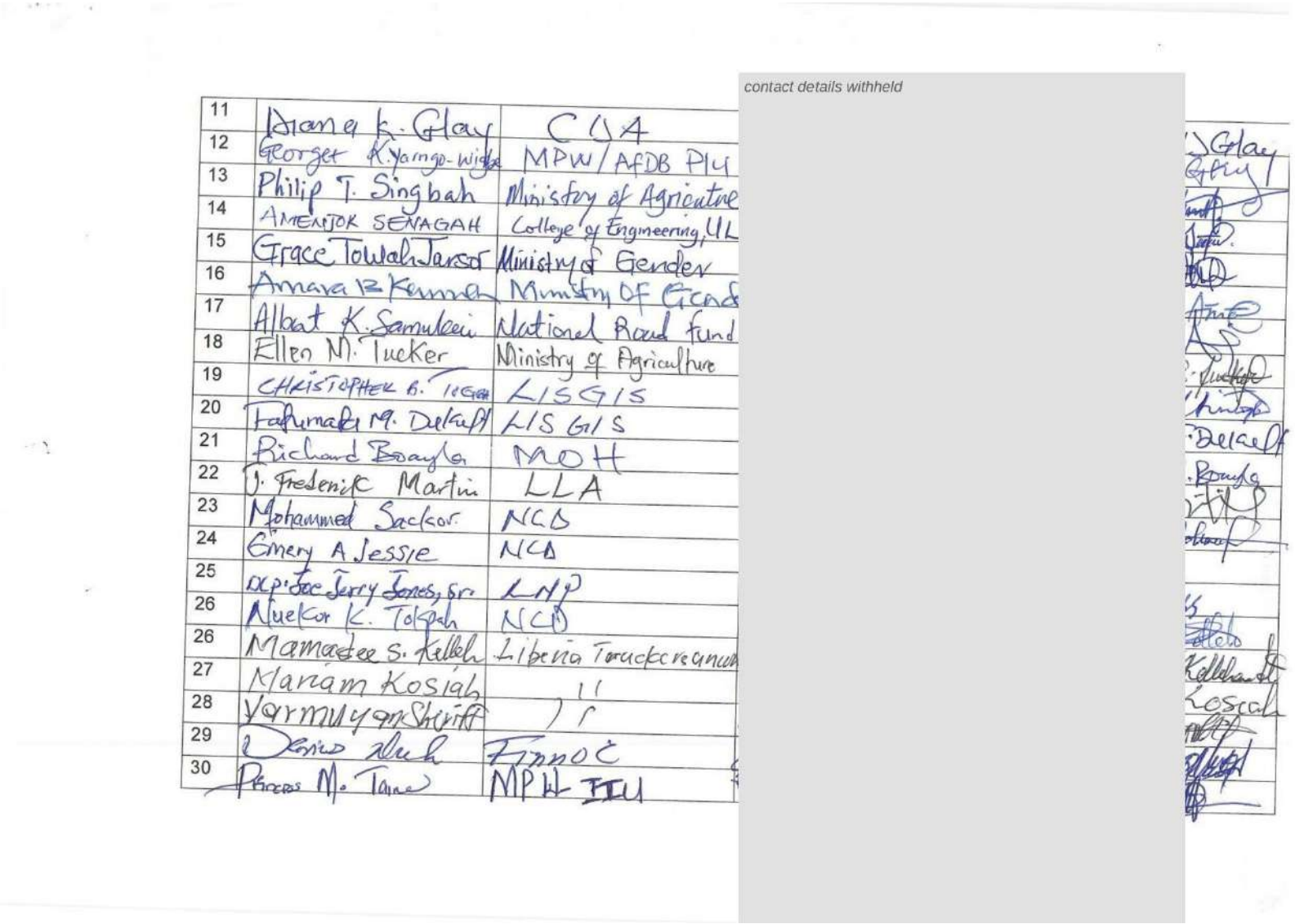


Plate 26**:** Attendance sheet – national stakeholder consultation on the ESF instruments, Ministry of Public Works, Monrovia, 9 October 2026 (page 2 of 3)

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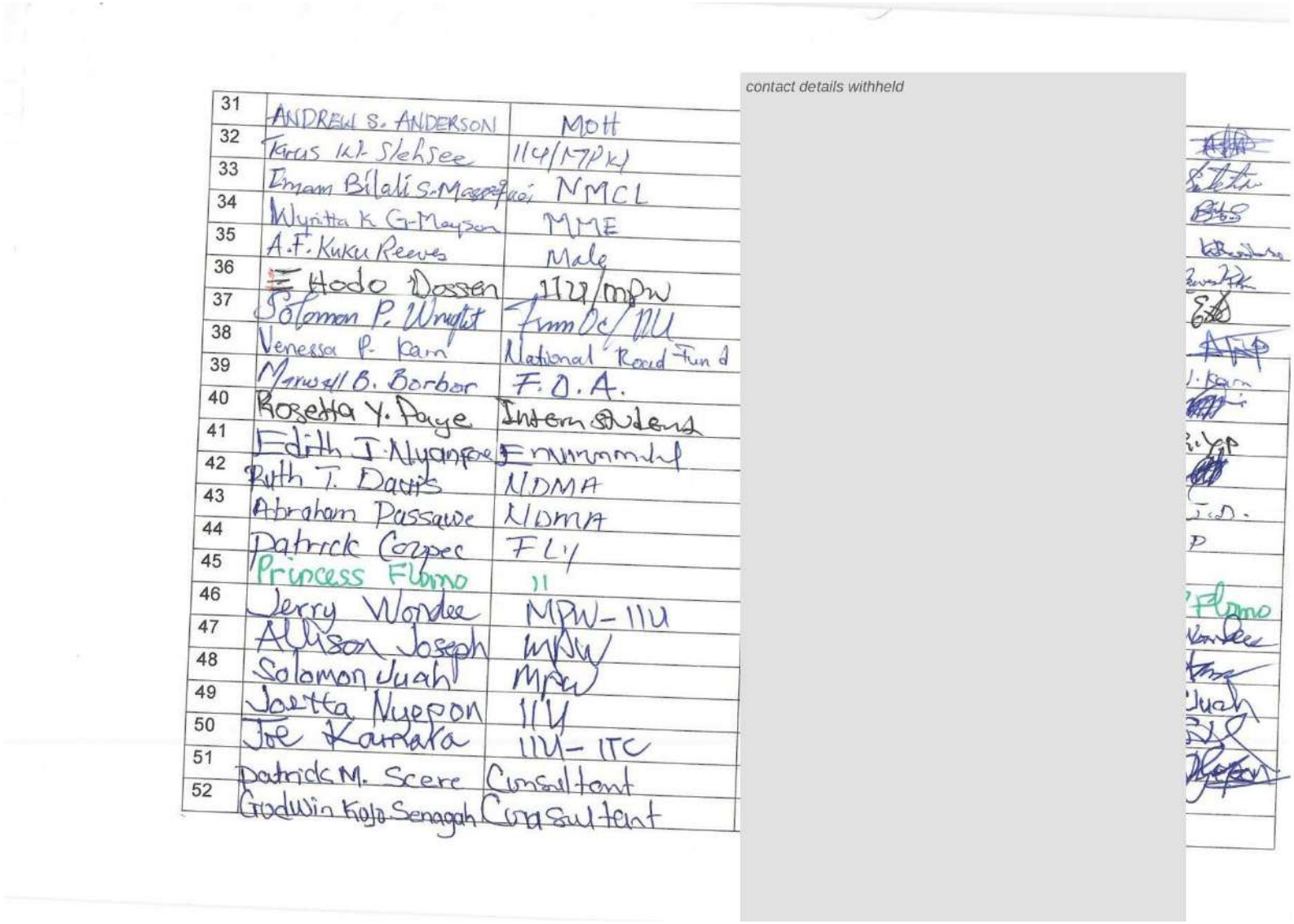


Plate 27**:** Attendance sheet – national stakeholder consultation on the ESF instruments, Ministry of Public Works, Monrovia, 9 October 2026 (page 3 of 3)

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Annex 17: Record of the National Stakeholder Consultation of 9 October 2026

Record of the national stakeholder consultation on the ESMF, RF, SEP and LMP convened by the IIU on Friday, 9 October 2026 (9:00 a.m.) at the Conference Hall of the Ministry of Public Works, Monrovia: organization and participation (Section A), the results of the questionnaire (Section B), the feedback given by each institution and the response of the ESMF (Section C) and photographs (Section D). The attendance sheets are in Annex 16; the completed questionnaires and their tabulation are held by the IIU with the consultation record. Matters that concern the RF, the LMP or the SEP are responded to in those instruments.

A. Organization and participation

The IIU chaired the consultation. The Environmental Consultant and the Social Consultant presented the project, the reasons for each instrument, its objectives and its relevance to the institutions, and invited feedback in a plenary discussion and through a 14-question questionnaire covering the parts of the project that concern each institution, the main environmental and social risks, land and compensation, labor, engagement channels, excluded groups, grievance mechanisms, GBV service providers and the role each institution can play. Twenty-two stakeholder institutions were represented by 38 participants (Table 33); with the staff of the MPW/IIU and its technical assistance, the Consultants and two other participants, 54 persons signed the attendance sheet. By the count of the IIU, about 32 of the persons present were men and 22 were women. Twenty-two questionnaires were returned by 16 institutions (7 completed by women, 14 by men, 1 not recorded).

Table 33**: Institutions represented at the national stakeholder consultation of 9 October 2026**

Stakeholder category	Institutions represented	Participants	Questionnaires returned
Government – implementing agencies and institutions receiving project support	Ministry of Agriculture (MoA); National Road Fund (NRF); Ministry of Mines and Energy (MME)	5	1
Government – regulatory and sector agencies, and academia	Liberia Land Authority (LLA); Forestry Development Authority (FDA); Ministry of Labor (MoL); Ministry of Gender, Children and Social Protection (MGCSP); Ministry of Health (MoH); Cooperative Development Agency (CDA); Liberia National Police – Traffic Division (LNP); Liberia Revenue Authority – Customs (LRA); National Commission on Disabilities (NCD); National Disaster Management Agency (NDMA); Liberia Institute of Statistics and Geo-Information Services (LISGIS); University of Liberia – College of Engineering (UL)	21	15
Traditional and faith-based institutions	Inter-Religious Council of Liberia (represented by the National Muslim Council of Liberia, a member of the Council)	2	0
Civil society	Society for the Conservation of Nature of Liberia (SCNL); Federation of Liberian Youth (FLY); Press Union of Liberia (PUL)	5	3
Private sector, producers and road users	Farmers Union Network of Liberia (FUN); transport unions – Liberia Truckers Union; E-KIMIA Agri Company (farmer cooperative with representation in all 15 counties)	5	3
Project team	Ministry of Public Works – IIU and AfDB PIU staff; FinnOC (technical assistance to the IIU); Environmental and Social Consultants	14	–

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Stakeholder category	Institutions represented	Participants	Questionnaires returned
Other participants	Intern student; one participant whose affiliation was not stated	2	–
Total	**22 stakeholder institutions**	**54**	**22**

B. Results of the questionnaire

The questionnaires confirm the focus of the institutions and the risks they rank highest. The parts of the project that concern them most are the village access roads and community-based maintenance (14 of 22 respondents), the rural access roads and water management structures (12) and the tree-crop infrastructure (11). The risks and impacts ranked most important are erosion and siltation of streams and wetlands, worker and road-user safety and the flooding and washout of crossings (13 respondents each), followed by dust, noise, waste and effluents (11) and the exclusion of women, youth and remote communities (9); labor influx and SEA/SH, security at the border and induced access to forests were each selected by six or seven respondents. The engagement channels that reach the institutions best are e-mail and website (11), community meetings (10), county and district forums and local radio (9 each) and telephone and SMS (8).

The written answers name the features the works must avoid or treat with special care (protected and proposed protected areas, community forests and forest-fringe communities, wetlands, streams and erosion-prone sections, water points, sacred sites and graves, disputed land and access to health facilities), the permits and data that the institutions state they provide (land-use permits and planning regulations, FDA sectoral clearance and harvesting permits, alien and ECOWAS work permits, accessibility clearance, health risk reviews, geospatial and census data, cooperative registers), the land issues they expect (overlapping customary claims, boundary disputes with the right-of-way, roadside structures, undocumented long-term occupants, tenant farmers), the labor risks (child labor, migrant workers, OHS, informal maintenance groups, wage disparities) and the groups at risk of exclusion (women, persons with disabilities – in particular the deaf and hard of hearing – customary tenants, minority groups in remote areas, low-income households, children on school routes). These answers are reflected in the screening form (Annex 1), the design considerations (Section 5.6), the mitigation measures (Section 5.4 and Annexes 6, 7 and 9) and the institutional roles (Table 17), and, for land, labor and engagement, in the RF, the LMP and the SEP.

C. Feedback given by the institutions and response of the ESMF

Table 34 records the feedback given by each institution in the plenary discussion – and, for the National Commission on Disabilities, in its questionnaires – and the response of this ESMF.

Table 34: Feedback given at the national stakeholder consultation of 9 October 2026 and the response of the ESMF

Institution	Feedback given at the consultation	Response and where addressed
Ministry of Agriculture (MoA)	MoA is developing a national framework for crop compensation with a new price list for tree crops; the 2023 crop compensation list is obsolete and is being updated, and a resettlement framework due to be published soon will require the list to be updated every three years; the report of the National Agriculture Census 2022–23 is available to the project; a steering committee should be established and road safety guidelines prioritized.	Compensation rates are set in the RF, which requires the current MoA framework and price list at the time of each RP and their updating; the census data are used in the baseline and the screening of value-chain sites (Sections 4.4 and 6.1.1); steering committee in Section 6.4; road safety in Section 5.6 and Annex 9.

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Institution	Feedback given at the consultation	Response and where addressed
National Road Fund (NRF)	In past RAPs compensation for grave sites was paid to the landowner and not to the caretaker of the graves, and compensation for faith-based property was paid in the name of the institution.	Addressed in the RF (eligibility and payment rules for graves and community and faith-based property); graves and sacred sites are identified at screening (Annex 1) and treated under the cultural heritage and chance-finds provisions (Annex 8).
Ministry of Mines and Energy (MME)	MME supports the project design and can provide hydrological data; some roads were designed without considering flood-prone areas; communities know the flooding problems of their areas and the feasibility and ESIA studies should consult them and integrate their knowledge.	Climate and flood screening of every site (Section 4.7, Annex 1) records the flood-prone sections reported by the communities; the design considerations (Section 5.6) require the MME hydrological data and this local knowledge in the siting and sizing of crossings; the ESIA/ESMP ToR (Annex 11) include community consultation on hydrology.
Liberia Land Authority (LLA)	LLA should be involved from the design phase because the village and rural access roads will pass through customary and Government land (verification, education and awareness, zoning); LLA and MPW should carry out the cadastral survey jointly; coordination among implementing institutions is often weak; detours should be provided before and during construction; road safety should be part of the design; grievance redress committees should be part of the process and the LLA land dispute resolution structures in all counties can handle land-related issues.	LLA role from the design stage and the joint cadastral survey in Table 17 and in the RF; LLA county office in the screening site visits (Section 6.1.1) and in the Tier 2 grievance committee, with its land dispute resolution structures (Section 7.3); detours and road safety in Section 5.6 and Annex 9; coordination in Section 6.4.
Forestry Development Authority (FDA)	FDA should be part of the process since the project focuses on feeder roads; the economic value of non-timber forest products such as bitter kola should be taken into account, and FDA issues the permits for them; disclosure should be included in the project framework.	FDA role and permits in Sections 3.3.7 and 3.5 and Table 17; non-timber forest products recorded at screening and valued under the RF; roads in or near community forest management areas screened for induced access (Sections 2.2 and 4.3, Annex 1) with the community forest management bodies; disclosure plan in Section 7.2.
Ministry of Labor (MoL)	The Labor Management Procedures should be integrated into all contracts; contractors should obtain a contractor certificate from MoL and submit periodic labor compliance reports to prevent child labor; a joint monitoring committee should be established with MoL; resettlement plans should include livelihood restoration and skills training.	LMP and contractor certification and reporting in the contract clauses (Section 6.1.3, Annex 10); joint monitoring of labor conditions with MoL (Section 6.1.4 and the LMP); livelihood restoration and skills training in the RF.
Ministry of Gender, Children and Social Protection (MGCSP)	The project should set up a steering committee of all relevant ministries and agencies and MGCSP should be part of the process; MGCSP has SEA/SH referral points in the counties; relocation sites should be identified before any demolition and relocation, not only cash compensation, should be considered for affected persons.	Steering committee in Section 6.4; county referral points in the SEA/SH referral pathway (Section 7.4) and Table 17; relocation before demolition and in-kind relocation options in the RF; no demolition before compensation and relocation (Table 15 and the RF).
Ministry of Health (MoH)	Dust control measures should be in place at all times; works should be carried out during normal working hours and night work in project communities avoided.	Dust control and working hours in ESCOP 1 (Annex 7), the community health and safety requirements (Annex 9) and the contract clauses (Annex 10); MoH county teams in the monitoring (Section 6.1.4) and Table 17.

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Institution	Feedback given at the consultation	Response and where addressed
Liberia National Police (LNP) – Traffic Division	Contractors create detours but do not maintain them, causing congestion at work sites; contractors do not inform the LNP in advance of where and when works will take place; road safety signs, lighting and pedestrian crossings are essential at work sites and their absence on past projects has caused major accidents.	Traffic management plans prepared by the contractors and coordinated with the LNP Traffic Division, advance notification of works, maintenance of detours, signs, lighting and crossings at work sites (Annex 9, Annex 10 and ESCOP 1); detours in the designs (Section 5.6); LNP role in Table 17.
Liberia Revenue Authority (LRA) – Customs	The trade corridor component is LRA's main interest: Buchanan–Bong County is a key trade corridor because of its heavy commercial activity, and the B'hai border corridor is the other key corridor.	Noted for the project design (Components 1 and 2); the stations are covered by this ESMF (Subcomponent 1.4) and the Toe Town–Côte d'Ivoire road by its own ESIA/ESMP.
National Commission on Disabilities (NCD)	Roads should be free of barriers for persons with disabilities – accessible crossing points and drainage crossings, road safety signs and sidewalks usable by wheelchair users; an accessibility audit should be conducted on all corridors; NCD issues accessibility clearance and can monitor crossings; persons with disabilities, in particular the deaf and hard of hearing, are often left out of consultations (sign-language interpreters, an additional session for those who could not reach the venue, involvement at all stages); the grievance mechanism should accommodate persons with disabilities; reasonable accommodation should be made in short-term project employment; NCD should be added to the project committee.	Accessibility in the design considerations and the accessibility review of the designs with the technical advice of the NCD (Section 5.6); NCD advisory role (Table 17); its request to sit on the steering committee recorded in Section 6.4; accessible grievance mechanism (Section 7.3); inclusive consultation in the SEP; reasonable accommodation in employment in the LMP.
Liberia Institute of Statistics and Geo-Information Services (LISGIS)	Pedestrian safety should be part of the project design; the environmental regulator should be part of the process; LISGIS can provide geospatial maps and spatial data and support the monitoring of land clearance, erosion and drainage during construction.	Pedestrian safety in Section 5.6 and Annex 9; the permitting and compliance pathway (Sections 3.5 and 6.5) defines the regulator's role at each step; LISGIS statistical and geospatial data in Table 17 and in the site maps of the screening (Annex 15); construction monitoring remains with the supervision consultants and county focal points (Section 6.1.4).
University of Liberia – College of Engineering	The project should take engineering students as interns to build their capacity; the Seven Mile–100 Mile section should be considered for a truck parking lot; the College can support geotechnical investigation, site assessment, assessment of erosion-prone areas and training on construction safety.	Internships and training support noted for the capacity-building plan (Section 6.6) and the supervision arrangements; truck parking in Section 5.6.
Inter-Religious Council of Liberia	Faith-based institutions should be consulted from the design stage and throughout all project phases; in past RAPs issues concerning churches and mosques were settled with the individual owners without the Council; the Council is represented in all counties and can help address such grievances.	Engagement of faith-based institutions in the SEP; county representatives of the Council associated with the grievance committees for grievances concerning churches, mosques and faith-based property (Section 7.3); treatment of faith-based property in the RF.

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Institution	Feedback given at the consultation	Response and where addressed
Society for the Conservation of Nature of Liberia (SCNL)	A stand-alone biodiversity study should be prepared to support the ESIA process; SCNL can conduct biodiversity surveys and biodiversity management plans.	Screening against protected areas, KBAs and natural habitats (Section 2.2, Annex 1); the ESIA/ESMP ToR (Annex 11) require a biodiversity survey, with a Biodiversity Management Plan where critical or natural habitat may be affected, as prepared for the Toe Town–Côte d'Ivoire road.
Press Union of Liberia (PUL)	The media should be involved at all stages, particularly in awareness and sensitization at county level through drama, jingles and flyers, and can carry out safety awareness; the road design should clearly mark parking and no-parking areas with signs; pedestrian crossings should be rehabilitated; truckers and commercial drivers should be trained on the toll, weighbridge and road safety systems.	Media engagement and county-level awareness in the SEP; parking and crossings in Section 5.6 and Annex 9; driver awareness on the axle-load stations in the operation-phase ESMP of Subcomponent 1.4 (Section 5.4).
Transport unions – Liberia Truckers Union	The unions welcomed the project, their first involvement in such a consultation; road designs should provide truck parking areas as for buses and taxis – trucks parked along the road are impounded by the police – including the Seven Mile–100 Mile section; the truckers support the toll and weighbridge system; training and media engagement should educate truckers on the toll, weighbridge and road safety systems; the consultation venue had no access route for persons with disabilities; local truckers should have a transparent mechanism to participate in and benefit from the project.	Truck parking in Section 5.6; driver training and awareness in the operation-phase ESMP of the stations (Section 5.4); accessible venues and the participation of local transport operators in the SEP; local procurement of transport services under the LMP and the procurement rules.
E-KIMIA Agri Company (farmer cooperative)	E-KIMIA is a farmer cooperative with representation in all 15 counties.	Recorded in the register of cooperatives (Annex 14) as a channel for reaching farmers under the SEP and for the identification of value-chain sites (Section 6.1.1).

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D. Photographs of the consultation

Photographs taken by the IIU and the Consultants during the consultation: the banner, the presentations, the plenary discussion and the completion of the questionnaire.



Plate 28: Banner of the national stakeholder consultation on the ESF instruments, Conference Hall, Ministry of Public Works, Monrovia, 9 October 2026



Plate 29: Presentation of the ESMF: how every subproject will be screened, assessed and managed, 9 October 2026



Plate 30: Presentation of the purpose, objectives and relevance of the instruments by the Consultants, 9 October 2026



Plate 31: Contribution from the floor during the plenary discussion, 9 October 2026



Plate 32: Participants contributing in the plenary discussion, 9 October 2026



Plate 33: Participants completing the questionnaire on the instruments, 9 October 2026

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Annex 18: Detours and Alternative Routes – Requirements and Social Risks

Every road subproject (village access roads, rural access road spot improvements, crossings and the access of the stations, water management systems and facilities) interrupts the movement of people, produce and vehicles while the works are carried out. This annex sets out the requirements for the planning, construction, operation and restoration of detours and alternative routes, which Section 5.6 requires in the design of every road subproject, and the social risks that detours create – often overlooked in compensation planning – and how they are managed. The detour and alternative-route plan is part of the subproject ESMP or checklist and of the contractor's traffic management plan (Annex 9, Section B); its measures are priced in the bills of quantities (Annex 10).

A. Planning and design

- Identification: for each section where the works will close the road, a crossing or a lane, the design identifies the detour (a parallel track, a bypass around the work site, a temporary crossing or a single-lane working with traffic control) or the alternative route (another road connecting the same communities), with its length, users, condition and the land it occupies; the design favors options within the road reserve and on fallow or Government land, and avoids farms, houses, graves, sacred sites, water points, wetlands and forest.
- Consultation: the communities, the town chiefs, the road committees, the women traders, the transport unions and the schools and clinics served are consulted on the detour, the timing and the hours of closure; market days, school hours, harvest periods, initiation seasons and the rainy season are taken into account in the works program.
- Continuity of access: pedestrian, wheelchair and motorcycle passage is maintained at all times, including at night, at every work site and crossing; emergency access (ambulance, evacuation) is guaranteed; where a crossing must be closed, a temporary footbridge or crossing is provided before the closure.
- Temporary crossings and detours in or near watercourses are designed and built so that they do not obstruct the flow, erode the banks or contaminate water points (ESCOP 3), and are removed and the site restored at completion.
- Land: land used temporarily for a detour is taken under a written temporary-use agreement with rent for the period of use, the compensation of crops and trees and the restoration of the land before hand-back, in accordance with the RF (temporary use of land); the affected persons are included in the census and asset inventory of the subproject.

B. Construction, operation and restoration

- The detour or alternative route is opened, signed and in use before the section is closed; the LNP and the county are notified at least one week before, with the location, dates and hours of the works (Annex 9).
- The contractor maintains the detour throughout the works – grading, drainage, dust control with watering, lighting and barriers at night, speed limit of 30 km/h in settlements, flag persons at single-lane sections – and repairs the damage caused to the alternative route by the diverted traffic.
- Road safety signs, marked pedestrian crossings and safe passage for persons with disabilities are provided at the entries and exits of the detour and at the work site (Section 5.6).
- At completion the detour is closed, the temporary crossings removed, the land restored to its former or better condition and handed back to its users with their written confirmation; the restoration is a condition of the final payment (Annex 10).

C. Social risks of detours and their management

- **Temporary economic displacement.** Roadside stalls, shops, kiosks, drying areas, workshops and markets lose customers while the road or a lane is closed, and farms and businesses on the detour lose land or access. These losses are economic displacement under ESS5 even though they are temporary: they are identified in the census and asset inventory of the subproject, and the affected

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persons are compensated under the RP in accordance with the RF – net income lost for the period of interruption, temporary trading space provided by the contractor where feasible, rent and crop compensation for land used, and transitional assistance for vulnerable persons; the cut-off date and the entitlements are communicated before the works.

- **Loss of access to services and livelihood resources.** Longer journeys to schools, clinics, markets, farms, water points and fishing or forest areas, and higher transport fares on the detour; managed through the continuity-of-access requirements above, the works program agreed with the communities, alternative water access during crossing works and the information of the transport operators on the fares and the duration of the works.
- **Safety.** Accidents of pedestrians, motorcycles and children on detours that are narrow, unlit or shared with heavy vehicles; managed through the traffic management plan, speed limits, lighting, flag persons, school-hour restrictions and road safety awareness (Annex 9).
- **Dust, noise and damage.** Dust and noise on detours passing through settlements and damage to the alternative routes; managed through watering, speed limits, haul times and the repair obligations of the contractor (ESCOP 1).
- **Land conflicts and exclusion.** Disputes over the land used for a detour, use of a path through a sacred site or a farm, or a detour that benefits one community at the expense of another; managed through the consultation, the written temporary-use agreements witnessed by the chiefs, the avoidance of sacred sites and the grievance mechanism (Section 7.3), with a grievance register at the work site.
- **Vulnerable persons.** Older persons, persons with disabilities, pregnant women and children are the most affected by longer and unsafe detours; the measures of Table 14 (accessible passage, assistance, information) apply, and the community liaison officer records their needs before the closure.

The screening form (Annex 1, Section D) records the expected detours and the persons and businesses affected by them, the subproject instrument sets the detour and alternative-route plan and the compensation arrangements, and the monitoring of Table 29 covers the temporary impacts with the land-take indicators and the grievance register.

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Annex 19: Voluntary Land Donation – Conditions, Protocol and Consent Form

Voluntary land donation (VLD) is land given by its owner or user without compensation. VLD is not covered by ESS5 or by the Resettlement Framework (RF): the conditions under which a donation is considered voluntary are set in ESS5 (footnote 11) and are assessed under ESS1, so that VLD is managed under this ESMF. This annex sets out the conditions, the protocol and the consent form to which exclusion criterion 9 of Table 3 and the screening form (Annex 1, Sections B and D) refer.

A. Scope and conditions

VLD may be used under the project only for minor land requirements where the landowner or community benefits directly from the facility: small strips for the widening or drainage of village access roads, and the small sites of community facilities such as collection points, drying units, nurseries and water points of Subcomponents 3.1 and 3.2. VLD is not used for the axle-load control stations, for borrow pits, for any land on which a household lives or for land whose loss would reduce the donor's remaining land below what is needed to maintain the household's livelihood. VLD is distinct from (i) the negotiated settlements covered by ESS5 – land acquired by the implementing agency by agreement where failure to agree would lead to expropriation, compensated at replacement cost under the RF, which is the normal case for the land of the stations, crossings and facilities – and from (ii) voluntary market transactions in which the buyer cannot resort to expropriation, which fall outside ESS5 (paragraph 6) and are documented with the due-diligence checklist of the RF. A donation is accepted only when all of the following conditions are met and documented:

- the potential donor has been appropriately informed and consulted about the project and the choices available, including the right to compensation;
- the potential donor is aware that refusal is an option and has confirmed in writing the willingness to proceed with the donation;
- the amount of land donated is minor (not more than 10 percent of the donor's holding) and does not reduce the donor's remaining land below what is required to maintain the household's livelihood at current levels;
- no household relocation is involved;
- the donor is expected to benefit directly from the project facility;
- for community or collective land, the donation occurs only with the consent of the individuals using or occupying the land, and the crops, trees and structures of such users are compensated unless expressly waived in writing by each user; and
- the land is free of disputes and encumbrances, confirmed by the chiefs and the LLA county office.

VLD is used subject to the prior approval of the World Bank. Each VLD record is submitted for no objection before the land is used, with the screening report or, where an RP is prepared for the same subproject, with the RP. VLD is never used to avoid the preparation of an RP, and the number and area of the donations are reported in the monitoring.

B. Protocol

The following steps are followed for each donation:

- Screening identifies the land need and the potential donor or donors; the Social Specialist of the implementing unit checks that the case falls within the scope of Section A (minor strip or small site; direct benefit; no relocation; no land needed for the household's livelihood).
- Community meeting: the project, the land need, the right to compensation at replacement cost and the option to refuse are explained in the local language; the minutes and the attendance are recorded.
- Individual meeting with the donor or donors, their spouses and, for family or community land, the family head, the community land development and management committee or the community leadership, and every user of the land; the donor confirms the willingness to donate without pressure.

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- The parcel is measured and sketched; the remaining holding of the donor is visited to confirm that it sustains the household's livelihood; the crops, trees and structures of the donor and of the other users are inventoried.
- The consent form of Section C is completed and signed by the donor or donors and by the users, and is witnessed by the town chief, a women's representative and a witness chosen by the donor; the Social Specialist signs the verification.
- The donation is recorded with the LLA county office and, where a deed exists, the transfer of the strip or site to the Government or to the community facility is registered at project cost; the VLD record is included in the screening report, or in the RP where one is prepared, and is reported to the World Bank.
- The donor is informed of the project grievance mechanism (Section 7.3) and may lodge a grievance at any time; a donation found not to meet the conditions is converted into compensation at replacement cost under the RF.

C. Consent form

The consent form below is completed for each donation and kept in the VLD file.

Item	Detail
Subproject	Name / location / purpose of the land (for example, road widening strip, collection point, water point)
Donor(s)	Name / sex / ID / community / tenure of the land (deed, customary family, community) / spouse(s) and co-owners
Parcel	Location and GPS / dimensions and area / sketch attached / total holding of the donor and share donated (percent) / current use / crops, trees and structures on the parcel and their owners
Users of the parcel	Names, sex and consent of all persons using the parcel (tenants, sharecroppers, family members) / compensation for their crops, trees and structures (paid or expressly waived in writing)
Information and choice	The donor confirms having been informed of the project, of the entitlement to compensation at replacement cost and of the right to refuse without consequence, and chooses to donate the parcel freely.
Conditions	No household relocation / remaining land sufficient for livelihood (verified) / direct benefit expected (described) / no dispute or encumbrance (confirmed by the chief and the LLA)
Signatures	Donor(s) and spouse(s) / users / town chief / women's representative / witness chosen by the donor / Social Specialist (verification) / LLA county office (record) / date

D. Documentation

The VLD file of each case contains the consent form, the sketch and measurements of the parcel, the identity documents of the donor and of the witnesses, the minutes of the community meeting, the verification report of the Social Specialist and the LLA record. The files are kept by the IIU or the MoA-PIU, referenced in the project grievance register and available to the independent monitor and the World Bank.

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Annex 20: Inclusion Measures for Matching Grants and Outgrower Contracts (Component 3)

The matching grants and outgrower contracts of Subcomponents 3.1 and 3.2 carry a risk of exclusion: producers who are poor, landless, tenants, migrants, women, young, disabled, remote from the aggregation points or not members of a cooperative may be unable to meet the eligibility, co-financing, land, membership or volume conditions, and benefits may be captured by better-off farmers, cooperative leaders or traders (Table 13; Table 14). This annex sets the measures that the MoA-PIU includes in the grant manual, the calls for proposals, the model outgrower contract and the selection procedures, and that the screening of each grant or outgrower scheme (Annex 1) verifies; they complement the E&S eligibility and screening conditions of Table 13 and the engagement measures of the SEP.

- **Eligibility and selection criteria.** Criteria published in Liberian English and local languages before each call; no requirement of a land deed (customary use rights, family and tenant arrangements accepted when documented by the chiefs); membership of a cooperative not required where group arrangements are available; in-kind and labor contributions accepted for the beneficiary share; small and medium grant windows so that smallholders compete among themselves; quotas or weighting for women (a 40 percent target for women-led beneficiaries of the matching-grant windows, as provided in the PAD in line with the benchmark of the Liberia Agri-commercialization Fund, and outgrower agreements issued directly to women or jointly to both spouses), young farmers and farmers of remote communities; a vulnerability criterion (Table 14) in the scoring.
- **Information and outreach.** Calls announced through community meetings, town criers, local radio and the county agricultural coordinators, with separate sessions for women and youth; application assistance by the extension staff and the community liaison of the MoA-PIU; applications accepted orally or with assistance for non-literate applicants.
- **Outgrower contracts.** Model contract reviewed by the Social Specialist: written in plain language and explained orally; fair prices and transparent grading and weighing; payment within an agreed period and into the farmer's own account where possible (joint or women's accounts for women farmers); no interlinked credit that creates debt bondage; input supply and prices disclosed; no obligation to clear forest or expand into forest (traceability, Table 3); labor conditions of primary supply workers under the LMP (no child labor, no hazardous work under 18); the right to withdraw and a dispute mechanism linked to the project grievance mechanism.
- **Groups and cooperatives.** Open membership and access rules of the cooperatives and producer organizations supported, with women and youth on their boards; the register of Annex 14 updated with the membership by sex; grants to groups conditional on the inclusion of tenant and migrant members.
- **Land and shared facilities.** Written land-use agreements for shared facilities covering the users and tenants; voluntary land donation only under the conditions of Annex 19; no facility sited so as to exclude the users of the land.
- **Transparency and grievances.** Selection minutes and the list of beneficiaries disclosed in the communities and at the county; grievance uptake through the county focal point, the extension staff and the project grievance mechanism; a complaint on the selection suspends the disbursement of the grant concerned until it is resolved.
- **Monitoring.** Share of women, young, vulnerable and remote beneficiaries among applicants and grantees; payment delays and price disputes of outgrowers; grievances received; reported in the quarterly report and in Table 29 (exclusion and elite capture); corrective action (additional outreach, revised criteria, re-opened call) where the inclusion targets are missed.

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Annex 21: Criteria and Template for the Assessment of the Capacity of the Institutions

Section 6.4 identifies the capacity gaps of the institutions responsible for the ESMF (Table 18). The gaps are assessed with the criteria of Table 35 at the start of implementation – within the first six months, as part of the capacity-strengthening plan – for each institution of Table 18 (IIU, MoA-PIU, MME, county focal points and county line offices, supervision consultants, contractors, operators and groups) and re-assessed at each annual review of the ESMF and whenever a new institution or contractor joins the project. Each criterion is rated on a four-level scale: 1 – absent (no staff, knowledge, procedure or resource); 2 – insufficient (present but unable to meet the requirements of this ESMF without support); 3 – adequate (meets the requirements with occasional support); 4 – strong (meets the requirements and can support others). A rating of 1 or 2 on any criterion is a gap, for which the template of Table 36 records the measure (recruitment, training of Table 19, equipment, procedure, external support), the responsibility, the deadline and the indicator of closure. The assessment is carried out by the implementing-unit E&S specialists with the institution concerned, reviewed by the World Bank for the IIU and the MoA-PIU, and reported in the quarterly report.

Table 35**: Criteria for assessing the capacity of each institution**

Criterion	What is assessed (evidence)	Minimum requirement under this ESMF
1. Staffing and qualifications	Number of environmental, social and GBV/SEA-SH staff or focal points against the functions of Table 18; qualifications, experience and time available for the project; vacancies	Staff and focal points of Table 18 in place; specialists recruited within one month of effectiveness
2. Knowledge of the ESF and of this ESMF	Familiarity with the ESSs, the ESMF procedures (screening, instruments, permits, contracts, supervision, incidents), the RF, the LMP and the SEP; training received (Table 19)	Initial training completed before the functions are performed (Section 6.6)
3. Procedures, tools and records	Availability and use of the screening form, the templates, the mobile data application, the registers (permits, grievances, non-conformances, incidents) and the reporting formats	Tools in use and records kept and verifiable
4. Experience and performance record	Previous ESF or safeguards projects (LIBRAMP, SECRAMP, RETRAP); timeliness of screening, instruments, compensation and reporting; audit findings and World Bank ratings	No unresolved audit finding; satisfactory performance on previous projects or a documented improvement plan
5. Resources and logistics	Budget, vehicles and fuel, equipment (GPS, meters, PPE), communication and presence in the counties and at remote sites	Resources of the ESMF budget and the project management subcomponents available and used
6. Coordination and authority	Clarity of the reporting lines, authority to issue non-conformance and stop-work notices, participation in the screening visits, the grievance committees and the steering committee; cooperation with the EPA, LLA, MGCSP, MoL, FDA, MLG and the counties	Roles of Tables 17 and 18 exercised; coordination mechanisms of Section 6.4 functioning
7. Specialized capacity	Resettlement planning and valuation; SEA/SH prevention and response; OHS and incident investigation; biodiversity screening, surveys and BMP monitoring; EPA permitting; contract management of E&S clauses	Specialized expertise available in-house or procured (biodiversity specialist, GBV service provider, external trainers)

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Criterion	What is assessed (evidence)	Minimum requirement under this ESMF
8. Contractors, operators and groups	E&S organization and key staff, C-ESMP quality, labor and OHS records, code-of-conduct compliance, previous non-conformances and stop-work orders	Requirements of Annex 10 met before mobilization; induction and cascading training completed

Table 36**: Template for the capacity assessment of an institution**

Criterion (Table 35)	Rating (1–4)	Gap and evidence	Measure (recruitment, training, equipment, procedure, support)	Responsibility and deadline	Indicator of closure; status at review
1. Staffing and qualifications					
2. Knowledge of the ESF and of this ESMF					
3. Procedures, tools and records					
4. Experience and performance record					
5. Resources and logistics					
6. Coordination and authority					
7. Specialized capacity					
8. Contractors, operators and groups					
Overall rating and priority of the institution					
Institution; assessed by; date; reviewed by (World Bank for the IIU and the MoA-PIU); next review					

The completed templates are annexed to the capacity-strengthening plan due within six months of effectiveness and updated in the annual review of the ESMF; the training plan of Table 19 is adjusted to the gaps identified.

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Annex 22: Compliance of the Subproject Activities with National Law and the Environmental and Social Standards on the Key Social Risks

This annex shows how the activities of the subcomponents comply with Liberian law and with the Environmental and Social Standards (ESSs) on the key social risks: child labor and forced labor, labor and working conditions, land acquisition and displacement, gender-based violence including sexual exploitation and abuse and sexual harassment (SEA/SH), community health and safety, and cultural heritage. For each risk, Table 37 gives the national requirement, the ESS requirement, the measures through which the village access roads and their community-based maintenance (Subcomponent 1.3), the stations (Subcomponent 1.4) and the agricultural subprojects (Subcomponents 3.1, 3.2 and 3.3) comply, the arrangement for the two activities that have their own instruments (Subcomponents 1.1 and 1.2), and the verification. Where the national requirement and the ESS differ, the more stringent applies (Annexes 3 and 4). The measures are carried into the site-specific instruments, the bidding documents and contracts (Annex 10), the community-based organization contracts and the grant and outgrower agreements; they are monitored through the plan of Annex 23.

Table 37: Compliance of the subproject activities with national law and the ESSs on the key social risks

Social risk	National law	ESS requirement	Village access roads and community-based maintenance (Subcomponent 1.3)	Stations (1.4) and agricultural subprojects (3.1 feed–poultry, 3.2 tree crops, 3.3 rural roads and markets)	Subcomponents 1.1 and 1.2 (own instruments)	Verification
Child labor and forced labor	Decent Work Act (2015): freedom from forced or compulsory labor (section 2.2) and from the worst forms of child labor (section 2.3); minimum age of 15 for employment (section 21.2); light work from 13 (section 21.3); hazardous work prohibited under 18 (section 21.4). Children's Law (2011). Hazardous and Light Work Lists (2022). Act to Ban Trafficking in Persons (revised 2021).	ESS2: no child below the minimum age (14, or the higher national age); no person under 18 in hazardous work; no forced labor or trafficked persons; the same for community workers and, where the risk is significant, for primary supply workers.	All community workers are 18 or older and their age is verified and entered in a register; work is voluntary and paid under a written contract with wage records; no unpaid compulsory community labor and no contribution in kind is required from the communities.	Works contracts: no worker under 18 on civil works, maintenance, haulage, machinery, station and security tasks, which the LMP classes as hazardous; minimum age of 15 for the limited non-hazardous tasks; age verification at hiring (LMP, Section 7). Matching grants and outgrower contracts (3.1, 3.2) are conditional on the absence of child and forced labor on the supported farms and facilities, with awareness in the cooperatives and monitoring of the primary suppliers of maize, soybean, cocoa, rubber and oil palm. Suppliers of	The LMP applies to all project workers, including those of Subcomponents 1.1 and 1.2; the same clauses are in their contracts and are checked when their instruments are revalidated or reviewed against the ESF.	Age registers and wage records checked monthly by the supervision consultant and the county focal point; joint spot checks with the labor inspectors of the Ministry of Labor; any case is a stop-work event with 24-hour notification and remediation (Section 6.1.5).

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Social risk	National law	ESS requirement	Village access roads and community-based maintenance (Subcomponent 1.3)	Stations (1.4) and agricultural subprojects (3.1 feed–poultry, 3.2 tree crops, 3.3 rural roads and markets)	Subcomponents 1.1 and 1.2 (own instruments)	Verification
				sand, laterite and timber are screened.		
Labor and working conditions	Decent Work Act (2015): contracts of employment (Chapter 13); minimum wage (section 16.1); ordinary hours of 8 a day and 48 a week (section 17.1), overtime (section 17.5) and rest periods (sections 17.7 to 17.10); leave (Chapters 18 to 20); termination (Chapter 14); equal protection, equal remuneration and non-discrimination (sections 2.4, 2.5 and 2.7); freedom of association (section 2.6); occupational safety and health duties of employers (Chapter 25).	ESS2: written terms and conditions; non-discrimination and equal opportunity; workers' organizations; occupational health and safety; a grievance mechanism for workers; provisions for contracted, community and primary supply workers.	The contract of each community-based organization sets the tasks, a wage not below the statutory minimum, the hours, the payment records, tools, personal protective equipment, first aid and insurance; group leaders are trained; women are at least 40 percent of the members; the workers use the worker grievance mechanism.	The requirements of the LMP are in the bidding documents and contracts (Annex 10): contractor's labor management plan, written contracts, the minimum wage floor for all project workers, hours and rest, an occupational health and safety plan (Annex 9), the worker grievance mechanism and the target of 40 percent women. Occupational health and safety requirements are a condition of the matching grants (3.1, 3.2).	The LMP applies; the contractors' labor management plans and occupational health and safety plans are required under their instruments.	Contractors' monthly reports; payroll and hours records checked by the supervision consultant; inspections by the Ministry of Labor; statistics of the worker grievance mechanism; accident and incident register.
Land acquisition, restrictions on land use and displacement	Constitution (1986): expropriation only for public purposes with prompt payment of just compensation. Land Rights Act (2018): public, government, customary and private land;	ESS5: avoid or minimize displacement; compensation at replacement cost and assistance before displacement; livelihood restoration; eligibility	Works stay within the existing alignments. The RF applies: census and Resettlement Plan (RP) for the crops, trees, stalls and structures in the road reserve, including the temporary impacts of detours (Annex 18); compensation at	Stations, markets and facilities are sited on Government land or on land whose tenure is confirmed by the LLA and is free of dispute. Land acquired by negotiated settlement or other acquisition is compensated under an	The RAP of the 10 km road is revalidated after negotiations and compensation is paid before civil works start; the Coastal Corridor RAP is reviewed against ESF	Compensation completion report cleared by the World Bank before works on each section (Step 7); RP monitoring and completion audit; land and compensation

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Social risk	National law	ESS requirement	Village access roads and community-based maintenance (Subcomponent 1.3)	Stations (1.4) and agricultural subprojects (3.1 feed–poultry, 3.2 tree crops, 3.3 rural roads and markets)	Subcomponents 1.1 and 1.2 (own instruments)	Verification
	customary land owned by communities with or without a deed. Liberia Land Authority Act (2016).	of persons without formal rights; consultation, disclosure and grievance mechanism; a plan proportionate to the impacts.	replacement cost before the section is handed over to the contractor; voluntary land donation only for minor strips under Annex 19.	RP; voluntary market transactions are documented with the due-diligence checklist of the RF; voluntary land donation is limited to small community facilities under Annex 19. A subproject that would physically displace more than 50 households is excluded.	requirements, updated as needed and redisclosed.	grievances by tier; voluntary land donation records submitted for no objection.
Gender-based violence, including SEA/SH	Act to amend the Penal Code on rape (2005); Act establishing Criminal Court "E" (2008); Domestic Violence Act (2019); Children's Law (2011); Decent Work Act (2015), section 2.8 (prohibition of sexual harassment).	ESS2 and ESS4, with the World Bank Good Practice Note on addressing SEA/SH in civil works: risk assessment, codes of conduct, training, a response and accountability framework, survivor-centered referral and a confidential reporting channel; ESS10 for the grievance mechanism.	Codes of conduct signed by the members and leaders of each community-based organization; awareness sessions in each community; women in the leadership of the groups; confidential channel and referral pathway mapped for the county.	SEA/SH Action Plan and Accountability and Response Framework; SEA/SH risk assessment in every ESIA/ESMP and ESMP; code of conduct signed by every worker; standards for camps and separate facilities; codes of conduct for station and security staff, including conduct toward women traders; the grant and outgrower agreements carry the code of conduct.	The SEA/SH Action Plan of the project covers Subcomponent 1.1; for Subcomponent 1.2, the SEA/SH provisions of the instruments prepared under AfDB requirements are reviewed against the ESF and aligned with the Action Plan. The contractors' codes of conduct are required under their instruments.	Monthly verification of signed codes of conduct and training; referral of every case within 24 hours; cases reported by number and status only; hotline 9696 and the confidential channel; an allegation triggers the response protocol and the 24-hour notification (Section 6.1.5).
Community health and safety	Public Health Law (1976); Vehicle and Traffic Law; Environment Protection and Management Law (2002); Decent Work Act (2015), section	ESS4: safety of infrastructure design, traffic and road safety, community exposure to disease, emergency preparedness and	Traffic management on the roads in use; fenced excavations; safe crossings and alternative water access during culvert and bridge works; speed humps, signs and guardrails in settlements;	Station designs separate trucks and pedestrians and provide parking, lighting, sanitation and waste management. Markets and facilities have fire protection, water and toilets. Water	The road safety and community health and safety measures of their ESIA/ESMPs apply and are reviewed against ESS4.	Weekly checks by the supervision consultant; accident and incident register; notification of serious incidents within 24 hours;

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Social risk	National law	ESS requirement	Village access roads and community-based maintenance (Subcomponent 1.3)	Stations (1.4) and agricultural subprojects (3.1 feed–poultry, 3.2 tree crops, 3.3 rural roads and markets)	Subcomponents 1.1 and 1.2 (own instruments)	Verification
	25.3 (duties of employers to persons other than their workers).	response, and security personnel; World Bank Group EHS Guidelines.	awareness of road safety and of the works in each community.	management structures are limited to 2 m and designed by a qualified engineer. Health screening and outbreak procedures apply at the camps and border stations, and a security risk assessment where guards are used.		road-safety indicators after completion (Table 29).
Cultural heritage	Environment Protection and Management Law (2002): heritage considered in the environmental assessment. Local Government Act (2018) and customary law: traditional and customary affairs, including the Poro and Sande sites, under the Ministry of Local Government with the National Council of Chiefs and Elders. National Museum (Bureau of Culture) for chance finds.	ESS8: identification of tangible and intangible heritage with the communities; avoidance; chance-finds procedure; continued access of the communities to the sites.	Walkover with the chiefs and elders at screening; graves, sacred sites and streams avoided; works calendar agreed with the community around the initiation seasons; chance-finds procedure in every contract.	Damage to, or restriction of access to, graves, sacred forests, Poro and Sande sites, shrines and places of worship is excluded (Table 3); sites within 500 m are recorded at screening; the chance-finds procedure (Annex 8) applies to all earthworks and borrow pits.	The chance-finds procedures of their ESIA/ESMPs apply and are reviewed against ESS8.	Screening records; chance-find reports within 24 hours; inspection by the county focal point, the chief and the elders within 48 hours; heritage grievances by tier.

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Annex 23: Social Risk Mitigation and Monitoring Plan

This plan brings together, for the key social risks – land acquisition and displacement, labor conditions, and the related risks of SEA/SH, community health and safety, cultural heritage, exclusion and grievance handling – the baseline, the mitigation measures and the monitoring arrangements that apply to every subproject. The first column of baseline information gives the situation found during preparation (Chapter 4) and the site baseline that is established at screening and, where land is affected, by the census of the Resettlement Plan; it is the reference against which the indicators are measured. The measures are those of the RF, the LMP, the SEP and this ESMF; the plan does not replace them. Each site-specific ESMP and RP takes over the rows that apply, with site values for the baseline and the targets, and the results are reported in the quarterly report to the World Bank (Step 10). The costs are in the RF budget for compensation and RP preparation, in the works contracts for the contractors' measures, and in items 4 to 6 of the ESMF budget (Table 20) and the SEP budget for the grievance mechanism, the SEA/SH Action Plan and the monitoring.

Table 38**: Social risk mitigation and monitoring plan for the subprojects of the ESMF**

Key social risk	Baseline (framework and site)	Mitigation measures	Monitoring indicators and targets	Frequency	Responsibility
Land acquisition and restrictions on land use	Framework: mostly customary land with little documentation; Government land in the road reserves; deeded land in towns such as Ganta. Site: tenure, owners and users of each parcel, established at screening with the LLA county office and by the census of the RP.	Design within existing alignments and on Government or undisputed land; LLA tenure verification; cut-off date announced; RP prepared, cleared and disclosed; compensation at replacement cost before the land is taken; land-use agreements signed and witnessed.	Area acquired by tenure (ha); parcels with tenure verified (target: all); RPs cleared before bidding (target: all); sections handed over only after the compensation completion report (target: all).	At screening; monthly during RP implementation; before each site handover	Social Specialist of the IIU or the MoA-PIU; LLA county office; county focal point
Physical displacement	Framework: few houses and structures expected, at station sites and at failed crossings; more than 50 households in a subproject is excluded. Site: households and structures recorded in the census.	Avoidance through siting and design; replacement housing or cash at replacement cost with moving and transitional assistance; relocation completed before demolition; additional support to vulnerable households.	Households physically displaced (target: as low as possible; none above the exclusion threshold); households relocated before demolition (target: all); vulnerable households receiving additional support (target: all identified).	Monthly during RP implementation; completion audit	Social Specialist; county authorities; supervision consultant

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Key social risk	Baseline (framework and site)	Mitigation measures	Monitoring indicators and targets	Frequency	Responsibility
Economic displacement and loss of livelihood, including temporary impacts of works and detours	Framework: crops, economic trees, stalls and parts of structures in the road reserves; traders at the stations and markets. Site: inventory of assets and income of each affected person in the census, by sex.	Compensation for crops, trees, structures and lost income at replacement cost before works; temporary trading space and compensation for the period of interruption (Annex 18); livelihood restoration measures; payment to women users in their own name.	Affected persons compensated before works, by sex (target: all); temporary impacts compensated (target: all); affected persons whose income is restored at the completion audit; open compensation grievances beyond the service standard (target: none).	Monthly during RP implementation; six months after completion	Social Specialist; contractor for temporary impacts; PFMU for payments
Voluntary land donation and voluntary transactions	Framework: community facilities are often built on land offered by families or communities. Site: owner, users, total holding of the donor and share offered, recorded at screening.	Voluntary land donation only under the conditions, the protocol and the consent form of Annex 19, with the prior approval of the World Bank; voluntary purchases and leases documented with the due-diligence checklist of the RF; conversion to compensation where the conditions are not met.	Donations with a complete file and no objection (target: all); donations converted to compensation (number); grievances from donors or users (number and outcome).	At screening; before the land is used; annually	Social Specialist; LLA county office; county focal point
Labor and working conditions	Framework: about 80 percent of the workforce is informal; written contracts and wage records are rare among local contractors and community groups. Site: workers by category, sex and origin in the labor management plan of the contractor or in the contract of the community-based organization.	Written contracts; wage not below the statutory minimum and paid on time with records; hours and rest of the Decent Work Act; target of 40 percent women; non-discrimination; worker grievance mechanism; LMP clauses in all contracts and agreements (Annex 10).	Workers with a written contract (target: all); wages paid on time and not below the minimum (target: all); share of women against the 40 percent target; worker grievances received and resolved within the standard (target: at least 90 percent).	Monthly	Contractor or community-based organization; supervision consultant; Social Specialist; Ministry of Labor

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Key social risk	Baseline (framework and site)	Mitigation measures	Monitoring indicators and targets	Frequency	Responsibility
Occupational health and safety	Framework: weak safety practice, few trained supervisors and little protective equipment on small works. Site: hazards of the works identified in the ESMP and in the occupational health and safety plan of the contractor.	Occupational health and safety requirements of Annex 9; permits to work for excavations, work in or over water and lifting; protective equipment, first aid and insurance; training and toolbox talks; daily inspections; stop-work on imminent danger.	Fatalities and serious injuries (target: none); lost-time injuries; workers trained before starting work (target: all); protective equipment in use at inspections (target: all workers); corrective actions closed on time.	Daily on site; monthly report; 24-hour notification of serious incidents	Contractor; supervision consultant; Environmental Specialist; Ministry of Labor
Child labor and forced labor	Framework: child labor is widespread in family farming, cocoa, rubber, sand and laterite supply and transport. Site: ages of workers and group members verified at hiring; suppliers and outgrowers screened.	Minimum age of 15 for any work and of 18 for hazardous work, which includes all civil works and maintenance tasks, and for community workers; age verification and registers; no unpaid compulsory labor; supplier screening; awareness in the cooperatives and communities; remediation and referral of any child found at work.	Workers with verified age in the register (target: all); cases of child or forced labor found (target: none) and remediated (target: all); suppliers and outgrowers screened (target: all).	Monthly; quarterly spot checks with the labor inspector	Contractor; cooperatives; Social Specialist; Ministry of Labor
Labor influx and SEA/SH	Framework: high prevalence of gender-based violence; survivor services concentrated in the county capitals; SEA/SH risk rated Substantial. Site: risk factors recorded at screening (camp, remote or border site, distance from services, proximity of a school).	Local recruitment; camps away from settlements; SEA/SH Action Plan; code of conduct signed by every worker; training; community awareness; referral pathway mapped with the MGCSP before works; confidential channel and hotline 9696.	Workers who have signed the code of conduct and been trained (target: all); share of local workers; awareness sessions held per site; SEA/SH cases referred within 24 hours (target: all), reported by number and status only.	Monthly; cases within 24 hours	Contractor; GBV/SEA-SH Specialist; MGCSP county coordinator; service provider
Community health and safety	Framework: frequent accidents involving motorcycles and pedestrians; crossings used for washing and water collection; limited health services. Site: receptors within the area of influence mapped at screening.	Traffic management plan; fenced excavations; safe crossings and alternative water access; road safety features and awareness; health screening and outbreak procedures; security arrangements under a risk assessment.	Accidents and incidents involving community members (target: none); complaints about dust, noise, access and safety resolved within the standard (target: at least 90 percent); safety measures in place at inspections (target: all sites).	Weekly on site; monthly report	Contractor; supervision consultant; county focal point; county health team

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Key social risk	Baseline (framework and site)	Mitigation measures	Monitoring indicators and targets	Frequency	Responsibility
Cultural heritage	Framework: graves, sacred forests and Poro and Sande sites near settlements and streams; initiation seasons. Site: sites within 500 m identified with the chiefs and elders at screening.	Avoidance at siting; works calendar agreed with the community; chance-finds procedure (Annex 8); continued access to the sites.	Sites identified and avoided (target: all); chance finds reported within 24 hours and handled under the procedure (target: all); heritage grievances (number and outcome).	At screening; during earthworks	Contractor; county focal point; chiefs and elders; Ministry of Local Government
Exclusion of vulnerable groups and elite capture	Framework: women, youth, tenants, migrants, persons with disabilities and remote hamlets have less access to information, land and benefits. Site: vulnerable groups identified at screening and in the census.	Published selection criteria and results; separate consultations with women, youth and vulnerable groups; inclusion measures for grants and outgrower contracts (Annex 20); accessible venues and assistance; social audit of a sample of subprojects.	Selections published (target: all); share of women and youth among the participants in consultations, workers, group members and beneficiaries; grievances about selection resolved within the standard.	At each selection; quarterly	IIU and MoA-PIU Social Specialists; county authorities
Stakeholder engagement and grievance redress	Framework: complaints are taken to chiefs, elders, road committees and the authorities; there is no documented procedure. Site: committees, focal points and contacts established before works.	Consultation and disclosure protocols (Section 7.2, SEP); three-tier grievance mechanism with a confidential SEA/SH channel (Section 7.3); committees trained before works; contacts posted at every site.	Sites with a trained committee and posted contacts before works (target: all); complaints acknowledged within 3 working days (target: all); resolved within the standard of the tier (target: at least 90 percent); complainants satisfied (target: at least 80 percent).	Monthly; quarterly report	IIU Social Specialist; county focal points; community liaison officers

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