Development and paving works of the Bassar-Tindjassé Road, Togo

Environmental and social impact assessment

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ABBREVIATIONS

Acronyms and terms	
A	
ADMS	Atmospheric Dispersion Modelling System
AFOLU	forestry and other land use
ALARP	as low as reasonably practicable
ANADEB	National Agency for Support of Grassroots Development
ANGE	Agence Nationale de Gestion de l'Environnement (*National Management Agency*)
AoI	area of influence
AQI	air quality index
ATS	action tracking system
B	
BB	bituminous base
BID	Background Information Document
BIE	investment and equipment budget
BMP	Biodiversity Management Plan
C	
CAT	Convention against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment
CCD	Cantonal Development Committee
CCKP	Climate Change Knowledge Portal
CDQ	committee for neighbourhood development
CEDAW	Convention on the Elimination of All Forms of Discrimination against Women
CEET	Compagnie Énergie Électrique du Togo (*Togolese National Electricity Company)*
CEG	collèges d'enseignement general (*secondary school*)
CEMP	Cabinet D'expertise En Management
CERD	International Convention on the Elimination of All Forms of Racial Discrimination
CESMP	Construction Environmental and Social Management Plan
CH	critical habitat
CHA	critical habitat assessment
CHMP	Cultural Heritage Management Plan
CIA	cumulative impact assessment
CLO	Community Liaison Officer
CMIP6	Coupled Model Intercomparison Project Phase 6

Acronyms and terms	
CMS	community health centre
CNDH	National Human Rights Commission
CO	carbon monoxide
CO_2	carbon dioxide
COMEX	commission d'expropriation (*expropriation commission*)
CR	Critically Endangered
CRC	Convention on the Rights of the Child
CRPD	Convention on the Rights of Persons with Disabilities
CSIGERN	strategic investment framework for the management of the environmental and natural resources
CSR	Corporate Social Responsibility
CVD	Village Development Committee
D	
DEFRA	Department for Environmental, Food and Rural Affairs
DGSCN	Directorate-General of Statistics and National Accounts
DPS	Prefectural Directorates of Health
DRE	Regional Directorates of Education
DRS	Regional Directorate of Health
E	
EAAA	Ecologically Appropriate Area of Analysis
EBRD	European Bank for Reconstruction and Development
ECMWF	European Centre for Medium-Range Weather Forecasts
ECOWAS	economic community of West African states
EEZ	exclusive economic zone
EHS	environmental, health and safety
EIA	environmental impact assessment
EIFO	Export and Investment Fund of Denmark
EIS	environmental impact study
EN	Endangered
EP4	Equator Principles
EPC	engineering, procurement and construction
EPCF	engineering, procurement, construction and financing
EPFI	Equator Principles financial institution
EPRP	Emergency Preparedness and Response Plan
EPUK	Environmental Protection United Kingdom
ES	ecosystem services
E&S	environment and social

Acronyms and terms	
ESHR	environmental, social, and human rights
ESIA	environmental and social impact assessment
ESMF	Environmental and Social Management Framework
ESMMP	Environmental and Social Monitoring and Management Plan
ESMP	environmental and social management plan
ESMS	environmental and social management system
F	
FETAPH	Togolese Federation of Associations of Disabled Persons
FGD	focus group discussion
FIFO	first in first out
G	
GBIF	Global Biodiversity Information Facility
GBV	gender-based violence
GDP	gross domestic product
GHG	greenhouse gas
GIS	geographic information system
GLVIA	Guidelines for Landscape and Visual Impact Assessment
GMP	grievance management procedure
GoT	Government of Togo
GPH	good practice handbook
H	
HDV	heavy duty vehicle
HGV	heavy goods vehicle
HRRA	human rights risk assessment
HSE	health, safety and environment
I	
IAQM	Institute of Air Quality Management
IAS	invasive alien species
IBA	Important Bird and Biodiversity Area
IBAT	Integrated Biodiversity Assessment Tool
ICCPR	International Covenant on Civil and Political Rights
ICESCR	International Covenant on Economic, Social and Cultural Rights
ICRMW	International Convention on the Protection of the Rights of All Migrant Workers and Members of Their Families
IFC	International Finance Corporation
IFI	international financial institution
ILO	International Labour Organization

Acronyms and terms	
INAM	National Health Insurance Institute
IPCC	Intergovernmental Panel on Climate Change
ISSG	Invasive Species Specialist Group
IUCN	International Union for Conservation of Nature
J	
K	
KPIs	Key performance indicators
KBA	Key Biodiversity Area
KII	key informant interview
L	
LAQM	local air quality management
LCA	landscape character area
LCT	Landscape and visual character types
LDV	light duty vehicle
LRP	livelihood restoration plan
LULC	land use and land cover
LVIA	landscape and visual impact assessment
M	
MHI	mandatory health insurance
N	
NCC	national climate commitments
NDC	nationally determined contributions
NDP	national development plan
NEAP	national environmental action plan
NGO	non-governmental organisation
NNL	no net loss
NO_2	nitrogen dioxide
NSSD	national strategy for sustainable development
NTS	Non-Technical Summary
N/A	not applicable
O	
O_3	ozone
OFAC	Office of Foreign Assets Control
OHS	occupational health and safety
P	
PAC	project-affected community

Acronyms and terms	
PAH	project-affected households
PAN/LCD	national action programme to combat desertification
PANGIRE	national action plan for integrated water resources management
PANSEA	National Action Plan for the Water and Sanitation Sector
PAPs	project-affected persons
PBV	priority biodiversity value
PCHSA	preliminary critical habitat screening assessment
PCU	peripheral care unit
PIIM	project-inducted in-migration
PIUP	industrial processes and product use
PM	particulate matter
PM_{10}	particulate matter of size fraction approximating to <10 µm diameter
$PM_{2.5}$	particulate matter of size fraction approximating to <2.5 µm diameter
PNACC	Togo's National Climate Change Adaptation Plan
PNDHU	National Policy for Housing and Urban Development
PNEA	National Water and Sanitation Policy
PNEEG	National Policy for Equality and Gender Equality
PNGE	National Environmental Management Program
PNHAT	National Hygiene and Sanitation Policy
PNIERN	National Investment Programme for the Environment
PNR	National Reforestation Program
PNSET	National Environmental Monitoring Program
PONAT	National Spatial Planning Policy
POP	persistent organic pollutant
PPE	personal protective equipment
PS	Performance Standards (IFC)
Q	
QA/QC	quality control and quality assurance
R	
RAM	risk assessment matrix
RAP	resettlement action plan
RoW	right of way
RPF	resettlement policy framework
RTC	road traffic collisions
S	
SCA	supporting conservation action

Acronyms and terms	
SDG	sustainable development goals
SEA	sexual exploitation and abuse
SEP	Stakeholder Engagement Plan
SGI	small group interview
SH	sexual harassment
SO_2	sulphur dioxide
T	
TBTs	toolbox talks
TCFD	Task Force on Climate related Financial Disclosures
TdE	Société Togolaise des Eaux (*Togolese Water Company*)
ToR	terms of reference
U	
UNHR	universal declaration of human rights
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
UK	United Kingdom
UONGTO	Union des ONG du Togo (Union of NGOs of Togo)
USP	local health post
V	
VC	valued component
VOC	volatile organic compound
VTE	volunteer teacher
W	
WAEMU	West African Economic and Monetary Union
WHO	World Health Organization
WRI	World Resources Institute
X	
Y	
Z	
Units	
°C	degree Celsius
cm	centimetre
dB	decibel
dB(A)	A-weighted decibels
km	kilometre
km^2	square kilometre

Acronyms and terms	
km/h	kilometre per hour
LAeq	A-weighted, equivalent continuous sound level (in decibels)
LAeq, T	A-weighted Leq, measured over a specified period of time (T) (in decibels)
m	metre
mm	millimetre
m^3	cubic metre
masl	metres above sea level
mph	miles per hour
tCO2e	tonnes of CO_2 equivalent
$\mu g/m^3$	micrograms per cubic metre
%	percentage
>	greater than
<	less than

1 INTRODUCTION

1.1 Background

The Bassar-Tindjassé Road is approximately 93.8 km long, beginning at the town centre of Bassar where it intersects with National Road No. 17 (Bassar–Kabou) and terminating at the Ghanaian border. The route crosses the Bassar Prefecture for ~32 km before continuing through the Mô prefecture for the remaining distance. Along its course, the road connects several key towns, including Baghan in the Bassar Prefecture, and Kagnibara, Boulohou, Djarkpanga and Tindjassé in the Mô prefecture. However, traffic flows are low due to its poor and progressively deteriorating condition.

Table 1-1 summarises the project and indicates where more detail is available throughout the document.

Table 1-1: Project snapshot (summary)

Component	Description	Reference in document
Project name and location	The project name is 'Development and Paving Works of the Bassar-Tindjassé Road'. It is located in northern Togo, running from Bassar town centre (junction with National Road No. 17) to the Ghanaian border at Tindjassé, covering 93.8 km.	Sections 3.1 and 3.2
Right of way (RoW) and land take	The RoW is 20 m, and the expropriation zone is potentially up to 70 m.	Section 3.2
Key structures and crossings	A total of 208 locations requiring upgrade or installation of infrastructure at watercourses crossed by the road have been identified, and 6 watercourse crossings will require new structures. Key structures include 17 bridges/ frame bridges, 82 closed frame culverts (single and double) and 109 reinforced concrete pipes.	Section 3.3.4
Scope of works	The scope of works covers all the construction activities associated with the project; key elements include sourcing quarrying materials, RoW demarcation and clearance, demolition of existing structures, earthworks and topsoil management, base and sub-base construction, asphalt production, transport and compaction, drainage and ancillary works, installation of signalling and safety features, construction speeds, workforce, resources supply, waste management, and management of hazardous substances.	Section 3.5
Construction duration and phasing	Main construction is expected to last approximately 27 months, with peak construction expected to last around 20 months. The main construction period is expected to commence by May 2026, following completion of early works in October 2026. Project commissioning is anticipated by July 2028.	Section 3.4

Component	Description	Reference in document
Peak workforce and accommodation	The project will employ approximately 550 workers comprising both technical expatriates (~60 people) and local workers (~490 people) during the construction period. Construction camps will include accommodation for both the expatriate and local workforce.	Sections 3.3.5 and 3.5.10
Supporting facilities	Temporary laydown and storage areas will be established at appropriate locations along the RoW.	Sections 3.3.5 -3.3.10
Key permits and approvals	The project must secure ESIA approval and an environmental compliance certificate from ANGE; obtain land acquisition/expropriation permissions, quarry/mining permits, water abstraction and waste management permits, urban planning/building approvals and cultural heritage clearances; and meet occupational health and safety requirements.	Section 2.1
Applicable international standards and lender requirements	Applicable standards include the International Finance Corporation (IFC) Performance Standards (PS), Equator Principles IV (EP4), World Bank Group Environmental, Health and Safety (EHS) Guidelines, and Export and Investment Fund of Denmark (EIFO) lender standards.	Section 2.4

Key sensitive receptors	Key sensitive receptors include:
	• social receptors such as:
	  ○ settlements
	  ○ schools
	  ○ healthcare centres
	  ○ markets
	  ○ roadside stalls
	  ○ crop fields
	  ○ cultural heritage sites (e.g., fetish sites, graves)
	• ecological receptors such as:
	  ○ legally protected areas and internationally recognised areas for biodiversity conservation
	  ○ priority habitats
	  ○ priority species of fauna
	  ○ critical habitat triggers
	• physical environment receptors
	• priority ecosystem services.
		Section 5

The Government of Togo (GoT) has signed an engineering, procurement, construction and financing (EPCF) contract with FB Group for the upgrade (including paving works) of the Bassar-Tindjassé Road, which will include the Saiboudè (7 km) and Souroukou

(2.6 km) slip roads. EIFO is considering financing the project subject to an environmental and social impact assessment (ESIA), performed in line with EP4, which EIFO has adopted, and the IFC PS. Additionally, the project requires environmental authorisation from the national regulator.

An ESIA for the project was initially done by AGEIM and DECO in 2011/2012, and the report (prepared) was included in the detailed design report. However, the project was subsequently put on hold and road improvement works between 2012 and 2025 were never realised, resulting in ongoing deterioration of the road.

RSK has been commissioned to undertake a new ESIA to national and international requirements to support FB Group in reaching financial close, with a view to start construction in May 2026.

1.2 Project rationale

The Bassar-Tindjassé Road, which connects the Bassar prefecture to the agriculturally rich Mô plain, is currently a deteriorated lateritic earth track, typically 4–5 m wide and follows the natural terrain with minimal engineering intervention. The platform lacks a stabilised base or bituminous surfacing, and, in many sections, it lies at the same level as the surrounding ground.

The wearing course consists mainly of silty clay and dusty materials, making the road highly vulnerable to seasonal impacts and erosion. Steep gradients, poor drainage and inadequate maintenance further compromise its usability. Heavy vehicles face significant mobility challenges, with average travel speeds reduced to around 20 km/h.

During the dry season, the surface disintegrates rapidly, forming corrugations and generating excessive dust under traffic. In the rainy season, runoff erodes the carriageway, silts up ditches and creates deep ruts and gullies, rendering the road impassable. In addition to these seasonal challenges, road degradation is also accelerated by blocked ditches, excessive vegetation growth on the roadside, rainwater erosion and poorly functioning hydraulic structures. These conditions isolate communities, restrict trade and essential services and severely limit the region's economic potential.

Upgrading this corridor is a key priority within the GoT's strategies (e.g., the National Programme for Agricultural Investment and the Food Security and Integrated Rural Development Project of Mô Plain) to reduce transport costs, improve market access for rural producers and promote agricultural development, poverty reduction and regional integration with Ghana. The proposed design targets speeds of 80 km/h in rural areas and 40 km/h in urban sections, significantly improving connectivity and supporting economic growth. Additionally, the project aims to improve road safety and reduce accidents and fatalities.

1.3 Project team

1.3.1 Project owner

The project owner is the GoT. It is represented by the Ministry of Public Works (Ministère des Travaux Publics), which serves as the primary authority for overseeing road development and related public works in the country. This Ministry is tasked with the

planning, execution and maintenance of key infrastructure projects, including roads, bridges and transport networks, to support economic development, regional connectivity and improved accessibility. Through projects like the Bassar road upgrade, the Ministry aims to drive economic and social development by enhancing transport infrastructure to boost agricultural trade, reduce transport costs and improve access to markets and services in the Mô plain, fostering regional integration and poverty reduction.

1.3.2 Project developer

FB Group is a infrastructure investment and development firm, established in 2023 following a strategic spin-off from Summa Company. The Group focuses on delivering large-scale projects in emerging markets, with activities spanning transport, energy, mining and hospitality.

FB Group has been responsible for implementing the following projects:

- construction of the Doutchi-Tsernaoua road, Niger
- modernisation and expansion of Freetown International Airport, Sierra Leone
- construction of Libreville Tower, Gabon.

1.3.3 ESIA consultant

RSK Environment Ltd is a subsidiary of RSK Group Ltd. RSK Group Ltd is a fully integrated, environmental, social, health, safety and engineering services company employing staff in offices across the UK and worldwide.

RSK provides independent consultancy and technical services in the areas of environment, social, health and safety, engineering and sustainability management to industrial, financial and public-sector clients.

The team undertaking this ESIA has a strong record in successfully carrying out ESIAs for international projects in accordance with international standards (including the IFC PS and EP4) and national regulatory requirements.

1.3.4 Local partner

Cabinet D'expertise En Management (CEMP) is a Togo-based company with more than 15 years of professional experience in the identification, assessment, and management of environmental risks, working in line with the environmental and social policies and standards of development partners such as the World Bank, Kreditanstalt für Wiederaufbau, African Development Bank, French Development Agency (Agence Française de Développement), European Union and IFC, as well as local requirements. Their experience spans multiple sectors including energy, water, health, climate change and construction. CEMP specialises in sustainable development and environmental and social assessments, offering services such as project design, management and evaluation; climate change adaption; financial analysis and modelling; and water, sanitation and hygiene.

For this project, CEMP has provided scoping support, social and stakeholder engagement, biodiversity baseline surveys and technical inputs to the ESIA. Members of CEMP are registered with the Agence Nationale de Gestion de l'Environnement (National Management Agency; ANGE) as accredited independent consultants.

1.4 Scoping

RSK was commissioned by FB Group to conduct an ESIA scoping study prior to undertaking the ESIA study. The objectives of the scoping study were to:

- identify and prioritise issues of importance for the ESIA and scope out issues not considered significant
- define the approach for the rest of the ESIA process and the terms of reference (ToR)
- identify any practical challenges for the ESIA in terms of data availability and meeting national and international standards and to propose solutions for addressing these
- define the approach for stakeholder engagement to ensure stakeholders understand how they may be impacted, have the opportunity to express their opinions and see their concerns reflected in the ESIA.

The resulting scoping report was completed in October 2025 and submitted with the ToR to ANGE in line with national environmental impact assessment (EIA) requirements; see Section 2.1.1.2 where the national EIA process is described.

1.5 ESIA report objectives

Following completion of the scoping stage and approval of the ToR by ANGE, the full ESIA has been conducted in accordance with national requirements and international standards. The objectives of the ESIA report are to:

- describe the project components and activities for the construction, pre-construction and operational phases
- present the analysis of alternatives considered for the project
- provide information on resources consumed, emissions, discharges and wastes
- describe the current physical, biological and socioeconomic baseline within the project area of influence (AoI)
- identify and assess the potential environmental and social impacts, including human rights, during the various phases of the project (pre-construction, construction, commissioning and operation)
- develop suitable mitigation measures, management plans and monitoring programmes to minimise the potential impacts to as low as reasonably practicable (ALARP)
- seek approval of the ESIA report from ANGE
- seek approval from other potential international financial institution (IFI) lender(s).

1.6 Report structure

Table 1-2 outlines the ESIA report structure.

Table 1-2: ESIA report structure

ESIA structure	
Executive summary	Presents the non-technical summary (NTS) of the ESIA
Chapter 1: Introduction	Introduces the background, rationale and objectives of this ESIA report

ESIA structure	
Chapter 2: Regulatory framework	Provides an overview of the applicable legislation, standards and guidelines governing FB Group's operations
Chapter 3: Project description	Provides an overview of the project location and site description, project phases, utilities, resource consumption, transport, workforce, security, project schedule, emissions, waste, other environmental issues and associated facilities
Chapter 4: Project alternatives	Provides an analysis of the alternatives considered for the project, and the rationale for selecting the chosen options
Chapter 5: Environmental and social baseline conditions	Presents the current physical, biological and socioeconomic baseline in the project's AoI (with a definition and justification of the project's AoI), including the findings of surveys undertaken to fill data gaps identified during the scoping stage
Chapter 6: Stakeholder engagement	Details the planned engagement activities to be undertaken with stakeholders and highlights key stakeholder discussion points that have arisen during the preparation of this ESIA. Includes details of the ESIA public consultation and disclosure process
Chapter 7: Impact assessment methodology	Presents the scope and methodology for assessing potential environmental and social impacts from planned activities and unplanned events
Chapter 8: Impact assessment	Identifies and assesses environmental and social impacts due to the project before and after the application of mitigation measures. Includes the cumulative impact assessment
Chapter 9: Environmental and social management framework	Provides a framework management plan, including measures designed to prevent, reduce or offset significant adverse environmental and social impacts. Includes an overview of project-specific plans that will be developed by FB Group and their subcontractor(s). A commitments register developed following completion of the impact assessment and mitigation measures is provided in Appendix 12.
Chapter 10: References	Lists the references used to develop the ESIA report
Appendices	Including but not limited to baseline survey information; stakeholder engagement materials; supporting assessments such as the climate change risk assessment, greenhouse gas assessment, critical habitat assessment, air quality and noise assessment methodologies; and the project commitments register

2 REGULATORY FRAMEWORK

The proposed project will be carried out in accordance with the environmental and social requirements of:

- the Togolese institutional framework
- key policy and legislative requirements of Togo
- applicable international/regional conventions, protocols and agreements
- World Bank Group EHS Guidelines, 2007
- IFC PS, 2012
- EP4, 2020
- international good practice.

2.1 Relevant national policy and legislation

Table 2-1 below includes the national policies, strategies and plans relevant to the project.

Table 2-1: Relevant national policies, strategies and plans

Policy/strategy/plan	Description
National Environmental Policy (1998)	The National Environment Policy, adopted on 23 December 1998, sets out the overall framework for the promotion of rational management of the environment and natural resources with a view to development. It focuses on (i) the integration of environmental concerns into the national development plan; (ii) mitigation, elimination and/or reduction of negative environmental impacts of public or private development projects and programmes; (iii) strengthening national capacities in environmental and natural resource management; and (iv) the improvement of the living conditions and environment of the population.
Togo's Forest Policy for 2021–2030	Togo's Forest Policy for 2021–2030 aims to achieve 26% forest coverage by 2030, promoting sustainable management, restoration of degraded forests, and better integration of the forestry sector into national development. It is based on five strategic axes: the promotion of forest production, the restoration of stands, the development of partnerships, the improvement of the legal and institutional framework, and the development of forestry research.
National Reforestation Program (PNR) of Togo 2017–2030	The PNR of Togo, covering 2017–2030, aims to increase the country's forest cover and restore degraded lands. This objective is part of a broader vision of sustainable development and respect for the environment, with the ambition to plant one billion trees by 2030 to achieve 30% forest cover. The programme also aims to reduce the country's dependence on wood, create rural jobs and improve the living environment of the population.

Policy/strategy/plan	Description
National Water Policy (2010)	Adopted by the Togolese government in 2010 and revised in 2017, the Policy institutes the adoption of new practices in the integrated water resources management process. The Policy considers water as a common heritage and is based on the principles of equity and solidarity with the poorest sections of the population, economic efficiency and environmental sustainability. It prescribes the development of an integrated, transversal and participatory approach to resource management. This approach also takes into account the exhaustible nature of the resource. The national water policy prohibits human behaviour and practices whose impacts have a negative impact on the quality, quantity and availability of water.
National Water and Sanitation Policy (PNEA; 2017)	The PNEA is structured around four strategic axes: • preserving water resources for the development of all socioeconomic activities • improving access to drinking water services • improving access to hygiene and sanitation services • improving governance, the institutional framework and develop support instruments adapted to the new vision.
National Action Plan for the Water and Sanitation Sector (PANSEA) 2021–2025	The PANSEA 2021–2025, which is the declination of the PNEA, aligns with the national development plan and the government roadmap), regional and the international post-2015 agenda of the United Nations (the SDGs, the Paris climate agreement and the recommendations of UN-HABITAT 3). It aims to achieve the development objectives of the sector of water and sanitation. It is about (i) the preservation and rational use of resources by water in order to optimise social and economic benefit and (ii) universal, equitable and sustainable access to adequate drinking water, hygiene and sanitation services.
National Water and Sanitation Strategy	Togo's Strategy for Universal Access to Drinking Water and Sanitation seeks to provide all inhabitants with safe drinking water and suitable sanitation facilities by 2030. This ambitious approach is part of Togo's efforts to meet the United Nation's Sustainable Development Goals (SDGs).
National Action Plan for Integrated Water Resources Management (PANGIRE; 2010)	PANGIRE is a strategic framework designed to ensure the sustainable management of the country's water resources. PANGIRE aims to integrate various sectoral and inter-sectoral water strategies and programmes to ensure cohesive and effective water management. Key components include policy framework, institutional strengthening, stakeholder engagement, and monitoring and evaluation.

Policy/strategy/plan	Description
National Health Policy (2011)	The National Health Policy aims to guarantee the best possible health for all citizens by working to create an effective healthcare system that is based on both public and private, individual and group efforts, accessible and equitable, and able to meet everyone's right to health, especially the most vulnerable.
National Policy for Housing and Urban Development (PNHDU)	The PNHDU aims to promote healthy and sustainable human settlements and ensure access to decent housing for all populations in general and particularly for the low- and middle-income segments of the population. It is a question of organising urban growth in such a way that it can play a positive role in economic development, poverty reduction and inequality by allowing each citizen to access a quality life. Four strategic axes have been selected for the implementation of the policy: (i) capacity development; (ii) harmonious and balanced spatial development of Togolese urban centres and integration into the sub-regional urban network; (iii) facilitation of access to decent housing; and (iv) sustainable and rational waste management.
National Hygiene and Sanitation Policy in Togo (PNHAT; 2010)	Togo's National Hygiene and Sanitation Policy (PNHAT) aims to improve public health and environmental conditions through effective hygiene and sanitation practices. Key objectives of the policy include (i) reducing health risks by ensuring access to clean water and proper sanitation facilities; (ii) promoting hygiene education to encourage good practices among the population; (iii) strengthening institutional frameworks to support sustainable hygiene and sanitation initiatives; and (iv) enhancing waste management systems to prevent pollution and protect natural resources. This policy is part of Togo's broader efforts to achieve sustainable development and improve the quality of life for its citizens.
National Environmental Action Plan (NEAP; 1999)	Togo's NEAP aims to enhance the country's capacity for environmental management and sustainable development. The key objectives of the NEAP include (i) developing, adopting, implementing and promoting a national environmental policy; (ii) creating relevant tools, projects and programmes for the strategic management of the environment and natural resources to improve the quality of life for the population; (iii) promoting an environmental ethic by raising awareness about environmental issues, especially among grassroots communities; and (iv) mobilising national and international resources to finance environmental projects and programmes. This plan is integral to Togo's efforts to address environmental challenges and promote sustainable development.

Policy/strategy/plan	Description
National Development Plan (NDP 2020–2025; adopted 2020)	This current National Development Plan for the period 2020–2025 outlines the country's strategic vision for economic and social development. The plan focuses on three main pillars: (i) structural transformation of the economy, which involves diversifying the economy, promoting industrialisation and enhancing agricultural productivity to create jobs and reduce poverty; (ii) strengthening social development and inclusion, which aims to improve access to quality education, healthcare and social protection services, particularly for vulnerable populations; and (iii) promoting sustainable development, which includes efforts to protect the environment, manage natural resources sustainably and address climate change. The NDP is designed to build on the progress made under the previous plan (2018-2022) and address ongoing challenges to ensure inclusive and sustainable growth.
Government Roadmap 2020–2025	As part of the Government Roadmap, a meeting was initiated in Lomé on 22 January 2021 by the Head of Government with the private sector, technical and financial partners of Togo and which aimed to present the government roadmap 2020–2025 in order to mobilise all these partners around the five-year vision of the government. It takes into account the current context marked by a health crisis. "This roadmap pragmatically refocuses government action on medium-term development priorities." It is about "working on a reduced number of high-impact integrated projects and strategic reforms to better target, measure and report". The government's roadmap is divided into three main areas: (i) strengthening inclusion, social harmony and peacebuilding; (ii) creating jobs for young people by building on the strengths of the economy; and (iii) the modernisation of Togo and the strengthening of its structures.
Strategic Investment Framework for the Management of the Environmental and Natural Resources (CSIGERN; 2018)	Togo's Strategic Investment Framework for Environmental and Natural Resource Management (CSIGERN) is a comprehensive programming framework that guides environmental and natural resource management actions. Established in 2018, CSIGERN replaces the National Program of Investment for the Environment and Natural Resources. Key objectives of the framework include (i) integrating environmental concerns into sectoral policies, including aspects of climate change mitigation and adaptation; (ii) serving as a reference document for the Ministry of the Environment and Forestry Resources for planning and implementing sectoral development and investment projects; and (iii) setting a budget to finance actions in forestry and other environmental sectors.

Policy/strategy/plan	Description
	This framework aims to ensure sustainable management of natural resources and promote environmental protection in Togo.
National Environmental Management Program (PNGE; 2008)	PNGE is designed to enhance the country's capacity for sustainable environmental management. Key objectives of the PNGE include (i) strengthening national and decentralised management of environmental resources to achieve global environmental benefits; (ii) integrating environmental priorities into sectoral policies and ensuring sound environmental management practices; and (iii) building capacities at systemic, organisational, and individual levels to effectively implement international environmental conventions. The PNGE aims to promote sustainable development by addressing environmental challenges and improving the quality of life for the population.
National Spatial Planning Policy (PONAT; 2009)	The National Spatial Planning Policy (PONAT), adopted in May 2009, intends, among other things, to plan the area for any future intervention. The overall goal of this policy is to find adequate solutions to the territory's problems, to promote comprehensive and rational space management in order to improve the environment and living conditions of the population, and to contribute to the country's balanced and sustainable socioeconomic development.
National Policy for Equality and Gender Equality (PNEEG; 2011)	The PNEEG has as its main objective to make Togo an emerging country, without discrimination, where men and women will have the same opportunities to participate in its development and enjoy the benefits of its growth. This policy aims to promote, in the medium and long term, equity and gender equality, the empowerment of women and their effective participation in decision making at all levels of the development process in Togo. Its objectives are to establish an institutional environment, sociocultural, legal and economic favourable to the achievement of equity and gender equality in Togo and to ensure the effective integration of gender in development interventions in all sectors of economic and social life.
The National Action Plan for the Involvement of Togolese Women in Conflict Resolution and Peacebuilding: Strategies 42 for Implementing UN Security Council Resolutions 1325 and 1820	The UN adopted, in 2000 and 2008, respectively, resolutions 1325 and 1820 to protect women and girls against violence, including sexual violence, to include gender in development policies and programmes, to strengthen the participation of women in reconstruction and the peaceful settlement of disputes. The aim of these resolutions is to further integrate women into political processes and decision making. Regional organisations based on these resolutions, in order to effectively take into account these resolutions have adopted related tools. This is the AU Declaration on gender parity and the Regional Action Plan for the implementation of resolutions 1325 and 1820. These different initiatives have been appropriated by various women's organisations of civil

Policy/strategy/plan	Description
	society and Togolese unions involved in the field of promoting peace and security. Based on these achievements, these organisations have requested the support of the United Nations system in Togo for the implementation and application of Security Council resolutions 1325 and 1820. To this end, with the support of the Togolese State and the United Nations system in Togo, women's organisations and trade unions have developed an action plan for the dynamic promotion of resolutions 1325 and 1820. This action plan aims, for a period of five years, to increase the participation of women at all levels of decision making, especially in conflict prevention, management and resolution and peacebuilding.
National Strategy for the Implementation of the UNFCCC (2004; revised in 2010)	This Strategy outlines the country's commitment to addressing climate change through both mitigation and adaptation measures. The strategy's creation enhanced the Initial National Communication on Climate Change's efforts.
Convention on Climate Change (UNFCCC; 1995)	Priority actions as outlined in the UNFCCC National Implementation Strategy include improving agricultural and livestock production systems, managing household and industrial waste, communicating and educating people to change their behaviour, and managing natural resources sustainably in the land use and forestry sectors.
Nationally Determined Contributions (NDCs; 2021)	Togo's NDC document, which was approved by the MERF on 15 September 2015, outlined the country's quantified goals for reducing greenhouse gas emissions in order to support the UNFCCC's overarching goal. In this way, it reaffirms its commitment to help the UNFCCC achieve its goals of keeping global warming to 2°C by 2030. Activities to cut greenhouse gas emissions are highlighted in the NDC, especially in the areas of energy and agriculture, land use, and land use change and forestry.
National Strategy for Sustainable Development (NSSD; 2011)	Togo's NSSD document was verified in September 2011 and serves as a vital instrument for national development planning. The strategy focuses on several key areas including economic diversification and job creation; inclusive socioeconomic resilience; environmental sustainability; education and health; and infrastructure and logistics.
National Civil Protection Policy Horizon 2030	The vision of the national civil protection policy is to make Togo by 2030, a country where the safety and protection of people and property are guaranteed by reducing the risks related to disasters of all kinds in a serene political environment, with respect for human rights, democracy, social and economic justice and in a lasting stability conducive to economic growth and job creation. The national policy of civil protection is divided into three main strategic axes:

Policy/strategy/plan	Description
	• promote the strategy of prevention against disasters and risks • promote the response strategy to disasters and risks • strengthen resilience capacities to disasters, particularly rehabilitation and recovery.
National Strategy for Information and Education on the Environment (2012)	Togo developed its national strategy of information, education and communication on the environment in 2012 to encourage populations to take ownership of environmental preservation issues and adopt more responsible behaviours towards natural resources and the environment in general. The project owner, the stakeholders and the companies awarded the works must contribute to the success of this strategy by implementing the awareness actions for employees and residents that will be planned in the environmental and social management plan (ESMP) of said project.
National Strategy for the Conservation and Sustainable Use of Biological Diversity (2003)	The strategy was created to improve biodiversity conservation and sustainable use practices. It suggests fundamental concepts, guidelines and measures to guarantee the sensible and sustainable preservation and utilisation of biodiversity. It recommends (i) implementing appropriate taxation to deter the unchecked use of biological resources and (ii) conducting EIAs of new projects and environmental audits of ongoing activities to ensure the sustainable use and equitable sharing of roles and responsibilities arising from biodiversity management.
National Communications on Climate Change (2015)	Togo's National Communications on Climate Change are comprehensive reports submitted to the UNFCCC. These reports outline Togo's efforts, progress and strategies in addressing climate change. Some key points in the latest communications include mitigation efforts, adaptation strategies, capacity building, financial and technical support, transparency and reporting.
Togo's National Climate Change Adaptation Plan (PNACC; 2017)	This Plan outlines Togo's strategies and actions to address the impacts of climate change. Some key aspects of the plan include a vulnerability assessment, adaptation measures, an institutional framework, capacity building, financial resources, and monitoring and evaluation.
National Implementation Plan for the Stockholm Convention on Persistent Organic Pollutants (POPs; 2006)	Implementation is centred on replacing POPs and avoiding their discharge into the environment. The goal of the Convention is to guarantee improved POP management in compliance with its requirements in order to safeguard the environment and human health from its detrimental effects.
National Environmental Monitoring Program (PNSET; 2012)	It aims to identify the structures producing environmental data, their characteristics, as well as priorities in terms of harmonisation in the collection, management and dissemination of environmental

Policy/strategy/plan	Description
	databases. This would make it possible to develop or strengthen an appropriate institutional framework for the centralisation and dissemination of these environmental data at the national level and, if possible, to feed the various international networks. It is envisaged to develop an appropriate method of data collection and management and to estimate the costs related to the implementation of different operations that will be identified as priorities.
National Investment Programme for the Environment (PNIERN; 2010)	The PNIERN in Togo constitutes an operational response to address the environmental and socioeconomic challenges facing Togo. It allows through its actions to fight against poverty by ensuring economic and social development, to combat desertification
Sectoral Policy for Road Transport	The Policy aims to: • create of a network of national roads with a good level of service linking the different parts of the territory so as to open up agricultural production areas and promote the development of various growth sectors while ensuring the integration of country to the network of sub-regional communication channels • establish a network of connected, denser rural tracks serving rural areas and connected to the interurban road network • promote employment through labour-intensive work • improve access to safe, cost-effective and environmentally friendly road transport. The project remains an opportunity to achieve the objectives of the sectoral policy for road transport through the development of 3,784 km of urban streets.
Transport Orientation Law (2023)	The Transport Orientation Law provides a modern legal framework for all modes of transport in Togo. It aims to position the country as a competitive regional logistics hub while ensuring safe, secure and inclusive mobility for people and goods. The law promotes environmental protection, multimodal transport, and accessibility for vulnerable groups, while clarifying the roles of the State, local authorities and private actors in the sector's governance.
National Action to Combat Desertification (2001)	The National Action Programme to Combat Desertification (PAN/LCD), published in 2001 following Togo's ratification of the UNI Convention to Combat Desertification in 1995, provides the strategic framework for managing land and natural resources in a sustainable manner. It focuses on strengthening national capacities for natural resource management and sets out objectives such as promoting sustainable village land use, managing wetlands, restoring fragile ecosystems, developing green spaces, protecting

Policy/strategy/plan	Description
	biodiversity and supporting traditional practices to prevent land degradation.

Table 2-2 below includes the national legislation and standards relevant to the project.

Table 2-2: Relevant national legislation and standards

Law/regulation/standard	Description
Law	
Constitution of the Fifth Togolese Republic (6 May 2024)	Law No. 2024-005 of 06/05/2024 was adopted on 19 April 2024 and promulgated on 6 May 2024, allowing Togo to transition to a new republic. Article 80 creates an Economic, Social and Environmental Council to advise on draft laws, ordinances, and legislative proposals, ensuring environmental concerns are considered early in policy and project development. The Council plays a central role in integrating environmental, social, and economic sustainability. Article 17 affirms the right to health and a healthy environment, mandating public authorities to use natural resources responsibly. Developers must protect the environment while respecting property rights, in line with constitutional principles.
Law No. 2021-033 of 31 December 2021 on public procurement	This Law defines the framework for public procurement in Togo, establishing rules for awarding, executing and regulating contracts. It is guided by principles of transparency, competition, equal treatment and efficient public spending. The law applies to contracts issued by public authorities, including infrastructure projects, and prioritises open tendering, with exceptions strictly regulated. Oversight includes both pre- and post-procurement controls, and enforcement is managed by the Public Procurement Regulatory Authority, which also handles remedies and sanctions.
Law No. 2021-034 of 31 December 2021 on public-private partnership contracts	This Law governs public-private partnership contracts in Togo, outlining their legal regime and institutional framework. It ensures significant risk transfer to private partners, promotes budget sustainability and seeks value for money. Open tendering is the standard procedure, with competitive dialogue and private negotiation strictly regulated. Governance is supported by dedicated public-private partnership units and oversight mechanisms, aligned with public procurement laws to ensure transparency and accountability.

Law/regulation/standard	Description
Law No. 97-002 of 10 January 1997, published in the Official Journal of the Togolese Republic, concerns the creation of a Road Maintenance Fund	The Road Maintenance Fund is a legally established entity with financial autonomy, operating under the supervision of the Minister of Public Works. Its primary mission is to finance the maintenance of Togo's national road network. It is funded through road user charges on petroleum products, tolls, compensation for road damage, and contributions from the State and international partners. Its expenditures are strictly dedicated to road maintenance, with the possibility of financing rehabilitation works when resources permit.
Law No. 2025-006 of 14 April, 2025, concerning the fight against climate change	Adopted in April 2025, this law constitutes the main national legal framework for combating climate change in Togo. It aims to strengthen the country's climate resilience, reduce greenhouse gas (GHG) emissions and frame development projects in a logic of environmental sustainability. Article 4 requires institutions, companies and communities to develop and implement climate adaptation plans, while promoting mitigation actions through energy efficiency improvements, the promotion of renewable energies and the reduction of energy losses. Article 5, on the other hand, provides mechanisms for domestic and international resource mobilisation to support climate-friendly projects, and Article 6 strengthens transparency and citizen participation in environmental and climate action.
Law No. 2008-005 of 30 May 2008 establishing the legal framework on the environment	This law sets the general legal framework for environmental management in Togo. It aims to (i) preserve and sustainably manage the environment; (ii) guarantee an ecologically sound and balanced living environment for all citizens; (iii) create the conditions for the rational and sustainable management of natural resources for present and future generations; (iv) establish the fundamental principles intended to manage and preserve the environment against all forms of degradation in order to enhance natural resources, to fight against all kinds of pollution and nuisances; and (v) improve the living conditions of the population in a sustainable manner while respecting the balance with the surrounding environment. To this end, the provisions of the Law standardise the preservation of the environment as well as the penalties incurred in the event of violations and presents the institutions for the protection and management of the environment.
Law No. 2008-009 of 19 June 2008 establishing the forest code	Adopted on 19 June 2008, this Law defines the rules for the management of forest resources. The purpose of this code is to define and harmonise the rules for the management of forest resources with a view to a balance of co-systems and the preservation of forest heritage. It also contains provisions relating to the protection and

Law/regulation/standard	Description
	exploitation of wildlife resources and trade in wildlife products.
Law No. 96-004/PR on the Mining Code of the Togolese Republic, amended and supplemented by Law No. 2003-012 promulgated on 14 October 2003	Law No. 96-004/PR, establishing the Mining Code of the Togolese Republic, has been amended and supplemented by Law No. 2003-012, promulgated on 14 October 2003. These laws govern the mining industry in Togo, establishing rules and procedures regarding the exploration, exploitation and management of the country's mineral resources. It governs the exploration/exploitation of substances, including construction materials (sands, aggregates, stones).
Law No. 2011-008 of 5 May 2011 and its implementing decree n° 2017-023/PR govern the contribution of mining companies to local and regional development in Togo.	Togo's mining legislation and accompanying decree aim to ensure that the exploitation of mineral resources contributes meaningfully to local development. The framework promotes the allocation of mining revenues to infrastructure, job creation and economic growth in affected regions. It emphasises community participation and compensation for environmental and social impacts, while encouraging companies to invest in local services and infrastructure to stimulate regional economies.
Law No. 2010-004 of the 14 June 2010 establishing the code of water	The Code of Water establishes the general legal framework and the basic principles of integrated water resources management, including rules for the fight against water pollution and quality and quantity control. This law aims to (i) ensure the sustainable management and protection of water resources; (ii) regulate the allocation, use and conservation of water resources; and (iii) combat water pollution and control the quality and quantity of water resources.
Law No. 2011-006 of 21 February 2011 establishing the code of social security	The purpose of the Code of Social Security is to define the provisions governing the general compulsory social security system in Togo. This law aims to (i) provide social security coverage for all workers, including family and maternity benefits, pensions and occupational risks; (ii) ensure equitable access to social security benefits for all employees, regardless of race, gender, origin or religion; and (iii) regulate the affiliation and registration of employers and workers, as well as the financial management of social security branches.
Law No. 2022-018 of 15 November 2022 amending law no 2015-10 of 24 November 2015 on the new penal code, amended by law no 2016-027 of 11 October 2016	This amendment aims to strengthen the repression of certain offences, particularly those related to sexual violence, gender-based violence, trafficking in persons, child exploitation and economic crime. The law consolidates the protection of victims and aligns Togolese legislation with international conventions. It also introduces legal clarifications and more deterrent penalties to fight against impunity.

Law/regulation/standard	Description
Law No. 2018-005 of 14 June 2018 establishing code of property and land	This Law defines the fundamental rules and principles governing land and property management in Togo. This law aims to (i) regulate land tenure and property rights; (ii) ensure equitable access to land for all individuals and entities; (iii) secure land rights established or acquired through customary practices; (iv) combat land speculation in urban, peri-urban, and rural areas; and (v) promote sustainable land use for the well-being of current and future generations.
Law No. 2016-002 of 4 January 4 2016 on the framework law on territorial planning in Togo	The purpose of this Law is to define the principles and guidelines for the spatial planning and development of the national territory. This framework aims to (i) promote balanced and sustainable development across different regions of the country; (ii) ensure the efficient use of land and natural resources; (iii) enhance the living conditions of the population by improving infrastructure and public services; and (iv) facilitate the coordination of development activities among various governmental and non-governmental entities.
Law No. 2022-011 of 4 July 2022, amending Law No. 2007-011 of 13 March 2007, on decentralisation and local freedoms, as amended by Law No. 2018-003 of 31 January 2018, Law No. 2019-006 of 26 June 2019, and Law No. 2021-020 of 11 October 2021	The purpose of this Law is to enhance and update the legal framework for decentralisation in Togo. This law aims to (i) strengthen local governance by providing more autonomy and resources to local authorities; (ii) promote local development through improved management and decision making at the local level; and (iii) ensure greater participation of local communities in the governance process.
Law No. 2007-007 of 8 January 2007 on traditional chiefdom	The purpose of this Law is to define the status and roles of traditional chiefs within the country. This law aims to (i) recognise and formalise the authority of traditional chiefs in their respective communities; (ii) outline the responsibilities and duties of traditional chiefs in maintaining social order and cultural heritage; and (iii) promote the integration of traditional leadership within the modern administrative framework of Togo.
Law No. 2009-007 of 15 May 2009 related to the code of public health in Togo, looking to protect the individual, the family, and the community against illnesses and sanitary risks	The purpose of this Law is to define the rights and duties related to the protection and promotion of public health in Togo. This law aims to (i) organise the prevention and control of major endemic diseases; (ii) combat certain social scourges; and (iii) define specific health measures to protect the population.
Law No. 90-24 on the protection of national cultural heritage of 23 November 1990	The purpose of this Law is to ensure the protection, conservation, and enhancement of Togo's cultural heritage. This law aims to (i) safeguard both movable and immovable cultural properties that are of significant importance to the national community; (ii) prevent the unauthorised exportation, exploitation, and reproduction of cultural heritage items for commercial purposes; and (iii) promote

Law/regulation/standard	Description
	the value and sustainable use of cultural heritage for educational, cultural and tourism purposes.
Law No. 2015-010, enacted on 24 November 2015, is Togo's Penal Code, which replaced the previous code from 1980	This Code criminalises various offences against individuals, including marital rape, explicitly addressed under Articles 211–212. It also prohibits female genital mutilation. Additionally, the Code criminalises consensual same-sex sexual conduct, categorising it as an “immodest or unnatural act” and an affront to public decency, punishable by up to three years’ imprisonment and a fine.
Togo Labour Code 2021 Law No. 2021-012 : Adopted in 2021, this law governs employment contracts, working hours, and worker rights in Togo	The law mandates written employment contracts, limits the misuse of fixed-term contracts and regulates working hours, leave entitlements and telecommuting. It enforces equal pay, prohibits discrimination and bans all forms of forced labour, ensuring fair treatment for all workers. It also includes provisions for workplace health and safety, requiring employers to prevent accidents and contribute to social security schemes. To protect workers' rights, it establishes mechanisms for labour inspections, dispute resolution, and mediation. Additionally, it sets guidelines for internships to prevent exploitation and addresses the evolving nature of work environments. Overall, the code aims to create a balanced and fair relationship between employers and employees while safeguarding workers' rights and promoting equitable practices.
Decree/order	
Transport Framework Act (December 22, 2022) Decree No. 2023-051/PR of 9 June 2023, which specifies the conditions for access to and exercise of road transport activities	This law lays down the general principles governing the transport sector in Togo. It lays the foundations for the regulation of road transport activities, particularly in public and private transport of goods and passengers, as well as for professions such as intermediaries and transport auxiliaries. This law aims to ensure safety, continuity, adaptation and compliance with environmental standards in the transport sector.
Decree No. 2023-051/PR of 09/06/2023 setting the conditions for access to the profession of road transport carrier, intermediary or auxiliary and for carrying out road transport activities	The Decree was adopted with support from the International Road Transport Union and the World Bank, modernises Togo’s road transport sector by strengthening its legal and institutional framework. It emphasises the formalisation and professionalism of transport operators, the introduction of clearer contractual rules, and improved safety standards for both goods and passenger transport. By aligning national regulations with international and regional best practices, the law aims to make the sector more competitive, sustainable and better governed, while fostering the role of private actors in delivering reliable and secure transport services.

Law/regulation/standard	Description
Decree No. 2017-040/PR of 23 March 2017 laying down the procedure for environmental and social impact studies	This Decree establishes the technique, methodology, and content of ESIAs in accordance with Article 39 of Law No. 2008-005 of 30 May 2008, on the foundation law for the environment. It also specifies which projects must be subject to ESIAs, whose studies allow for the assessment of their environmental impact prior to any decision on permission or approval by a public authority.
Decree No. 2011-041/PR of 16 March 2011 setting the methods of implementation of an environmental audit	The purpose of this Decree is to establish the methods for implementing environmental audits. This decree aims to (i) define the procedures and standards for conducting environmental audits; (ii) ensure compliance with environmental regulations and promote sustainable environmental management; and (iii) identify and mitigate environmental risks associated with various activities.
Decree No. 2016-043/PR of 1 April 2016 establishing the regulation of the delivery of acts of urbanisation	The purpose of this Decree is to regulate the issuance of urban planning documents. This decree aims to (i) define the procedures for obtaining urban planning permits and certificates, such as building permits, work declarations and certificates of conformity; (ii) ensure compliance with urban planning, construction, hygiene, environmental protection, housing and fire safety regulations; and (iii) establish penalties for violations of urban planning regulations, including unauthorised construction and non-compliance with approved plans.
Decree No. 2019-189/PR of 05/12/2019 on the powers, organisation and operation of the expropriation commission (COMEX) and Decree 2021-055/PR of 12 May 2021 amending and supplementing it.	COMEX is responsible for negotiating with individuals affected by development projects, proposing compensation, and ensuring the release of sites for public use. COMEX operates under the Ministry of Economy and Finance, which includes representatives from various government sectors to ensure comprehensive decision making. The involvement of COMEX is mandatory for all projects requiring expropriation for public utility. Key elements in the amendments include enhanced procedures, expanded roles and updated compensation guidelines.
Decree No. 0150/MERF/CAB/ANGE of 22 December 2017 setting the methods of public participation in social and environmental impact studies	This Decree is issued in line with the terms of Decree No. 040-17/PR of 23 March 2017, which establishes the procedure for conducting ESIAs. The purpose of this regulation is to provide ways for public participation in social and EIAs. This decree seeks to (i) ensure that the public is informed and involved in decision making regarding projects with potential social and environmental consequences; (ii) collect public opinions and concerns for incorporation into the ESIA process; and (iii) improve transparency and accountability in project implementation by involving affected communities and stakeholders.

Law/regulation/standard	Description
Decree No. 2024-067/PR of 12/12/2024 on the vulnerability criteria for non-monetary or multidimensional poverty and monetary poverty among households in the Togolese Republic	This Decree establishes criteria for assessing both non-monetary and monetary vulnerability of individuals and households. Key aspects of non-monetary vulnerability include health and nutrition, education, housing and living conditions, and social inclusion, while those of monetary vulnerability include income levels, employment status and access to financial services. This order aims to provide a comprehensive framework for identifying and supporting vulnerable populations in Togo, ensuring targeted and effective interventions.
Decree No. 97-256-PR of 3 December 1997 prohibiting the import and use in public works and buildings of materials containing asbestos	This Decree prohibits the importation and use of materials containing asbestos in public works and buildings, and imposes enforcement measures and controls.
Decree No. 70-164/PR of 2 October 1970 establishing, pursuant to the provisions of Article 213 of the Labour Code, conditions and general measures for hygiene, safety and health in the workplace	This Decree mandates general hygiene measures, including regular cleaning and disinfection of work premises (Article 1 & 2). It requires constant protection of workspaces from sources of infection such as sewers and cesspools (Article 4). Employers must provide masks and protective gear against toxic dust, vapours and gases. Additionally, establishments must supply clean drinking water (Article 10) and gender-separated sinks (Article 11). Section 2 covers elevator safety: lifting devices must display maximum load limits, and personnel transport via goods lifts must not exceed one-third of the rated load (Article 42). Section 3 addresses machinery safety, requiring quarterly inspections of equipment that could pose accident risks (Article 43).
Decree No. 2012-043/PR of 27 27 June 2012, revising the tables of occupational diseases	This decree gives the list of diseases considered as occupational and the tables of said diseases. It defines an occupational disease as a disease resulting from working conditions and which is listed in the tables of occupational diseases annexed to the text.
Decree No. 2019-096/PR of 8 July 19, regulating delegated public project management and project management in the Togolese Republic	This decree aimed to fill a legal gap in the management of major public projects in Togo by supervising delegated public project ownership and project management. It aims to enable the State and local authorities, where their internal powers are limited, to entrust the design, monitoring or execution of projects to qualified entities, in accordance with clear rules on competence, integrity and transparency. The text defines the responsibilities of the delegated project owners and project managers, sets out the conditions for selecting and carrying out their tasks, and provides for control, audit and sanction mechanisms in order to ensure the quality of the works, the proper use

Law/regulation/standard	Description
	of public resources and compliance with national standards.
Decree No. 11-86-MSPASCF of 20 June 1986 on the organisation of medico-sanitary services in companies	Article 16 of this decree concerns the presence and constitution of emergency boxes in establishments. It was stated that an emergency box must be installed and supplied with medicines and dressing items in each parastatal or private establishment operating in the Togolese Republic, for any kind of activity, and employing less than 20 workers.
Interministerial Decree No. 005/2011/MTESS/MS laying down the conditions under which the various forms of surveillance of workers' health, of the working environment, prevention, improvement of working conditions and monitoring and evaluation of activities are carried out	This Decree, through 18 articles, sets out the conditions for occupational health and safety services, requiring employers to conduct medical exams before hiring, annually, and during job changes. It outlines special supervision for certain workers, mandates exams for retiring staff, and defines who can perform these evaluations. The decree also assigns responsibilities to all parties involved in health surveillance.
Interministerial Decree No. 004/2011/MTESS/MS on the creation of occupational safety and health services	Togo requires companies to establish occupational safety and health services to protect workers and prevent risks. Depending on company size and activity, these services may be internal or shared, with approval from the Ministry of Labour and consultation with the Ministry of Health. Staffed by qualified professionals, occupational safety and health services are responsible for risk prevention, workplace monitoring, first aid and promoting health. The decree also outlines how these services should be organised and operated, respecting the autonomy of occupational safety and health personnel.
Interministerial Decree No. 006/2011/MTESS/MS on the conditions for the approval of occupational safety and health personnel	This Decree outlines the formal and substantive requirements for approving occupational safety and health services. It defines the roles of occupational physicians and nurses (Arts. 2–3), and specifies who is authorised to serve as occupational safety and health personnel (Art. 4). Articles 5–6 detail eligibility for approval, while Articles 7–9 set conditions for service provision.
Decree No. 008/2011/MTESS/DGTLS of 26 May 2011 on the composition and functioning of the Occupational Safety and Health Committee, issued in accordance with Article 168 of the Labour Code	This Decree specifies the responsibilities, determines the composition and sets out the operating procedures of the Technical Advisory Committee on Occupational Safety And Health. The Committee is responsible for coordinating workplace risk prevention, including issues like HIV/AIDS, smoking, stress, substance abuse and violence. It reviews and advises on regulations related to working conditions, hygiene, safety and the organisation of occupational safety and health services. It also evaluates rules for health surveillance, workplace monitoring and the provision of medical equipment and supplies for occupational safety and health staff.

Law/regulation/standard	Description
Decree No. 0316/MFPTDS of 2 February 2024, prohibiting discrimination, sexual or moral harassment, violence or intimidation in the workplace and at work	This Decree prohibits discrimination, sexual or moral harassment, violence and intimidation in the workplace. Employers are required to take preventive measures, raise awareness, train staff and integrate these issues (including psychosocial risks) into occupational safety and health protocols. Chapter 2 outlines obligations and sanctions, emphasising the employer's duty to foster a respectful and safe work environment.
Order	
Order No. 0149/MERF/CAB/ANGE of 22 December 2017 on the conditions for the approval of environmental assessment consultants	The purpose of this Order is to establish the conditions for the approval of environmental assessment consultants. This order aims to (i) set the criteria and procedures for the accreditation of consultants who conduct environmental assessments; (ii) ensure that environmental assessments are carried out by qualified professionals who meet specific standards; and (iii) enhance the quality and reliability of environmental assessments to support sustainable development and environmental protection.
Order No. 0151/MERF/CAB/ANGE of 22 December 2017 establishing the list of activities and projects subject to environmental and social impact assessment	This Order specifies the numerous activities and projects that are subject to an ESIA. The purpose of the Order is to (i) identify activities and projects that could have significant environmental and social impacts; (ii) ensure that these activities and projects are thoroughly assessed to mitigate potential negative effects on the environment and society; and (iii) promote sustainable development by integrating environmental and social considerations into project planning and decision-making.
Order No. 215/MEF/SG/DAD of 23 November 2018 setting the base prices for concessions or transfers of rural land throughout the national territory in the event of expropriation and administrative leases	This Order establishes the base prices for concessions or transfers of rural land across the national territory in cases of expropriation and administrative leases. Key points covered include base prices, expropriation, administrative leases and implementation. This order aims to provide a clear and fair framework for land transactions involving rural land, protecting the rights of landowners and facilitating public projects.
Order No. 019/MERF of 1 June 2005 regulating the transportation of solid waste and materials likely to be dispersed into the environment during transit	This Order regulates the transport of solid waste and materials likely to be dispersed into the environment during transit. It applies to all solid waste (excluding hazardous or toxic waste), scrap, rubble, gravel, sand, laterite, clay and similar materials. The order requires drivers to prevent releases into the environment and mandates that such materials be transported in closed containers sheltered from the wind. Where this is not possible, loads must be securely covered, such as with tarpaulins for sand, gravel or rubble, and nets for waste and recyclables, to avoid dispersion during

Law/regulation/standard	Description
	transport. This Order provides an important framework for controlling pollution and protecting public health during the movement of bulk materials.
Order No. 1619/MUHCV-CAB/SG of 7 December 2018 concerning the technical control of construction works and risk-based inspection procedures	This Order establishes the rules relating to the technical control of the construction of works and the methods of risk-based inspections in the Togolese Republic.
Order No. 729 of 23 August 2024, on the reaction to fire of materials (classification and approval)	This order classifies materials according to their reaction to fire and specifies the tests/approvals applicable to structures.

2.1.1 Impact assessment process

The elements of the ESIA process required under national law are shown in the overall ESIA process diagram in Figure 2-1 below. The different stages of the Togolese ESIA procedure are outlined in Sections 2.1.1.1–2.1.1.9 below.

2.1.1.1 Submission of the project notice

The project developer prepares a project notice, which is submitted to the Minister of Environment with a copy to ANGE. The notice must comply with the provisions of Article 7 of Decree No. 013/MERF regulating the procedure, methodology and content of ESIAs. ANGE, in collaboration with the relevant technical services, categorises the project, determining whether a simplified or detailed ESIA is required.

2.1.1.2 Preparation of ToR (scoping report)

The project developer, assisted by a study bureau or consultant accredited by ANGE, prepares a draft ToR based on the official guidelines and in accordance with the regulatory framework. The ToR clarifies legal requirements, outlines the ESIA methodology and scope, describes how the ESIA report will be prepared and provides practical guidance on how to carry out each part of the assessment (e.g., project description, stakeholder engagement, impact assessment).

CEMP, a consultancy with personnel accredited by ANGE (see Section 1.3.4), supported the ToR preparation and submitted the document to ANGE.

2.1.1.3 Site visit

ANGE, together with the relevant technical services, conducts a site visit with the project developer and the selected study bureau/consultant (coordinated by CEMP). The visit allows the sponsor to present the project and justify the choice of options. ANGE evaluates the environmental and social stakes aspects to the site and consults local populations and stakeholders to gather their opinions.

2.1.1.4 Validation of the ToR (scoping report)

Following the site visit, ANGE reviews and comments on the draft ToR. After the developer integrates all observations, ANGE validates the ToR and invites the developer to carry out the ESIA.

2.1.1.5 *Draft ESIA report*

The accredited study bureau/consultant (RSK is supported by CEMP) prepares the draft ESIA report under the responsibility of the developer. The draft is submitted to ANGE for review of compliance with legal requirements, ToR and methodological guides.

2.1.1.6 *Public participation*

Depending on the project's scale and characteristics, ANGE may submit the draft ESIA for public participation, through document consultation, public inquiry, hearings or involvement of civil society representatives in the review committee.

CEMP will conduct public disclosure of the ESIA in early 2026.

2.1.1.7 *Technical and national review*

The draft ESIA is first reviewed internally by ANGE, then submitted to a national workshop with an ad-hoc committee established by the Minister of Environment. The committee evaluates data quality, methodology, compliance with regulations and relevance of proposed mitigation measures.

2.1.1.8 *Final ESIA report and environmental compliance certificate*

The developer integrates all observations into the final report (supported by RSK and CEMP) and submits it to ANGE with a request for an environmental compliance certificate. After verification and payment of the required fees, ANGE issues a technical opinion and the Minister delivers the certificate, which constitutes official authorisation for project implementation.

2.1.1.9 *Implementation and monitoring of the ESMP*

The developer executes the ESMP, submits quarterly implementation reports and undergoes regular inspections by ANGE. During the operational phase, an environmental audit must be conducted every four years.

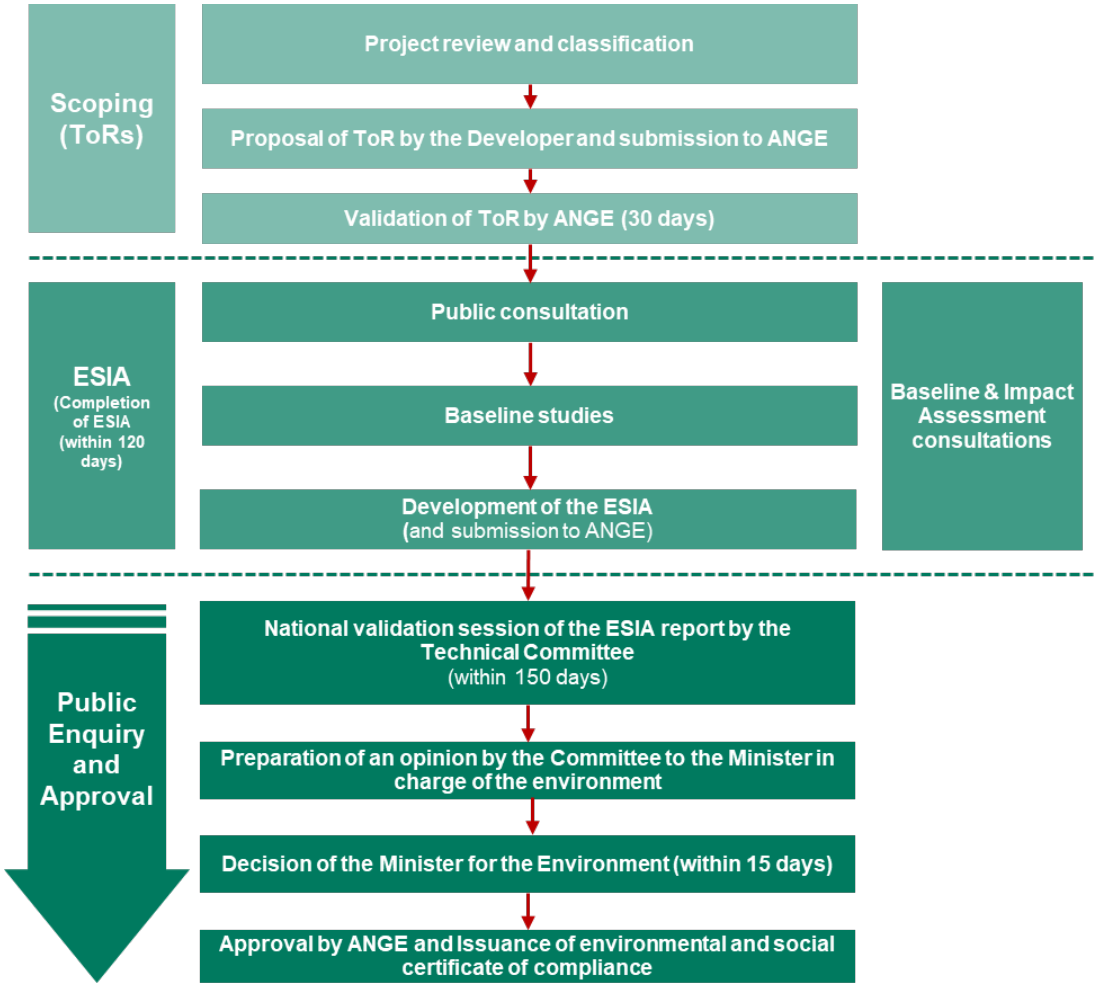

Figure 2-1: Indicative schematic of the impact assessment process

2.2 Implementing agencies

2.2.1 National Environmental Management Agency (ANGE)

ANGE was created by the law n° 2008-005 on May 30, 2008, as a public administrative institution with legal personality and financial autonomy to support the implementation of the country's national environmental policy. The Agency aims to provide high-quality environmental evaluation and information services to promote sustainable development by 2030.

2.2.2 Ministry of Water and Sanitation

This Ministry is responsible for ensuring the availability and sustainable management of water resources and sanitation services across the country and is responsible for the development, management and regulation of water resources and sanitation services in the country. The ministry coordinates and monitors national policies, programs and actions in the water and wastewater treatment sector. This Ministry is responsible for implementing the Government's guidelines for the supply of water to the population and the management of Togo's water resources.

2.2.3 Ministry of Public Service Reform, Labour, and Social Dialogue

This ministry is dedicated to modernising the public service, ensuring fair labour practices, and fostering constructive dialogue between employers, employees, and the government. By addressing these critical areas, the ministry aims to promote efficient governance, protect workers' rights, and maintain social harmony.

2.2.4 Ministry of Territorial Administration, Decentralisation and Customary Chieftaincy

This Ministry is responsible for overseeing the country's administrative divisions and promoting local governance. The ministry's key functions include: (i) managing the administrative organisation of Togo's regions, prefectures, and communes to ensure effective governance and public service delivery; (ii) implementing policies that transfer certain powers and responsibilities from the central government to local authorities, enhancing local autonomy and participation in governance; (iii) providing training and resources to local officials to strengthen their capacities and improve local governance structures.

2.2.5 Ministry of Urban Planning, Housing and Land Reform (MUARF)

This ministry is responsible for implementing the government’s policies that are crucial for the orderly development of urban areas, the provision of adequate housing, and the effective management of land resources.

2.2.6 Ministry of Infrastructure and Transport

This ministry is a key governmental body responsible for the development and maintenance of the country's infrastructure and transportation systems. The Ministry has evolved over time, reflecting the growing importance of infrastructure and transport in Togo's development. It has been known by various names, including the Ministry of Public Works. The Ministry aims to enhance the quality and efficiency of infrastructure and transport services to support economic growth and improve the quality of life for Togolese citizens.

2.2.7 Ministry of Agriculture, Village Water Supply and Rural Development

Togo's Ministry of Agriculture, Village Water Supply, and Rural Development is committed to improving the agricultural sector, providing long-term water supply in rural regions, and encouraging rural development.

2.2.8 Ministry of Grassroots Development, Financial Inclusion, Youth and Youth Employment

The Ministry was created to address the needs of grassroots communities, enhance financial inclusion, and support youth development and employment. The Ministry aims to foster sustainable development by empowering local communities, improving access to financial services, and creating opportunities for youth.

2.2.9 Ministry of Security and Civil Protection

The Ministry of Security and Civil Protection is a governmental body responsible for maintaining public safety and managing civil protection efforts.

2.2.10 Ministry of Environment and Forest Resources

The Ministry of Environment and Forest Resources is a governmental body responsible for the protection and sustainable management of the country's natural resources. The Ministry oversees environmental protection and the management of forest resources in Togo and aims to ensure the sustainable use of natural resources, protect biodiversity, and combat environmental degradation to support sustainable development.

2.2.11 Ministry of Health, Public Hygiene and Universal Access to Health Care

Togo's Ministry of Health, Public Hygiene and Universal Access to Health Care is a vital governmental body responsible for ensuring the health and well-being of the population, and the implementation of universal health care policies.

2.2.12 Ministry of Human Rights, Citizenship Training and Relations with the Institutions of the Republic

This Ministry is a governmental body focused on promoting human rights, educating citizens, and fostering relationships with various institutions. The Ministry was created to address the critical areas of human rights, citizenship education, and institutional relations in Togo.

2.2.13 Ministry of Mines and Energy

Togo's Ministry of Mines and Energy is responsible for developing and coordinating state policies in the fields of mining, geology and energy sectors. Their responsibility also include controlling the country’s mineral resources, monitoring energy production and distribution, promoting environmentally friendly practices and supervision of the public companies and establishments under its jurisdiction.

2.2.14 Ministry of Justice and Legislation

Togo's Ministry of Justice is a governmental body responsible for overseeing the country's judicial system and ensuring the rule of law.

2.2.15 Ministry of Social Action, Solidarity and the Advancement of Women

This Ministry is dedicated to promoting social welfare, community solidarity, and gender equality.

2.2.16 Ministry of Planning, Development and Cooperation

The Ministry of Planning, Development and Cooperation is a governmental body responsible for overseeing the country's development planning, state planning, and cooperation efforts. The Ministry is also tasked with coordinating, implementing, monitoring and evaluation of the government’s development policies and strategies.

2.2.17 Ministry of Economy and Finance

Togo's Ministry of Economy and Finance is a central governmental body responsible for managing the country's economic policies, public finances, and financial regulations. The Ministry is responsible for national policy on development planning and regional planning. As such, it is responsible, among other things, for knowing, planning, arbitrating and

observing the territory for any intervention, and for developing a practice of spatial planning by setting up frameworks for spatial coherence of national and regional development actions. As the institution responsible for implementing and monitoring the country's short- and medium-term economic and financial policy, the Ministry of the Economy and Finance will play an active role in implementing the RAP. In fact, it will have to provide funds that will be allocated to those affected who must be compensated, in accordance with the provisions of the laws and procedures in force. Compensation for those affected by the projects will be paid through the Expropriation Commission (COMEX).

2.2.17.1 Role in the preparation and implementation of safeguard instruments (ESIA and RAP)

In environmental assessments, the Ministry of Economy and Finance involved in issues of compensation for loss of property or income through COMEX. Created by Law 2014-014 of 22 October 2014 on the modernisation of the State's public action in favour of the economy and governed by Decree No. 2019-189/PR of 05/12/2019, COMEX previously known as the Interministerial Compensation Committee (CII) is responsible for communicating with the population and making proposals with a view to compensating people expropriated of their property as part of public utility projects. The Commission may call on any other natural or legal person whose expertise is deemed useful for the accomplishment of its mission. It reports regularly on the progress of its work to the Minister of Finance.

2.2.17.2 General information about COMEX

COMEX is placed under the supervision of the Minister of the Economy and Finance and headed by a Chairman appointed by decree in the Council of Ministers, on the proposal of the Minister of the Economy and Finance, for a term of office of four (4) years, which can be renewed. The other members of the COMEX are appointed by order of the Minister of Finance, after nomination by their parent bodies, for a term of three (3) years, which can be renewed. All projects requiring expropriation in the public interest must be referred to the COMEX. As soon as they receive the results of the environmental and social impact studies, the ministerial departments, public services and legal entities governed by public law send COMEX the resettlement plan for people affected by the projects they are coordinating, and initiate the procedure for declaring the said projects to be in the public interest, in conjunction with the services responsible for property.

2.2.17.3 COMEX's role

COMEX's role is to negotiate with people affected by development projects, make proposals for compensation and clear sites or rights of way before work is carried out. To this end, it is responsible for:

- receiving from ministerial departments, public services and any legal entity governed by public law, information relating to projects of general interest that require expropriation or involuntary resettlement
- ensure compliance with the expropriation procedure
- analysing and implementing Resettlement Action Plans for projects requiring expropriation or involuntary resettlement
- verifying the study data in the field, carry out a counter-expertise and draw up a verification report

- providing annual forecasts of expropriation amounts based on information received from departments after reconciliation with the data used in the Public Investment Programme (PIP)
- keeping up-to-date forecasts of compensation requirements to send estimates to the Director General of the Budget and Finance Department and the Director General of the Treasury and Public Accounting Department
- organising information and awareness-raising sessions for people affected by project implementation
- organising the negotiation process
- validating the standard form for negotiation minutes or a memorandum of understanding for an amicable transfer
- sign negotiation minutes or memoranda of understanding for amicable sales;
- authorising the payment of compensation
- monitoring and evaluate upstream and downstream compensation processes;
- validating compensation reports
- monitoring the release of project rights of way give an opinion in the event of exceptional expropriation procedures.

2.2.17.4 Organisation and operation of the COMEX

The COMEX is composed as follows:

- three (3) representatives of the Ministry of Finance, including one representative of the Investment Coordination and Control Committee
- one (1) representative of the Ministry responsible for Planning
- one (1) representative of the Ministry of Justice
- one (1) representative from the Ministry of Public Works
- one (1) representative of the Ministry for the Environment
- one (1) representative of the Ministry of Territorial Administration
- one (1) representative of the Ministry responsible for town planning
- one (1) representative of the Ministry of Social Affairs
- one (1) representative of the Estates Department
- one (1) representative of the land registry.

When the project, for which the expropriation procedure for reasons of public interest is required, concerns a municipality, COMEX involves the mayor of this municipality, as a resource person, in the said procedure.

2.2.17.5 Role of the COMEX technical unit

The Technical Unit is the COMEX's operational body. As such, it is responsible for:

- receiving mail and files on behalf of COMEX
- preparing dossiers for submission to the Executive Committee
- welcoming those affected and providing information on expropriation and compensation procedures
- analysing technical reports and ESIA reports for projects requiring expropriation and organising the validation of action plans for the resettlement of affected people
- carrying out counter-assessments of property valuations impacted by projects

- organising information and awareness-raising sessions in connection with the COMEX
- organising negotiation sessions
- preparing negotiation minutes or memoranda of understanding for amicable sales
- preparing compensation payment statements
- preparing compensation reports
- organising the monitoring of the release of project rights-of-way.

2.2.17.6 Organisation of the COMEX technical unit

The technical unit includes lawyers, civil engineers, technicians, accountants, surveyors and secretaries. The staff of the technical unit includes civil servants on secondment to COMEX and staff recruited following a call for applications. The Technical Unit may be assisted, with the authorisation of the President of the COMEX, by any persons whose skills are deemed useful for the performance of its tasks. The rules governing the operation of the technical committee are set out in the COMEX rules of procedure. The technical unit is placed under the responsibility of a coordinator appointed by order of the Finance Minister, who attends COMEX meetings. The COMEX meets at least twice a month, convened by its chairperson, to deliberate on expropriation cases. The COMEX assesses the rates of remuneration in accordance with the national legislation in force.

The proposed Project will therefore review COMEX assessments to ensure that they comply with African Development Bank standards before negotiating with PAPs to ensure that compensation is in line with the project financing agreement.

2.3 International conventions and agreements

Table 2-3 below presents the conventions and agreements applicable to the project that have been ratified by Togo.

Table 2-3: Key international conventions and agreements

International convention or agreement	Date of ratification
Revised ECOWAS Treaty (1993)	27 June 1975
Convention on International Trade in Endangered Species of Wild Fauna and Flora (Washington, 1973)	23 October 1978
Montreal Protocol on Substances that Deplete the Ozone Layer (1987)	25 February 1991
Vienna Convention for the Protection of the Ozone Layer (1985)	25 February 1991
United Nations Framework Convention on Climate Change (Rio, 1992)	8 March 1995
Marrakesh Agreement establishing the World Trade Organisation (1994)	19 April 1995
Convention on Wetlands of International Importance Especially as Waterfowl Habitat (Ramsar Convention, 1971)	4 July 1995
Convention on Biological Diversity (Rio Convention, 1992)	4 October 1995
United Nations Convention to Combat Desertification (Paris, 1994)	4 October 1995

International convention or agreement	Date of ratification
Convention on the Ban of Import into Africa and the Control of Transboundary Movements and Management of Hazardous Wastes within Africa (Bamako, 1991)	6 May 1996
Convention on the Conservation of the World Cultural and Natural Heritage (1972)	15 April 1998
Kyoto Protocol (1997)	2 July 2004
Convention on the Control of Transboundary Movements of Hazardous Waste and their Disposal (Basel Convention, 1989)	2 July 2004
Stockholm Convention on Persistent Organic Pollutants (2004)	22 July 2004
Maputo Convention on the Conservation of Nature and Natural Resources (2003)	2 October 2005
WTO Agreement on Trade Facilitation (2013)	1 October 2015
Paris Agreement (2015)	28 June 2017
International Labour Organisation (ILO) Conventions	
ILO Convention 29 on Forced Labour (1930)	7 June 1960
ILO Convention 87 on Freedom of Association and Protection of the Right to Organise (1948)	7 June 1960
Convention 14 on Weekly Rest (Industry; 1921)	7 June 1960
Convention 26 on Methods of Fixing Minimum Wages (1928)	7 June 1960
Convention 95 on the Protection of Wages (1949)	7 June 1960
Convention 98 on the Right to Organise and Collective Bargaining (1949)	8 November 1983
Convention 100 on Equal Remuneration (1951)	8 November 1983
Convention 111 on Discrimination in Employment and Occupation (1958)	8 November 1983
Convention 144 on Tripartite Consultations on International Labour Standards (1976)	8 November 1983
Convention 143 on Migrant Workers (Supplementary Provisions; 1975)	8 November 1983
Convention 138 on Minimum Age (1973)	16 March 1984
Convention 105 on the Abolition of Forced Labour (1957)	10 July 1999
Convention 182 on the Worst Forms of Child Labour (1999)	19 September 2000
ILO Convention 187 on the Promotional Framework for Occupational Safety and Health (2006)	30 March 2012
Convention 81 on Labour Inspection (1947)	30 March 2012
Convention 122 on Employment Policy (1964)	30 March 2012
Convention 150 on Labour Administration (1978)	30 March 2012
ILO Convention 102 on Social Security (1952)	7 June 2013

2.4 International good practice

The project is committed to complying with the pertinent environmental and social guidelines and requirements of EP4, the IFC PS on Social and Environmental Sustainability (2012) and EHS Guidelines of the World Bank Group. Meeting these standards will also be required to satisfy international lender requirements. The PSs are designed to help avoid, mitigate, and manage environmental, health, safety and social risks and impacts. The PSs will also be used to guide stakeholder engagement and public disclosure. Lenders that subscribe to IFC PS are required to carry out an ESIA in accordance with PS1 and additional PS2–8 as applicable.

Where there is a difference between national requirements and IFC PS/World Bank Group EHS Guidelines/EP4, the project will apply the more stringent requirement or document a justified alternative approach acceptable to the lenders.

2.4.1 Lender requirements

The Lender engaged by FB Group at the time of writing this ESIA is the Export and Investment Fund of Denmark (EIFO). EIFO joined the EP4 in 2004. Under the EIFO's Environmental, Social, and Governance (ESG) and sustainability policy, the fund is committed to complying with the UN Guidelines on Human Rights and Business (UNGP, 2011) and to implementing a management system in accordance with the guidelines. The fund is obliged to follow a number of international agreements related to ESG for Category A and B Projects or Transactions. The ESIA package has been prepared to meet IFC PS (2012), the EP4 and relevant World Bank Group EHS Guidelines, in addition to applicable Togolese regulatory requirements. EIFO's environmental and social requirements (including human rights expectations aligned with the UN Guiding Principles on Business and Human Rights) will be addressed through the ESIA commitments and the project's management plans, and tracked via the commitments register/environmental and social action plan.

2.4.2 World Bank Group EHS Guidelines

The World Bank Group's EHS Guidelines are technical reference documents with general and industry-specific examples of good international industry practice. These General EHS Guidelines are designed to be used together with the relevant industry sector EHS guidelines. The following World Bank Group guidelines are considered applicable to the project:

- General EHS Guidelines (2007a)
- EHS Guidelines for Toll Roads (2007b).

2.4.2.1 EHS Guidelines for Toll Roads

The World Bank Group's EHS Guidelines for Toll Roads provide sector-specific guidance for the planning, construction and operation of road infrastructure projects. These guidelines address key environmental concerns such as habitat disruption, air and noise pollution, stormwater runoff and soil erosion. They also include road safety, community health and the protection of biodiversity through measures like wildlife crossings and careful route selection. Additionally, the guidelines outline best practices for managing

occupational health and safety risks during construction and maintenance, ensuring that both workers and nearby communities are protected throughout the project lifecycle.

2.4.3 IFC PS

The IFC PS are an international benchmark for identifying and managing environmental and social risk and have been adopted by many organisations as a key component of their environmental and social risk management.

The IFC PS have been screened for applicability. PS1 applies to all projects, while the applicability of PS2–PS8 is confirmed in Table 2-4, with justification and references to the relevant ESIA sections and associated management plans. The objectives of each standard are also summarised in Table 2-4.

Table 2-4: IFC PS

PS	Objectives	Applicability
PS1: Assessment and Management of Environmental and Social Risks and Impacts	• To identify and assess environmental and social risks and impacts of the project • To adopt a mitigation hierarchy to anticipate and avoid, or minimise where avoidance is not possible, and where residual impacts remain, compensate/offset for risks and impacts to workers, affected communities and the environment • To promote improved environmental and social performance of clients through the effective use of management systems • To ensure that grievances from affected communities and external communications from other stakeholders are responded to and managed appropriately • To promote and provide means for adequate engagement with affected communities throughout the project lifecycle on issues that could potentially affect them and to ensure that relevant environmental and social information is disclosed and disseminated	Applicable to all projects

PS	Objectives	Applicability
PS2: Labour and Working Conditions	• To promote the fair treatment, non-discrimination and equal opportunity of workers • To establish, maintain and improve the worker–management relationship • To promote compliance with national labour and employment laws • To protect workers, including vulnerable categories of workers such as children, migrant workers, workers engaged by third parties and workers in the client's supply chain • To promote safe and healthy working conditions and the health of workers • To avoid the use of forced labour	Applicable due to employment of local and expatriate workforce (see Section 3.5.10)
PS3: Resource Efficiency and Pollution Prevention	• To avoid or minimise adverse impacts on human health and the environment by avoiding or minimising pollution from project activities • To promote more sustainable use of resources, including energy and water • To reduce project-related GHG emissions	Applicable due to potential adverse environmental impacts (see Section 5.3)
PS4: Community Health, Safety and Security	• To anticipate and avoid adverse impacts on health and safety of the affected community during the project life from both routine and non-routine circumstances • To ensure safeguarding of personnel and property is carried out in accordance with relevant human rights principles and in a manner that avoids or minimises risks to the affected communities	Applicable due to potential adverse community health, safety and security impacts (see Section 5.5.12)
PS5: Land Acquisition and Involuntary Resettlement	• To avoid or, when avoidance is not possible, minimise displacement by exploring alternative project designs • To avoid forced eviction • To anticipate and avoid or, where avoidance is not possible, minimise adverse social and economic impacts from land acquisition or restrictions on land use by (i) providing compensation for loss of assets at replacement cost and (ii) ensuring that resettlement activities are implemented with appropriate disclosure of information, consultation, and the informed participation of those affected	Applicable due to potential resettlement (see project Resettlement Policy Framework)

PS	Objectives	Applicability
	• To improve or restore the livelihoods and standards of living of displaced persons • To improve living conditions among physically displaced persons through the provision of adequate housing with security of tenure at resettlement sites	
PS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	• To protect and conserve biodiversity • To maintain the benefits from ecosystem services • To promote the sustainable management of living natural resources through the adoption of practices that integrate conservation needs and development priorities	Applicable due to potential adverse biodiversity impacts (see Section 5.4)
PS7: Indigenous Peoples	PS7 recognises Indigenous Peoples, as social groups with identities that are distinct from dominant groups in national societies. • To ensure that the development process fosters full respect for the human rights, dignity, aspirations, culture and natural resource-based livelihoods of Indigenous Peoples • To anticipate and avoid adverse impacts of projects on communities of Indigenous Peoples or, when avoidance is not possible, to minimise and/or compensate for such impacts • To promote sustainable development benefits and opportunities for Indigenous Peoples in a culturally appropriate manner • To establish and maintain an ongoing relationship based on informed consultation and participation with Indigenous Peoples affected by a project throughout the project's lifecycle • To ensure the free, prior and informed consent of the affected communities of Indigenous Peoples when the circumstances described in this PS are present • To respect and preserve the culture, knowledge and practices of Indigenous Peoples	Not applicable (see Section 5.5.5.4)

PS	Objectives	Applicability
PS8: Cultural Heritage	• To protect cultural heritage from the adverse impacts of project activities and support its preservation • To promote the equitable sharing of benefits from the use of cultural heritage	Applicable due to potential adverse cultural heritage impacts (see Section 5.5.13)

2.4.4 Equator Principles

EP4 is a risk management framework, adopted by financial institutions, for determining, assessing and managing environmental and social risk in projects. The latest iteration, EP4, came into effect on 1 October 2020. The Equator Principles are summarised in Table 2-5 below.

Table 2-5: Equator Principles

Equator Principle	Summary
Principle 1: Review and Categorisation	The EP financial institution (EPFI) is required to conduct a preliminary assessment of the level of environmental and social risks associated with a project that is within the scope of the EP4, and to categorise that risk as either Category A (significant risks), B (limited risks) or C (minimal or no risks).
Principle 2: Environmental and Social Assessment	An ESIA (taking a variety of possible forms from full-scale to limited ESIA or compliance audit) must be developed by the project proponent for all Category A and B projects, providing an evaluation of the environmental and social risks of the project and proposing measures to minimise, mitigate and offset adverse impacts of the proposed project.
Principle 3: Applicable Environmental and Social Standards	For projects in non-designated countries, the assessment process evaluates compliance with host country laws, regulations and permits and IFC PS and World Bank EHS Guidelines. These standards must be met “to the EPFI’s satisfaction”, with any deviation justified.
Principle 4: Environmental and Social Management System and Equator Principles Action Plan	For Category A and B projects, the project proponent is required to develop and maintain an environmental and social management system (ESMS) and an ESMP to address issues raised in the assessment process and incorporate actions required to comply with the applicable standards. An EP action plan, agreed between the EPFI and the project proponent, would outline gaps and commitments to meet EPFI requirements.
Principle 5: Stakeholder Engagement	For Category A and B projects, project proponents are required to show effective stakeholder engagement with affected communities and other stakeholders starting early in the impact assessment process, and to conduct an informed consultation and participation process where there is the potential for significant adverse impacts on communities.
Principle 6: Grievance Mechanism	For Category A and appropriate B projects, the project proponent is required to operate a grievance mechanism to receive and facilitate resolution of concerns and grievances about the project’s environmental and social performance.

Equator Principle	Summary
Principle 7: Independent Review	For Category A and appropriate B projects, an independent review is required to assist the EPFI's due diligence, assess EP compliance and propose a suitable action plan capable of bringing the project into compliance with the EP or to indicate if compliance is not possible.
Principle 8: Covenants	The project proponent covenants to comply with all relevant host country environmental and social laws, regulations and permits, as well as the ESMPs and EPs in the case of Category A and B projects, in all material respects.
Principle 9: Independent Monitoring and Reporting	An independent consultant or the project proponents' qualified and experienced external experts should assess project compliance with the EPs and ongoing monitoring and reporting.
Principle 10: Reporting and Transparency	In addition to the disclosure requirements of Principle 5, at a minimum, a summary of the ESIA is to be accessible and available online. GHG emission reporting is required for projects emitting over 100,000 tonnes of CO_2 equivalent annually. EPFIs are required to report on their implementation of the EP4 framework.

Following the impact assessment, the proposed project has been classified as Category B under EP4.

3 PROJECT DESCRIPTION

3.1 Project overview

Based on feasibility studies commissioned by the Ministry of Public Works, the Ministry has prioritised the rehabilitation of numerous degraded dirt roads in Togo, many of which were constructed before the 1960s. These roads are in a severe state of disrepair and are identified under the GoT's Priority Action Program, which sets out to improve road infrastructure and revive the transport sector.

The proposed project involves the rehabilitation and upgrading of a 93.8-km-long degraded earth track between Bassar and Tindjassé, together with the construction of two slip roads at Saiboudé (7 km) and Souroukou (2.6 km). It is envisaged that the project will deliver a modern asphalt-paved corridor that improves accessibility for communities, facilitates agricultural trade, and strengthens cross-border integration with Ghana. On completion, the road will provide a durable transport link with reduced travel costs and enhance year-round connectivity, supporting the GoT's objectives for regional development.

As indicated in Section 1.3.2, the project is being delivered under an EPCF contract with FB Group, with financing support from EIFO. The project will require the establishment of construction camps, clearance of the right of way (RoW), earthworks to reprofile the alignment, sourcing and processing of construction materials, drainage improvements, and resurfacing with asphalt concrete to national road standards.

Table 3-1 provides an overview of the key project components, including a description of each component, whether it is new or existing, its location, land take required and whether it is included in the ESIA scope.

Table 3-1: Project overview

Component	Description	Status	Location	Estimated footprint	Assessed in ESIA?
Main road alignment	The main road alignment is the 93.8 km degraded earth road between Bassar and Tindjassé, to be rehabilitated and upgraded into a modern asphalt-paved corridor.	Existing, permanent	Start: 00° 46' 15.89" E, 09° 12' 43.51" N End: 00° 26' 55.18" E, 08° 38' 27.09" N	20 m RoW X 93.8 km = 187 ha	Yes
Slip roads	Slip roads will be constructed at Saiboudé (7 km) and Souroukou (2.6 km). They will be designed and constructed to the same technical standards as the main road.	Existing, permanent	Saiboudé and Souroukou	20 m RoW X 9.6 km = 19.2 ha	Yes
Bridges and culverts	Seventeen frame bridges and 82 closed frame culverts will be constructed at watercourse crossings to replace existing infrastructure or allow safe vehicular passage.	Existing, permanent	Along main alignment at surface water crossings	-	Yes
Service road	A 5 m-wide temporary service road will be constructed within the RoW during the construction phase to prevent long road closures. Temporary diversions will be implemented, particularly at km 9 and km 81.	New, temporary	km 9 and km 81	Within RoW	Yes
Construction camps (main and satellite)	The main construction camp will be a large temporary facility (~3 ha) located at km 45 along the Bassar–Tindjassé road which will provide accommodation for expatriate and local workers, with power, communications, and utilities installed. A smaller satellite camp of about 0.5 ha will be established at km 6 to support the main camp by providing localised accommodation and	New, temporary	Various locations are being considered	3.5 ha	Yes

Component	Description	Status	Location	Estimated footprint	Assessed in ESIA?
	support facilities for workers operating in the early sections of the road				
Asphalt plant	An asphalt plant is part of the core construction infrastructure required for producing asphalt concrete for the road works and will be installed within the main construction camp.	New, temporary	Construction camp		Yes
Batching plant	A concrete batching plant will be installed within the main construction camp at km 45.	New, temporary	Construction camp		Yes
Workshops	Workshops will be established within the construction camp for equipment and machinery storage and repairs.	New, temporary	Construction camp		Yes
Fuel storage	Fuel will be stored in bunded tanks at camps/plants.	New, temporary	Construction camp		Yes
Laydown areas	Temporary laydown and storage areas will be established at appropriate locations along the RoW and will be located on hard, clean and levelled surfaces, with peripheral slopes for drainage.	New, temporary	Within RoW	Within RoW	Yes
Lateritic quarries	Approximately 20 existing lateritic quarries exist in the project area for the supply of lateritic soil, gravel or sand needed for the road construction.	Existing	Potentially 20 locations	Not to exceed permitted area	Yes
Rock quarry	A rock quarry will be identified or established outside of the project area (up to 70 km from Bassar) for the supply of rock during the construction phase	New	Various locations are being considered	Not to exceed permitted area	Partially

3.2 Project location

The road is situated in northern Togo, extending 93.8 km from the centre of Bassar town at its junction with National Road No.17 (Bassar-Kabou) to the Ghanian border at Tindjassé. The road passes through the Bassar prefecture (in the Centrale Region) for approximately 32 km before continuing across the agriculturally Mô prefecture (within the Kara Region). Settlements along the road include the following with their position along the road indicated in parentheses:

- Bassar (km 0)
- Saboudi (km 8)
- Kpalou (km 11)
- Tchessi (km 18)
- Baghan (km 23)
- Village Mô (km 29)
- Boungoulou (km 31)
- Banda (km 35)
- Folo (km 39)
- Kagnigbara (km 46)
- N'konta (km 49)
- Kagna (km 52)
- Boulohou (km 57 and slip road to Souroukou)
- Djarkpanga (km 70)
- Waragni (km 75)
- Gnomandé (km 76)
- Okou (km 81)
- Sibonia (km 84)
- Tindjassé (km 93 and slip road to Saiboudè)
- Saiboudè.

Between the settlements of Mô and Boulohou (and the slip road to Souroukou), the road runs adjacent to sensitive ecological areas, including the Bassar classified forest on Mont Barba Bassar for approximately 3.5 km, and the cliff edge of the Fazao-Malfakassa National Park for around 26 km (see Figure 3-1).

3.3 Project components

3.3.1 Right of Way (RoW)

In accordance with Decree No. 2022-106/PR of 17 October 2022 on the definition and classification of roads and the delimitation of RoWs, the legal expropriation width of the RoW for the Bassar–Tindjassé road could be as wide as 70 m. A decision on the final RoW to be applied from the Ministry of Public Works is pending.

The working assumption for the ESIA is that the road will be developed and upgraded within an expropriation zone of between 25 and 30 m in width, as determined by the Ministry of Public Works. For practical purposes, this will allow for a 20 m execution zone with 10 m allowance for any extensions.

Exceedances of the 30 m working width may be required in some instances at the following sections:

- bridges/culverts
- junctions
- diversions/detours
- camp entrances
- quarry and borrow sites.

In such cases, the maximum additional width is not specified and will need to be determined on a case-by-case basis, dependent on the works required, existing receptors/structures and sensitivity of the receptor. In these instances, the mitigation hierarchy will be observed and construction will be managed in accordance with the relevant management plans.

3.3.2 Road platform and pavement structure

The Bassar–Tindjassé road is 93.8 km in length. Key road dimensions include:

- RoW of 20 to 30 m comprising:
    - road platform: 10.2 m in rural areas to 14.2 m in urban areas
    - slopes and drainage channels: up to 4.8 m wide
    - service road: up to 5 m in width (see Section 3.3.7)
- pavement structure:
    - 6 cm asphalt concrete
    - 20 cm cement stabilised lateritic gravel base
    - 20 cm natural lateritic gravel foundation (compacted)
- embankments as necessary.

This configuration is defined as a semi-rigid pavement, suitable for 13-ton axle load and a 20-year design life, with bituminous pavement coating in both urban and rural sections.

Figure 3-2 to Figure 3-5 below illustrate the cross-sectional profile of the road in urban, small town, open countryside and sloping countryside areas. All measurements are in metres unless otherwise specified.

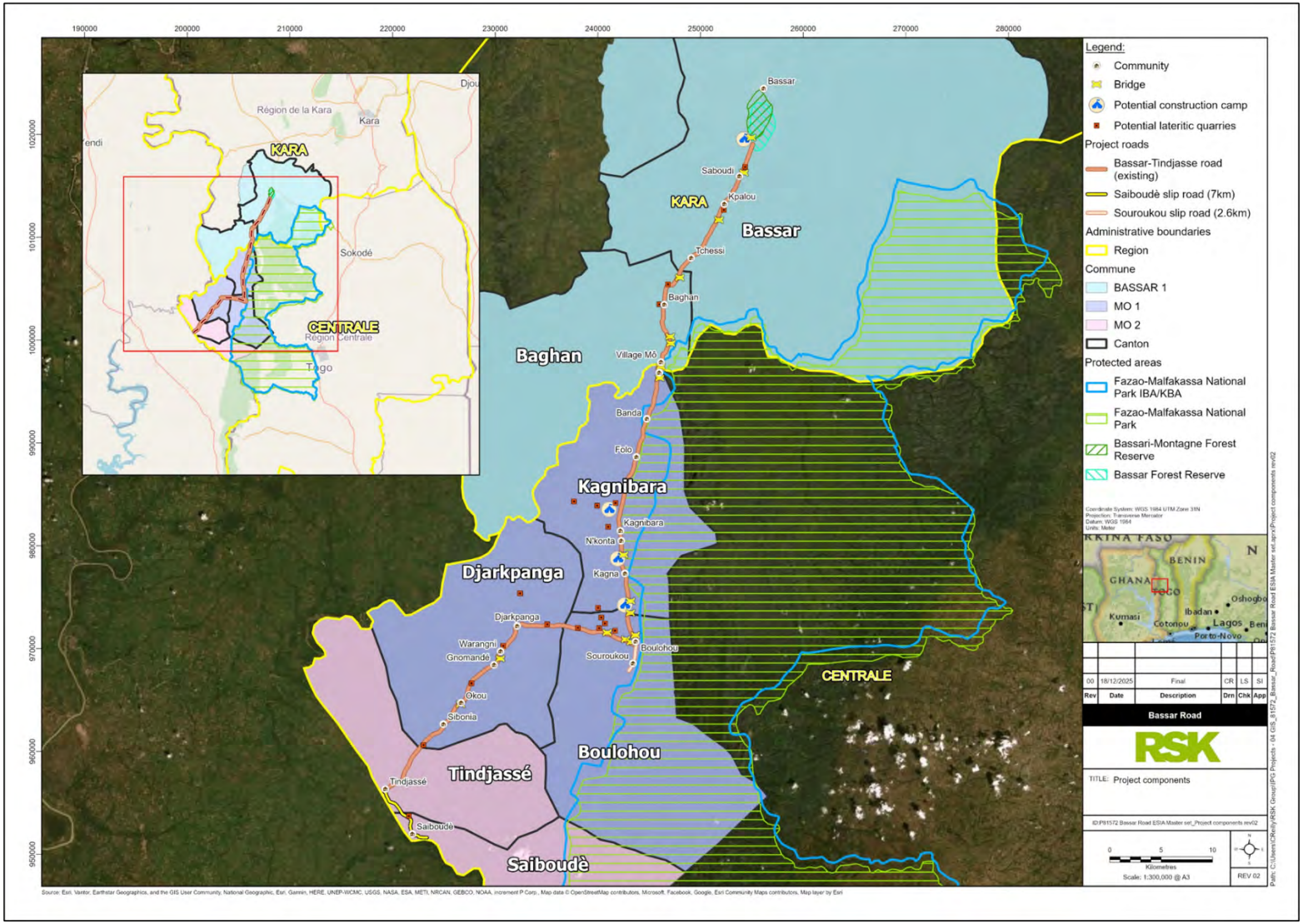

Figure 3-1: Project overview

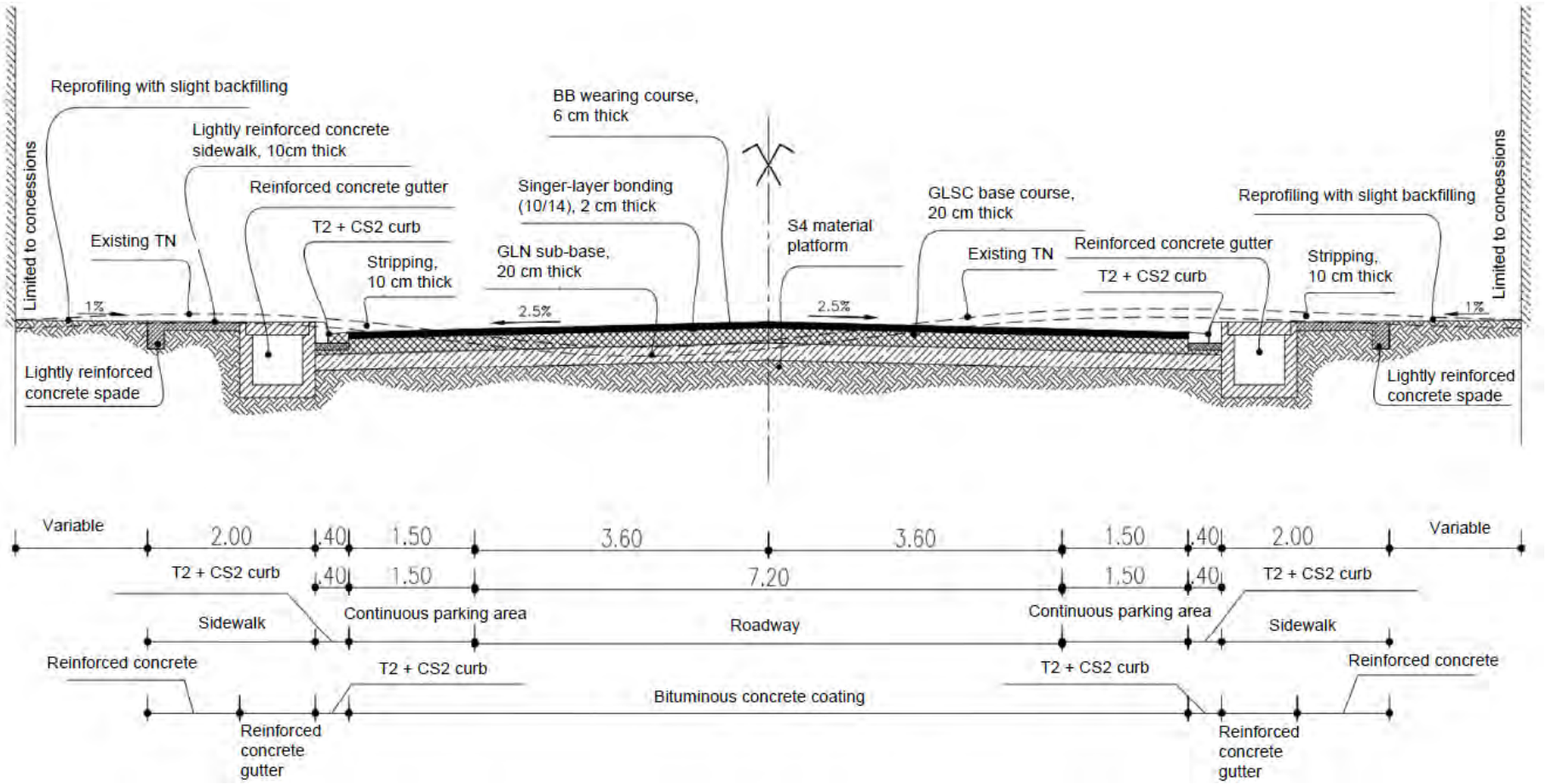

Figure 3-2: Proposed cross-section of road in urban area

Note: BB – bituminous base; T2 – type 2 curb; CS2 – concrete spade curb, type 2; GLN – granular layer (sub-base); GLSC – granular layer base course; TN – existing road level; S4 – material platform type

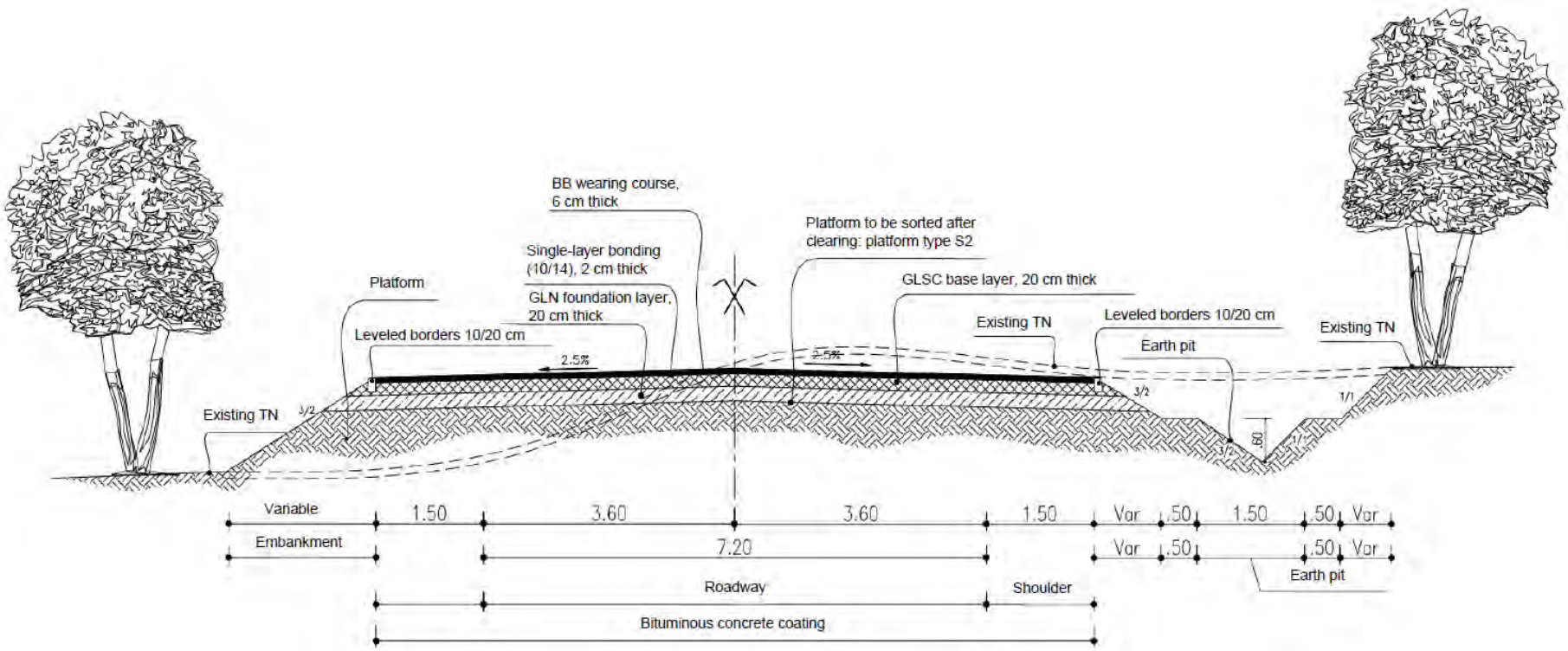

Figure 3-3: Proposed cross-section profile of road in small town area

Note: BB – bituminous base; T2 – type 2 curb; CS2 – concrete spade curb, type 2; GLN – granular layer (sub-base); GLSC – granular layer base course; TN – existing road level; S4 – material platform type

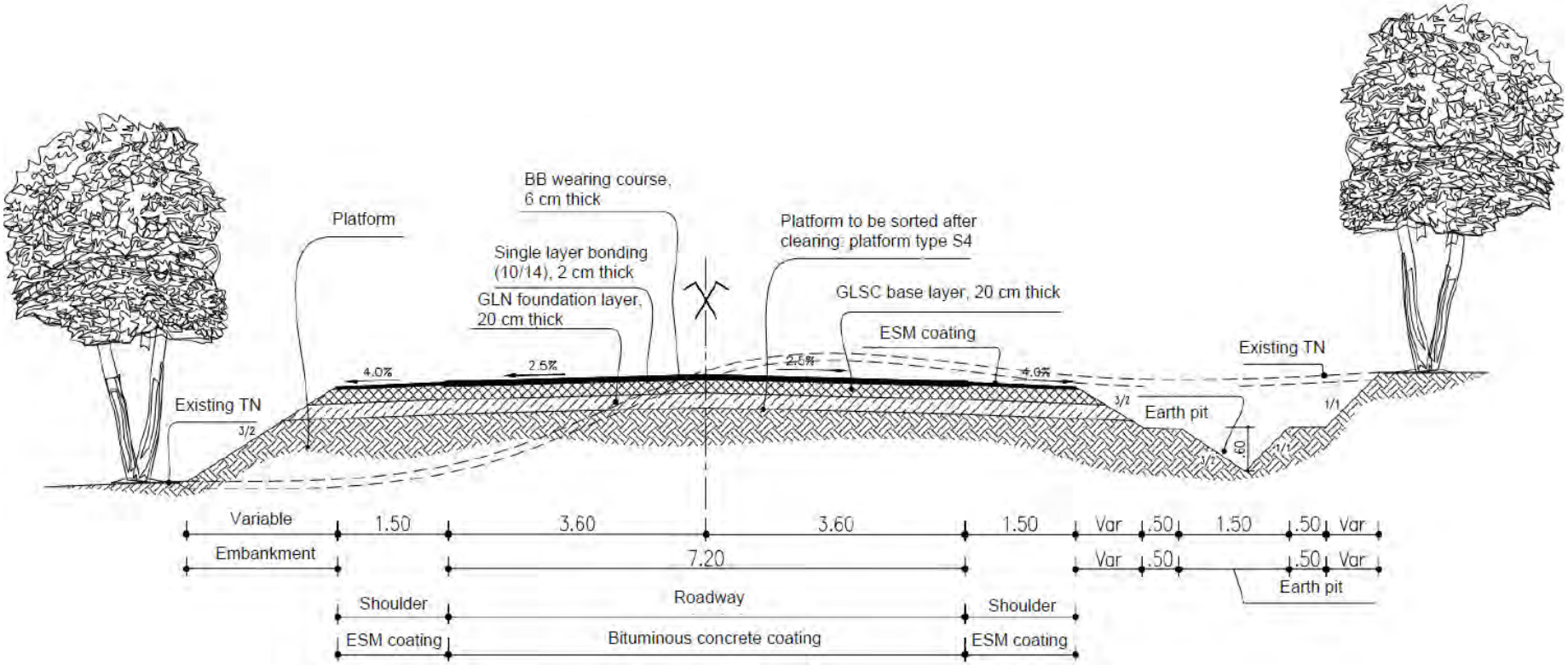

Figure 3-4: Proposed cross-section profile of road in open countryside

Note: BB – bituminous base; T2 – type 2 curb; CS2 – concrete spade curb, type 2; GLN – granular layer (sub-base); GLSC – granular layer base course; TN – existing road level; S4 – material platform type

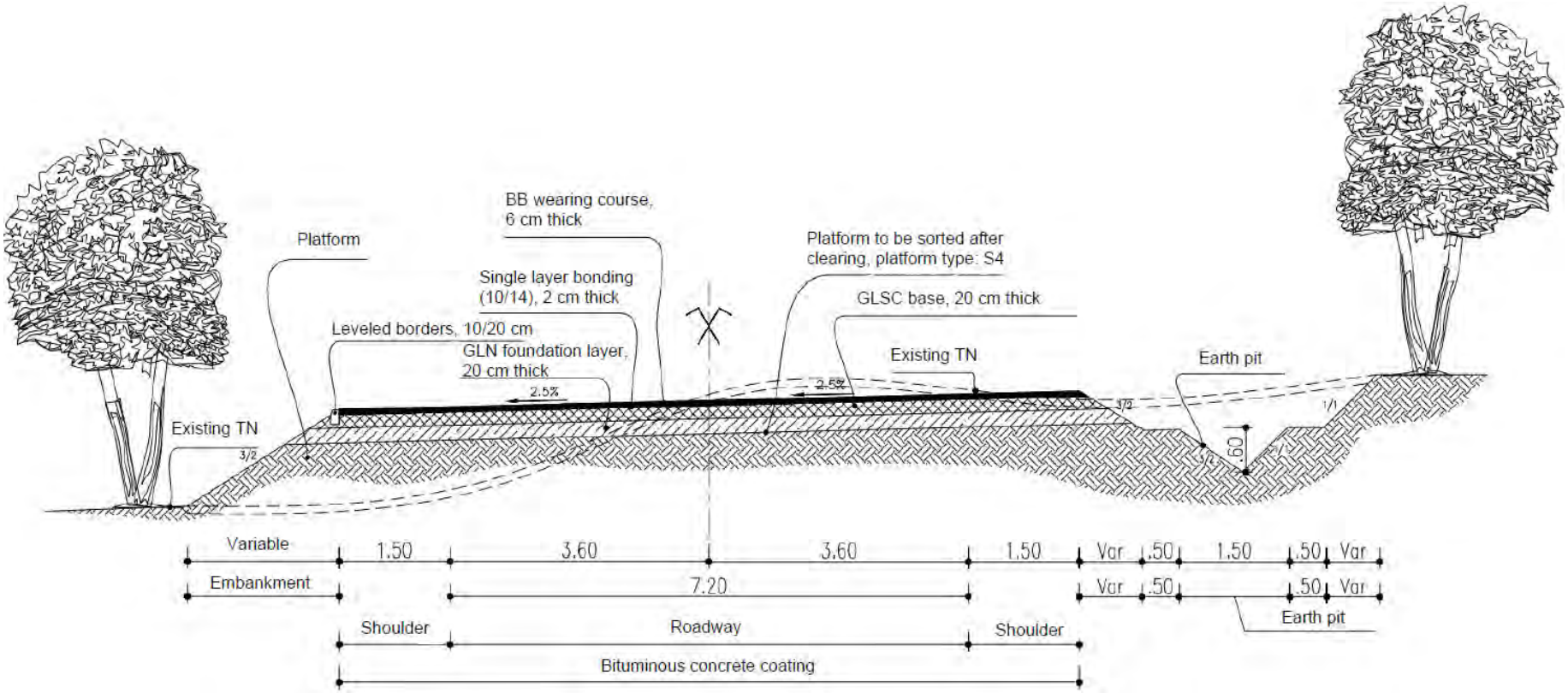

Figure 3-5: Proposed cross-section profile of road in sloping countryside

Note: BB – bituminous base; T2 – type 2 curb; CS2 – concrete spade curb, type 2; GLN – granular layer (sub-base); GLSC – granular layer base course; TN – existing road level; S4 – material platform type

3.3.3 Slip roads

The two slip roads intended to enhance connectivity to the Bassar–Tindjassé road are the:

- Saiboudé slip road (7 km)
- Souroukou slip road (2.6 km).

The slip roads will be designed and constructed to the same technical standards as the main road, depending on the surrounding environment (see Figure 3-3 to Figure 3-5). The standard pavement structure is 6 cm asphalt concrete (BB) and 2 cm surface bond coat (mono-couche).

3.3.4 Watercourse crossings and drainage

A total of 208 locations requiring upgrade or installation of infrastructure at watercourses crossed by the road have been identified, and 6 watercourse crossings will require new structures. These works are required to allow for safe passage of traffic over watercourses and include:

- 17 bridges/frame bridges allowing the crossing of major watercourses with widths or spans between 4 m and 15.5 m and heights ranging from 1.5 to 15 m
- 82 closed frame culverts (single and double, between 1 m and 5 m wide, and height varying between 1 m and 3 m) for crossing smaller watercourses
- 109 reinforced concrete pipes with diameters varying between 60 cm and 100 cm.

Adequate drainage is essential to protect the road platform. Works will include:

- reconstruction and upgrading of bridges, where needed
- reinforcement and extension of culverts and gutters
- construction of longitudinal and diverging side ditches
- masonry-lined channels to prevent erosion on slopes higher than 1 m including capping beams anchored by concrete curbs, footings and trapezoidal water descents to evacuate rainwater.

These measures will reduce the risk of flooding and ensure year-round operability.

3.3.5 Construction and accommodation camps

The main, temporary construction camp of approximately 3 ha will be constructed at km 45. Site selection criteria will include avoidance of sensitive receptors such as schools, settlements, watercourses, areas sensitive to flooding, sensitive habitat or unconsented land.

The camp will be a container-type arrangement and will include:

- offices and meeting rooms
- parking facilities
- a kitchen and dining area
- welfare/sanitary facilities
- recreational spaces
- a medical centre
- a dedicated site laboratory
- workshops and hangars for equipment and machinery

- material and waste storage areas
- an asphalt plant and concrete batching plant.

A satellite camp of approximately 0.5 ha will also be established at km 6.

Construction camps will include accommodation for both the expatriate and local workforce. The camps will host both expatriate staff (around 60 specialists) and local workers (around 150 personnel). Accommodation will mainly be required in rural areas, while in urban areas rented housing may also be considered.

The construction camp will be supplied with water, power and communication facilities installed. Material and waste storage areas will be situated on hard surfaces and suitably bunded or contained. Provision will be made for stormwater and wastewater management at the camps. Spill kits and fire-fighting equipment will be stationed at the camps and maintained during construction. All camps will be managed according to a Camp Management Plan (see Section 9.6). A project Emergency Preparedness and Response Plan will be implemented during construction.

Following completion of construction, the camp will be decommissioned and the site restored to pre-existing conditions.

3.3.6 Quarries

Temporary quarries will be required for the supply of rock and lateritic gravel during the construction phase.

3.3.6.1 Quarry and borrow pit selection and approval process

To ensure compliance with lender requirements and international standards, the project will implement a formal “approval gate” for all quarry and borrow pit sites prior to use. This process will confirm that only legally authorised sites with acceptable environmental and social conditions are utilised. The minimum requirements for approval are as follows:

- Each quarry/borrow pit will have valid permits and licences. Documentation will be reviewed and retained by FB Group prior to mobilisation.
- Where sites are used by the community or located on customary land, the project will undertake screening in line with IFC PS5. This will include confirming land tenure, securing stakeholder agreements and ensuring compensation or livelihood restoration measures are applied, where required.
- All sites will be screened against IFC PS6 to confirm they do not fall within ‘no-go’ zones or trigger critical habitat criteria. Sites located near ecologically sensitive areas will be subject to additional mitigation measures or excluded from use.
- Each approved site will have specific rehabilitation and closure requirements with roles and responsibilities and plans for post-closure monitoring.

3.3.6.2 Rock quarry within project area

FB Group is seeking to identify a suitable site to establish a rock quarry for sourcing of rock material for road construction within the project area to reduce hauling distances. One such site was identified to the north of the Iliade community and a new access road of approximately 700 m from the Bassar-Tindjassé Road would need to be constructed to access the new rock quarry. However, following chemical tests, the material at this site was determined to be unsuitable for construction purposes. Alternative locations for sourcing of rock material outside of the project area, identified in the geotechnical

assessment, include existing quarries in the Sokodé area over 50 km from Bassar and near Lassa village in the Kara region over 70 km away from Bassar.

3.3.6.3 Lateritic gravel quarries

Approximately 20 potential quarries for sourcing of lateritic gravel have been identified, along or near to the Bassar-Tindjassé Road (see Figure 3-1). Many of these quarry sites already exist and are operational, used by other contractors and local communities in the project area. Ten of the potential quarry sites are situated immediately adjacent to the Bassar-Tindjassé Road. The remaining 10 lateritic quarry sites are located immediately adjacent to other existing feeder roads within the project area. Between Bassar and Boulohou (and Souroukou slip road), most of the quarry sites are located to the west of the road due to the sensitive nature of the terrain to the east.

It is anticipated that most of the quarries will be exploited by the project. However, criteria for final selection will be based on quality of the resource, extent of existing exploitation by other contractors or local communities, proximity to sensitive receptors (communities and schools) and health and safety considerations. The project will seek to avoid cumulative impacts (traffic, dust, noise, land degradation) within any particular area in the quarry selection process. Only quarries that are legally authorised and have been screened for E&S risks (including PS5 and PS6 considerations) will be used. Site selection will be subject to a documented approval process and rehabilitation requirements.

Quarries and borrow pits used specifically by the project will be restored and rehabilitated through spreading of topsoil and revegetation (trees, shrubs, grass etc.). Monitoring of the efficacy of the landscaping process will be required.

Quarry closure will be managed by the project according to the Erosion Control/Soil Management and Reinstatement Plan (see Section 9.6).

3.3.7 Service roads

During the construction phase, a 5-m-wide temporary service road (dirt track) will be established within the RoW. With the service road in place, extended road closures are not expected.

Vegetation clearance for service roads will be done during the pre-construction stage. Service roads will be located as near to the final road surface as possible to minimise land take for temporary use. However, any unplanned service road diversions from the existing route will be screened to ensure that land take, environmental degradation, physical and economic resettlement, as well as community health and safety risks are minimised. Diversions will be subject to the same safety and design standards as the main arterial, requiring adequate signage and speed limits to ensure community and pedestrian safety.

Most construction activities are expected to take place during the dry season. Due to minimal or absent water flow during the dry season, short detours of approximately 200 m will be required. In areas where bridge or culvert construction is required, or where significant sections of the road require closure, planned temporary diversions will be implemented to ensure continuous traffic flow. In particular, temporary diversions are

anticipated at km 9 and km 81. Given the low traffic volume in these areas, the diversions should cause minimal disruption.

3.3.8 Pedestrian pavement

Pedestrian pavements (sidewalks) will be constructed in urban areas (see Figure 3-2). They will be made of lightly reinforced concrete (10 cm thick), with a width varying from 1 to 1.4 m, depending on the type of side channel/drain section.

3.3.9 Security provision

Lighting, fencing, alarms, and signage will be installed and maintained as required to secure the construction site. Closed-circuit television will also be installed at project facilities, including workforce accommodation camps.

Public access to the construction site will be prohibited, with access points clearly marked and safety measures in place to prevent accidents.

Site guarding and surveillance will be maintained at all times, including outside working hours, weekends, and holidays. Security personnel will operate in accordance with FB Group's Security Management Procedures and the IFC's Good Practice Handbook on the Use of Security Forces (2017).

3.3.10 Laydown and storage areas

In addition to storage areas in the construction camp (see Section 3.3.5), temporary laydown and storage areas will be established at appropriate locations along the RoW. Storage facilities will be located on hard, clean and levelled surfaces, with peripheral slopes for drainage.

3.3.11 Associated facilities

The IFC definition of 'associated facilities' is adopted: "facilities that are not funded as part of the project and that would not have been constructed or expanded if the project did not exist and without which the project would not be viable" (IFC, 2012).

There are no associated facilities applicable to this project.

3.3.12 Environmental design and construction controls for sensitive receptors

The project will adopt good practice in the design process and implement construction controls to reduce potential impacts on sensitive receptors. These measures include, but are not limited to:

- restricting the project footprint to work areas
- establishing buffers around sensitive receptors requiring avoidance or additional mitigation
- implementing 'no-go' zones
- when working in sensitive areas such as near or in watercourses, ensuring that best practice measure are followed to limit impacts on the resource
- prohibiting poaching or hunting
- reinforcing driver safety protocols and limiting night-time driving
- enforcing a workforce code of conduct

- performing monitoring to ensure ongoing environmental and social performance.

Further provisions are detailed as mitigation measures throughout Section 8 and articulated in the ESMP commitments register.

3.4 Project schedule and phasing

At the time of writing this ESIA report, the main construction period is expected to commence by May 2026, following completion of early works (including preliminary installation and preparatory works) in October 2026. Main construction will last approximately 27 months, with peak construction expected to last around 20 months. Project commissioning is anticipated by July 2028.

Generally, construction will follow a phased approach in seven stages:

1. Preliminary installation phase: Mobilisation of equipment and staff, establishment of camps, workshops, laboratories, storage areas, borrow pits and quarries
2. Preparatory/early works: Site clearance, removal of unsuitable soils, setting out, diversion of utilities where required
3. Earthworks and subgrade: Excavation, filling, embankments, compaction of subgrade
4. Pavement structure comprising foundation, base course and wearing course
5. Drainage and structures: Side drains, culverts, and other hydraulic structures
6. Ancillary works: Road signs, markings, safety devices, landscaping, restoration
7. Commissioning and handover: Final inspection, dismantling of temporary facilities, rehabilitation of borrow areas.

An indicative schedule, outlining the sequence of major activities and the time required for mobilisation and site preparation, is outlined in Table 3-2.

Table 3-2: Project development schedule

Key milestone	Dates
Mobilisation and preparatory works	April–October 2026
Earthworks and embankments	October 2026–June 2027
Pavement works	January 2027–February 2028
Asphalt works	October 2027–April 2028
Drainage and ancillary works	October 2026–April 2028
Finishing, signage and safety	July 2028
Commissioning	July 2028

3.5 Construction

The main construction activities on the Bassar-Tindjassé Road will include:

- quarrying materials for sub-base and base courses
- sourcing of lateritic gravel and crushing of solid rock for gravel
- construction of sub-base and base layers, adjusting, compacting and profiling to a suitable thickness

- construction of masonry drainage and crossing structures (bridges, culverts, gutters)
- spreading of bitumen and laying of asphalt concrete surfacing
- construction of longitudinal and diverging ditches
- installation of road signs and safety measures.

Construction is planned to start between km 45 and km 50, progressing simultaneously in both directions from this starting point. The start point position could change depending on the quantity and distribution of earthworks.

The initial 6 km from Bassar to Binaparba bypass has been completed by another contractor (not FB Group). However, FB Group may upgrade this section with the asphalt concrete wearing course to a width of 7.2 m to ensure uniformity.

3.5.1 RoW demarcation and clearance

The project RoW and temporary construction areas will be delineated and cleared of all shrubs, stumps, brush, roots, hedges, dead wood and any other vegetation and detritus. Holes formed by stump and root removal will be backfilled. Removed materials will be stored in suitable areas within the RoW. If deemed safe to do so, removed vegetation will be handed over to local communities. Vegetation burning will only be undertaken when deemed necessary and with the explicit approval of both FB Group and the relevant local authorities.

3.5.2 Demolition of existing structures

Permanent and temporary structures of any kind within the limits of the RoW and which are not necessary for the work, must be demolished. Where technically feasible, the project prioritises the use or acquisition of land without physical assets to avoid household-level impacts. Furthermore, the design will seek to reduce impacts to existing structures as far as possible and the design of the working width has been optimised to the minimum technically feasible requirement for safe and compliant construction. Where dwellings, small businesses or farm structures are located close to the road, micro-alignment adjustments, temporary access solutions and safety design measures will be integrated to avoid physical impacts and maintain access.

During construction, the agreed working width will be demarcated on the ground by the survey team, to be monitored daily by site supervisors. Any works outside the approved limits will require formal approval.

The demolition of existing drainage structures in the RoW will be carried out to a level 1 m lower than that of the finished earthworks platform. The recovered materials will be stored outside the RoW of the works or disposed of. Recovered stone materials can be used in shaping future embankments.

3.5.3 Earthworks and topsoil management

According to the design, approximately 200,000 m^3 of topsoil will be stripped and removed. Approximately 850,000 m^3 fill and 230,000 m^3 cut material will be generated. Cut materials will be used as far as possible as fill material, however a significant amount of material will be sourced from borrow pits.

In addition to clearing activities, the stripping of topsoil will take place and excavated materials stored and used in backfill earthworks. The stripping and removal of topsoil will be done using a bulldozer. Topsoil will be stored at easily accessible points a short distance from the route. Project topsoil management procedures require that topsoil will not be mixed with any other material; will not be stored in piles more than 2 m in height; will not be compacted; and no movement of machinery or trucks will be permitted on the topsoil storage piles. Additionally, topsoil seedbank will be carefully managed to maintain soil health and promote natural regeneration after landscaping.

3.5.4 Base and sub-base construction

The base and sub-base layers will be constructed to provide a stable foundation for the pavement. Cement-stabilised lateritic gravel will be used for the sub-base; it will placed in uniform layers and compacted using vibratory rollers to achieve the required density (typically 97%) and shape. Moisture will be tested and controlled during compaction to prevent material segregation and ensure durability before the base layer is applied.

The base layer (also cement-stabilised lateritic gravel) will be spread, levelled and compacted to meet geometric tolerances. Cement dosage will be verified by laboratory tests (typically 4–6% by dry weight). Visual checks will confirm surface regularity and thickness.

3.5.5 Asphalt production, transport and compaction

Asphalt concrete will be manufactured in a batch-type plant. The supply of aggregates will be done in such a way as to allow for the continuous operation of the batching plant. The stages of asphalt production include aggregate pre-dosing, manufacturing, heating and dewatering of aggregates, dusting, screening and mixing.

The asphalt will be transported from the plant to the construction site in dumper vehicles (equipped with tarpaulins as necessary to cover the asphalt and inhibit cooling).

Once laid, compaction of the asphalt will be undertaken by rollers of between four and ten tonnes in weight. The finished surface will be checked for uniformity and compliance with design standards to ensure long-term performance.

3.5.6 Drainage and ancillary works

Comprehensive drainage systems will be installed, including ditches, gutters, downspouts, manholes and gabions, to manage surface water and prevent erosion. These features may be prefabricated, or cast-in-place and reinforced.

3.5.7 Installation of frame culverts and bridges

Method statements for constructing frame culverts and bridges at watercourses will be developed prior to construction. As there is already water-crossing infrastructure in place, pre-construction surveys will be done to determine the necessary works required necessary to meet the design brief. Sediment control measures (e.g., silt fences, sediment traps) and bank stabilisation measures will be installed prior to excavation as required. These measures will be regularly inspected and maintained. If required, the work area will be isolated through temporary cofferdams or bunds using sandbags or sheet piles. If necessary, temporary diversion channels or pipes to maintain water flow

around the work area will be installed. It will be ensured that any diverted water matches expected flow rates.

For the installation of the frame culverts, excavations will be restricted to the isolated area. Excavated materials will be stored away from the watercourse. Culverts will be installed as per design specifications. Work areas will be backfilled and compacted using clean material.

Following construction, any temporary diversions and cofferdams will be carefully removed to avoid sudden sediment release. Watercourse banks with erosion control measures (e.g., riprap, vegetation) will be reinstated. Water quality testing will be carried out to ensure compliance.

3.5.8 Installation of signalling and safety features

Galvanised metal crash barriers will be installed according to EN 1317-2 standard including CE mark to 1317-5 standard. The necessary horizontal signage (paint strips on roads) and vertical signage (hazard, intersection, and directional signs) will be installed.

Vertical signage (e.g., directional and regulatory signs) and horizontal markings (white paint and glass beads) will be applied to the finished pavement surface. Crash barriers will also be installed.

Temporary traffic management measures will be implemented during construction to protect workers and road users.

3.5.9 Construction speeds

Vehicle speeds during construction will be as follows:

- 10 to 20 km/h within the sites and in remote sites
- 30 to 40 km/h on unpaved roads in villages, from 100 m before the first house
- 50 km/h in the city limits
- 80 km/h on paved roads outside towns, villages or hamlets.

Speed bumps, rumble strips and signage will be implemented as required, at the approach to built-up areas.

3.5.10 Workforce

The project will employ approximately 550 workers comprising both technical expatriates (~60 people) and local workers (~490 people) during the construction period. The total number of workers may be increased depending on the workload and project needs during peak construction phases. Workers will be contracted by FB Group.

Workforce accommodation during construction is addressed in Section 3.3.5.

During the construction phase, the project will optimise the use of local content, with a target of 80 to 90% of the workforce to comprise Togolese labour, wherever possible and where experience and skills are compatible with project needs.

The project promotes gender inclusion, with a target of up to 5% female participation in the workforce. Provisions are also in place to accommodate workers with disabilities, with capacity for up to three individuals, subject to site conditions and task suitability.

Standard working hours will be 10 hours per day, six days a week, in compliance with national regulations. Shift patterns may be adjusted to accommodate construction requirements, daylight availability and health and safety considerations.

3.5.11 Supply of resources

3.5.11.1 Power

The energy requirements of the project during the construction phase will be met through a dual supply system, combining grid connection with standby generation capacity.

- Primary supply: The project will be primarily powered through a direct connection to the Togolese national electricity grid, operated by the Compagnie Énergie Électrique du Togo (CEET). Step-down transformers will be installed to regulate voltage levels for safe distribution across project facilities, including construction camps, workshops, asphalt plants and office complexes.
- Backup supply: To ensure uninterrupted operations in the event of grid outages, diesel-powered generators will be deployed at all critical facilities. These units will serve as an emergency supply for facilities where continuous power is essential to maintain safety and quality standards.

Electricity will be required across multiple operational areas, notably for:

- asphalt and concrete batching plants
- laboratories and quality control facilities
- site workshops and equipment maintenance areas
- site lighting and quality control facilities
- administrative and project management offices
- construction camps and workers' accommodation.

This dual approach ensure both reliability and resilience of the energy supply throughout the construction phase.

3.5.11.2 Fuel

Fuel required for construction vehicles and machinery will be delivered in bulk to bunded tanks at camps/plants and will be monitored daily.

An estimated 11,876,000 litres of fuel will be required throughout the construction phase, comprising:

- 676,000 litres of kerosene
- 11,200,000 litres of diesel.

3.5.11.3 Water

An estimated 1,150,000 m^3 of water will be required throughout the project.

Several existing wells and reservoirs exist along the route but are used by the local population.

Therefore, the project's water requirements during construction will be met through the drilling of dedicated wells. Along the road alignment, wells will be established to provide sufficient volumes for soil compaction, asphalt production and other construction

processes. At the base camps, a dedicated well and storage tank will secure reliable potable water supply for domestic use.

All drinking water wells will be tested and validated by the competent authorities to confirm compliance with national quality standards. By relying on drilled wells rather than abstraction from rivers or community sources, the project ensures sustainability of supply while avoiding disruption of local water resources.

3.5.11.4 Construction materials and equipment

Construction materials

The project will require substantial quantities of construction materials as listed in Table 3-3 below.

Table 3-3: Construction materials

Material	Estimated quantity	Unit
Bitumen	9,250	tons
Reinforcement steel	3,000	tons
Cement	49,000	tons
Aggregate	350,000	tons
Sand	22,500	m^3
Laterite	1,730,000	m^3
Concrete additive	128,000	kg
Formwork	207,000	m^2
Ammonium nitrate fuel oil explosive	136,000	kg
Dynamite	15,400	kg
Engine oil	560,000	l
Road barrier (galvanised steel)	6,000	m
Road paint	30,000	kg
Glass beads (road marking)	10,000	kg
Pesticides and herbicides	Limited usage only around accommodation blocks and offices.	

Extraction, processing and transportation of all raw materials will be carefully managed to reduce environmental and social impacts. All borrow sites and quarries will be rehabilitated upon completion of use.

Storage capacity and design will adhere to supplier recommendations and health, safety, and environment (HSE) standards, while stock levels will be synchronised with the project schedule to maintain continuity and avoid overstocking.

1.1.1.1.1 Construction machinery and equipment

A wide range of construction equipment will be deployed, including bulldozers, graders, loaders, compactors, hydraulic excavators, tankers and tippers. Ancillary equipment will comprise motor pumps, concrete mixers, pneumatic hammers, compressors and vibratory compactors. While most materials will be sourced internationally, aggregates, fill materials, cement, fuel, oil, food, consumables and small tools will be procured locally within Togo.

Construction machinery and equipment will be maintained through regular inspections and, where necessary, repairs.

Appendix 1 provides a detailed machinery and equipment list.

3.5.12 Waste management

Collection points in the form of colour-coded bins and skips will be placed at camps, worksites, and workshops, with dedicated areas provided for segregating hazardous and non-hazardous waste.

Waste will then be temporarily stored on site in designated areas before it is collected and disposed of offsite.

All waste, except for bins in remote sites, will be stored at least 100 m from any natural sensitive areas, and at least 500 m from human sensitive areas (i.e., schools, markets, water wells). Waste storage areas will be established on flat and hard surface, and will be covered by a shelter (unless waste is inert).

Offsite disposal will be arranged through contracts with municipal authorities and licensed companies for landfill and hazardous waste treatment.

Waste registers, regular inspections, and audits will be maintained to monitor performance and ensure compliance with national requirements.

Table 3-4 below provides details of the estimated quantities and specific management techniques for each waste stream generated by the project.

Table 3-4: Estimated quantity and management of waste streams during construction

Waste stream	Estimated quantity	Management
Hazardous waste e.g., oils, lubricants, solvents and chemicals, chemical cans and containers, bitumen residues, spill response equipment, batteries	2-3 tons/month at peak	Stored in sealed drums within bunded and ventilated sheds, and disposed of via licensed waste contractors
Non-hazardous solid waste e.g., general (domestic) waste, kitchen waste, plastic, cardboard, paper, glass, scrap metal, wood	5-20 tons/month at peak	Segregated, stored in covered containers, and transferred to municipal landfill or recycling facilities
Sewage and grey water	30-70 m^3/day at peak	Managed through septic tanks at camps and oil-water separators at workshops

Waste stream	Estimated quantity	Management
Excavated spoil and inert materials	Several hundred thousand m^3 during earthworks	Re-used where possible

3.5.13 Hazardous substances

A fuel, lubricant and petroleum product warehouse will be constructed at the main construction camp. This facility will have an impermeable surface and is required to be located at least 200 m from surface water bodies and watercourses. Temporary storage locations are required to be located outside of flood prone and residential areas. Secondary containment is required as a preventative control measure in the event of accidental spills. Vehicle and machinery refuelling areas will be established on impermeable soil to prevent soil contamination.

FB Group will transport petroleum products, lubricants and other hazardous materials in labelled, leak-proof containers. An accidental spill protocol will be implemented in the event of accidental spills to ground and accidental spills in watercourses. Material safety data sheets will be required for all hazardous substances.

3.5.14 Traffic and transportation

Construction materials will be delivered to site primarily by heavy goods vehicles (HGVs) under a coordinated logistics plan, with imported items such as steel and bitumen arriving via the Port of Lomé and transported after customs clearance. HGVs will use the existing national and regional road network connecting Bassar and Tindjassi.

Deliveries will be managed by a fleet of tipper trucks, flatbeds, tankers and low-bed trailers, scheduled to align with construction phases and prevent overstocking, while equipment and machinery movements will be reduced during the rainy season. All vehicle operations will follow designated routes with safety measures in place, including avoiding villages and sensitive public areas, escorts for sensitive loads, and material tracking to laydown areas will be ensured through waybills, GPS and gate log systems.

Approximately 9,500 tons of bitumen and 49,000 tons of cement will be transported from the Port of Lomé. Bitumen will be transported over an eight-month period using 40-ton capacity tankers, cement will be supplied via silo trucks, and approximately 370 tanker trips will be required for diesel fuel transport, alongside around 100 container shipments for other materials.

3.6 Commissioning

Commissioning is expected to occur during July 2028, and will be undertaken by FB Group. Commissioning will include operational testing of the signalling and any toll systems in order to verify that the project components are fit for purpose and that the overall process, output, quality and performance meet the design specifications.

3.7 Demobilisation

Demobilisation activities will begin immediately following commissioning and are anticipated to be completed within two to three months. Demobilisation works covers dismantling of temporary facilities, rehabilitation of camps, borrow pits, and storage areas.

Specifically, demobilisation activities will include:

- dismantling and removal: All temporary infrastructure, including camps, site offices, workshops, asphalt and batching plants and storage facilities will be removed. Sites will be restored to pre-existing conditions.
- waste management: Construction residues, oils and hazardous materials will be safely disposed of through licensed contractors.
- site rehabilitation: Borrow pits and quarries will be graded and stabilised, with landscaping and vegetation replanting carried out where necessary.
- demobilisation of plant: All machinery, vehicles, and surplus materials will be removed from the site.
- final handover: Pproject sites will be restored to an acceptable condition, verified and certified by local authorities, in alignment with environmental commitments and regulatory standards.

3.8 Operations

The design life of the road is 20 years, based on the standard pavement structural design methodology, considering the cumulative axle load coefficient and projected traffic growth over the period.

The new road design reference speed will be 80 km/h in rural areas and 40 km/h in urban areas.

The Ministry of Public Works will be responsible for the operation and maintenance of the road. During operation, the road will facilitate vehicle, goods and passenger movements year-round. Routine activities will include operation of drainage works, periodic road resurfacing, maintenance of culverts and ditches and localised repairs to preserve road safety and performance.

3.9 Decommissioning and handover

The road will not be decommissioned. In the context of this project, decommissioning refers to demobilisation of the construction phase works at the end of the 27-month construction period. Upon completion of FB Group's scope of work, the road will be handed over to the Ministry of Public Works.

4 PROJECT ALTERNATIVES

This section describes the project alternatives considered by FB Group, including the 'no project' option.

4.1 Route alignment

Two options were considered in the 2012 ESIA (AGEIM and DECO, 2012):

- modification of the existing route
- use of the existing alignment with minor modifications.

FB Group's contract covers the upgrade of the current route alignment, as it provides the most direct and efficient connection between towns in the project area. This contractual constraint limits consideration of major route alternatives. However, in line with IFC PS1 and EP4 requirements for a proportionate alternatives analysis, the following feasible alternatives have been identified and will be considered and applied, where appropriate:

- micro-adjustments to the alignment at environmentally or socially sensitive areas
- variations in construction methodology (such as seasonality considerations)
- alternative siting options for camps and quarries
- drainage design alternatives to mitigate flood risk
- traffic management or diversion strategies to minimise disruption.

These measures aim to optimise environmental and social performance while respecting contractual obligations.

4.2 RoW width

As stated in Section 3.3.1, Decree No. 2022-106/PR of 17 October 2022 codifies the definition and classification of roads and the delimitation of RoW. Accordingly, the legal expropriation width of the RoW for the Bassar–Tindjassé road could be as wide as 70 m. A decision on the final RoW to be applied from the Ministry of Public Works RoW is pending.

The working assumption for the ESIA is that the road will be developed and upgraded within an expropriation zone of between 25 and 30 m in width, as determined by the Ministry of Public Works, with construction contained within the minimum footprint reasonably possible. For practical purposes, this will see a 20 m execution zone with 10 m allowance for any extensions.

Application of a uniform RoW greater than 30 m and up to 70 m will result in increased land take within the existing corridor and will increase exponentially the potential for physical and economic resettlement in villages situated along the road. Any substantial widening of the 30 m RoW, particularly near human settlements, is not considered to be a reasonable alternative, given that substantial human displacement will be triggered.

4.3 Road surfacing

Two road surfacing options were considered in the previous 2012 ESIA (AGEIM and DECO, 2012) and have been evaluated by FB Group for the road design:

- a three-layer surface dressing: the most feasible and cheaper option; however, given the high levels of traffic anticipated, it does not guarantee the longevity of the road
- an asphalt concrete wearing course: a relatively expensive option but could reduce future maintenance costs due to increased longevity.

The asphalt concrete wearing course option was chosen based on its superior lifecycle performance and environmental and social considerations. This option was considered to offer enhanced durability, reduced maintenance frequency and improved safety through better skid resistance. It also demonstrates greater climate resilience under conditions of heat and heavy rainfall, minimises lifecycle costs and user disruption, and supports lower emissions over its service life. It was also considered more aesthetically pleasing.

As the road is required to meet minimum design standards under the current design contract, the cheaper road surfacing option has not been given further design consideration.

Of the various types of bitumen considered for the project, a combination of the reclaimed asphalt pavement (RAP) and warm-mix asphalt (WMA) binders bitumen was selected. This option offers the most environmentally effective and operational feasibility as it involves significant GHG reductions, reduced energy use, and full circularity of bitumen materials.

4.4 Quarry location

As indicated in Section 3.3.6, sites for the supply of rock material within the project area have been considered. However, upon laboratory analysis, the materials did not present favourable chemical characteristics. Consequently, two existing quarry zones located between 80 km and 90 km from Bassar have been identified for the supply of rock, as determined in the final geotechnical assessment (LNBTP, 2025).

- Alibi-2 quarry zone (coordinates: 8.971° N, 1.183° E): located in the Sokodé area, offers high-performance granulite suitable for both hydraulic concrete and bituminous mixtures
- Lassa quarry zone (coordinates: 9.337° N, 1.185° E): located near Lassa village in the Kara region, provides sound and homogeneous granite aggregates, appropriate for asphalt and concrete works.

These sites represent the most reliable sources for aggregate production. At the time of writing, the preferred quarry zone has not been selected. However, preliminary measures have been taken to source rock material from one of the quarry zone options, and FB Group will either:

- buy material from an existing quarry that has permits in place and is operational
- rent an area of an existing quarry that has permits in place but is not operational
- rent an area of the quarry zone (adjacent to existing quarries) that does not currently have a permit and is not operational.

4.5 'No project' alternative

The decision to not undertake road improvements following completion of the last ESIA in 2012 resulted in continued degradation of the Bassar-Tindjassé Road, posing a

significant safety hazard to road users and serving to inhibit economic opportunities between Togo and Ghana (AGEIM and DECO, 2012). During the scoping site visit, it became evident that stakeholders were frustrated with the situation and indicated that past initiatives to restore the road to a safe standard had failed. Therefore, the 'no project' alternative has subsequently been abandoned by the Ministry of Public Works, which has opted to progress with the project given the direct benefits to road users, including improved road conditions and accessibility to areas along the route. Benefits to the local population and regional economy are anticipated. Since the project will upgrade the existing road alignment, the current environmental and social impacts are already present. Any additional land required for extended project footprint and widened RoW is considered acceptable, because it offers overall benefits compared to leaving the road in its deteriorated state. The 'no project' alternative is therefore not considered feasible.

5 BASELINE CONDITIONS

5.1 Introduction

This section presents the results of both desk-based studies and field surveys carried out to identify the baseline conditions in the project area.

5.2 Area of influence

5.2.1 Environmental AoI

The AoIs used for air quality; noise and vibration; traffic and transportation; landscape and visual amenity; topography, geology and geohazards; soils; hydrogeology; and hydrology are described throughout Section 5.3.

5.2.2 Biodiversity AoI

The biodiversity AoI encompasses both the area physically affected by project activities and the adjacent areas affected by dust, noise, traffic and increased human presence. The biodiversity AoI is described in further detail in Section 5.4.1.

5.2.3 Socioeconomic AoI

The project's social AoI is divided into three areas: primary, secondary and tertiary. These are described in further detail in Section 5.5.1.

5.3 Physical environment baseline

5.3.1 Climate

5.3.1.1 Source of information

Data is derived from ERA5 reanalysis products produced by the European Centre for Medium-Range Weather Forecasts (ECMWF). ERA5 reanalysis data is produced at daily scale. Sub-national data aggregations are presented at 0.25º x 0.25º (25 km x 25 km) resolution. All data is accessible in the World Bank Climate Change Knowledge Portal (World Bank, 2025) Data Download.

5.3.1.2 Baseline conditions

The road corridor spans the Kara and Centrale region of northern and central Togo lies within the tropical savanna climatic zone, characterised by a distinct alternation between wet and dry seasons under the influence of the West African Monsoon system. The climate is defined by high year-round temperatures, strong seasonality in rainfall and a pronounced cool, dry season (roughly November to March), known as the harmattan period.

Across the corridor, average mean annual surface temperatures range is 27.03°C in and 26.93°C in Centrale. Seasonal temperature variations are moderate, with the hottest months occurring in March when average mean surface air temperatures reach 30.35°C in Kara and 28.91°C in Centrale, with daily highs sometimes reaching 36–38.5°C. The

coolest period occurs in August, when average mean temperatures drop to approximately 24.84°C in Kara and 24.23°C in Centrale, with highs around 30°C.

Long-term temperature observations indicate a consistent warming trend across both regions. The warming rate is estimated at approximately 0.22°C for Kara to 0.24°C for Centrale per decade. This is in line with the national average mean surface air temperature increase of 0.24°C per decade between the period 1951-2020.

Rainfall patterns across the corridor follow the north–south gradient of the West African monsoon. Both the Bassar (Kara region) and Plaine du Mô (Centrale region) prefectures have a unimodal rainfall distribution. The rainy season typically lasts from April to October, contributing more than 90% of annual precipitation, followed by a pronounced dry season from November to March dominated by the dry north-easterly harmattan winds.

Average annual precipitation is estimated at 1,566.83 mm in Centrale and 1,214.79 mm in Kara. Monthly rainfall reaches peak values of 270.36 mm and 295.04 mm in August for Kara and Centrale respectively. During the dry season, rainfall totals are often below 20 mm, with several consecutive months of little to no precipitation.

Togo has experienced a decline in precipitation of 6.6 mm/decade during the period 1951-2020, although this is not statistically significant. This means that observed changes or patterns in rainfall are likely due to random natural variability, rather than a long-term shift. Precipitation data for Kara mirrors the national trend, with a 29.6 mm/ decade decline between 1971 and 2020. For Centrale, a statistically significant decline of 46.42 mm/decade between 1971 and 2020 as well as a decline of 80.46 mm/decade between 1991 and 2020 has been experienced. This suggests that Centrale is becoming drier.

5.3.2 Air quality

5.3.2.1 Air quality AoI

The air quality AoI for dust emissions from construction activities will be up to 250 m from the site boundary; for road transport, the AoI will be up to 200 m from affected roads, i.e., those predicted to experience changes in traffic flow, with an increase of 500 light duty vehicles (LDVs) and/or 100 heavy duty vehicles (HDVs) per day.

5.3.2.2 Desk-based study

Limited information is available on ambient air quality in Togo. ANGE was established to develop solutions (Ministry of Environment and Forest Resources, MERF, 2022) but as yet we are not aware of any national or regional governmental air quality monitoring.

It has been reported that in 2024, Togo's average $PM_{2.5}$ concentration was 5.2 times higher than the World Health Organization's (WHO) recommended Guideline, making it the 27th worst country globally for air quality (IQAir, 2024). Key sources of $PM_{2.5}$ include vehicle emissions, cooking, waste burning and dust from unpaved roads.

The AQI Website (https://www.aqi.in/uk/dashboard/togo) gives a 'real time' air quality index (AQI) and estimates of pollutant concentrations based on measurements using indicative sensors. No information is available regarding the accuracy of these data or

any QA/QC undertaken. However, taken at face value, data available for the six-day period between 11 and 16 September 2025 suggest:

- 24-hour averaged PM_{10} concentrations were in the range 17 to 30µg/m^3, below the WHO 24-hour Guideline of 45 µg/m^3
- $PM_{2.5}$ concentrations were in the range 6 to 10 µg/m^3, well below the WHO 24-hour Guideline of 15 µg/m^3
- 24-hour averaged NO_2 concentrations were in the range (6 to 10ppb) 11 to 19 µg/m^3 well within the WHO 24-hour Guideline of 25 µg/m^3
- 24-hour averaged CO concentrations were in the range 65 to 527ppb well within the WHO hourly, 8-hour and 24-hour Guidelines
- 24-hour averaged O_3 concentrations were in the range (12 to 20 ppb) 24 to 39 µg/m^3 well within the WHO 8-hour Guidelines of 100 µg/m3 or 60 µg/m^3 in peak season.

5.3.2.3 Air quality baseline survey

Air quality monitoring was carried out between 18 and 20 November 2025 in ten monitoring locations along the Bassar-Tindjassé Road. The weather during sampling was dry and sunny. The baseline monitoring was carried for the following below parameters:

- PM, including PM_{10} and $PM_{2.5}$
- CO
- NO_2
- SO_2
- O_3.

The monitoring locations and receptors are listed in Table 5-1 and Figure 5-1.

Short-term (1 hour) monitoring was carried out for PM, including PM_{10}, $PM_{2.5}$ and CO using TSI 'DustTrack' nephelometers and TSi 'Q-Track', and the long-term (25 days) monitoring was carried out for NO_2, SO_2 and O_3 using passive diffusion tubes.

Table 5-1: Air quality monitoring locations

Location reference	Receptor name/location	Grid reference
MP1	Mosquee Tabiou	9.260026ºN; 0.778075ºE
MP2	Binaparba public primary school	9.241948ºN; 0.766421ºE
MP3	Kpalou private residence	9.164984ºN; 0.751517ºE
MP4	EPP Bangham Primary school	9.072279ºN; 0.694145ºE
MP5	MEPSO Primary school	9.020341Nº; 0.691576ºE
MP6	Boulohou secondary school	8.781016ºN; 0.666881ºE
MP7	Boulohou old market	8.772363ºN; 0.670984ºE
MP8	Djarpanga Market	8.787738ºN; 0.566226ºE
MP9	Okoue market	8.726030ºN; 0.521012ºE
MP10	DEPOT Pharmaceutique Tindjasse	8.650773ºN; 0.464114ºE

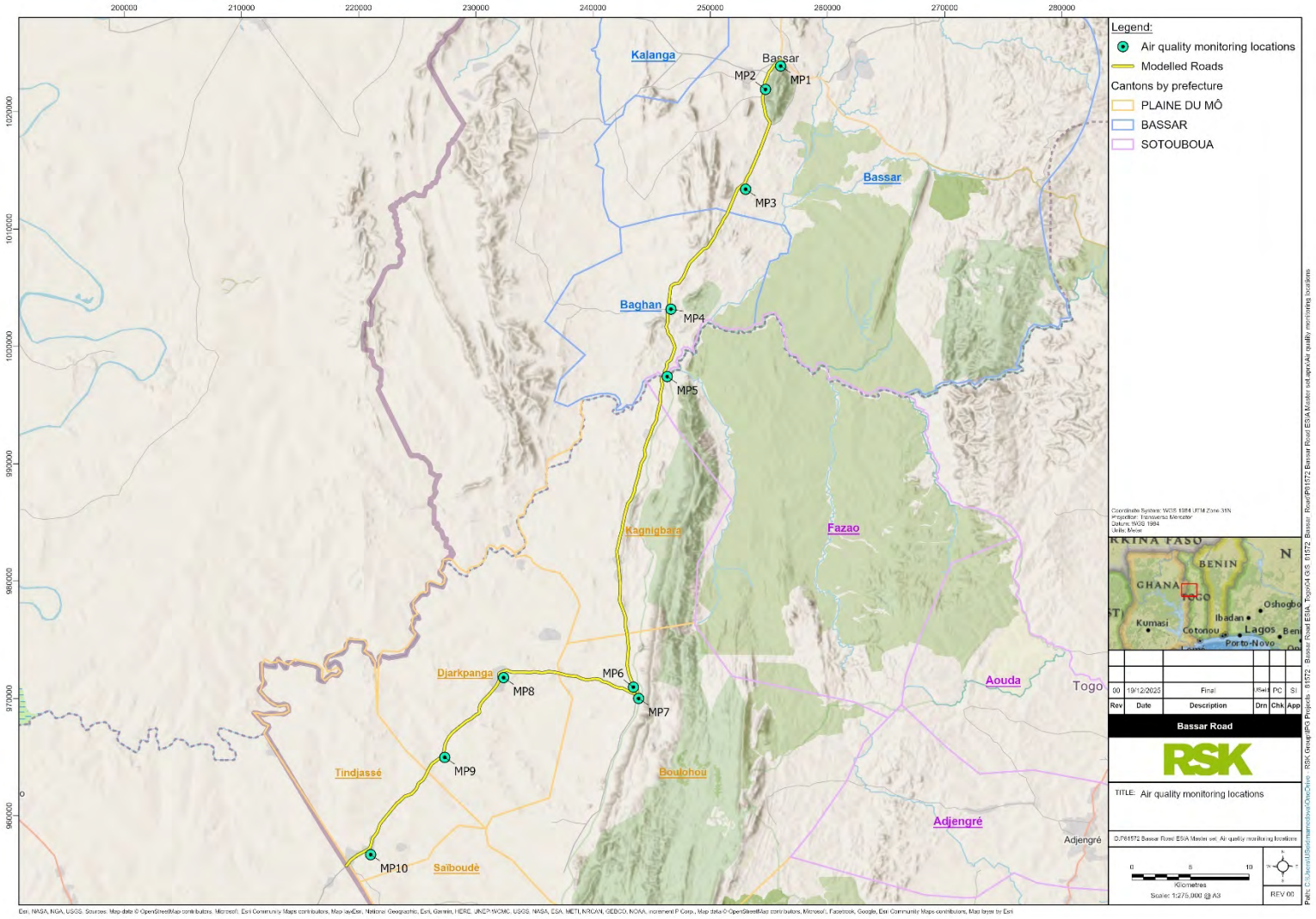

Figure 5-1: Air quality monitoring locations

The maximum temperature recorded was 37.3ºC. 1-hour PM_{10} and $PM_{2.5}$ WHO Air Quality Guidelines are not available and therefore monitoring results have been compared with 24-hour PM_{10} and $PM_{2.5}$ WHO Air Quality Guidelines. The PM_{10} results exceeded the 24-hour WHO 2021 Air Quality Guideline of 45 µg/m³ at eight monitoring locations (MP1, MP2, MP3, MP5, MP7, MP8, MP9 and MP10). The maximum PM_{10} concentration was identified as 106.28 µg/m^3 at monitoring location 1 (MP1) Mosquee Tabiou. The $PM_{2.5}$ results exceeded the 24-hour WHO 2021 Air Quality Guideline of 15 µg/m³ at all monitoring locations. The maximum $PM_{2.5}$ concentration was identified as 106.28 µg/m^3 at monitoring location 1 (i.e. MP1) Mosquee Tabiou.

The CO levels at all monitoring locations did not exceed the 1-hour WHO 2021 Air Quality Guideline of 35 mg/m³. The highest CO level recorded was 3.88 mg/m³ (3.4 ppm) at monitoring location 1 (i.e. MP1).

The monitoring results are shown in Table 5-2.

Table 5-2: PM_{10}, $PM_{2.5}$ and CO monitoring results

Location reference	Parameter	Monitoring results (1-hour average)	WHO Air Quality Guidelines
MP1	PM_{10}, µg/m^3	106.28	24-hr: 45 µg/m^3 (WHO 2021)
	$PM_{2.5}$, µg/m^3	106.28	24-hr: 15 µg/m^3 (WHO 2021)
	CO, mg/m^3	2.94	1-hr: 35 mg/m^3 (WHO 2021)
MP2	PM_{10}, µg/m^3	65.85	24-hr: 45 µg/m^3 (WHO 2021)
	$PM_{2.5}$, µg/m^3	65.85	24-hr: 15 µg/m^3 (WHO 2021)
	CO, mg/m^3	2.72	1-hr: 35 mg/m^3 (WHO 2021)
MP3	PM_{10}, µg/m^3	95.97	24-hr: 45 µg/m^3 (WHO 2021)
	$PM_{2.5}$, µg/m^3	95.97	24-hr: 15 µg/m^3 (WHO 2021)
	CO, mg/m^3	2.90	1-hr: 35 mg/m^3 (WHO 2021)
MP4	PM_{10}, µg/m^3	41.43	24-hr: 45 µg/m^3 (WHO 2021)
	$PM_{2.5}$, mg/m^3	41.43	24-hr: 15 µg/m^3 (WHO 2021)
	CO, µg/m^3	2.62	1-hr: 35 mg/m^3 (WHO 2021)
MP5	PM_{10}, µg/m^3	50.18	24-hr: 45 µg/m^3 (WHO 2021)
	$PM_{2.5}$, µg/m^3	50.18	24-hr: 15 µg/m^3 (WHO 2021)

Location reference	Parameter	Monitoring results (1-hour average)	WHO Air Quality Guidelines
	CO, mg/m^3	3.03	1-hr: 35 mg/m^3 (WHO 2021)
MP6	PM_{10}, µg/m^3	42.69	24-hr: 45 µg/m^3 (WHO 2021)
	$PM_{2.5}$, µg/m^3	42.69	24-hr: 15 µg/m^3 (WHO 2021)
	CO, mg/m^3	3.49	1-hr: 35 mg/m^3 (WHO 2021)
MP7	PM_{10}, µg/m^3	57.17	24-hr: 45 µg/m^3 (WHO 2021)
	$PM_{2.5}$, µg/m^3	57.17	24-hr: 15 µg/m^3 (WHO 2021)
	CO, mg/m^3	2.62	1-hr: 35 mg/m^3 (WHO 2021)
MP8	PM_{10}, µg/m^3	68.82	24-hr: 45 µg/m^3 (WHO 2021)
	$PM_{2.5}$, µg/m^3	68.82	24-hr: 15 µg/m^3 (WHO 2021)
	CO, mg/m^3	3.05	1-hr: 35 mg/m^3 (WHO 2021)
MP9	PM_{10}, µg/m^3	64.66	24-hr: 45 µg/m^3 (WHO 2021)
	$PM_{2.5}$, µg/m^3	64.66	24-hr: 15 µg/m^3 (WHO 2021)
	CO, mg/m^3	3.83	1-hr: 35 mg/m^3 (WHO 2021)
MP10	PM_{10}, µg/m^3	76.52	24-hr: 45 µg/m^3 (WHO 2021)
	$PM_{2.5}$, µg/m^3	76.52	24-hr: 15 µg/m^3 (WHO 2021)
	CO, mg/m^3	3.88	1-hr: 35 mg/m^3 (WHO 2021)

NO_2 monitoring

Ambient concentrations of NO_2 were sampled using passive diffusion tubes, and diffusion tubes were deployed in duplicate. The diffusion tube results exceeded the annual WHO 2021 Air Quality Guideline of 10 µg/m³ at two monitoring locations (MP1 and MP8); there was no exceedance of NO_2 at any other monitoring locations. The highest NO_2 level recorded was 25.52 µg/m³ at monitoring location 1 (i.e. MP1) Mosquee Tabiou. The monitoring results are shown in Table 5.3.

Table 5.3: NO_2 monitoring results

Location reference	Monitoring results (µg/m³)*	WHO Air Quality Guidelines
MP1	25.52	Annual: 10 µg/m³ (WHO 2021)
MP2	5.9	
MP3	8.88	
MP4	6.17	
MP5	5.17	
MP6	3.20	
MP7	6.45	
MP8	11.25	
MP9	5.13	
MP10	8.85	
*Average of duplicate is presented and results are blank subtracted		

SO_2 monitoring

SO_2 monitoring results are shown in Table 5.4. The diffusion tube monitoring results suggest that no exceedance of SO_2 at any of the monitoring locations and they are well below the 24-hour mean WHO 2021 Air Quality Guideline of 40 µg/m³. The highest SO_2 level recorded was 0.15 µg/m³ at monitoring location 1 (i.e. MP1) Mosquee Tabiou**.**

Table 5.4: SO_2 monitoring results

Location reference	Monitoring results (µg/m³)*	WHO Air Quality Guidelines
MP1	0.15	24-hr: 40 µg/m³ (WHO 2021)
MP2	0.14	
MP3	0.10	
MP4	0.10	
MP5	0.07	
MP6	0.09	
MP7	0.08	
MP8	0.03	
MP9	0.02	
MP10	0.02	
*Average of duplicate is presented and results are blank subtracted		

O_3 monitoring

O_3 monitoring results are shown in Table 5.5.

The diffusion tube results exceeded the 8-hour WHO 2021 Air Quality Guideline of 100 µg/m³ at one monitoring location (MP2); the diffusion tube results exceeded the peak season WHO 2021 Air Quality Guideline of 60 µg/m³ at six monitoring locations (MP2,

MP3, MP6, MP7,MP9 and MP10). The highest O_3 level recorded was 100.92 µg/m³ at monitoring location 2 (i.e. MP2) Binaparba public primary school. The monitoring results are shown in Table 5.5.

Table 5.5: O_3 monitoring results

Location reference	Monitoring results (µg/m³)*	WHO Air Quality Guidelines
MP1	60.03	8-hr: 100 µg/m³ (WHO 2021) Peak season: 60 µg/m³ (WHO 2021)
MP2	100.92	
MP3	87.49	
MP4	51.54	
MP5	44.50	
MP6	86.37	
MP7	76.89	
MP8	45.26	
MP9	61.40	
MP10	71.91	
*Average of duplicate is presented and results are blank subtracted		

5.3.3 Noise and vibration

5.3.3.1 Noise and vibration AoI

AoIs apply to the upgraded and new construction roads associated with the project. The AoI was artificially set at 20 m radius as it was limited by the receptor information available from the social survey at the time of the assessment. There is potential for impacts beyond the AoI, this is discussed further in the limitations section of this report.

The project is permanent and will remain operational over the lifetime of the project, so the temporal AoIs will be approximately 20 years. For the temporary construction access roads, the temporal AoI is for the period of construction.

5.3.3.2 Receptors

The areas surrounding the alignment are a mixture of rural isolated dwellings, agricultural land, villages and towns.

The social survey identified the main settlements along the alignment, see Figure 5-2.

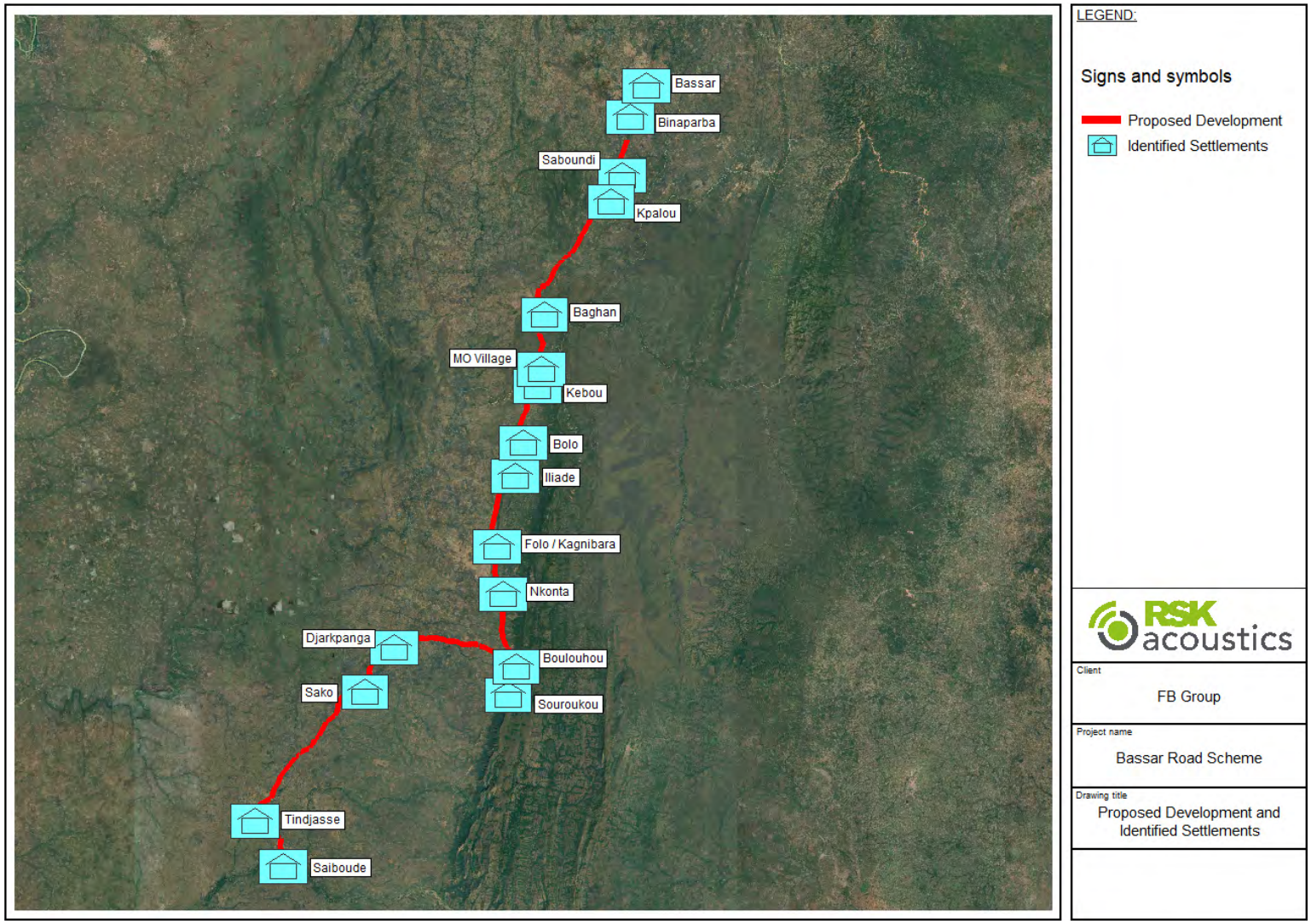

Figure 5-2: Nearby settlements

5.3.3.1 *Baseline environment – noise*

Monitoring locations

Baseline noise surveys were undertaken at nine noise monitoring locations at the primary settlements along the route between 18 and 23 November 2025. Measurements were undertaken during both daytime and night-time periods.

Table 5-3 below details monitoring locations at the identified primary settlements, and Figure 5-3 depicts their location relative to the project.

Table 5-3: Measurement location details

Measurement location	Description	Coordinates (EPSG: 3857)		Distance from ROW (m)
		X	Y	
MP1	Tindjasse	8.64865	0.458374	54
MP2	Djarekpanga	8.774458	0.560126	45
MP3	Bouhoulou	8.769661	0.669942	160
MP4	Folo	8.870486	0.655547	25
MP5	Iliade	8.930264	0.668454	53
MP6	Kebou	9.010471	0.689207	60
MP7	Baghan	9.074345	0.693138	54
MP8	Kpalou	9.163574	0.74878	64
MP9	Saboundi	9.184428	0.76005	50

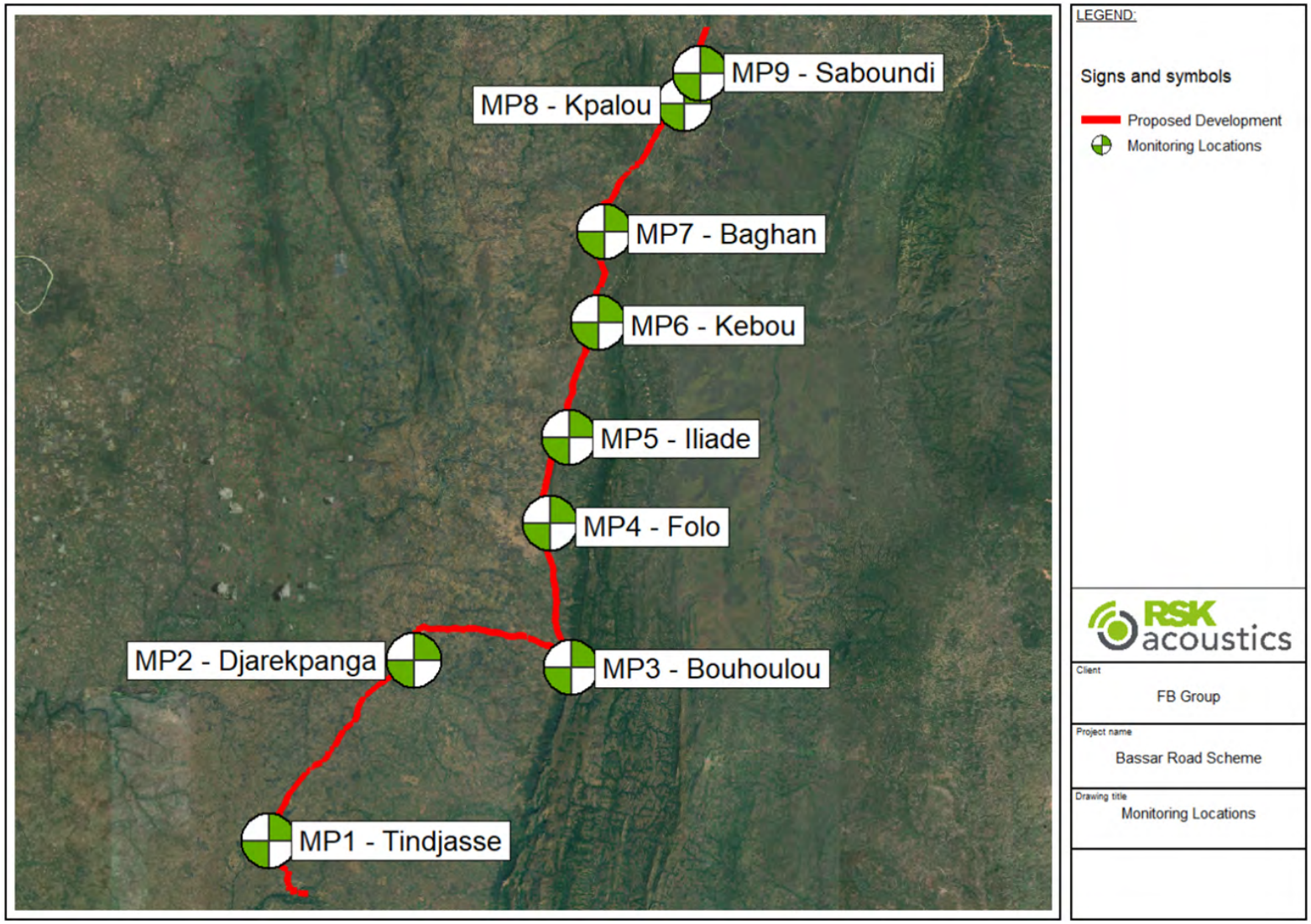

Figure 5-3: Proposed road alignment and noise monitoring positions

Monitoring equipment

The noise measurements were undertaken using the following equipment.

Table 5-4: Monitoring equipment

Equipment	Make/Model	Serial number	Calibration date
Sound level meter	Svantek/971A	131649	22/01/2025
		113227	09/01/2024
Acoustic calibrator	Rion/NC-74	39614	20/01/2025

The sound level meters conform to the Class 1 requirements of BS EN 61672-1:2013. The calibrator used conforms to the Class 1 requirements of BS EN IEC 60942:2018. The equipment used has a calibration history that is traceable to a certified calibration institution. Calibration certificates are available upon request. The calibration of the sound level meters was field-checked prior to commencing measurements and prior to removing the equipment from site upon completion; no significant calibration drift was observed i.e., within a +/- 0.5 dB tolerance.

All measurements were undertaken in free field conditions with the microphone positioned greater than 3.5 m away from reflecting surfaces and at 1.5 m above ground height, complying with the requirements of BS 7445.

Measurements were logged in continuous 15-minute integration periods (with supplementary 100 millisecond data) and obtained using a combination of broadband indices (L_{Aeq}, L_{A10}, L_{A90} and L_{Amax}) and one-third octave frequency bands.

Weather conditions

Weather condition data during the monitoring period was noted and is summarised in Table 5-5.

Table 5-5 Weather conditions during the monitoring period

Monitoring location	Measurement Date	Average Temperature (˚C)	Total precipitation (mm/h)	Average wind speed range (km/h)	Prevailing wind direction
MP1	18/11/2025	35	0	10	ESE
MP2	18/11/2025	35	0	10	ESE
MP3	19/11/2025	35	0	8	EES
MP4	19/11/2025	37	0	9	ESE
MP5	20/11/2025	33	0	5	EES
MP6	20/11/2025	37	0	5	SSE
MP7	21/11/2025	36	0	5	ESE
MP8	21/11/2025	36	0	4	ESE
MP9	22/11/2025	39	0	8	EES

The weather conditions are generally considered suitable for the survey, in accordance with BS 7445, except for some periods of gust that were not sufficient to affect the results.

Noise environment

Observations of the acoustic environment were made at the monitoring location during the installation and removal of the noise monitoring equipment. Table 5-6 summarises the existing dominant and audible noise sources noted throughout the noise survey.

Table 5-6: Audible noise sources

Location	Monitoring period	Audible noise sources
MP1	Daytime	The daytime audible noise sources were dominated by traffic related sound (i.e., motorcycles passing by, honking and vehicle movements), windblown foliage, animal sounds including goats as well as human activity including people conversing and children playing in the background.
	Night-time	The nighttime audible noise sources were dominated by were dominated by traffic related sound (i.e., motorcycles passing by, honking and vehicle movements), windblown foliage, animal sounds including owls, birds and roosters as well as human activity including people conversing.
MP2	Daytime	The daytime audible noise sources were dominated by traffic related sound (i.e., motorcycles passing by, honking and vehicle movements), animal sounds including birds and chickens as well as human activity including people conversing and children playing in the background.
	Night-time	The nighttime audible noise sources were dominated by were dominated by traffic related sound (i.e., motorcycles passing by, honking and vehicle movements), animal sounds including birds and insects chirping as well as human activity including people conversing.
MP3	Daytime	The daytime audible noise sources were dominated by traffic related sound (i.e., motorcycles and tricycle passing by, honking and vehicle movements), animal sounds including sheep/goat bleating and chickens as well as human activity including people conversing and children playing in the background.
	Night-time	The nighttime audible noise sources were dominated by were dominated by traffic related sound (i.e., motorcycles passing by, honking and vehicle movements), windblown foliage, animal sounds including chickens, sheep/goats bleating and birds and insects chirping, as well as human activity including people conversing.
MP4	Daytime	The daytime audible noise sources were dominated by traffic related sound (i.e., motorcycle and tricycle passing by, honking and vehicle movements), animal sounds including sheep/goats bleating, as human activity including people conversing and children playing in the background.
	Night-time	The nighttime audible noise sources were dominated by were dominated by traffic related sound (i.e., motorcycles, passing by, honking and vehicle movements), windblown

Location	Monitoring period	Audible noise sources
		foliage, animal sounds including dog barking, sheep/goats bleating and birds/owls/rooster and insect's chirpings, as well as human activity including people conversing.
MP5	Daytime	The daytime audible noise sources were dominated by traffic related sound (i.e., motorcycles passing by, honking and vehicle movements), animal sounds including chickens and sheep/goats bleating, as human activity including people conversing and children playing in the background.
	Night-time	The nighttime audible noise sources were dominated by were dominated by traffic related sound (i.e., motorcycles, passing by, honking and vehicle movements), animal sounds including dog barking, sheep/goats bleating and birds/owls/rooster and insect's chirpings, as well as human activity including people conversing
MP6	Daytime	The daytime audible noise sources were dominated by traffic related sound (i.e., motorcycles passing by, honking and vehicle movements), industrial machine noises, animal sounds including dog barking, sheep/goats bleating and chickens as human activity including people conversing and children playing in the background.
	Night-time	The nighttime audible noise sources were dominated by were dominated by traffic related sound (i.e., motorcycles, passing by, honking and vehicle movements), animal sounds including birds/owls/rooster and insects chirping, as well as human activity including people conversing.
MP7	Daytime	The daytime audible noise sources were dominated by traffic related sound (i.e., motorcycles passing by, honking and vehicle movements), windblown foliage, industrial machine noises, animal sounds including dog barking, sheep/goats bleating and chickens as human activity including people conversing and children playing in the background.
	Night-time	The nighttime audible noise sources were dominated by were dominated by traffic related sound (i.e., motorcycles, passing by, honking and vehicle movements), windblown foliage, animal sounds including dog barking, sheep/goats/pigs bleating and birds/owls/rooster/guinea fowls/ducks, cows and insects chirpings, as well as human activity including people conversing.
MP8	Daytime	The daytime audible noise sources were dominated by traffic related sound (i.e., motorcycles and tricycles passing by, honking and vehicle movements), windblown foliage, industrial machine noises, animal sounds including sheep/goats bleating and chickens as human activity including people conversing and children playing in the background.
	Night-time	The nighttime audible noise sources were dominated by animal sounds, including birds/rooster/chickens/guinea fowl, dogs barking, sheep/goats/pigs/cats and insects chirping; traffic-related noises, windblown foliage; and human activity, including people movements, conversing and playing the radio.

Location	Monitoring period	Audible noise sources
MP9	Daytime	The daytime audible noise sources were dominated by traffic related sound (i.e., motorcycles and tricycles passing by, honking and vehicle movements), windblown foliage, animal sounds including sheep/goats bleating and chickens as human activity including people conversing and children playing in the background.
	Night-time	The nighttime audible noise sources were dominated by were dominated by traffic related sound (i.e., motorcycles, passing by, honking and vehicle movements), animal sounds including dog barking, sheep/goats bleating, as well as human activity including people conversing.

Baseline noise survey results

A summary of the daytime and night-time measurements taken are presented in Table 5-7. No existing noise data for the area could be found, and as such, no comparison could be drawn between the summarised data below and any existing relevant noise data.

Table 5-7: Noise survey results (2025)

Noise monitoring location	Time period*	Start time	End time	Measures noise levels (dB(A))		
				$L_{Aeq,T}$	$L_{A90,T}$	$L_{AFmax,T}$
MP1	Daytime	10:15	13:15	43	35	70
	Night-time	22:15	07:15	45	37	79
MP2	Daytime	16:00	19:00	48	41	83
	Night-time	22:00	07:00	48	41	78
MP3	Daytime	11:00	14:00	51	36	86
	Night-time	22:00	07:00	48	34	87
MP4	Daytime	16:00	19:00	46	38	70
	Night-time	22:00	07:00	43	35	71
MP5	Daytime	10:00	13:00	40	29	71
	Night-time	22:00	07:00	43	35	84
MP6	Daytime	14:00	17:00	43	35	75
	Night-time	22:00	07:00	46	36	82
MP7	Daytime	10:00	13:00	47	38	78
	Night-time	22:00	07:00	45	34	83
MP8	Daytime	14:30	17:30	44	37	82
	Night-time	22:00	07:00	45	34	83
MP9	Daytime	13:15	16:15	41	30	71
	Night-time	22:00	07:00	47	39	73

* $L_{Aeq,\ T}$ values are the logarithmic average of $L_{Aeq,1\text{-hour}}$ samples, and the $L_{A90,T}$ is the arithmetic average of $L_{A90,1\text{-hour}}$ samples.

5.3.3.2 Baseline environment – vibration

The existing vibration environment has not been quantified, and no discernible sources of vibration were observed during the field survey.

Vibration assessments are typically conducted against absolute criteria, rather than comparison to background. Therefore, baseline vibration measurements were not considered necessary.

5.3.4 Traffic and transport

As observed during the scoping site visit, the average road width is between 5 and 10 m. The section between Bassar and Binaparba (see Figure 5-4) is in good condition and allows for traffic to reach speeds of between 60 and 100 km/h, however between Mô and Tindjassé, the average traffic flow is reduced to less than 25 km/h on this unmaintained section. The road has a flat cross-section with a few sharp but not dangerous bends. The longitudinal profile has a few gradients and low points that are not very pronounced. Over 98% of the road's length is built on relatively flat ground.

Figure 5-4: Main road between Bassar and Binaparba

For most of the route between Tindjassé and Binaparba, the road is severely degraded with damage including:

- erosion
- longitudinal and transverse gullies
- sections of corrugated road
- silted ditches
- cracks in watercourse crossings
- rocky outcrops in road
- recessed areas/pot holes

- excessive vegetation on roadside.

The existing traffic on these sections consists of local traffic serving the communities located along the road, and freight transportation via HGVs. Low volumes of traffic pass into neighbouring Ghana along this route, due to the very poor condition of the road.

5.3.4.1 *Traffic survey – 2025*

In 2025, FB Group conducted a 24-hour continuous traffic survey at two locations:

- KM0 – Bassar construction site entrance
- KM70 – Boulouhou exit (junction ramp).

Relatively low traffic volumes were observed during the 24-hour period, with 428 daily vehicles observed at km 0 (Bassar) and 417 daily vehicles observed at km 70 (Boulouhou). HGVs accounted for a substantial proportion of this flow (~28%) which highlights the route's importance for regional freight transport. Traffic patterns show a pronounced morning peak between 06:00 and 10:00, where hourly flows reached up to 8–9% of the daily total, while night-time movements were negligible (<2%).

FB Group forecasts a steady annual growth rate of 3%, with traffic volumes expected to nearly double by 2045 (up to 773 vehicles/day at km 0), while maintaining a similar composition.

Table 5-8 summarises the observations and provides projections for future traffic volumes.

Table 5-8: Traffic survey results (2025)

Site	Traffic volume (number of vehicles per day)			
	2025 observation	Projected*		
		2030	2035	2045
km 0 – Bassar construction site entrance	428 (122 HGVs; 28.5%)	496	575	773
km 70 – Boulouhou exit (junction ramp)	417 (118 HGVs; 28.3%)	483	560	753

*Assuming a 3% annual growth rate 2025-2045

5.3.4.2 *Traffic survey – 2012*

A traffic survey was also performed in 2012, with manual traffic counts taken at three stations (between Bassar and Bagan; Bagan and Djarapanga; and Djarapanga and Tindjassé) over seven days.

The survey counted a very low number of passenger vehicles and even lower number of freight vehicles. The results of the analysis indicated that most users were traders, travelling for business reasons.

Table 5-9: Traffic survey results (2012)

Site	Traffic volume (average number of vehicles per day)
Bassar-Bagan	99 (34 HGVs; 34%)
Bagan- Djarapanga	36 (5 HGVs; 14%)
Djarapanga-Tindjassé	11 (1 HGV; 14%)

A comparison of the results between 2012 and 2025 indicates that traffic volumes, including HGVs, have significantly increased.

5.3.5 Topography, geology and geohazards

5.3.5.1 Topography

The information and data for this section was obtained from desk-based research and available studies (Présidence de la République, 2021; AGEIM and DECO, 2012).

The project area is located in the Mô plain. This plain extends towards the west from the Boulohou cliff, which is the western edge of the Fazao mountains. The cliff rises to an altitude of 749 metres above sea level (masl), and a foothill zone extends from the foot of the cliff to the plains bordering the left bank of the Mô river. Numerous streams flow down from the cliff and spread across the plains to the river Mo. The average altitude of the Mô plain is 190 masl and the gradual slope is less than 1%.

5.3.5.2 Geology

The geology of the Centrale Region is characterised by the Dahomean Basement in the east and the Voltaian Supergroup in the west. This includes the Atakorian and Buem structural units. In contrast, the Kara Region features a series of synclines and anticlines composed of metamorphosed sedimentary or epimetamorphic formations.

The bedrock geology of the project area is characterised by Late Proterozoic – Early Paleozoic rocks of the Atakora and the Buem structural units. The Atakora Structural Unit is represented by the Fazao mountains. These units comprise hard quartzites containing sericite and muscovite (both mica minerals) (Gnazou et al., 2018).

5.3.5.3 Seismicity

Earthquakes and seismic risks are rare in Togo and haven't been reported in the project area (National Agency for Civil Protection).

5.3.5.4 Susceptibility to slope movements

No information or data on susceptibility to slope movements has been identified.

5.3.5.5 Mining and quarrying

Several quarries for construction material have been identified in the local area. These are listed in the project description (Section 3).

5.3.6 Soils

5.3.6.1 Soils AoI

For the construction phase, the AoI is:

- the RoW for the road and access/slip roads. This area has been selected to include the potential area required for any construction activities or storage of material along the routes
- the quarry sites
- all construction and worker camp sites.

For the operational phase, the AoI is the RoW and any project sites where there is waste storage, fuel and chemicals storage and use.

5.3.6.2 Baseline environment

The data was collected using desk-based research methods primarily from the ESIA prepared by AGEIM and DECO (2012).

As indicated in Section 5.3.4, the existing road surface is characterised by the formation of gullies, pronounced erosion, silted ditches, cracks, quagmires, rocky outcrops and surface recession.

The five soil categories that have been identified in the project area are tropical ferruginous soils, ferralitic soils, soils with little development and lithosols (mountainous areas), vertisols and soils with vertic characteristics (lowlands) and hydromorphic soils (marshy areas, riverbanks) (AGEIM and DECO, 2012).

Ferruginous soils

They are either concretion-free, with concretions, indurated or hydromorphic.

Ferralitic soils

These soils are very deep, fine, compact and often red in colour. Concentrated or diffuse erosion has stripped away the surface (H1) horizon, which in places remains only very sparsely represented. The H2 horizon, underneath the H1, is desaturated but not indurated (hard or callous), has a sandy-clay structure and is very thick.

Poorly developed soils

These are erosion soils associated with raw mineral soils. They are represented in the area by rocky points. They are essentially lithic, associated with crude minerals with a high proportion of coarse, stony and gravelly elements mixed with quartz sands.

Vertisols

Vertisols also known as black clay, are found along the Khra river. They are rich in swelling clay and mineral elements.

Hydromorphic soils

These soils are found along watercourses and in certain low areas. The development of hydromorphic soils is conditioned by the presence of excess water over a more or less

long period of the year. In dry seasons, they are marked by deep desiccation and large cracks.

5.3.6.3 Field survey

No field soil sampling was conducted as part of the baseline study.

5.3.7 Hydrogeology

5.3.7.1 Hydrogeology AoI

The AoI for the construction phase includes:

- The shallow aquifer in all areas where the project components are located
- The shallow aquifer in all construction camps, yards, storage areas and access roads
- The shallow aquifer at all associated facilities including the quarries.

For the operational phase:

- The shallow aquifer in all areas where the project components are located.

5.3.7.2 Baseline environment

The data was collected using desk-based research methods from published papers and from data collected during the social baseline site survey.

Groundwater is present within a shallow aquifer in the general area of the project. These are typically discontinuous sedimentary alluvial aquifers (Gnazou et al., 2018). Deeper basement aquifers of Late Proterozoic – Early Paleozoic age rocks are present and are characterised by fracture flow.

Data on the quality of groundwater was not available at the time of writing.

During stakeholder engagement conducted by CEMP in September 2025, groundwater was identified as a critical resource across the project-affected villages, primarily accessed through boreholes, wells and public water supply systems. Across the project-affected communities (PACs), boreholes were the most common water source, present in 15 out of 19 communities. Further data is presented in the social baseline in 5.5.11.3. Borehole depths typically range from 65 to 80 m (see Figure 5-5 and Figure 5-6). Most villages possess multiple boreholes, with some equipped with solar pumps or managed under community-based maintenance schemes. However, challenges such as unproductive drilling and limited proximity to project roads are noted in certain areas, including N'Konta and Binaparba. Groundwater infrastructure varies in reliability and coverage, with some localities relying on commercial water sales or experiencing pressure on existing systems.

Figure 5-5: Example of a well in the village of Mô

Figure 5-6: Example of a borehole in the villages of Bikoutiba (left) and Tindjassé (right)

5.3.8 Hydrology

5.3.8.1 Hydrology AoI

The data was collected using desk-based research methods from published papers and from data collected during the social baseline site survey.

The AoI for the construction phase includes:

- the locations where the road, access/slip roads or any other infrastructure cross a watercourse
- surface water bodies downstream of all crossings.

For the operational phase, the AoI is all surface water bodies within the operating area of the project.

5.3.8.2 Baseline environment

The surface water bodies that have been identified along the road are presented in Figure 5-7 below.

The Mo river is a perennial river fed by various tributaries as shown in the figure. The Sako is also a relatively large river that crosses the route. Other streams and rivers are indicated although their flow conditions have not been confirmed.

Rivers and streams are used as water sources for nine PACs.

Data on the quality of water in the surface water bodies was not available at the time of writing.

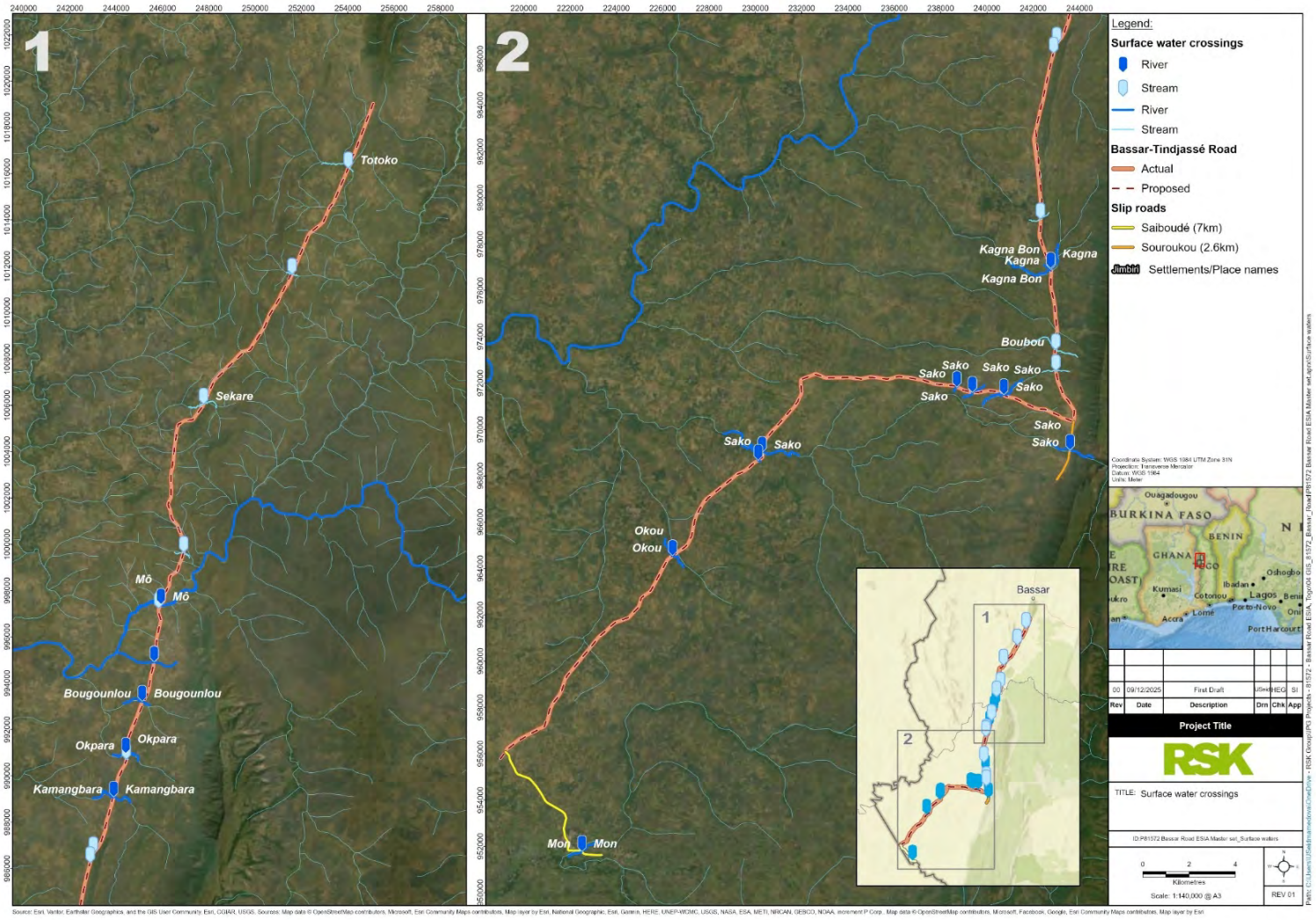

Figure 5-7 Surface water features and crossing points

5.3.9 Landscape and visual amenity

The landscape and visual impact baseline defines the existing landscape and visual baseline environments and assesses their sensitivity to change.

5.3.9.1 Landscape and visual amenity AoI

The AoI has been determined through a combination of desk-based analysis and field survey. It is accepted practice within landscape and visual assessment work that the extent of the AoI for a development proposal is broadly defined by the visual envelope of the project. Effects on landscape or visual receptors outside of these areas would be negligible and are not assessed in detail.

The AoI of landscape and visual effects arising from this project comprises up to a 1 km buffer from the site boundary due to the proposed route following existing roads and the presence of intervening built form and vegetation in and around the site. Due to the scale and nature of the project components described in Section 3 it is not anticipated that there will be significant effects beyond 1 km, with the exception of the Souroukou cascade (within Fazao-Malfakassa National Park) which is up to 2 km east of the route. In places, the AoI is less than 1 km where there are fewer receptors and/or where the route involves less infrastructure (e.g., away from bridges or large embankments/cuttings).

5.3.9.2 Data sources

Data has been gathered from both desk study and field survey. Teams visited the site and its surroundings in September-November 2025 and captured photography from several locations within the site and the AoI. This photography has been used to inform the landscape characterisation and to provide indicative views representative of receptor groups.

There are no published landscape character assessments within Togo, therefore local landscape character units have been developed and refined as part of the assessment process. Visual receptor groups have been identified in the field survey and represented by a selection of representative viewpoints.

Within the desk study, aside from aerial mapping, the following sources have been used:

- Akpataku, K., et al. (2025) 'Hydrogeochemical Characteristics of Groundwater in the Prefecture of Bassar, Togo', American Journal of Chemical Engineering, 13(1), p.1. Available on: https://www.sciencepublishinggroup.com/article/10.11648/j.ajche.20251301.11 [accessed 12 December 2025].
- Birdlife (2025), 'Fazao-Malfakassa National Park'. Available online: https://datazone.birdlife.org/site/factsheet/fazaomalfakassa-national-park [accessed 12 December 2025].
- Britannica (2025), 'Bassar, Togo'. Available online: https://www.britannica.com/place/Bassar [accessed 12 December 2025].
- CILSS (2016), 'Landscapes of West Africa – A Window on a Changing World'. Available online: https://pubs.usgs.gov/book/2016/70176549/70176549.pdf [accessed 12 December 2025].
- Hounkpati, K., Adjonou, K. and Kokou, K. (2023) 'Distribution and cultural identity of sacred groves in Togo', Journal of Forest and Environmental Science, 39(2), pp. 115–129. Available online: https://www.researchgate.net/profile/Kossi-Hounkpati/publication/361850542_Distribution_and_cultural_identity_of_sacred

_groves_in_Togo/links/641978dba1b72772e414f0a6/Distribution-and-cultural-identity-of-sacred-groves-in-Togo.pdf [accessed 12 December 2025].

- Kourpa, N., Koumoi, Z. and Kadouza, P. (2024) 'Migrations rurales et dynamique de l'occupation du sol dans la plaine de Mô au centre-ouest du Togo', Ahoho, 18(32). Available online: https://ahoho.net/papers/volume-18/issue-32/migrations-rurales-et-dynamique-de-loccupation-du-sol-dans-la-plaine-de-mo-au-centre-ouest-du-togo/ [accessed: 12 December 2025].
- OneEarth (2025), 'West Sudanian Savannah West- Sudanian Savannah (AT20)' Ecoregion. Available online: https://www.oneearth.org/ecoregions/west-sudanian-savanna/ [accessed 12 December 2025].
- UNESCO (2021), 'Tentative Lists – Fazao-Malfakassa National Park'. Available online: https://whc.unesco.org/en/tentativelists/6604/ [accessed 12 December 2025].

5.3.9.3 Overview of baseline landscape and visual conditions

Regional context

The project is located within the Bassar (Kara region) and Plaine du Mô (Centrale region) prefectures in western Togo along the north-western border of Togo with neighbouring Ghana. The prefecture of Sotouboua (Centrale region) lies to the east of the project, adjacent to the Plaine du Mô prefecture.

The landscape within the Bassar prefecture incorporates a combination of wooded hills including the foothills of the Atakora mountain range in the east (typically 400-600 m elevation, but up to 700 m in elevation) and savannah plain landscapes (typically 10-300 m elevation) with occasional gallery forests along watercourses. The prefecture is associated with yam and iron production (Akpataku et al, 2025).

The Plaine du Mô prefecture comprises a wide and undulating alluvial savannah plain located immediately west of the Fazao mountain range (part of the Fazao-Malfakassa National Park). The plain lies at approximately 100-200 m elevation, with the mountains in the east of the prefecture rising steeply to 700-800 m elevation. The plain is largely used for farmland due to its fertile soils and has undergone waves of migration within the last 50 years due to its natural resources (Kourpa et al, 2024).

Project context

Vegetation and land cover

The project area falls within the West Sudanian Savannah global ecoregion, which stretches across West Africa from Senegal to Nigeria (OneEarth, 2025). On a country level, the project area falls within the Zone Agro-pastorale ecoregion, with the Forêt sur Atakora ecoregion lying within the Fazao-Malfakassa National Park to the east. The National Park lies approximately 150 m east of the proposed route at its closest point. The Zone Agro-pastorale ecoregion is characterised by a patchwork of savanna, gallery forest and cropland; with the Forêt sur Atakora ecoregion comprising a mixture of natural forests and savannah landscapes. The change in topography between the Mô Plain and adjacent Fazao mountains provides a sharp transition between the two ecoregions within the AoI.

The main river crossing the route of the project is the River Mô which crosses the proposed route just north of the boundary of the Bassar and Plaine du Mô prefectures. Several minor unnamed watercourses also cross the route.

Some landscape features are recognised in local folklore and identity, giving a strong intangible cultural and perceptual association with the landscape: for example, there are sacred groves recorded within the AoI (Hounkpati et al, 2023).

The project area forms a 93 km route along existing road corridors. Vegetated land cover either side of the route comprises a mixture of savannahs, including wooded and grassy savannah linked to flood plains, and open forests with trees, bushes, plantation and crop fields. Along sections of the existing road, there is overgrown vegetation present at the roadside and along the verges. Across the AoI, the generally wooded Sudano-Guinean savannah has been degraded over time by intensive land use for agriculture and livestock farming, bush fires and carbonisation.

There is ongoing pressure for agricultural development, particularly within the fertile Mô Plain, where incoming migration has led to a notable change in land cover. Between 1986 and 2021, there was a 44,826 ha increase in fields and fallow land in the Mô Plain prefecture (from 8.08% to 43.78% of total ground cover – Kourpa et al, 2024).

Human influences

The project area extends south-westwards from the town of Bassar through the Mô Plain towards the Ghanaian border. Bassar is the main settlement in the AoI, with other settlements along the route typically comprising villages and small towns including Binaparba, Baghan, Boulohou, Djarkpanga and Tindjassé. The structure and character of these settlements differ as characterised by their setting and townscape pattern. Housing is typically grouped in geometric shapes and the overall settlement structures tend to be either linear or nucleated. Some isolated dwellings and dwelling clusters are apparent.

The roads along which the project is located are the main highways through the project area. These roads are surfaced in places, such as at Bassar, but otherwise comprise dirt roads, with occasional rocky outcrops. They are used by a mixture of vehicular and pedestrian traffic, with no clear spatial distinction between these user groups.

5.3.9.4 Landscape character

Landscape character areas

The process of establishing landscape character involves identification and description of the unique combination of elements and features that make landscapes distinctive. These are then grouped into Landscape Character Areas (LCAs) or Landscape Character Types (LCTs). Within the AoI, analysis has identified six local LCTs; these are potentially sensitive to change arising from the project by virtue of their proximity to the site and/or the potential for intervisibility with the project. These LCTs are listed below and shown on Figure 5-8:

- LCT 01 Open Forest
- LCT 02 Wooded Savannah
- LCT 03 Grassy Savannah
- LCT 04 Mosaic Cropland/Farmland

- LCT 05 Radi-Concentric Urban Corridor
- LCT 06 Linear Urban Corridor.

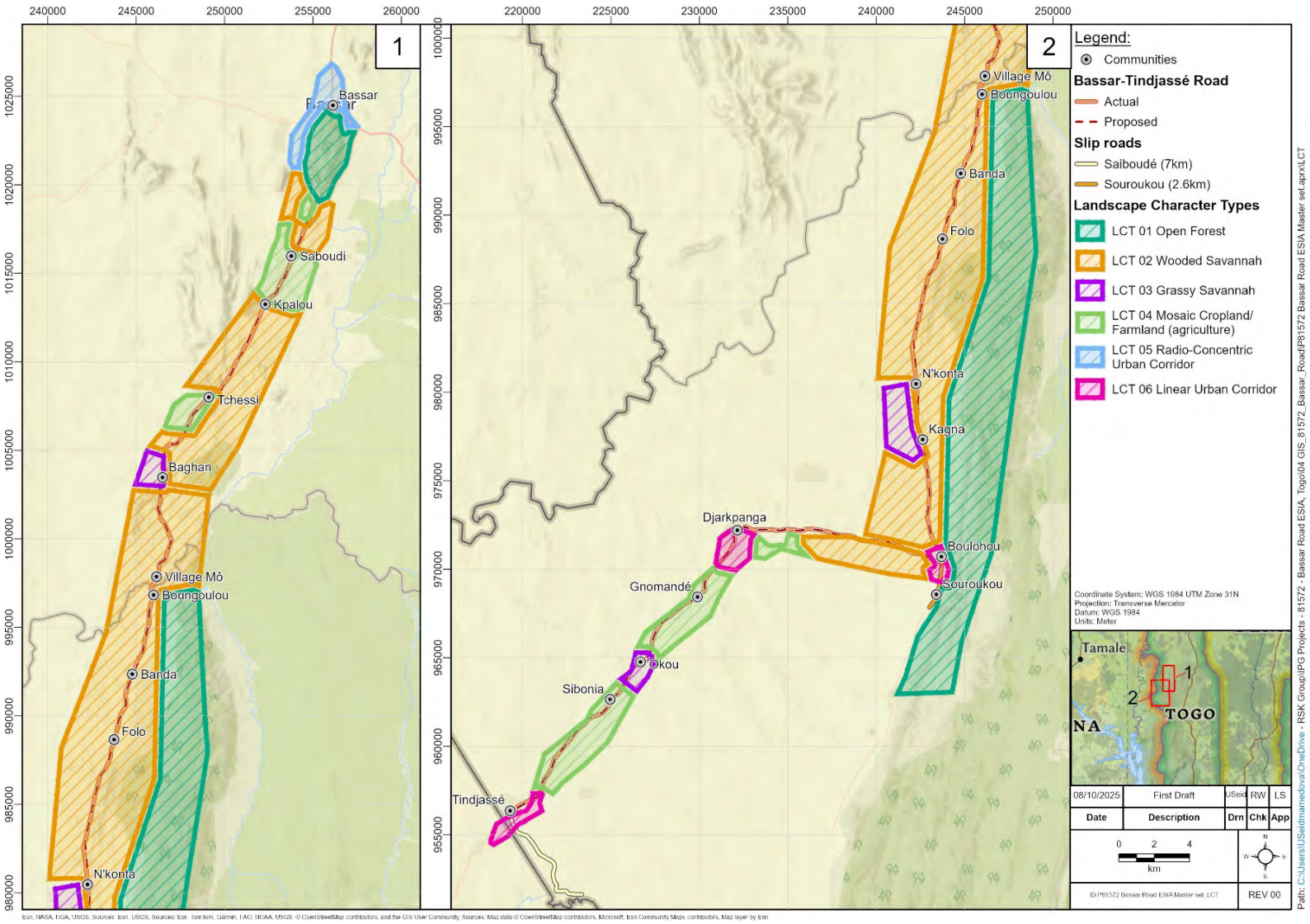

Figure 5-8: Landscape character areas

Relevant key characteristics of the parts of these six LCTs within the AoI are set out within Table 5-10 to Table 5-15 below.

Table 5-10: LCT 01 Open Forest key characteristics within the AoI

LCT 01 Open Forest
The LCT is formed by dense forested areas at Bassar Forest Reserve and within Fazao-Malfakassa National Park, in the Eastern Guinean Forests Ecoregion and part of the Atakora Mountain Range. The landform of the LCT comprises plateaux and hill slopes, in contrast with the gently sloping and flat landform of adjoining LCTs. The National Park is semi-mountainous, and its high diversity of natural habitats attracts a variety of rare flora and fauna. The landform and landcover form distinctive regional landmarks, as well as the backdrop and setting of settlements including Bassar and Boulohou. These forests also important to local cultural traditions and animist beliefs. There is a sense of tranquillity, remoteness and wildness, with limited human influence present.
Landscape Value: The LCT has a National value, given its partial inclusion within the Fazao-Malfakassa National Park; natural and cultural heritage associated with local traditions; biodiversity; and high scenic and perceptual aspects.
Image 1: Forest slopes at Bassar Forest Reserve, adjacent to the settlement of Binaparba.

LCT 01 Open Forest
Image 2: View from the existing road towards the lower slopes with dense vegetation, adjacent to Bassar Forest Reserve.

Table 5-11: LCT 02 Wooded Savannah key characteristics within the AoI

LCT 02 Wooded Savannah
This LCT is formed by wooded Sudano-Guinean savannah linked to flood zones. Some of the eastern fringes of the LCT are located within the Fazao-Malfakassa National Park. These savannahs were most likely continuous in the past but are now fragmented given the introduction and expansion of agriculture across the LCT, thereby reducing the once present local biodiversity. Wooded savannahs are linked to former fallow land or parkland savannahs, and these are of a degraded quality. There are a variety of crops grown, including root vegetables and cashew trees, set on irregular shaped fields and accessed by tracks, including the existing road. Beyond the scattered trees and tree belts along watercourses, there are a few open forest areas with mainly a pattern of sparse, small trees and stunted shrubs, which are occasionally overgrown by large species. There are a small number of houses within the LCT, located adjacent to the existing road. Given the sloping and flat landform, local landmarks above the height of trees including overhead power lines and radio transmission masts at Kpalou and Baghan. The Mo River and the bridge over it are also landmarks in the landscape. The combination of agricultural fields and open forest areas appear monotonous in places, but the limited human presence and green outlook give the LCT a sense of naturalness and remoteness.
Landscape Value: This landscape is partially included within the Fazao-Malfakassa National Park; it provides green infrastructure and some ecological value including trees. However, the LCT is in a degraded state, when compared to its previous form as fallow land or parkland savannah. The landscape value is Regional.

LCT 02 Wooded Savannah
Image 1: An identified site of biodiversity, located north of Tchessi.
Image 2: A yam field in the Tchessi area.

Table 5-12: LCT 03 Grassy Savannah key characteristics within the AoI

LCT 03 Grassy Savannah
These grassy savannahs are linked to flood zones, set in open depressions, which are often linked to watercourses. Vegetation consists mainly of native grasses interspersed with woody trees with some forest galleries and trees along watercourses. This combination of vegetation adds to the variety of colour and texture seen within the LCT. The LCT consists of and is influenced in part by forested lower slopes of the Fazao-Malfakassa National Park and agricultural fields associated with a small number of houses located adjacent to the existing road. Local wetland areas are of ecological value, as they attract migratory birds, providing an important blue/green connection between the LCT and the adjoining National Park in parts. The proximity to the National Park and vegetation within the LCT itself, add to the visual and scenic appeal of the landscape character type.

LCT 03 Grassy Savannah
Landscape Value: This landscape provides some green infrastructure and ecological value including trees and forest galleries. The landscape has preserved its natural character and forms part of the setting to the Fazao-Malfakassa National Park. The landscape value is Regional.
Image 1: Natural vegetation visible near Baghan.

Table 5-13: LCT 04 Mosaic Cropland/Farmland key characteristics within the AoI

LCT 04 Mosaic Cropland/Farmland
This LCT consists of an irregular patchwork of fields set for intensive agriculture and livestock farming, which formally consisted of savannah landscapes. The areas within the LCT are located away from larger settlements and form the setting of villages, including Djarkpanga and Tindjassé. The LCT's distinct savannah characteristics of scattered trees and shrubs remain, with more trees found along watercourses and where the LCT borders the Wooded Savannah LCT, particularly south of Bassar. The extent of agricultural fields appears monotonous in places, but the limited human presence and expansive views to the landscape beyond and the Fazao-Malfakassa National Park, give the LCT a sense of naturalness.
Landscape Value: There is a varied landscape condition, with the LCT used for subsistence farming. The landscape value is Community.

LCT 04 Mosaic Cropland/Farmland
Image 1: Local garden along the Saboudo river.
Image 2: Roadside fields of maize, north of Saboudi.

Table 5-14: LCT 05 Radi-Concentric Urban Corridor key characteristics within the AoI

LCT 05 Radi-Concentric Urban Corridor
The LCT covers the settlement of Bassar and smaller settlements south of Bassar, including Binaparba and Moande. The road network in Bassar is set in a general grid-pattern, and housing here and across the LCT is grouped and set in geometric or radi-concentric shapes. The forested areas at Bassar Forest Reserve, to the south and east, form a more natural and greener backdrop to this LCT. This is in contrast with its generally urban character, although there are scattered trees and shrubs throughout. The LCT consists of a combination of traditional and modern buildings with public buildings and sites found adjacent or near to the existing road. These buildings include schools, a hospital and health centre, religious sites and a football stadium. The road within these settlements is paved in part, particularly at Binaparba, where there are marked pedestrian pavements adjacent to the road. Overhead power lines are

LCT 05 Radi-Concentric Urban Corridor
present in these settlements, as well as street lighting and infrastructure for public drinking water. The LCT is characterised by human activity within settlements, with the surrounding forested slopes at Bassar Forest Reserve, beyond the LCT, providing scenic and visual appeal.
Landscape Value: There is a varied landscape condition, with the LCT characterised by human activity within settlements and along the existing road. The landscape value is Community.
Image 1: Buildings along the existing road in Bassar, with the forested area of Bassar Forest Reserve beyond.
Image 2: Ecole primaire, Binaparba. The primary school is set between the existing road and the backdrop of the forested slopes of Bassar Forest Reserve is visible, as well as the modern architecture of the main building.

LCT 05 Radi-Concentric Urban Corridor

Table 5-15: LCT 06 Linear Urban Corridor key characteristics within the AoI

LCT 06 Linear Urban Corridor
LCT formed by a linear urban corridor, also referred to as 'village rues' as well as semi-concentric settlement patterns, along the existing road between and including the settlements of Boulohou and Tindjassé, as well as Djarkpanga. The setting of each village within the LCT differs with the Boulohou area located adjacent to the Fazao Malfakassa National Park, Djarkpanga set within open savannah and Tindjassé backed by the Akwapim Togo Mountains in Ghana. This surrounding landform contrasts with the gently sloping area of the LCT. In addition to housing, these settlements consist of schools and places of worship including the distinct architecture of mosques and churches. The large markets, town hall and courthouse are notable roadside buildings in Djarkpanga, with similar uses and buildings found in the settlements of Tindjassé and Saiboude. There is a combination of traditional and modern buildings, with the latter mainly built from breezeblock, with a range of roof materials including corrugated iron and tiles. Local infrastructure in the form of overhead power lines, street lighting and public drinking water facilities are present in these urban corridors, with the radio masts at Saiboude forming local landmarks in views. The LCT is characterised by human activity within settlements along the existing road, with surrounding forested and savannah landscapes providing some scenic and visual appeal.

LCT 06 Linear Urban Corridor
Landscape Value: There is a varied landscape condition, with the LCT formed by settlement in ‘village rues’ and semi-concentric settlement patterns. The landscape value is Community.
Image 1: Properties along the existing road in Boulohou, set adjacent to the Fazao Malfakassa National Park.

LCT 06 Linear Urban Corridor
Image 2: The entrance to the large market in Djarkpanga, near to the existing road.

5.3.9.5 *Fazao-Malfakassa National Park*

The project area lies partially within the Fazao-Malfakassa National Park between Folo and N'Konta, with the majority of the National Park lying to the east of the project area. The National Park is semi-mountainous and comprises four main vegetation types: semi-deciduous forests, open woodland (savannah) forests, wooded savannahs on iron-rich plateaus and degraded shrub savannahs on hilltops (UNESCO, 2021). The National Park is designated due to its high diversity of natural habitats and subsequent importance for biodiversity conservation – several of the flora and fauna species found within the National Park are rare and not found elsewhere in Togo. The forests of the National Park also offer a sense of seclusion and remoteness; with some traditional cultural associations evident such as the granite rock in the centre of the park which was historically used by hunters as a sharpening stone.

Valued elements of the National Park include its natural heritage and biodiversity; cultural heritage and association with cultural traditions; as well as its high scenic quality and perceptual aspects such as a sense of tranquillity, remoteness and wildness.

5.3.9.6 *Visual amenity*

Visual receptors are 'the different groups of people who may experience views of the development' (GLVIA, 3rd edition, para 6.3). In order to identify those groups who may be significantly affected the baseline desk study and site visit have been used.

Visual receptors with the potential to be affected by the construction and operation of the project include nearby residential settlement, informal recreational routes, key transport routes and places of interest within the landscape.

The different types of groups assessed within this LVIA encompass local residents; people using key routes such as roads and paths; or people visiting key vantage points. In dealing with areas of settlement, local informal trails and local roads, receptors are grouped into areas where effects might be expected to be broadly similar or areas that share particular common factors. Settlements from which visual effects will be assessed include Bassar, Binaparba, Moande, Saboundi, Palou, Baghan, Kébou, Bolo, Illiade, Folo, N'Konta, Boulohou, Souroukou, Djarkpanga, Sako and Tindjassé.

The following visual receptor groups are likely to see the project and are considered further in the impact assessment:

- settlements, paths and tracks within 250 m of the proposed route
- settlements, paths and tracks between 250 m and 1 km of the proposed route
- visitors to the Souroukou cascade (within Fazao-Malfakassa National Park) – up to 2 km east of the route.

5.4 Biodiversity baseline

This chapter presents the terrestrial biodiversity baseline in and around the project's biodiversity/ecological AoI.

5.4.1 Area of influence

The biodiversity AoI encompasses the area affected by the following project activities:

- the area physically affected by vegetation clearance and earth moving activities (e.g., for access roads, construction compounds, storage facilities and other associated infrastructure). This area is assumed to be the infrastructure footprint and construction activities within a 50 m buffer zone either side of the pipeline route and around the associated infrastructure. It is understood that the alignment follows the existing unmetalled road and will predominantly run through disturbed/modified habitats.
- the adjacent areas affected by dust, noise, traffic and/or increased human presence, i) during construction and ii) during operation. During construction this area is assumed to be a radius of up to 500 m from construction sites within which standard operating noise levels are predicted to attenuate to an acceptable noise level for residential areas of 45 dBA.
- the downstream extent of any watercourses crossed by the project, due to potential spills and sedimentation during the construction period causing changes in water quality and hydrology. The AoI for aquatic ecological receptors will extend beyond the immediate footprint of the road improvements. The exact extent of downstream propagation will ultimately be dependent on the magnitude of change relative to existing baseline flow and chemical condition.
- an extended area resulting from project induced in-migration (PIIM) and other induced impacts. PIIM may occur during construction due to influx of workers, their relatives and people seeking employment and business opportunities, and during the operational phase because of improved accessibility. This is anticipated to contribute to increased population density and greater pressure on natural resources in the surrounding area. In addition, enhanced access provided by the upgraded road may facilitate encroachment into natural habitats,

potentially leading to habitat degradation, deforestation and increased exploitation of wildlife and forest resources. The spatial extent and magnitude of such induced impacts cannot currently be determined with confidence.

5.4.2 Methodology

The baseline has been compiled using the following information:

- a desk study and literature review
- a wet season terrestrial fauna and avifauna baseline assessment for the project (completed by RSK in October 2025)
- a wet season botany field survey report (completed by CEMP in October 2025) (see Appendix 7).
- a critical habitat assessment for the project (completed by RSK in 2025) (see Appendix 11).

5.4.2.1 Biodiversity surveys

Wet season biodiversity surveys were conducted at selected key locations along the alignment. These focussed on habitats preliminarily identified to be potentially natural or sensitive and therefore expectedly hosting a more diverse fauna and flora community. Representative areas of additional, less sensitive habitats were also sampled, e.g., agricultural areas, open ground. Nine discrete areas, (i.e., 'sites') situated along the project footprint between Bassar and Djarekpanga were identified during the scoping and premobilisation phase, with surveys conducted at each location to identify habitats and observable fauna receptors (see Figure 5-9 below).

To date, a single survey period (wet season) has been carried out, and a dry season will be undertaken if considered necessary to ensure accordance with the requirements of EP4 (World Bank Group 2021) EP4 and IFC (IFC 2019) PS6. It is noted that to date, no dedicated aquatic biodiversity surveys have been carried out. Suitable locations for eDNA sampling and/or aquatic biodiversity surveys were identified during the wet season survey.

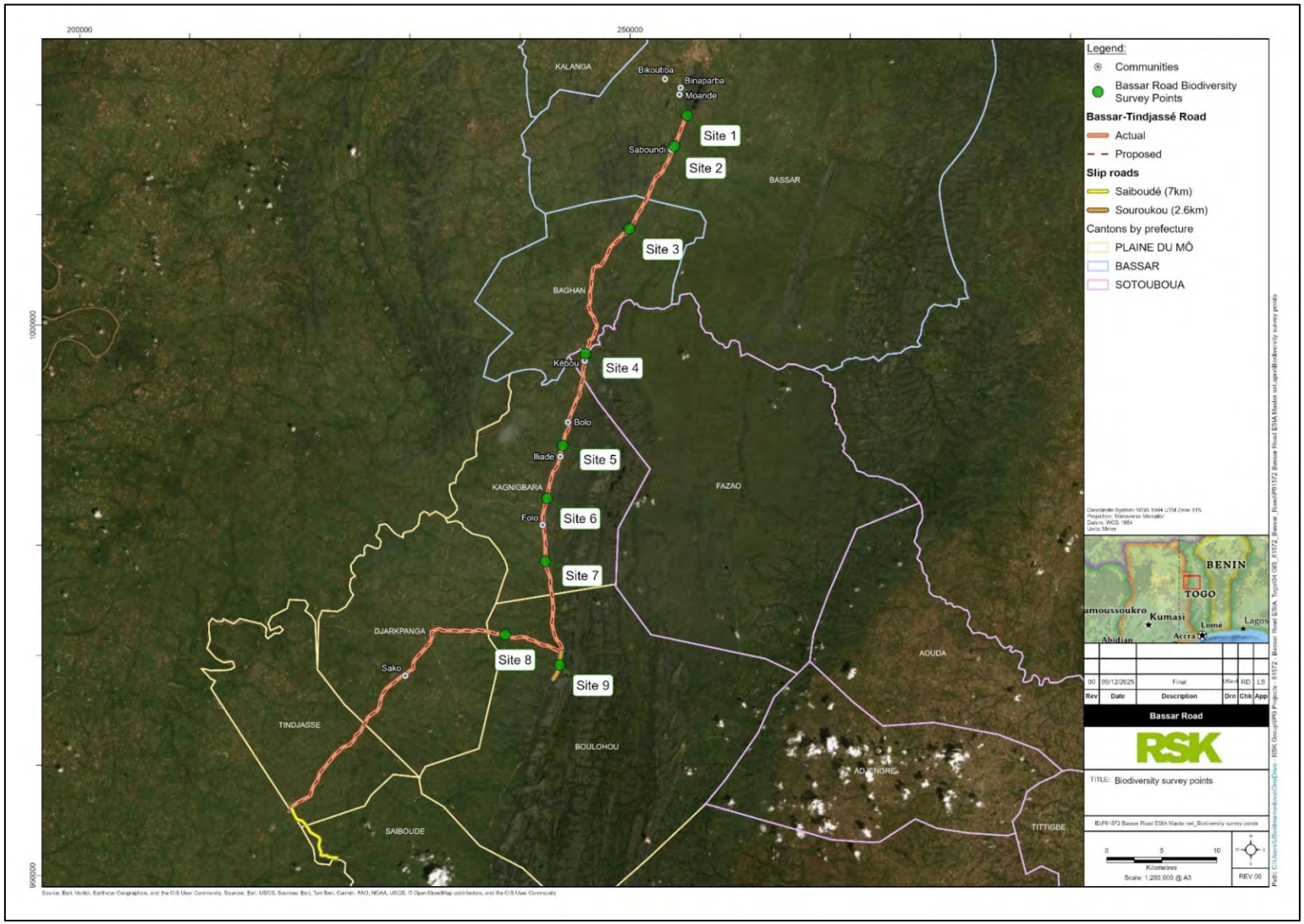

Figure 5-9: Location of the biodiversity wet season survey sites

Fauna surveys

The fauna survey approach included walkovers of the nine identified survey sites. Within each site, detailed avifauna and terrestrial fauna surveys were undertaken by two surveyors. The walkover surveys followed transect routes designed to give suitable representative coverage of the AoI where possible, focussing on sensitive habitats. Survey locations and descriptions of habitats were collected via GIS-linked devices, where possible, to provide ground-truthing data for the habitat mapping exercise. Where visible and identifiable, any evidence of ecosystem services was also documented.

The avifauna surveys methods involved:

- recording direct observations of birds either side of transect routes
- undertaking point counts in habitats of high importance to birds, i.e., those supporting a greater number of species, such as watercourses, scrub and woodland or habitats of importance to specialist species, e.g., bare ground
- starting in the early morning (where possible) and typically concluding prior to 14h00 each day, as by this time there was notably reduced avifauna activity
- conducting surveys at certain sites during the afternoon in order to aid recording the presence of any species active during hotter times of the day, including soaring and insectivorous species. This included areas with steep escarpments that may aid soaring and large open areas that provide greater visibility
- using binoculars to maximise field of vision
- recording species, abundance and location of all birds observed using the eBird mobile app, developed by the Cornell University Lab of Ornithology.

The terrestrial fauna (mammals and herptiles, i.e., reptiles and amphibians) surveys comprised:

- recording direct observations (i.e., sightings and calls) and indirect evidence (i.e., nests, faeces, prints, feeding remains and burrows) either side of transect routes
- searching under natural refugia for sheltering herptiles and small mammals, where considered safe to do so
- recording species, abundance and type of direct and indirect evidence.

A ‘constant effort’ methodology (also known as ‘continuous count’ surveys) was also undertaken while observers were not actively undertaking transect surveys or point counts, for example, while driving between sites. All sightings of PBV and other notable species, including identifiable road kill, were recorded using the same data-capture protocols used for walked transects (see above) and in general compliance with the road-count protocols described for large terrestrial species and raptors, e.g., Malan (2009).

The survey times and effort for each survey site, along with the location and general habitat types and sensitivities, is shown below in Table 5-16.

Table 5-16: Biodiversity wet season survey sites information

Survey site	Date(s)	Time(s)	Total survey effort (minutes)	Distance along footprint (km)	Broad habitat type	Sensitivities
1	08/10/2025 11/10/2025	15:35–16:15 06:10–08:40	190	0	Woodland, bushland, agriculture (crops), teak plantation,	Bassar Forest Reserve
2	09/10/2025 11/10/2025	14:20–16:00 08:55–09:35	140	2.0-3.3	Bushland, watercourse/riparian, open ground (quarry)	Tributary of Mo River
3	10/10/2025, 11/10/2025	15:10–16:10 10:15–12:30	195	11.3-12.2	Woodland, grassland, bushland, teak plantation	n/a
4	08/10/2025 09/10/2025	08:30–11:00 12:55–13:25	180	24.7-25.2	Watercourse (Mo River)/riparian, bushland.	Fazao-Malfakassa National Park IBA/KBA, Mo River
5	08/10/2025	11:30–13:10	100	33.5-34.2	Bushland, watercourse/riparian, teak plantation, agriculture (crops)	Fazao-Malfakassa National Park, Tributary of Mo River
6	09/10/2025	08:20–10:05	105	38.4-39.2	Woodland, bushland, teak plantation, open ground (recently cleared)	Fazao-Malfakassa National Park
7	09/10/2025	10:15–12:15	120	44.3-45.0	Woodland, bushland	Fazao-Malfakassa National Park
8	10/10/2025	11:30–13:45	135	58.4-58.9	Watercourse/riparian, woodland, bushland. teak plantation, agriculture (crops)	Tributary of Mo River
9	10/10/2025	08:30–10:55	145	54.3-54.6 (on Souroukou slip road)	Woodland, watercourse/riparian, bushland, agriculture (crops)	Tributary of Mo River

Botany surveys

A wet season botany survey was conducted by CEMP botanists in October 2025, at nine sites/sampling plots within the project area (see Figure 5-9). These sampling plots were established in the same location as or in the vicinity of, the biodiversity survey areas (see Table 5-17). The plots comprised of areas considered to be representative of the different habitat types present within the project AoI, up to 200 m from the project footprint where access allowed. The surveys aimed to characterise the floristic composition of each habitat type within each project development area.

The floristic inventory was conducted using a linear transect method, based on the method described in Huebner (2007), which allows for efficient sampling of biodiversity over long distances while adapting to the linear configuration of the project route. One transect was carried out at sites that did not show sufficient variation, whereas sites with high floristic richness or marked heterogeneity were subject to a greater survey effort, i.e., two or three transects. This increased effort was aimed at reaching a species saturation threshold and depended on the size and occupancy status of the site. The inventory was carried out by systematic observation on both sides of the progression axis, over a maximum distance of 500 m covering the area of direct and indirect impact of the project.

To ensure the collection and identification of floristic data, all plant species (trees, shrubs, herbaceous plants and lianas) encountered within the transect observation area were systematically recorded. For each species, an abundance-dominance coefficient was assigned according to the standard Braun-Blanquet scale (1932), allowing the number of individuals and surface coverage to be quantified:

- + = rare species, coverage of 0 to 1%
- 1 = coverage of 1 to 5%
- 2 = coverage of 5 to 25%
- 3 = coverage of 25 to 50%
- 4 = coverage of 50 to 75%
- 5 = coverage of 75 to 100%.

Species identification was carried out directly in the field. However, in cases of difficulty, samples were collected, packaged and placed in a herbarium for identification at the Laboratory of Botany and Plant Ecology at the University of Lomé using the Analytical Floras of Togo (Brunel et al., 1984) and Benin (Akoégninou et al., 2006).

Opportunistic sampling of the vegetation was also carried out in each plot to record important plant species (e.g., IUCN globally and regionally threatened/invasive alien species) that may not be recorded during the meandering transects.

An assessment of the habitat type, land uses and extent of natural and/or modified habitat within the sampling plots and general vicinity was also undertaken.

Table 5-17: Botany survey sites information

Survey site	Number of Transects	Coordinates	Total survey effort (minutes)
1	1	X: 9.2123633; Y: 0.7718467	210
2	1	X: 9.1871183; Y: 0.7612867	150
3	2	X: 9.1158; Y: 0.7229	250
4	1	X: 9.0151293; Y: 0.6890884	185
5	1	X: 8.940515; Y: 0.671560	150
6	3	X: 8.8983884; Y: 0.6593753	380
7	1	X: 8.8428467; Y: 0.65741	250
8	1	X: 878215; Y: 0.62313	260
9	1	X:8.7593645; Y: 0.6713366	195

5.4.2.2 Land use and land cover mapping

A remote sensing approach was used to conduct broad scale land use and land cover (LULC) mapping along the length of the project alignment, using a multispectral Sentinel-II (S-II) quarterly composite imagery product for Q3 (01 July to 31 September) of 2025. This imagery is freely available from the European Space Agency's Copernicus S-II satellite array. This constellation consists of two satellites in sun-synchronous orbit which provide multi-spectral imagery of earth's land and coastal regions at a revisit frequency of approximately 10 days.

Imagery is provided in overlapping imagery tiles measuring approximately 110 km x 110 km which are then stitched together in a Geographical Information System (GIS) by the end user to cover the required area of investigation. The multispectral images allow for a range of manipulations, enabling the user to develop a wide variety of outputs and models to suit the needs of the project.

The quarterly composite imagery product (also from Copernicus S-II) comprises a stacked mosaic of scenes captured during this period, eliminating cloud cover impairment and providing an "average" reflectance value for each pixel in Bands 2, 3, 4 and 8. Table 5-18 outlines key parameters and reflectance information for the utilised imagery products.

Table 5-18: Summary of key Sentinel-II imagery parameters and metadata

Band	Common name	Pixel resolution (m)	Central wavelength (µm)
B02	Blue	10	0.49
B03	Green	10	0.56
B04	Red	10	0.665
B08	Near Infrared	10	0.842

For this assessment, two imagery tiles were utilised to cover the alignment and mosaiced to provide a seamless base imagery layer, which was then clipped to a 5,000-m-wide swathe (2,500 m either side) running the length of the project alignment. This additional

width, as opposed to the 500 m and 50 m buffers considered for the indirect and direct AoIs respectively, is to account for any changes in the alignment during the detailed design and engineering phases, as well as to provide a landscape context beyond the project area.

This imagery was then composited and rendered to enhance vegetation visibility (RGB:843) and classified using a supervised, object-based Support Vector Machine algorithm across six land cover classes derived from the baseline survey data. This process groups pixels with similar reflective properties and divides the scene into segments of identifiable contiguous habitat which are "trained" using a subset of data points as entered by the user.

Due to known gaps in the level of available baseline ground truthing information, where differentiation of closely related habitats was not feasible, a more general class was assigned. For instance, separation of primary and secondary woodland is not feasible through interrogation of imagery alone and therefore a more general "Woodland" classification was used. It should also be noted that assessment of condition, or level of degradation, is not feasible using the source Sentinel-II imagery due to the relatively coarse pixel resolution of 10 m and lack of empirical ground truthing data at this stage of the overall assessment.

5.4.3 Ecoregions and ecosystems

The project is located within two bioregions, the West African Coastal Forests and Savanna and Sudanian Savannas bioregion (One Earth n.d.) and two terrestrial ecoregions, namely the West Sudanian savanna and Eastern Guinean forests (WWF, n.d.) (see Figure 5-10).

The West Sudanian savanna ecoregion stretches across West Africa from Senegal and The Gambia to the eastern border of Nigeria. The climate is tropical and strongly seasonal. The highest average daily high temperatures (from 35°C to 40°C) occur in March, April and May, while the lowest average daily low temperatures (between 15°C and 20°C) are in November and December. Mean annual precipitation ranges up to 1,600 mm per annum to the south, but declines to 600 mm on the northern border. Rainfall is highly seasonal: the dry season in the north can last up to nine months, whereas it lasts about six to seven months in the south (One Earth, 2020a).

The Eastern Guinean forests ecoregion extends from the east banks of the Sassandra River in western Côte d'Ivoire to the edge of Lake Volta in Ghana. There is a small extension east of Lake Volta in the Togo Hills. The Dahomey Gap is a dry lowland area and a major biogeographical barrier on the ecoregion's eastern edge. Topography generally undulates between 50 and 300 m, with occasional inselbergs rising to over 400 m. Within the Togo Hills, the maximum elevation reaches 1,000 m. Temperatures in the south range between 22°C and 34°C, whereas in the north, temperatures can reach a maximum of 43°C and fall to 10°C. There are distinct wet and dry seasons, with a longer dry season than in the Western Guinean Lowland Forests ecoregion (One Earth, 2020b).

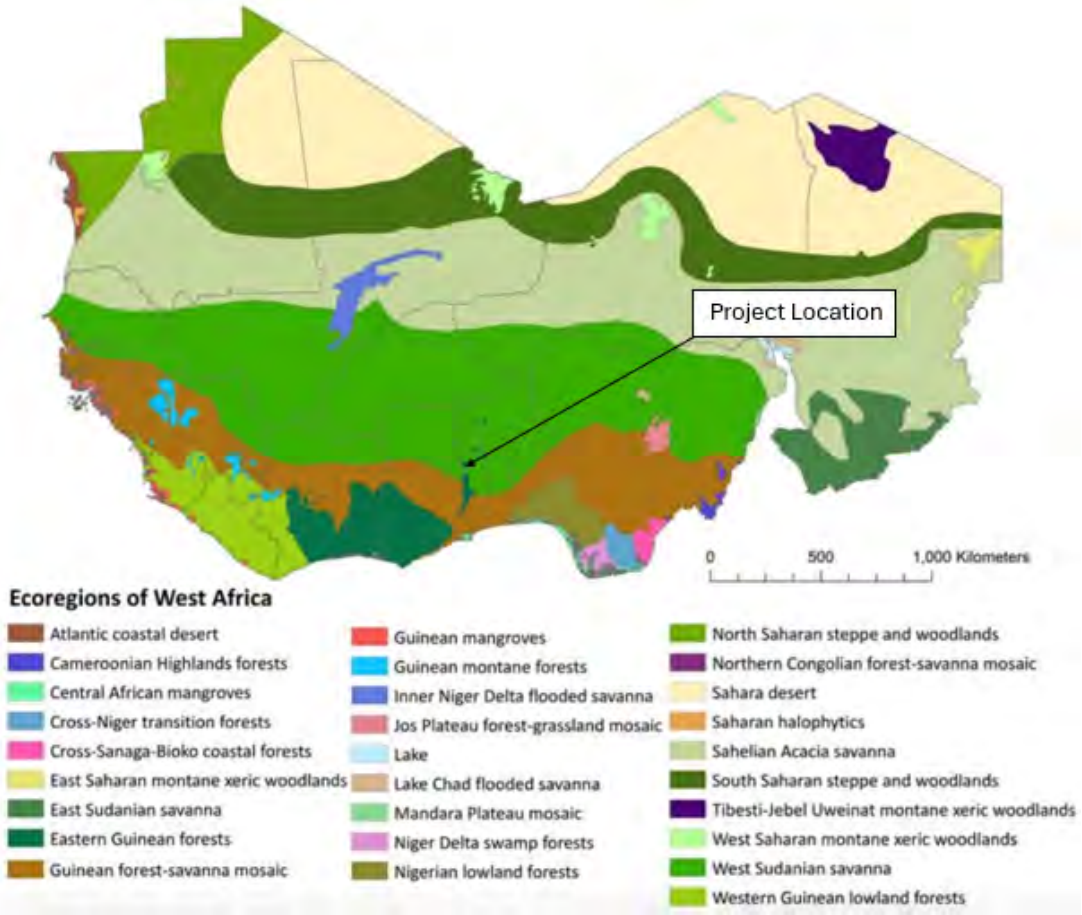

Figure 5-10: Ecoregions of West Africa, showing approximate location of the project area

Source: (PARCC West Africa, 2015)

The moist forests of the Togo Hills also form part of the Upper Guinean Forest of West Africa ecosystem (see Figure 5-11 below). This ecosystem is considered severely threatened and ranks among the most endangered tropical forest systems in the world (USGS, 2023). They are considered a biodiversity hotspot (Critical Ecosystem Partnership Fund, 2025), supporting rare and threatened species and these forests are considered a priority habitat.

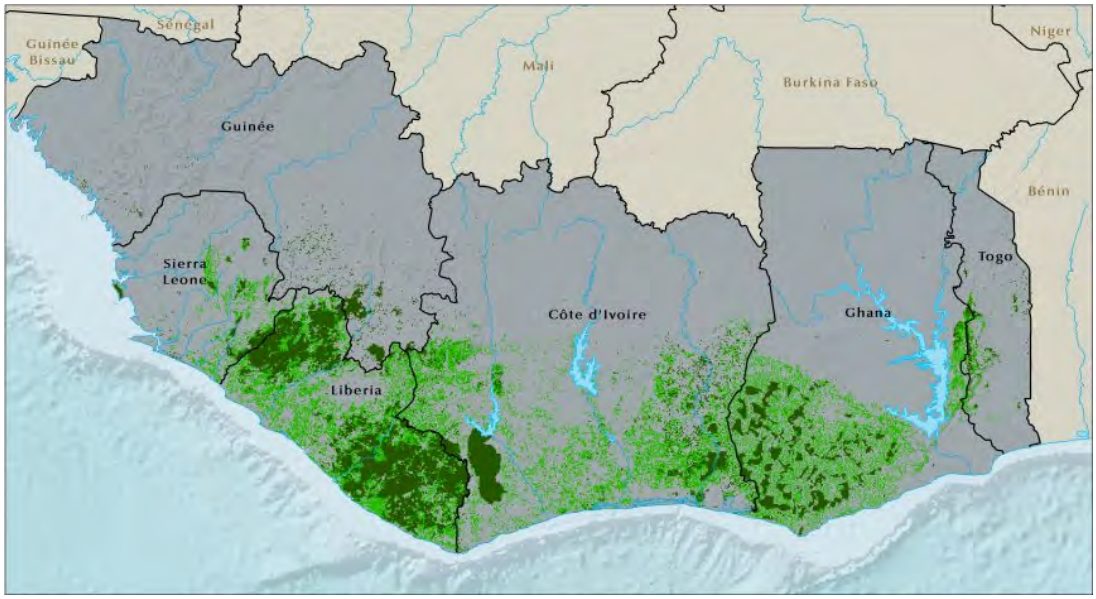

Figure 5-11: Upper Guinean Forest of West Africa in 2013
Source: (USGS, 2023)

5.4.4 Legally protected areas and internationally recognised areas for biodiversity conservation

IUCN defines a legally protected area (PA) as 'a clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values'. Examples include National Parks, Wildlife Sanctuaries and Nature Reserves. IFC PS6 also includes protected areas that governments have proposed but not yet designated, as well as areas recognised by an international body or international assessment exercise. These 'internationally recognised areas' (IRAs) are defined as UNESCO natural World Heritage sites, UNESCO Man and the Biosphere Reserves (MAB reserves), Key Biodiversity Areas (KBAs), Important Bird and Biodiversity Area (IBAs) and wetlands designated under the Convention on Wetlands of International Importance (i.e., Ramsar sites). (The Biodiversity Consultancy (TBC), 2016).

The project area is located partly within and adjacent to a national park (Fazao-Malfakassa), which is also designated as a KBA and an IBA, and a forest reserve (Bassar). The national park is also designated as an IUCN Management Category II protected area (UNEP-WCMC (2025).

One additional forest reserve (Bassari-Montagne) is also within the biodiversity AoI, of which the majority of the area overlaps with the Bassar Forest Reserve. Key designations for the protected areas are summarised in Table 5-19 with further information provided below and the location shown in Figure 5-12.

Table 5-19: Protected areas in the biodiversity AoI

Name	Protected status	Area (km^2)	Distance from project area (km)
Fazao-Malfakassa National Park	National Park	2,204	Partly within
	KBA	2,153.4	Partly within
	IBA	1,920	Partly within
	IUCN Management Category II	2,204	Partly within
Bassar Forest Reserve	Forest Reserve	8.6	Partly within
Bassari-Montagne Forest Reserve	Forest Reserve	8.1	0.4

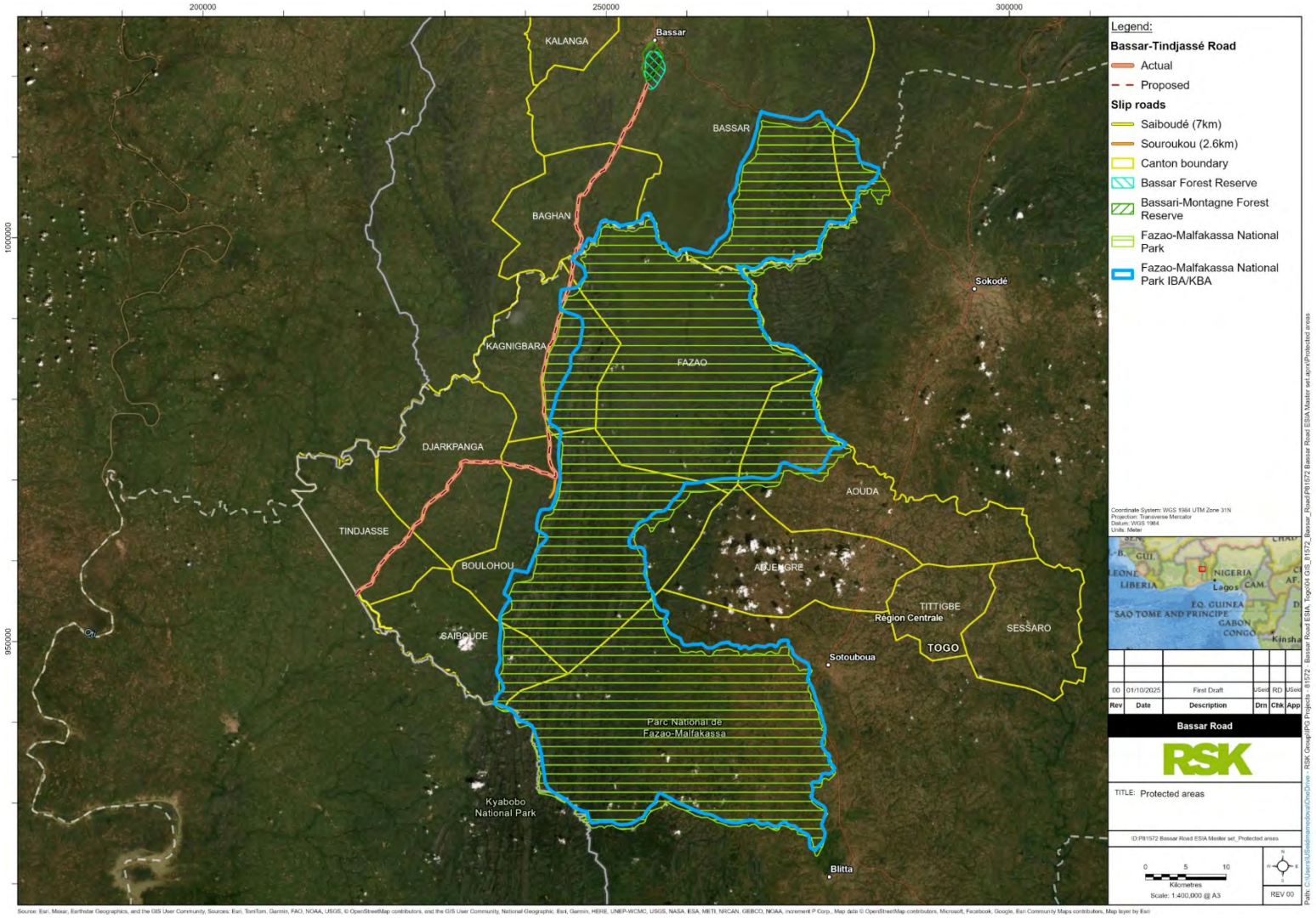

Figure 5-12: Protected areas within and around the scoping stage biodiversity AoI

5.4.4.1 *Fazao-Malfakassa National Park*

The Fazao-Malfakassa National Park (FMNP) is the largest national park in Togo and one of the most important protected areas in the country (see Figure 5-13). It was created in 1975, when Fazao Forest Reserve (162,000 ha) and Malfakassa Forest Reserve (30,000 ha) were combined. FMNP was managed by the Ministry for the Environment and Forestry Resources (MERF) up until 1990, by Franz Weber Foundation between 1990 and 2015, and by MERF afterwards. In 2012, FMNP was added to the UNESCO World Heritage Site Tentative List, but this has not been formalised (Atsri et al., 2018).

In the park, hunting, timber and firewood collection, charcoal production, grazing of livestock and harvesting non-timber forest products are illegal activities. There are no major cities or tarmacked roads around the park, except for the north boundary (Sokode-Bassar road). Few untarmacked motorable roads cross the park, mainly in the south-eastern part (Ibid).

The large mammals recorded include African Forest Elephant *Loxodonta cyclotis* (IUCN Critically Endangered), Savanna Elephant *Loxodonta africana* (IUCN Endangered), Lion *Panthera leo* (IUCN Vulnerable), Western Hartebeest *Alcelaphus buselaphus* subspecies *major* (IUCN Vulnerable), African Buffalo *Syncerus caffer* (IUCN Near Threatened), (Ibid) and Aardvark *Orycteropus afer*, Side-striped Jackal *Canis adustus,* Caracal *Caracal caracal* and Marsh Mongoose *Atilax paludinosus* (IUCN Least Concern) (Assou et al., 2021).

Primates recorded include White-thighed Colobus *Colobus vellerosus* (IUCN Critically Endangered), West African Potto *Perodicticus potto* and Mona Monkey *Cercopithecus mona* (IUCN Near Threatened), and Northern Lesser Galago *Galago senegalensis* (IUCN Least Concern) (Atsri et al., 2018); and Tantalus Monkey *Chlorocebus tantalus,* Patas Monkey *Erythrocebus patas and* Olive Baboon *Papio Anubis* (IUCN Least Concern) (Assou et al., 2021).

Globally threatened birds recorded in the national park include Bateleur *Terathopius ecaudatus*, Martial Eagle *Polemaetus bellicosus* (IUCN Endangered), Tawny Eagle *Aquila rapax and* Northern Ground-Hornbill *Bucorvus abyssinicus* (IUCN Vulnerable) (Kaboumba et al., 2025). Additional species recorded include European Honey-buzzard *Pernis apivorus,* Great Blue Turaco *Corythaeola cristata*, Sharpe's Apalis *Apalis sharpii* (Ibid), Red-legged Sparrowhawk *Accipiter erythropus* and Green Turaco *Tauraco persa* (Atsri et al., 2018) (IUCN Least Concern).

Several IUCN Vulnerable tree species have been recorded in the national park including: *Afzelia africana, Cordia platythyrsa, Khaya senegalensis and Khaya grandifoliola, Pararistolochia goldieana* and *Vitellaria paradoxa* (Atsri et al., 2018).

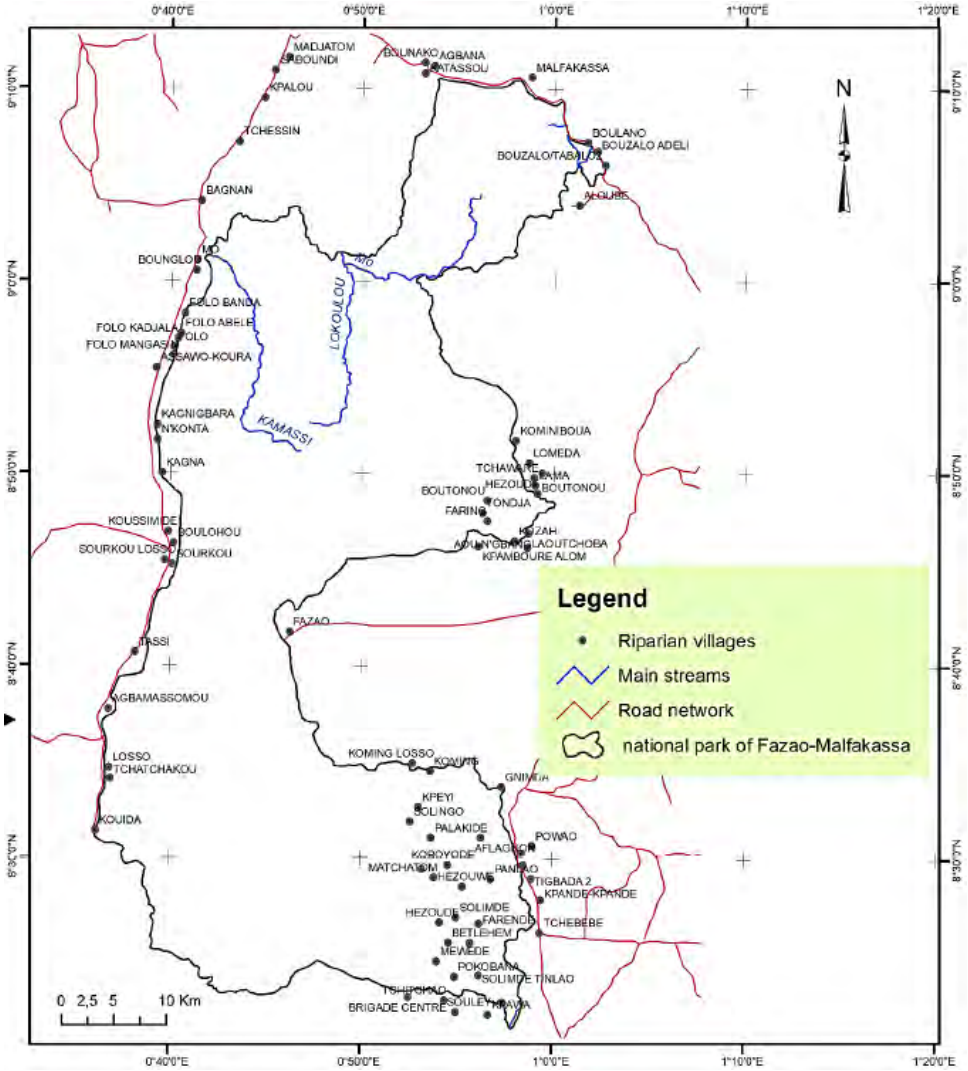

Figure 5-13: Fazao-Malfakassa National Park
Source: Atsri et al. (2018)

5.4.4.2 Fazao-Malfakassa National Park IBA

The IBA is important on account of its large size and undisturbed habitat (see Figure 5-14). It is designated due to it resident populations of 25 qualifying species (see Table 5-20). It is one of the few places in the country where Northern Ground-hornbill *Bucorvus abyssinicus* occurs and is a refuge for many of the rarer birds of prey (e.g., Ayres's hawk-eagle *Hieraaetus dubius* and Cassin's Hawk-Eagle *Spizaetus africanus*), as well as Western Crested Guineafowl *Guttera pucherani* and Forest Francolin *Francolinus lathami*. The area probably harbours many as yet unrecorded species, especially in the well-wooded valleys of the Kpaza and Koué rivers (BirdLife International 2025a).

Non-bird biodiversity potentially present includes mammals of global conservation concern include Lion *Panthera leo*, African Savannah Elephant *Loxodonta africana* and Bay Duiker *Cephalopus dorsalis*. In addition, Western Chimpanzee *Pan troglodytes* is “reputed to occur” (BirdLife International 2025a), although this species is considered to now be extinct in the national park and Togo (e.g., Western Chimpanzee Conservation Regional Alliance, n.d.).

Table 5-20: Qualifying and important species of Fazao-Malfakassa National Park IBA

Scientific name	Common name	Red List category	IBA Population
Bird populations meeting IBA/KBA criteria			
Psittacus erithacus	Grey Parrot	Endangered	Present
Ceratogymna elata	Yellow-casqued Hornbill	Vulnerable	Present
Merops bulocki	Red-throated Bee-eater	Least Concern	Present
Pytilia hypogrammica	Yellow-winged Pytilia	Least Concern	Present
Poicephalus senegalus	Senegal Parrot	Least Concern	Present
Falco alopex	Fox Kestrel	Least Concern	Present
Laniarius leucorhynchus	Lowland Sooty Boubou	Least Concern	Present
Peliperdix lathami	Forest Francolin	Least Concern	Present
Coracias cyanogaster	Blue-bellied Roller	Least Concern	Present
Eremomela pusilla	Senegal Eremomela	Least Concern	Present
Tigriornis leucolopha	White-crested Tiger-heron	Least Concern	Present
Neocossyphus poensis	White-tailed Ant-thrush	Least Concern	Present
Bycanistes fistulator	Western Piping Hornbill	Least Concern	Present
Bradornis comitatus	Dusky Blue Flycatcher	Least Concern	Present
Cinnyris coccinigastrus	Splendid Sunbird	Least Concern	Present
Tauraco persa	Green Turaco	Least Concern	Present
Indicator maculatus	Spotted Honeyguide	Least Concern	Present
Lagonosticta rara	Black-bellied Firefinch	Least Concern	Present
Trochocercus nitens	Western Crested-flycatcher	Least Concern	Present
Tockus fasciatus (Lophoceros semifasciatus)	West African Pied Hornbill	Least Concern	Present
Pternistis ahantensis	Ahanta Spurfowl	Least Concern	Present
Thescelocichla leucopleura	Swamp Palm Bulbul	Least Concern	Present
Aquila africana	Cassin's Hawk-eagle	Least Concern	Present
Musophaga violacea	Violet Turaco	Least Concern	Present
Psalidoprocne obscura	Fanti Saw-wing	Least Concern	Present
Important biodiversity			
Hieraaetus dubius	Ayres's Hawk-eagle	Least Concern	n/a
Spizaetus africanus	Cassin's Hawk-Eagle	Least Concern	n/a
Guttera pucherani (verreauxi)	Western Crested Guineafowl	Least Concern	n/a
Francolinus lathami	Forest Francolin	Least Concern	n/a

Scientific name	Common name	Red List category	IBA Population
Panthera leo	Lion	Vulnerable	n/a
Loxodonta africana	African Savannah Elephant	Endangered	n/a
Cephalopus dorsalis	Bay Duiker	Near Threatened	n/a
Pan troglodytes	Chimpanzee	Endangered	n/a

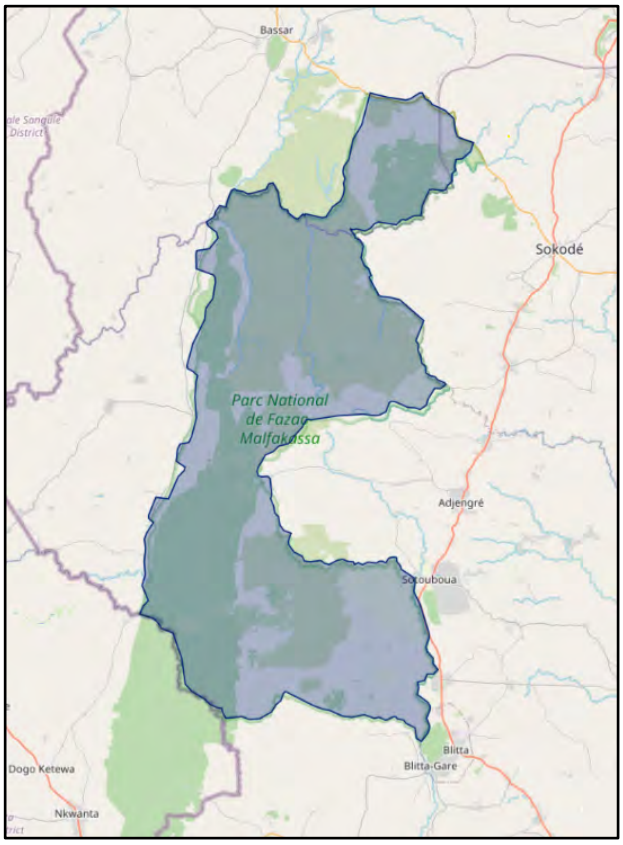

Figure 5-14: Extent of Fazao-Malfakassa National Park IBA
Source: BirdLife International (2025a)

5.4.4.3 *Fazao-Malfakassa National Park KBA*

This site qualifies as a KBA of international significance because it meets one or more previously established criteria and thresholds for identifying sites of biodiversity importance (including Important Bird and Biodiversity Areas, Alliance for Zero Extinction sites and Key Biodiversity Areas), as identified in the CEPF Ecosystem Profile of the Guinea Forests of West Africa Hotspot (2015) (Key Biodiversity Areas 2025). Non-bird species listed as occurring in the site at the time of qualifications, that do no trigger KBA criteria include Lion *Panthera leo* and Chimpanzee *Pan troglodytes*.

5.4.4.4 *Bassar and Bassari-Montagne Forest Reserves*

African forest reserves are designated by government departments, typically Forestry Departments, and can have functions ranging from timber production to the strict protection of water sources (Burgess et al, 2007). No specific information on the

designation of the Bassar and Bassari-Montagne Forest Reserves were publicly available at the time of writing.

5.4.5 Migratory bird flyways

The biodiversity AoI is located within two important flyways for migratory birds, the East Atlantic Flyway and the Mediterranean/Black Sea Flyway. These flyways are important for numerous species of migratory birds travelling from breeding grounds in Greenland, the Arctic Circle and Europe to wintering grounds in western and southern Africa (BirdLife International, 2021), including those located in the Centrale and Kara regions of Togo.

The East Atlantic Flyway migratory route connects breeding grounds in Europe and the Arctic with wintering grounds in Africa (Figure 5-15). Land birds typically cross the bottleneck at Gibraltar and wintering grounds are typically located along the coast or in the Sahel as well as tropical and subtropical locations (BirdLife International, 2021).

Figure 5-15: East Atlantic Flyway
Source: BirdLife International (2025b)

This Mediterranean/Black Sea Flyway (Figure 5-16) is used largely by birds with breeding grounds in central and eastern Europe and western and northern Asia and wintering grounds in Africa, with huge numbers crossing bottlenecks at the straits of Messina and the Bosphorus. Most birds using this flyway fly to the east of the project area, but some are likely to use the project area (BirdLife International, 2021).

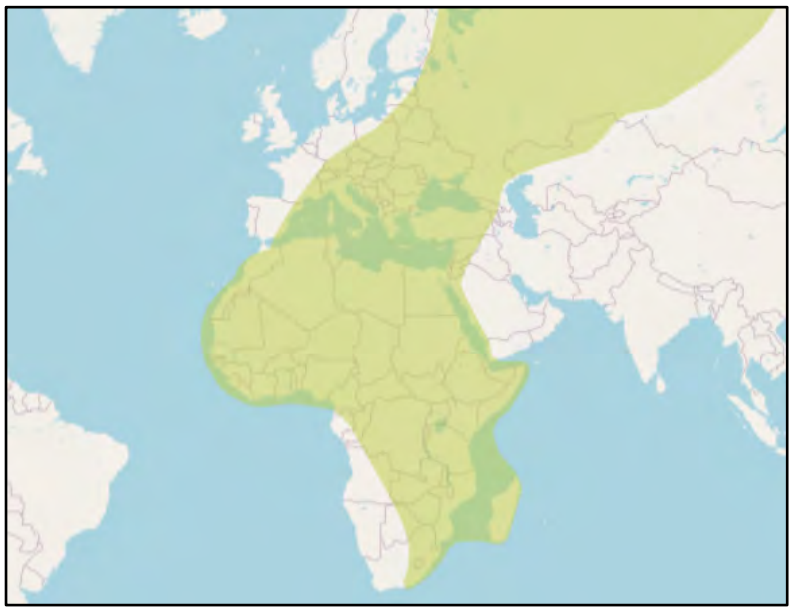

Figure 5-16: Mediterranean/Black Sea Flyway
Source: BirdLife International (2025c)

5.4.6 Habitats

5.4.6.1 Natural and modified habitat

Habitats are categorised into Natural or Modified by the IFC PS6 criteria (IFC, 2012a) and Guidance Note 6 (IFC, 2012b):

- 'Natural habitats are areas composed of viable assemblages of plant and/or animal species of largely native origin, and/or where human activity has not essentially modified an area's primary ecological functions and species composition'.
- 'Modified habitats are defined by IFC as areas of land that support a large proportion of flora and/or fauna species that are non-native in origin, and/or where human activity has substantially modified an area's primary ecological functions and species composition'.

Much of the ecological AoI comprises habitat which has been modified and fragmented to a certain extent because of agricultural activities such as grazing and conversion to plantations. Additionally, much of the natural habitat, including primary woodlands and bushland, are showing signs of fragmentation and severe degradation because of land use changes in the project area, such as the clearing of woodland and planting of non-native species.

Habitats that are known to be modified, i.e., agricultural, secondary re-growth, developed and cleared land, constitute approximately 49.8% of the project AoI that can be classified into broad habitat types (see Table 5-22).

It is not known what proportion of the woodland, bushland and open/running water habitats within the entire project AoI constitute natural or modified habitat. However, the extent of these broad habitat types within the AoI that may contain areas of natural habitat has been estimated (see Section below) and shown in Table 5-22. Examples of natural

and modified habitats, identified during the botany surveys, are shown in Figure 5-17 to Figure 5-19 and Figure 5-20 to Figure 5-24, respectively, below.

Examples of natural habitat

Figure 5-17: Primary woodland habitat (Site 3)

Figure 5-18: Bushland habitat (Site 3)

Figure 5-19: Watercourse (Mo River) (Site 5)

Examples of modified habitat

Figure 5-20: Bare ground (Site 2)

Figure 5-21: Agricultural/crop land ground (Site 5)

Figure 5-22: Teak plantation (Site 1)

Figure 5-23: Secondary woodland (Site 3)

Figure 5-24: 'Farmbush' habitat (secondary bushland) (Site 3)

The botany surveys indicate that the majority of the survey sites and adjacent areas (up to 200 m from the project footprint, where access allows) are comprised of both natural and modified habitat. Significant extents of natural habitat were only recorded in the direct AoI (i.e., up to 100 m from the existing road) in sites 1, 6 and 7.

Table 5-21: Natural habitat

Survey site	Natural habitat present	Natural habitat within 100 m of the road
1	Patches, but generally degraded	Yes
2	Gallery forest away from the road, some bushland	No
3	Forest areas away from the road	No
4	Generally no, but potentially some stretches of the watercourse (Mo River)	No
5	Gallery forest away from the road	No
6	Patches of woodland adjacent to the road but degraded. Less degraded further away.	Yes
7	Patches of woodland adjacent to the road but degraded. Less degraded further away.	Yes
8	Gallery forest away from the road	No
9	Gallery forest away from the road	No

5.4.6.2 Land use and land cover mapping

The preliminary LULC map is shown below in Figure 5-26, with road, river and building features overlaid from OpenStreetMap.

The habitat mapping shows that the main broad habitat types within the project's direct AoI are teak plantation and open canopy woodland, with smaller extents of farm-bush, cultivation and cleared ground. Within the direct AoI, closed canopy forest represents less than half of its proportional area when compared to the wider mapped buffer area.

Table 5-22 below provides the extents of the broad habitat types within 50 m, 500 m and 2,500 m of the road alignment. These distances represent the direct AoI (the area physically affected by vegetation clearance and earth moving activities area), indirect AoI (adjacent areas affected by dust, noise, traffic and/or increased human presence during construction and operation) and extended AoI (an area resulting from PIIM and other induced impacts) respectively.

Table 5-22: Mapped habitat extents within the project's direct and indirect AoI

Vegetation/land use	Mapped area (2,500 m buffer)		Indirect AoI (500 m buffer)		Direct AoI (50 m buffer)	
	Area (ha)	Area (%)	Area (ha)	Area (%)	Area (ha)	Area (%)
Modified habitat						
Barren/cleared	660.7	1.4	295.3	3.0	120.6	12.5
Teak plantation	8,553.8	17.8	1,902.5	19.6	238.5	24.6
Cultivated farmland	6,443.6	13.4	1,159.4	11.9	123.3	12.7
Habitats that may contain natural habitat						
Secondary farm-bush	11,354.8	23.6	2,446.6	25.2	190.2	19.7
Open-canopy woodland	12,240.2	25.4	2,445.4	25.2	208.4	21.5
Closed-canopy forest	8,858.1	18.4	1,460.4	15.0	86.9	9.0

The habitats in immediate proximity to the project alignment were generally noted to be disturbed by existing anthropogenic activities and developments. Woodland and forest, in particular, is under threat from clearance for firewood/charcoal and agricultural land (see Figure 5-25).

Figure 5-25: Woodland/bushland within project AoI showing initial signs of clearance adjacent to the road

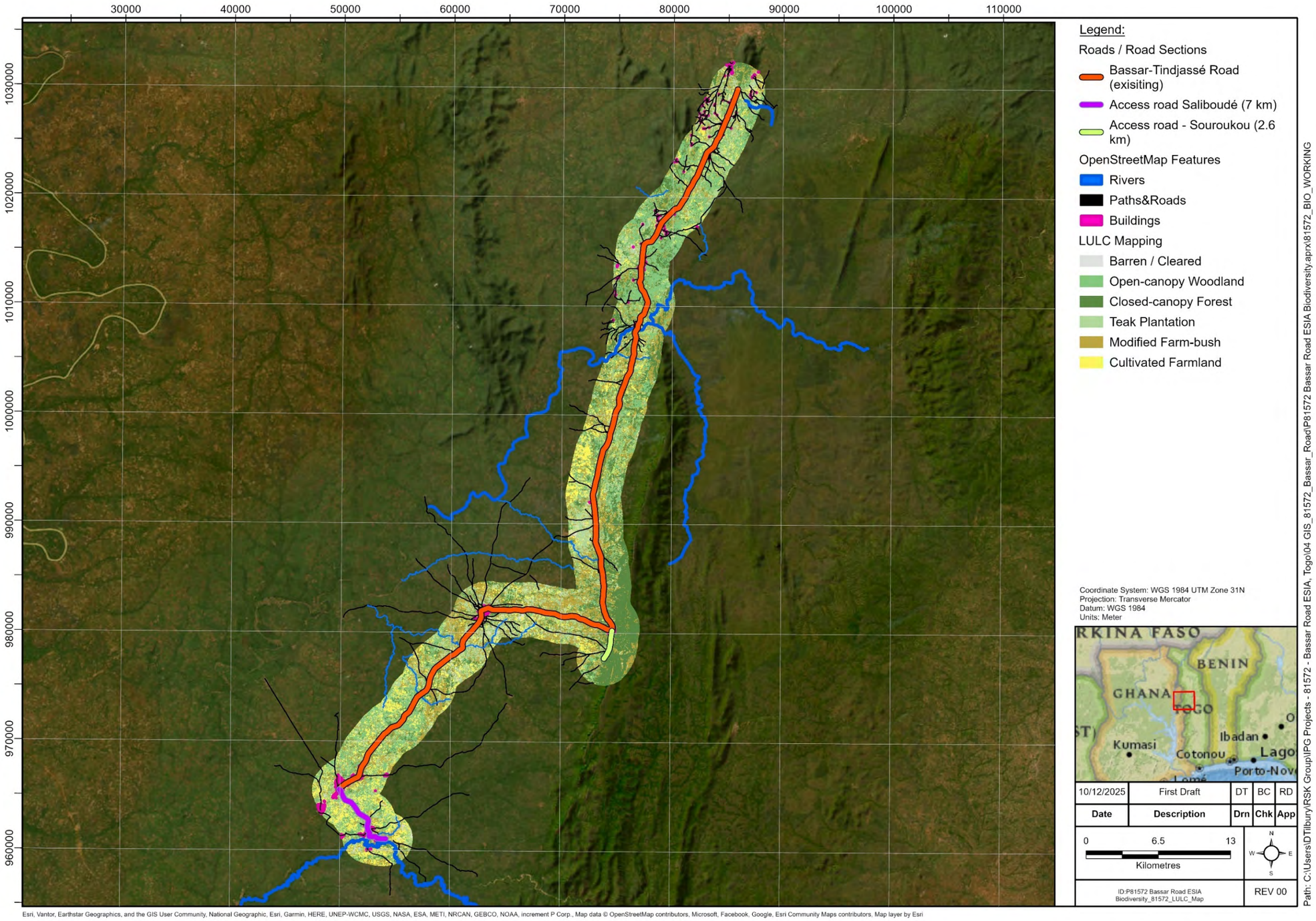

Figure 5-26: Preliminary wide-scale LULC map of the project AoI

5.4.7 Botany

Section 5.4.7.1 below describes the botany at the survey sites, and Table 5-23 shows the flora species identified at each site during the October 2025 botany survey, along with their family and associated IUCN Red List status and phytogeo-graphical zone.

Appendix X provides the individual species list for each site, along with each species' family, biological type, general coverage within the survey site, phytogeo-graphical zone and IUCN Red List status, and habitat photos.

5.4.7.1 CEMP survey site descriptions

Survey site 1: Flank of Mount Bassar

The site is a bit rugged with the presence of some cuirasses (lateritic crusts/ironstone outcrops). The dominant plant formation of the site is a wooded savannah with discontinuous vegetation cover. The most represented woody plant species are typical of Sudanian formations, i.e., plant communities typical of the Sudanian biogeographical region. They are, among others, *Khaya senegalensis, Lannea acida, Afzelia africana, Daniellia oliveri* and *Isoberlinia doka.* The herb layer is dominated by grasses such as *Andropogon gayanus* and *Hyparrhenia rufa.*

The site shows notable signs of anthropisation, including the regular passage of herds of cattle for grazing, which accentuates the trampling of the ground and the degradation of the herbaceous groundcover. In addition, firewood harvesting contributes to the opening of the tree cover and the decrease in density of woody species of ecological interest. These disturbances promote the presence of pioneer and secondary species. This site plays an essential role in the provision of ecosystem services to the populations bordering the area, and the vegetation plays a crucial role in protecting soils against erosion and maintaining the ecological balance of this mountainous area (see Section 5.6.3.2 in Ecosystem Services).

Survey site 2: edge of River Saboudi

This site is in gallery forest bordering the Saboudi river, which is a seasonal watercourse. This site belongs to the communities of the Saboudi village.

The gently sloping relief towards the river promotes good drainage and the development of gallery species. The most common woody species are those from transition zones, which include among others: *Isoberlinia doka, Khaya senegalensis, Parkia biglobosa* and *Pterocarpus erinaceus*. In addition to these species, the presence of a few individuals of *Tectona grandis* was observed, which are non-native species that are imported for economic purposes.

The periphery of the site is marked by the presence of cultivated fields and an old laterite quarry. The frequent presence of cattle has affected the area. Despite this, the gallery forest still retains its essential ecological role in protecting the banks and maintaining local biodiversity, particularly the avifauna of the site.

Survey site 3: hill at Tchessi

The site of Tchessi is in a hilly area with the presence of cuirasses (lateritic crusts/ironstone outcrops) in places. Two distinct types of plant formations are present:

an open forest at the bottom of the slope and a wooded savannah at the top. The site has not been mined or quarried.

The dominant vegetation of the open forest is made up of species such as: *Anogeissus leiocarpa*, *Isoberlinia doka* and *Pterocarpus erinaceus*. The wooded savannah is dominated by species such as *Vitellaria paradoxa* and *Daniellia oliveri*. The site shows significant signs of human disturbance, particularly on the lower slopes, such as the presence of yam fields, the cutting of firewood and the regular passage of cattle for grazing.

Survey site 4: Mo River

This site corresponds to a dense gallery forest located at the edge of the Mô River, a non-seasonal watercourse with rocky outcrops. It is the largest watercourse in the project area. This river is a tributary of the Oti River which flows into the Volta in Ghana. This site plays a crucial role in providing ecosystem services to local populations, particularly water supply. The forest formation of this site is dominated by species such as *Ceiba pentandra*, *Khaya senegalensis* and *Pterocarpus santalinoides,* testifying to a continuous regeneration dynamic. The soil is moist and rich in organic matter which promotes the development of dense vegetation along the banks.

However, the site shows significant signs of human disturbance including sand extraction and the presence of gold mining in the riverbed. These activities have led to the destabilisation of banks and the localised destruction of riparian vegetation. Cattle grazing is also frequent at this site.

Survey site 5: stream near Folo village

This site is a gallery forest formed along a seasonal stream at the entrance to the village of Folo, coming from the Fazao range. This plant formation develops on relatively fertile alluvial soils, favourable to the growth of varied woody species. Despite strong human influences, such as the presence of cultivated fields on the banks of the river and frequent presence of humans, the gallery forest retains a great diversity of tree species typical of riparian areas, such as *Khaya senegalensis, Anogeissus leiocarpa* and *Lonchocarpus sericeus*.

Survey site 6: edge of Fazao Mountain Chain in Folo

Site 6 is a forest and wooded savannah mosaic, located on the side of the Fazao mountain chain. It is characterised by a clear forest dominated by species such as: *Isoberlinia doka*, *Pterocarpus erinaceus* and *Monotes kerstingii*. It should be noted that the site is the buffer zone of the Fazao-Malfakassa National Park. The relief is very rugged, with steep slopes and numerous rocky outcrops that locally limit the development of vegetation cover. The tree layer is discontinuous, alternating with herbaceous areas composed mainly of grasses adapted to shallow and dry soils.

The lower part of the site is marked by the regular passage of cattle for grazing, leading to soil trampling and degradation of the herbaceous layer. These disturbances promote the loss of vegetation cover and accentuate erosion of the soils in these areas.

Survey site 7: edge of Fazao Mountain Chain in Kagna

Site 7 is located at the end of the mountain range corresponding to the extension of site 6. It consists of a clear forest and a wooded savannah occupying the transition zone between the hillsides and the valley, on either side of the main road. The vegetation is dominated by species typical of Sudanese formations such as *Isoberlinia doka*, *Pterocarpus erinaceus* and *Monotes kerstingii*.

The site shows clear signs of human presence, particularly the exploitation of fuelwood and charcoal production, which lead to a degradation of the vegetation cover and the loss of large woody species.

Survey site 8: Bessio

Site 8 mainly comprises gallery forest located in a confluence zone of several streams from the plain flowing towards the Mô river. There is notable human influence, marked by cultivated fields, cattle grazing and timber exploitation. These activities have led to the local degradation of vegetation cover and riverbank disturbance. The dominant species in this formation include *Khaya senegalensis, Erythrophleum suaveolens, Cola gigantea, Mimusops kummel* and *Diospyros mespiliformis*.

Survey site 9: Sako River between Soukou and Boulohou

Site 9 is located on the Sako River, originating from the Souroukon waterfall upstream. It is a gallery forest that creates favourable conditions for the development of vegetation characterised by high soil moisture and floristic diversity. This ecosystem is home to large trees, making the site distinctive. The vegetation is dominated by species such as *Erythrophleum suaveolens, Antiaris toxicaria, Dialium guineense* and *Lecaniodiscus cupanioides*. Anthropogenic pressure is very low, which promotes the presence of mature woody species and natural regeneration of the vegetation cover.

5.4.7.2 Species identified

A total of 188 species of flora were recorded across the nine sampling plots, as detailed in Table 5-23 below. Most of the species recorded (111 species; 59%) are classified by IUCN as least concern, with a further 69 species (36.7%) not evaluated or classified as data deficient.

Two species recorded (1.1%) are classified as IUCN endangered. This comprises *Pterocarpus erinaceus* (Kosso), which was recorded at all survey sites except for Site 4 (adjacent to Mo River). *Tectona grandis* (Teak) was recorded at six survey sites. This species is introduced to Togo and is native to India and South East Asia.

Three species (1.6%) are classified as IUCN vulnerable: *Afzelia africana* was recorded at seven survey sites (Sites 1, 3, 4, 5, 6, 8 and 9), *Khaya senegalensis* (African Mahogany) recorded at six survey sites (Sites 1, 2, 3, 4, 5 and 8) and *Vitellaria paradoxa* recorded at eight survey sites (Sites 1, 2, 3, 5, 6, 7, 8 and 9).

Eight species (4.3%) recorded (*Alternanthera denticulata, Azadirachta indica, Hibiscus cannabinus, Mangifera indica, Musa balbisiana, Senna obtusifolia, Spondias mombin* and *Tectona grandis*) are classified as introduced.

Seven species (*Annona senegalensis, Anogeissus leiocarpa, Flueggea virosa, Grewia flavescens, Lannea barteri, Sarcocephalus latifolius* and *Terminalia glaucescens*) were

recorded at all nine survey sites points, with two species (*Pterocarpus erinaceus and Vitellaria paradoxa)* recorded at eight survey sites.

The full survey results for each survey site are provided in Table 5-23 below.

Table 5-23: Flora species identified during the October 2025 botany survey

Species	Family	IUCN Red List status	Phytogeo-graphical Zone*	Site								
				1	2	3	4	5	6	7	8	9
Acacia polyacantha	Fabaceae	LC	GC-SZ				x				x	
Acacia sieberiana	Fabaceae	LC	GC-SZ		x		x		x	x	x	
Adansonia digitata	Bombacaceae	NE	SZ				x					
Adenodolichos paniculatus	Fabaceae	LC	GC-SZ			x		x	x	x	x	
Aframomum sceptrum	Zingiberaceae	LC	GC				x	x	x	x		
Aframomum stipulatum	Zingiberaceae	NE	GC					x		x		x
Afzelia africana	Fabaceae	VU	GC-SZ	x		x	x	x	x		x	x
Ageratum conyzoides	Asteraceae	LC	GC-SZ				x	x	x			
Albizia ferruginea	Fabaceae	NT	GC			x						x
Albizia zygia	Fabaceae	LC	GC					x	x	x		x
Alchornea cordifolia	Euphorbiaceae	LC	GC-SZ			x		x				x
Allophylus africanus	Sapindaceae	LC	GC			x	x	x			x	x
Alternanthera denticulata	Amaranthaceae	LC	i							x	x	
Ampelocissus leonensis	Vitaceae	LC	GC-SZ				x	x			x	
Anchomanes difformis	Araceae	NE	GC		x		x	x		x	x	
Andira inermis	Fabaceae	LC	GC-SZ	x		x	x			x		
Andropogon gayanus	Poaceae	NE	GC-SZ	x	x	x		x				
Andropogon tectorum	Poaceae	NE	GC-SZ	x				x	x	x		x
Annona senegalensis	Annonaceae	LC	GC-SZ	x	x	x	x	x	x	x	x	x
Anogeissus leiocarpa	Combretaceae	LC	SZ	x	x	x	x	x	x	x	x	x
Anthocleista djalonensis	Loganiaceae	LC	GC-SZ					x				x
Anthocleista nobilis	Loganiaceae	LC	GC									x

Species	Family	IUCN Red List status	Phytogeo-graphical Zone*	Site								
				1	2	3	4	5	6	7	8	9
Antiaris toxicaria	Moraceae	LC	GC-SZ	x			x	x			x	x
Asparagus flagellaris	Asparagaceae	NE	GC-SZ	x		x	x					
Aspilia bussei	Asteraceae	NE	SZ					x			x	
Azadirachta indica	Meliaceae	LC	i	x		x	x				x	
Berlinia grandiflora	Fabaceae	LC	GC-SZ					x				
Blumea viscosa	Asteraceae	DD	GC					x				
Boerhavia diffusa	Nyctaginaceae	NE	GC						x			
Bombax costatum	Bombacaceae	LC	SZ	x				x	x			
Bridelia ferruginea	Euphorbiaceae	LC	GC-SZ		x	x	x	x	x			x
Bridelia micrantha	Euphorbiaceae	LC	GC-SZ									x
Burkea africana	Fabaceae	LC	SZ	x	x	x	x		x		x	
Caesalpinia benthamiana	Fabaceae	NE	GC				x					
Calopogonium mucunoides	Fabaceae	NE	GC					x				
Ceiba pentandra	Bombacaceae	LC	GC-SZ				x		x			
Centrosema pubescens	Fabaceae	NE	GC							x		
Ceratotheca sesamoides	Pedaliaceae	NE	SZ			x	x					
Chamaecrista mimosoides	Fabaceae	LC	GC-SZ	x		x	x					x
Chromolaena odorata	Asteraceae	NE	GC		x		x	x	x		x	x
Cissus populnea	Vitaceae	NE	GC-SZ	x	x		x	x	x	x	x	
Cleistopholis patens	Annonaceae	NE	GC								x	x
Clerodendrum capitatum	Verbenaceae	LC	GC-SZ			x						
Cochlospermum tinctorium	Cochlospermaceae	LC	SZ	x		x		x			x	
Cola gigantea	Sterculiaceae	LC	GC-SZ					x			x	

Species	Family	IUCN Red List status	Phytogeo-graphical Zone*	Site								
				1	2	3	4	5	6	7	8	9
Cola millenii	Sterculiaceae	LC	GC							x		
Combretum collinum	Combretaceae	LC	GC-SZ	x	x	x	x		x	x	x	
Combretum micranthum	Combretaceae	LC	GC			x	x					
Combretum molle	Combretaceae	LC	SZ		x	x	x			x	x	
Combretum nigricans	Combretaceae	LC	SZ	x								
Costus spectabilis	Zingiberaceae	NE	SZ						x			
Crassocephalum crepidioides	Asteraceae	NE	GC					x				
Crossopteryx febrifuga	Rubiaceae	LC	GC-SZ	x	x		x	x		x	x	
Cussonia arborea	Araliaceae	LC	GC-SZ	x	x			x	x	x		
Cyphostemma adenocaule	Vitaceae	NE	GC-SZ		x				x			x
Daniellia oliveri	Fabaceae	LC	GC-SZ	x	x	x		x	x	x	x	
Desmodium velutinum	Fabaceae	NE	GC-SZ					x			x	x
Detarium senegalensis	Fabaceae	LC	GC-SZ		x	x			x	x	x	
Dialium guineense	Fabaceae	LC	GC									x
Dichrostachys cinerea	Fabaceae	LC	GC-SZ			x	x	x				
Dioscorea bulbifera	Dioscoreaceae	NE	GC-SZ								x	
Diospyros mespiliformis	Ebenaceae	LC	GC-SZ			x	x	x			x	x
Diospyros monbuttensis	Ebenaceae	LC	GC									x
Drypetes floribunda	Euphorbiaceae	NE	GC									x
Elaeis guineensis	Arecaceae	LC	GC					x			x	x
Entada africana	Fabaceae	LC	SZ	x	x	x		x		x	x	
Entada pursaetha	Fabaceae	NE	GC									x
Eragrostis tremula	Poaceae	NE	GC-SZ	x	x							

Species	Family	IUCN Red List status	Phytogeo-graphical Zone*	Site								
				1	2	3	4	5	6	7	8	9
Eriosema griseum	Fabaceae	NE	SZ		x						x	
Erythrophleum suaveolens	Fabaceae	LC	GC-SZ								x	x
Ficus glumosa	Moraceae	LC	GC-SZ						x	x		
Ficus on	Moraceae	LC	GC-SZ		x	x		x	x		x	
Ficus ovata	Moraceae	NE	GC					x				x
Flacourtia flavescens	Flacourtiaceae	NE	SZ					x	x		x	
Flueggea virosa	Euphorbiaceae	LC	GC-SZ	x	x	x	x	x	x	x	x	x
Gardenia aqualla	Rubiaceae	NE	GC-SZ		x	x	x		x	x		
Gardenia erubescens	Rubiaceae	NE	GC-SZ			x						
Gardenia ternifolia	Rubiaceae	LC	GC-SZ			x		x			x	
Gomphrena celosioides	Amaranthaceae	NE	GC-SZ					x				
Grewia flavescens	Tiliaceae	LC	GC-SZ	x	x	x	x	x	x	x	x	x
Gymnosporia senegalensis	Celastraceae	LC	SZ	x	x	x		x				x
Hannoa undulata	Simaroubaceae	NE	SZ	x	x				x	x	x	
Hexalobus monopetalus	Annonaceae	LC	SZ	x	x	x			x	x		
Hibiscus cannabinus	malvaceae	NE	i			x		x		x		
Hibiscus ciliatus	malvaceae	NE	GC-SZ							x		
Holarrhena floribunda	Apocynacae	LC	GC-SZ							x		x
Hoslundia opposita	Lamiaceae	NE	GC-SZ									x
Hymenocardia acida	Euphorbiaceae	LC	GC-SZ			x	x	x		x		
Hyparrhenia rufa	Poaceae	NE	GC-SZ		x							
Hyptis suaveolens	Lamiaceae	NE	GC-SZ	x	x	x	x	x	x	x		
Icacina oliviformis	Icacinaceae	NE	SZ				x	x		x		x

Species	Family	IUCN Red List status	Phytogeo-graphical Zone*	Site								
				1	2	3	4	5	6	7	8	9
Indigofera tinctoria	Fabaceae	NE	GC-SZ	x	x		x					
Ipomoea involucrata	Convolvulaceae	NE	GC-SZ				x					
Isoberlinia doka	Fabaceae	LC	SZ	x	x	x			x	x		
Isoberlinia tomentosa	Fabaceae	LC	SZ				x					
Khaya senegalensis	Meliaceae	VU	GC-SZ	x	x	x	x	x			x	
Lannea acida	Anacardiaceae	LC	GC-SZ	x	x	x		x	x	x		x
Lannea barteri	Anacardiaceae	LC	GC-SZ	x	x	x	x	x	x	x	x	x
Lecaniodiscus cupanioides	Sapindaceae	LC	GC					x				x
Leptadenia hastata	Asclepiadaceae	NE	GC-SZ				x				x	
Lippia multiflora	Verbenaceae	NE	GC-SZ								x	x
Lonchocarpus cyanescens	fabaceae	NE	GC-SZ				x				x	x
Lonchocarpus sericeus	Fabaceae	LC	GC		x	x	x	x				
Lophira lanceolata	Ochnaceae	LC	SZ							x		
Ludwigia decurrens	Onagraceae	NE	GC-SZ					x				
Luffa aegyptiaca	Cucurbitaceae	NE	GC-SZ				x					
Mangifera indica	Anacardiaceae	DD	i			x		x				x
Manilkara multinervis	Sapotaceae	NE	GC-SZ					x			x	
Margarconclud discoid	Euphorbiaceae	LC	GC-SZ	x					x	x		x
Markhamia tomentosa	Bignoniaceae	LC	GC-SZ				x					x
Milicia excelsa	Moraceae	NT	GC-SZ					x				x
Millettia thonningii	Fabaceae	LC	GC				x					
Millettia zechiana	fabaceae	LC	GC								x	x
Mimusops kummel	Sapotaceae	LC	GC-SZ				x				x	x

Species	Family	IUCN Red List status	Phytogeo-graphical Zone*	Site								
				1	2	3	4	5	6	7	8	9
Mitracarpus hirtus	Rubiaceae	NE	GC-SZ					x			x	
Mitragyna inermis	Rubiaceae	LC	SZ			x	x					
Monotes kerstingii	Dipterocarpaceae	LC	SZ	x	x	x			x	x	x	x
Morinda lucida	Rubiaceae	LC	GC-SZ					x				x
Musa balbisiana	Musaceae	LC	i				x					x
Nephrolepis biserrata	Nephrolepidaceae	NE	GC-SZ					x				x
Opilia amentacea	Opiliaceae	LC	GC-SZ			x		x				
Oxytenanthera abyssinica	Poaceae	NE	GC-SZ			x						
Panicum maximum	Poaceae	NE	GC-SZ	x				x				
Panicum repens	Poaceae	LC	GC-SZ	x	x							
Parinari curatellifolia	Chrysobalanaceae	LC	SZ			x			x		x	
Parkia biglobosa	Fabaceae	LC	GC-SZ	x	x	x			x	x	x	x
Paspalum scrobiculatum	Poaceae	LC	GC-SZ					x				
Paullinia pinnata	Sapindaceae	NE	GC								x	x
Pavetta corymbosa	Rubiaceae	LC	GC-SZ						x			
Pericopsis laxiflora	Fabaceae	LC	GC-SZ			x		x	x	x		
Phoenix reclinata	Arecaceae	LC	GC-SZ					x				
Phyllanthus amarus	Phyllanthaceae	NE	GC				x			x		
Physalis angulata	Solanaceae	LC	GC-SZ					x				
Piliostigma thonningii	Fabaceae	LC	GC-SZ		x	x	x	x	x	x	x	
Pouteria alnifolia	Sapotaceae	LC	GC-SZ					x	x			x
Prosopis africana	Fabaceae	LC	SZ			x		x	x	x	x	
Pseudocedrela kotschyi	Meliaceae	LC	SZ						x	x	x	x

Species	Family	IUCN Red List status	Phytogeo-graphical Zone*	Site								
				1	2	3	4	5	6	7	8	9
Pteleopsis suberosa	Combretaceae	LC	SZ		x					x		
Pterocarpus erinaceus	Fabaceae	EN	SZ	x	x	x		x	x	x	x	x
Pterocarpus santalinoides	Fabaceae	LC	GC-SZ				x					
Pycnanthus angolensis	Myrsinaceae	LC	GC									x
Raphia sudanica	Arecaceae	NT	SZ					x				
Rauvolfia vomitoria	Apocynacae	LC	GC-SZ								x	
Rottboellia cochinchinensis	Poaceae	NE	GC-SZ	x	x		x	x		x	x	
Rourea coccinea	Connaraceae	LC	GC-SZ		x	x		x	x			
Saba comorensis	Apocynacae	NE	GC		x							x
Sapium grahamii	Euphorbiaceae	NE	SZ			x						
Sarcocephalus latifolius	Rubiaceae	NE	GC-SZ	x	x	x	x	x	x	x	x	x
Securidaca longepedunculata	Polygonaceae	LC	SZ	x	x							
Senna obtusifolia	fabaceae	LC	i				x	x				
Senna occidentalis	fabaceae	LC	GC-SZ	x			x					
Sida acuta	malvaceae	NE	GC-SZ								x	
Sida rhombifolia	malvaceae	NE	GC			x						
Spermacoce radiata	Rubiaceae	LC	GC-SZ		x			x				
Spondias mombin	Anacardiaceae	LC	i							x		
Sporobolus pyramidalis	Poaceae	NE	GC-SZ	x		x						
Stachytarpheta angustifolia	Verbenaceae	NE	GC-SZ					x			x	
Steganotaenia araliacea	Apocynaceae	LC	GC-SZ	x	x				x	x		
Sterculia setigera	Sterculiaceae	LC	SZ	x		x			x	x	x	x
Sterculia tragacantha	Sterculiaceae	LC	GC-SZ							x		

Species	Family	IUCN Red List status	Phytogeo-graphical Zone*	Site								
				1	2	3	4	5	6	7	8	9
Stereospermum kunthianum	Bignoniaceae	LC	GC-SZ	x	x		x	x		x		
Strychnos innocua	Loganiaceae	LC	SZ		x				x			
Strychnos spinosa	Loganiaceae	LC	SZ	x	x	x		x	x	x	x	
Stylochaeton hypogeum	Araceae	NE	GC-SZ		x							
Swartzia madagascariensis	Fabaceae	LC	SZ				x					
Synedrella nodiflora	Asteraceae	NE	GC-SZ					x				x
Syzygium guineense	Myrtaceae	LC	GC-SZ				x					
Tacca leontopetaloides	Taccaceae	LC	GC-SZ		x							
Talinum triangulare	Portulacaceae	NE	GC-SZ					x				
Tamarindus indica	fabaceae	LC	GC-SZ				x	x	x			
Tectona grandis	Verbenaceae	EN	i		x	x		x		x	x	x
Tephrosia purpurea	Fabaceae	LC	GC-SZ	x	x		x					x
Terminalia glaucescens	Combretaceae	LC	SZ	x	x	x	x	x	x	x	x	x
Terminalia laxifolia	Combretaceae	NE	SZ							x	x	
Terminalia macroptera	Combretaceae	LC	SZ		x	x	x		x	x		
Thaumatococcus daniellii	Marantaceae	NE	GC									x
Trichilla emetica	Meliaceae	NE	SZ	x		x	x		x	x	x	
Tridax procumbens	Asteraceae	NE	GC-SZ			x	x		x			
Trilepisium madagascariense	Moraceae	LC	GC									x
Uraria picta	Fabaceae	LC	GC-SZ			x					x	x
Urena lobata	malvaceae	LC	GC-SZ	x		x	x	x		x	x	
Uvaria chamae	Annonaceae	LC	GC-SZ					x				x
Vangueriopsis vanguerioides	Rubiaceae	NE	GC		x						x	

Species	Family	IUCN Red List status	Phytogeo-graphical Zone*	Site								
				1	2	3	4	5	6	7	8	9
Vernonia cinerea	Asteraceae	NE	GC-SZ					x				
Vitellaria paradoxa	Sapotaceae	VU	SZ	x	x	x		x	x	x	x	x
Vitex doniana	Verbenaceae	LC	GC-SZ			x	x	x		x	x	x
Voacanga africana	Apocynaceae	LC	GC								x	x
Ximenia americana	Oleaceae	LC	GC-SZ						x			
Total species: 188				**52**	**58**	**68**	**67**	**88**	**58**	**63**	**71**	**68**

*Note: GC = Guinean-Congolese; SZ = Soudano-zambéziennes; GC-SZ = Guinean-Congolese (GC) and Sudano-Zambezian; i = Introduced

5.4.8 **Avifauna**

5.4.8.1 Survey results

A total of 102 species were recorded during the wet season avifauna survey in October 2025 (Table 5-24), which comprised 96 species recorded at the survey sites and an additional six species recorded as incidentals from road surveys.

Most of the species recorded (94 species; 92.2%) are resident species, with four species (3.9%) migratory breeding species, three species (2.9%) non-breeding (i.e., winter migratory species) and one species (1%) both a resident and migratory breeding species within the project AoI (IUCN, 2025).

The species recorded in greatest numbers at the survey sites were Common Bulbul (a total of 48 individuals recorded), Bronze Mannikin (27 individuals recorded), Village Weaver (20 individuals recorded) and Blue-spotted Wood-Dove, Red-cheeked Cordonbleu and Senegal Parrot (18 individuals recorded).

Two species, Blue-spotted Wood-Dove and Common Bulbul, was recorded at all survey sites, with Green-backed Camaroptera and Vinaceous Dove recorded at eight and seven sites respectively.

Ten PBV species of birds were recorded: Bateleur (IUCN Endangered) and Guinea Turaco, Violet Turaco, Cassin's Hawk-Eagle, West African Pied Hornbill, Piping Hornbill, Senegal Parrot, Fanti Sawwing, Splendid Sunbird and Senegal Eremomela (listed as qualifying species of the Fazao-Malfakassa National Park IBA).

The species recorded along with their and breeding, conservation and endemic status are provided in Table 5-24 and full survey results for each survey site are provided in Table 5-25 below.

Table 5-24: Bird species and breeding, conservation and endemic status recorded

Scientific name	Common name	Breeding status	IUCN Red List rating	IBA designated species	Endemic Status
Numida meleagris	Helmeted Guineafowl	Resident	LC	n/a	n/a
Ptilopachus petrosus	Stone Partridge	Resident	LC	n/a	n/a
Pternistis bicalcaratus	Double-spurred Spurfowl	Resident	LC	n/a	n/a
Cypsiurus parvus	African Palm Swift	Resident	LC	n/a	n/a
Apus affinis	Little Swift	Resident	LC	n/a	n/a
Apus caffer	White-rumped Swift	Resident	LC	n/a	n/a
Crinifer piscator	Western Plantain-eater	Resident	LC	n/a	n/a
Tauraco persa	Guinea Turaco	Resident	LC	Yes	n/a
Tauraco violaceus	Violet Turaco	Resident	NT	Yes	n/a
Centropus senegalensis	Senegal Coucal	Resident	LC	n/a	n/a
Chrysococcyx klaas	Klaas's Cuckoo	Breeding	LC	n/a	n/a
Columba livia	Feral Pigeon	Resident	LC	n/a	n/a
Columba guinea	Speckled Pigeon	Resident	LC	n/a	n/a
Streptopelia semitorquata	Red-eyed Dove	Resident	LC	n/a	n/a
Streptopelia vinacea	Vinaceous Dove	Resident	LC	n/a	n/a
Spilopelia senegalensis	Laughing Dove	Resident	LC	n/a	n/a
Turtur afer	Blue-spotted Wood-Dove	Resident	LC	n/a	n/a
Treron calvus	African Green-Pigeon	Resident	LC	n/a	n/a
Bubulcus ibis	Western Cattle Egret	Resident	LC	n/a	n/a
Ardea brachyrhyncha	Yellow-billed Egret	Resident	LC	n/a	n/a

Scientific name	Common name	Breeding status	IUCN Red List rating	IBA designated species	Endemic Status
Scopus umbretta	Hamerkop	Resident	LC	n/a	n/a
Polyboroides typus	African Harrier-Hawk	Resident	LC	n/a	n/a
Terathopius ecaudatus	Bateleur	Resident	EN	n/a	n/a
Hieraaetus ayresii	Ayres's Hawk-Eagle	Resident	LC	n/a	n/a
Spizaetus africanus	Cassin's Hawk-Eagle	Resident	LC	Yes	n/a
Kaupifalco monogrammicus	Lizard Buzzard	Resident	LC	n/a	n/a
Milvus migrans	Black Kite	Resident	LC	n/a	n/a
Glaucidium perlatum	Pearl-spotted Owlet	Resident	LC	n/a	n/a
Phoeniculus purpureus	Green Woodhoopoe	Resident	LC	n/a	n/a
Lophoceros semifasciatus	West African Pied Hornbill	Resident	LC	Yes	n/a
Lophoceros nasutus	African Grey Hornbill	Resident	LC	n/a	n/a
Bycanistes fistulator	Piping Hornbill	Resident	LC	Yes	n/a
Merops apiaster	European Bee-eater	Wintering	LC	n/a	n/a
Pogoniulus bilineatus	Yellow-rumped Tinkerbird	Resident	LC	n/a	n/a
Pogoniulus chrysoconus	Yellow-fronted Tinkerbird	Resident	LC	n/a	n/a
Lybius vieilloti	Vieillot's Barbet	Resident	LC	n/a	n/a
Lybius dubius	Bearded Barbet	Resident	LC	n/a	n/a
Indicator minor	Lesser Honeyguide	Resident	LC	n/a	n/a
Dendropicos fuscescens	Cardinal Woodpecker	Resident	LC	n/a	n/a
Falco cuvierii	African Hobby	Resident	LC	n/a	n/a
Falco biarmicus	Lanner Falcon	Resident	LC	n/a	n/a
Falco peregrinus	Peregrine Falcon	Resident/wintering	LC	n/a	n/a

Scientific name	Common name	Breeding status	IUCN Red List rating	IBA designated species	Endemic Status
Poicephalus senegalus	Senegal Parrot	Resident	LC	Yes	n/a
Psittacula krameri	Ring-necked Parakeet	Resident	LC	n/a	n/a
Batis senegalensis	Senegal Batis	Resident	LC	n/a	n/a
Platysteira cyanea	Brown-throated Wattle-eye	Resident	LC	n/a	n/a
Tchagra senegalus	Black-crowned Tchagra	Resident	LC	n/a	n/a
Dryoscopus gambensis	Northern Puffback	Resident	LC	n/a	n/a
Laniarius major	Tropical Boubou	Resident	LC	n/a	n/a
Prionops plumatus	White-crested Helmetshrike	Resident	LC	n/a	n/a
Coracina pectoralis	White-breasted Cuckooshrike	Resident	LC	n/a	n/a
Campephaga phoenicea	Red-shouldered Cuckooshrike	Resident	LC	n/a	n/a
Lanius corvinus	Yellow-billed Shrike	Resident	LC	n/a	n/a
Oriolus auratus	African Golden Oriole	Resident	LC	n/a	n/a
Dicrurus adsimilis	Fork-tailed Drongo	Resident	LC	n/a	n/a
Terpsiphone viridis	African Paradise-Flycatcher	Resident	LC	n/a	n/a
Corvus albus	Pied Crow	Resident	LC	n/a	n/a
Pycnonotus barbatus	Common Bulbul	Resident	LC	n/a	n/a
Psalidoprocne obscura	Fanti Sawwing	Resident	LC	Yes	n/a
Hirundo rustica	Barn Swallow	Wintering	LC	n/a	n/a
Hirundo smithii	Wire-tailed Swallow	Resident	LC	n/a	n/a
Melocichla mentalis	Moustached Grass-Warbler	Resident	LC	n/a	n/a
Sylvietta brachyura	Northern Crombec	Resident	LC	n/a	n/a
Cisticola erythrops	Red-faced Cisticola	Resident	LC	n/a	n/a

Scientific name	Common name	Breeding status	IUCN Red List rating	IBA designated species	Endemic Status
Cisticola lateralis	Whistling Cisticola	Resident	LC	n/a	n/a
Cisticola juncidis	Zitting Cisticola	Resident	LC	n/a	n/a
Prinia subflava	Tawny-flanked Prinia	Resident	LC	n/a	n/a
Prinia erythroptera	Red-winged Prinia	Resident	LC	n/a	n/a
Camaroptera brachyura	Green-backed Camaroptera	Resident	LC	n/a	n/a
Zosterops senegalensis	Northern Yellow White-eye	Resident	LC	n/a	n/a
Turdoides plebejus	Brown Babbler	Resident	LC	n/a	n/a
Lamprotornis caudatus	Long-tailed Glossy Starling	Resident	LC	n/a	n/a
Melaenornis edolioides	Northern Black-Flycatcher	Resident	LC	n/a	n/a
Agricola pallidus	Pale Flycatcher	Resident	LC	n/a	n/a
Muscicapa caerulescens	Ashy Flycatcher	Resident	LC	n/a	n/a
Luscinia megarhynchos	Common Nightingale	Wintering	LC	n/a	n/a
Ficedula hypoleuca	European Pied Flycatcher	Wintering	LC	n/a	n/a
Oenanthe familiaris	Familiar Chat	Resident	LC	n/a	n/a
Hedydipna collaris	Collared Sunbird	Resident	LC	n/a	n/a
Cyanomitra verticalis	Green-headed Sunbird	Resident	LC	n/a	n/a
Chalcomitra senegalensis	Scarlet-chested Sunbird	Resident	LC	n/a	n/a
Cinnyris coccinigaster	Splendid Sunbird	Resident	LC	Yes	n/a
Cinnyris venustus	Variable Sunbird	Resident	LC	n/a	n/a
Passer griseus	Northern Grey-headed Sparrow	Resident	LC	n/a	n/a
Gymnoris dentata	Sahel Bush Sparrow	Breeding	LC	n/a	n/a
Ploceus cucullatus	Village Weaver	Resident	LC	n/a	n/a

Scientific name	Common name	Breeding status	IUCN Red List rating	IBA designated species	Endemic Status
Quelea erythrops	Red-headed Quelea	Resident	LC	n/a	n/a
Euplectes hordeaceus	Black-winged Bishop	Resident	LC	n/a	n/a
Euplectes franciscanus	Northern Red Bishop	Resident	LC	n/a	n/a
Euplectes macroura	Yellow-mantled Widowbird	Resident	LC	n/a	n/a
Spermestes cucullata	Bronze Mannikin	Resident	LC	n/a	n/a
Estrilda melpoda	Orange-cheeked Waxbill	Resident	LC	n/a	n/a
Uraeginthus bengalus	Red-cheeked Cordonbleu	Resident	LC	n/a	n/a
Pytilia phoenicoptera	Red-winged Pytilia	Resident	LC	n/a	n/a
Lagonosticta larvata	Black-faced Firefinch	Resident	LC	n/a	n/a
Lagonosticta senegala	Red-billed Firefinch	Resident	LC	n/a	n/a
Vidua macroura	Pin-tailed Whydah	Resident	LC	n/a	n/a
Vidua togoensis	Togo Paradise-Whydah	Resident	LC	n/a	n/a
Eremomela pusilla	Senegal Eremomela	Resident	LC	Yes	n/a
Crithagra mozambica	Yellow-fronted Canary	Resident	LC	n/a	n/a
Emberiza goslingi	Gosling's Bunting	Breeding	LC	n/a	n/a
Emberiza cabanisi	Cabanis's Bunting	Resident	LC	n/a	n/a

Table 5-25: Bird species recorded within the project's ecological AoI within each survey site

Common name	Survey site									Total birds	Number of Sites	Incidental
	1	2	3	4	5	6	7	8	9			
Helmeted Guineafowl						1				1	1	
Stone Partridge	5		3			3				11	3	
Double-spurred Spurfowl	2		1							3	2	
African Palm Swift				7						7	1	
Little Swift				8						8	1	
White-rumped Swift				2						2	1	
Western Plantain-eater				2	4		3		1	10	4	
Guinea Turaco	1		2							3	2	
Violet Turaco	1				1		1			3	3	
Senegal Coucal		1		1					1	3	3	
Klaas's Cuckoo						1				1	1	
Feral Pigeon												15
Speckled Pigeon												2
Red-eyed Dove	2		1							3	2	
Vinaceous Dove	3	1	3	2	2	2	3			16	7	
Laughing Dove			1	3		2				6	3	
Blue-spotted Wood-Dove	2	2	1	6	3	1	1	1	1	18	9	
African Green-Pigeon		11								11	1	
Western Cattle Egret	3	2								5	2	
Yellow-billed Egret		1								1	1	

Common name	Survey site									Total birds	Number of Sites	Incidental
	1	2	3	4	5	6	7	8	9			
Hamerkop		1		1				1		3	3	
African Harrier-Hawk								1		1	1	
Bateleur				1		1				2	2	
Ayres's Hawk-Eagle								1		1	1	
Cassin's Hawk-Eagle	1									1	1	
Lizard Buzzard	1	1	1	1	1					5	5	
Black Kite	1	1	4			1				7	4	
Pearl-spotted Owlet	1					1				2	2	
Green Woodhoopoe				3						3	1	
West African Pied Hornbill				3	2					5	2	
African Grey Hornbill	1	2						2		5	3	
Piping Hornbill												7
European Bee-eater		3								3	1	
Yellow-rumped Tinkerbird	2		1			1				4	3	
Yellow-fronted Tinkerbird	1	1	1			2	1			6	6	
Vieillot's Barbet						1				1	1	
Bearded Barbet	3		1		1					5	3	
Lesser Honeyguide	1							1	1	3	3	
Cardinal Woodpecker		1			1	1				3	3	
African Hobby	1									1	1	
Lanner Falcon		1								1	1	
Peregrine Falcon	1									1	1	

Common name	Survey site									Total birds	Number of Sites	Incidental
	1	2	3	4	5	6	7	8	9			
Senegal Parrot			2	12	3	1				18	4	
Ring-necked Parakeet				4						4	1	
Senegal Batis			1	1		1				3	3	
Brown-throated Wattle-eye				2						2	1	
Black-crowned Tchagra	1	1	2	1	1		2			8	6	
Northern Puffback			1	1						2	2	
Tropical Boubou	2	2	2							6	3	
White-crested Helmetshrike							6			6	1	
White-breasted Cuckooshrike				1						1	1	
Red-shouldered Cuckooshrike				1	1					2	2	
Yellow-billed Shrike												3
African Golden Oriole		1								1	1	
Fork-tailed Drongo		1			1			1		3	3	
African Paradise-Flycatcher	1		2	1	1		1	2		8	6	
Pied Crow												3
Common Bulbul	8	7	5	7	4	4	3	7	3	48	9	
Fanti Sawwing							3			3	1	
Barn Swallow	5									5	1	
Wire-tailed Swallow			2	14						16	2	
Moustached Grass-Warbler	1			1						2	2	
Northern Crombec			1							1	1	
Red-faced Cisticola	1									1	1	

Common name	Survey site									Total birds	Number of Sites	Incidental
	1	2	3	4	5	6	7	8	9			
Whistling Cisticola				1		1				2	2	
Zitting Cisticola				1						1	1	
Tawny-flanked Prinia	1	1	2		1					5	4	
Red-winged Prinia	1			1						2	3	
Green-backed Camaroptera	1	1	1	1		1	1	2	1	9	8	
Northern Yellow White-eye	3	2						3		8	3	
Brown Babbler		2								2	1	
Long-tailed Glossy Starling												2
Northern Black-Flycatcher		1								1	1	
Pale Flycatcher		1								1	1	
Ashy Flycatcher			1							1	1	
Common Nightingale							1			1	1	
European Pied Flycatcher		1	1				1		1	4	4	
Familiar Chat	1									1	1	
Collared Sunbird			1							1	1	
Green-headed Sunbird								1		1	1	
Scarlet-chested Sunbird	1		2		1					4	3	
Splendid Sunbird	1	1	2						3	7	4	
Variable Sunbird	1		1						2	4	3	
Northern Grey-headed Sparrow				5						5	1	
Sahel Bush Sparrow	1								1	2	3	
Village Weaver	2	4	6	4	1				3	20	6	

Common name	Survey site									Total birds	Number of Sites	Incidental
	1	2	3	4	5	6	7	8	9			
Red-headed Quelea				10						10	2	
Black-winged Bishop	2	3		2	6			3		16	5	
Northern Red Bishop	3	2	1							6	3	
Yellow-mantled Widowbird	2	2	1	3	3					11	5	
Bronze Mannikin	4	7		4	2			6	4	27	6	
Orange-cheeked Waxbill	3	6			3					12	3	
Red-cheeked Cordonbleu	2	4	2	5	5					18	5	
Red-winged Pytilia	2									2	1	
Black-faced Firefinch	1	1			2					4	3	
Red-billed Firefinch		3		4						7	2	
Pin-tailed Whydah		1		2						3	2	
Togo Paradise-Whydah									1	1	1	
Senegal Eremomela				2	1		1			4	3	
Yellow-fronted Canary		1			2					3	2	
Gosling's Bunting				1						1	1	
Cabanis's Bunting					1					1	1	
Total individuals	**84**	**85**	**59**	**132**	**54**	**26**	**28**	**32**	**23**	**523**	**-**	**-**
Total species	**44**	**38**	**33**	**40**	**26**	**18**	**14**	**18**	**13**	**96**	**-**	**6**

5.4.9 Mammals

A total of two species of wild mammals, comprising one rodent and one lagomorph (hares and rabbits) were recorded during the wet season terrestrial fauna survey (see Table 5-26). African savanna hare was recorded at survey site 1, and Gambian Sun Squirrel was recorded at survey sites 1 and 7 (see Figure 5-27). In addition, two sets of tracks were identified at the supplementary quarry survey site as likely being domestic (or feral) dog.

No globally or nationally threatened or endemic species were recorded. None of the mammal species identified during the baseline surveys are categorised as PBV species. Mammalian sightings and evidence were uncommon, due to the high level of anthropogenic activity.

Table 5-26: Mammal species recorded within the project's ecological AoI

Scientific name	Common name	IUCN Red List rating	Protection status	Endemic Status
Lepus victoriae	African savanna hare	LC	n/a	n/a
Heliosciurus gambianus	Gambian Sun Squirrel	LC	n/a	n/a
Canis familiaris	Domestic dog	Not evaluated	n/a	n/a

Figure 5-27: *Heliosciurus gambianus* (Gambian Sun Squirrel), photographed at Survey Site 1

5.4.10 Herpetofauna

During the wet season terrestrial fauna surveys, one species of amphibian and one species of reptiles were recorded (see Table 5-27 below). The most commonly observed species was the red-headed Agama, recorded at multiple survey sites. A single specimen of *Sclerophrys maculata* was recorded at survey site 6 (see Figure 5-28).

None of the herpetofauna species were identified as PBV species.

Table 5-27: Herpetofauna species recorded within the project's ecological AoI

Scientific name	Common name	IUCN Red List rating	Protection status	Endemic Status
Agama agama	Red-headed agama	LC	n/a	n/a
Sclerophrys maculata	Northern flat-backed toad	LC	n/a	n/a

Figure 5-28: *Sclerophrys maculata* (Northern flat-backed toad), captured and photographed at Survey Site 6

5.4.11 Critical habitat and priority biodiversity values

5.4.11.1 Introduction

A critical habitat assessment (CHA) was conducted by RSK in 2025 to identify whether the project is located in Critical Habitat based on the qualifying criteria of the IFC PS6 (IFC, 2012; IFC, 2019). The report also assesses and identifies habitats, species and ecosystem functions that are of high sensitivity to change. This is the first stage in the prioritisation and identification of the Priority Biodiversity Values (PBVs) that may require

particular mitigation, management and monitoring in relation to the project during construction and operation.

Full details pertaining to the objectives, methodology (including determination of the EAAA), stakeholder engagement and screening results of the CHA can be found in the Critical Habitat Assessment for Bassar-Tindjassé Road, Togo report (RSK 2025c).

5.4.11.2 Ecologically Appropriate Area of Analysis (EAAA)

The scale at which CH is assessed depends on underlying ecological processes and biodiversity values for the habitat in question and therefore must not focus solely on the project site (Guidance Note (GN) 58: IFC, 2019). The determination of CH should be based on an EAAA which takes into account the distribution of species or ecosystems (within and sometimes extending beyond the project's AoI) and the ecological patterns, processes, features and functions that are necessary for maintaining them (GN59: IFC, 2019).

The delineation of an EAAA should take a precautionary approach and is based on rational ecological boundaries dependent on the biodiversity feature of concern; accounting for different species, habitats or ecological processes etc. The inclusion of landscapes beyond the project development area ensures all potential risks to biodiversity are taken into consideration and ensures transparency to relevant stakeholders. the full extent of ecosystems that might be affected in any way, together with any additional areas that have a functional role in supporting those ecosystems or their associated biodiversity, for example the limits of relevant river catchments or watersheds needed to support a wetland.

The project EAAA needs to be determined for the CHA and this was done by analysing existing baseline data, satellite imagery, topographical features such as watershed boundaries and rivers, protected areas and broad habitats surrounding the project, and political boundaries. The EAAA has a total footprint of approximately 5,148 km² (see Figure 5-29).

The AoI defines the spatial extent within which environmental risks and impacts are identified and assessed for a given project. It encompasses areas likely to be affected by the project's physical components and activities including indirect impacts on biodiversity and ecosystem services, predictable but unplanned developments, and associated facilities essential to project viability (IFC, 2021).

For the purposes of a CHA, the AoI informs the EAAA, which is delineated based on the project's location and the distribution of relevant biodiversity values. However, the EAAA is defined independently of the project's impacts or mitigation measures. The presence of CH is determined solely by the distribution of biodiversity values and not by the footprint or design of the project itself (GN60: IFC, 2019). Therefore, the AoI is a key input in establishing the EAAA, but the identification of CH remains an objective assessment of ecological value, irrespective of project-related considerations. Subsequently, the AoI will inform impacts to CH during the impact assessment undertaken as part of the ESIA.

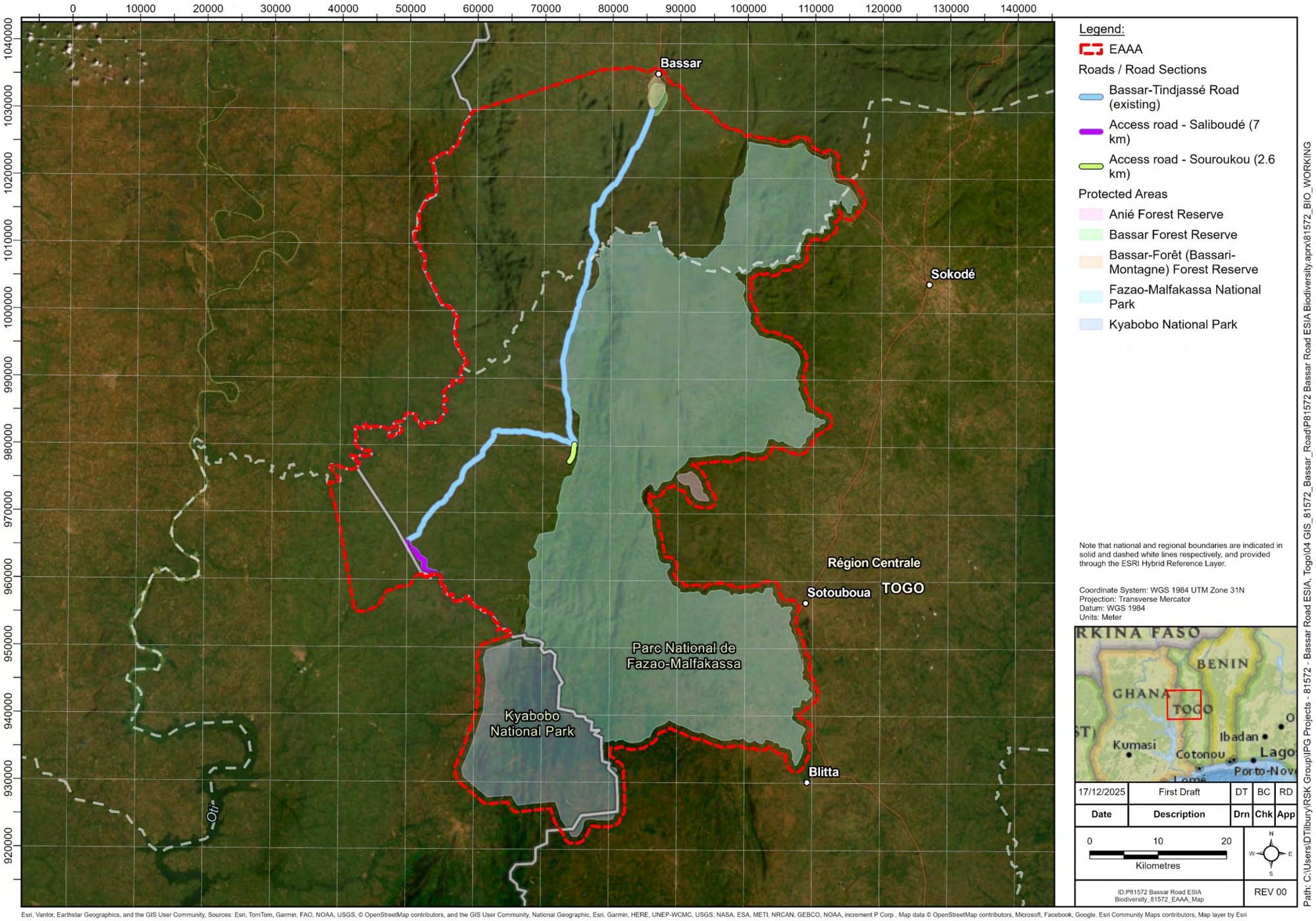

Figure 5-29: Preliminary CHA EAAA/AoA for Bassar-Tindjassé Road

5.4.11.3 Results

The literature review and IBAT data search identified 1,535 candidate species in EAAA. A total of 1,255 species were initially screened out as not threatened, endemic, migratory, congregatory or evolutionarily distinct. Following this, 278 candidate features were screened against Criteria 1 to 3. One additional species was identified as potential Critical Habitat trigger following a review of recent research.

A total of 12 features were found to trigger or potentially trigger the thresholds for CH under Criteria 1 to 3 and two features were found to trigger the thresholds for CH under Criteria 4 (Table 5-29).

Due to limitations in available baseline data relating to the numbers of reproductive units and population sizes of species within the EAAA as well as the global population or distribution data for certain species, it was not possible to quantitively assess all biodiversity features against the thresholds for critical habitat. Therefore, a precautionary approach was used for species based on the following categories:

- Qualifying: reasonable evidence that the species is present in the EAAA and meets or approaches the threshold
- Potentially qualifying: Insufficient evidence to confirm qualification but there is, for example, suitable habitat or other aspects that may suggest qualification
- Unlikely: reasonable evidence that the species does not meet the threshold
- Not qualifying: Available information is clear enough to conclude that the species does not meet the threshold.

Table 5-28: Identified and potential CH-triggers under criteria 1-3

Kingdom	Scientific name	Common name	IUCN status	CH-trigger criteria					
				1a	1b	1c	2	3a	3b
Plantae	*Syzygium kerstingii*	n/a	EN	P	N	P	P	N	N
Animalia	*Glomeremus nitidus* *	Adélé Raspy Cricket	DD	N	N	N	P	N	N
Animalia	*Hyperolius torrentis* *	Ukami Reed Frog	VU	N	P	P	P	N	N
Animalia	*Cyclanorbis elegans* *	Nubian Flapshell Turtle	CR	N	N	P	DD	N	N
Animalia	*Gyps africanus*	White-backed Vulture	CR	N	N	P	N	DD	DD
Animalia	*Necrosyrtes monachus*	Hooded Vulture	CR	N	N	P	N	DD	DD
Animalia	*Leimacomys buettneri* *	Groove-toothed Forest Mouse	DD	N	N	N	P	N	N
Animalia	*Colobus vellerosus*	White-thighed Colobus	CR	P	N	Y	N	N	N
Animalia	*Loxodonta cyclotis* *	African Forest Elephant	CR	N	N	Y	N	N	N
Animalia	*Loxodonta africana* *	African Savanna Elephant	EN	N	N	P	N	N	N
Animalia	*Lycaon pictus* *	African Wild Dog	CR	N	N	P	N	N	N
Animalia	*Acinonyx jubatus* *	Cheetah	VU	N	N	P	N	N	N

Key: Y = Yes, P = Potential, N = No, DD = Data Deficient. Species marked with * have been included under a precautionary approach, despite a paucity of data.

Table 5-29: Identified and potential CH-triggers under criteria 4-5

Area name	Justification	CH-trigger criteria		
		4a	4b	5
Fazao-Malfakassa National Park	• Key Biodiversity Area (KBA) • Important Bird Area (IBA) • Presence of Upper Guinean Forest ecosystem • Tentative UNESCO World Heritage site	DD	Y	DD
Kyabobo National Park (proposed)	• Key Biodiversity Area (KBA) • Important Bird Area (IBA) • Presence of Upper Guinean Forest ecosystem	DD	Y	DD

Key: Y = Yes, P = Potential, N = No, DD = Data Deficient.

While the preliminary CHA has identified that parts of the AoI is situated in CH based on the identified priority for conservation areas, further analysis is required to assess the risk of any project-related impacts to CH and to evaluate the efficacy of the project's proposed mitigation strategy in accordance with the mitigation hierarchy. It is recommended that further surveys are undertaken to inform and update the CHA. This work is recommended to fill data gaps in the knowledge of the distribution and potential abundance of species within the EAAA, particularly CH potentially qualifying species. The recommended work is as follows:

- Dry season survey. This should be undertaken to assess the seasonal variability of faunal species, distribution and abundance (including critical habitat triggers) due to potential changes in habitats, e.g., increase in the extent of open water.
- eDNA survey. This should be undertaken to ascertain the presence/likely absence of species within the project AoI that are rare, elusive or otherwise difficult to detect during survey walkovers such as fish, reptiles and mammals.

5.4.11.4 Priority biodiversity values (PBV)

PBVs are ecosystems, habitats, species and protected areas with a high degree of irreplaceability and vulnerability and may include potential critical-habitat triggers. Likely PBVs were identified based on criteria noted in the IFC PS (IFC, 2012) and Guidance Note (GN) 6 (IFC, 2019).

In addition to the potential critical-habitat triggers identified (see Table 5-28 and Table 5-29. above), a total of 10 species considered to be PBVs (all species of birds) were recorded during the wet season fauna surveys, i.e., Bateleur (IUCN Endangered) and Guinea Turaco, Violet Turaco, Cassin's Hawk-Eagle, West African Pied Hornbill, Piping Hornbill, Senegal Parrot, Fanti Sawwing, Splendid Sunbird and Senegal Eremomela (listed as qualifying species of the Fazao-Malfakassa National Park IBA).

Four PBV plant species, *Pterocarpus erinaceus* (IUCN endangered), *Afzelia africana, Khaya senegalensis* and *Vitellaria paradoxa* (IUCN vulnerable) were recorded during the botany surveys.

Two nationally protected areas (Bassar and Bassari-Montagne Forest Reserves) are present within the AoI and are PBVs due to their high degree of irreplaceability and vulnerability.

5.4.12 **Invasive species (IAS)**

IUCN defines IAS as "animals, plants or other organisms that are introduced by humans, either intentionally or accidentally, into places outside of their natural range, negatively impacting native biodiversity, ecosystem services or human economy and well-being" (IUCN, n.d.). The accidental or intentional introduction of IAS fauna or flora may become invasive and spread rapidly by outcompeting native flora and fauna when introduced to new habitats, posing a significant threat to biodiversity. IAS are recognised to be a major global threat to biodiversity and ecosystem services (IFC, 2012).

The wet season fauna baseline surveys did not identify the presence of invasive alien species (IAS) within the AoI. The botany survey recorded the presence of eight introduced species of plants, including certain invasive species including *Azadirachta indica* and *Senna obtusifolia.*

5.4.13 Trends and threats

Much of West Africa has seen an increased rate of conversion of natural habitats to agricultural landscapes, both for subsistence cropland and grazing pasturage (see e.g., Herrmann et al, 2020). The impact of this expansion, due to the expansion of human populations, is clearly visible within the project area, both on the ground and via satellite imagery where the conversion of natural habitats to cropland is visible month to month in some areas.

The grazing of cattle and goats across natural habitats in the project area, including protected areas, may result in the disturbance of native fauna, and the loss of ecological function in the understory of woodlands (Conte, 2010). Grassland over-grazing can also have substantial negative effects on biodiversity and ecosystem functioning if not carefully managed at sustainable grazing levels. Grazers such as cattle and goats may also introduce parasites and diseases to wild populations of susceptible species.

Also connected to the expansion of humans into previously wild areas is the increased distribution of domesticated cats and dogs and other associated species such as chickens. Cats and dogs are both highly skilled carnivorous hunters and can decimate populations of small and medium sized mammals, birds and reptiles in the vicinity of any human settlement (Barnes et al., 2018), which includes large towns such as Bassar and smaller settlements such as Bangan, Boulohou and Djarekoanga. Where allowed to run feral, both cats and dogs have previously been responsible for extirpations of local fauna and can have far reaching impacts on ecological systems.

Other threats include sand extraction and gold mining in riverbeds so as the Mo River (which can lead to the destabilisation of banks and the localised destruction of riparian vegetation), quarrying, poor waste management, wind-blown litter, spread of invasive species and the effects of firewood collection and small-scale charcoal production. The aftermath of previous construction activities in the form of abandoned quarries and borrow pits may also form highly degraded habitats in which invasive flora proliferate. However, these same features can become flooded and may provide important habitats for certain wetland species.

5.5 Socioeconomic baseline

This section presents the findings from both secondary data, obtained through a desk-based review, and primary data collected during the scoping visit and social baseline survey. The analysis is structured across three levels:

- national: provides an overview of Togo's broader demographic, social and economic context and is based on secondary data.
- regional: focuses on the Kara and Centrale regions, highlighting key social characteristics and regional dynamics and is based on secondary data.
- local: analyses conditions at the community level within the primary AoI, based largely on primary data collected during the social baseline survey conducted in November 2025. Where relevant, secondary data has been incorporated to provide additional context, particularly for information aggregated at the commune level.

Before presenting these findings, this section defines the socioeconomic AoI and outlines the methodology applied in data collection and analysis.

5.5.1 Socioeconomic AoI

For this report, the social AoI is categorised into three tiers: primary, secondary and tertiary. Information on the primary and secondary AoI is presented under the local-level analysis, while details on the tertiary AoI are included within the national and regional levels.

5.5.1.1 Primary AoI

The primary social AoI includes the communities:

- located along the road alignment (including slip roads), who are most likely to experience immediate and tangible impacts from the project. An AoI extending up to 1 km from the road and any other construction activities (e.g., construction camp, quarries) has been considered to capture potential impacts related to land acquisition, noise, dust, visual disturbance and other construction-related disruptions. Where relevant environmental receptors have a different AoI, e.g., air quality and noise, a precautionary principle is applied and the the largest AoI is considered - in this case all relevant environmental AoIs are less than 1 km.
- situated closest to the transportation corridors who are more likely to experience impacts such as increased traffic volumes and delays for traders transporting good.

These communities may also benefit from the project through local employment opportunities in construction, logistics and support services, helping boost the local economy and community support.

As shown in Figure 5-30, the primary social AoI includes the following communities that are located along the road alignment (from north to south):

- Saboudi
- Kpalou
- Tchessi
- Baghan
- Village Mô

- Boungoulou
- Banda
- Folo
- Kagnigbara
- N'Konta
- Kagna
- Boulohou
- Souroukou
- Djarkpanga
- Warangni
- Gnomandé
- Okou
- Sibonia
- Tindjassé
- Saiboudè.

5.5.1.2 Secondary social AoI

The secondary social AoI includes communities that are not located directly along the road or near transportation corridors and which lie beyond the 1 km buffer from the road and other construction activities. These communities are typically affected in more indirect ways, such as through new employment opportunities that shift local labour dynamics, changes in the demand for goods and services, and demographic shifts caused by an influx of workers.

5.5.1.3 Tertiary social AoI

The tertiary social AoI includes communities beyond the primary and secondary social AoIs, extending to national and even international or transboundary levels. While these communities are not close to the project site, they may still be affected through supply chain-related impacts such as economic benefits as well as risks, particularly among workers recruited by contractors or labour brokers.

As shown in Figure 5-30, the tertiary AoI includes:

- the capital Lomé
- the regional capitals of Kara and Centrale (Sokodé) regions.

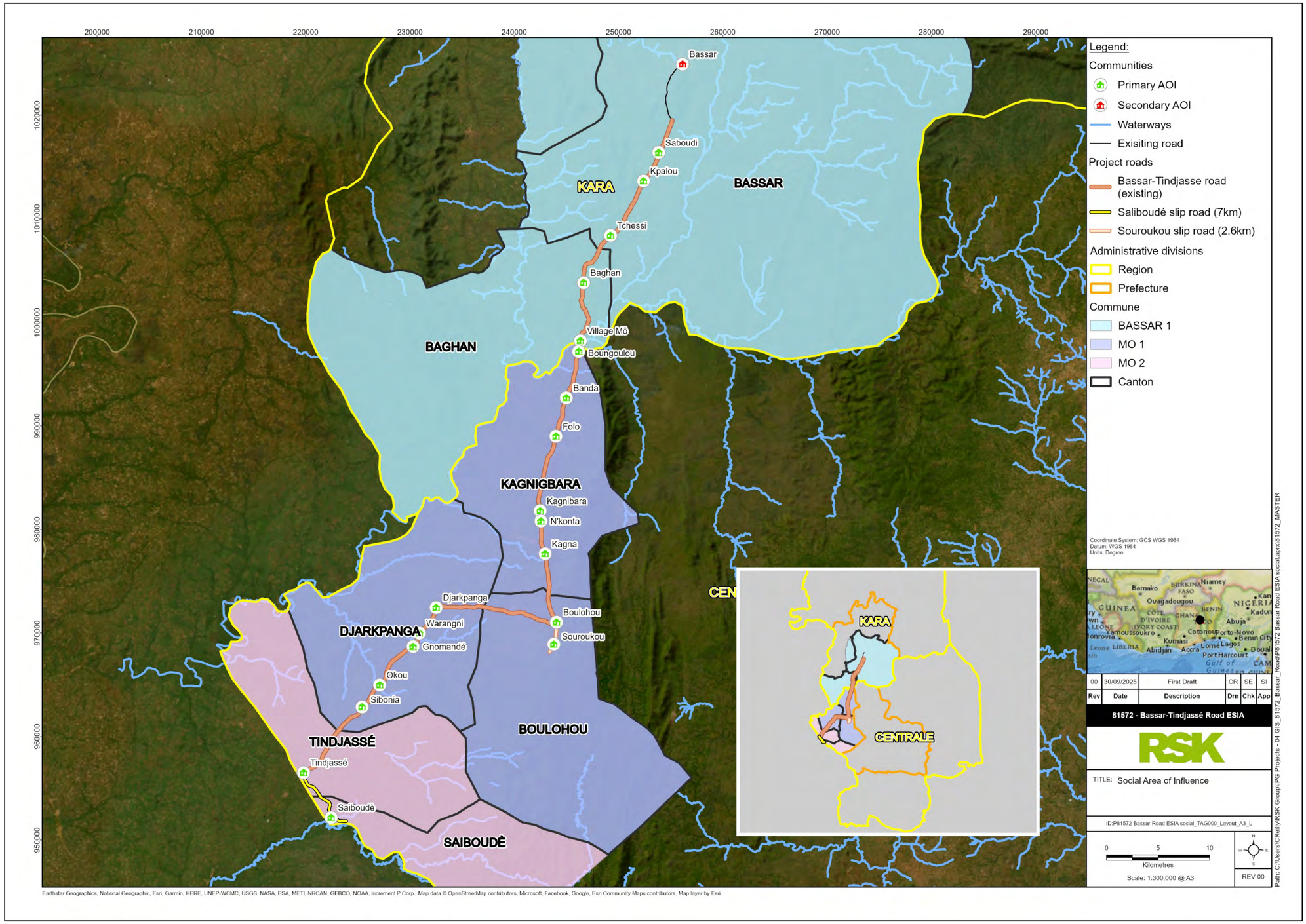

Figure 5-30: Social AoI

5.5.2 Data collection methodology

The social baseline has been compiled from primary and secondary data.

5.5.2.1 Secondary data

Qualitative and quantitative secondary data were collected from various sources to provide contextual information at the national (Togo) and regional (Centrale Region, Kara Region) level, including:

- previous ESIAs undertaken in recent years in Togo by RSK
- ESIA conducted for the project in 2012 (AGEIM and DECO, 2012)
- 'Monograph of the Kara Region' produced by the Ministry of Panning Development and Coordination and the Ministry of Territorial Development
- 'Monograph of the Centrale Region' produced by the Ministry of Planning Development and Coordination and the Ministry of Territorial Development
- reports published by national agencies, research institutes and international organisations
- Communal diagnostic reports (MDTT 2025; MDTT 2023a; MDTT 2023b)
- research papers published in academic journals
- public internet sources.

5.5.2.2 Primary data collection

Site reconnaissance survey

A site reconnaissance survey was conducted during the scoping phase in September 2025 by RSK's local consultants CEMP. A drive over survey of the road alignment was undertaken and observations gathered at all the communities along the route (primary social AoI). Observations were made on demographics, livelihood and economic activities, land use, ecosystem services, community infrastructure (including water supply and housing), health facilities, schools, road infrastructure and cultural heritage. Photographs were taken during the survey. The raw social baseline data collected by the field team was recorded in the field by hand into the field guide templates. The data was compiled, interpreted and embedded within secondary data at the national, governorate and district levels to develop the socioeconomic baseline of the scoping report.

Social baseline survey

During the baseline and impact assessment phase, a field team of five local social consultants from CEMP and one ESIA consultant from RSK conducted social baseline data collection between 28 October and 06 November.

At national level (in Lomé), a key Informant Interview (KII) was conducted with the Union of Togolese NGOs (UONGTO).

Requests for secondary data (e.g., socioeconomic reports, statistics, local development plans) were made from the Mayor of Mo1, Mo2 and Bassar 1 and health data was requested from health centres in the prefectures of Djarkpanga and Bassar.

At local level, a sample of seven PACs were chosen for social baseline data collection. They were selected primarily because they serve as the canton capitals. The sample reflects a diversity of livelihood strategies, access to basic services, geographic

representation and potential exposure to project impacts to ensure that the data collected is representative and supports a robust understanding of the socioeconomic context within the primary social Area of Influence (AoI). Social baseline data was collected in the following PACs. These are referred to in the baseline as 'surveyed PACs':

- Kpalou
- Baghan
- Kagnigbara
- Boulohou
- Djarkpanga
- Tindjassé
- Saiboudè.

The following data collection activities were conducted in each PAC:

- focus group discussions (FGD) with women and men to understand different livelihood strategies and ecosystem service use
- key informant interviews (KII) with village leaders, market sellers, teachers and healthcare staff
- a walk-over survey was conducted where GIS points and visual observations were made of land use, community infrastructure and archaeology and cultural heritage, particularly fetish sites[1].

Table 5-30 presents the data collection activities carried out in each PAC.

All activities included an element of identifying vulnerable groups and exploring knowledge, perceptions and attitudes towards vulnerable groups. Women only focus group discussions were conducted to explore gender matters with particular reference to women's perceptions and concerns.

[1] A fetish site in Togo is a physical place such as a shrine, tree, river, mountain associated with Vodun (voodoo) spiritual practices, where fetishes (objects believed to contain or channel spiritual power) are worshiped. Fetish priests (traditional healers or diviners) consult spirits through these objects and conduct ceremonies. These sites are deeply embedded in local religious traditions and belief systems.

Table 5-30: Primary data collection in surveyed PACs

Surveyed PAC	Date	FGD with men	FGD with women	KII with village chief	KII market sellers	KII with school	KII with healthcare facility	Walk-over survey and GIS points
Kpalou	01.11.25	✓	✓	✓				✓
Baghan	02.11.25	✓	✓	✓	✓		✓	✓
Kagnigbara	05.11.25	✓	✓	✓		✓	✓	✓
Boulohou	06.11.25	✓	✓	✓		✓		✓
Djarkpanga	03.11.25	✓	✓	✓		✓		✓
Tindjassé	04.11.25	✓	✓	✓	✓			✓
Saiboudè	04.11.25	✓	✓	✓	✓	✓		✓

5.5.2.3 *Data capture, management and analysis*

Data from all the FGDs and KIIs has been compiled and interpreted to develop a qualitative description of the socioeconomic baseline. This has then been triangulated with field observations and secondary sources to enhance validity and reliability. The data have provided the basis for the identification and assessment of project impacts on social receptors and a robust basis for future comparison, enabling the recording and monitoring of changes that take place in the socioeconomic environment as a result of the project.

5.5.2.4 *Data assumptions and limitations*

The following assumptions were made:

- no significant changes will take place in the study area between the time of data collection and the submission of the report
- most respondents provided reliable information.

Limitations include the following:

- the baseline is based on a limited sample of villages within the primary AoI
- no household survey was conducted in the settlements in the primary sphere of influence. As a result, no quantitative results are available in terms of household incomes, health and livelihood activities. The data in the report are qualitative in nature, based on group and individual interviews.
- no meeting was held with Fulani pastoralists due to their highly mobile lifestyle, which made scheduling and engagement difficult
- no meeting was held with the Togolese National Human Rights Commission (CDNH), as officials generally require prior authorisation from their hierarchy before commenting on such topics. In RSK and CEMP experience, attempts to engage, including during past projects, did not result in responses to questionnaires despite in-person visits.
- data sets for the different topics (e.g., health, education) might not be exhaustive (may not cover the entire primary sphere of influence)
- the RSK consultants did not speak French or local languages and therefore relied on English translation during data collection in the villages.

5.5.3 History and governance

Togo is located in West Africa along the Gulf of Guinea. It is bordered to the north by Burkina Faso, to the south by the Atlantic Ocean, to the east by Benin and to the west by Ghana. Lomé serves as the capital city and is the country's main administrative hub, as well as the centre of Togo's commercial and financial activities.

5.5.3.1 *Political history*

Togo is home to various ethnic groups and small kingdoms, including the Ewé and Mina peoples along the coast and the Kabye in the north. In the late 19th century, Germany established control over the territory, establishing the colony of Togoland in 1884. Following World War I, Togoland was divided between Britain and France under League of Nations mandates, with the larger eastern portion administered by France. French Togo became an autonomous republic within the French Union in 1956 and achieved full independence on 27 April 1960.

Sylvanus Olympio served as Togo's first president until his assassination in 1963, which marked the beginning of a series of political upheavals and military coups. General Gnassingbé Eyadéma seized power in 1967 and ruled for nearly four decades, establishing a one-party state before introducing limited political reforms in the 1990s. After Eyadéma's death in 2005, his son, Faure Gnassingbé, assumed the presidency, sparking political tensions and contested elections.

Since the mid-2000s, Togo has gradually implemented democratic reforms and economic liberalisation, supported by international partners. Despite periodic political disputes, the country has experienced relative stability and moderate economic growth, with recent efforts focused on infrastructure development, governance improvements and poverty reduction (World Bank, 2023a; UNDP, 2022).

5.5.3.2 Administrative structure and governance

Togo is a unitary republic with a presidential system of government. The President serves as both Head of State and Head of Government, elected by universal suffrage. The President appoints a Prime Minister, who leads the Council of Ministers and coordinates government action. Legislative power is vested in the National Assembly, a unicameral parliament elected through multi-party elections. The judiciary is constitutionally independent and is organised under the Supreme Court, Constitutional Court and other lower courts (UCLG, n.d.).

Administratively, Togo is divided into five regions (Maritime, Plateaux, Centrale, Kara and Savanes), each led by a Regional Prefect appointed by the central government. These regions are further subdivided into prefectures (39 in total), which are the key units of territorial administration. Prefects act as the government's representatives, coordinating state services and overseeing local governance. The local governance structure is managed by municipalities. The administrative structure of each district or village includes a traditional chieftaincy headed by a district chief chosen according to the rules of customary designation and a Committee for Neighbourhood Development (CDQ) (UCLG, n.d.).

The project traverses the Kara Region and the Central Region:

- The Kara region has seven Prefectures, 22 communes and 75 cantons (Presidency of the Republic, 2021a). Kara is the regional capital.
- The Centrale Region has five prefectures subdivided into 61 cantons (Presidency of the Republic, 2021b). Sokodé, is the regional capital.

Local authority in the primary Social AoI is structured around various traditional figures, including canton chiefs, village chiefs, neighbourhood chiefs, wise men and notables. Typically, these authorities are appointed through customary procedures, although political considerations can sometimes override traditional processes (AGEIM and DECO, 2012).

The chief is the regulator of peace and social cohesion in his administrative area. The traditional chief is the guarantor of habits and customs. He organises and manages customary affairs, prevents and settles conflicts and disputes between his constituents (Presidency of the Republic, 2021b).

Table 5-31 and Figure 5-31 highlight the regions (2), prefectures (2), communes (3) and cantons (7) affected by the project.

Table 5-31: Project-affected regions, prefectures, communes and cantons

Region	Prefecture	Commune	Canton
Kara	Bassar	Bassar 1	Bassar
			Baghan
Centrale	Mô	Mô 1	Kagnigbara
			Djarkranga
			Boulohou
		Mô 2	Tindjassé
			Saiboudè

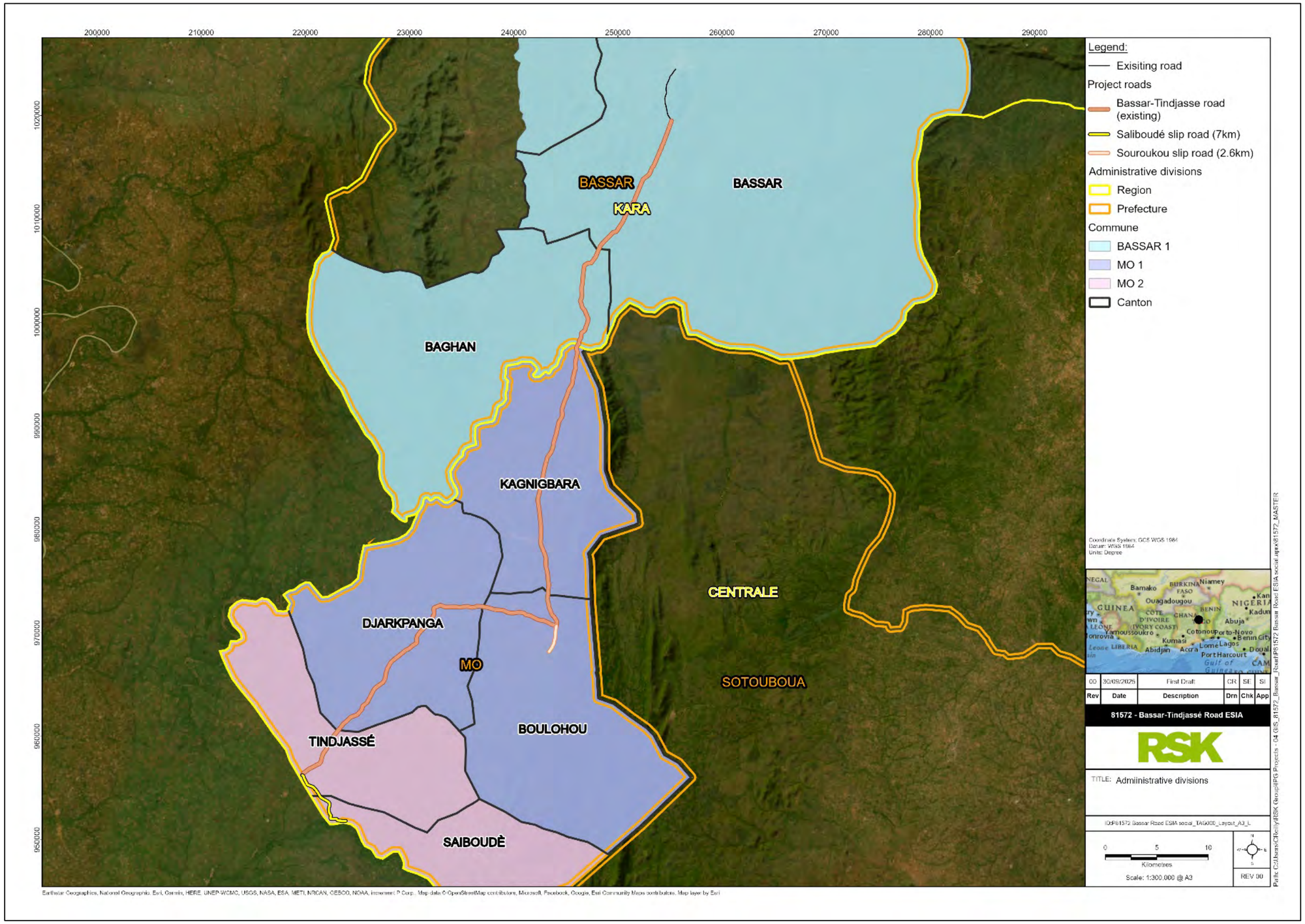

Figure 5-31: Administrative divisions

5.5.3.3 *Brief history of the project-Affected Communities (PAC)*

The following historical profiles of the surveyed PACs were compiled through KIIs conducted with village leaders:

- Kpalou: established in 1993 by Faya Kadjada. The village is named after the 'kpalou' tree, traditionally used as a toothpick. Since its founding, Kpalou has had four chiefdoms, with the fourth currently in place.
- Baghan: originating as a hunting village, the community settled here due to the availability of spring water from Bobolim and Ribobrim.
- Kagnigbara: Kagnigbara canton was created around 1960 by the hunter Wapion Foyoo, the first to settle in the locality. Wapion Foyoo was attracted by a water source called Gnagbalaki and, over time, gathered people to form the village, which takes its name from the canton.
- Boulohou: founded by Nataka Fané, originally from Southern Sudan Kadjada. Nataka Fané was the eldest son of the founder of Great Bassar (circa 400 BC). His brothers went on to establish Nangbani and Kebedoumpou.
- Djarkpanga: founded by Djarkpanga and dates back to pre-colonial times, predating the arrival of settlers. When the Tombé arrived, the plain of Mô was uninhabited, with neighbouring communities including Bassar, Tem and Dagomba. After settling, Djarkpanga discovered Souroukou and Boulohou in the Plain of Mô, leading to allegiance with the Mountain. The Kabyèe settled in Tindjassé
- Tindjassé: Tindjassé canton was founded around 1960 by the hunter Takougnadi, the first to arrive in the area. The village is located near the border and is named after the surrounding forest. Takougnadi was drawn to the area by the Niébé plant and gradually formed a community. The Kabyèe settled in Tindjassé
- Saiboudè: Saiboudè canton was established around 1960 by Chief Saibou, who migrated from Djarkpanga for hunting. Over time, he gathered others and formed the village, which is named after its founder.

5.5.3.4 *Local governance structure*

Decision making structures are centred around chiefdoms across all surveyed PACs, according to KIIs with community leaders. Decisions made at the village level are first discussed by the village chief with help from his notables. If the village chief is unable to arrive at a consensus, he will report the issue to the canton chief, the mayor and the prefect. According to local leaders, women are involved in these decision-making processes across all surveyed PACs, with the leader of the women's group and her office contributing to decision making meetings. Across all surveyed PACs, leaders describe key decision-making stakeholders, namely:

- Chief
- Comité Villageois de Développment (CVD) – Village Development Committee
- Notables
- Women's Group
- Youth Group
- Child Protection Officers (not present in Kagnigbara)
- Associations of Disabled People (only present in Boulohou).
- Local institutions and NGOs.

Local NGOs and community organisations play a key role in service delivery across Bassar. Based in Baghan, SALEM-Togo is among the key humanitarian organisations in the area. Active since 1997, it focuses on improving living conditions and supporting environmental protection. The organisation operates a forest-school, an organic agriculture training centre and regular workshops on natural medicine, providing locally accessible services that strengthen community resilience. SALEM-Togo is recognised nationally for its pioneering role in sustainable land management and nature conservation, working closely with villages to promote ecological practices.

5.5.3.5 Women's associations

Women's organisations are present across all surveyed PACs (except Kpalou, where data was not collected) according to FDGs with women (see Table 5-32). The most prevalent type of organisation reported is the *Three Keys* savings and money-raising club, found in Baghan, Djarkpanga, Saiboudè, Tindjasse and Boulohou. Beyond savings groups, women's organisations engage in diverse activities including:

- agricultural cooperatives
- community gardening (see Section 5.5.8.3)
- agri-food processing
- mutual aid initiatives.

Table 5-32: Women's associations reported by women across surveyed PACs

Surveyed PAC	Total	Name	Activities	Funding source
Kpalou	No data			
Baghan	3	Three Keys	Savings and money raising	Self-organised
		Club de Mère	Medical care support and village hygiene	Self-organised
		Project MikaGo	Shea butter production training	Swedish government, Swiss Agency for Development and Cooperation (SDC), FAO
Kagnigbara	3	Solimwe	Savings, mutual aid and advice	Copec Djarkpanga
		FAWITA	Agri-food processing - cassava to gari, seed/harvest services	ANADEB
		DIMORE	Savings and loans	RAS
Boulohou	10	Badounè, Sourallah, Youwè Sodjo, Somé Soka, Essolatcheleda, Imanoubia	Tontine/savings	Self-organised
		Essongnedoro	Red Cross	Red Cross
		Women's group	Community development	Self-organised
		Planting activities	Organisation and development of planting activities	Self-organised
		Merchant activities	Organisation and development of merchant activities	Self-organised
Djarkpanga	3	Three Keys	Savings and money raising	No data
		Farming Association	Farming maize, soya beans, pineapple, cashews	
		FNFE	Government organisation	

Surveyed PAC	Total	Name	Activities	Funding source
Tindjassé	10	Badounè, Sourallah, Youwè Sodjo, Somé Soka, Essolatcheleda, Imanoubia	Tontine/savings groups	Self-organised
		Essognedoro	Red Cross	Red Cross
		Women’s group	No information given	Self-organised
		Group of planters	Agricultural group	Self-organised
		Merchant group	Enterprise group	Self-organised
Saiboudè	4	Three Keys	Savings and money raising	Self-organised
		Women's farming	Agriculture	Self-organised
		Community gardening	Growing okra, spinach, pepper, boma	Self-organised
		Women's committee meetings	No information given	Self-organised

5.5.4 Demographics

5.5.4.1 National level

Togo's estimated population in 2025 is approximately 9.7 million people, with an annual growth rate of just over 2% (Worldometer, 2025). The country remains youth-dominated, with a median age of only 19 years and nearly three-quarters of the population under 35 (Data Portal, 2025). The population is roughly evenly distributed between rural and urban area, with about 44–45% living in urban areas, concentrated particularly around Lomé and the southern coastal region (Data Portal, 2025). Ethnically, Togo is diverse, with more than 30 groups, the largest being the Ewé (35%) and Kabre (22%), alongside Mina, Moba and Kotokoli communities. French is the official language, with Ewé and Kabiye recognised as national languages widely used in education and administration. Togo is pluralistic: roughly half the population adheres to indigenous beliefs, about 30% identify as Christian and nearly 20% as Muslim (CIA Factbook, 2024).

5.5.4.2 Regional level

Kara

According to data from the Directorate-General of Statistics and National Accounts (DGSCN), the Togolese national body responsible for census operations, the population of the Kara Region has increased from 237,304 inhabitants in 1970 to 426,651 inhabitants in 1981, i.e., an annual growth rate of just over 6%. In 2021, the regional population has reached 957, 683 inhabitants, indicating that the growth rate has slowed by a third to only 2% per year (Presidency of the Republic, 2021a). The population is concentrated in the western part of the region, particularly around Bassar and Konkomba (Presidency of the Republic, 2021a).

Internal migration levels (12.1%) are well above the national average, highlighting Kara's strong pull compared to surrounding areas, resulting in higher land prices and rising rents (Presidency of the Republic, 2021a).

The Kara region is experiencing a decline in fertility and a decrease in the number of children per woman, which fell from 5.9 in the second Demographic and Health Survey (EDST-II) in 1998 to 4.8 in 2014 (DGSCN, 2014) (Presidency of the Republic, 2021b). Infant mortality has fallen considerably, from 80% in 1988 to 49% in 2013, mainly attributed to the improvement of health infrastructure and especially to the provision of basic health care (Presidency of the Republic, 2021a).

Centrale

According to DGSCN, the population of the Centrale Region has increased from 173,288 inhabitants in 1970 to 768,000 in 2021. The increase in population is largely due to in-migration. The Centrale Region continues to experience in-migration from the northern regions and the plateaux region (Presidency of the Republic, 2021b). The annual population growth rate of 2.53% for the region mirrors the national growth rate. The region also experiences out-migration; young people and adults in search of agricultural work go south to the coffee and cocoa plantations of the Plateaux Region or to Ghana, while young people of all genders migrate to Lomé, Gabon, Nigeria, Côte d'Ivoire and Benin (Presidency of the Republic, 2021b).

5.5.4.3 *Local level*

Population and household characteristics

According to census data from the Ministère Délégué Chargé du Développement des Territoires (MDTT) (2025), demographic growth in the primary AoI has been primarily driven by natural increase. In Bassar 1 commune, the population rose from 51,456 in 2010 to 65,059 in 2022, reflecting a sustained annual growth of 2.2%. This has been primarily driven by high fertility rates (estimated at 4.7–5 children per woman), contributing to a youthful population, with nearly 50% of the population under age 20. Mortality indicators have improved but remain high in rural areas, with infant mortality at 69 per 1,000 and under-five mortality at 111 per 1,000 (MDTT, 2025). Sex ratios in Bassar 1 show a slight male majority (50.4% men), contrasting with the national trend where women represent 51.3% of the population.

In Mô 1, population density remains low with most households living in rural areas (MDTT, 2023a). Nevertheless, significant demographic expansion is occurring around agricultural corridors and emerging semi-urban centres (MDTT, 2023a). Moreover, in Mô 2, dispersed settlements and rapid population growth in administrative hubs, such as Tindjassé, reflect ongoing urbanisation pressures (MDTT, 2023b).

According to KIIs with community leaders, the average village size across affected communities is 2,149 residents. Populations range from 8,446 in Tindjassé to 439 in Sibonia, according to data from local health centres, as shown in Figure 5-32. Population changes also vary across villages. According to local leaders, in the past five years four communities have experienced population growth due to:

- migrants returning to Togo after immigrating to other West African countries (Kpalou, Boulohou)
- new births (Baghan, Djarkpanga, Boulohou)
- decreasing mortality rates (Boulohou).

Four villages have experienced a net decline in populations following out-migration of residents to Togolese cities alongside Ghana and Nigeria (Kagnigbara, Boulohou Tindjassé, Saiboudè). Village leaders in Baghan and Djarkpanga also note significant rural exodus, although this has been compensated by high birth rates. This data aligns with DGSCN data regarding regional trends of in migration into Kara (Kpalou, Baghan) and a mix of in and out migration in Centrale (Kaginigbara, Boulohou, Djarkpanga, Tindjassé, Saiboudè).

Across all communities, the average household ranges from seven to nine people, with single person households being present in all villages. Households can reach sizes of 13 (Kpalou, Baghan, Saiboudè, Kagnigbara), 15 (Djarkpanga, Tindjassé) and 19 (Boulohou).

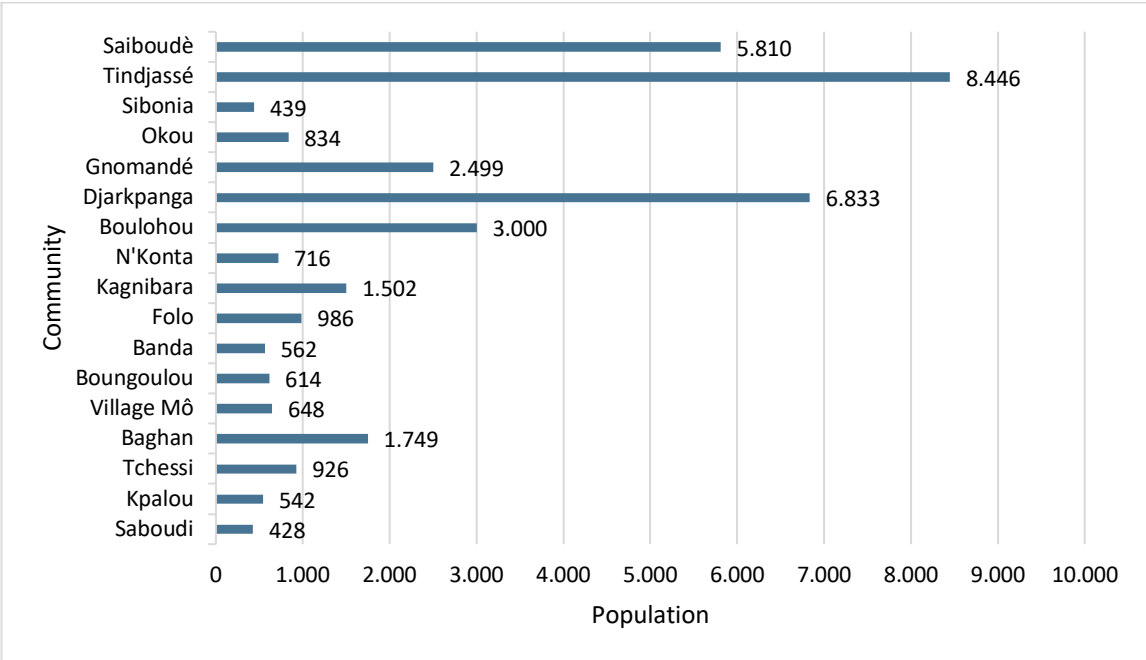

Figure 5-32: Population by PAC in primary AoI

Source: population data obtained from local health centres for all communities except Boulohou, where data was collected from village leader

Note: no data available for Kagna, Souroukou or Warangni

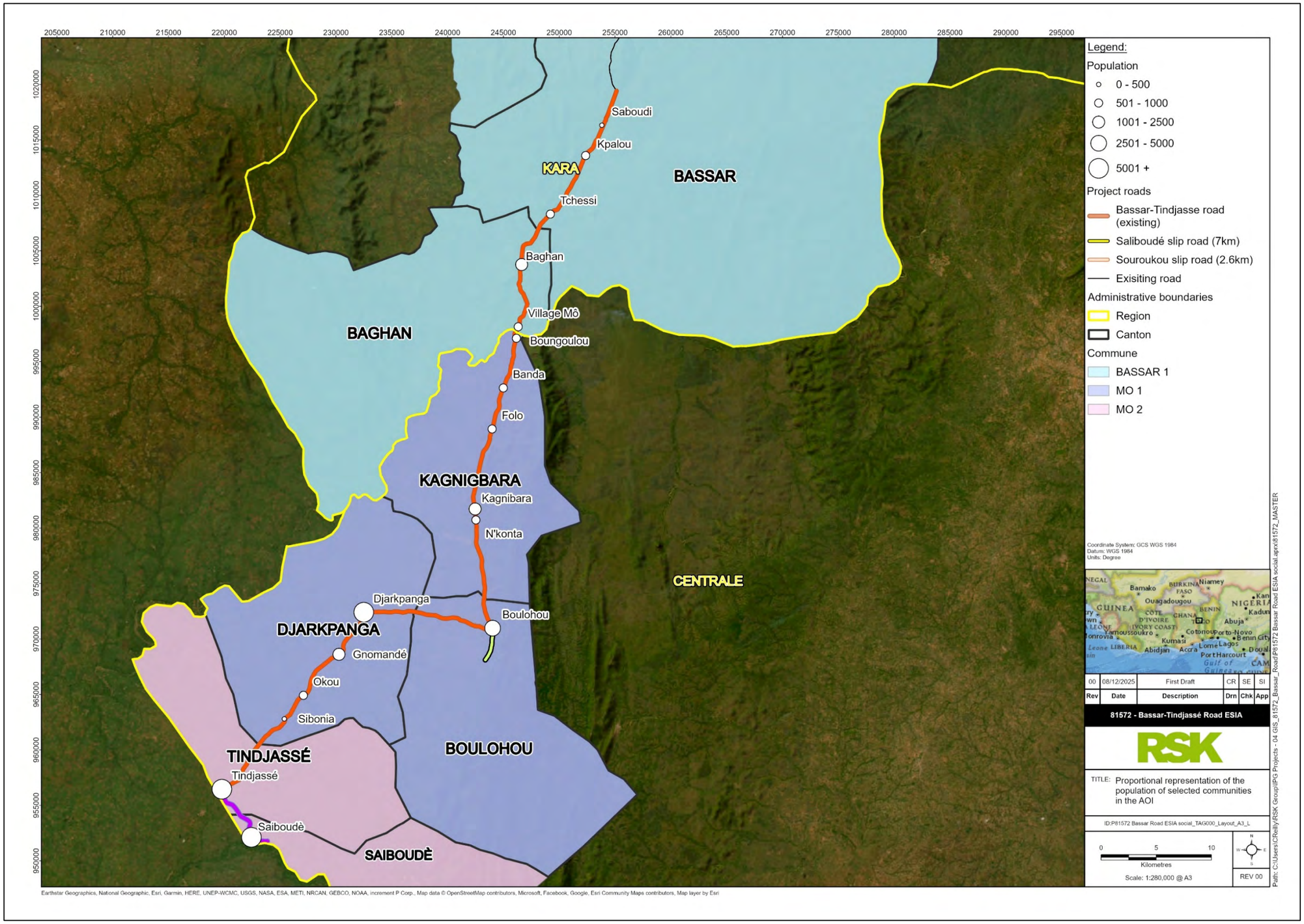

Figure 5-33: Proportional representation of the population of communities within the social AoI

Migration

Out-migration

While local leaders claim out-migration is high, they also note surveyed PACs are witnessing a trend of returning out-migrants, who are typically men of 18 to 35 years of age, due to unspecified challenges in their destination countries (see Table 5-33). Government data confirms out-migration is particularly high among young people aged 15–35 in Bassar, including a growing number of young women, and that returning migrants often report negative experiences such as health problems or economic loss (MDTT, 2023). The report further shows migration dynamics in Bassar are driven by both economic and climatic/environmental pressures (MDTT, 2023). For instance, recurrent droughts and changing rainfall patterns push households to move seasonally or permanently towards zones offering better agricultural conditions (MDTT, 2023).

According to village leaders, migrants visit home between every eight months to one year. Moreover, leaders in Tindjassé and Saiboudè also note they see a surge in temporary in-migration during the end of the year and festivals, such as Tabski and the Yam Festival (see Section 5.5.12).

While the MDTT (2023) reports remittances are important source of income for rural households across Bassar, leaders across all surveyed PACs report that remittances are uncommon in practice. Nevertheless, they note when remittances are sent, migrants utilise mobile transfer services.

In-migration

The commune of Bassar 1 experiences substantial cross-border migration with Ghana, facilitated by trading routes, family networks and cultural proximity (MDTT, 2023). Additionally, the area receives periodic influxes of Peulh pastoralists who migrate seasonally in search of water and grazing land for their herds (MDTT, 2023). These transhumant movements constitute additional pressure on land and natural resources and can interact with local farming systems, contributing to localised tensions if not properly managed (MDTT, 2023). Leaders across all surveyed PACs further corroborate this, noting Peulh pastoralists have contributed to conflicts with farmers (see Section 5.5.12.3).

See Table 5-33 for an overview of the origins of in-migrants and destinations of out-migrants across surveyed PACs, as reported by local leaders.

Table 5-33: Destinations of in- and out-migrants by surveyed PAC

Surveyed PAC	Origins of in-migrants	Destinations of out-migrants
Kpalou	• Fulani pastoralists from Niger Burkina, Mali, Benin, Nigeria	• Internal: Atakpamé, Sokodé, Lomé • Continental: Ghana, Benin, Nigeria
Baghan	• Fulani pastoralists from Niger Burkina, Mali, Benin, Nigeria	• Internal: Bassar, Atakpamé, Sokodé, Lomé • Continental: Ghana, Benin, Nigeria, Burkina Faso, Niger

Surveyed PAC	Origins of in-migrants	Destinations of out-migrants
Kagnigbara	No data	• Internal: Atakpamé, Sokodé, Kara, Lomé • Continental: Nigeria, Ghana, Benin
Boulohou	• Fulani pastoralists from Niger Burkina, Mali, Benin, Nigeria	• Internal: Bassar, Lomé and other cities • Continental: Ghana, Benin, Nigeria
Djarkpanga	• agriculturalists from interior prefectures of Bassar, Tchaoudjo, Dankpen, Kéran, Sotouboua, Assoli, Doufelgou, Kozah, Tandjouaré, Oti, Tône and Ogou and from neighbouring countries such as Ghana, Benin, Niger and Nigeria • Fulani pastoralists from Niger Burkina, Mali, Benin, Nigeria	• Internal: Bassar, Atakpamé, Sokodé, Lomé • Continental: Ghana, Benin, Nigeria, Gabon, Algeria, Burkina Faso, Niger • International: Saudi Arabia
Tindjassé	• Fulani pastoralists from Niger Burkina, Mali, Benin, Nigeria	• Internal: Bassar, Sotouboua, Sokodé, Kara, Lomé • Continental: Ghana, Nigeria, Benin, Burkina Faso, Niger
Saiboudè	No data	• Internal: Bassar, Sotouboua, Sokodé, Kara, Lomé • Continental: Ghana, Benin, Burkina Faso and Niger

5.5.5 Ethnicity, language and religion

5.5.5.1 National level

Togo has approximately 40 ethnic groups speaking approximately 44 languages. According to CIA Factbook (2025), the main ethnic groups are:

- Ewé, who predominantly reside in the south of Togo
- Kabyé, who are traditionally from the northern part of the nation
- Mina, who reside mainly on the coast.

The official language of Togo is French, although many Togolese people are multilingual and also speak local languages (CIA factbook, 2025).

Paulh, or Fulani Pastoralists, are nomadic livestock herders who graze livestock through Togo. Fulani tend to originate from wider West African nations, with security threats in the Sahel influencing the migration patterns of the group (Loukoumanou et al., 2023). Peulh herders are often seen as *foreigners* by settled communities, with whom they often experience conflict over livestock induced crop damage (see Section 5.5.12.3).

5.5.5.2 *Regional level*

Kara Region

The Kara Region in northern Togo is predominantly inhabited by the Kabyé ethnic group, with significant populations of Moba, Konkomba, Lamba, Losso, Kotokoli (Tem) and Adele. The main languages spoken correspond to these ethnic groups, with French serving as the official language used in administration and education. Religious practices include Christianity, Islam and animism and are often practiced alongside one another (City Population, 2025).

Centrale Region

In the Centrale Region, the population includes Kabyé, Kotokoli (Tem), Adele, Ana (Ifè), Gen-Mina and Konkomba ethnic groups. Local languages reflect these communities, with French as the official language. As in the Kara Region, religious practices are diverse, encompassing Christianity, Islam and animism (City Population, 2025). Sokodé is also recognised as a historical centre of Islam in Togo (Republic of the Presidency, 2021b).

5.5.5.3 *Local level*

All three communes are religiously diverse, although traditional African religions play a dominant role across PACs. In Bassar 1, traditional religion is practiced by over half the population, with Christianity and Islam also significant. In Mô 1, traditional beliefs remain strongest, but Islam is more prominent than Christianity. In Mô 2, animism is also the majority, with Christianity and Islam present; peaceful coexistence is noted everywhere.

Each commune is multilingual. Bassar 1 is dominated by the Bassar language (N'tcham), but Tem, Kabyè and others are spoken. In Mô 1, Tem serves as the main lingua franca across ethnic groups, while Mô 2 features a mix of Bassar, Kabyè, Tem, Konkomba and more, with no single dominant language.

Historical migration has resulted in ethnically diverse villages across all PACs surveyed (Table 5-34). According to KIIs with local leaders, the most common ethnicities across communities include Kabyè and Komkomba while Moba, Zabarama and Aoussa are each present in only one community. Paulh, or Fulani Pastoralists, are present across all seven surveyed communities, although village members view the group as *strangers*. Fulani Pastoralists are partially nomadic, originally coming from other West African countries including Niger, Burkina, Mali, Benin and Nigeria. Conflicts between Fulani and sedentary village members have been documented across all communities (see Section 5.5.12).

Most ethnic groups across surveyed PACs practice agriculture, except for Zabarama and Aoussa who mainly carry out trade in Tindjassé. According to leaders, Paulh are herders of livestock, including cattle, sheep and chickens.

Within village communities, vulnerability is primarily socioeconomic rather than ethnic (see Section 5.5.6). Nevertheless, the stigmatisation and marginalisation of Paulh, who are considered outsiders to sedentary village communities, contributes to their vulnerability as an ethnic group.

Table 5-34: Ethnic groups by village surveyed PAC

Surveyed PAC	Ethnic group	Area of origin	Main activity
Kpalou	Kabyè	Kara (Pya, Tchitchao and Djamda)	Agriculture
	Lamba	Niamtougou (village animist, Kéran (Kantè, Kadjala, défale)	Agriculture
	Komkomba	Goudrin kouka	Agriculture
	Peulh (Fulani Pastoralists)	Benin (Dahomey)	Livestock (cattle, sheep, chickens)
Baghan	Bassar	Bassar	Agriculture
	Losso	Niamtougou (village animist, Kéran (Kantè, Kadjala, défale)	Agriculture
	Kabyè		Agriculture
	Komkomba	Goudrin kouka	-
	Peulh (Fulani Pastoralists)	Nomadi (Burkina Faso, Mali, Niger)	Livestock (cattle, sheep, chickens)
Kagnigbara	Kabyè	Kara (Pya, Tchitchao and lama)	Agriculture
	Lamba	Niamtougou (village animist, Kéran (Kantè, Kadjala, défale)	Agriculture
	Komkomba	Goudrin kouka	Agriculture
	Tem	Tchaoudjo	Agriculture
	Bassar	Bassar	Agriculture
	Peulh (Fulani Pastoralists)	Niger, Burkina, Mali, Benin, Nigeria	Livestock (cattle, sheep, chickens)
Boulohou	Tem	Sokoddé, Tchamba, Aoudia	Agriculture, farming, trade
	Kabyè	Kara (Dourouaboua, Adjilare, Aoudia)	Agriculture
	Peulh (Fulani Pastoralists)	Benin (Dahomey)	Livestock (cattle, sheep, chickens)
Djarkpanga[2]	Komkomba	-	-
	Tem	-	-
	Lamba	-	-
	Kabyè	-	-

[2] Information on areas of origin and main activity were not provided during the KII with village leaders in Djarkpanga.

Surveyed PAC	Ethnic group	Area of origin	Main activity
	Peulh (Fulani Pastoralists)	-	-
	Losso	-	-
	Bassar	-	-
	Tchakossi	-	-
	Moba	-	-
Tindjassé	Kabyè	Kara (Pya, Tchitchao and lama)	Agriculture
	Lamba	Niamtougou (village animist, Kéran (Kantè, Kadjala, défale)	Agriculture
	Komkomba	Goudrin kouka	Agriculture
	Tchakossi	Mango	Agriculture
	Tem	Techaoudjo	Agriculture
	Bassar	Bassar	Agriculture
	Peulh (Fulani Pastoralists)	Niger, Burkina, Mali, Benin, Nigeria	Livestock (cattle, sheep, chickens)
	Gourma	Gando	Agriculture
	Zabarama	-	Trade
	Aoussa	-	Trade
Saiboudè	Kabyè	Kara (Pya, Tchitchao and Djamda)	Agriculture and small-scale farming
	Lamba	Niamtougou (village animist, Kéran (Kantè, Kadjala, défale)	Agriculture and small-scale farming
	Komkomba	Goudrin kouka	Agriculture and small-scale farming
	Tchakossi	Mango	Agriculture and small-scale farming
	Tem	Tchaoudjo	Agriculture and small-scale farming
	Bassar	Bassar	Agriculture and small-scale farming
	Peulh (Fulani Pastoralists)	Niger, Burkina Faso, Mali, Benin, Nigeria	Livestock (cattle, sheep, chickens)
	Gourma	Gando	-

Source: KII with village leaders

5.5.5.4 *Indigenous people (screening)*

IFC PS7 (2012) defines the term 'indigenous people' as a distinct social and cultural group with the following characteristics in varying degrees:

- self-identification as members of a distinct indigenous cultural group and recognition of this identity by others
- collective attachment (i.e., persons whose identity as a group or community is linked to geographically distinct habitats or ancestral territories and to the natural resources in these habitats and territories)
- customary cultural, economic, social or political institutions that are separate from those of the dominant society or culture
- an indigenous language, often different from the official language of the country or region in which they reside.

Based on available evidence, including input from RSK's local partner CEMP and supplementary desk-based research, Togo does not have any groups recognised as triggering IFC PS7. There is no evidence from international bodies (e.g., UN, World Bank, IFC) or national legislation that any ethnic group in Togo is officially recognised as Indigenous under PS7. Note that:

- Togo has not ratified ILO Convention 169, which is the only binding international treaty specifically addressing the rights of Indigenous and Tribal Peoples
- Local populations include Bassar, Kotocoli (Tem), Kabyè, Konkomba, Lamba, Anoufo and Ewé (see full list in Section 5.5.5) none of which are considered Indigenous under PS7.
- Vulnerability in the area is primarily socioeconomic, not ethnic (see Section 5.5.6)

However, should individuals or groups self-identify as Indigenous during further stakeholder engagement, the project will investigate fully, potentially developing a dedicated plan and applying PS7 protocols, including culturally appropriate consultation and the principle of free, prior and informed consent (FPIC).

5.5.6 Vulnerable people

Vulnerable groups and reasons for vulnerability:

Surveyed local leaders and women identified the following groups as vulnerable within the primary social AoI:

- Women: Vulnerability arises primarily from limited access to land and resources. Widows and female-headed households face further restrictions, with inheritance and land-use rights varying across communities (e.g., Boulohou excludes widows entirely from requesting land, while in Kagnigbara they may use land without ownership or inheritance rights).
- Children and Youth: Girls are particularly at risk of school dropout and child marriage. Youth, in general, face declining agricultural yields and a lack of livelihood opportunities.
- Elderly: Older persons often lack the financial and material resources needed for daily survival.
- Persons with Disabilities: Physical, visual and mental disabilities limit access to education, employment and community resources. Only one surveyed PAC, Boulohou, has a designated disability association to support them.
- Orphans: Children without one or both parents are at higher risk of poverty, school dropout and child labour.

Factors exacerbating vulnerability:

Across these groups, vulnerabilities are intensified by structural and environmental factors, including:

- Service gaps: Limited access to secondary education, unreliable water systems and absence of functional literacy centres disproportionately affect women, youth and the elderly (MDTT 2023a; MDTT 2023b).
- Food insecurity and Livelihood Shocks: Seasonal food shortages and climate-related shocks increase household vulnerability, particularly for widows, female-headed households and land-poor families in Mô 2 (MDTT 2023b).
- Social and cultural constraints: Women's limited land rights, early marriage practices for girls and exclusion of widows in some communities exacerbate social vulnerability.
- Limited support structures: Only select communities have formal mechanisms to support persons with disabilities, leaving many without access to necessary resources or advocacy.
- Health-related risks: Pregnant women, children and older persons face additional vulnerabilities due to limited healthcare access and reliance on traditional practices (see Section 5.5.9.3).

Table 5-35: Vulnerable groups identified by local leaders and women across surveyed PACs, disaggregated by data source (leaders and women)

Surveyed PAC	Women		Young girls		Young boys		Elderly		Disabled		Orphans	
Kpalou	✓	✓		✓		✓		✓				
Baghan	✓	✓		✓		✓		✓				
Kagnigbara	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	
Boulohou	✓	✓	✓		✓							
Djarkpanga	✓	✓		✓		✓		✓				
Tindjassé	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	
Saiboudè	✓			✓		✓		✓		✓		✓

Source: KII with village leaders and FGD with women

Key	
✓	FGD women
✓	KII leaders

Table 5-36 below presents groups in the wider project AoI who would be considered vulnerable based on information gathered during the primary baseline data collection.

Table 5-36: Vulnerable groups within the PACs in primary AoI

Group	Reasons for vulnerability
Women	• Lack of access to land, having to rely on male relatives • Bear financial burden of family needs (health, food, education) with insufficient support from men • High illiteracy rates • Barriers to participation in decision-making • Gender-based violence (GBV), with economic violence being most common and sexual violence risk higher in market areas and during travel to fields • Economic insecurity and poverty • Limited employment opportunities • Exclusion from land ownership • Disproportionate risk of being excluded from project-related communications
Female-headed households and widows	As above plus: • economic insecurity • lack of access to land ownership and/or husband's ownership • poverty • food insecurity • limited access to affording services for self and family (e.g., healthcare and education) • social exclusion
Pregnant women and children under five	• High risk of serious illness • Long distance to healthcare facilities • High cost of healthcare relative to income • Poverty • Seeking traditional healers for serious cases, which may be ineffective and damaging • Health complications, particularly related to childbirth • Death • Malnutrition
Young girls	• High domestic workload • Cultural norms which prioritise boys' education • Child marriage • Child pregnancies (age 11–15) • Lower school enrolment and higher dropouts • GBV • Limited future employment prospects • Exploitation and trafficking
School children	• Cross busy road with poor road conditions and no traffic calming measures • Higher risk of traffic accidents
Orphans (no parents or	• Limited financial resources and support systems

Group	Reasons for vulnerability
single/remarried mother)	• Unable to access services (healthcare, education) • Homelessness • Child labour and trafficking
Youth	• Lack of land for farming • Low agricultural yields • Lack of opportunities • No vocational training centres • Unemployment and underemployment • Economic insecurity • Rural out-migration • Poverty • Crime
Elderly	• High unemployment • Commonly experience health issues • Poverty • May be unable to afford high healthcare costs
Persons with disabilities	• High unemployment • Limited adapted infrastructure • Risk of exclusion • Poverty • Limited access to services (healthcare and education) due to infrastructure and financial constraints
Persons living below poverty line	• Agricultural incomes fluctuate throughout seasons • Women, disabled, youth and orphans all more likely to fall into poverty • Higher literacy rates • Inability to access resources (education and healthcare) • Inability to afford food and housing • Higher risk of exploitation, trafficking and child labour • Higher risk of social exclusion and exclusion from project communications
Informal sector workers	• Lack of formal protections, contracts, social security • Limited health and safety protocols • Roadside businesses vulnerable to displacement • High risk of accident and injury • Risk of displacement • Risk of poverty
Agricultural workers	• Low crop prices • Water shortages • Lack of equipment • Climate change • Poor infrastructure • Financial constraints

Group	Reasons for vulnerability
	• Low yields • Limited connection to markets • Economic shocks • Conflicts with transhumance pastoralists
Fulani pastoralists	• Nomadic migrants from neighbouring countries • Practice transhumance • Free roaming cattle passes through pac villages • Prone to conflict with farmers over livestock induced crop damage • Lack of state protection from migrant status alongside "terrorist" labels • Nomadic nature increases risk of exclusion from project communications • Risk of economic displacement resulting from project

5.5.7 Land tenure and land use

5.5.7.1 National and regional level

Togo's land tenure system operates under a dual structure, statutory and customary, often leading to conflicts where the two systems intersect. Statutory law vests land ownership in the state, which can grant rights to individuals or entities. Customary law, predominant in rural areas, treats land as communal property managed by traditional authorities (International Land Coalition, 2023; IIED, 2022). About 80% of land is governed by customary systems, typically regulated informally through oral agreements, which can create challenges for registration and tenure security.

Agriculture is the backbone of Togo's economy, occupying roughly 60% of the land. Key crops include maize, cassava, rice, cotton and cocoa. Land use is changing due to population growth, urban expansion and sales to private investors. Urban areas, especially around Lomé, now cover approximately 2.8% of the country, increasing pressure on farmland and natural resources. Forests cover around 24% of Togo, but face threats from logging, charcoal production and land conversion, endangering biodiversity and local communities' access to resources (Sow et al., 2020).

In traditional Togolese societies, land is sacred, associated with ancestors and central to social and economic life. Customary ownership and usage rights are established through rituals, reinforcing cultural and familial ties. Tenure is primarily collective, though urbanisation and economic pressures have introduced sales and disputes. Land is mainly inherited, with limited purchase options and restricted access for outsiders (AGEIM and DECO, 2012). Land is typically owned by the original occupants and managed by the community, with portions distributed among family members, who are responsible for their development. Land is considered a critical and inalienable resource, and its use is intensive. In densely populated areas, overexploitation has led to soil degradation, reduced fallow periods and increased reliance on improved seeds, fertilisers and pesticides (Presidency of the Republic, 2021a; Presidency of the Republic 2021b). These pressures have contributed to conflicts and weakened social cohesion in some areas (AGEIM and DECO, 2012).

5.5.7.2 *Regional level*

Land tenure in the regions of Kara and Centrale reflects the national system.

5.5.7.3 *Local level*

Land use

Across all surveyed villages, land along the road and within the villages is predominantly used for agriculture and construction, with agriculture representing the largest share (80-100%). Construction occupies a minor proportion (0–10%). For more details on agriculture at the local level, see Section 5.5.8.3.

Characteristics of land ownership, tenure and parcel size

Several forms of land ownership exist within the primary social AoI, according to surveyed PACs (see Table 5-37). For most communities, land can only be administered through donation by the landowner; Djarkpanga and Tindjassé are the only surveyed PACs who note that land can be acquired through sale.

Single community ownership is the most common land structure, which is followed by four surveyed PACs. Under this system, land is owned by a single community, known as *La Collectivité Tombé*, who designates a manager, referred to as the *Landowner*, who can administer land to the local population. For instance, in Kagnigbara, all land across villages belongs to the Foyoo collectively who give deeds for donation to other village members. In Djarkpanga, the landowner also serves as the canton chief. For these villages, land is organised as follows:

- A primary holding refers to the main parcel of land managed by the family head and forms the core property of the family.
- Allocated parcels are smaller sections within the primary holding, assigned to different households within the family for cultivation or other uses. Although these parcels are used independently, they do not have separate legal status and remain part of the primary holding under both customary and statutory legal frameworks.

Other ownership structures present among surveyed PACs are outlined in Table 5-37 and include:

- chief ownership: In Saiboudè, the canton chief acts as the landowner, who administers land to local residents.
- decentralised ownership: In Tindjassé, land belongs to the different communities in the village.
- External ownership: in Kpalou, land belongs to villages of Mondè, located in Bassar. Kpalou residents must receive a donation certificate for construction and rent land for agriculture, which costs 10 tubers and one rooster per year.

Table 5-37: Land ownership structures across surveyed PACs

Land ownership type	PAC	Description	Total PACs
Single community ownership with designated land manager	• Baghan • Djarkpanga* • Baghan	Land is owned by a single community (La Collectivité Tombé) which designates a manager (landowner), who is	4

Land ownership type	PAC	Description	Total PACs
	• Kagnigbara	able to give the land for construction.	
External community ownership	• Kpalou	Land belongs to the communities of the villages of Mondè (Bassar). The inhabitants of Kpalou issue donation certificates to be able to build. For agriculture, they are in an annual rental system with a fee of 10 tubers and one rooster per year	1
Multiple village communities' ownership	• Tindjassé*	Land belongs to the different communities in the village	1
Canton chief ownership	• Saiboudè	The land of the canton of Saiboudè belongs to the canton chief who administers use to the population	1

Note: * indicates land can be acquired through sale; no data available for Boulohou

Table 5-38 below summarises the characteristics of primary holdings and allocated parcels across the PACs. It presents, for each village, the typical number of allocated parcels within a primary holding, as well as the average sizes of both primary holdings and allocated parcels.

Table 5-38: Characteristics of primary holdings and allocated parcels by surveyed PAC[3]

Surveyed PAC	Number of allocated parcels within a primary holding	Average primary holding size (ha)	Average allocated parcel size (ha)
Kpalou	3	2.5	0.8
Baghan	4	2	0.5
Djarkpanga	3	3.5	1.2
Tindjassé	6	3.5	0.6
Saiboudè	4	5	1.3
Kagnigbara	3	3.5	1.2
Boulohou	4	5	1.3
Average	4	4	1.00

[3] Average allocated parcel size was calculated by dividing the average primary holding size by the number of allocated parcels within a primary holding

Table 5-38 shows that:

- Tindjassé has the highest number of allocated parcels per holding (six parcels) but relatively small parcel sizes (0.6 ha), suggesting more subdivision within the household.
- Saiboudè and Boulohou have the largest primary holdings (5 ha) and the largest allocated parcels (1.3 ha), indicating less fragmentation and potentially higher productivity per parcel.
- Baghan shows the smallest parcel size (0.5 ha) despite having four parcels, which may reflect land scarcity or intensive land use.

Overall, the data indicates that while primary holdings are relatively consistent in size, the number and size of allocated parcels vary significantly by locality. On average, each Primary Holding contains four allocated parcels, with an average size of 4 ha for the Primary Holding and one hectare for each allocated parcel.

Under this system, land rights are commonly transferred through acts of donation where the family head grants land to a descendant without monetary compensation. This process is essentially a gift of land, often used to allocate plots to family members, for community purposes or to fulfil social obligations.

Land access and allocation mechanisms

In terms of granting access to land, the surveyed communities show the following differences:

- In Kpalou, the communities of Mondè and the chief of Mondè grant access, while the chief of Kpalou is only informed of the process.
- In Baghan, landowners hold full authority.
- In Djarkpanga, a landowner who also serves as the canton chief oversees allocation, sometimes delegating responsibilities to village chiefs.
- In Saiboudè the canton chief authorises access
- In Tindjassé and Kagnigbara, land belongs to the community
- Boulohou requires agreement between the chief and landowners, with notables involved for significant transactions.

Traditional leaders (village chiefs and canton chiefs) generally play a role as witnesses or approvers rather than primary decision-makers, except in cases like Djarkpanga and Saiboudè where the canton chief is central to the process.

For newcomers or migrants, the process varies by locality:

- In Kpalou and Baghan, individuals negotiate directly with landowners, and chiefs are informed.
- In Djarkpanga, newcomers first meet the village chief and then the canton chief for purchase or donation.
- Tindjassé offers options such as sale, rental, lease or donation
- Saiboudè requires a request to the canton chief without formal rules or payment.
- Boulohou involves chiefs and notables for major transactions
- Kagnigbara allocates land through donation.

Land documentation

Regardless of land ownership structure, land documentation in the primary social AoI remains predominantly customary, with only limited formalisation. The act of donation is typically recorded in a donation deed, a written document that notes the transfer of land rights from the donor to the recipient without payment. However, these deeds are rarely officially certified. For example, in Kpalou and Saiboudè, the documents reviewed were not certified by the Town Hall and did not follow official formats. In Kagnigbara, deeds are signed in the presence of witnesses but remain informal and lack legal recognition.

Gender and social inclusion in land access

Gender restrictions remain a critical issue. In Kpalou, Baghan and Kagnigbara, women cannot directly request land and depend on male relatives for formal deeds. Boulohou allows women to request land but excludes widows entirely. Djarkpanga permits women to purchase land, while Tindjassé and Saiboudè grant women equal access and recognise widows' rights to exploit or acquire land. Kagnigbara is the most restrictive, denying women any ownership or inheritance rights and limiting widows to using their deceased husband's land. Youth access is mentioned primarily in Saiboudè, where they can acquire land without restrictions.

Cultural norms historically prohibited women from owning land to prevent emancipation and maintain household stability. Although awareness campaigns by NGOs have led to improvements in several communities, concerns persist that women's economic autonomy may destabilise families. These attitudes continue to influence land allocation practices, particularly in Kagnigbara and, to a lesser extent, Kpalou and Baghan.

Overall, land access remains decentralised and deeply rooted in local customs, with traditional leaders acting mainly as facilitators or witnesses. While progress has been made in some areas, gender inequality and cultural barriers persist, and processes for migrants and vulnerable groups often require negotiation and approval at multiple levels, ranging from informal arrangements to formal agreements.

Internal land disputes

Across the surveyed communities, land disputes are generally limited; however, underlying tensions persist, primarily due to the presence of Fulani pastoralists (see Section 5.5.8.3).

Except for Djarkpanga and Tindjassé, villages report no internal land issues, meaning disputes between community members from the same village or from other nearby villages. In Djarkpanga and Tindjassé, land conflicts are present, typically arising from boundary encroachments and competition over cultivable land. In Djarkpanga, disputes centre on the allocation of land for cultivation and construction, with instances of individuals claiming land that does not belong to them, illegal authorisations bypassing the Canton chief and the sale of administrative domains without proper oversight. In Tindjassé, conflicts occur when occupants of cultivable land encroach upon the domains of others, leading to disputes within the community.

Beyond internal land issues, problems related to transhumance, particularly livestock damaging crops, are widespread and recurrent across all villages (see Section 5.5.12.3).

5.5.8 Economy and livelihoods

5.5.8.1 National level

Togo's economy has maintained steady growth in recent years, achieving an average annual growth rate of 6.1% between 2021 and 2023, supported by fiscal stimulus measures (World Bank, 2024). The country's gross domestic product (GDP) in 2024 was USD 9.17 billion, with a GDP per capita of USD 985.70 (World Bank, n.d.). Economic projections suggest continued growth, with GDP expected to rise by 6.0% in 2025, driven by strong agricultural performance and private sector investment. Inflation is projected to decline to 2.7% in 2024 and 2.1% in 2025, supported by energy price subsidies (African Development Bank, 2024).

The Togolese economy is diversified across several sectors:

- Agriculture: Employing around 60% of the labour force, agriculture is critical for livelihoods, food security and economic development. However, the sector largely relies on traditional methods, with limited mechanisation or modernisation (BMZ, n.d.).
- Services: a key growth driver, contributing approximately 61.5% of GDP in 2019 (Umoatitres, 2023).
- Industry and mining: Togo possesses significant phosphate deposits and a developing industrial base, including cement production and light manufacturing (Lloyds Bank Trade, n.d.).
- Fishing: Employing over 20,000 individuals, fishing contributes around 4.5% of GDP (Maritim Africa, 2023).

Despite overall growth, income deprivation remains significant. Around 26.6% of the population live below the international poverty line of USD 2.15 per day, and approximately 45.5% live below the national poverty line, indicating widespread challenges in meeting basic needs (World Bank, 2023b).

Gender disparities in employment are pronounced: women are heavily concentrated in the informal sector, with 94% of employed women working informally, compared to 74% of men (ODI, 2023). Nevertheless, unemployment rates are relatively low, with adult unemployment at 1.8% in 2024 (1.6% of women and 2% of men) and youth unemployment averaging 3.4% (World Bank, 2025).

Transhumance pastoralism

Transhumance pastoralism is the nomadic herding of livestock, primarily carried out by the Peulh ethnic group across West Africa, with herds ranging from 100 to 300 cattle, (Loukoumanou et al., 2023). The official regional window for transhumance under the Economic Community of West African States (ECOWAS) regulations runs from January 31 to May 31 (Loukoumanou et al., 2023). However, in practice, transhumance now starts earlier than the official period, sometimes beginning in November or December. This timing is explicitly tied to seasons: Fulani herders move from Niger and Burkina Faso towards coastal countries (such as Benin, Togo, Ghana) where rains and pasture arrive earlier than in their home areas, returning after the rainy season begins in their territories. Climatic changes have thus contributed to shifting migration patterns.

Fulani often seek out clandestine routes to avoid both official border posts and the associated administrative requirements, as well as to escape armed groups and extortion

by security forces (Loukoumanou et al., 2023). Route choice is also determined by market access and animal prices.

5.5.8.2 *Regional level*

In the Kara and Centrale Regions, most workers are employed informally. The civil service is another large employer in Centrale. Several commercial companies, banks and petrol stations have set up their branches and agencies in the various prefectural capitals and in large cities (Presidency of the Republic of Togo 2021b). An overview of employment sectors within the regions is outlined below.

Kara Region

Agriculture

Agriculture and livestock farming employ an estimated 70% of the regional population. The main crops grown are cereals (maize, sorghum, millet, rice) followed by tubers (cassava, yam, sweet potato, taro) and legumes (beans, voandzou and groundnuts). The region also produces cotton, cashew nuts, shea and soybeans as cash crops (Presidency of the Republic of Togo, 2021a).

Livestock farming is the second largest activity for farmers in the Kara Region after agriculture. The species of animals raised in the region include cattle, sheep, goats, pigs and poultry. Poultry (chickens and guinea fowl) is the main source of both animal protein and income outside of crops (Presidency of the Republic of Togo, 2021a).

Fishing

Artisanal fishing is practiced by a very small minority of the population in the rivers using hooks, traps and nets. The fish products caught are mostly carp, catfish and crabs (Presidency of the Republic of Togo, 2021a).

5.5.8.3 *Local*

Employment and unemployment

According to village leaders, young people and women are disproportionately impacted by unemployment across all surveyed PACs, with declining agricultural yields contributing to high youth unemployment. Other groups reported to face high unemployment include the elderly in Saiboudè and Kagnigbara and widows in Kagnigbara.

A minority of individuals are employed through formal contracts across surveyed PACs, according to leaders. Teacher and health care positions dominate formal employment, with all local leaders reporting the presence of these positions, although the quantity of jobs available remain in the single digits. Other formal jobs reported include:

- military and police
- government agency workers
- formal agricultural employees (forestry, veterinary services, advisors).

Local livelihood strategies

Most PAPs work in the informal sector, with people typically engaging in more than one livelihood activity. In contrast to regional level data, no surveyed PACs engaged in industries or mining according to leaders.

According to KIIs with leaders, the most prevalent informal jobs include:

- subsistence agriculture (including market gardening) and livestock keeping: practiced by 100% of residents
- charcoal production: supplementary to agricultural income streams
- hunting: also supplementary to agricultural income streams
- non-food small-scale businesses: e.g., mechanics, shop keepers, hairdressers and craftspeople
- transhumance: practiced by Fulani pastoralists, a distinct nomadic ethnic group, who travel throughout West Africa in search of pastures for livestock grazing.

Subsistence agriculture and market gardening

Subsistence agriculture is the primary livelihood generation activity, though sale and consumption, across all surveyed PACs. According to local leaders, 100% of all village populations engage in some form of agriculture, which can be divided into two categories:

- Agriculture: household owned plots of land, typically by the roadside (see Figure 5-34, Figure 5-35 and Figure 5-36) which are managed by men, although women may also assist with cultivation. Common crops include maize, corn, millet, cashews and chia seeds, which are grown for consumption and sale.
- Market gardening: smaller plots located in a community collective, typically by the river, which acts as a natural irrigation system. These plots are typically cultivated by women, who primarily produce smaller crops for daily consumption and sale, such as leafy greens and peppers.

While all village populations engage in agriculture, levels of market gardening vary across villages, according to leaders. This ranges from 80% in Tindjassé, Saiboudè, Kpalou and Kagnigbara to 50% in Boulohou and 40% in Baghan and Tindjassé. While market gardening is primarily carried out by women, men also participate in Boulohou and male youth in Kagnigbara.

Figure 5-34: Yam cultivation along road near Tchessi village 02.11.25

Figure 5-35: Tobacco cultivation along road alignment near Boulohou 17.09.25

Figure 5-36: Maize cultivation along road near Tchessi village 02.11.25

According to FDGs with men, most agricultural produce is sold locally, either at the production site or in markets (see Table 5-39). Yams, soy (wangash), bean fritters and local beverages (tchoukoudou) are commonly sold. Sales across all villages entail a gendered division of labour, where yams are sold by men and cereals by women across all communities. According to men, this is because grains are measured and sold by the bowl, which is an area women are more skilled in. Due to the existing road condition, surveyed PACs struggle to transport their crops to larger markets for sale and must sell to merchants who act as an intermediary buyer, purchasing their crops at a low price. Men in four villages (Saiboudè, Boulohou, Djarkpanga and Tindjassé) report selling agricultural outputs internationally in Ghana and Burkina Faso, where they can receive higher prices. However, they note crossing the border has become increasingly difficult, further constraining incomes.

Table 5-39: Sale prices for agricultural outputs by surveyed PAC

Crop type	Price per kg (F.CFA)						
	Kpalou	Baghan	Kagnigabara	Boulohou	Dijarkpanga	Tindjassé	Saiboudè
Maize	350	250-350	600-700	400-700	600-700	600-700	400-700
Rice	500	350	500	500	500	500	500
Rice flaked	1,200	1,200	1,500	2,000	1,500	1,500	2,000
Millet	700	700	700	800	700	700	700
Niebe	800	800	800	800	800	800	800
Soy	800	600-800	600-800	600-800	600-800	600-800	600-800
Yam	50,000-75,000 per calabash (100 tubers)	50,000-75,000 per calabash	10,000-75-000 per batch	50,000-75,000 per calabash	50,000-75,000 per calabash	50,000-75,000 per calabash	400-700 per 100 g
Corn	-	250-350	-	-	-	-	-
Bean	-	2000	2,000	2,000	2,000	2,000	2,000
Sorgho	-	700	700	700		700	700
Peanut	-	1,200	1,200	1,200	1,200	1,200	1,200

Source: FGDs with men

Sedentary livestock rearing

Across all communities, livestock is sold locally, either to consumers in markets or to intermediary buyers on site (see Table 5-40 for prices). Men report that common livestock owned by community members include:

- free roaming animals: chickens, dogs, ducks, goat, guinea fowl, pigs and sheep (see Figure 5-37)
- semi-free roaming: pigeons (enclosed 86% of the time)
- always enclosed: rabbits.

According to FGDs with men, cattle is predominantly sold in markets, while pigs are purchased by merchants on site. Although men report both genders have the right to sell livestock, they note it is primarily sold by men.

Figure 5-37: Free roaming goats in Saiboudè

Table 5-40: Sale prices for livestock by surveyed PAC

Animal	Price per unit of livestock (CFA)						
	Kpalou	Baghan	Djarkpanga	Tindjassé	Saiboudè	Kagnigbara	Boulohou
Red rooster	5,000	5,000-6,000	7,000-8,000	7,000-8,000	7,000-8,000	7,000-8,000	6,500
White rooster	5,000	5,000	7,000	7,000	7,000	7,000	7,000
Black cock	5,000	5,000	7,000	7,000	7,000	7,000	7,000
Hens	3,000	3,000	3,000	3,000	3,000	3,000	3,000
Duck	7,000	7,000	7,000	7,000	7,000	7,000	7,000
Pig	30,000-70,000	30,000-70,000	30,000-70,000	30,000-70,000	30,000-70,000	30,000-70,000	30,000-70,000
Goat	10,000-30,000	10,000-30,000	10,000-30,000	10,000-30,000	10,000-30,000	10,000-30,000	25,000-35,000
Sheep	Variable	20-90	20-90	20-90	20-90	20-90	20-90
Cattle		150,000-700,000	150,000-700,000	150,000-700,000	200,000-700,000	150,000-700,000	200,000-700,000

Source: FGDs with men

Nomadic livestock rearing (Fulani pastoralists)

Livestock is also herded through all surveyed PACs by Fulani Pastoralists, who originally come from neighbouring countries, such as Mali, Niger and Burkina Faso. Fulani Pastoralists practice transhumance pastoralism, where they move their herds along the road alignment and within the social AoI to graze and water their herds (see Figure 5-38). The group is referred to as *strangers* by PACs, with men across all surveyed PACs noting they experience conflicts over land with Fulani groups. (see Section 5.5.12 for more information regarding disputes).

Figure 5-38: Cattle crossing Bassar-Tindjassé Road 01.11.25

Charcoal production

Men and women across all surveyed PACs, except Boulohou, trade charcoal to further support themselves financially (see Figure 5-39). Charcoal is predominately made for sale purposes, with all villages reporting sales, while Saiboudè and Boulohou also report charcoal production for consumption. According to men, production increases when agricultural output is low. Production is constrained by the disappearance of species of wood and the presence of forest rangers from the nearby Malfakssa animal park. Charcoal is sold in local markets (see Figure 5-39). In Baghan, charcoal is also purchased on site by tradespeople who transport it for sale in Lomé. Across all surveyed PACs, a bag is sold for 10,000 CFA. In Baghan, men report these profits are spent on seeds, food, pesticides, herbicides and fertiliser. Further details on charcoal production are discussed in Section 5.6.3.1 on provisioning services in the ecosystem services baseline.

Figure 5-39: Charcoal production in Kagnigbara 17.09.25

Bee keeping and wild honey

In Baghan, Djarkpanga, Tindjassé and Saiboudè women reported income generating wild honey collection and bee keeping. They sell 98% of the honey and keep 2% to give to children when they have a cough. The honey is sold within the village and nearby markets for approximately 1000-2000 CFA per litre. The destruction of beehives by cattle is identified as a key challenge affecting honey availability. Further details on wild honey is discussed in Section 5.6.3.1 on provisioning services in the ecosystem services baseline.

Figure 5-40: Beehives in Baghan 02.11.25

Hunting

Hunting is carried out by men across all communities, where game is either sold or consumed. The respective prices for game caught is displayed in Table 5-42. The most common animals hunted across all surveyed communities include agouti, bat, hare, monitor lizard, monkey, rat, squirrel and wild guinea fowl. See Table 5-41 for a matrix outlining the most common animals hunted across communities.

Men across all communities note there has been a significant decline in the number of gorillas and deer over the past decade. In some communities (Baghan, Djarkpanga, Tindjassé and Kagnigbara), men have compensated this decline by increasingly hunting crocodiles and, occasionally, lions. Further details on hunting are discussed in Section 5.6.3.1 on provisioning services in the ecosystem services baseline.

Table 5-41.: Most commonly hunted animals across surveyed PACs

Animal type	Hunted in community (yes/no)							
	Kpalou	Baghan	Kagnigbara	Boulohou	Djarkpanga	Tindjassé	Saiboudè	Total
Adder			✓	✓		✓		3
Agouti	✓	✓	✓	✓	✓	✓	✓	7
Antelope		✓	✓	✓	✓	✓	✓	6
Bat	✓	✓	✓	✓	✓	✓	✓	7
Deer	✓	✓	✓	✓	✓	✓	✓	7
Gorilla		✓	✓	✓	✓	✓	✓	6
Hares	✓	✓	✓	✓	✓	✓	✓	7
Monitor lizard	✓	✓	✓	✓	✓	✓		6
Monkey	✓	✓	✓	✓	✓	✓	✓	7
Partridge		✓	✓	✓		✓	✓	5
Peregrine falcon	✓							1
Rat	✓	✓	✓	✓	✓	✓	✓	7
Snake		✓					✓	2
Squirrel	✓	✓	✓	✓	✓	✓	✓	7
Wild guinea fowl	✓	✓	✓	✓	✓	✓	✓	7
Monitor lizard							✓	1

Source: FGDs with men

Note: green tick box indicates animal is commonly hunted in community

Table 5-42: Prices of the top five most hunted animals for sale by surveyed PAC

Animal	Price per animal hunted (CFA)						
	Kpalou	Baghan	Kagnigbara	Boulohou	Djarkpanga	Tindjassé	Saiboudè
Deer	18,000						
Peregrine	1,000	-	1,000	-		1,000	-
Partridge	-	1,000	-	1,200	-	-	1,200
Agouti	5,000	5,000 – 15,000	5,000 – 15,000	5,000 – 15,000	5,000 – 15,000	5,000 – 15,000	5,000 – 15,000
Rat	1,000						
Monkey	2,500						
Pangolin	-	5,000	5,000	5,000	5,000	5,000	5,000
Scents	-	-	-	Hunted but no price given	-	-	Hunted but no price given
Snake	-	-	-	Hunted but no price given	-	-	Hunted but no price given
Antilope	-	-	-	Hunted but no price given	-	-	Hunted but no price given

Source: FGDs with men

Note: men were asked to list the five most commonly hunted animals and their respective prices. "Hunted but no price given" indicates the animal was part of villages' top five list but no price was indicated. A dash (-) indicates the animal was not listed as part of the top five most commonly hunted animals but may still be hunted in the village to a lesser degree.

Fishing

Fishing is not widely practiced across the surveyed PACs, except for Saiboudè, where 40% of residents fish in the Mon river. A very small 2% minority also fish in Boulohou.

Local markets

<u>Location and transport</u>

According to male FGDs, a local market is in each PAC. The largest markets in the primary AoI include Bassar and Djarkpanga, which are both visited by residents of four PACs (see Table 5-43). Produce and livestock is transported by motorcycles, tricycles, cars and foot across all villages, according to men (see Figure 5-41). Moreover, all villages, except Kpalou, report transportation of products by truck.

Table 5-43: Local markets and participating villages[4]

Market location	Village sellers	Products	Photo
Bassar	• Kpalou • Baghan • Saiboudè • Boulohou	• Crops • Cattle • Charcoal	 *Yams for sale at Bassar Market*
Djarkpanga	• Djarkpanga • Saiboudè • Kagingbara • Boulohou	• Crops • Poultry • Cattle • Charcoal	 *Djarkpanga Market*
Tindijassi	• Tindjassé • Saiboudè • Boulohou	• Crops • Poultry • Cattle • Charcoal	 *Tindijassi Market*
Sarakawa	• Kpalou	• Crops	No photo available
Baghan	• Baghan	• Crops • Coal	 *Roadside charcoal production in Baghan*
Saiboudè	• Saiboudè	• Crops • Charcoal	No photo available

[4] Markets in Folo, Banda, Saboudi and Kagnigbara were also identified through CEMP GIS mapping during scoping and baseline surveys. However, no additional information on sellers, products or market characteristics was reported during FGDs and KIIs.

Market location	Village sellers	Products	Photo
Boulohou	• Saiboudè • Boulohou	• Crops • Charcoal	 *Boulohou Market*
Sanda	• Kpalou	• Cattle (large)	No photo available

Source: FDGs with men

Figure 5-41: Charcoal being transported to market along existing road alignment 03.11.25

Market stalls

KIIs were conducted with three market salespeople across three PACs (Baghan, Tindjassé and Saiboudè) who have been operating their businesses for 10 to 20 years.

In Baghan and Saiboudè, permission for operating the market stalls on village land was granted by the chief for free. Conversely, in Tindjassé (see Figure 5-42), the salesperson pays a 100 CFA fee to the administration in exchange for the space. No salesperson interviewed has official documentation of ownership proving ownership (title deed, property certificate) or occupancy rights (lease agreement).

All stalls were noted by sellers to offer goods which are homogenous across markets. These include traditional medicine, soap and household items (e.g., screws and nails) (Tindjassé) and condiments and spices (Baghan).

Figure 5-42: Market stalls at Tindjasse market 04.11.25

Business inputs

Across all stalls, labour is sourced informally. Children also provide additional help to their parents. According to salespeople, in Tindjassé and Baghan, this occurs after school, whereas in Saiboudè, this happens on the Monday market day (see Table 5-54).

In Tindjassé, the owner commutes to the market by bike, while owners in Baghan and Saiboudè live close by and thus walk.

All sellers report they source most goods locally, either from their own or surrounding villages. In Tindjassé, the shop owner reports he purchases wholesale items from women in Sokode. Nevertheless, in Baghan and Saiboudè, sellers note they stock up on certain unspecified items which cannot be sourced locally in Bassar.

In Baghan and Saiboudè, sellers highlight they have no electricity or water in the market, which they would like to see being brought into local infrastructure. In Baghan and Saiboudè, sellers add they would appreciate storage locations within the market. The lack of service access severely constrains profitability, as the seller in Baghan notes he must return home to access these services, which reduces his selling hours. In Tindjassé,

the seller also highlights financial constraints limit his ability to buy in bulk, forcing him to buy and sell small quantities.

Demand

Men and women shop at all surveyed stalls, according to sellers. Moreover, the Tindjassé seller notes customers also visit from across the border in Ghana.

Baghan and Saiboudè sellers highlight a decline in customers over the past few years and believe this is due to declining agricultural yields leading to a contraction in the disposable income of customers.

All salespeople note a decline in revenues during the rainy season; in Tindjassé, the owner notes this is because the river floods, making the road to the market impassible, while in Baghan the seller highlights customers go to the agricultural fields rather than the market. During this period, prices fall due to the contraction of demand, which sellers in Baghan and Saiboudè find difficult to manage.

Changes in market days also risk demand shocks. For instance, the Tindjassé seller describes that the market day was previously changed from Thursday to Tuesday and then subsequently had to be reverted back to Thursday since people did not attend on Tuesday. He believes this is due to ineffective information sharing regarding the change and also notes sales have still not returned to their pre-change level.

Revenue

Each stall is open daily, although foot traffic is notably higher on market days, according to sellers. While in Tindjassé the market is the owner's main source of income, sellers in Baghan and Saiboudè also practice agriculture. While no information regarding revenues was provided in Tindjassé, in Saiboudè sales reportedly range from 1,500 to 4,000 CFA and in Baghan, from 2,000 CFA on non-market days to 10,000 CFA on market days. Sellers all note they are highly dependent on market profits and that any inaccessibility to the market would severely constrain their ability to afford food for their families.

Informal businesses

Several informal businesses exist (see Figure 5-43 and Table 5-44), with the following services found across all surveyed villages:

- shops: selling basic necessities
- seamstresses: clothes tailoring
- masons: construction of houses
- carpenters: wood working
- mechanics: repair of motorcycles (2-wheel mechanic) and larger vehicles (4-wheel)
- hairdressers: hair services
- fuel sellers: unsecured sale of fuel.

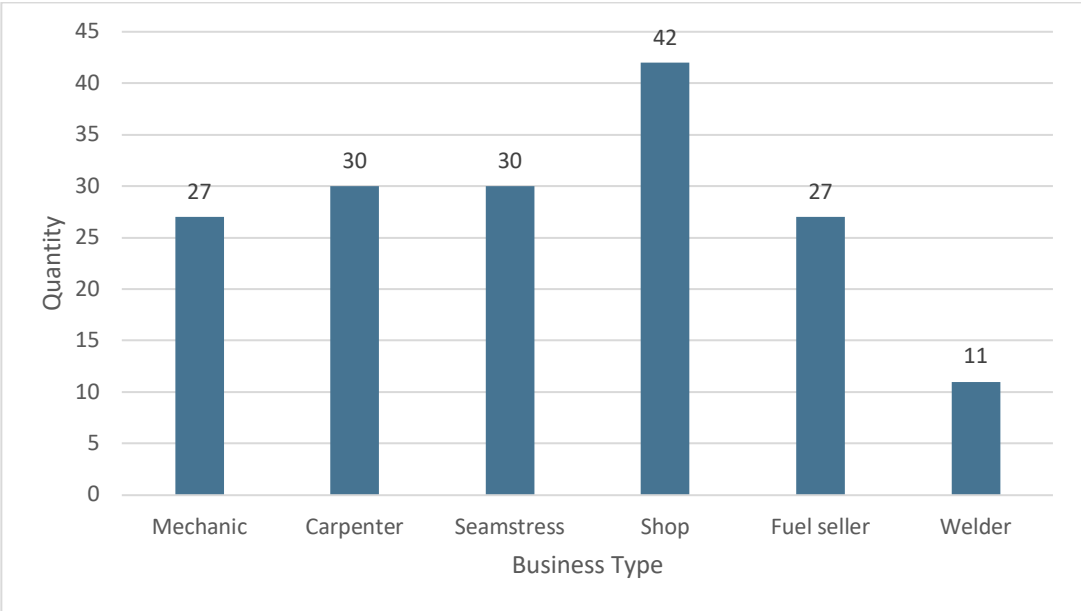

Figure 5-43: Number of businesses located by the roadside across surveyed PACs
Source: FGDs with men

Many businesses are located by the roadside, with the largest quantity located in Tindjassé (over 148 businesses) followed by Baghan (40), Kagnigbara (15), Saliboude (14), Kpalou (7) and Boulohou (2). As seen in Table 5-44, shops are most likely to be located at the roadside (42 across all villages), followed by carpenters/seamstresses (30), fuel sellers/two-wheel mechanics (27) and welders (11).

Table 5-44: Quantity of businesses across surveyed PACs

Surveyed PAC	Business Type	Quantity	Location	Photos	Total
Kpalou	2-wheeled mechanic	4	No data	No photo available	45
	Carpenter	4	No data		
	Mason	10	No data		
	Seamstress	12	No data		
	Hairdresser	8	No data		
	Shop	4	Edge of road		
	Fuel seller	3	Edge of road		
Baghan	2-wheeled mechanic	4	Edge of road	*Forging and welding workshop in Baghan* *Bench made by carpenters being transported in Baghan*	>60
	Carpenter	>10	Edge of road		
	Mason	>10	No data		
	Seamstress	>10	Edge of road		

Surveyed PAC	Business Type	Quantity	Location	Photos	Total
	Hairdresser	>11	No data		
	Shop	7	Edge of road		
	Fuel seller	8	Edge of road		
	Welder	1	Edge of road		
Tindjassé	2-wheeled mechanic	>10	Edge of road	*Shop trading by road side in Tindijassi*	>118
	4-wheel mechanic	3	No data		
	Carpenter	20	Edge of road		
	Mason	25	No data		
	Seamstress	20	Edge of road		
	Hairdresser	25	No data		
	Shop	15	Edge of road		
	Fuel seller	8	Edge of road		
	Welder	10	Edge of road		
	Veterinary service*	1	Edge of road		
	Farming supplies shop	3	Edge of road		
Djarkpanga	Service station*	1	Edge of road		1
	Telephone cable depot	1	Edge of road		
Saiboudè	2-wheeled mechanic	8	Edge of road		>59
	Carpenter	7	No data		
	Mason	10	No data		
	Seamstress	>10	No data		
	Hairdresser	>10	No data		

Surveyed PAC	Business Type	Quantity	Location	Photos	Total
	Shop	6	Edge of road	*Fuel sale in Saliboude*	
	Farming supplies shop*	1	Edge of road		
	Fuel seller	8	Edge of road		
Boulohou	2-wheeled mechanic	8	No data	No photo available	72
	Carpenter	20	No data		
	Mason	18	No data		
	Seamstress	23	No data		
	Hairdresser	1	No data		
	Shop		Edge of road		
	Scrap metal depot	1	Edge of road		
	Fuel seller	2	Edge of road		
Kagnigbara	2-wheeled mechanic	5	Edge of road	No photo available	37
	Carpenter	3	No data		
	Mason	10	No data		
	Seamstress	5	No data		
	Hairdresser	3	No data		
	Shop including farming supplies business*	10	Edge of road		
	Fuel seller	1	No data		

Source: FGDs with men. Businesses marked with an asterisk were identified during the scoping and baseline drive-by surveys and not reported during the FGDs

Skills and training

Across all surveyed PACs, men highlight they are skilled in:

- agriculture
- charcoal production
- hunting
- fishing (Saiboudè and Boulohou)
- carpentry
- masonry
- mechanics, primarily for motorcycles.

Women across surveyed PACs stress their low literacy rates bar them from entering formal employment. Nevertheless, they note they possess the following skills:

- soap making
- tailoring
- hair dressing
- traditional cloth weaving
- makeup
- agri-food processing (sodia)
- sewing.

Incomes and poverty

As discussed above, incomes across surveyed PACs are highly dependent on agriculture, while livestock rearing, charcoal production and hunting all further support incomes when agricultural output is low.

Men across all villages report crop prices being too low to sustain their livelihoods; this is noted as one of the biggest economic problems across all communities. Agricultural outputs are further constrained by water shortages and a lack of equipment, reflecting national trends. Farmers in Tindjassé also report a lack of calibrated instruments, meaning they are unable to receive a standardised price for crops.

The profitability of livestock faces two key constraints across all villages, according to mens' FGDs:

- Disease: a lack of veterinary services increases livestock susceptibility to diseases, preventing reproduction. Disease is noted by men as one of their biggest economic problems.
- Property damage: free roaming livestock can result in property damage of agriculture plots, according to FDGs with men (see Section 5.5.12.3).

In addition to poor harvests and livestock disease, men also note several additional constraints:

- absence of NGOs
- lack of government financial support
- lack of microfinance
- lack of money transfer agencies
- high youth unemployment
- no training centres.

5.5.9 Health

5.5.9.1 National level

Togo's healthcare system follows a tiered structure designed to provide services at the local, regional and national levels. It comprises primary, secondary and tertiary care, with primary healthcare forming the foundation through decentralised facilities such as USPs (local health posts) and CMSs (community health centres). These facilities deliver essential services including outpatient care, vaccinations, maternal and child health, and health education, particularly in rural and semi-urban areas (Integrate Health, 2021).

USPs offer basic health services staffed by nurses and auxiliary workers, while CMSs provide a broader range of care, including general practitioner consultations, minor surgery, prenatal care and limited laboratory services. They also coordinate community health initiatives. More complex cases are referred to district hospitals or tertiary hospitals in urban centres like Lomé, where specialised care is available (Integrate Health, 2021).

Since 2011, the Mandatory Health Insurance (MHI) scheme, managed by the National Health Insurance Institute (INAM), provides financial protection and has improved access to healthcare, especially for civil servants and their families. Community health agents are also central to service delivery, bridging gaps between populations and formal healthcare facilities in underserved regions (Integrate Health, 2021).

Access remains uneven, particularly in rural areas, where infrastructure is limited, healthcare worker shortages are significant (seven health workers per 10,000 people), and nearly 44% of villages lack preventive services provided by community health workers (Africa Health Business, 2022; World Health Organization, 2023).

The life expectancy in Togo in 2023 was 62.74 years. Health challenges persist, including a maternal mortality ratio of 396 per 100,000 live births and an under-five mortality rate of 66.9 per 1,000 live births (WHO, 2023).

The leading causes of death in Togo are communicable, maternal, perinatal and nutritional conditions, accounting for approximately 45% of total deaths in 2021 (see Figure 5-44).

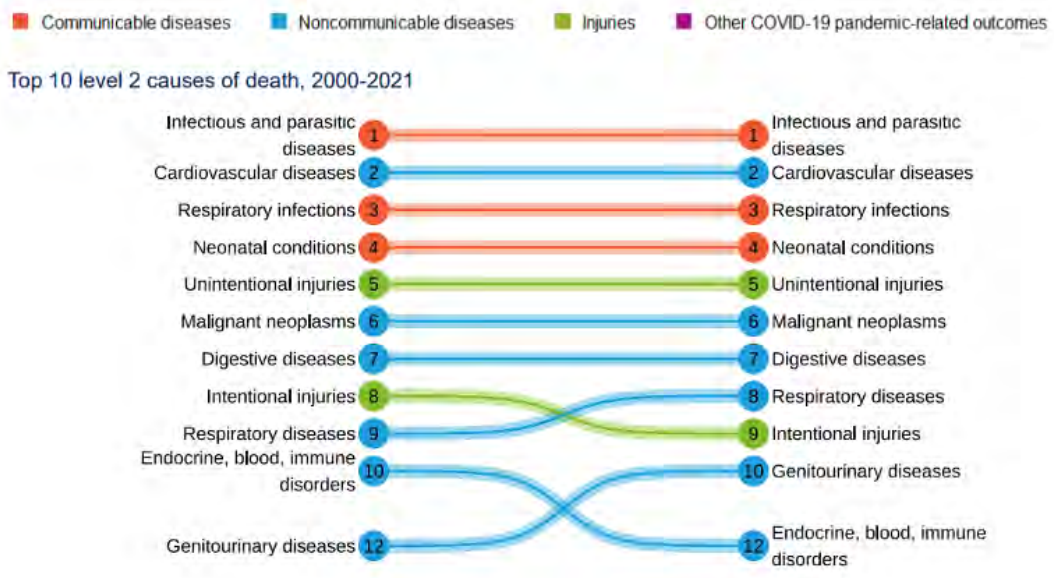

Figure 5-44: Top 10 level 2 causes of death in Togo 2000-2021
Source: World Health Organisation (2023)

5.5.9.2 Regional level

Kara Region

The Regional Directorate of Health (DRS) of Kara is composed of seven health districts corresponding to the seven prefectures.

In 2021, in addition to the Kara University Hospital and the Kara Tomdè Regional Hospital, the Kara region had 6 Prefectural Hospitals, one private hospital, 23 CMSs and 113 USPs (Presidency of the Republic of Togo, 2021a).

In 2021 there were 28 doctors, 36 medical assistants, 128 state-certified nurses, 77 midwives, 20 health engineering technicians, 32 laboratory technicians, medical auxiliaries and 111 administrative staff (Presidency of the Republic of Togo, 2021a).

Despite the government's efforts in the field of public health, many patients in the Kara region continue to rely on traditional medicine (Presidency of the Republic of Togo, 2021a).

Centrale Region

The Regional Directorate of Health (DRS), based in Sokodé, works with the Prefectural Directorates of Health (DPS) to organise and coordinate regional healthcare.

The region has 1 regional hospital (CHR), 5 prefectural hospitals in each of the prefectural capitals,1 faith-based hospital, 2 public CMSs, 5 private CMSs, 115 maternal and child posts, 2 private clinics and 2 private practices and several USPs. There are 84 public pharmacies and 27 private pharmacies. There is a morgue at the CHR of Sokodé, the only operational morgue in the region (Presidency of the Republic of Togo, 2021b).

In 2021, there were 31 doctors, 64 medical assistants, 126 nurses, 44 sanitary engineering technicians, 35 laboratory technicians, 65 midwives and 275 medical auxiliaries (Presidency of the Republic of Togo, 2021b).

Healthcare utilisation remains low; BMC Health Services Research (2022) found that only 9.2% of individuals in the Centrale region consult general practitioners, and just 2% seek specialist care.

The maternal mortality rate in the region in 2020 was 160 per 100,000 women (Presidency of the Republic of Togo, 2021b). Caesarean Section is provided in the CHR and hospitals in the health districts.

Malaria remains the leading cause of morbidity in the region. Non-communicable diseases, including cardiovascular conditions, diabetes, mental health issues, domestic injuries and early or unwanted pregnancies, are increasingly observed. Water- and sanitation-related diseases, such as cholera, meningitis and measles, continue to affect the population, while endemic diseases like leprosy and tuberculosis remain prevalent. The prevalence of HIV in 2020 was 2.9% (Presidency of the Republic of Togo, 2021b).

Traditional medicine and traditional healers are also present in the region. They treat disorders such as bewitchment, epilepsy, madness, bipolar disorders, infertility, sexual impotence, snakebite and sickle cell anaemia (Presidency of the Republic of Togo, 2021b).

5.5.9.3 Local level

Infrastructure and access

Local health services are unevenly distributed, as shown in Table 5-45. All communities except Mô (village), Kanga, N'konta and Souroukou have a local health centre. However, local health centres can be difficult to reach for community residents living further away, which is compounded by poor road quality, as is noted in Kagnigbara. Women across all villages cite the cost of healthcare, specifically for consultations, medicines and transportation, as a key access constraint. This is noted as a key factor in the decision to seek medical help from traditional healers over health centres across all villages.

Service quality also varies between centres, with many local health centres lacking specialist services (reported by women in Boulohou, Tindjassé, Djarkpanga, Kagnigbara and Saiboudè). In these communities, women must travel to Bassar or Ghana for childbirth. Women in Saiboudè also report needing to travel to Ghana due to the very poor condition of the Togolese road. The long distances to hospitals is noted as a contributing factor to maternal and child mortality by women (see below for more information on maternal healthcare). In Kagnigbara, residents are likely to seek medical help from traditional healers for diseases which the local health centre cannot treat due to a lack of service offerings.

KIIs were conducted with healthcare workers at USP Baghan and USP Kagnigbara. Staff indicated both centres receive patients from nine cantons, although difficult terrain and villages being as far as 5 km from the centre limit accessibility. Both facilities have reliable running water, electricity provided by solar panels and a mobile phone. While both facilities have functioning refrigerators for storing medicine, staff from USP Kagnigbara indicate drugs are not always available. Moreover, both buildings are in a rundown condition, lacking a room equipped for childbirth/newborns, a treatment room and staff housing with electricity.

Table 5-45: Healthcare facilities observed in PACs in the primary AoI

PAC	Health service	Communities which use centre	Photos	Notes
Kpalou	Kpalou Community Health Centre (CMS)[5]	-	Photos not taken	-
Baghan	USP[6] Baghan	Baghan	*UPS Baghan*	-
Village Mô	None Identified	-	None identified	-
Folo	USP Folo	-	*USP Folo*	-

[5] CMSs provide a broader range of care, including general practitioner consultations, minor surgery, prenatal care, and limited laboratory services, and coordinate community health initiatives

[6] USPs offer basic health services staffed by nurses and auxiliary workers

PAC	Health service	Communities which use centre	Photos	Notes
Kagnigbara	USP Kagnigbara	Kanga, Kagnigbara	*USP Kagnigbara*	Limited services: vaccinations, prenatal care, uncomplicated childbirth, delivery of essential drugs when available. Serious cases and emergencies referrd to PHC Mo.
N'konta (Togo)	None identified	-	-	-
Boulohou	USP Boulohou USP Agbamassomou	Boulohou,	*USP Boulohou*	Poor quality, lacks specialist
Souroukou	None identified	-	-	-
Djarkpanga	USP Djarkpanga Djarkpanga Prefectural Hospital	DJarkpanga	Photos not taken	Lacks child birth services

PAC	Health service	Communities which use centre	Photos	Notes
Tindjassé	USP Tindjassé	Tindjassé, Toukoudjou, Sarakawa	*USP Tindjassé*	General medicine, family planning, vaccination and small procedues available. Patients are often referred to Djarkpanga or CHP Bassar in Sokodé.
Saiboudè	USP Saiboudè	Saiboudè	*USP Saiboudè*	Insufficient staff and medicine – patiens often referred to Bassar or Ghana (N'konta)
Sokodé	Bassar USP	Baghan, Saiboudè, Djarkpanga	Photos not taken	Offers child delivery
N'konta, (Ghana)	USP N'konta (Ghana)	Saiboudè	Photos not taken	-

Source: site walkover survey, KII with health staff and FGD with women

Health-seeking behaviour

According to interviews with women and health staff, each surveyed PAC has at least one traditional healer, although use varies across villages. Geographical proximity, cost and healthcare centre service availability all play key roles in the decision to visit a traditional healer over USP, according to women. Healers offer medicinal and spiritual treatments and may refer clients with serious health needs (e.g., severe malaria, complicated childbirth and fractures) to formal health centres.

Although healers should be registered with the health district, they often operate informally, according to health staff. Healthcare workers also note there is a significant lack of regulation of healers, resulting in delays in proper treatment, use of non-dosed remedies which can result in poisoning, unhygienic practices resulting in a higher risk of infections and drug interference between healers' treatments and health centre drugs. These can all lead to serious complications and even death.

The use of healers across communities is as follows:

- widely used: Kpalou, Baghan, Djarkpanga
- regular use: Tindjassé, Kagnigbara
- used less often than hospitals and typically for acute problems: Boulohou.

Determinants of health

Health outcomes in surveyed PACs are shaped by a range of environmental and social factors. Key determinants include air quality, water and sanitation, and nutrition.

Air quality

Air quality varies across surveyed PACs. According to FDGs with women, Tindjassé and Kagnigbara both have "unpolluted" and "pure" air due to the lack of infrastructure, processing plants and machines. Meanwhile, Baghan, Kpalou and Djarkpanga women all report polluted air with high dust levels, which worsen during the rainy season. They also report poor air quality results in health problems such as eye infections.

Water

For information on water infrastructure and quality, see Section 5.5.11.3.

Sanitation

Access to effective sanitation and sewage systems is constrained across surveyed PACs. Open defecation is the most common sanitary system, used by all communities except Djarkpanga, according to women. Although pit latrines are additionally present within these communities, the majority only have access to open defecation, which is practiced by 80 to 99% of residents in Tindjassé, Kagnigbara and Bolohou. Heterogeneity also exists between PACs, as Djarkpanga has access to the most hygienic sanitation systems across all cantons and no residents practice open defecation, according to women. Overall, sanitation system access is lower for all surveyed PACs, except Djarkpanga, than the national average (see Section 5.5.11 for an overview of sanitation infrastructure).

Nutrition

According to FDGs with women, diets are rich in locally grown carbohydrates, vegetables and oil, while protein is consumed occasionally due to its higher price (see Table 5-46). Diets across surveyed PACs namely include:

- carbohydrates: locally grown carbohydrates are consumed daily, with the most common sources including yams and maize
- vegetables: locally grown vegetables are also consumed daily, including okra and leafy greens
- fruits: oranges, mangoes, papayas and bananas are available seasonally
- protein: small fish and soy are consumed occasionally, when finances permit.

Food scarcity varies seasonally, while meat remains scarce year-round. Women across surveyed PACs note significant financial constraints in accessing protein. Although desired, meat and eggs are notably never available in Baghan and Saiboudè. Food scarcity is highest during the dry season from May to July, which is sometimes referred to as the "famine" period. Women in Kagnigbara report needing to sell products such as charcoal, wood and poultry during this time to obtain food. They also note some families reduce their food intake to one meal per day in response to financial constraints.

Table 5-46: Foods consumed across surveyed PACs

Food	Surveyed PAC	Availability
Carbohydrates		
Yam	Baghan, Tindjassé, Boulohou, Kagnigbara	Consumed daily
Millet	Baghan, Kagnigbara	
Maize	Baghan, Saboudi, Kagnigbara, Tindjassé, Boulohou	
Sorgum	Baghan, Tindjassé, Boulohou	
Cassava	Saboudi	
Vegetables		
Okra	Baghan, Saboudi, Tindjassé, Kagnigbara, Boulohou	Consumed daily
Leafy greens	Saboudi, Tindjassé, Kagnigbara, Boulohou	
Tomatoes	Tindjassé	
Fats/oils		
Oil (peanut, palm, other)	Baghan, Kagnigbara	Consumed daily
Fruit (seasonally available)		
Oranges	Baghan, Tindjassé, Boulohou	Seasonal variation
Mangoes	Baghan, Saboudi, Kagnigbara	
Papaya	Kagnigbara, Saboudi	
Banana	Saboudi, Tindjassé, Boulohou	

Food	Surveyed PAC	Availability
Protein		
Beans	Baghan, Kagnigbara	Consumed infrequently
Soy	Tindjassé, Boulohou	
Small	Baghan, Kagnigbara, Saboudi	

Source: FDG with women

Health issues

According to health staff, the most common illnesses across the communities include:

- malaria (pregnant women and children under five most at risk of serious complications)
- diarrhoea
- measles
- acute flaccid paralysis
- influenza
- red diarrhoea
- trauma.

According to health staff, pregnant women and children under five are most at risk to developing serious illnesses.

For children under five, the most common illnesses include:

- pneumonia
- malaria
- diarrhoea
- acute respiratory infection
- measles.

For the elderly, common illnesses include:

- hypertension
- diabetes
- asthma.

In Kagnigbara, 61% of intermittent preventive treatment is received by the elderly, although the centre lacks a geriatric service and adequately trained staff.

5.5.10 Education

5.5.10.1 National level

Togo's education system follows a 2-6-6 structure, comprising two years of pre-primary, six years of primary and six years of secondary education. Primary education is free and compulsory for children aged six to 15.

The primary school completion rate stands at 90.7% as of 2023, with gross enrolment at 120.25%[7]. However, progression to secondary education is limited, with secondary school enrolment at 65.26% in 2023. The tertiary enrolment rate is relatively low, at 15.07% in 2020, with a notable gender disparity: 15% for women and 19% for men. Gender disparities persist throughout the system, with a female-to-male enrolment ratio of 0.96 in primary education, 0.81 in secondary and 0.57 in tertiary education (World Bank, 2023c).

In Togo, the adult literacy rate is approximately 67% (World Bank, 2023d), with a notable gender gap: 80% of men versus 55% of women are literate (World Bank Gender Data, 2023). Youth literacy is higher, at around 84%, reflecting improvements in access to primary and secondary education (World Bank, 2023c). These figures indicate progress in education, but also highlight the need for continued efforts, particularly to reduce gender disparities in literacy.

5.5.10.2 Regional level

Kara Region

In the region, it is estimated that 37% of the population have no education, 36% have completed primary education, 37% have completed lower secondary education and 1.8% have completed upper secondary education (Presidency of the Republic, 2021a).

The number of students per class varies from 50 to 60 children. The adult literacy rate in Kara is estimated at 65% for men and 38% for women (the national average for Togo is approximately 67%) (Presidency for the Republic, 2021a).

The only university in the region is Kara University which opened in 2004. It has five faculties which are arts and humanities, economics and management, law and political science, science and technology, and health sciences (Presidency for the Republic, 2021a).

Centrale Region

The net enrolment rate for primary school (EPP) at the regional level has continued to increase. It rose from 83.10% in 2014–2015 to reach 95.30% in 2019–2020. The pass rate for primary school is 70.9% in 2020 with a repetition rate of 8.4% The region has 4,445 teachers (Presidency of the Republic, 2021b). The percentage of students enrolled in lower secondary education (CEG) was around 65% in 2020.

5.5.10.3 Local level

Literacy rates and school attendance

Across all communities, less than half the population is literate, according to local leaders, which is slightly below the national average. Women are disproportionately illiterate across all surveyed PACs, with rates ranging from completely illiterate (Baghan, Saiboudè) to majority illiterate (Kpalou, Tindjassé, Kagnigbara, Boulohou), according to FGDs with women. Nevertheless, leaders note access to education is improving, and that

[7] A gross enrolment rate of over 100% does not indicate universal coverage; rather, it signals issues like: high repetition rates (students repeating grades), late entry into school (over-age students) and inaccurate age reporting or population estimates.

they appreciate the value of education. According to village leaders and teachers, school enrolment varies across surveyed PACs (see Figure 5-45):

- total enrolment: Djarkpanga
- majority enrolment: Kpalou, Boulohou, Saiboudè
- minority enrolment: Kagnigbara, Tindjassé.

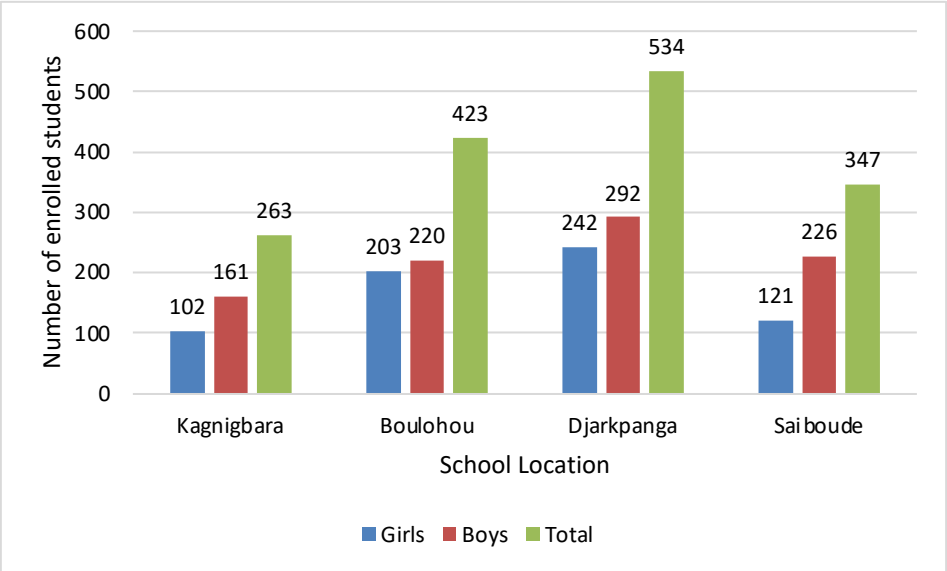

Figure 5-45: Enrolment of boys and girls across surveyed schools
Source: KII with teachers

Once enrolled, school attendance is high at above 90% according to teachers in Kagnigbara, Boulohou and Djarkpanga. Attendance is slightly lower, at 75%, in Saiboudè.

Primary school completion rates are low in comparison to the national average (90.7%). Locally, completion rates range from 35% (Boulohou) to between 55% and 60% (Kagnigbara, Djarkpanga, Saiboudè) (see Figure 5-46).

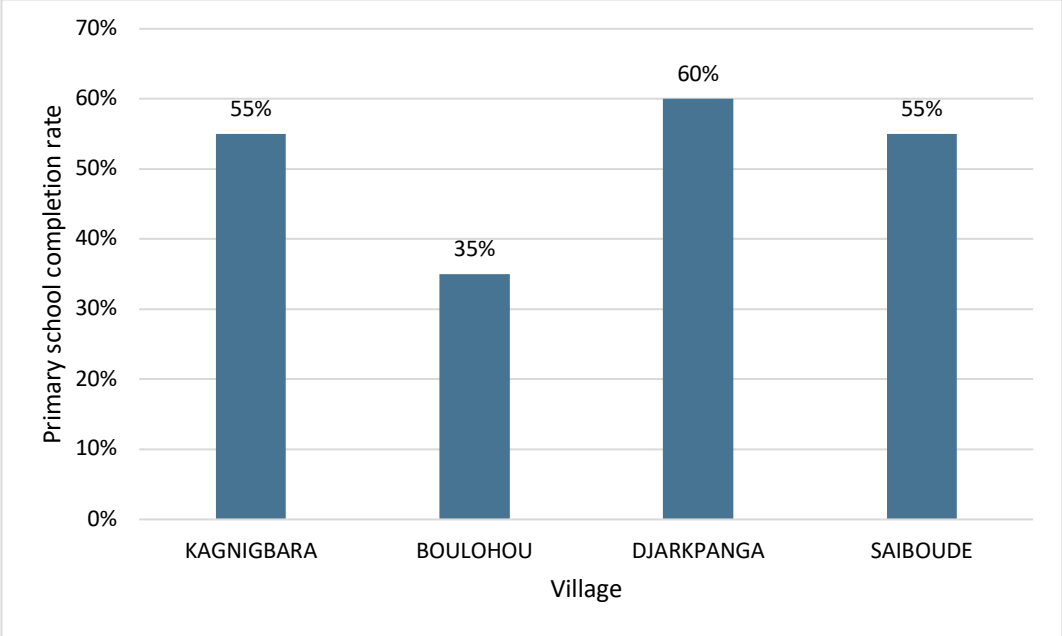

Figure 5-46: Primary school completion rates in surveyed PACs
Source: KII with teachers

Tertiary education attainment mirrors the national average in Kagnigbara and Djarkpanga, with attendance rates of 10% and 20%, respectively. University enrolment is slightly higher in Saiboudè, with an attendance rate of 30%, according to teachers.

Barriers to education

Despite free primary school for all children mandated under Togolese law, financial constraints prevent children in surveyed PACs from attending, as noted by women in Kpalou, Tindjassé and Kagnigbara. Even though no schools charge fees across all those surveyed, parents still pay school related costs, or *parallels*, which are 3,000 CFA in Saiboudè, according to school staff. Orphans are disproportionately likely to not attend school due to financial constraints. Long distances to schools and road conditions also constrain enrolment according to teachers in Kagnigbara and Djarkpanga.

Across all schools surveyed, attendance and enrolment rates are higher for boys, with the smallest disparity in Boulohou and largest in Saiboudè (see Figure 5-45). In Saiboudè, teachers note domestic workload prevents girls from attending. Nevertheless, learning outcomes are equal for boys and girls, according to teachers. Women in Kpalou also note pregnancies for girls aged 11 – 15 force them to drop out. According to women, the decision to send children to school most commonly falls on both parents (as is the case in Tindjassé, Kagnigbara and Boulohou), except for Kpalou, where it is the mother's responsibility. Nevertheless, across surveyed PACs, women note the financial burden of affording school related costs falls solely on mothers.

School infrastructure and distance

School availability varies across surveyed PACs (see Table 5-47). All communes have at least one primary school, with many having a primary school in each village, such as Saiboudè and Kagnigbara. Some villages within cantons lack primary schools, as is the case in Djarkpanga, where children must traverse difficult terrain, including a river, to

reach school, according to teachers. Kpalou is the only commune which lacks any form of college, middle or high school, while Tindjassé and Djarkpanga are the only communes with a high school, according to leaders. In other PACs, dropouts after primary and middle school are common due to limited school supply. No vocational training centres are present in any villages, according to leaders, with men also noting this is a barrier to local economic development.

The educational quality is noted to be poor, according to all teachers surveyed. Moreover, they note all schools lack reading materials such as books, hindering literacy rates.

Table 5-47: Schools availability in surveyed PACs in the primary AoI

PAC	Schools
Kpalou	• Multiple primary schools • 1 CEG/middle school
Baghan	• 3 primary schools • One secondary school
Village Mô	• One primary school*
Boungoulou	• One primary school*
Banda	• One primary school*
Folo	• One primary school*
Kagnigbara	• Primary school (all villages) • 1 CEG/middle school (see Figure 5-47)
Boulohou	• 2 primary schools • 1 college
Djarkpanga	• 3 primary schools • 1 high school
Sibonia	• 1 Primary school*
Tindjassé	• 7 preschools • 11 primary schools (all villages) • 1 CEG/middle school • 1 high school
Saiboudè	• 1 (all villages) • 1 CEG/middle school

Source: KII with leaders. Schools marked with an asterisk were identified during the scoping and baseline drive-by surveys

Figure 5-47: CEG/middle school in Kagnigbara 17.09.25

School distance and transport

Since most students reach school on foot, and a small minority by bicycle, according to teachers, long distances are a key constraint on children's ability to attend school. There is greater heterogeneity in distances to schools for villages within cantons than between cantons, with distances ranging from 1 km to 11 km. Across all villages, teachers note students must walk alongside and/or cross the Bassar-Tindjassé Road to reach schools.

During the rainy season, rivers are prone to flooding, which prevents children from making their way to school since crossing is dangerous. Other safety concerns which teachers express include:

- motorcycle accidents
- poor road condition leading to traffic accidents (see Section 5.5.12)
- violent winds.

5.5.11 Social infrastructure and services

5.5.11.1 National level

Water and sanitation

As of 2023, Togo's drinking water coverage increased to 69%, up from 47.66% in 2014. In rural areas, access rose from 47.7% to 74.4% over the same period, indicating significant improvements in water access nationwide (Blue Community, 2025).

Energy

Electricity access in Togo reached 59.2% in 2023, a 2% increase from the previous year. While urban areas have higher access rates, rural regions continue to face challenges in energy availability (Macrotrends, 2025).

Road network

Togo's road network plays a critical role in linking urban and rural areas, supporting trade, agriculture, and access to social services. As of 2025, the government allocated 72 billion CFA to road development, including the construction and rehabilitation of approximately 1,877 km of rural roads, alongside mechanised maintenance of 1,844 km (Togo First, 2025). Despite these investments, many rural roads remain in poor condition, particularly during the rainy season, limiting access to markets, health services and schools.

Telecommunications

Togo's telecom market is dominated by two major providers: Yas Togo and Moov Africa Togo. In 2023, Togo led West Africa in mobile internet performance, offering the best mobile internet performance in the sub-region (Togo First, 2023a).

5.5.11.2 Regional level

Kara Region

Water and sanitation

In 2010, nearly 7 out of 10 households disposed of household waste in nature and nearly 8 out of 10 households did not have a latrine and practiced open defecation. Only Kara has wastewater collection and treatment. Elsewhere in the region, sewage is disposed of in the streets and in vacant lots. Faecal sludge is disposed of in nature without prior treatment (Presidency of the Republic of Togo, 2021a).

Urban and semi-urban centres do not have sufficient rainwater sanitation infrastructure leading to recurring flooding of the streets (Presidency of the Republic of Togo, 2021a).

In urban areas, drinking water is supplied by the Togolese Water Company (TdE) and the Water and Sanitation Heritage Company in Urban and Semi-Urban Areas (SP-EAU S.A) through household connections and public standpipes. In rural areas, drinking water is supplied by mini water supply systems or the drilling of boreholes (Presidency of the Republic of Togo, 2021a).

Access to drinking water is a major concern in the region. Many communities continue to use other sources of drinking water such as wells, rivers, water reservoirs and springs (Presidency of the Republic of Togo, 2021a).

Energy

In the Kara region, electrification increased from 20.29% in 2016 to 22.16% in 2017. Electricity is the primary source of lighting for the population. Electrical energy is supplied by CEET through the CEB network and the Sokodé and Kara thermal power plants. In rural areas without electricity kerosine lamps remain the primary source of lighting.

Fuelwood and charcoal remain in high demand for cooking. More than 80% of households and artisanal processing units use wood and charcoal as a source of energy which is produced by the informal sector (Presidency of the Republic of Togo, 2021a).

Road network and transport

In the Kara region, efforts have been made to improve the road network by opening service roads to agricultural areas and modernising roads to facilitate trade with

neighbouring countries. Urban roads remain limited: only Kara has 38 km of asphalt streets, while Bassar, Pagouda, Niamtougou and Kanté have about 2 km each. Dirt roads are difficult to use during the rainy season, and maintenance is challenging. Urbanisation is minimal, and streets are either planned or virtually non-existent (Presidency of the Republic, 2021a).

Two-wheeled motorcycles and tricycles partially compensate for the lack of transport, although fares are often unaffordable. Outside Kara, there are no formal bus stations; in the city itself, stations are informal marketplaces lacking adequate facilities. Kara also has eight transport companies supporting bus services (Presidency of the Republic, 2021a).

Air transport in the region includes Niamtougou Airport, the country's second-largest international airport, capable of handling four jet aircraft and an airstrip at Sarakawa (Presidency of the Republic, 2021a).

Housing

Rural housing in the region is typically traditional, with straw-roofed dwellings known as sukkalas, while urban areas feature modern constructions with metal, tile or concrete roofs (Presidency of the Republic, 2021a).

Telecommunications

Both 3G and 4G mobile networks are available in the Kara region, with coverage extending to rural areas. This connectivity supports mobile internet services and mobile money platforms, enhancing communication and financial inclusion (nPerf, 2025).

Centrale Region

Water supply and sanitation

Access to adequate hygiene and sanitation remains limited in the Central Region. In 2021, only 10.6% of the population had access to sanitation facilities, such as public or private latrines. Sewage and wastewater are often discharged into rivers (e.g., Kpandi and Kpondjo) or near homes, exposing populations to waterborne diseases. In 2020, the region had 836 landfill sites, though illegal dumping persists. Drinking water is supplied through urban hydraulics (AEP), semi-urban hydraulics (mini-AEP) and village systems, including boreholes with hand pumps, photovoltaic systems or autonomous stations.

Energy

The region's energy mix includes electricity, firewood, charcoal, hydrocarbons and solar energy. Two solar photovoltaic plants (Assoukoko and Blitta) operate in the region; there is no wind energy. A SODIGAZ gas depot in Sokodé improved urban gas availability, though rural access is limited due to low awareness of risks and high costs. In 2020, 14 petrol stations served the region, facing competition from informal, adulterated fuel. In rural areas without electricity, kerosene lamps remain the primary source of lighting.

Transport network

Between 2010 and 2020, the region's road network expanded from 3,647 km to 6,709.8 km, driven by projects such as the Mô Plain Integrated Development Project (PDRI-Mô). Paved roads increased from 256 km to 347 km, unpaved roads from 1,640 km to

2,042 km and rural tracks from 695 km to 4,667.6 km. Maintenance of both asphalt and unpaved roads remains insufficient. In 2020, five bus stations existed in the region, at least one per prefecture. Short intercity travel relies on motorcycle taxis, while longer trips use taxis, minibuses and 50-seater buses. Rural transport remains limited, and air transport is minimal, with only an airfield in Nada; the railway network is obsolete.

Housing

Rural housing is typically traditional, with straw-roofed dwellings, while urban areas feature modern constructions with metal, tile or concrete roofs.

Telecommunications

Landline telephones are mainly used by households and institutions, while mobile phones, provided by Yas Togo (previously called Togocom) and Moov Africa, have been widely adopted. Internet access, introduced via cybercafés in the early 2000s, is increasingly used for email, social networks and digital services. Traditional communication methods such as Telex and Fax have largely been replaced. Regional media includes radio and television.

5.5.11.3 Local level

Water

Water sources identified across PACs in the primary AoI during the scoping and baseline drive-by survey are outlined in Table 5-48. Across PACs, boreholes are the most common water source, present in 15 out of 19 communities. Rivers and streams are used as water sources for nine PACs. Meanwhile, water towers, wells and piped water are notably less common across PACs.

Table 5-48: Water supply and sanitation in the PACs in the primary AoI

PAC	Number of water sources per village					
	Borehole	River or stream	Well	Water tower or station	Piped water	Total
Saboudi	3					3
Kpalou	3					3
Tchessi			1			1
Baghan	3			1		4
Village Mô		1				1
Boungolou		1				1
Banda	2	1				3
Folo	2	3		1		6
Kagnibara	5			1		6
N'konta	1					1
Kagna		1				1

PAC	Number of water sources per village					
	Borehole	River or stream	Well	Water tower or station	Piped water	Total
Boulohou	5					5
Souroukou	1	1			1	3
Djarkpanga	3				1	4
Gnomandé	2	1				3
Okou	1	1				2
Sibonia	1					1
Tindjassé	5		2	3		11
Saiboudè	6		2	3		11

Source: Scoping and baseline drive-by survey

Note: no data available for Warangni

In the surveyed PACs, women report walking long distances to collect water. They report boreholes range from 500 m in Kpalou to 1 km in Baghan and 2 km in Boulohou. Rivers are up to 5 km away in Kagnigbara and Bolouhou.

Drinking water quality ranges significantly across surveyed PACs (see Table 5-49). In Boulohou, women report water from boreholes is safe to drink even though untreated. Women in Tindjassé also report no concerns with drinking water quality. Women in Kagnigbara report the availability of drinking water has improved within local cantons, although they cite recurring breakdowns and population growth as remaining constraints.

Nevertheless, women in other surveyed PACs report poor quality water citing the following issues:

- discolouration: Kpalou, Djarkpanga
- disease: Baghan
- pollution from cattle entering river: Djarkpanga.

Water quality and availability varies on a seasonal basis. Across all surveyed PACs, water scarcity increases significantly in the dry season, where natural sources and wells dry up completely or at a faster rate. During this time, no water is available from the river in Djarkpanga. In Saiboudè, the well water source is unavailable during the dry season. Even when available, women note it is oversubscribed, which causes disputes over water to arise in the afternoon. In Kagnigbara, it takes 30 to 60 minutes to draw water, which is of poorer quality, especially in the morning. Contrastingly, women in Kpalou report water to be poorer quality in the rainy season.

Table 5-49: Reported drinking water quality across surveyed PACs

Surveyed PAC	Safe	Unsafe
Kpalou		
Baghan		
Kagnigbara		
Boulohou		
Djarkpanga		
Tindjassé		
Saiboudè	No data	

Source: FGDs with women

Figure 5-48: Mo river used for collecting water by surveyed PACs, 17.09.25

Figure 5-49: Borehole in Boulohou, 05.11.25

Sanitation

Access to effective sanitation and sewage systems is similarly constrained (see Table 5-50). Across surveyed PACs, open defecation is the most common sanitary system, used by all communities except Djarkpanga, according to women. Although pit latrines are additionally present within these communities, the majority only have access to open defecation, which is practiced by 80% to 99% of residents in Tindjassé, Kagnigbara and Boulohou.

Table 5-50: Sanitation systems across surveyed PACs

Surveyed PAC	Percentage of population using sanitary system		
	Open defecation	Pit latrine	Improved pit latrine
Kpalou			
Baghan			
Kagnigbara	80	5	5
Bolohou	99	1	
Djarkpanga			
Tindjassé	99	1	

Source: FGDs with women.

Note: no data for Saiboudè and percentage amounts not available for Kpalou, Baghan or Djarkpanga.

Energy

Lighting

Most households across surveyed PACs have access to some form of electricity, although the quality of lighting sources varies (see Table 5-51). According to women FGDs, battery torches are the most widely used light source, available across six PACs. Within these, coverage is high, ranging from 90% to 100%. Solar panel energy is available in Tindjassé, Kagnigbara and Boulohou for a minority of households ranging from 25% to 5%. In Tindjassé and Kagnigbara, 5% of households are connected to the electricity grid. Electrification is highest in Djarkpanga, where women note all households are connected to the grid, although the connection is only available from 9am to 11 pm.

Table 5-51: Light electricity sources across surveyed PACs

Energy source	Surveyed PAC	Percentage of population with access
Battery torch/lamp	Kpalou	100
	Baghan	100
	Kagnigbara	90
	Boulohou	100
	Djarkpanga	Used during power cut
	Tindjassé	90
Phone torch	Saiboudè	100
Electricity (grid)	Kagnigbara	5
	Djarkpanga	100 (available 9am – 11pm)
	Tindjassé	5
Candle	Kagnigbara	90
	Tindjassé	90

Energy source	Surveyed PAC	Percentage of population with access
Solar panels	Kagnigbara	25
	Boulohou	5
	Tindjassé	25

Source: FGDs with women

Cooking

Following regional trends, most surveyed PACs use charcoal and wood sources for cooking, according to women, which are sourced and traded locally on an informal basis (see Section 5.5.8.3). Butane gas is also used by a small (2%) minority of urban populations in Tindjassé and Kagnigbara (see Table 5-52).

Table 5-52: Cooking sources by surveyed PAC

Energy source	Surveyed PAC	Source
Charcoal	Kpalou, Baghan, Kagnigbara, Boulohou, Djarkpanga, Tindjassé, Saiboudè	• Kpalou and Baghan: at the men's farms in gallery forest • Djarkpanga: trees in the bushland • Tindjassé and Kagnigbara: produced locally and purchased • Boulohou: neighbouring villages
Wood	Kpalou, Baghan, Kagnigbara, Boulohou, Djarkpanga, Tindjassé, Saiboudè	• Tindjassé and Kagnigbara: communal forrest • Boulohou: village
Butane gas	Kagnigbara, Tindjassé	• Rarely used (predominantly by urban households)

Source: FDG with women

Housing

Housing is predominantly rural and dispersed, with a mix of traditional banco (mud brick) circular concessions (see Figure 5-33). Along the Bassar–Tindjassé road, numerous residential dwellings are located close to the road corridor.

Figure 5-50: Traditional 'Banco' houses 03.11.25

Telecommunications

During scoping and baseline drive-by survey's, telecommunications antennas managed by various network providers including Togocel, Yas Togo and Moov were recorded adjacent to the proposed route in various communities including Baghan, Djakpanga, Saiboudè and Tindjassé (see Figure 5-51).

Figure 5-51: Telecommunications antenna operated by Moov 03.11.25
Source: scoping visit drive-by survey

Road network and transportation

Across all communities, walking is the most common mode of transport, followed by motorcycle taxis used on an occasional basis, according to women. These are used to reach crop farms and local markets, such as Bassar. A day of transport in the local area costs approximately 784 CFA. Residents may also travel further to larger economic hubs, including Sokodé, Kara, Lomé and Accra.

5.5.12 Community safety, security and welfare

5.5.12.1 National level

Law enforcement

The national police and gendarmerie are responsible for law enforcement and maintenance of order within the country. The gendarmerie is also responsible for migration and border enforcement. The National Intelligence Agency provides intelligence to police and gendarmes but does not have internal security or detention facility responsibilities. Police are under the direction of the Ministry of Security and Civil Protection. The gendarmerie falls under the Ministry of Security and Civil Protection on many matters involving law enforcement and internal security but also reports to the Ministry of the Armed Forces (US Department of State, 2023).

Togo has a criminality score of 5.23 on the ENACT Global Organised Crime Index 2023, placing it 27th out of 54 African countries. This score reflects the country's overall exposure to organised crime, including illicit markets and criminal actors (Organised Crime Index, 2023).

Road safety

Togo faces significant challenges related to road safety, including a high incidence of traffic accidents. In 2020, road traffic accidents caused 2,316 deaths, accounting for 4.67% of total deaths, with a rate of 33.94 per 100,000 population (World Life Expectancy, 2023). In the third quarter of 2023, road safety improved slightly, with 117 fatalities compared to 145 in the previous quarter. This improvement is attributed to new safety measures, including stricter enforcement of helmet-wearing and adherence to traffic signals (Togo First, 2023b).

Agricultural and transhumance conflicts

Conflicts between sedentary villagers and Fulani pastoralists represent a significant and evolving community security concern across Togo. Fulani herders are frequently held responsible for crop damage, creating recurring tensions with agricultural communities. In response to insecurity and stigmatisation, Fulani herders increasingly report they no longer seek to foster relationships with host communities but rather aim to protect their own herds. Increasing internal fragmentation is also reported, with pastoralists sometimes denouncing each other to survive (Loukoumanou et al., 2023).

This deteriorating security environment is compounded by widespread stigmatisation and ethnic targeting. Local narratives in several countries equate "terrorists" with Peulh herders; In Togo, media narratives have described Peulh as "les terroristes sont souvent les peulhs" (terrorists are often Peulh) and describing them as "peulhs djelgoodji" (violent Peulh) (Loukoumanou et al., 2023). Traditional manure-for-food contracts between Fulani transhumants and farmers, formerly widespread and mutually beneficial, are now largely abandoned due to fear and mistrust on both sides.

5.5.12.2 *Regional level*

Kara Region

Security in the region is the responsibility of the national police, the national gendarmerie, the fire brigade and the military corp. Each prefectural capital has a police station.

In 2017, 40% of the population in the region reported feeling unsafe at home alone at night and 50% highlighted feeling unsafe walking along at night (Republic of the Presidency, 2021a).

There have been 56 recorded natural disasters in the Kara Region in 2020 (5 fires, 1 flood, 45 tornadoes or strong winds, 2 community conflicts and 3 'other', e.g., building collapse or destruction of fields) (Republic of the Presidency, 2021a).

Centrale Region

Security in the region is the responsibility of the national police, the national gendarmerie, the fire brigade and the military corp. Each prefectural capital has a police station.

5.5.12.3 *Local level*

Law enforcement coverage

Table 5-53 displays gendarmerie posts present within communities.

Table 5-53: Gendarmerie coverage in PACs in the primary AoI

Gendarmerie post	PACs served
Baghan	• Baghan • Village Mô • Folo
Kagnigbara	• Kagnigbara • Village Mô • Folo
Boulohou	• Boulohou • N'konta
Djarkpanga	• Djarkpanga • Souroukou
Tindjassé	• Tindjassé • Saiboudè

Source: scoping site survey

Crime trends

Despite limited local data being available regarding crime, women in Kagnigbara note increasing juvenile delinquency rates within their community. Nevertheless, leaders in Baghan report the intervention of the gendarmerie has contributed to violence stopping in recent years, although GBV persists.

Traffic accidents and road safety

Accidents remain common across all PACs, which most often involve motorcycles and pedestrians. Nevertheless, Tindjassé and Boulohou are exceptions, where women note accidents are rare and never serious. Road accidents can be attributed to (a) road conditions and (b) behaviour.

Road conditions

Roads are predominantly unpaved, which creates poor quality and hazardous conditions. The rainy season further amplifies the risk of accidents by degrading the road further. For instance, women note the Tindjassé-Nabou road linking Tindjassé centre with its smaller villages becomes dangerous.

Behaviour

According to women, human behaviour also increases the risk of accidents, namely:

- excessive speed
- alcohol
- poor driving knowledge
- absence of road signs
- increased traffic on market day(s) (see Table 5-54).

Road accident impacts

Fatalities from road traffic are common across PACs, bar Tindjassé and Boulohou. Emergency care is also hard to access due to the poor roads and long distances to medical facilities alongside the high cost of treatment relative to incomes, making fatalities high.

While PACs are hopeful the new road will reduce accidents in the long run, they note increased frequency of traffic comes with a risk of greater traffic accidents.

Table 5-54: Market days with heavy traffic for surveyed PACs

Market name	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Kpalou	Multiple days (unspecified)						
Baghan					■		■
Kagnigbara							■
Boulohou							■
Djarkpanga			■				
Tindjassé[8]	■	■	■	■			
Saiboudè	■						
Bassar						■	

Source: KIIs with leaders

[8] Tindjassé's main market day is Thursday, according to a KII with a market seller, although according to the community leader, the market operates Monday – Thursday

Resource conflicts (village members and transhumance pastoralists)

Land conflicts more frequently occur between village crop farmers and Fulani Pastoralists who may graze cattle on crop land. Men cite this as causing disputes across all surveyed communities. Men further note transhumance disputes arise due to livestock intrusion leading to crop damage and soil degradation. Over the past five years, the frequency and intensity of disputes with pastoralists is reported to have increased, driven by worsening climate impacts and persistent transhumance pressures, according to FDGs with men. Soil impoverishment and increased reliance on fertilisers have further strained relations between farmers and herders. Government sources also confirm that conflicts between farmers and transhumant herders have increased over the past five years due to declining rainfall, soil degradation and pressure on remaining fertile land (MDTT, 2025).

Water is also notably scarce across all villages, which risks inter and intra community conflict arising from competing water source claims. For example, in Saiboudè, women note that conflicts emerge between village members when water supply of the local well is insufficient to meet demand. Moreover, women in Djarkpanga report pollution of the river water source due to cattle entering the river. This may risk triggering water related disputes between Fulani pastoralists and community members.

Gender-based violence

Despite the increasing presence of campaigns run by organisations such as RADAR, Creuset Togo and Action Sociale, village leaders report the persistence of GBV across all communities, except Boulohou. Nevertheless, GBV is notably underreported, as suggested by the community leaders of Tindjassé and Saiboudè, citing socio-cultural factors as a key barrier. GBV is further cited by men as project risk in Djarkpanga, Tindjassé, Saiboudè, Kagnigbara and Boulohou.

According to community leaders, GBV most often entails economic violence, as is the case in Kpalou, Baghan, Djarkpanga, Saiboudè and Kagnigbara. Health staff in Kagnigbara also report the presence of early and forced marriages in remote villages.

Leaders in Kpalou and Saiboudè further note GBV can result from jealousy and fear among husbands that they may lose their wives due to the financial freedom women can obtain from market gardening. According to health staff in Baghan, the risk of GBV increases during harvest periods, when men have greater financial liquidity from crop sales, and during parties. Health staff in Kagnigbara also note the risk of sexual violence is higher in market areas and occurs during commutes to fields.

Dispute resolution mechanisms

Conflict resolution mechanisms involve traditional governance structures, where disputes are settled by district, canton and village chiefs to resolve issues such as land conflicts and GBV. Men report land conflicts resolved in this way often result in compensation payments for victims of crop damage by livestock. Leaders of Tindjassé and Saiboudè report cases of GBV are often brought towards traditional leaders, although victims are often silenced due to socio-cultural factors. In markets, disputes are solved in various ways. In Baghan, the landowner is first called. If they cannot resolve the dispute, the case will be brought to the chief, and as a last resort, the formal justice system. In Tindjassé, disputes are brought to the head of the market, while in Saiboudè all issues are brought directly to the chief.

Social welfare services

Support for women facing violence and/or harassment is sparse across villages, according to village leaders. While leaders claim support is available from women's families across most surveyed PACs, formal support from associations remains limited to Boulohou. Chiefs note they provide additional support to women in Kagnigbara and Saiboudè, who also highlight they act as mediators in cases of GBV. Leaders overall report the following services available to women facing violence and harassment:

- family support available in Kpalou, Baghan, Djarkpanga, Tindjassé and Saiboudè
- additional support from chieftaincy available in Kagnigbara and Saiboudè
- associations and social action service available in Tindjassé
- support available but unspecified in Boulohou
- no association present in Kpalou, Baghan, Djarkpanga and Saiboudè.

Women in Saiboudè, Boulohou and Tindjassé report local chiefs are providers of help in crisis situations. Women in Djarkpanga, Boulohou and Tindjassé report families as sources of assistance. In Kagnigbara, women reportedly have the option to turn to the leaders of their women's group and association alongside the citizenship office. Women in Tindjassé and Boulohou report the availability of military services for assistance. However, women in Baghan report no social protection services, since they are hesitant to ask the community and chief for help as rumours of their problems will spread through the community. See Table 5-55 for an overview of available social protection services, according to women and leaders.

Table 5-55: Community welfare services available across surveyed PACs according to leaders and women

Surveyed PAC	Available community support system												Total support systems	
	Chiefs		Family		Association		Citizenship office		Military		Unspecified support		Women	Leaders
Kpalou	-			✓	-		-		-		-		-	1
Baghan				✓									0	1
Kagnigbara		✓	✓		✓		✓						2	1
Boulohou	✓		✓						✓			✓	3	1
Djarkpanga			✓	✓									1	1
Tindjassé	✓		✓	✓		✓			✓				3	2
Saiboudè	✓	✓		✓									1	2

Source: KII with village leaders and FDG with women

Key	
✓	FDG women
✓	KII leaders
-	No data

5.5.13 Cultural heritage and archaeology

5.5.13.1 National level

Togo's cultural heritage is rich and diverse, reflecting its 40 ethnic groups, including the Ewe, Mina, Kabyé and Tem. The country is home to several intangible cultural practices recognised by UNESCO, including:

- traditional midwifery: Recognised for its knowledge, skills and practices in maternal care (UNESCO, 2023)
- oral heritage of Gelede: A ritual performed by women, involving music, dance and masked performances to honour the primordial mother, Iyà Nlà (UNESCO, 2008).

5.5.13.2 Regional level

Kara Region

In the Kara Region, several traditional festivals are celebrated by various ethnic groups (Republic of the Presidency 2021a). These include:

- "*Evala"*, an initiation festival for young boys in Kabyè country that usually takes place in the month of July in the prefecture of the kozah
- "*Akpema*", an initiation festival for young girls in Kabyè country that usually takes place in the month of July in the prefecture of Lakozah
- "*Kiyèna*", a yam festival in Kabyè country
- *"Habyè*", a spiritual festival or carnival of conjuring up death
- *"*D'pontr", a yam festival in Bassar and Dankpen
- *"Sinkaring"*, a festival of initiation of the Kabyè of the binah
- *"Tissilim*", a harvest festival in the prefecture of Keran
- *"Kamaka*", a traditional festival of the prefecture of Assoli.

The Kara Region is renowned for the Koutammakou (Land of the Batammariba) heritage site. A UNESCO World Heritage Site shared with Benin, Koutammakou is characterised by its distinctive mud tower-houses known as takienta. These structures are integral to the Batammariba people's cultural identity and are associated with their traditional way of life (UNESCO, 2004)

Centrale Region

In the Central Region, several traditional festivals are celebrated by various ethnic groups (Republic of the Presidency, 2021b). These include:

- "*Adossa*", which celebrates the bravery of the communities and implores divine protection for the communities for the new year
- *"Gadaou*", a customary festival celebrated in memory of the mysterious disappearance of the first Chief Moola and to thank the ancestors for the year's harvests
- *"Kiyèna*", a harvest festival in Sotouboua and Blitta.

5.5.13.3 *Local level*

The primary social AoI exhibits a blend of animist, Christian and Muslim practices, with animism remaining dominant. Sacred sites and cultural heritage observed along the road alignment are summarised in Table 5-56.

Intangible cultural heritage

Several local taboos exist within surveyed PACs, which include the following forbidden activities, according to local leaders PAC names are in (s):

- flirting with women when married (Kpalou, Baghan, Kagnigbara, Tindjassé)
- romantic/sexual relationships with minors (Boulohou)
- moving fetishes without the permission of the owner (Djarkpanga)
- cutting wood at night (Kagnigbara, Tindjassé, Saiboudè)
- whistling at night (Tindjassé, Saiboudè)
- bringing wood with its branches into the house (Tindjassé, Saiboudè)
- menstruating women going to the river (Saiboudè)
- entry of malicious strangers into the village (Kagnigbara)
- working in the fields on the sixth day of the week (Kagnigbara).

According to village leaders, all surveyed PACs participate in the Yam Festival to celebrate harvest. Across West Africa, the Yam Festival marks the end of the farming season and honours the connection between people, their land and ancestors (Tchimou, 2025). Beyond its spiritual significance, the festival serves as a time of unity where families gather, elders pass down traditions and communities come together through songs, dances, traditional foods and the resolution of disputes.

While the community leader of Boulohou did not say that the community participates in the Yam festival, he noted that they participate in the Feast of Reunions (Kayakoyo) in December. He further noted that Reunion and Monsoon festivals occur throughout the Mô prefecture throughout August, alongside the Islamic religious events of Tabaski and Ramadan.

Tangible cultural heritage

In the project area, shrines, fetish sites and sacred forests serve as venues for religious ceremonies, ancestral worship, initiation rites and ongoing Vodun (voodoo) practices, which are deeply embedded in the local intangible cultural heritage (see Figure 5-54 and Figure 5-55and Figure 5-56).

Figure 5-52: Dikpende fetish tree in Baghan 02.11.25

Figure 5-53: Kagoum fetish in Djarkpanga 03.11.25

During KIIs with leaders, they identified that each surveyed PAC had several fetish sites which include trees, rivers, rocks and sacred forests and individual household fetishes and religious sites (mosques and churches). These are summarised in Table 5-56. Fetishes vary in their mobility on an individual basis, although permission for relocation is always necessary from the fetish owner. During baseline data collection, the field team took GIS points of tangible cultural sites along the road alignment. These are mapped in Figure 5-54, Figure 5-55 and Figure 5-56 including those sites that are within a 30 m buffer of the RoW.

Table 5-56: Sacred sites in surveyed PACs

Surveyed PAC	Sacred natural sites				Religious structures/places of worship	
	Forest	Rock/stone	Tree	Other	Mosques	Churches
Kpalou	-	-	-	Household fetishes	-	-
Baghan	Ghamboul	Mongal, Botchul & Limbi (in the river Mô) Tadimpo	Wakindjouja Gibiar Chagandja Cheligue	Baboubali Fetish (Djarkrui)	-	Two churches including Assembly of God (Pentecostal) church
Kagnigbara	Community forest	Rock Rock with inexhaustible water source	Fetish Tilou (baobab tree) Fetish Sambo Fetish Kpêtoua	Household fetishes	One mosque	One church
Boulohou	Community forest Gnagbalaki[9]	Rock with inexhaustible water source	Fetish Tilou Fetish Sambo Fetish Kpêtoua	Household fetishes Fetish Kagna Tchoktchouboukoukou Fetish Tchoketchaicukou Royal Palace	Two mosques	-
Djarkpanga	-	Rock Konipés	Tree Naim bowa Fetish tree Nègpêssim Kagoum Fetish	Small hill - Lagon/Petite Colline Small hill - Kon Djarkpanga Maranita in water (Nrou) Water - Lieou Koudjom	Four mosques	Catholic church
Tindjassé	Tindjassé Forest Tindjassé sacred forest/fetish Community forest	-	-	Household fetishes	One mosque	Two churches including Tindjassé Pentecostal Church
Saiboudè	Kpandjare Forest area with water source in each canton	-	-	Household fetishes Djundjalé Household graves Cemeteries	Three mosques	Two churches including on Catholic

Source: KII with community leaders

[9] Water source in forest which never dries up

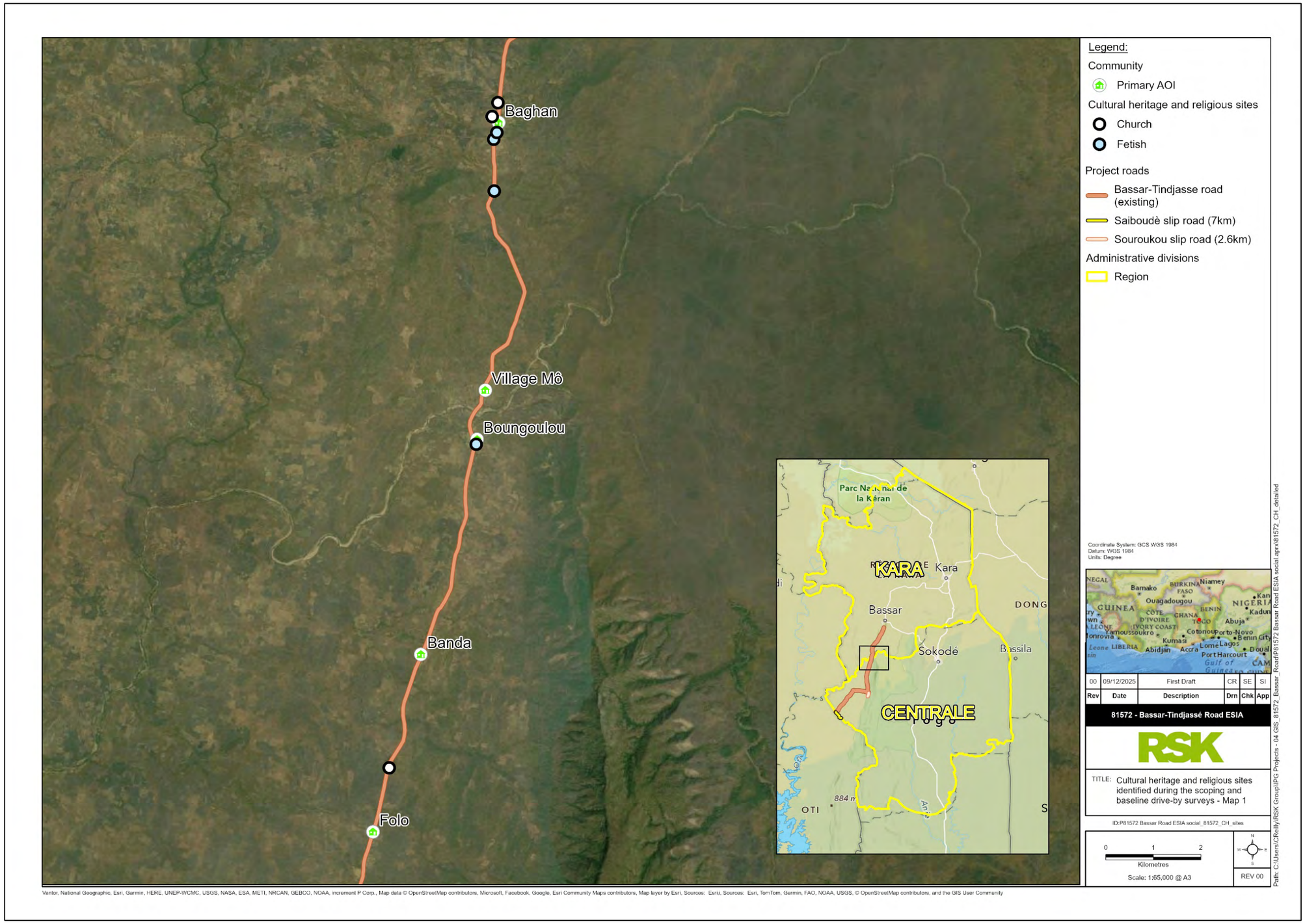

Figure 5-54: Cultural heritage and religious sites identified in the communities of Baghan, Boungoulou and Folo

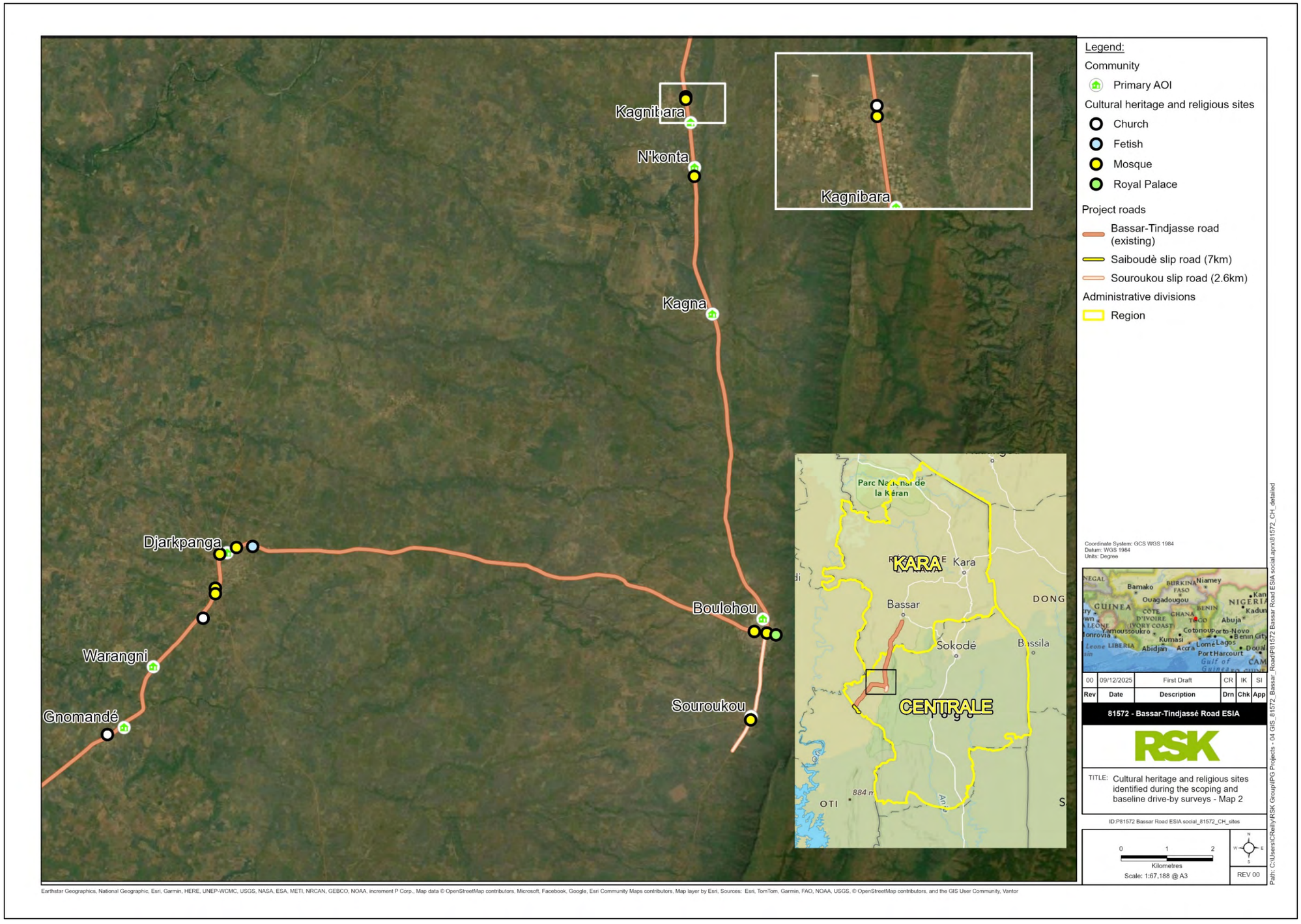

Figure 5-55: Cultural heritage and religious sites identified in the communities of Kagnibara, Boulohou, Souroukou, Djarkpanga and Gnomandé during drive-by surveys

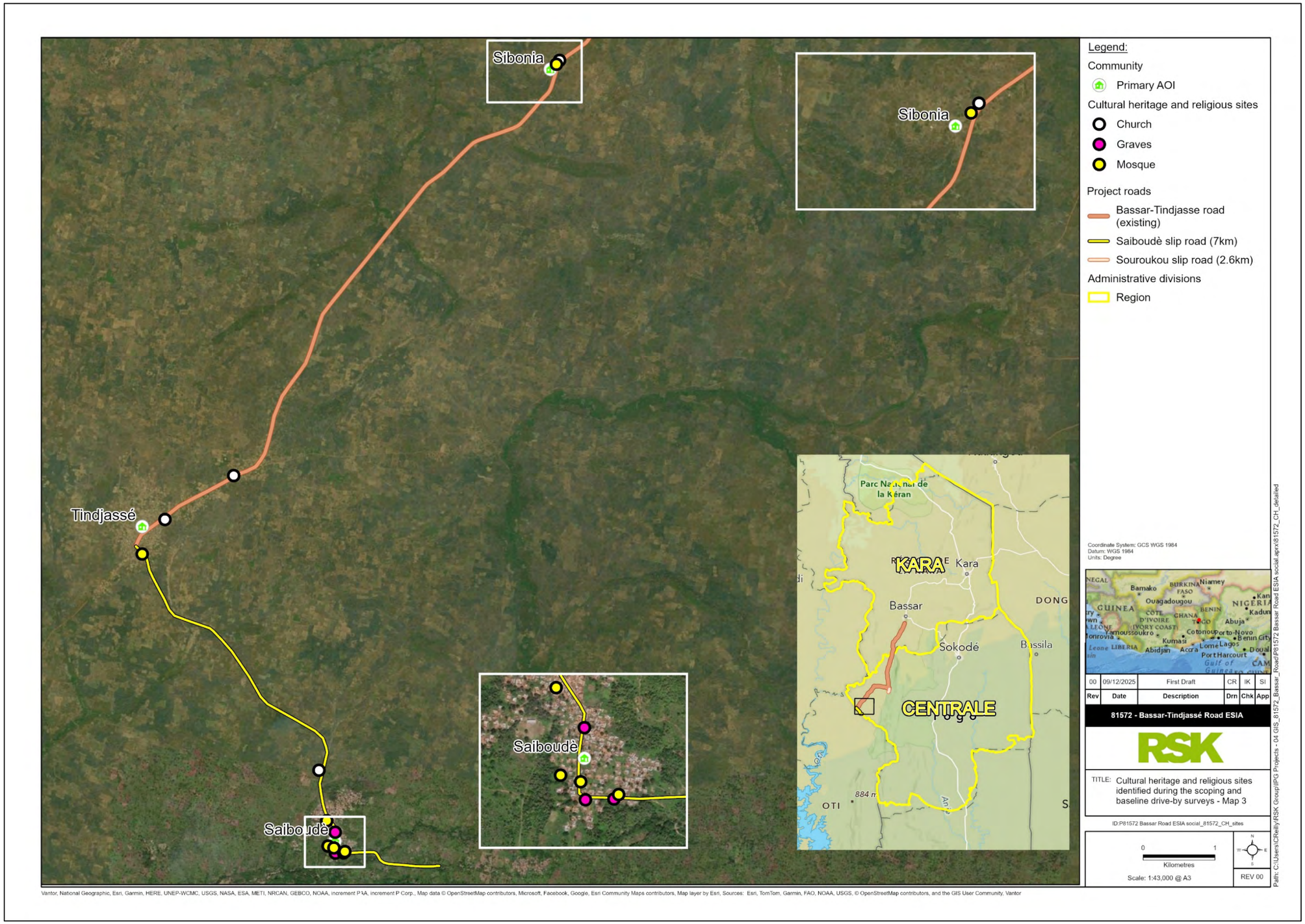

Figure 5-56: Cultural heritage and religious sites identified in the communities of Saiboudè, Tindjassé and Sibonia during drive-by surveys

5.5.14 Community needs

Consultations carried out across all villages and stakeholders groups revealed a consistent set of community needs that reflect both long-standing development gaps and priorities directly linked to the road project. These needs range across social services, economic opportunities, infrastructure and environmental management.

One of the most frequently mentioned needs among the consulted communities was the improvement of reliable and accessible transport infrastructure. Communities emphasised the poor condition of the existing road and expressed a strong need for a safer and more efficient transport route. Communities noted that improved connectivity would directly support broader development needs by making health facilities, schools, markets and administrative services more accessible than they are at present.

A strong need for enhanced access to clean water was also reported. Communities indicated that access to drinking water remains a challenge, noting that boreholes are often aging or inadequate, distribution networks do not reach all households and long distances are required to collect safe water. Reliable water supply was identified as essential for household consumption, agricultural productivity and basic health.

Another widespread need concerns stronger health services. Many communities reported limited staff, outdated equipment and insufficient medical supplies at existing health post. They highlighted the need for upgraded health facilities, increased staffing and improved emergency access.

Improved education infrastructure was another key need mentioned by communities. Several villages indicated that existing school infrastructure is insufficient, with overcrowded classrooms, inadequate buildings and limited access to water, electricity and sanitation. Communities mentioned that improving learning conditions is essential for reducing dropout rates and improving outcomes for children, particularly girls, who may face additional barriers to accessing education.

In addition, communities articulated the need for inclusive economic opportunities, especially for women and young people who are more vulnerable to unemployment and economic insecurity. Improved market infrastructure, enhanced access to trading networks and support for income-generating activities were identified as priority that could help strengthen household resilience and reduce rural out-migration.

Finally, communities identified the need for environmental protection, including dust control during construction, preservation of vegetation and community forests and measures to maintain the integrity of cultural heritage sites.

5.5.15 Human rights

The human rights baseline draws from the broader social baseline study as well as additional secondary sources, including international and regional treaties, national constitutional and legislative provisions, reports by United Nations treaty bodies, African regional human rights institutions, non-governmental organisations, academic research and local diagnostic reports.

5.5.15.1 National Level

International and regional human rights commitments

As a Member State of the United Nations since 1960, Togo has affirmed its commitment to the Universal Declaration of Human Rights (UDHR, 1948), which forms the cornerstone of the international human rights framework. Building on this foundation, Togo has ratified a wide range of core international human rights treaties that together constitute the International Bill of Rights and its extensions:

- International Covenant on Civil and Political Rights (ICCPR), ratified in 1984.
- International Covenant on Economic, Social and Cultural Rights (ICESCR), ratified in 1984.
- International Convention on the Elimination of All Forms of Racial Discrimination (CERD), ratified in 1972.
- Convention on the Elimination of All Forms of Discrimination against Women (CEDAW), ratified in 1983.
- Convention on the Rights of the Child (CRC), ratified in 1990.
- Convention against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment (CAT), ratified in 1987.
- International Convention on the Protection of the Rights of All Migrant Workers and Members of Their Families (ICRMW), ratified in 2001.
- Convention on the Rights of Persons with Disabilities (CRPD), ratified in 2011.

Togo has also ratified all eight of the ILO Core Conventions, which underpin international labour standards:

- Forced Labour Convention (C29), ratified in 1960.
- Freedom of Association and Protection of the Right to Organise Convention (C87), ratified in 1960.
- Right to Organise and Collective Bargaining Convention (C98), ratified in 1960.
- Equal Remuneration Convention (C100), ratified in 1968.
- Abolition of Forced Labour Convention (C105), ratified in 1985.
- Discrimination (Employment and Occupation) Convention (C111), ratified in 1968.
- Minimum Age Convention (C138), ratified in 1979.
- Worst Forms of Child Labour Convention (C182), ratified in 2000.

At the regional level, Togo is a State Party to the African Charter on Human and Peoples' Rights (ratified in 1982), which enshrines a comprehensive set of civil, political, economic, social and cultural rights. Togo has also ratified the Protocol to the African Charter on Human and Peoples' Rights on the Rights of Women in Africa (the Maputo Protocol, ratified in 2005) and recognises the competence of both the African Commission on Human and Peoples' Rights and the African Court on Human and Peoples' Rights (declaration under Article 34(6) not yet made, therefore individuals cannot directly access the Court). As a member of the Economic Community of West African States (ECOWAS, since 1975), Togo also falls within the jurisdiction of the ECOWAS Court of Justice, which has delivered important judgments on human rights matters within the region.

Domestic legal foundations

Domestically, these international and regional commitments are reinforced by the Constitution of the Republic of Togo (1992, revised 2007), which guarantees non-

discrimination (Article 21), equality before the law and equal pay for equal work (Article 37). National legislation such as the Labour Code (Law No. 2021-012), the Child Code (2007) and the Inter-professional Collective Agreement (2011) operationalise international and regional standards by prohibiting forced and child labour, ensuring workplace protections and safeguarding minors.

Institutional mechanisms

Togo's compliance with these obligations is periodically reviewed. In the third cycle of the Universal Periodic Review (UPR) in 2022, Togo received 224 recommendations, of which 182 were supported by the government. These focused on strengthening legal frameworks, civil and political rights, economic, social and cultural rights, women's rights and the protection of other vulnerable groups

While Togo has demonstrated efforts to address human rights concerns through reforms and initiatives, systemic challenges persist in civil and political rights, labour rights and cross-cutting issues including gender equality.

Civil and political rights

Togo has undertaken a series of legislative reforms, including the abolition of the death penalty and treaty ratifications, which reflect efforts to improve governance; however, structural issues such as corruption and accountability gaps continue to be reported. Allegations of fund mismanagement during COVID-19 highlight persistent accountability gaps (US Government, 2023; Bertelsmann Stiftung, 2024). These issues erode trust in public institutions and risk undermining community confidence in project-related commitments.

Civil liberties are reported to be significantly restricted, with reports of arbitrary arrests, detentions of political activists and excessive force against demonstrators (Article 19, 2023; Amnesty International, 2018). Media outlets critical of the government face suspensions and restrictive laws further erode civic space. Organisations such as Amnesty International classify Togo's civic environment as "repressed," with human rights defenders and journalists vulnerable to harassment and detention (CIVICUS, 2022; FIACAT and ACAT-Togo, 2022).

Prison conditions in Togo remain a challenge, characterised by overcrowding, inadequate healthcare and reports of torture and mistreatment. Accredited NGOs are permitted to visit prisons; however, some have reported being denied access, particularly when visiting political prisoners who allege abuse by guards (US Government, 2023; OHCHR, 2022). Although reforms aim to improve accountability, enforcement remains inconsistent and systemic issues persist (FIACAT and ACAT-Togo, 2022).

Allegations of arbitrary and unlawful killings by government agents have persisted, particularly against political opponents. According to the US Government 2023 Human Rights Report on Togo, these claims reflect trends observed in previous years. Both Amnesty International and the US State Department note the lack of accountability for such incidents, undermining trust in law enforcement (US Government, 2023; Amnesty International, 2018).

Labour rights

Despite ratification of ILO core conventions, enforcement is weak, particularly in the informal sector, which comprises around 90% of the workforce (OHCHR, 2022). In project-affected areas, livelihoods are dominated by informal activities such as market gardening, agriculture, sewing, carpentry, tailoring and petty trade along roadsides. These businesses provide essential income but lack formal protections, social security or health and safety measures.

Although The Child Code (2007) establishes protections for minors, including minimum age requirements and restrictions on hazardous work, child labour continues to be a widespread concern in Togo, especially in agriculture, domestic work and mining. Enforcement of laws prohibiting child labour remains inadequate, with limited government resources allocated to monitoring violations. Communities also acknowledge the risk of child trafficking, particularly in peri-urban zones where children are recruited into domestic servitude. Rehabilitation services remain limited (Amnesty International, 2018).

Cross-cutting issues

Human trafficking

Reports highlight ongoing cases of human trafficking, with children and women particularly vulnerable to exploitation in domestic servitude, agriculture and sexual exploitation. Despite anti-trafficking legislation and partnerships with international organisations, enforcement efforts are inconsistent and victims often lack access to rehabilitation and support services (Amnesty International, 2018; UPR, 2021)

Women's Rights and Gender Equality

Togo has made strides in promoting gender equality, such as the adoption of the National Policy on Gender Equality and Gender Equity, which has increased women's representation in leadership roles, with women holding 30% of key positions (UN Human Rights Council, 2022; OHCHR, 2022). However, pervasive issues such as GBV, including domestic and spousal violence, continue to hinder progress. Although rape is criminalised, enforcement is weak and survivors often face societal stigma and inadequate legal support (Amnesty International, 2018; FIACAT and ACAT-Togo, 2022). Additionally, child marriage remains prevalent, despite existing legal frameworks prohibiting the practice (US Government, 2023).

Right to Remedy and Dispute Resolution

Togo's judiciary offers formal recourse but is weakened by political interference and resource constraints (US Government, 2023). The National Human Rights Commission (CNDH) provides an institutional mechanism but lacks visibility in rural areas. Locally, disputes are more often resolved through customary chiefs and taboos. During the UPR (2022), recommendations to strengthen access to justice were supported.

5.5.15.2 Local level

Institutional mechanisms

Across the Bassar and Mô communes, traditional authorities frequently play a central role in resolving disputes, including cases involving GBV or family conflict. Diagnostic reports

indicate that survivors of GBV often turn first to traditional chiefs who settle disputes informally rather than to formal justice institutions. This underscores persistent gaps in access to formal justice mechanisms, the limited outreach of state-based protection systems at the local level and the continued reliance on customary mechanisms, where women and girls may face additional social pressure or discrimination in seeking remedies (MDTT, 2023a & MDTT, 2025).

Civil and political rights

Diagnostic reports highlight recurrent local tensions, conflicts and forms of sociopolitical discrimination in some communities. Instances of marginalisation and identity-based segregation were identified locally, as well as concerns about unequal treatment of certain groups and poor cohesion between communities. The reports also warn of the risk that existing grievances or local disputes may be exploited by extremist groups, creating elevated protection risks for vulnerable populations and eroding civil and political rights at the community level, including the right to security and non-discrimination (MDTT, 2023a & MDTT, 2025).

Economic, social and cultural rights

Local-level findings from the diagnostic reports reveal structural gender inequalities rooted in patriarchal social organisation. Women remain under-represented in community decision-making bodies (for example, some communes have only one woman in the entire council), while men dominate leadership roles and control local governance structures. This exclusion appear to affect women participation in public life, their ability to access information and their role in local development processes (MDTT, 2023a & MDTT, 2023b).

Educational access shows marked gender disparities: despite the national policy of free schooling, a significant proportion of girls discontinue education due to early marriage and early pregnancy. These factors contribute to long-term inequalities in literacy, employment prospects and household decision-making power. The report findings also point to sexual and reproductive health challenges, noting gaps in service provision and cases involving support to girls who experienced rape, abuse or child trafficking, highlighting persistent weaknesses in the realisation of sexual and reproductive rights (MDTT, 2023b & MDTT, 2025).

Group rights

The local diagnostic report notes the exclusion of certain groups (including youth, women, persons with disabilities and, in some contexts, minorities) from meaningful participation in local governance and consultation structures. Barriers include entrenched social norms, limited representation in decision-making platforms and lack of transparency or accessibility in municipal governance. These findings point to systemic obstacles affecting the rights of specific groups to participate in public affairs and benefit equally from local development initiatives (MDTT, 2023b & MDTT, 2025).

5.6 Ecosystem services baseline

This section presents the findings drawn from both secondary sources, obtained through a desk-based review and primary data collected during the scoping visit and the baseline

field visit. The analysis is structured across three spatial scales to provide a comprehensive understanding of ecosystem services within the Area of Influence (AoI):

- National Level: Summarises Togo's ecological context, including major biomes, forest cover, water resources and key ecosystem services supporting sectors such as agriculture and energy. It also outlines pressures such as deforestation and resource extraction. This level is based on secondary data from national and global sources.
- Regional Level: Highlights ecosystem characteristics of the Kara and Centrale regions, focusing on savannah and forest systems, provisioning and regulating services and regional trends such as forest loss and agricultural practices. This analysis relies on secondary data, complemented by insights from regional studies.
- Local Level: Focuses on ecosystem services within the primary AoI, emphasising site-specific conditions such as habitat types, resource use and community interactions with natural assets. This level draws largely on primary data collected during the baseline study conducted in November 2025.

5.6.1 Ecosystem services concept

Ecosystem services (ES) are the benefits that ecosystems provide to people, including businesses, as defined by the IFC and other organisations. These services often rely on biodiversity, which underpins their value to humans. As a result, negative impacts on biodiversity can frequently disrupt the delivery of ecosystem services. ES are typically categorised into four main types: provisioning, regulating, cultural and supporting services. A more comprehensive definition can be found in IFC PS6 and its accompanying Guidance Note 6 (IFC, 2019)

5.6.2 Ecosystem services national and regional level

5.6.2.1 Togo

Togo's ecosystem services are vital for the population's wellbeing and economic stability. They support key sectors such as agriculture, fisheries, energy, tourism and cultural practices. As of 2020, natural forests covered 32% of Togo's land area, approximately 1.81 million hectares, providing wildlife habitat, carbon sequestration and soil protection (Global Forest Watch, 2024a). However, by 2024, around 12,300 hectares of natural forest had been lost, releasing an estimated 5.76 million tonnes of carbon dioxide. This loss results mainly from human activities such as settlement expansion, agricultural development and the extraction of natural resources including gold, rubber and oil. The Plateaux region, the most forested area, was most affected, followed by the Centrale and Maritime regions (Global Forest Watch, 2024a).

Despite these pressures, important forested areas remain. Fazao Malfakassa National Park is the largest and most ecologically intact forest block, with high conservation value and potential for ecotourism. Protected areas of inland waters and land, including the Keran Forest Reserve, cover approximately 28% of the country and play a critical role in preserving biodiversity and supporting essential ecosystem functions (UNEP-WCMC, 2025). Forests also hold significant cultural value. Sacred forests in southern Togo and the Kara region are ecologically important and culturally revered, providing intangible benefits that strengthen community identity (CBD, 2020).

Togo's forests supply essential goods including food products, raw materials and medicinal plants used in traditional healing. They also provide building materials, cosmetics and plants important for sociocultural rites. The forested highlands of Kloto, Danyi, Wawa, Blitta and Tchamba are biodiversity-rich areas and popular ecotourism destinations. These regions support agriculture with crops such as manioc, yam, cocoa and coffee thriving due to fertile soils and effective rainwater absorption (CBD, 2020).

Water is also a critical ecosystem resource throughout Togo. Major surface water systems such as the Oti and Mono Rivers provide water for agriculture, households and hydroelectric power. Groundwater from the coastal sedimentary basin supplies much of the drinking water in urban centres, particularly Lomé (UNECE, 2023). Rural communities rely on wells, boreholes and rainwater harvesting, although access and water quality vary. Overall, these ecosystem services are crucial for sustaining livelihoods, biodiversity and climate resilience in Togo.

5.6.2.2 Kara Region

Protected areas such as the Djamdè Wildlife Reserve, Sarakawa Park and parts of the Oti Kéran Reserve play a key role in conserving biodiversity and supporting ecological stability (Republic of the Presidency, 2021a). The Sudano Guinean savannah and gallery forests contribute to essential functions like carbon storage, erosion control and maintaining soil fertility, which are crucial for the cultivation of staple crops such as maize, yam and groundnuts. Although the region has limited fishing potential due to rivers and streams drying up or becoming fragmented during the dry season, a small portion of the population still practices angling and net fishing (Republic of the Presidency, 2021a). In 2020, Kara had 408 thousand hectares of natural forest, covering 35% of its land area. However, by 2024, it had lost 1.29 thousand hectares of natural forest, resulting in an estimated 439 kilotons of carbon dioxide emissions (Global Forest Watch, 2024c).

5.6.2.3 Centrale Region

The Kara and Guérin-Kouka plains, together with the region's extensive hydrographic network centred around the Kara River system, support subsistence farming of grains, tubers and cash crops such as cotton, soybeans and cashew nuts (Republic of the Presidency, 2021b). The diverse vegetation of the Sudano-Guinean savannah enhances soil fertility, provides wildlife habitats and aids nutrient cycling. Additionally, natural features like inland basins and forests contribute significantly to regulating water flow, preventing soil erosion and sustaining the local climate (Republic of the Presidency, 2021b).

In 2020, approximately 815,000 hectares of indigenous forest covered 62% of the region's expanse. By 2024, a reduction of 6,060 hectares emitted an estimated 2.28 million tonnes of carbon dioxide, making the Centrale Region Togo's second most severely deforested area in recent years (Global Forest Watch, 2024b).

5.6.3 Ecosystem services local level

5.6.3.1 Provisioning services

Provisioning services underpin daily life and income generation across all surveyed communities, supporting household consumption and income-related activities.

Crop production is widespread across all surveyed communities. Households cultivate yam, maize, millet, sorghum, rice, cassava, soy, sesame, groundnuts and beans. Yam holds particular importance for income generation in most villages, with producers typically selling around 75% of harvested yams and retaining approximately 25% for household consumption. Maize is primarily grown for subsistence, with communities reporting that around 75% of production is used for home consumption. Market gardening is practised in riparian areas in Djarkpanga, Saiboudè and Tindjassé, where rivers support seasonal vegetable production. Field clearing for agriculture also provides firewood and construction poles for household use.

Livestock rearing is practised in all surveyed communities and includes goats, sheep, poultry, pigs and cattle. Djarkpanga reports relatively larger numbers of goats and sheep, while smaller herd sizes are reported in Kpalou and Baghan. In several communities, animals are reported to roam freely around homesteads. Cattle are often managed by nomadic Fulani herders under informal arrangements. Livestock disease is identified as one of the most significant challenges affecting livelihoods, with swine fever and ruminant plague most frequently reported. Access to veterinary services is limited, and communities in Baghan, Kpalou, Saiboudè and Kagnigbara will rely on plant-based remedies and traditional healers for animal treatment. Water for livestock is mainly sourced from nearby rivers and from water collected and stored by the communities.

Bushmeat remains an important source of protein and income across surveyed communities. Species hunted include deer, agouti, hare, bat, monkey and wild guinea fowl. Hunting is undertaken for household consumption, income and, in some cases, for protection. Hunting is typically carried out near bushland and gallery forest edges in small parties, with reported catches of 1-4 animals per trip. Hunting is also occasionally taken place in the forest areas, although only under authorisation. Hunting in forest zones is reported to be prohibited in Kpalou, Baghan, Tindjassé, Saiboudè, Boulohou and Kagnigbara, although occasional violations are acknowledged. Communities report a decline in larger fauna over the past decade, with hunting activity increasingly focused on smaller species. Sales of small quantities of bushmeat occur through village markets or via itinerant buyers to supplement household income, with catches per outing reported to remain low.

Charcoal production provides a vital supplementary income when agricultural revenues are low. Wood is collected mainly after field clearing from gallery forests and wooded savannah/bushland, though replanting is not practiced. Charcoal is produced primarily for sale, with preferred species including Pterocarpus erinaceus (known locally as faux teck) in six communities and Dinaglindi in Boulohou. Sales occur in local markets, and occasionally in Lomé, with prices around 10,000 CFA per bag. Communities report declining availability of suitable woody species near settlements, which requires further time and distance in collection. Restrictions and taboos are reported for certain tree species, including néré and teak, and for trees within community forests and near protected areas.

Wild food collection is another key provisioning service and is provided by gallery forests, wooded savannah, riparian corridors, bare ground areas (such as the old quarry) and agricultural lands and plantations. Wild food collection from forest areas does occur on occasion, although it is restricted and associated with a risk of apprehension. In Tindjassé and Kagnigbara, wild fruit collection forms an important part of this activity, with women collecting mango, shea nuts and seeds from néré trees primarily for household

consumption. In Kagnigbara, this use extends to the collection of cashew and other seasonal fruits, which are consumed locally and occasionally sold. In Baghan, wild food collection includes the gathering and sale of shea grains from gallery forest habitats. This activity is linked to the MikaGo 2023 project, funded by the Swedish Government, the District Coordinating Council and the Food and Agriculture Organisation of the United Nations (FAO), which aims to support the processing of shea grains into shea butter for sale. At the time of data collection, the training had not yet started. In Baghan and Kpalou, men report collecting wild food such as mushrooms and wild honey.

Wild honey is collected in all surveyed communities from gallery forest and bush habitats. Both wild harvesting and beekeeping are reported. In Baghan, beekeeping was introduced through external support, with women reporting that approximately 98% of honey is sold at prices of 1,000 to 2,000 CFA per litre, while the remaining percentage is used for medicinal purposes. In Baghan, the distance to wild honey sources has increased over time, with honey previously collected at approximately 6 km from the village and now reported at around 12 km. Increased distances to remaining honey sources are also reported in Tindjassé, Saiboudè and Kagnigbara, reflecting growing scarcity of the resource. A decline in bee populations and honey availability over the past 10 years is reported across all communities.

Medicinal plants are sourced from the same habitats as wild food and form an important provisioning service for community health. Leaves, bark, roots and fruits are used to treat common sicknesses in humans and livestock, particularly where formal healthcare and veterinary services are limited. In Tindjassé and Kagnigbara, women report collecting a range of medicinal plants, including neem, jatropha (red and white), shea, eucalyptus, lemon, néré and kpatima, which are used to treat malaria, stomach aches, fevers and childhood illnesses. In Djarkpanga, women act as traditional healers and report walking up to three hours to reach bushland collection areas, compared to much shorter distances in the past. In Kpalou and Baghan, medicinal plant collection is reported to be undertaken primarily by men. Across Kpalou, Baghan, Tindjassé, Kagnigbara and Djarkpanga, communities report that certain medicinal plant species have become rare or are no longer available, which is perceived to limit continued reliance on traditional medicine.

Fresh water is primarily supplied from wells and boreholes, with rivers and riparian corridors serving as secondary and seasonal sources when infrastructure fails or during the dry season. In Kpalou and Baghan, boreholes are frequently reported to break down or run out, forcing households to rely on rivers despite concerns about water quality. In Djarkpanga, the river dries up from December onwards, increasing dependence on pumped water and exposing households to shortages during electricity cuts. In Boulohou, boreholes and rivers are used in parallel, although wells also dry up during the dry season. Across all communities, dry-season scarcity increases pressure on rivers and riparian corridors, reinforcing their role as critical fallback freshwater resources.

Sand and gravel extraction is limited and confined to specific locations, with most communities reporting no direct exploitation. Small-scale sand extraction for sale to house builders is reported in Djarkpanga, while Saiboudè reports sand and gravel extraction from a nearby river. In Kagnigbara, sand and gravel are collected along the Mô River for use in house construction.

5.6.3.2 *Regulating services*

Regulating services relate to ecological processes that influence environmental conditions, including the moderation of water availability and the maintenance of vegetation cover. All surveyed communities report that water availability decreases during the dry season, as rivers and wells dry up completely or more rapidly. In Djarkpanga, the river reportedly provides no water during the dry season, while in Saiboudè the community well is also unavailable during this period.

Communities also report changes in tree cover around villages and agricultural areas. In Baghan and Kpalou, restrictions on cutting certain tree species, including néré and teak, are reported. In Boulohou and Djarkpanga, reductions in tree cover are reported in connection with agricultural expansion and charcoal production.

5.6.3.3 *Supporting services*

Supporting services underpin biodiversity, soil processes and the ecological conditions required for agricultural production and wild resource availability. In the surveyed communities, these services are reflected in reported changes in wildlife presence, habitat condition and soil fertility.

Forests, gallery forests and wooded savannahs provide habitat for wildlife and wild food species. Hunting data indicates that species such as deer, agouti and wild guinea fowl are still present, although in reduced numbers. Communities in Baghan, Kpalou, Djarkpanga, Tindjassé and Kagnigbara report the disappearance of larger fauna, including gorillas and pangolins, indicating declining habitat quality and reduced biodiversity support.

Soil fertility is reported as a growing constraint to agricultural production. In Baghan and Djarkpanga, farmers report leaving land fallow for approximately three to four years to restore soil productivity. However, shortening of fallow periods is reported due to increasing land pressure. Across all seven communities, farmers report increased reliance on chemical fertilisers to compensate for declining soil fertility.

Tree cutting linked to agricultural expansion and charcoal production is reported in Boulohou and Djarkpanga, where communities note reduced forest cover in surrounding areas. These changes are reported alongside declining availability of wildlife and increased pressure on remaining forested areas, which communities associate with reduced access to wild resources.

5.6.3.4 *Cultural services*

All seven surveyed communities report the presence of sacred or protected sites, reflecting ongoing cultural relationships with surrounding ecosystems. In Baghan, multiple fetish trees, including Warkroudja and Okpandja, are located close to the road (approximately 2 to 15 metres), alongside sacred stones such as Tadjimpo located in riverbeds. Kagnigbara reports several sacred sites associated with baobab trees, caves, rocks and water sources, while Saiboudè and Boulohou identify community forests, sacred trees and other protected places linked to customary rules and taboos. Tindjassé contains a sacred forest located near the Ghana border, which functions as an important spiritual site. All villages report annual yam harvest festivals (Kyèna), typically held between July and August, alongside a range of customary practices and prohibitions related to ancestors, spirits and social conduct. Together, these sites and practices

illustrate the cultural importance of forests, rivers and other natural features beyond their material uses. Further information on local cultural practices is provided in Section 5.5.13.3.

5.6.4 Ecosystem services prioritisation

Table 5-57 below provides a screening table showing the results of the ES prioritisation exercise. The screening is based on the ecosystem services baseline and the underlying raw data collected across project affected communities and applies the World Resources Institute 'Weaving Ecosystem Services into Impact Assessment' methodology (WRI, 2013) and IFC PS (2012).

In total, 16 ES were identified. This consists of nine provisioning services, one cultural service and six regulating and supporting services. All identified ecosystem services are classified as Type 1 ecosystem services. This reflects that, if impacted by the project, these services have the potential to result in adverse effects for project affected communities and ecosystem service beneficiaries.

Following the identification of ecosystem services through the primary data collected, the identified Type 1 ecosystem services were further screened into priority and non-priority services. This screening considered whether project activities could affect the ability of others to benefit from the service, the importance of the service to beneficiaries and the availability of viable alternatives. Priority ecosystem services are those for which project-related impacts may affect the well-being of beneficiaries, particularly livelihoods, food security, health, safety and cultural practices.

The screening identified that provisioning services form the core ecosystem services relied upon by communities within the project area. Key provisioning services include crop production for subsistence and income generation, freshwater supply for domestic use and livestock, wild food collection, wild honey, medicinal plants, fuelwood and charcoal and bushmeat. These services are characterised in the baseline and raw data by high levels of dependence, limited substitutes, seasonal constraints and, in some cases, increasing scarcity. As a result, these provisioning services are generally classified as priority ecosystem services for the assessment.

Cultural ecosystem services associated with sacred sites, spiritual values and customary practices were also identified across all surveyed communities. These services include sacred trees, forests, rivers and other natural features, as well as customary practices and festivals linked to agricultural cycles. These services are considered essential to community identity and social cohesion and have no culturally appropriate alternatives. Cultural ecosystem services are therefore classified as priority ecosystem services.

A number of regulating and supporting ecosystem services were identified through the baseline and are reflected in the ES impact assessment. These include regulation of water availability, erosion control and soil stabilisation, runoff regulation, water purification and soil filtering, habitat provision, biodiversity support, soil formation and nutrient cycling. Communities experience the effects of changes in these services through water scarcity, declining soil fertility and reduced wildlife availability.

For the purposes of prioritisation, regulating and supporting services have been treated conservatively. Regulation of water availability is classified as a priority ecosystem service due to its direct and documented importance for domestic water access, livestock

watering and dry season resilience. Other regulating and supporting services are screened as non-priority. This reflects that these services primarily influence community well-being indirectly through their contribution to provisioning services, rather than being directly relied upon as standalone benefits.

Table 5-57: Ecosystem services impact and dependence prioritisation screening table

Ecosystem/ habitat associated with ES	Identified ES	Location and extent of ES associated with the project	Description of the ES	Beneficiaries of the ES	Activities that could adversely impact on ES	ES Type	Viable ES alternatives	ES importance to beneficiaries	ES Replaceability	ES priority
Provisioning services										
Agricultural and fallow land	Crop production	Agricultural fields within all surveyed communities	Cultivation of yam, maize, millet, sorghum, rice, cassava, soy, sesame, groundnuts and beans for subsistence and income	Farming households	Land take, loss of access to farmland, reduced soil fertility	Type 1	Some spatial alternatives may exist, such as access to more distant farmland or reallocation within community land. However these options are limited by land pressure and the low income of beneficiaries, which constrains their ability to shift to alternative land.	Essential	Low	Priority
Agricultural land, homesteads and wooded savannah/ bushland	Livestock rearing	Homesteads, grazing areas and surrounding land	Rearing of goats, sheep, poultry, pigs and cattle for income and household use	Livestock owning households	Loss of grazing areas, disease pressures	Type 1	Alternative sources of fodder or grazing exist but beneficiaries are limited by low income status and	High	Moderate	Non-priority

Ecosystem/ habitat associated with ES	Identified ES	Location and extent of ES associated with the project	Description of the ES	Beneficiaries of the ES	Activities that could adversely impact on ES	ES Type	Viable ES alternatives	ES importance to beneficiaries	ES Replaceability	ES priority
							affordability of alternatives			
Forest, gallery forest, agricultural land and wooded savannah/ bushland	Bushmeat provision	Bushland and forest edges near communities	Hunting of wild animals for food and supplementary income	Hunting households	Habitat loss, access restrictions	Type 1	Hunting households typically poor and unable to afford alternative sources of protein	High	Low	Priority
Gallery forest, bare ground and wooded savannah/ bushland	Fuelwood and charcoal production	Areas cleared for agriculture and nearby forest	Collection of fuelwood for household use and production of charcoal for income, particularly during periods of low agricultural income	Households engaged in charcoal production	Tree cutting, restrictions on access	Type 1	Alternative non-ecosystem sources exist (i.e., energy from gas) or informal sector income but low income status of affected beneficiaries and limited availability of alternative informal sector opportunities limit viability of alternatives.	High	Low	Priority
Forest, gallery forest, rivers, agricultural land, bare ground and wooded	Wild food collection	Forests, riparian areas and agricultural land	Collection of fruits, nuts, mushrooms and other wild foods for consumption	Women engaged in collection and their households	Habitat degradation, reduced access	Type 1	Few viable ecosystem-based alternatives are available without increased	High	Low	Priority

Ecosystem/ habitat associated with ES	Identified ES	Location and extent of ES associated with the project	Description of the ES	Beneficiaries of the ES	Activities that could adversely impact on ES	ES Type	Viable ES alternatives	ES importance to beneficiaries	ES Replaceability	ES priority
savannah/ bushland			and occasional income				distance, cost or effort			
Gallery forest and wooded savannah/ bushland	Wild honey	Gallery forest and bush habitats	Collection of wild honey and beekeeping for income and household use	Households engaged in honey harvesting and beekeeping	Habitat loss, destruction of hives	Type 1	Few viable ecosystem based alternatives are available without increased distance, cost or effort	High	Low	Priority
Forest, gallery forest and wooded savannah/ bushland	Medicinal plants	Forests and bushland surrounding villages	Collection of plants for treatment of human and livestock illness	Households relying on traditional medicine	Resource depletion, habitat loss	Type 1	Formal healthcare services exist but access is limited, costs may be prohibitive due to low incomes of beneficiaries and there are cultural preferences for medicinal plant solutions.	Essential	Low	Priority
Rivers, wells and boreholes	Freshwater supply	Rivers, wells and boreholes within communities	Provision of water for drinking, domestic use and livestock	All households	Reduced water availability, infrastructure failure	Type 1	Alternatives exist through boreholes or pumped systems, though water availability is limited during the dry season	Essential	Low	Priority

Ecosystem/ habitat associated with ES	Identified ES	Location and extent of ES associated with the project	Description of the ES	Beneficiaries of the ES	Activities that could adversely impact on ES	ES Type	Viable ES alternatives	ES importance to beneficiaries	ES Replaceability	ES priority
Rivers and riverbanks	Sand and gravel extraction	Specific river locations	Small scale extraction for house construction	Households constructing dwellings	Access restrictions	Type 1	Alternative building materials can be sourced commercially, subject to affordability	Moderate	Moderate	Non-priority
Regulating and supporting services										
Rivers and riparian vegetation	Regulation of water availability	Rivers, riparian corridors and wells	Seasonal regulation of surface and groundwater availability, particularly during the dry season	All households	Reduced river flow, degradation of riparian vegetation, infrastructure failure	Type 1	No non-ecosystem based alternative	High	Low	Priority
Forests, gallery forests and wooded savannah/ bushland	Regulation of microclimate and vegetation cover	Forests and wooded areas surrounding communities	Tree cover contributing to local microclimate regulation and environmental stability	All communities	Tree cutting for agriculture and charcoal production	Type 1	No non-ecosystem based alternative	Moderate	Low	Non-priority
Forests, gallery forests and wooded savannah/ bushland	Habitat provision, connectivity and biodiversity support	Forests, gallery forests and wooded savannah	Provision of habitat, ecological connectivity and support for wildlife, soil processes and wild resources	All communities	Vegetation clearance, fragmentation and disturbance	Type 1	No non-ecosystem based alternative	High	Low	Non-priority

Ecosystem/ habitat associated with ES	Identified ES	Location and extent of ES associated with the project	Description of the ES	Beneficiaries of the ES	Activities that could adversely impact on ES	ES Type	Viable ES alternatives	ES importance to beneficiaries	ES Replaceability	ES priority
Agricultural land, riparian corridors and vegetated areas	Erosion control and soil stabilisation	Cultivated land, fallow areas and riparian corridors	Vegetation cover and root systems reducing soil erosion and land degradation	Farming households and downstream users	Tree cutting, shortened fallow periods, vegetation clearance	Type 1	No affordable non-ecosystem based alternative due to limited availability of external assistance	High	Low	Priority
Agricultural land and soils	Soil fertility and nutrient cycling	Cultivated land and fallow areas	Maintenance of soil productivity for agriculture	Farming households	Shortened fallow periods, land pressure	Type 1	Chemical fertilisers provide a partial substitute but do not replace natural soil processes and are unaffordable for many low income beneficiaries	Essential	Low	Priority
Soils, vegetation and water bodies	Water purification and soil filtering	Soils, vegetation and surface water bodies near settlements and corridors	Natural filtration of sediments and pollutants by soils and vegetation before entering water bodies	All communities	Dust generation, accidental contamination, vegetation clearance	Type 1	No affordable non-ecosystem based alternative due to limited availability of external assistance	Moderate	Low	Non-priority

Ecosystem/ habitat associated with ES	Identified ES	Location and extent of ES associated with the project	Description of the ES	Beneficiaries of the ES	Activities that could adversely impact on ES	ES Type	Viable ES alternatives	ES importance to beneficiaries	ES Replaceability	ES priority
Cultural services										
Gallery forest, rivers and wooded savannah/ bushland	Cultural and spiritual values, sacred sites and customary practices	Sacred trees, forests, stones, rivers and village spaces	Spiritual values, sacred sites, taboos and customary practices including annual yam harvest festivals	All communities	Restricted access to sacred sites, landscape change, loss of access to customary land	Type 1	No culturally appropriate or equivalent alternatives exist	Essential	Low	Priority

6 STAKEHOLDER ENGAGEMENT

6.1 Introduction

This section describes how stakeholder engagement activities have been undertaken since the beginning of the ESIA and outlines how stakeholder engagement will be continued following the completion of the ESIA. This chapter includes:

- stakeholder engagement objectives
- stakeholder analysis
- a summary of stakeholder engagement activities undertaken to date
- issues and concerns raised during the ESIA baseline phase
- ongoing engagement activities, including the ESIA public disclosure.

This chapter has been updated with the outcomes of the ESIA public disclosure. Detailed stakeholder identification, engagement methods, disclosure plan and grievance management are set out in the project Stakeholder Engagement Plan (SEP; RSK, 2025).

The SEP (RSK, 2025) will be the controlling document for ongoing engagement and grievance management.

6.2 Objectives of stakeholder engagement

The objectives of stakeholder engagement during the ESIA are to:

- inform stakeholders in an accessible and appropriate manner about the project and the ESIA, opportunities for them to engage, and the project grievance mechanism
- ensure that stakeholders understand how they might be affected by the project and their potential role in impact identification and management
- obtain the input of stakeholders into project impact identification and impact management
- provide opportunities for stakeholders to express their opinions and concerns about the project and the ESIA, and ensure that these opinions and concerns are considered in the ESIA and any related management decisions
- during public disclosure, to provide feedback to, and hear comments from, the stakeholders on the impact assessment and associated management or mitigation measures.

6.3 Stakeholder analysis

Project stakeholders were identified based on a methodology that was set out for stakeholder analysis. The methodology analyses the:

- level of impact that the project has on stakeholders, rated as low, medium, high or critical
- level of influence that stakeholders have on the project, rated as low, medium, high or critical
- level of stakeholder interest in the project. This will be rated as low, medium, high or critical.

A preliminary analysis and visual mapping were undertaken during the ESIA process of stakeholders, disaggregated by stakeholder group, including a justification for the analysis of influence, interest and impact for each stakeholder, and the resulting engagement approach.

Table 6-1 presents the stakeholder groups and classifies them according to their level of impact, influence and interest in the project, along with the corresponding engagement approach (level and intensity). A points-based method was applied to determine the appropriate engagement level. Each of the three assessment criteria was scored as follows:

- low (L): 1
- medium (M): 2
- high (H): 3
- critical (C): 4

Based on these scores, stakeholders were assigned to one of three engagement approaches:

- **Engage closely:** Stakeholders are engaged on a regular basis. Communication is likely to revolve around direct, in-person meetings to discuss the project and ensure that relevant information and feedback from stakeholders is considered proactively in the ESIA (and beyond during construction and operation). Opportunities for collaboration are sought, where appropriate or possible.
- **Keep informed:** Stakeholders are engaged on an as-needed basis, with information provision and 'check-in' at major milestones in the ESIA that may be of interest/relevance to the stakeholder. Communication tends to be one way and revolves around the distribution of written information via email or letter, but engagement can be increased to build a positive relationship or on a specific issue.
- **Monitor:** There are no deliberate plans to engage with these stakeholders. However, stakeholders' interest in and opinions of the project are monitored (e.g., through the receipt of correspondence and online activities, including social media) to identify any change in perceptions and to continue to assess the potential need for more engagement, as appropriate.

Further information on the approach to stakeholder analysis and mapping is available in the project SEP (RSK, 2025). The actual analysis and mapping of each stakeholder is a confidential internal document.

Table 6-1: Preliminary stakeholder analysis[10]

	Level of impact	Level of influence	Level of interest	Engagement method
National-level organisations				
Infrastructure and technical services	**L**	**C/H/L**	**C/M**	**Keep informed/monitor**
Infrastructure and technical services	L	C/H/L	C/M	Keep informed/monitor
Environment and natural resources	**L**	**C/H**	**C/H**	**Keep informed**
Economic and financial governance	**L**	**C/H**	**H**	**Keep informed**
Economic and financial governance	L	C/H	H	Keep informed
Social development and protection	**L**	**M/L/H**	**H**	**Keep informed/monitor**
Governance and security	**L**	**H/M**	**H/M**	**Keep informed/monitor**
Governance and security	L	H/M	H/M	Keep informed/monitor
Labour and public service	**L**	**H**	**H**	**Keep informed**
Culture, communication and tourism	**L**	**M/H**	**H**	**Keep informed/monitor**
Culture, communication and tourism	L	M/H	H	Keep informed/monitor

[10] Some stakeholder groups contain diverse actors who experience different levels of impact, influence, or interest. For this reason, certain groups are shown with a range of scores (e.g., C/H/L) and, correspondingly, more than one engagement approach (e.g., 'Keep informed/Monitor'). This reflects the internal variation within the group, where some members require closer engagement while others only need periodic monitoring. Detailed disaggregation and tailored engagement methods are provided in the SEP.

Administrative authorities				
Regional administrative authorities	**H**	**H**	**C**	**Engage closely**
Regional administrative authorities	H	H	C	Engage closely
Prefectural authorities	**H**	**H**	**C**	**Engage closely**
Commune authorities	**C**	**H**	**C**	**Engage closely**
Commune authorities	C	H	C	Engage closely
Academic and research institutions				
Local universities and technical institutes	**L**	**L**	**M**	**Monitor**
Local universities and technical institutes	L	L	M	Monitor
Civil society and regional networks				
Regional network of NGOs and associations	**M**	**H**	**H**	**Keep informed**
Regional network of NGOs and associations	M	H	H	Keep informed
Private sector				
Private companies offering services in the construction industry	H	M	H	Keep informed
Regional Chamber of Commerce and Industry	L	H	H	Keep informed
Traditional and customary authorities				

Canton traditional and customary authorities	**C**	**H**	**C**	**Engage closely**
Village traditional and customary authorities	C/M/H	M/H	C/H	Engage closely/keep informed
Community development structures				
Village community development structures	**H**	**H/M**	**H**	**Keep informed**
Village community development structures	H	H/M	H	Keep informed
Project-affected communities				
Project-affected communities	**C/H**	**M**	**C/H**	**Engage closely/keep informed**
Project-affected communities	C/H	M	C/H	Engage closely/keep informed

6.4 Scoping and ESIA baseline phase stakeholder engagement

This ESIA section summarises stakeholder engagement undertaken during the scoping and ESIA baseline phase.

6.4.1 Scoping phase

A site reconnaissance survey only was conducted during the scoping phase conducted in September 2025 by RSK's local consultants CEMP. A drive over survey of the road alignment was undertaken and observations gathered at all the communities along the route (primary social AoI).

A preliminary meeting was held with the Ministry of Public Works on 15 September 2025 before travelling to the project area to discuss the project and proposed scoping phase activities (see Figure 6-1). The meeting was attended by local consultants CEMP and a representative from FB Group. Table 6-2 outlines the requests made by the ministry and the response given. An attendance list for the meeting is available in Appendix 3.

Figure 6-1: Meeting with the Ministry of Public Works, 15 September 2025

Table 6-2: Ministry of Public Works scoping phase feedback

Ministry of Public Works request	Project team response
Identify the quarries and include them in the ESIA	FB Group has already provided positions for the quarries/borrow pits, and the potential impacts will be included in the ESIA.
Involve the Regional Public Works Directorates of Kara and Centrale	CEMP will meet with regional directors to see how they will be involved.
Consider the possibility of completing the ESIA by November instead of December	RSK will consider if it is possible to expedite the ESIA.

6.4.2 ESIA baseline phase

During the ESIA baseline phase, stakeholder engagement was carried out with institutional stakeholders and with project-affected communities.

6.4.2.1 Institutional meetings

Meetings with government authorities and civil society were held between 28 October and 6 November. A total of 129 (19 women and 110 men)[11] stakeholders participated in six meetings. Meetings were held with:

- 13 national ministries and agencies in Lome
- the Togolese Union of NGOs (UONGTO) held in Lome
- the governor of the Centrale Region and the Prefect of Soutoboua including regional government directorates and agencies
- the governor of the Kara Region including regional government directorates
- the Prefect of Bassar, the Mayor of Bassar, chiefs of PACs that fall under the Bassar canton and technical services
- the Prefect of Mo, the Mayor of Mo 1, the Mayor of Mo 2, the canton chiefs of Baghan, Djarkpanga, Kagnigbara, Boulohou, Tindjassé and Saiboudè including the chiefs of PACs that fall under these cantons and technical services.

Figure 6-2 and Figure 6-3 present a sample of the photographs taken at the stakeholder engagement meeting with regional institutional stakeholders in the Central Region and stakeholder engagement meeting with prefectural institutional stakeholders in Mo Prefecture.

Stakeholder engagement materials used are available in Appendix 4, and attendance lists are available in Appendix 5.

Figure 6-2: Stakeholder meeting with Centrale Regional officials, 30 October 2025

[11] Please note that the stakeholder attendance records are complete for all consultation sessions, except the meeting held with the Governor of Kara. The attendance list for this session could not be retrieved due to the loss of the original document. The stakeholder count presented therefore excludes this meeting.

Figure 6-3: Stakeholder meeting with Mo Prefecture officials, 3 November 2025

6.4.2.2 Community meetings

Community stakeholder engagement meetings were held between 1 and 6 November 2025. A total of 309 stakeholders (87 women and 222 men) were met across seven community meetings. Figure 6-4 shows the locations in which community level meetings were held.

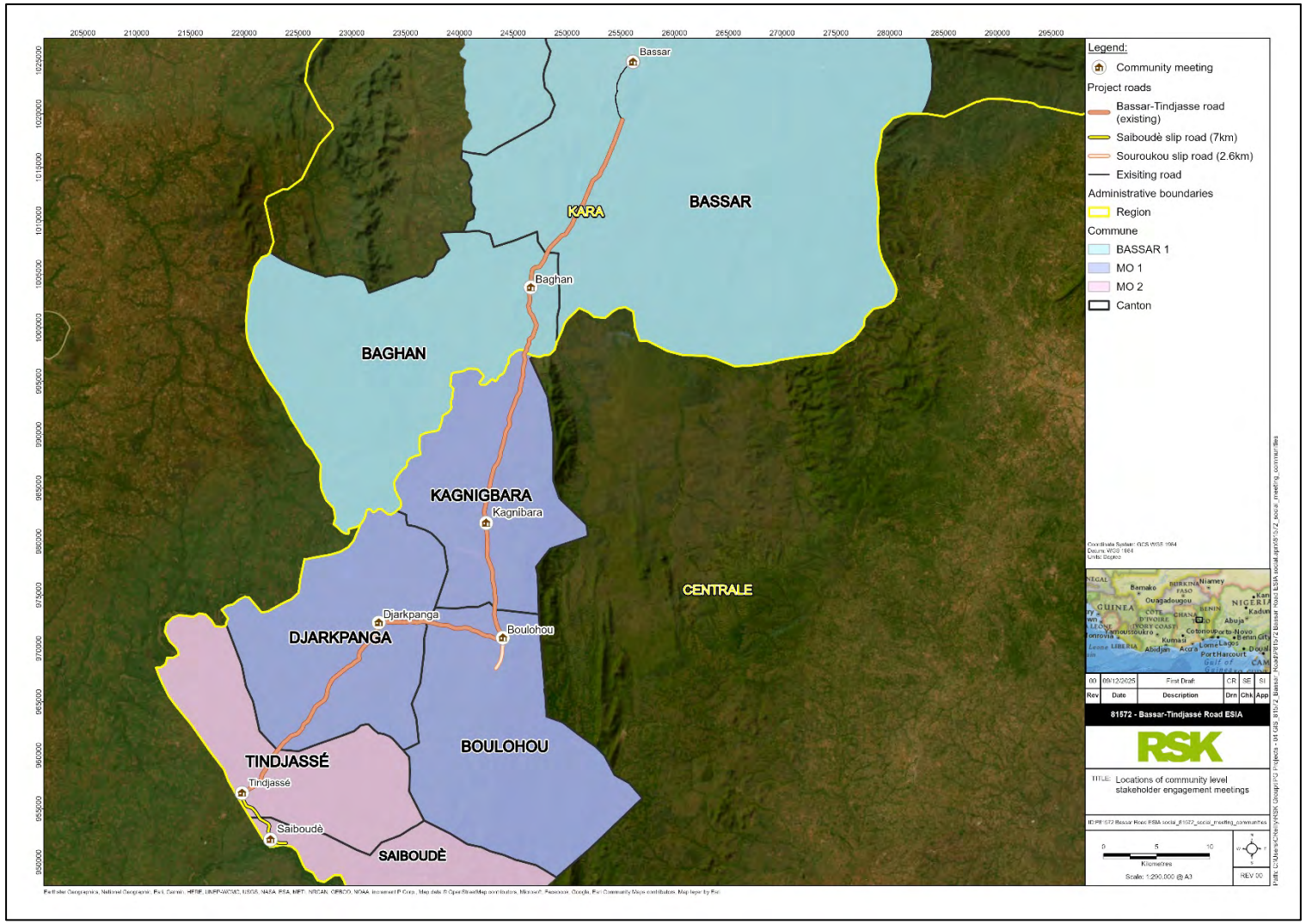

Figure 6-4: Locations of community level stakeholder engagement meetings

Figure 6-5 and Figure 6-6 present a sample of the photographs taken at the community stakeholder meetings in Kpalou and Djarkpanga.

Figure 6-5: Community meeting at Kpalou, 1 November 2025

Figure 6-6: Community meeting at Djarkpanga, 3 November 2025

Women's focus groups were undertaken to provide further opportunities to learn and ask questions about the project and the ESIA. An example of a women's focus group is shown in Figure 6-7.

Figure 6-7: Women's focus group discussion at Baghan, 2 November 2025

Stakeholder engagement materials used are available in Appendix 4, and attendance lists are available in Appendix 6.

6.5 Analysis of stakeholder issues and concerns raised

This section presents the analysis of stakeholder feedback, highlighting key concerns, expectations/aspirations and challenges raised by stakeholders during the ESIA baseline phase.

Overall, the following topics were raised by stakeholders: project scope, benefits and economic development: project understanding, employment and income, market opportunities, accessibility, youth development, improvement to schools, health services, water access and community facilities

- technical design, engineering and construction: design specifications, construction duration and quality
- land acquisition, compensation and resettlement: fairness of compensation, clarity, community-level equity
- environmental and social safeguards: ESIA and monitoring, air and dust pollution, noise, health impacts, environmental degradation
- social risks, protection and community well-being: GBV risks, road safety, worker-community interactions, conflict and economic risks
- community engagement, participation and awareness: consultation processes, participation and cultural heritage
- grievance redress and complaint management
- institutional responsibilities and stakeholder roles.

The analysis considers both concerns and aspirations prompted by specific questions and, separately, issues raised from unprompted interventions.

6.5.1 Stakeholder aspirations

A series of stakeholder engagement meetings were conducted with diverse community groups, including women, men, village leaders, health staff, teachers, and market and business owners. In total, 39 meetings were held across the project area.

Stakeholders shared a range of aspirations that reflect both their immediate needs and long-term development expectations. As illustrated in Figure 6-8, the strongest expectations relate to better market and business opportunities (representing 20% of all aspiration raised across 39 meetings) and to improved transport and accessibility (19% of all aspiration raised across 39 meetings). Communities explained that a more reliable road would make it easier and cheaper to travel, reach services and move agricultural products while also helping to attract traders and stimulate local economic activity.

Stakeholders also frequently expressed aspirations around better access to drinking water (10% of aspirations raised across the meetings), as well as broader economic growth (9% of aspirations raised across the meetings) and increased income-generating opportunities (7% of aspirations raised across the meetings). Hopes for improved social services were also common, particularly stronger health facilities (9% of aspirations raised across the meetings) and better school infrastructure (5% of aspirations raised across the meetings). In several locations, people highlighted the importance of support for youth and women, community facilities and continued awareness-raising on issues such as road safety and GBV prevention.

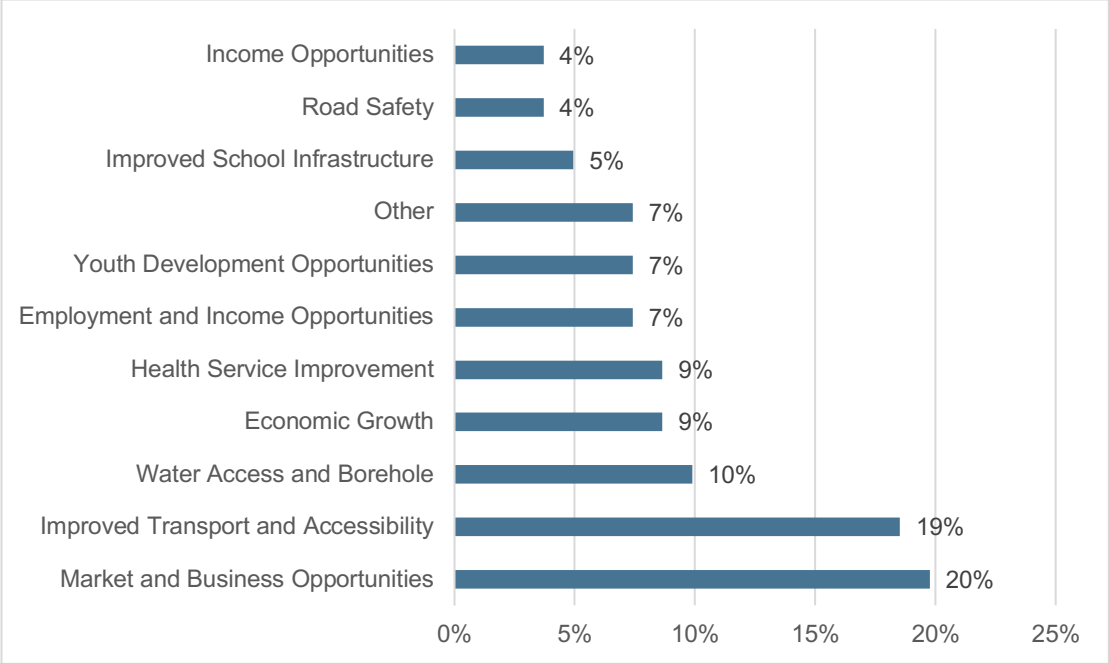

Figure 6-8: Percentage of meetings in which different aspirations were raised
Source: FGDs and KIIs, October–November 2025 (81 expectations/aspirations from 39 meetings)

6.5.2 Stakeholder concerns

While communities expressed a wide range of aspirations for how the project could support local development, they also raised several concerns about potential negative impacts that may arise during implementation. As shown in Figure 6-9, the most

frequently mentioned concern relates to road safety (representing 20% of all concerns raised across 39 meetings). Stakeholders expressed general worries about an increased risk of accidents associated with the project. Many participants also raised concerns about air and dust pollution (19%). These concerns were expressed generally, with no distinction made between construction-level impacts and those that might occur once the road is operational. Participants highlighted the likelihood of dust affecting homes, markets and schools (11%), noting it could increase health issues noting that dust and air pollution would contribute to respiratory diseases.

In addition to environmental and safety issues, several stakeholders highlighted social risks, particularly the potential for gender-based violence and unwanted pregnancies (16%) linked to the presences of external workers. Consultation also highlighted other concerns related to the project's implementation, these included issues around the fairness of compensation for affected lands, the potential for environmental degradation and the temporary disruption of livelihoods during construction.

A number of issues raised less frequently are grouped under "other", such as worries about noise disturbance, minor conflicts between workers and broader pressures on community infrastructure and services.

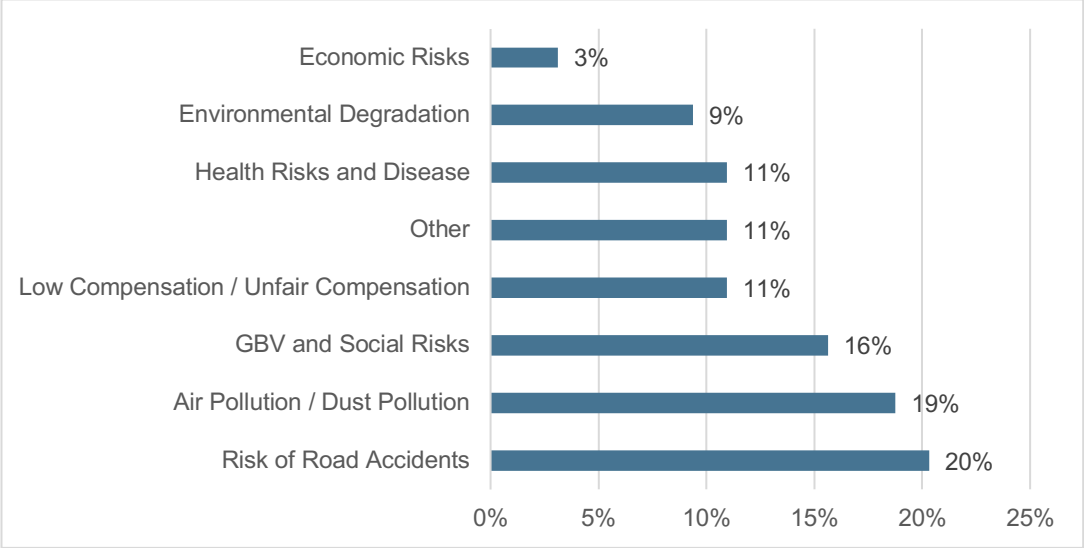

Figure 6-9 Percentage of concerns' topics raised during stakeholders meetings
Source: FGDs and KIIs, October–November 2025 (64 concerns from 39 meetings)

6.5.3 Unprompted interventions

As part of the ESIA process, targeted consultation meetings were held with a wide range of stakeholders along the Bassar-Tindjasse Road corridor and at national level (Lome). Ninety-six individual unprompted interventions were recorded. Each intervention represents a specific question, concern, suggestion or request for clarification that required a response from the project team.

The interventions were collected during formal consultation meetings held between 28 October and 5 November 2025 in Djarkpanga, Lomé, Sokodé, Bassar, Kara, Kpalou, Baghan, Tindjassi, Saiboudè, Kagnigbara and Boulouhou. These meeting involved national, regional and local authorities, community leaders, civil society and professional institutions.

The interventions recorded primarily relate to land acquisition, compensation and livelihood restoration (21% of all interventions), employment and workforce (16%), environmental and social safeguards (13%), institutional roles and project financing (11%), and technical design considerations (see Figure 6-10). Within the topic of land and property, stakeholders expressed concerns about the acquisition process, valuation of crops and structures, potential physical displacement and how economically displaced individuals will restore or improve their livelihood.

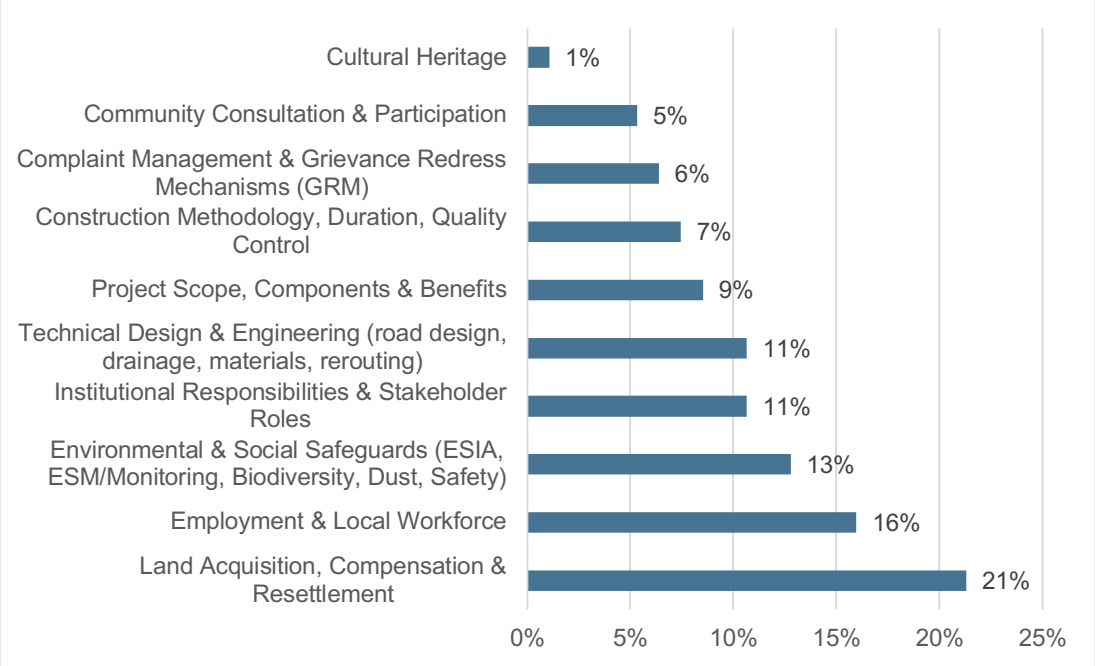

Figure 6-10 Topics raised by stakeholders during interventions

Sources: Stakeholder engagement meetings, 2025, based on 96 interventions from 12 meetings

As illustrated in Figure 6-11, the topics raised varied between stakeholder groups, with government authorities focusing more on project scope, technical design, institutional coordination and environmental monitoring, while communities focused on employment and compensation.

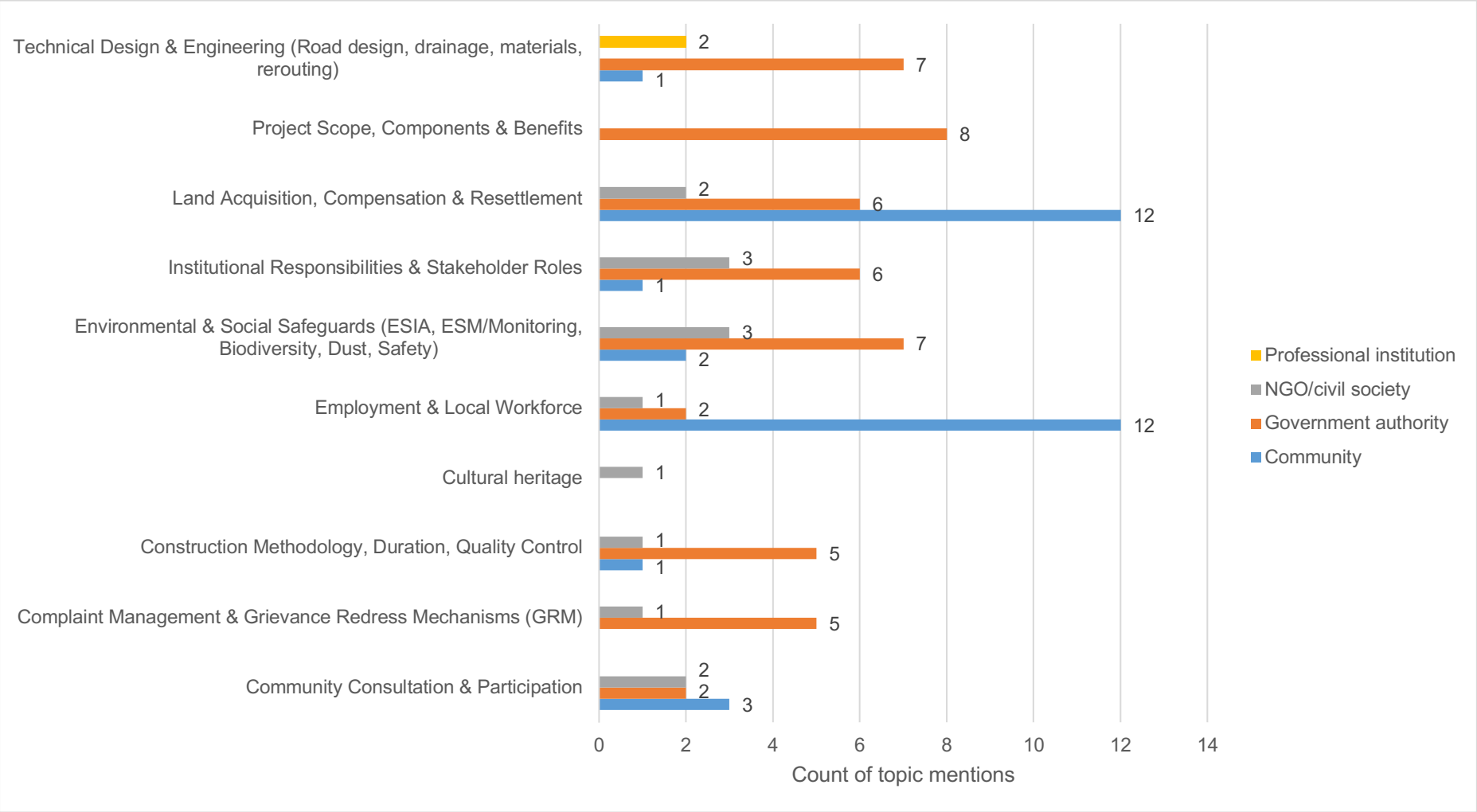

Figure 6-11 Distribution of consultation topics by stakeholder's group

Sources: Stakeholder engagement meetings, 2025, based on 96 interventions from 12 meetings

6.5.4 Stakeholder issues response matrix

This section presents the stakeholder issues response matrix (see Table 6-3), which consolidates the concerns and aspirations raised through the specific questions outlined in Sections 6.5.1 and 6.5.2 with the project's corresponding responses.

The matrix provides a transparent and traceable overview of how stakeholder feedback has informed project design, mitigation measures and formal commitments. It ensures that all issues raised are properly considered, addressed and monitored throughout the project lifecycle.

The matrix summarises:

- what stakeholders said: the issues, concerns or suggestions recorded during engagement activities
- what the project did: how each issue has been addressed through design changes, mitigation measures or commitments assigned to an owner and a timeline.

As all responses in this case constitute formal commitments, the matrix also specifies:

- the owner responsible for each action, as per the commitments register (Appendix 12)
- the timeline for implementation or review, as per the commitments register (Appendix 12)
- the corresponding commitment reference number.

The matrix is organised according to the same thematic areas used in the preceding analysis of stakeholder concerns and aspirations. The entries are grouped into six main topics:

- land acquisition, compensation and resettlement (5 entries)
- environmental and social safeguards – ESIA, ESM/monitoring, biodiversity, dust and safety (4 entries)
- employment and local workforce (3 entries)
- community consultation and participation (2 entries)
- community grievance mechanism (1 entry)
- cultural heritage (1 entry).

Table 6-3: Stakeholder issues response matrix (ESIA baseline phase)

Stakeholder issues/concern ("you said")	Project response ("we did")	Timeline[12]	Commitment reference
Community consultation and participation			
How will communities and stakeholders be consulted? Will the actors at the cantonal and village level of the project area (Bassar and Mô) be consulted?	The project will implement a Community Relations Plan to ensure continuous, accessible and culturally appropriate engagement with all communities and stakeholders throughout the project. This includes informing stakeholders before works begin, providing regular updates on construction schedules, using local communication channels (chiefs, market heads, radio and noticeboards) and maintaining targeted engagement with villages, traditional leaders, pastoralist groups and relevant authorities. Ongoing community engagement will help identify new issues or impacts, ensure mitigation measures are working as planned and raise awareness of procedures such as land access protocols, as well as ensuring understanding of the Community Grievance Mechanism.	EW and MC	1, 143, 158, 197, 260, 282, 293
Community grievance mechanism			
How can I raise questions or concerns? What is the complaint management mechanism for this project?	The project will maintain and implement the Community Grievance Mechanism to ensure that all community members and stakeholders can freely raise concerns at any time during construction and early operation. The mechanism will be clearly communicated and accessible to all. It will cover any community issues, including but not limited to issues related to land acquisition, access restrictions, safety and cultural heritage (including graves and cemeteries).	MC	170, 177, 258
Cultural heritage			
How will the relocation of the sacred fetishes within the project area be carried out?	The project will develop and implement a Cultural Heritage Management Plan (CHMP) that sets out the procedures for identifying, assessing and mitigating potential impacts on sacred sites, graves and cemeteries. As part of this plan, the project will: • carry out a targeted survey to identify, map and document all culturally significant sites	MC	257,261 and 295

[12] EW = Early works, MC = Main Construction and O = Operation

Stakeholder issues/concern ("you said")	Project response ("we did")	Timeline[12]	Commitment reference
	• demarcate and protect identified locations before any project activities begin • ensure that workers are trained to behave respectfully and appropriately around these areas. The project will also maintain the Community Grievance Mechanism so that residents can raise any concerns related to disruption of rituals, ceremonies or community events during construction. Where necessary, the project will implement avoidance measures (such as controlled access points) to minimise the loss of access to sacred or culturally important sites.		
Employment and local workforce			
Can women be employed on the Bassar–Tindjassé road project? What opportunities are available for women?	The project will develop and implement a Labour Management Plan that promotes non-discrimination and equal opportunity. This will include establishing hiring mechanisms, in collaboration with contractors, to ensure that no worker or job applicant is discriminated against based on gender, marital status, nationality, ethnicity, age, health status, religion or sexual orientation. The plan will also prioritise local recruitment for unskilled roles, apply fair and transparent procedures throughout the hiring process, and proactively engage vulnerable groups so they are informed of and able to access employment opportunities during the project lifecycle	MC	152
What will be the strategies for rebuilding careers after the work?	The project will implement a Labour Management Plan. A comprehensive training programme will be provided for all workers, including induction, safety, skills development and financial literacy, and end-of-contract certificates or references will support future employability. FB Group will oversee contractor recruitment to ensure compliance with project standards, communicate clearly about the temporary nature of employment, and follow IFC-aligned retrenchment procedures, including early consultation, transparent selection and appropriate severance and transition support during demobilisation.	MC	148, 150, 159, 160
Will the project hire local workers?	The project will implement a Labour Management Plan that prioritises hiring people from communities closest to the construction corridor, followed by workers from other parts of Togo. Contractors will be required to commit to local hiring targets during tendering, and FB Group will oversee all recruitment to ensure compliance with these requirements, alignment with the project's recruitment	MC	144, 145, 146, 155, 156

Stakeholder issues/concern ("you said")	Project response ("we did")	Timeline[12]	Commitment reference
	strategy, and consultation with local authorities. All labour practices will follow fair, transparent and non-discriminatory procedures.		
Environmental and social safeguards (ESIA, ESM/monitoring, biodiversity, dust, safety)			
Are measures taken to mitigate the effects of dust during work?	The project will implement the ESMP to manage dust and air emissions, including planning site activities to minimise impacts, using barriers or enclosure where needed, and removing dusty materials promptly. Daily inspections will be carried out, and all dust-related complaints or incidents will be recorded and addressed in a timely manner. Coordination with nearby construction sites will ensure impacts are minimised, and the log of inspections and corrective actions will be made available to authorities upon request.	EW and MC	3, 4, 6, 7, 8, 12, 13, 14, 17
How will the project manage the increased risk of accidents and pedestrian safety due to construction vehicles?	The project will integrate traffic safety measures into construction planning once quarry locations are confirmed, including consideration of sensitive community areas. Safety signage with clear pictograms will be installed and explained through CLO engagement, and clearly marked pedestrian crossings will be provided near all schools along the project road.	MC	209, 210, 211
What measures will be taken by the FB Group to ensure the safety of workers and residents?	The project will implement an Occupational Health, Safety and Security Management Plan to identify risks and ensure the health, safety and welfare of all workers and visitors. FB Group will assess contractor performance on OHS as part of procurement and will conduct regular audits to ensure compliance with national law and international standards. All workers will receive induction and task-specific safety training, with refresher training provided as needed. A Community Health, Safety and Security Plan will manage risks to nearby communities, including traffic and road safety, awareness programmes, and installing clearly marked pedestrian crossings near schools. CLOs will conduct ongoing community safety outreach along the road and near quarries and construction areas.	MC	161, 163, 164, 165, 208, 211, 212
What will be the strategy put in place to avoid gender-based violence?	The project will implement and enforce a Workers' Code of Conduct that includes zero tolerance for GBV, SEA and SH, mandatory induction and refresher training on respectful behaviour, and strict prohibitions on exploitation, transactional sex and relationships with minors. The Code will outline clear reporting procedures linked to the Community Grievance Mechanism, be displayed at worker camps and included in all employment contracts, and its implementation will be monitored through regular audits.	MC	214

Stakeholder issues/concern ("you said")	Project response ("we did")	Timeline[12]	Commitment reference
Land acquisition, compensation and resettlement			
How will affected landowners and users be identified and consulted? How will the project ensure that compensation and resettlement are completed before construction begins?	The project will prepare and implement a Resettlement Action Plan (RAP) to ensure that all affected households and businesses receive fair, lawful and timely support. The RAP will: • carry out a detailed census and socio-economic survey to identify all affected people • map all affected assets, including land, crops, structures and businesses • provide compensation based on replacement-cost principles • offer relocation assistance, including suitable housing and basic services for physically displaced households • establish monitoring and evaluation systems to track RAP implementation and outcomes and ensure that livelihoods are restored.	MC	175
How will the livelihoods of economically displaced people be restored or improved?	The project will prepare and implement a Livelihood Restoration Plan (LRP) to restore and, where possible, improve the livelihoods of economically displaced households. This will include income-restoration programmes, skills training, agricultural support, access to microfinance, and facilitation of employment or local business opportunities. Livelihood restoration will be monitored and adjusted as needed to ensure sustainability. The project will also maintain the Community Grievance Mechanism so that affected people can freely raise concerns related to land acquisition or temporary restrictions on access to natural resources during construction.	MC	176 and 178
If any goods or fields along the roadside are impacted by the project, will measures be taken to compensate us?	The project will prepare and implement a Resettlement Action Plan (RAP) to ensure that all affected households and businesses are identified through detailed surveys and asset mapping, and receive fair and timely compensation at replacement-cost— including compensation for verified crop and livestock losses in line with national regulations and IFC PS5. The RAP will also provide relocation assistance where needed and establish monitoring systems to ensure that resettlement and compensation outcomes are effectively implemented and sustained.	MC	175 and 281

Stakeholder issues/concern ("you said")	Project response ("we did")	Timeline[12]	Commitment reference
What is planned for the land and properties that will be affected by the project, given that the right of way will be 20 metres and the expropriation zone 30 metres? What reintegration plan will be put in place for the people who will be impacted?	The project will prepare and implement a Resettlement Action Plan (RAP) and a Livelihood Restoration Plan (LRP) to ensure that all affected households are properly supported. These plans will: • identify all affected people and assets through detailed surveys and mapping • provide compensation at replacement-cost, along with relocation assistance for physically displaced households • deliver livelihood restoration support such as skills training, agricultural assistance, microfinance access and employment opportunities • monitor outcomes to ensure that living conditions and income sources are fully restored or improved.	MC	175 and 176
Will the populations whose properties will be affected be notified before the start of the work?	The project will provide timely notice to communities before any vegetation clearance or temporary access restrictions occur. We will also inform communities in advance of any periods when workforce presence on site will increase, so that residents can plan accordingly and raise concerns through the existing community grievance mechanism if needed.	MC	179

6.6 Disclosure phase stakeholder engagement

The objectives of the disclosure phase were to ensure that stakeholders were informed of and could comprehend the outcome of the ESIA– in particular, the identified impacts and mitigation measures – and they could provide comments and questions related to the draft ESIA report to be addressed in this final ESIA report.

The main engagement method consisted of holding two group meetings, one in each prefecture. In the prefecture of Bassar, a group meeting was organised with participants from Mondè, Saboundi, Kpalou and Baghan. This meeting involved 48 participants, including 44 men and 4 women. In the prefecture of Mô, a second group meeting was held with stakeholders from Boholou, Kagnigbara, Djarkpanga, Tindjassi and Saiboudè, and this meeting involved 42 participants, comprising 41 men and 1 woman. Attendance lists for both meetings are provided in Appendix 3.

Both meetings were held in French with translation into local languages (Bassar, Kabiyè, Losso and Kotokoli) and were scheduled and arranged through correspondence with local authorities and community representatives, using letters, telephone calls, WhatsApp messages to confirm dates, locations and participation. This correspondence served solely as a logistical step to organise the meetings rather than as an engagement method in itself.

The following stakeholder engagement materials were developed to facilitate the meetings:

- A Non-Technical Summary (NTS) in French of the ESIA for community representatives. A longer version including a more detailed impacts and mitigations table was provided to technical stakeholders (Appendix 4)
- A PowerPoint Presentation in French present the ESIA findings (Appendix 4)

Figure 6-12 and Figure 6-13 present a sample of photographs taken during the prefectural meetings in Bassar and Mô,.

Figure 6-12 Disclosure meeting in Bassar Prefecture

Figure 6-13 Disclosure meeting in Mô Prefecture

The ESIA findings were made available for public review and comment at the townhall in Bassar and Mô in French. Copies of the NTS were also deposited in locations show in Table 6-4 below.

Table 6-4 Locations where copies of the NTS were deposited

Location	Number of copies
Commune Bassar 1	10 copies
Canton Baghan	5 copies
Commune Mô 1	20 copies
Canton Djarkpanga	10 copies
Canton de boulohou	10 copies
Commune Mô 2	20 copies
Canton Tindjassi	10 copies

All copies were made available for a 30 day period from January 19 2026 to February 18 2026. Copies of the NTS were also be provided to local leaders, including village and canton chiefs and development committee representatives to facilitate public access. In addition, as part of the Resettlement Action Plan (RAP) process, the CEMP team visited each affected village during the disclosure period. During these visits, communities were informed of the availability of the Non-Technical Summary (NTS) of the ESIA and reminded of their opportunity to submit comments. This provided an additional channel for feedback collection, particularly for project-affected persons.

6.6.1 Analysis of stakeholder feedback

During the 2 prefectural meetings, 8 comments were raised. The following comments and questions were raised:

- Appreciation for the transparent and participatory ESIA process
- Clarification requested on the duration and process for reviewing and submitting comments
- Questions on where documents are available and how feedback will be collected
- Questions on whether impacts on cultural and religious sites had been assessed
- Interest in understanding the project's positive impacts and community benefits
- Clarification on how impacts on public infrastructure (schools, boreholes, places of worship) will be managed

During the meetings, the following recommendations were made:

- Drill water boreholes in the community and schools;
- Support communities with agricultural inputs;
- Provide the communities of Baghan with agricultural tractors and market gardening tools and equipment
- Build a market with sheds in the cantons

A stakeholder feedback register was deposited alongside hard copies of the NTS to gather feedback. No comments were received in any locations on this register.

6.7 Grievance mechanism

A grievance mechanism has been established to enable workers and community members to raise concerns related to project activities. The ESIA provides only a high-level summary of this mechanism. Detailed procedures, including submission channels, roles and responsibilities, confidentiality provisions and case-handling timeframes, are set out in the SEP, which is the controlling document for grievance management. The SEP will continue to guide ongoing disclosure, grievance handling and stakeholder engagement throughout the project lifecycle to ensure consistency with IFC PS1/PS2 and relevant national requirements.

6.8 Ongoing engagement

Stakeholder engagement will continue following the submission of the final ESIA report in order to provide stakeholders with project updates, as appropriate, across the project lifetime. Engagement with the PACs will follow the established mechanisms through FB Group and its team of CLOs. The community grievance mechanism will remain fully operational and will provide stakeholders with ongoing means to lodge project-related grievances and concerns. The detailed procedures are set out in the SEP, which remains the controlling document for future engagement and grievance management.

Engagement with PAPs and land-acquisition institutions will be coordinated with the RPF/RAP to ensure affected people are consulted prior to entitlement finalisation, in line with IFC PS5. Grievances related to land valuation, eligibility, or compensation will follow the grievance mechanism process, ensuring consistency with PS5 principles.

7 IMPACT ASSESSMENT METHODOLOGY

7.1 Introduction

The purpose of this ESIA is to assess the potential physical, biological, and socioeconomic impacts of the project. The assessment of impacts for all project components has been undertaken in a structured and consistent manner. The impact assessment methodology described below has been developed to meet Togo's legislative requirements (refer to Section 2), GIIP as defined in the World Bank Group's EHS Guidelines and FB Group's standard practices. The structure of the methodology is also aligned and consistent with the IFC PS (2012) guidelines.

The methodology has been developed to take into consideration the potential impacts on:

- the physical environment:
    - air quality
    - noise and vibration
    - traffic and transportation
    - landscape and visual amenity
    - soils
    - surface water
    - groundwater
- the biological environment:
    - protected areas
    - priority habitats and flora
    - fauna
    - critical habitat triggers
- the socioeconomic environment:
    - local and regional economy
    - employment and skills development
    - labour and working conditions
    - land access and livelihoods
    - community safety and security
    - public health
    - infrastructure and services
    - cultural heritage
- ecosystem services:
    - provisioning services
    - regulating services
    - supporting services
    - cultural services

The impact assessment covers:

- planned activities – those that correspond to routine (normal) activities associated with the construction and commissioning, operation and decommissioning phases of the project

- unplanned events – those events defined as reasonably foreseeable that are not planned to occur as part of the project works, but which may plausibly occur, even with a low probability.

The assessment of planned activities and unplanned events has been carried out on the assumption that GIIP, presented as management control measures, have been applied to all project activities.

As per GIIP, project-specific mitigation measures are required for significant negative impacts only. The main objective of this process is to reduce impact significance to levels that are ALARP. Enhancement measures for positive benefits are also documented where relevant.

7.2 Scope and objectives of the ESIA

The scope of the impact assessment includes impacts identified in the project's AoI (see Section 5.2).

The overarching objectives of the ESIA are to evaluate the possible impacts of the project on the natural and social environments in which it is being constructed and to identify the measures to limit negative impacts and optimise the positive impacts of the project.

The findings of the ESIA will feed into the project decision-making process. A further objective of the ESIA is to support the project in complying with national legislation, FB Group's environmental and social performance requirements and aligning the project with GIIP.

7.3 Overall approach

The project could give rise to potential impacts on a wide range of environmental and social receptors. To assess these potential impacts, an ESIA has been undertaken, following the overall process illustrated in Figure 7-1 below. The key steps of the ESIA are described in the subsequent sections:

- Screening: A process to determine the appropriate level of analysis.
- Scoping: The key objectives of scoping are to:
    - identify the project's planned activities and unplanned events with the potential to result in significant impacts on physical, biological, and/or social receptors
    - gather stakeholder input on potential impacts to these aspects or other concerns regarding the project
    - help inform the development of a terms and scope that outlines the scope and technical approach to be used to conduct the ESIA.
- Project description and interaction with project design process, including identifying environmental and social receptors within the AoI.
- Environmental and socioeconomic baseline studies.
- Identify potential environmental and socioeconomic impacts.
- Assess impact significance by estimating the magnitude of a potential impact (taking into account management control measures) and the sensitivity of receptors.
- Propose mitigation measures to avoid or minimise the potential impacts, and enhancement measures to maximise beneficial impacts.

- Determine any residual impacts.
- Development of ESMPs that describe the measures that will be implemented in order to maximise project benefits and prevent and/or limit the potential negative impacts of the project.
- Public disclosure according to IFC PS1 and national regulatory requirements.
- Implementation of ESMPs.

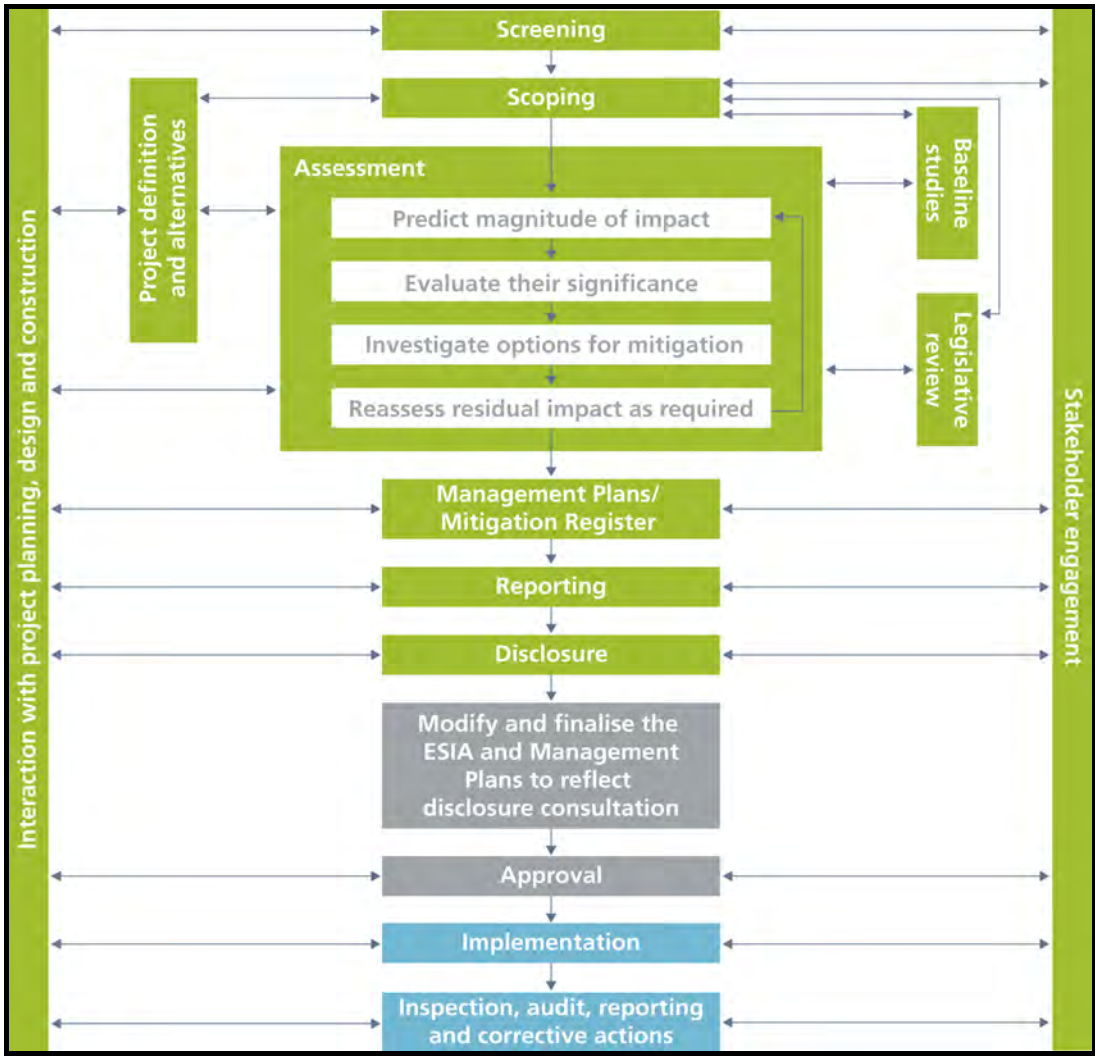

Figure 7-1: ESIA process

Source: RSK

7.3.1 Scoping

In October 2025, RSK produced a Scoping Report for this ESIA with the following objectives:

- identify and prioritise issues of importance for the ESIA
- define the approach for the rest of the ESIA process and the ToR that:
- is focused on the key issues (impacts, alternatives, mitigation and management)
- engages and considers the views of relevant stakeholders

- informs the design of the project to reduce negative environmental and social impacts
- meets national and relevant international requirements
- is realistic given the timeframe and resources available
- identify any practical challenges for the ESIA in terms of data availability and meeting national and international standards, and to propose solutions for addressing these
- define the approach for stakeholder engagement to ensure stakeholders understand how they may be impacted, have the opportunity to express their opinions and that the ESIA reflects their concerns.

Scoping also included elements of stakeholder consultation to identify available baseline data, specific sensitivities and key issues, resources and receptors that may be affected by the project (see Sections 1.4 and 5.1).

The scoping exercise included the following considerations:

- sources of potential impact (aspects) associated with the construction and operation of the project
- identification of the main environmental and social resources and receptors
- experience gained from developments of a similar nature or scale
- results of the stakeholder engagement completed to date.

7.4 Identification of project aspects and potential impacts

A preliminary assessment of the resource/receptor types present in the ESIA study area was made using a combination of desktop review, stakeholder engagement and site visits. The assessment of existing conditions is aimed at providing sufficient detail to meet the following objectives for the physical, biological, and socioeconomic aspects identified during scoping as having the potential to be significantly impacted by the project:

- identify the key conditions and sensitivities in the project AoI
- provide a basis for extrapolation of current conditions, taking into consideration natural variability and changes due to factors external to the project
- further understand stakeholder concerns, perceptions, and expectations regarding the project
- provide data to aid in the prediction and evaluation of potential impacts of the project
- inform development of appropriate mitigation measures and
- provide a baseline to inform assessments of future changes and of the effectiveness of mitigation measures.

Potential interactions between project activities and the physical, biological and social environment were identified based on the information provided in Section 3, and data collected on the baseline conditions provided in Section 1. Potential environmental and socioeconomic impacts were identified considering aspects of the project that could change baseline conditions.

The assessment of magnitude with regard to human receptors considers their ability to adapt to and manage the effects of an impact.

Impacts can be classified as:

- positive – an impact considered to represent an improvement to the baseline environmental or social conditions, or that introduces a new desirable factor
- negative – an impact considered to represent an adverse change from the baseline conditions, or that introduces a new undesirable factor
- direct – an impact that results from a direct interaction between a project activity and the receiving environment
- indirect – an impact between a project activity and the environment because of subsequent interactions, for example, the impact of pollution of a watercourse on users of water abstracted from the watercourse or loss of habitat affecting the viability of a species population
- induced – impacts from non- project activities that are encouraged to happen because of the project and that would not occur in the absence of the project, for example new businesses established to cater for an increased number of construction workers in the area
- cumulative – an impact that acts together with other impacts (including from other third-party project or projects) to affect the same receptor(s)
- perceived – issues that stakeholders believe would change baseline conditions even when there is no factual basis for the concern. Stakeholder views are obtained via stakeholder consultation
- transboundary impacts (i.e., impacts that cross the border from Togo) – where identified have been described and assessed.

7.5 Impact assessment methodology

7.5.1 Planned activities

7.5.1.1 Impact magnitude

Impact magnitude is defined according to its intensity (degree of the predicted change to the receptor), the duration (time) of the impact, and the frequency (probability). The criteria for four different grades of impact magnitude were defined, as described in Table 7-1, from 1 (very low) to 4 (high), based on definitions of negative effects. A rating of 0 is also provided for beneficial (positive) effects.

Table 7-1: Impact magnitude

Score/ Intensity	General	Baseline	Definition of impact magnitude
0 Positive	Beneficial effects	Physical	Beneficial to the physical environment (including landscape).
		Biological	Beneficial to habitats and species.
		Social	Beneficial to local communities, health, resources/ecosystem services, cultural heritage.
1 Very Low	Negligible or non-detectable effects. **Extent**: site-specific (project footprint and immediate surrounding area) **Duration**: transient (limited to the duration of the activity in question, i.e., days or weeks) **Frequency**: improbable (never heard of in the industry)	Physical	**Air quality*:** emissions do not breach licence limits, or national/international standards and have negligible impact.
			Noise:** emissions do not breach licence limits, or national/international standards and have negligible impact. Noise levels may still be audible.
			Water resources, surface and groundwater (quality): no noticeable change to hydrology or hydrogeology. Effluent discharges do not breach licence limits, or national/international standards and have negligible impact. Spill or accidental event that causes local contamination only and can be restored to an equivalent capability in a period of days up to one month.
			Soils (quality)*:** effluent discharges do not breach licence limits, or national/international standards and have negligible impact. Spill or accidental event that causes immediate area damage only and can be restored to an equivalent capability in a period of days up to one month.
			Landscape and visual amenity: typically, a negligible scale of change to landscape character and/or visual amenity, which may occupy a limited extent and be short-term and reversible.
		Biological	**Biodiversity (protected areas):** no protected or internationally designated areas affected.
			Biodiversity (habitat): disturbance of habitat limited to the immediate area, with rapid recovery without intervention.
			Biodiversity (species): planned activity or unplanned incident causes disturbance to individuals of a species that is similar in effect to the random changes in population due to normal environmental variation. No discernible effect of disruption of behaviour or species interactions of nationally/internationally important species of conservation concern.
		Social	**Livelihoods:** changes to economy, employment, livelihoods and infrastructure are within normal variations in baseline levels. Very limited/intermittent interference, may be noticed by users of resources/ecosystem services.

Score/ Intensity	General	Baseline	Definition of impact magnitude
			Social cohesion: changes to community dynamics are within normal variations in baseline levels.
			Health and safety: changes to health, community safety, security and welfare are within normal variations in baseline levels. Transitory, negligible decrease in the psychological wellbeing of the local community due to perceived safety risks.
			Cultural heritage: negligible degradation of tangible cultural heritage sites or intangible cultural heritage.
2 Low	Impact affects the receptor in such a way that natural, cultural and social functions and processes are minimally affected. **Extent**: localised (impacts may be experienced within the AoI for the aspect) **Duration**: short term (up to one year) **Frequency**: probable good possibility (≤ 50%) that the impact will occur (has occurred in the industry and so therefore could occur)	Physical	**Air quality*:** minor elevation in ambient pollutant levels well below WHO guidelines.
			Noise:** minor elevation in ambient noise levels well below WHO guidelines.
			Water resources: a noticeable but not fundamental change to hydrology or hydrogeology.
			Surface water (quality): reduction in water quality (suspended sediment, turbidity, colour, odour and taste) downstream of project activities is likely to be discernible by local users, but is unlikely to cause users to use less water than they normally use or to seek supplementary sources of water.
			Groundwater (quality): localised impact that may take up to one year to restore to baseline quality.
			Soils (quality)*:** minor losses of productivity expected to last up to one year after reinstatement and/or localised compaction of agricultural land or natural/semi-natural habitat that can be alleviated, e.g., by deep cultivation. Localised contamination may take up to one year to restore to pre-existing capability/function.
			Landscape and visual amenity: typically, a small scale of change to landscape character and/or visual amenity, which may occupy a localised extent and be short-term or medium-term and reversible.
		Biological	**Biodiversity (protected areas):** minor loss or alteration to a legally protected or internationally recognised site whereby key elements or features are retained and the ecosystem continues to function as before.
			Biodiversity (habitat): reduction in habitat integrity, ecosystem function or ecosystem services. Recovery to baseline state is expected within a year with minimal intervention.
			Biodiversity (species): disturbance of a local population or individuals of a species resulting in a decline in abundance or distribution over one or more generations, but that does not change the overall longevity or viability of the population of the species or populations of other dependent species.
		Social	**Livelihoods:** reduction in community and household assets, or access to assets, such that economic displacement (as defined in IFC PS5 affects 1–4 individuals, households or businesses. Short-term financial loss to business owners where recovery is likely.

Score/ Intensity	General	Baseline	Definition of impact magnitude
			Social cohesion: unplanned in-migration is not expected to cause infrastructure capacity exceedance. Increases in incidences of cultural conflict, but expected to be contained within existing social control norms.
			Health and safety: incident that requires mobilisation of on-site response equipment and crews. Increased public exposure to health threats that may increase morbidity rates. Decline in access to health care facilities and acquisition of treatment.
			Cultural heritage: activity that may cause minor disturbance and/or superficial damage to tangible cultural heritage site(s) or intangible cultural heritage that is easily and effectively mitigated.
3 Medium	Where the affected receptor is altered but natural, cultural and social functions and processes continue, albeit in a modified way Valued, important, sensitive or vulnerable systems or communities are negatively affected. **Extent**: regional **Duration**: medium-term (1–5 years) **Frequency**: highly probable most likely (50–90% chance) that the impact will occur (has occurred or is expected to occur	Physical	**Water resources:** fundamental change to hydrology and hydrogeology within a catchment resulting in temporal changes to the water shed.
			Surface water (quality): reduction in water quality (suspended sediment, turbidity, colour, odour and taste) downstream of project activities is sufficient to cause complaints from local users but is unlikely to cause users to use less water than they would normally use or to seek supplementary sources of water.
			Groundwater (quality): localised impact that may take 1–5 years to restore to baseline quality. Widespread (regional) impact that may take up to one year to restore to baseline quality.
			Soil (quality)*:** minor losses of productivity expected to last 1–5 years after reinstatement and/or widespread compaction of agricultural land or natural/semi-natural habitat that can be alleviated, e.g., by deep cultivation. Localised contamination (within single fields) that may take more than one year to restore to pre-existing capability/function and/or widespread damage that may take up to one year to restore to pre-existing capability/function.
			Landscape and visual amenity: typically, a medium noticeable scale of change to landscape character and/or visual amenity, which may occupy an intermediate extent and be medium-term or long-term and reversible.
		Biological	**Biodiversity (protected areas):** moderate loss or alteration to a legally protected or internationally recognised site whereby key elements or features will be changed but the overall integrity of the site is not affected.
			Biodiversity (habitat): changes to a habitat or ecosystem ecological features and ecosystem services, structures or functions that reduce its integrity, but recovery to baseline state is expected within five years with some intervention.

Score/ Intensity	General	Baseline	Definition of impact magnitude
	during the project or very likely to)		**Biodiversity (species):** disturbance of a sufficient portion of the bio-geographic population of a species to cause a decline in abundance, distribution or size of genetic pool such that natural recruitment would not return the population of the species, and other species dependent on it, to former levels within several generations.
		Social	**Livelihoods:** physical resettlement (as defined in IFC PS5) of 1–20 households/businesses. Reduction in community and household assets, or access to assets, such that economic displacement (as defined in IFC PS5) affects 5–20 individuals, households or businesses. Medium-term (1–5 years) financial loss to owners of businesses where recovery may be difficult.
			Social cohesion: unplanned in-migration flows considered sufficient to cause an exceedance of the capacity of at least one component of physical or social infrastructure. Increases in cultural conflict are likely to not be contained within existing social control norms.
			Health and safety: incident that requires mobilisation of national/company response equipment. Increased public exposure to health threats that may increase mortality rates. Increases in rates of serious crimes involving violence and property theft.
			Cultural heritage: activity or accident that damages a site of tangible cultural heritage importance or affects intangible cultural heritage and requires immediate repair by existing project resources or mitigation.
4 High	Where natural, cultural or social functions and processes are altered to the extent that it will temporarily or permanently cease. Valued, important, sensitive or vulnerable systems or communities are	Physical	**Water resources**: widespread and permanent change to hydrology and hydrogeology in an internationally or nationally designated site.
			Surface water (quality): reduction in water quality (suspended sediment, turbidity, colour, odour and taste) downstream of project activities is likely to cause users to use less water than they normally use and to seek supplementary sources of water to make up the deficit.
			Groundwater (quality): localised impact that may take more than five years to restore to baseline quality. Widespread impact that cannot be restored to baseline quality within one year.
			Soil (quality)*:** major losses of productivity predicted to last >1 year after reinstatement and/or widespread compaction of agricultural land or natural/semi-natural habitat that cannot be alleviated, e.g., by deep cultivation. Localised contamination that cannot economically be restored and/or widespread damage that cannot be restored to pre-existing capability/function within one year.
			Landscape and visual amenity: typically, a substantial scale of change to landscape character and/or visual amenity, which may occupy a wide extent and be long-term or permanent. Will result in significant

Score/ Intensity	General	Baseline	Definition of impact magnitude
	substantially affected. **Extent**: national or transboundary. **Duration**: long-term (> 6 years). **Frequency**: definite (> 90%) chance of the impact occurring regardless of any prevention measures (expected to happen frequently in a year or is almost certain to happen, or an event which is expected to occur multiple times).		negative change to the existing landscape character and/or visual amenity (e.g., because of loss of key elements of the existing landscape and/or views, or introduction of elements that are uncharacteristic compared to existing features).
		Biological	**Biodiversity (protected areas):** major loss or alteration to a legally protected or internationally recognised site whereby key elements or features will be fundamentally changed such that the overall integrity of the site is affected.
			Biodiversity (habitat): long-term and widespread changes to a habitat, ecosystem function or ecosystem services that reduce its integrity, affects the ability to sustain valued components, and may require extensive intervention. The habitat or ecosystem service may not recover to its baseline state.
			Biodiversity (species): disturbance of a sufficient portion of the bio-geographic population of a species may cause a decline in abundance, distribution or size of genetic pool such that natural recruitment could not return the population of the species, and other species dependent on it, to former levels.
		Social	**Livelihoods:** physical resettlement (as defined in IFC PS5) of more than 20 households/businesses. Reduction in community and household assets, or access to assets, such that economic displacement (as defined in IFC PS5) affects 20 or more individuals, households or businesses. Job losses in small communities with very limited alternative opportunities nearby. Long-term (>5 years) financial loss to owners of businesses where recovery may be difficult.
			Social cohesion: significant unplanned in-migration flows considered sufficient to cause an exceedance of the capacity of at least three components of physical or social infrastructure. Increases in cultural conflict not able to be contained within existing social control norms.
			Health and safety: incident that requires mobilisation of international response equipment and crews. Increased public exposure to health threats that will very likely increase mortality rates. Significant increases in rates of serious crimes involving violence and property theft.
			Cultural heritage: activity or accident that seriously damages a site of tangible cultural heritage importance, notifiable to the relevant authority and requiring specialist skills to repair or seriously affects intangible cultural heritage requiring extensive mitigation.

* The air quality impact assessment methodology is detailed in Appendix 8.

** Noise impact magnitude categories are defined in more detail in Appendix 9.

***Soil quality includes soil productivity potential (being a function of soil type, structure and fertility), soil compaction and soil contamination.

7.5.1.2 *Receptor sensitivity*

For the impact assessment, RSK has used professional judgement to assess the quality and sensitivity of the receptor or aspect affected by the impact, taking into account its local, regional, national and international designations, its importance to the local or wider community and its economic value. The assessment of the sensitivity of human receptors, for example, a household, community or wider social group, has taken into account their likely response to change and their ability to adapt to and manage the effects of the impact.

Stakeholder concerns associated with the type of receptor and the potential for cumulative impacts to occur have also been taken into consideration.

Appendix 8 provides the detailed air quality impact assessment methodology.

Please note that the noise and vibration impact assessment considers only residential receptors, which are classified as highly sensitive (refer to Appendix 9 for additional information).

The sensitivity of receptors has been determined based on four categories, from 1 (very low) to 4 (high), as described in Table 7-2.

Table 7-2: Receptor sensitivity

Score	Baseline	Definition of receptor sensitivity
1 Very Low	Physical	**Surface water (resources):** surface waters with no community use or only used for low-grade industrial use.
		Groundwater (quality): very low-quality groundwater/groundwater not used by the community.
		Soil (quality): soils identified as being tolerant of the proposed change without perceptible detriment to its character.
		Landscape and visual amenity: typically, landscape character with a community landscape value and low susceptibility to change; or visual amenity which has community value and is experienced by low susceptibility receptors. These will include a landscape that is dominated by derelict, disused or degraded man-made structures and/or which is not valued by local communities or others. A natural landscape severely degraded or modified by cultural land uses, such as intensive arable or pastoral agriculture. Visual receptors with no or very limited views.
	Biological	**Biodiversity (habitat):** commonly occurring habitats and species, not subject to significant decline. Habitats that are already disturbed/modified with little biodiversity value.
		Biodiversity (species): fauna and flora present not particularly susceptible to disturbance including noise and vibration.
	Social	**Livelihoods:** highly skilled and experienced labour pool.
		Social cohesion: project AoI includes a negligible number of inhabitants and/or resources that are not used or protected.
		Cultural heritage: no cultural heritage assets, or artefacts of low archaeological importance.
		Health and safety: no human receptors for air emissions and noise apart from the workforce.
2 Low	Physical	**Surface water (quality):** surface water and sediments with some pre-existing pollution that limits their use or value for wildlife or communities.
		Groundwater (quality): Groundwater with some pre-existing pollution/degradation that limits its use or value for wildlife or communities.
		Soil (quality): soils with no geological, ecological, agricultural or economic value. Soils that respond well to restoration techniques.

Score	Baseline	Definition of receptor sensitivity
		Landscape and visual amenity: typically, landscape character with a community-regional landscape value and low-medium susceptibility to change; or visual amenity which has community-regional value and is experienced by low-medium susceptibility receptors. These will include a landscape with few intact or distinctive natural or historic features but which is valued at settlement/district/municipal level (e.g., attracts local visitors). Landscape with large, dominant, numerous and/or noisy modern man-made features. A natural landscape is degraded or modified by cultural land uses such as arable or pastoral agriculture. Visual receptors include people at their place of work, industrial facilities.
	Biological	**Biodiversity (value):** low sensitivity or local ecosystem value. Sites of local biodiversity value but not intact, fragile or unique.
		Biodiversity (habitat): habitats that recover quickly following disturbance, e.g., habitats comprising species that rapidly recolonise disturbed areas.
		Biodiversity (species): species present are widespread common species, e.g., IUCN listed near threatened or least concern, with low biodiversity value. Fauna and flora present have low susceptibly to emissions and discharges fauna with low susceptibly to noise and vibration emissions.
	Social	**Livelihoods:** skilled labour pool that lacks relevant experience.
		Social cohesion: project AoI include a low number of inhabitants and/or resources that are used but not protected. Individuals or households in local communities have access to alternative resources, the use of which may cause limited adverse indirect impacts.
		Cultural heritage: designated and undesignated cultural heritage assets of local importance. Areas of negligible or low potential for previously unrecorded buried archaeology.
		Health and safety: human receptors for air quality and noise are limited to individuals from the local community that may pass through the area, but exposure for extended periods is unlikely.
3 Medium	Physical	**Surface water:** surface water and sediments of moderately high quality, e.g., in its natural state, or supports an area or species valued or designated for its importance at national level. Water is used for drinking or domestic use by a small number of users. Waters that support commercial or subsistence fishery.
		Groundwater: groundwater used for industrial purposes or agriculture. Groundwater that provides baseflow to surface watercourses used for fishing or bathing. Groundwater that supplies springs and wells but is not used for domestic purposes (washing, cooking, bathing).
		Soil (quality): soils that respond moderately well to restoration techniques. Soils with moderate geological, ecological, agricultural or economic value.

Score	Baseline	Definition of receptor sensitivity
		Landscape and visual amenity: typically, landscape character with a regional landscape value and medium susceptibility to change; or visual amenity which has regional value and is experienced by medium susceptibility receptors. These will include a landscape with a number of distinctive natural landforms or historic/traditional features that add character and where modern man-made features may be present but do not significantly degrade the landscape character. Landscape valued or designated for its landscape importance at national level (e.g., attracts tourists within the country). Anthropogenic landscape which has a more traditional, less intensive character and which has a higher sensitivity to change due to the presence of features such as gardens, orchards and traditional or unimproved pastures. A settlement which is valued at provincial/regional level (e.g., attracts tourists from province/region). Visual receptors include people travelling through or past the affected landscape in cars, on trains or other transport routes where higher speeds are involved and views sporadic and short-lived; people engaged in outdoor recreation where enjoyment of the landscape is incidental rather than the main interest,
	Biological	**Biodiversity (value):** medium sensitivity or regional/national ecosystem value.
		Biodiversity (protected areas): sites of regional importance, or designated for protection at a national level, e.g., national parks/marine parks.
		Biodiversity (habitat): habitats providing important feeding or breeding grounds. Habitats of protected species or habitat diversity or 'naturalness', or recognised as intact or unique, or areas recognised by NGOs as having high environmental value. Habitats that are unlikely to return to natural conditions without some intervention, but which are capable of assisted recovery.
		Biodiversity (species): regionally or nationally important population of a species, either because of population size or distributional context. Species listed as vulnerable on the IUCN Red List (global or regional). Keystone species and species with long life histories, reflecting the inability of localised populations to recover from significant disturbance. Fauna and flora with moderate susceptibly to air emissions and discharges, fauna with moderate susceptibly to noise emissions.
	Social	**Livelihoods:** some households and business owners/operators perceive that the change will affect their ability to maintain their livelihood or quality of life for a significant time period (<1 year). Limited skills and experience in the labour pool.
		Social cohesion: project AoI include a moderate number of inhabitants and/or resources of regional importance. Some individuals/households depend on the affected resource with no nearby alternatives.
		Cultural heritage: cultural heritage sites or artefacts of regional or national importance. Area where archaeological or other cultural heritage resources are present, and/or area where the chance of disturbance of previously unknown or unrecorded buried archaeology is moderate.

Score	Baseline	Definition of receptor sensitivity
		Health and safety: human receptors for air quality and noise include residential buildings where longer periods of exposure may occur.
4 High	Physical	**Surface water:** surface waters and sediments of very high quality, e.g., in natural state or supports an area or species valued or designated for importance at international level. Water is used for drinking or domestic use by many users. Waters that support very productive fisheries.
		Groundwater: aquifer used for drinking or domestic use (e.g., washing, cooking, bathing) by many users. Groundwater that provides essential baseflow to a watercourse.
		Soil (quality): soils with very high agricultural or economic value. Land supporting critically endangered species whose presence is dependent on soil quality, structure or properties.
		Landscape and visual amenity: typically, landscape character with a national landscape value and high susceptibility to change; or visual amenity which has national value and is experienced by high susceptibility receptors. These will include a landscape valued or designated for its landscape importance at international level (e.g., attracts foreign tourists). Landscape with a high degree of naturalness or dominated by traditional/historic landscape features and an absence of modern man-made features or wilderness landscape. Visual receptors include occupiers of homes, users of outdoor recreational facilities where landscape value is important or integral to that activity, communities who have views of the landscape that they value highly, and homes and hotels purposely positioned/placed to take advantage of a view.
	Biological	**Biodiversity (value):** high sensitivity or international ecosystem value.
		Biodiversity (protected areas): sites of international importance/designated for protection at international level, e.g., World Heritage Area, Ramsar wetlands. Internationally recognised areas such as Key Biodiversity Areas and Important Bird and Biodiversity Areas. Areas internationally recognised as Alliance for Zero Extinction sites.
		Biodiversity (habitat): highly threatened and/or unique ecosystems and areas illustrative of key evolutionary processes, as defined in IFC PS6[13]. Critical habitats as defined by IFC PS6. Habitats that are very difficult to restore to natural conditions.
		Biodiversity (species): species listed as critically endangered or endangered on the IUCN Red List (global or regional). Evolutionarily distinct species listed under the EDGE programme. Endemic and/or range-restricted species, migratory and/or congregatory species triggering critical habitat as per IFC PS. Fauna and flora with high susceptibly to air emissions and discharges, fauna with very low tolerance for noise and vibrations.

[13] Critical habitats are areas with high biodiversity value, including (i) habitat of significant importance to critically endangered and/or endangered species; (ii) habitat of significant importance to endemic and/or restricted-range species; (iii) habitat supporting globally significant concentrations of migratory species and/or congregatory species; (iv) highly threatened and/or unique ecosystems; and/or (v) areas associated with key evolutionary processes (IFC, 2012).

Score	Baseline	Definition of receptor sensitivity
	Social	**Livelihoods:** many households and business owners/operators perceive that the change will affect their ability to maintain their livelihood or quality of life to an unacceptable extent and may have to leave the area/community. Lack of skilled and experienced labour pool.
		Social cohesion: project AoI include a significant number of inhabitants and/or resources of national or global importance. Communities depend on the affected resource(s) with no nearby alternatives.
		Cultural heritage: cultural heritage sites or artefacts of international importance such as United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Sites. Area where significant or important archaeological or other cultural heritage resources are present, and/or where the chance of disturbance of previously unknown or unrecorded archaeology is high.
		Health and safety: human receptors for air quality and noise include residential buildings, schools, hospitals where near-constant presence of people is possible and long-term exposure is likely.

7.5.1.3 *Impact significance*

The impacts are assessed by examining both the magnitude of the impact and the sensitivity of the receptor that is affected. Together, the magnitude of the impact (1 – 4) and the sensitivity of the receptor(s) (1 – 4) allows the forecast of the impact significance. This interaction between magnitude and sensitivity can be expressed as a matrix, shown in Figure 7-2, thereby bringing a transparent structure to complex interactions.

Significance			Sensitivity rating			
			Very low	Low	Medium	High
		0 Positive	1	2	3	4
Magnitude rating	Very low	1	1 Negligible	2 Negligible	3 Minor	4 Minor
	Low	2	2 Negligible	4 Minor	6 Moderate	8 Moderate
	Medium	3	3 Minor	6 Moderate	9 Moderate	12 Major
	High	4	4 Minor	8 Moderate	12 Major	16 Major

Figure 7-2: Significance matrix

The significance of the overall assessment for each environmental and social aspect were defined as follows, based on best international practice:

- Major impact: impacts that have the potential to cause irreversible or widespread harm to an environmental or social receptor that is unique or has a limited capacity to adapt to change. Avoidance through appropriate design responses is the only effective mitigation.
- Moderate impact: impacts that have the potential to degrade or upset an environmental or social receptor due to their scale or its susceptibility to change. The receptor's abundance or resilience to change ensures that replacement and recovery is achievable.
- Minor impact: when an environmental or social receptor with low sensitivity is exposed to minor alterations that will not affect its viability, provided standard controls are adopted.
- Negligible impact: when an environmental or social value with low sensitivity is exposed to minor alterations which will not result in any noticeable change.
- Positive impact: impacts that have the potential to create beneficial or uplifting effects on an environmental or social value.

Major and moderate impacts are considered 'significant' and thus warrant identification of possible mitigation measures.

Impacts of minor or negligible impact are considered not to warrant additional mitigation measures, although in some cases low-cost actions are proposed that would be expected

to further reduce corresponding impact significance. Within the social impact assessment (see Section 8.3) mitigation measures have been provided in most cases even where the impact has been assessed as not significant (e.g., minor or negligible). This is largely because the measures set out are part and parcel of GIIP for socioeconomic management.

Positive impacts, particularly within the socioeconomic sphere (e.g., an increase in local employment opportunities due to the project), can result from project activities. In this circumstance, such impacts have not been ranked but were assigned a 'positive impact' for simplicity and discussed as appropriate, based on the assumption that any measures that would optimise benefits will be effectively implemented.

7.5.1.4 Presentation of impact assessment

A summary table (Table 8-72) of impact assessment magnitude, sensitivity and significance, and residual impact where relevant, is provided for each environmental and socioeconomic aspect assessed in Sections 8.1-8.4. Refer to Section 7.6 for information regarding mitigation measures and residual impacts.

7.5.2 Cumulative impacts

Cumulative impacts have been identified and assessed in accordance with the 'IFC Good Practice Handbook on Cumulative Impact Assessment and Management: Guidance for the Private Sector in Emerging Markets' (2013). The IFC Good Practice Handbook uses a six-step approach to cumulative impact assessment (CIA), as presented in Figure 7-3. This approach is described in more detail in the sections below.

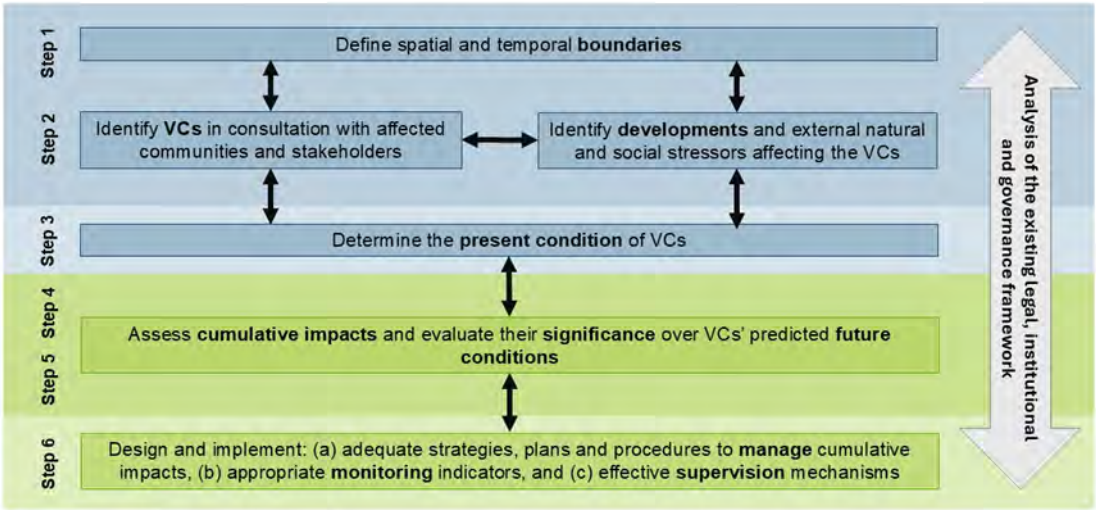

Figure 7-3: IFC cumulative impact assessment process

Source: IFC (2013)

It should be noted that the Good Practice Handbook suggests that government and regional planners have ultimate responsibility for CIA. However, it's acknowledged that managing the CIA process through government-led approaches can present some challenges, such as limited capacity or gaps in strategic regional, sectoral, or integrated resource planning. It can therefore be in the best interest of the developer, i.e., FB Group,

to lead the CIA process and recommend management measures to address cumulative impacts.

7.5.2.1 Defining the spatial and temporal boundaries (Step 1)

For the CIA, the AoI is based on that described in the baseline (Section 5.2). The temporal boundary of the CIA is the lifetime of the project as this is the duration of potential impacts on receptors.

In addition, a precautionary study area around the project area has been used identify other projects and activities that have the potential to lead to cumulative impacts. The study area, as shown in Figure 7-4 is a radius of approximately 15 km around the project footprint.

It should be noted that the unplanned/accidental events AoI is not considered in this impact assessment as the likelihood of simultaneous large-scale events is considered too remote.

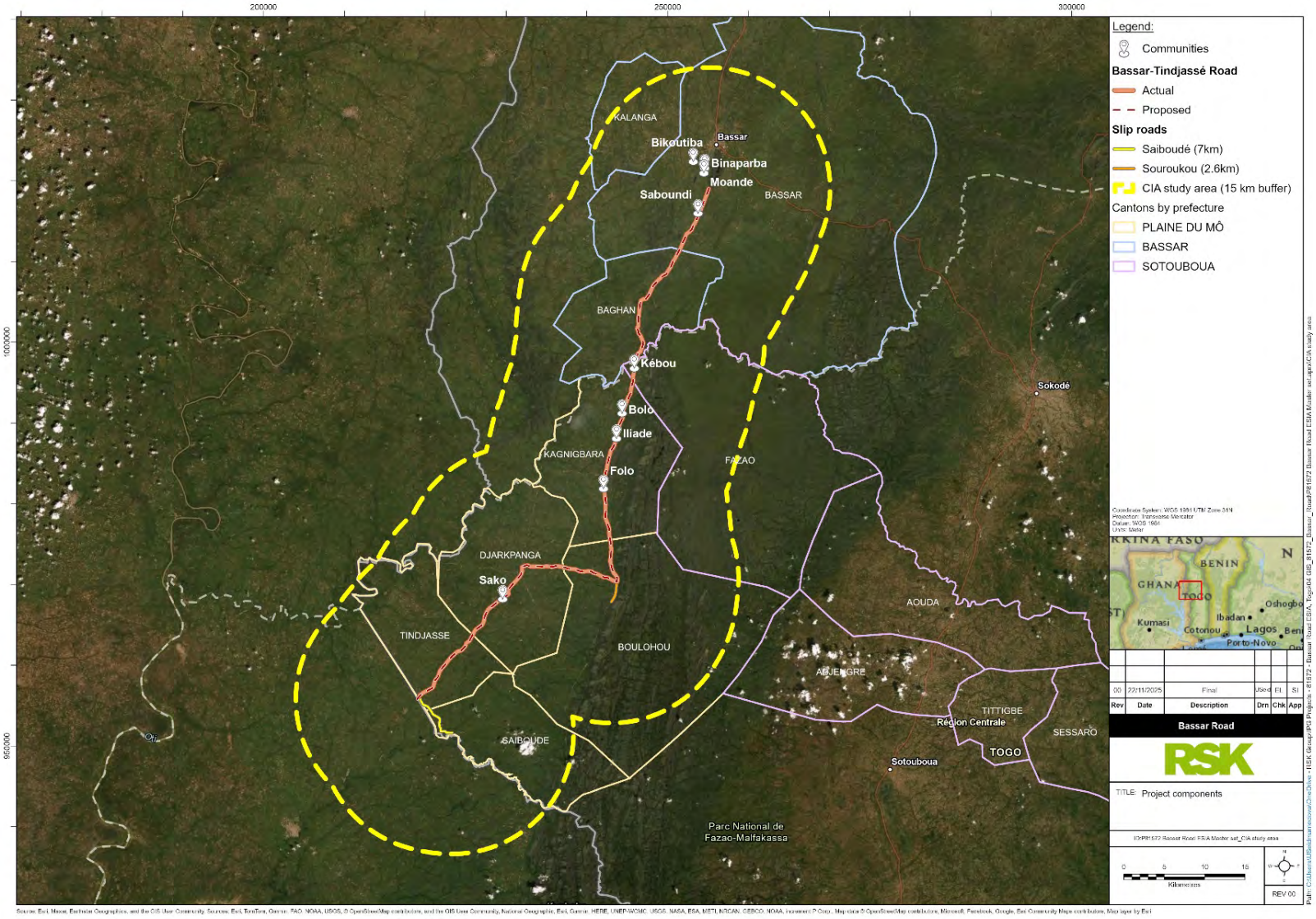

Figure 7-4: CIA study area

7.5.2.2 *Stakeholder engagement (Step 2)*

Stakeholder engagement has been carried out with national, regional (prefecture and commune), and community level stakeholders (see Section 5.1). The output from this engagement has been used to identify environmental and social concerns and potential sources of cumulative impact in CIA study area.

7.5.2.3 *Valued environmental and social components (Step 3)*

The IFC Good Practice Handbook defines valued environmental and social components (VCs) as "environmental and social attributes that are considered important in assessing risks" (IFC, 2013). These attributes may be:

- physical features, habitats, wildlife populations (e.g., biodiversity)
- ecosystem services
- natural processes (e.g., water and nutrient cycles, microclimate)
- social conditions (e.g., health, economics), or
- cultural aspects (e.g., traditional spiritual ceremonies).

In accordance with the IFC Good Practice Handbook, the following criteria for the identification of VCs (or receptors) has been defined:

- identified as important and/or sensitive in Section 5 of this ESIA
- identified as important by the national/international scientific community, i.e., meeting the Good Practice Handbook criterion that a VC should be recognised as important on the basis of scientific concern
- identified as important or sensitive by stakeholders.

The current condition of VCs or receptors is provided in the ESIA baseline (Section 5).

7.5.2.4 *Defining the sources of cumulative impact (Step 4)*

A source of potential cumulative impact is something that affects the condition of the VCs. These include:

- associated facilities
- past and existing third-party projects that continue to affect the current and predicted future of the receptor
- reasonably defined/foreseeable third-party projects
- developments or activities induced by the project
- other sources of human and natural stressors on the receptors.

1.1.1.1.2 Associated facilities

IFC PS1 (IFC, 2012) defines associated facilities as:

"facilities that are not funded as part of the project, would not have been constructed or expanded if the project did not exist and without which the project would not be viable".

IFC Guidance Note 1 (IFC, 2012), clause 52 states that:

". . . the client should normally have some commercial leverage on the operators of such [associated] facilities. Where such leverage allows, undertakings can be secured from these operators to operate their facilities consistent with the applicable Performance

Standards. In addition, the client should identify its own actions, if any, that could support or supplement the actions of the operators of the associated facilities."

There are no associated facilities considered for this project.

1.1.1.1.3 Third party developments

Past, present and planned third-party projects, developments and activities have been identified within the study area by:

- review of district development plans and national development plans, including:
  - the National Development Programme (PND) Water project (Ministry of Water and Sanitation, 2025)
  - the Quality Essential Health Services For Universal Health Coverage (SSEQCU) (The World Bank, 2024)
  - the Togo-Agro-Food Processing Zone Project (PTA-TOGO) (African Development Bank Group, 2024; EWS Data, n.d)
- review of IFI websites for projects receiving or applying for funding
- review of other publicly available information on key developments in the region, such as websites of known developers and the press, for example Togo First
- consultation with stakeholders.

A screening process was conducted to identify developments that are reasonably defined, reasonably predictable or foreseeable based on the IFC definitions[14].

Existing third-party facilities and activities are covered by the ESIA baseline (see Section 5).

1.1.1.1.4 Induced development of facilities and services

Project-induced development are covered by the ESIA social impact assessment (see Section 8.3).

1.1.1.1.5 Other sources of human and natural stressors

Receptors are exposed to stresses, threats and pressures that are not directly connected with formal development. Consequently, they have not been considered as a source of cumulative impact and are described in the baseline sections in this ESIA (Section 5).

7.5.2.5 Impact assessment (Step 5)

For an impact to be assessed as cumulative, the project AoI and the source of cumulative impact AoI must overlap, and the impacts must occur in the same timescale.

At the time of writing, no sources of cumulative impact were screened in and consequently no impact assessment was undertaken.

7.5.3 Unplanned events

An unplanned event is defined as 'a reasonably foreseeable event that is not planned to occur as part of a project, but which may conceivably occur as a result of project activities (e.g., accidents), even with a low probability'. Unplanned events may occur during any

[14] Definition of projects that are "reasonably defined", taken from IFC PS1 (IFC, 2012a). Definition of projects that are "reasonably predictable" or that are "foreseeable future developments", taken from the IFC Good Practice Handbook.

phase of a project. The risk assessment is based on the application of experience of events or incidents to predict risk in the future. Consequences of potential impacts were first determined using severity levels and definitions. The impact of unplanned events on the environment and public health and safety, and the likelihood of their occurrence, were taken into consideration.

Unplanned events have been assessed using a risk assessment matrix (RAM), which enables qualitative assessments of ‘reputation’, ‘health and safety’, ‘environment’, ‘social’ and ‘commercial’ risk (Figure 7-5). The likelihood was rated from highly unlikely to very likely (highly unlikely, unlikely, possible, probable and very likely), while the severity was rated from insignificant to very high (insignificant, low, medium, high and very high). The risk ranking was subsequently rated from small to critical (small, material, severe and critical).

			CONSEQUENCES TO PROJECT OBJECTIVES					LIKELIHOOD				
			Reputation	H&S	Environmental	Social (eg accidental damage or interruption to infrastructure/cultural site etc, damage to or loss of a livelihoods asset (including livestock)) *(NB restitution/compensation for any damage is not considered within this column, only the extent of the impact)*	Commercial	Incident hardly ever occurs in industry	Occurs in <1 in 100 projects	Occurs in <1 in 10 projects	Occurs in many projects	Expected to occur in every project
								Highly unlikely	Unlikely	Possible	Probable	Very likely
								1	2	3	4	5
IMPACT	5	Very high	International Level	Multiple fatalities	Long term impact within or outside of company site. Restitution time >3 years. Tier 3 response.	>Severe damage or disruption of access to infrastructure or assets for multiple communities/ households. >Severe follow-on impacts on multiple households' livelihoods/ businesses. >Time is required to re-instate access, provide alternative access or repair damage to infrastructure or asset. >Permanent destruction or complete loss to a cultural heritage site	>$50mln loss					
	4	High	Regional Level	PTD/ Single fatality	Large effect within or outside of company site. Restitution time 1-3 years. Tier 2 response.	>Substantial damage or disruption of access to infrastructure or assets for multiple communities/ households. >Severe damage or disruption of access to infrastructure or assets for 1-2 households with follow on severe damage to those households' livelihoods. >Substantial follow- on impacts on multiple households' livelihoods/ businesses. >Time required to re-instate access, provide alternative access or repair damage to infrastructure or asset. >Substantial destruction takes place to a cultural heritage site which is at least partially repairable.	$30-50mln					
	3	Medium	Country Level	Major injury/ LTI	Any effect outside of company site. Short term effect on environment but contained within company site. Restitution time <3 months. Tier 1 response.	>Moderate damage or disruption of access to infrastructure or assets for one or two communities/ several households. >Moderate follow- on impacts on at least one households' livelihoods/ businesses. >Reinstatement of access, repair or provision of alternative infrastructure/asset can occur quickly >Some destruction takes place to a cultural heritage site, but this is repairable.	$10-30mln					
	2	Low	Industry Level	Minor injury/ RTW	Minor effect on environment & contained within company site. Restitution timer <3 months. Tier 1 response only.	>Minor damage or disruption of access to infrastructure or assets for one or two communities/ one or more households. >Minor follow-on impacts on one or more households' livelihoods/ businesses. >Reinstatement of access, repair or provision of alternative infrastructure/asset can occur quickly >No impacts at all on vulnerable individuals.	$1-10mln					
	1	Insignificant	Internal Knowledge only	Slight Injury/ First Aid	Limited or no effect on environment. Contained within site/system. Restitution time <1 month. Tier 1 response	>No livelihoods impact for any community or household as a result of damage to or interruption of access to community infrastructure or livelihood assets. >Reinstatement of access, repair of damage is immediate.	<$1mln					

Small	Material	Severe	Critical

Figure 7-5: RAM for unplanned events

7.6 Identification of mitigation measures and assessment of residual impacts

7.6.1 Mitigation measures

Mitigation measures are proposed to reduce potential negative impacts ranked moderate or major, and enhancement measures recommended to maximise potential positive impacts where possible. The mitigation hierarchy is followed for identifying appropriate mitigation measures:

- avoid at source – remove the source of the impact by employing alternative designs or operations to avoid potential adverse interactions with environmental and social receptors
- reduce at source – reduce the source of the impact by lessening the consequence of adverse interactions that cannot be avoided (e.g., reduce the size of the project footprint)
- reduce off-site/at receptor – reduce the impact by lessening the chance of adverse interaction between the project and receptors
- repair or remedy – if adverse interactions between the project and receptors cannot be avoided or their consequences reduced, then "repair" the consequences of the impact after it has occurred through rehabilitation, reclamation, restoration, compensation, and/or other measures
- compensate in kind – if there are any remaining significant biodiversity impacts, these should be offset/compensated for.

The above hierarchy is aimed at ensuring that, wherever possible, potential negative impacts are mitigated at the source rather than mitigated through restoration after the impact has occurred.

7.6.2 Residual impacts

The assessment of residual impacts is based on the effective implementation of:

- avoidance, mitigation and management measures for adverse impacts
- measures to optimise benefits.

Residual impacts with initial significance ratings of moderate or major are discussed in more detail and required additional mitigation measures specific to that impact to reduce the impact significance down to an acceptable level. In some cases, 'additional' measures have been proposed even though significance is rated at 'minor' or less.

7.7 Ecosystem services assessment

Ecosystem services (ES) are defined as the direct and indirect benefits that people (including PACs) derive from ecosystems, which are a dynamic complex of plant, animal, and micro-organism communities and their non-living environment interacting as a functional unit (World Resources Institute (WRI), 2013). For example, a stand of trees can reduce air pollution, purify the water supply, reduce the likelihood of floods, and help regulate the climate by capturing and storing carbon. It might also provide timber for buildings, a space for recreation and improve the aesthetic qualities of the landscape. ES valued by humans are often underpinned by biodiversity, hence adverse impacts on

biodiversity can often adversely affect the delivery of ecosystem services. ES are categorised as follows:

- provisioning services – the products people obtain from ecosystems
- regulating services – the benefits people obtain from the regulation of ecosystem processes
- cultural services – which are the nonmaterial benefits people obtain from ecosystems
- supporting services – which are the natural processes that maintain the other services.

7.7.1 Methodology – ES analysis

This section describes the approach used to conduct the ES impact assessment for the project. The ES impact assessment will provide information on impacts to each ecosystem directly or indirectly affected by the project. After the analysis of impacts for identified priority ES, specific mitigation and management measures may be identified for incorporation into the ESIA and ESMPs.

The ES impact assessment has been undertaken within the overarching impact assessment framework described in Section 7. While ES require an additional step to identify and prioritise services of importance to project affected communities and to the project, the assessment of impacts follows the same structured approach applied across the ESIA. This includes the identification of potential impacts associated with planned activities and unplanned events, the evaluation of impact magnitude and receptor sensitivity, the determination of impact significance and the identification of mitigation measures and residual impacts. The ES assessment therefore aligns with the impact assessment methodology applied to the environmental and socioeconomic aspects.

The methodology used to perform this ecosystem services assessment is based on the Guide for the Integration of Ecosystem Services into Impact Assessment of the World Resources Institute (WRI) (World Resources Institute, 2013). The assessment has two objectives:

- to identify and mitigate the impacts of the project on the benefits provided by ES
- to provide measures to manage operations that rely on those services to achieve planned performance (if required).

This ES assessment also considered the IFC PS (2012), which requires that the assessment considers both potential impacts on ES and dependency of the project on ES for its operation. Particularly, IFC PS6 requirements include conducting a systematic review to identify priority ES and where adverse impacts are unavoidable, the client will minimise them and implement mitigation measures that aim to maintain the value and functionality of priority ES. For any identified project dependencies on ES, the project should minimise impacts and implement measures that increase resource efficiency of operations, as described in IFC PS3. Additional provisions for ES are also included in PS1, PS4, PS5,PS7 and PS8.

IFC also specify that, “priority ecosystem services are two-fold:

- those services on which Project operations are most likely to have an impact and, therefore, which result in adverse impacts to Affected Communities, and/or,

- those services on which the project is directly dependent for its operations (e.g., water or aggregates)."

It should also be noted that when Affected Communities are likely to be impacted, they should participate in the determination of priority ecosystem services in accordance with the stakeholder engagement process as defined in PS1 (International Finance Corporation, 2012).

In accordance with the WRI guidance 'Weaving Ecosystem Services into Impact Assessment' (WRI, 2013) the ES analysis involved the following components:

- A comprehensive summary and characterisation of all ES associated with ecosystems within and surrounding the direct and indirect social AoI
- The identification of beneficiaries of the services provided by ecosystems that could be positively or negatively affected as a result of project-related impacts
- Assigning of a priority ranking (low, medium, high or critical) for each ES in alignment with GIIP WRI (2013) and based on IFC PS6 'Biodiversity Conservation and Sustainable Management of Living Natural Resources' (IFC, 2012) Guidance Note (IFC, 2019).

ES within and surrounding the direct and indirect social AoI will be described and assessed within the ESIA. This will consider:

- the type of ES
- relevance of the ES to the project
- whether the project has direct management, control, or significant influence on the ES
- whether project activities could adversely impact the ES and therefore the benefits affected communities derive from these ES
- whether the project will depend on the ES for its operation
- the category of the ES (Type 1 or 2)
- whether the ES is a priority ('priority' or 'non-priority') using the diagram shown in Figure 7-6 below

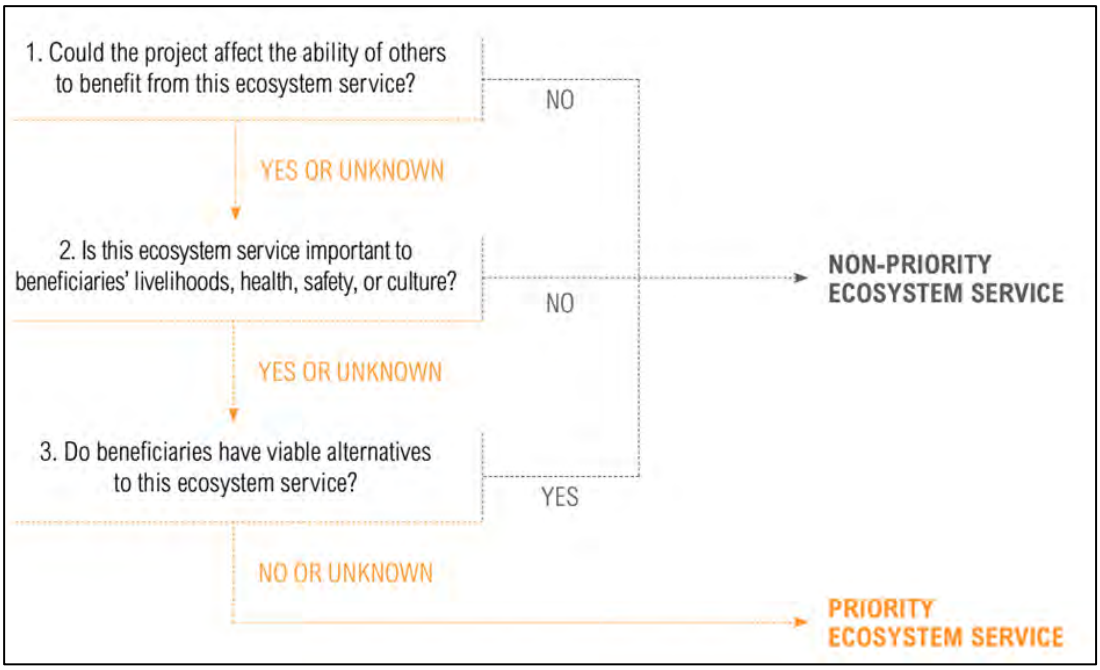

Figure 7-6: Methodology used to determine ES priority

Figure 7-6 was used as the primary tool to screen ecosystem services and determine whether they should be considered priority ecosystem services for the assessment.

Figure 8.2 below was likewise used as a supporting reference to inform professional judgement during the prioritisation process, particularly in relation to the importance of ecosystem services to beneficiaries and the availability of viable alternatives. The combined use of these tools supports a robust and proportionate prioritisation process consistent with WRI guidance and IFC PS.

ES Priority Ranking		Replaceability of ES		
		High (many spatial alternatives)	Moderate (some spatial alternatives)	Low or not replaceable (few to no spatial alternatives)
Importance of ES to beneficiaries	Essential	High	Critical	Critical
	High	Medium	High	Critical
	Moderate	Low	Medium	High
	Low	Low	Low	Medium

Figure 7-7: Methodology used to determine ES priority level

7.8 Limitations

Where applicable, limitations to the ESIA on physical environment, biodiversity and social receprors have been described in Sections 7.8.1-7.8.4 below.

7.8.1 Physical environment

7.8.1.1 Noise and vibration

Refer to Section 9 of Appendix 9, which details uncertainties in the noise and vibration impact assessment.

7.8.1.2 Landscape and visual amenity

The landscape and visual impact assessment was undertaken using largely desk-based baseline information, supplemented by site photographs from CEMP. The reporting has been undertaken by Chartered Landscape Architects with experience in highway developments and more broadly within West Africa. There could be circumstances where there are specific viewpoints locations with high scenic quality that could be affected by the project but impacts unlikely to be greater than those recorded for the various landscape and visual receptor groups as a whole.

Impacts of the proposed rock quarries and lateric gravel quarries along the proposed route are based on rough locations given within the project description and may be subject to change. The impacts of the proposed rock quarries at Alibi-2 and Lassa are noted, but are not assessed within this section as a decision on the final location has yet to be finalised.

7.8.2 Biodiversity

The biodiversity impact assessment has been undertaken using baseline data obtained during wet season fauna, botany and habitat surveys, and therefore may be subject to change if eDNA and dry season surveys are undertaken.

Impacts of the proposed rock quarries, including those at Alibi-2 and Lassa, are not considered as part of this assessment as a decision on the final location has yet to be finalised.

7.8.3 Social

The social impact assessment has been conducted using baseline data collected from a representative sample of PACs within the primary AoI. The sample was designed to reflect the social and economic diversity of the AoI; however, it may not capture all variations across the project area.

7.8.4 Ecosystem services

The ES baseline is primarily informed by information provided through community consultations and reflects local resource use, access and conditions at the time of the surveys. Sensitivity around topics such as hunting limited the level of detail disclosed in some cases but did not affect the identification of ecosystem service types or patterns of community dependence.

Professional judgement was applied when assessing viable alternatives to ES during the prioritisation process, as primary data on alternatives were limited. A conservative and consistent approach was used, drawing on the ES baseline, stakeholder engagement findings and relevant contextual experience, to ensure overall robustness of the ES prioritisation and subsequent impact assessment.

8 IMPACT ASSESSMENT

This section presents an assessment of impacts on physical environment, biodiversity and social receptors, drawing on the baseline conditions and the methodology described in Sections 5 and 7 respectively. The assessment also provides the basis for determining appropriate mitigation measures and residual impacts.

8.1 Physical environment impact assessment

8.1.1 Air quality

8.1.1.1 Construction

Air emissions from construction activities are broadly categorised into:

- dust emissions from demolition, earthworks, construction and trackout (movement of vehicles over surfaces where muddy materials have been transferred off-site) activities
- exhaust emissions from construction plant and equipment on site
- exhaust emissions from the movement of vehicles in and out of the site.

Dust and particulate matter emissions

A qualitative assessment of the likely significant effects of construction phase dust and particulate matter on local air quality at sensitive receptors has been undertaken following the Institute of Air Quality Management (IAQM) Guidance on the Assessment of Dust from Demolition and Construction v2.2 (IAQM, 2024).

The magnitude of dust emissions expected from proposed construction activities at the project site is summarised in Table 8-1. The IAQM impact magnitude class 'large' has been equated to 'high', 'medium' to 'medium' and 'small' to both 'low' and 'very low' magnitude categories.

Table 8-1: Magnitude of dust emissions

Activity	Aspect	Scale and IAQM category
Demolition	Total volume of structure to be demolished	<12,000 m^3
	On-site crushing and screening proposed	Yes
	Height of demolition activities above ground	<6 m
	Dust potential of demolition materials	Yes
	Time of year where demolition works will be undertaken	Works are planned year-round, with dust control reinforced during dry season.
	Dust emission magnitude	**Medium**
Earthworks	Total site area	>110,000 m^2

Activity	Aspect	Scale and IAQM category
	Soil type of the site	Mixed lateritic soils with clay and silt components.
	Earthmoving vehicles at any one time	>10
	Height of bunds	<3 m
	Dust emission magnitude	**Large**
Construction	Total volume of structure to be built	<12,000 m^3
	On-site concrete batching proposed	Yes
	On-site sandblasting proposed	No
	Dust potential of construction materials	Yes
	Dust emission magnitude	**Medium**
Trackout	Number of heavy duty vehicles per day	20-50
	Surface type of the site	The site consists of natural lateritic materials with normal clay content (not high).
	Length of unpaved road	>100 m
	Dust emission magnitude	**Medium**

The sensitivity of the receptors is summarised in Table 8-2.

Table 8-2: Sensitivity of the receptors

Potential impact		Sensitivity of the surrounding area			
		Demolition	Earthworks	Construction	Trackout
Dust soiling	Receptor sensitivity	High	High	High	High
	Number of receptors	>100	>100	>100	1-10
	Distance from the source	<20 m	<20 m	<20 m	<20 m
	Sensitivity	**High**	**High**	**High**	**Medium**
Human health	Receptor sensitivity	High	High	High	High
	Annual mean PM_{10} concentrations	>32 µg/m^3	>32 µg/m^3	>32 µg/m^3	>32 µg/m^3
	Number of receptors	>100	>100	>100	1-10
	Distance from the source	<20 m	<20 m	<20 m	<20 m
	Sensitivity	**High**	**High**	**High**	**High**

Receptor sensitivity has been assigned as **high (4)**. The impact magnitude has been assessed as **medium (3)** to **high (4)**. The resulting impact significance is **major (12/16)**, see Table 8-3.

Table 8-3: Impact of dust emissions from construction activities

Activity	Potential impact	Impact significance			Mitigation needed
		Magnitude	Sensitivity	Significance	
Demolition activities	Increased dust emissions	Medium (3)	High (4)	**Major (12)**	Y
Earthworks activities	Increased dust emissions	High (4)	High (4)	**Major (16)**	Y
Construction activities	Increased dust emissions	Medium (3)	High (4)	**Major (12)**	Y
Trackout activities	Increased dust emissions	Medium (3)	High (4)	**Major (12)**	Y

Mitigation measures

Site-specific mitigation measures are divided into general measures, applicable to the whole site and measures specific to demolition, earthworks, construction and trackout. Depending on the level of risk assigned, different mitigation is assigned. The method of assigning mitigation measures detailed in the IAQM construction dust guidance (IAQM, 2024) has been used. Two categories of mitigation measure are described in the IAQM construction dust guidance (IAQM, 2024) – 'highly recommended' and 'desirable', which are indicated according to the dust risk level identified in Table 8.3. Desirable measures are presented in italics.

<u>Communications</u>

- Develop and implement a stakeholder communications plan that includes community engagement before work commences on site.
- Display the head or regional office contact information.

<u>Dust management</u>

- Develop and implement a project ESMP that includes measures to control other emissions, to be approved by the local authority. The level of detail will depend on the risk and should include at a minimum the highly recommended measures. The desirable measures should be included as appropriate for the site.

<u>Site management</u>

- Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner and record the measures taken.
- Make the complaints log available to the local authority when asked.
- Record any exceptional incidents that cause dust and/or air emissions, either on- or off site and the action taken to resolve the situation in the logbook.

- Hold regular liaison meetings with other high risk construction sites within 250 m of the site boundary, to ensure plans are co-ordinated and dust and particulate matter emissions are minimised. It is important to understand the interactions of the off-site transport/deliveries which might be using the same strategic road network routes.

Monitoring

- Undertake daily on-site and off-site inspection, where receptors (including roads) are nearby, to monitor dust, record inspection results and make the log available to the local authority when asked. This should include regular dust soiling checks of surfaces such as street furniture within 100 m of site boundary, with cleaning to be provided if necessary.
- Carry out regular site inspections to monitor compliance with the ESMP, record inspection results and make the inspection log available to the local authority when asked.
- Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.
- Agree dust deposition, dust flux or real-time PM_{10} continuous monitoring locations with the local authority. Where possible commence baseline monitoring at least three months before work commences on site or before work on a phase commences. Monitoring should be undertaken close to sensitive human receptors such as settlements at Bassar, Kpalou, Baghan, Mo, Boulohou, Djarkpanga and Tindjasse.

Preparing and maintaining the site

- Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible.
- Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site.
- Fully enclose site or specific operations where there is a high potential for dust production and the site is active for an extensive period.
- Avoid site runoff of water or mud.
- Keep site fencing and barriers clean using wet methods.
- Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below.
- Cover, seed or fence stockpiles to prevent wind whipping.

Operating vehicles/machinery and sustainable travel

- Ensure all vehicles switch off engines when stationary - no idling vehicles.
- Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable.
- Impose and signpost a maximum-speed-limit of 15 mph on surfaced and 10 mph on unsurfaced site roads and within work areas.
- Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials.
- Implement a Travel Plan that supports and encourages sustainable travel.

Construction operations

- Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g., suitable local exhaust ventilation systems.
- Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate.
- Use enclosed chutes and conveyors and covered skips.
- Minimise drop heights from loading or handling equipment and use fine water sprays on such equipment wherever appropriate.
- Ensure equipment is readily available on site to clean any dry spillages and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods.

Waste management

- Avoid bonfires and burning of waste materials.

Specific to demolition

- Ensure effective water suppression is used during demolition operations.
- Avoid explosive blasting, using appropriate manual or mechanical alternatives.
- Bag and remove any biological debris or damp down such material before demolition.

Specific to earthworks

- Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable.
- Use hessian, mulches or tackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable.
- Only remove the cover in small areas during work and not all at once.

Specific to construction

- Avoid scabbling (roughening of concrete surfaces) if possible.
- Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place.
- Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery.
- For smaller supplies of fine power materials ensure bags are sealed after use and stored appropriately to prevent dust.

Specific to trackout

- Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site.
- Avoid any dry sweeping of large areas.
- Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport.
- Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable.
- Record all inspections of haul routes and any subsequent action in a site log book.

- Install hard surfaced haul routes to the temporary surface road, which are regularly damped down with fixed or mobile sprinkler systems or mobile water bowsers and regularly cleaned.
- Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).
- Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever site size and layout permits.
- Access gates to be located at least 10 m from receptors where possible.

Residual impact

With the implementation of the mitigation measures listed above, the impact magnitude is expected to decrease to **low (2)**. The receptor sensitivity remains to **high (4)**, therefore reducing the impact significance to **moderate (8)**.

Exhaust emissions from construction plant and equipment and traffic

Exhaust emissions from construction phase plant and equipment and vehicles may have an impact on local air quality adjacent to the routes used by these vehicles to access the project site and in the vicinity of the project site itself. Construction traffic will comprise haulage/construction vehicles and vehicles used for workers' trips to and from the project site. The operation of plant and equipment and vehicle powered by internal combustion engines results in the emission of exhaust gases containing the pollutants NO_x, PM_{10}, VOC, SO_2 and CO. The quantities emitted depend on factors such as engine type, service history, pattern of usage and fuel composition.

Construction plant and equipment

Plant and equipment likely to be used during construction are listed in Appendix 1.

The IAQM construction dust guidance (IAQM, 2024) and the UK Department for Environment Food & Rural Affairs (Defra) Local Air Quality Management Technical Guidance (LAQM TG22) (Defra, 2025) suggests that, based on experience of assessing the exhaust emissions from on-site plant and equipment that, with suitable controls and site management, these are unlikely to make a significant impact on local air quality, and in the vast majority of cases they will not need to be quantitatively assessed.

The above-mentioned construction plant and equipment will be used intermittently during the construction programme, depending on the construction activities to be undertaken and will move across the site as the road is built out. Emissions from construction plant and equipment will be temporary, localised and controlled through best-practice mitigation measures.

Receptor sensitivity has been assigned as **high (4)**. The impact magnitude has been assessed as **very low (1)**. The resulting impact significance is considered to be **minor (4)**.

Construction traffic

Considering the scale of the development, it is estimated that there will be 20-50 Heavy-Duty Vehicle (HDV) outward movements per day, which is considered unlikely to cause a significant impact on local air quality with appropriate mitigation measures, with reference to the IAQM construction dust guidance (IAQM, 2024). The traffic effects during construction will be limited to a relatively short period at each phase of the project and will be along traffic routes employed by haulage/construction vehicles and workers.

Receptor sensitivity has been assigned as **high (4)**. The impact magnitude has been assessed as **very low (1)**. The resulting impact significance is considered to be **minor (4)**.

Table 8-4: Impact of exhaust emissions from construction plant and traffic

Activity	Potential impact	Impact significance			Mitigation needed
		Magnitude	Sensitivity	Significance	
Operation of construction plant and equipment	Increased exhaust emissions	Very low (1)	High (4)	**Minor (4)**	N (but best-practice mitigation measures have been recommended)
Construction traffic	Increased exhaust emissions	Very low (1)	High (4)	**Minor (4)**	N (but best-practice mitigation measures have been recommended)

Mitigation measures

The below listed mitigation measures will be implemented as part of routine construction activities to reduce exhaust emissions from construction plant and equipment and vehicles:

- Ensure all vehicles switch off engines when stationary - no idling vehicles.
- Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable.
- Impose and signpost a maximum-speed-limit of 15 mph on surfaced and 10 mph on unsurfaced site roads and within work areas.
- All plant, equipment and vehicles used during the works shall be regularly serviced and fitted with appropriate emission control equipment, where practicable, to ensure optimum performance and that no excess exhaust emissions are emitted.
- Develop and implement a transport strategy that maximises the use of efficient transport methods.
- Plant, equipment and vehicles shall be maintained in accordance with manufacturer's specifications to achieve effective combustion.
- Implementation of a Community Grievance Mechanism.
- Infrastructure shall be designed, constructed and operated with the intention of minimising emissions of key pollutants where practicable.

Residual impact

With the implementation of the mitigation measures listed above, the impact magnitude is expected to remain to **Very low (1)**. The receptor sensitivity remains to **high (4)**, therefore the impact significance remains to **minor (4)**.

8.1.1.2 *Operations*

Exhaust emissions from operational traffic

In view of the nature of the project, nitrogen dioxide (NO_2) and particulate matter (PM_{10} and $PM_{2.5}$) are the key pollutants released by vehicular combustion processes or subsequently generated by vehicle emissions in the atmosphere through chemical reactions.

World Health Organisation (WHO) Air Quality Guidelines 2021 (WHO, 2021) have been used to establish the assessment criteria, which are presented in Table 8-5 below.

Table 8-5: Relevant WHO Air Quality Guidelines 2021 & interim targets

Pollutant	Averaging time	Interim target (mg/m^3)				Air quality guideline (mg/m^3)
		1	2	3	4	
NO_2	Annual	40	30	20	-	10
PM_{10}	Annual	70	50	30	20	15
$PM_{2.5}$	Annual	35	25	15	10	5

A quantitative detailed dispersion modelling assessment of the potential operational phase traffic effects has been undertaken with the use of the Atmospheric Dispersion Modelling System (ADMS)-Roads dispersion model software, with reference to the Defra LAQM TG22 (Defra, 2025) and Environmental Protection UK (EPUK) and IAQM UK Land-Use Planning & Development Control: Planning for Air Quality guidance note (EPUK-IAQM, 2017).

The following scenarios have been considered in this assessment:

- Scenario 1 (S1): 2028 Opening Year 'Without Development' scenario – for the future year of opening of the completed project, without the project.
- Scenario 2 (S2): 2028 Opening Year 'With Development' scenario – for the future year of opening of the completed project, with the project.

Pollution concentrations were predicted at a number of human receptors along the Bassar-Tindjassé Road included in the study at locations where the greatest changes in traffic flows were predicted due to the operational phase. A height of 1.5 m and 1.0 m was used for human receptors to represent the approximate average breathing height of an adult and a child. Details of all human receptors included in the modelling study are summarised in Table 8-6 and shown in Figure 8-1. These existing receptors were selected to represent sensitive receptors at locations near to the Bassar-Tindjassé Road, to ensure that 'worst-case' impacts were captured.

Table 8-6: Receptors included in the dispersion modelling assessment

Receptor ID	Type of receptor	Grid reference		Height (m)
		X	Y	
ER1	Existing residential receptor	255752	1024273	1.5

Receptor ID	Type of receptor	Grid reference		Height (m)
		X	Y	
ER2	Existing residential receptor	255521	1023993	1.5
ER3	Existing residential receptor	255002	1023325	1.5
ER4	Primary school	254594	1022364	1
ER5	Existing residential receptor	254590	1021562	1.5
ER6	Primary school	254482	1021373	1
ER7	Existing residential receptor	254489	1020828	1.5
ER8	Existing residential receptor	253797	1015757	1.5
ER9	Existing residential receptor	252770	1013747	1.5
ER10	Primary school	246535	1003650	1
ER11	Existing residential receptor	246383	1003111	1.5
ER12	Existing residential receptor	246056	997661	1.5
ER13	Existing residential receptor	245861	996897	1.5
ER14	Existing residential receptor	244766	992291	1.5
ER15	Existing residential receptor	244419	990855	1.5
ER16	Existing residential receptor	243627	988157	1.5
ER17	Secondary school	242102	982485	1.5
ER18	Existing residential receptor	242237	980461	1.5
ER19	Primary school	242491	977439	1
ER20	Existing residential receptor	242644	977266	1.5
ER21	Existing residential receptor	243718	970862	1.5
ER22	Existing residential receptor	243489	970425	1.5
ER23	Existing residential receptor	232281	972263	1.5
ER24	Existing residential receptor	231848	971282	1.5

Receptor ID	Type of receptor	Grid reference		Height (m)
		X	Y	
ER25	Existing residential receptor	229610	968244	1.5
ER26	Existing residential receptor	221260	958140	1.5
ER27	Existing residential receptor	220890	957218	1.5
ER28	Existing residential receptor	219779	956625	1.5
ER29	Existing residential receptor	219220	956147	1.5

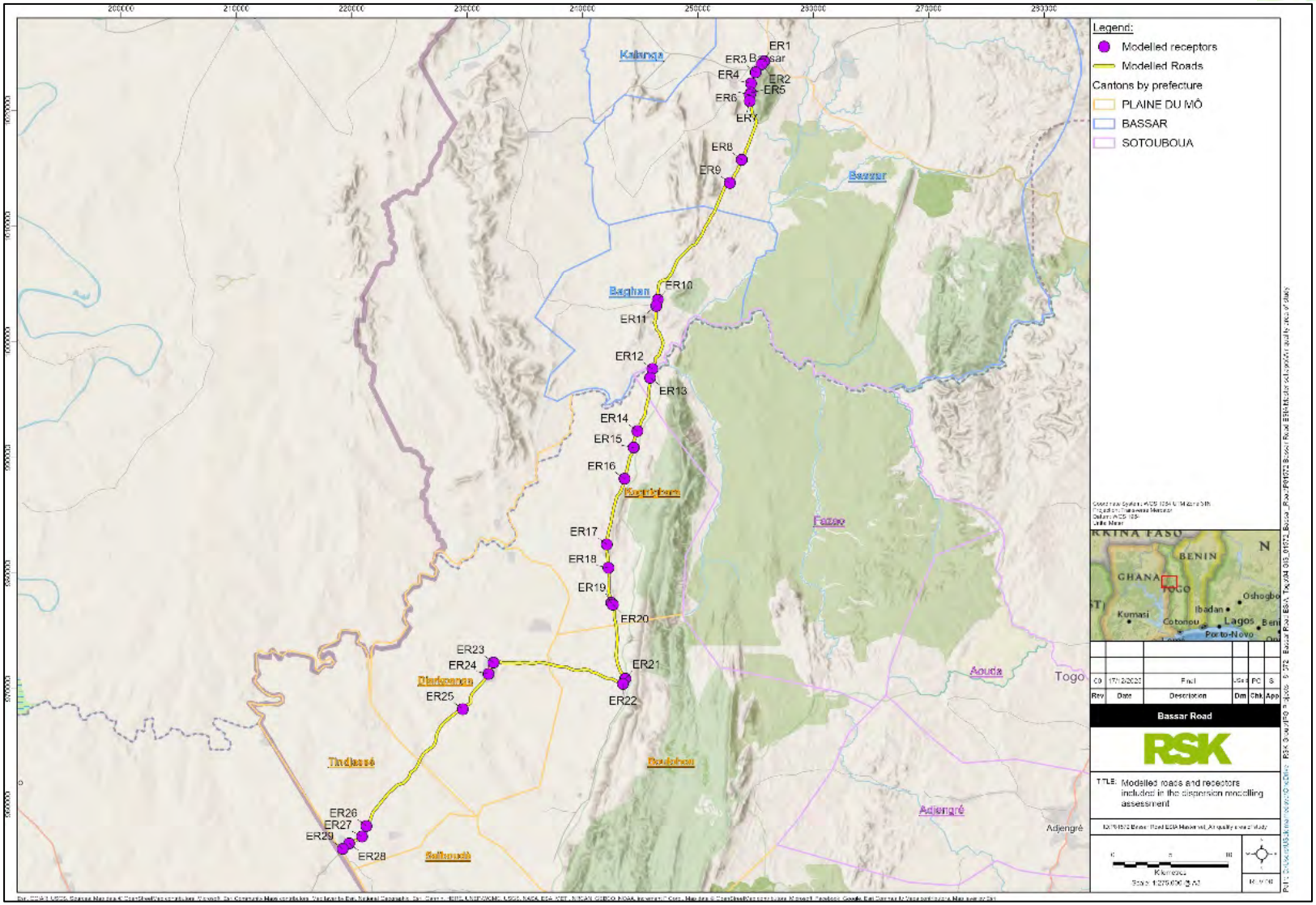

Figure 8-1: Modelled roads and receptors included in the dispersion modelling assessment

In general, air quality impacts should be assessed cumulatively as a combination of the contribution from the project and the baseline ambient air quality. In the absence of any long-term baseline monitoring data, based on the geographical characteristics of the assessed receptor locations, the 1-hour mean concentrations recorded during the air quality monitoring undertaken within the project AoI are used as the background concentrations to assess the potential impacts of the project. For a conservative assessment, the measured 1-hour mean concentrations of NO_2, PM_{10} and $PM_{2.5}$ are assumed to be equivalent to the corresponding annual mean concentrations.

The background concentrations included in the dispersion modelling assessment are presented in Table 8-7.

Table 8-7: Background concentrations included in the assessment

Receptor ID	Measured 1-hour mean concentrations during the air quality monitoring (µg/m³)			Corresponding monitoring location
	NO_2	PM_{10}	$PM_{2.5}$	
ER1	25.52	106.3	106.3	MP1
ER2	25.52	106.3	106.3	MP1
ER3	25.52	106.3	106.3	MP1
ER4	5.90	65.85	65.85	MP2
ER5	5.90	65.85	65.85	MP2
ER6	5.90	65.85	65.85	MP2
ER7	5.90	65.85	65.85	MP2
ER8	8.88	95.97	95.97	MP3
ER9	8.88	95.97	95.97	MP3
ER10	6.17	41.43	41.43	MP4
ER11	6.17	41.43	41.43	MP4
ER12	5.17	50.18	50.18	MP5
ER13	5.17	50.18	50.18	MP5
ER14	5.17	50.18	50.18	MP5
ER15	5.17	50.18	50.18	MP5
ER16	5.17	50.18	50.18	MP5
ER17	5.17	50.18	50.18	MP5
ER18	5.17	50.18	50.18	MP5
ER19	5.17	50.18	50.18	MP5
ER20	5.17	50.18	50.18	MP5
ER21	3.20	42.69	42.69	MP6
ER22	6.45	57.17	57.17	MP7
ER23	11.25	68.82	68.82	MP8
ER24	11.25	68.82	68.82	MP8
ER25	5.13	64.66	64.66	MP9

Receptor ID	Measured 1-hour mean concentrations during the air quality monitoring (µg/m³)			Corresponding monitoring location
	NO_2	PM_{10}	$PM_{2.5}$	
ER26	8.85	76.52	76.52	MP10
ER27	8.85	76.52	76.52	MP10
ER28	8.85	76.52	76.52	MP10
ER29	8.85	76.52	76.52	MP10

The modelling input parameters for the dispersion modelling assessment are presented in Table 8-8.

Table 8-8: Summary of inputs to the dispersion model

Parameter	Brief description	Inputs into model
Modelling software	Dispersion model used for the assessment	ADMS-Roads 5.1.0.2
Emission year	Predicted emission rates depend on the year of emission being used	2028 for S1 and S2
Road source emissions	Road source emission rates calculated from traffic flow data using an emission factor toolkit from AQC or Defra EFT	EFT V13.1
Road width	Width of road (m)	Road widths determined based on approximate measurement of roads (internet mapping)
Road type	Selection of different types of road to be assessed, inputted into the emission factor toolkit calculations	'Rural' and 'Urban' settings
Road speeds	Speed of the road effects the vehicle emissions to air	Rural – 80 km/h Urban – 40 km/h
Meteorology	Representative hourly sequential meteorological data	Niamtougou International meteorological station 2023
Latitude	Allows the location of the model area to be determined	9.0°
Surface roughness	This defines the surface roughness of the model area	0.2 m at development and 0.3 m at the meteorological site
Monin-Obukhov length	A boundary layer parameter required to precisely describe the atmospheric stability	10 m at the development and 30 m at the meteorological site

The predicted pollutant concentrations at receptor locations for scenarios S1 and S2 are presented in Table 8-9, and the assessment findings are summarised below.

The WHO Air Quality Guidelines for NO_2, PM_{10} and $PM_{2.5}$ are predicted to be met at all receptor locations considered in the assessment. Although the predicted NO_2, PM_{10} and $PM_{2.5}$ concentrations at all assessment receptors are above the corresponding annual mean Air Quality Guidelines, it is due to the use of 1-hour mean NO_2, PM_{10} and $PM_{2.5}$ concentrations recorded at all monitoring stations from the air quality monitoring

undertaken within the project AoI as the baseline NO_2, PM_{10} and $PM_{2.5}$ concentrations measured at monitoring stations exceeded the corresponding annual mean Air Quality Guidelines. In accordance with Environmental Protection UK (EPUK)-IAQM Land-Use Planning & Development Control: Planning for Air Quality guidance (EPUK-IAQM, 2017), the impacts of the project on NO_2, PM_{10} and $PM_{2.5}$ concentrations at sensitive human receptors, prior to mitigation, are predicted to be negligible. Therefore, the effect of the project on NO_2, PM_{10} and $PM_{2.5}$ concentrations, prior to mitigation, is considered to be not significant.

Table 8-9: Predicted pollutant concentrations at receptor locations for S1 and S2

Receptor ID	Annual mean NO_2 concentrations (µg/m^3)		Annual mean PM_{10} concentrations (µg/m^3)		Annual mean $PM_{2.5}$ concentrations (µg/m^3)	
	S1	S2	S1	S2	S1	S2
ER1	25.71	26.05	106.34	106.44	106.31	106.37
ER2	25.66	25.90	106.32	106.39	106.30	106.34
ER3	25.69	26.01	106.33	106.41	106.31	106.35
ER4	6.01	6.20	65.88	65.94	65.87	65.90
ER5	6.11	6.49	65.92	66.03	65.89	65.95
ER6	6.06	6.34	65.90	65.98	65.88	65.92
ER7	6.10	6.46	65.91	66.02	65.88	65.94
ER8	8.97	9.17	96.00	96.07	95.99	96.03
ER9	8.94	9.08	95.99	96.04	95.98	96.01
ER10	6.22	6.31	41.45	41.48	41.44	41.46
ER11	6.46	7.00	41.51	41.65	41.47	41.55
ER12	5.20	5.38	50.19	50.25	50.19	50.22
ER13	5.19	5.36	50.19	50.24	50.18	50.22
ER14	5.19	5.37	50.19	50.25	50.18	50.22
ER15	5.20	5.41	50.19	50.26	50.19	50.23
ER16	5.19	5.34	50.19	50.24	50.18	50.21
ER17	5.18	5.29	50.18	50.22	50.18	50.20
ER18	5.20	5.44	50.19	50.27	50.19	50.23
ER19	5.18	5.23	50.18	50.20	50.18	50.19
ER20	5.20	5.42	50.19	50.27	50.19	50.23
ER21	3.23	3.49	42.70	42.78	42.69	42.74
ER22	6.49	6.83	57.18	57.28	57.17	57.23
ER23	11.29	11.59	68.83	68.91	68.83	68.87
ER24	11.31	11.81	68.84	68.97	68.83	68.90
ER25	5.13	5.23	64.66	64.69	64.66	64.68
ER26	8.86	9.01	76.53	76.57	76.53	76.55

Receptor ID	Annual mean NO_2 concentrations (µg/m³)		Annual mean PM_{10} concentrations (µg/m³)		Annual mean $PM_{2.5}$ concentrations (µg/m³)	
	S1	S2	S1	S2	S1	S2
ER27	8.86	9.23	76.53	76.63	76.53	76.58
ER28	8.85	8.96	76.53	76.56	76.53	76.54
ER29	8.86	9.08	76.53	76.59	76.53	76.56

Receptor sensitivity has been assigned as **high**] **(4)**. The impact magnitude has been assessed as **very low (1)**. The resulting impact significance is considered to be **minor (4)**.

Table 8-10: Impact of exhaust emissions from operational traffic

Activity	Potential impact	Impact significance			Mitigation needed
		Magnitude	Sensitivity	Significance	
Operational traffic	Increased exhaust emission	Very low (1)	High (4)	**Minor (4)**	N

Mitigation measures

No specific mitigation measures are considered required.

Residual impact

The impact magnitude is expected to remain to **very low** (**1**). The receptor sensitivity remains to **high (4)**, therefore the impact significance remains **minor (4)**.

Reduction in dust emission and sedimentation due to road improvements

It is anticipated that there will be an increase in the number of vehicles using the upgraded road, and therefore an associated increase in particulate matter and other vehicular emissions. However, dust emissions will reduce during the operation of the road due to the improvement of the road from an unpaved earth track to a modern asphalt-paved corridor. Overall, this improvement will likely lead to a significant enhancement in local air quality and reduced impacts on nearby priority habitat and priority species of flora.

The impact significance of the reduction in dust emission and sedimentation due to road improvements is assessed as **positive (0)** (see Table 8-50).

8.1.2 Noise and vibration

8.1.2.1 Construction

Noise and vibration emissions from construction will arise from demolition, earthworks, operation of heavy plant, rock breaking, quarry and borrow pit activities, concrete batching and asphalt production, and from construction traffic moving along the route. These activities have the potential to generate intermittent but sometimes high levels of noise and perceptible vibration, particularly where works occur close to settlements.

Noise will predominantly affect residential receptors located along the project corridor, while vibration effects are expected to be limited to short-duration perceptibility during activities such as vibratory compaction, rock breaking or heavy vehicle movements on uneven surfaces. Construction activities will be transient and linear, meaning the duration of impacts at any one location will be temporary.

Receptor sensitivity is classified as high, as residences and community facilities lie within the area of influence. Impact magnitudes differ by activity; those generating percussive forces (e.g., rock breaking) result in greater impacts than activities involving only mobile plant.

The assessed impacts for each construction activity are presented in Table 8-11.

Table 8-11: Impact on receptors from construction noise and vibration

Activity	Potential impact	Impact significance			Mitigation needed
		Magnitude	Sensitivity	Significance	
Earthworks (excavation, grading, levelling)	Increased noise from heavy machinery and intermittent low-level vibration	Medium (3)	High (4)	**Major (12)**	Y
Rock breaking, demolition, crushing and vibratory compaction	High noise levels and perceptible vibration, strongest of construction sources	High (4)	High (4)	**Major (16)**	Y
Concrete batching, asphalt plants and stationary equipment	Continuous background noise from fixed plant	Medium (3)	High (4)	**Major (12)**	Y
Construction traffic (HGVs, tippers, trailers)	Intermittent noise and occasional perceptible vibration in settlements	Low (2)	High (4)	**Moderate (8)**	Y
Operation of generators, pumps and auxiliary equipment at camps	Localised equipment noise affecting nearby receptors	Low (2)	High (4)	**Moderate (8)**	Y

Mitigation measures

Mitigation will be applied, where applicable, through the following:

- use of modern, well-maintained machinery fitted with silencers

- restricting high-noise activities (rock breaking, compaction) to daytime hours
- avoiding simultaneous operation of multiple noisy plant close to receptors
- establishing speed limits (25 km/h) for construction vehicles in settlements
- locating stationary plants (batching, generators) as far from dwellings as practicable
- providing advance notification to communities ahead of high-noise works
- implementing a grievance mechanism for noise and vibration complaints
- applying temporary noise barriers around quarries or work zones close to settlements
- undertaking ad-hoc vibration monitoring where works occur within 30 m of structures, where required
- minimising drop heights of materials, i.e., lorry with lifting boom or dumper carefully depositing materials
- maintaining smooth surfaces for vehicle movements (irregular surfaces can create greater noise/vibration emissions)
- maintaining all plant, equipment and noise control measures in good and efficient working order and operating such that noise emissions are minimised as far as reasonably practicable. Any plant, equipment or items fitted with noise control equipment found to be defective will not be operated until repaired.
- shutting down or throttling machines in intermittent use to a minimum during periods between works
- as far as is reasonably practicable, choosing the location and orientation of semi-static equipment to minimise the noise impact on sensitive receptors
- where relevant, incorporating specific noise and vibration control measures into the contractor's method statements
- where safe to do so, controlling and limiting noise from reversing alarms as far as possible through the use of a banksman or other means, to minimise intrusive sound of tonal alarms
- where night works are required, as far as is practicable, programming the work so that separation distances to noise-sensitive receptors are maximised
- preparing a detailed Construction Noise and Vibration Management Plan.

The above mitigation measures will be implemented where deemed appropriate for each task undertaken. A task specific risk assessment is recommended to be completed to review the relevant mitigation measures to ensure best practice is implemented.

Residual impact

With the implementation of the mitigation measures listed above, the impact magnitude associated with construction-phase noise and vibration is expected to decrease to **very low (1)**. Although the receptor sensitivity remains **high (4)** due to the presence of residential dwellings and community facilities along the alignment, the resulting *residual impact significance reduces to* **minor (4)**.

8.1.2.2 Operations

During operation, noise will arise from road traffic travelling along the upgraded road. Higher traffic volumes and vehicle speeds may result in slightly elevated noise levels, particularly where dwellings are close to the road edge. Traffic-induced vibration during

operation is expected to be minimal and generally imperceptible except at very short distances.

Receptor sensitivity is classified as **high (4)**, as residential dwellings and community facilities are located along the road corridor. Impact magnitude is **low (2)**, given the expected modest increase in sound levels and negligible vibration effects. Resulting impact significance is **moderate (8)**.

The assessed impacts for operation are presented in Table 8-12.

Table 8-12: Impacts of operational noise and vibration

Activity	Potential impact	Impact significance			Mitigation needed
		Magnitude	Sensitivity	Significance	
Operational road traffic (cars, motorcycles, HGVs)	Increased ambient noise for roadside residents	Medium (3)	High (4)	**Major (12)**	Y
Heavy vehicle movements during operation	Occasional low-level vibration near the road edge	Very low (1)	High (4)	**Minor (4)**	Y

Mitigation measures

Mitigation measures during the operational phase include:

- Speed management within and near settlements.
- Warning and regulatory signage at settlement boundaries.
- Earth bunds, where feasible, to reduce perceived noise.
- Maintenance of road surface quality to minimise traffic-induced vibration.
- Implementation of noise insulation at isolated dwellings along the alignment where speed restrictions are not in place (i.e., 80 kph). Further consideration to this should be made at detailed design stage to determine level of reduction, if required.
- Further consideration to operational phase noise impacts should be made at detailed design once further information surrounding individual noise sensitive receptors is known, where required.

Residual impact

For operational noise and vibration, the proposed mitigation measures—including speed management within settlements, provision of road signage, maintenance of pavement quality and, where feasible, establishment of earth bunds—will further reduce the potential for disturbance to nearby receptors. Following the implementation of these measures, the impact magnitude is also expected to decrease to **low (2)**. With receptor sensitivity remaining **high (4)**, the overall residual impact significance similarly reduces to **moderate (8)**.

8.1.3 Traffic and transport

8.1.3.1 Construction

Impacts associated with traffic and transport

The main impact is considered to be during the construction phase with additional traffic from both vehicles associated with workers arriving and departing the site each day along with Heavy Goods Vehicles associated with delivering construction materials.

During the construction phase, project-related traffic is expected to temporarily increase congestion along access routes, potentially limiting road availability and causing short-term delays for local road users. Severance is the perceived division that can occur when a community is separated. Intimidation is the measure of how levels of traffic and transport affects people These impacts are anticipated to be temporary and localised but may result in moderate disruption to local travel patterns and community safety during peak construction activity.

Access to the majority of lateritic quarry sites situated within the project is possible from the main Bassar – Tindjasse arterial. The remaining lateritic quarry sites are located immediately adjacent to other existing feeder roads within the project area and only a short distance from the main arterial, to be exploited as needed depending on the movement of construction works along the arterial. These feeder roads are in a similar condition to the main arterial and traffic impacts around the lateritic quarries is not anticipated to be noticeably different than in the main construction areas.

Sourcing of rock within the project area was initially considered but alternative supply options are being sought at quarry sites outside of the project area, at a distance of up to 70 km from Bassar. Approximately 200,000 tons of material will be transported from the rock quarries in 30 ton trucks over a 12 month period. This will result in approximately 6,750 trips over the course of a year. This will result in traffic impacts on either the N19 tarred road and the tarred Sokode to Bassar Road.

Receptor sensitivity has been assigned as **low (3)**. The impact magnitude has been assessed as **medium (3)**, due to the temporary but recurrent increase in heavy goods vehicle movements, potential congestion and heightened accident risk during peak construction activity. The resulting impact significance is considered to be **moderate (9)**.

Table 8-13: Impact on local traffic and transport receptors from construction activities

Activity	Potential impact	Impact significance			Mitigation needed
		Magnitude	Sensitivity	Significance	
Transport of people and movement of heavy vehicles	Severance and intimidation of communities	Medium (3)	Low (2)	**Moderate (6)**	Y
Transport of lateritic gravel from quarries within project area	Increased impact of traffic on sensitive receptors	Medium (3)	Low (2)	**Moderate (6)**	Y

Activity	Potential impact	Impact significance			Mitigation needed
		Magnitude	Sensitivity	Significance	
Transport of rock from quarries outside the project area	Increased impact on road safety due to larger distances covered outside of project area	Medium (3)	Low (2)	**Moderate (6)**	Y

Mitigation measures

A Construction Traffic Management Plan has been developed by FB Group which defines roles and responsibilities, includes measures for site-specific traffic risk assessments, identifies main work areas, considers route planning and prescribes signage and speed control. The plan considers emergency response and identifies mitigation measures which address general safety measures minimum safety requirements, vehicle maintenance and driver behaviour. The plan includes a procedure for continuous monitoring and review.

Additionally, vehicle movements will be restricted to defined access routes and demarcated working areas. The use of minibuses to transport workers to and from the working areas should be adopted wherever possible to reduce the number of vehicle trips associated with the project.

Residual impact

With diligent implementation of the Construction Traffic Management Plan, the impact magnitude reduces to **low (2)**, while the sensitivity remains **low (2)**, which reduces the significance to **minor (4)**.

8.1.3.2 Operations

Impacts associated with traffic and transport

During the operational phase, the improved road infrastructure is expected to facilitate safer and more efficient vehicle movement, leading to reduced travel times and lower transportation costs for road users. Incidents of congestion, delays and damage to vehicles will be minimised due to improved road surfaces. However, higher vehicle speeds and traffic densities could elevate the risk of accidents, particularly in areas without effective road safety enforcement or pedestrian control measures. There will be maintenance activities which may cause temporary impacts on traffic flows and journey times.

Receptor sensitivity has been assigned as **low (2)**. The impact magnitude has been assessed as **low (2)**, given that while some increase in traffic and associated risks may occur, the improved road condition and embedded safety features are expected to offset most negative effects. The resulting impact significance is considered to be **minor (4)**.

Table 8-14: Impact on local traffic and transport receptors from operational activities

Activity	Potential impact	Impact significance			Mitigation needed
		Magnitude	Sensitivity	Significance	
Transport of people and equipment	Increased vehicular traffic	Low (2)	Low (2)	**Minor (4)**	N

8.1.4 Soils

8.1.4.1 Construction

Erosion and reduced soil quality during early works and construction

The existing road surface is characterised by the formation of gullies, pronounced erosion, silted ditches, cracks, quagmires, rocky outcrops and surface recession.

During the preparatory/early works and site clearance phase, soil along the route within the RoW will be removed. In addition, vehicle movement during these activities and throughout the construction phase may cause soil compaction and erosion within the RoW and along any access roads. Spills and leaks of fuels and hazardous materials may also occur from vehicles and plant.

Topsoil salvage or stripping will be undertaken along the RoW and within other construction areas. Topsoil management and preservation will reduce the impact on the soil resources in the project construction areas.

Receptor sensitivity has been assigned as **very low (1)**. The impact magnitude has been assessed as **medium (3)**, due to the importance of soil to the local community for agriculture. The resulting impact significance is considered to be **minor (3)**.

Reduction of soil resources at quarry sites due to excavation

According to the design, approximately 200,000 m^3 of topsoil will be stripped and removed. Approximately 850,000 m^3 fill and 230,000 m^3 cut material will be generated. Cut materials will be used as far as possible as fill material, however a significant amount of material will be sourced from borrow pits.

The excavation and development of quarries will require site clearance and removal of soil and natural rock; this will reduce the soil resources in the area of influence.

Receptor sensitivity has been assigned as **low (2)**. The impact magnitude has been assessed as **medium (3)**, due to the importance of soil to the local community for agriculture. The resulting impact significance is considered to be **moderate (6)**.

Table 8-15: Erosion and reduction of soil resources during early works and construction

Activity	Potential impact	Impact significance			Mitigation needed
		Magnitude	Sensitivity	Significance	
Early works and construction	Erosion and reduced soil quality	Medium (3)	Very low (1)	**Minor (3)**	Y

Activity	Potential impact	Impact significance			Mitigation needed
		Magnitude	Sensitivity	Significance	
Excavation of quarries	Reduction of soil resources at quarry sites	Medium (3)	Low (2)	**Moderate (6)**	Y

Mitigation measures

Potential impacts to the quality of soil along the RoW will be managed with the implementation of the measures listed below:

- Undertake contamination survey to inform clean-up prior to construction
- good practice topsoil storage, handling and reinstatement will be undertaken in accordance with the design measures stated in Section 3.5.3 as well as detailed measures in the Soil Management and Reinstatement Plan
- delineate all construction, temporary working and parking areas and prohibit construction work and vehicles outside the marked areas
- ensure appropriate transportation, storage, handling and disposal of hazardous materials, including staff training
- ensure refuelling away from sensitive areas and according to a defined procedure
- develop Emergency Preparedness and Response Plan including spill kits and training
- construction staff to be trained on soil protection measures.

At the end of construction, all quarries, borrow sites and temporary sites which are specifically used by the project will be restored through spreading of topsoil and revegetation (trees, shrubs, grass etc.). Monitoring of the efficacy of the landscaping process will be required. The mitigation measures presented above for the management of topsoil and prevention of soil contamination will also be required at the quarry sites.

Residual impact

With the implementation of the mitigation measures listed above, the impact magnitude is expected to decrease to **very low (1)**. The receptor sensitivity remains **low (2),** therefore reducing the impact significance to **negligible (2).**

8.1.4.2 Operations

Potential impacts to soil quality along the route are not foreseen during the operations phase.

8.1.5 Surface water

8.1.5.1 Construction

A total of 208 locations requiring upgrade or installation of infrastructure at watercourses crossed by the road have been identified and six watercourse crossings will require new structures. The infrastructure includes the following:

- 17 bridges/frame bridges allowing the crossing of major watercourses with widths or spans between 4 m and 15.5 m and heights ranging from 1.5 to 15 m
- 82 closed frame culverts (single and double, between 1 m and 5 m wide, and height varying between 1 m and 3 m) for crossing smaller watercourses

- 109 reinforced concrete pipes with diameters varying between 60 cm and 100 cm.

Adequate drainage is essential to protect the road platform. Works will include:

- reconstruction and upgrading of bridges where needed
- reinforcement and extension of culverts and gutters
- construction of longitudinal and diverging side ditches
- masonry-lined channels to prevent erosion on slopes higher than 1 m including capping beams anchored by concrete curbs, footings and trapezoidal water descents to evacuate rainwater.

Potential impacts to surface water may arise during the construction and operation of these components.

Erosion of river or channel banks, scour, sediment contamination of surface waters

Direct impacts from erosion-causing and sediment-generating activities may occur during construction, including from vegetation removal, topsoil stripping and benching.

When bare soil is exposed to rain splash, fine particles may seal the surface, reducing the infiltration rate below the rainfall rate, causing sheet overland flow and sheet soil erosion. Where sheet flow is concentrated, rills and gullies may be eroded. Where runoff from a site reaches a watercourse, the flow rate may increase above baseline conditions and sustained higher flow rates may increase channel bed and bank erosion, channel instability and suspended sediment.

Sediment suspended in runoff from construction areas may be transported to downstream receptors. It may also be released to watercourses during soil handling, using vehicles in watercourses and during excavation.

Sediment reduces light levels within the water column and can therefore have an indirect impact on aquatic biodiversity (see biodiversity receptors). High suspended sediment concentrations can also make watercourses unsuitable as drinking water sources.

Receptor sensitivity has been assigned as **medium (3)** due to the importance of the surface water resources to the community. The impact magnitude has been assessed as **low (2)**, due to the short-term duration of impacts during the construction period. The resulting impact significance is **moderate (6)**.

Contamination of surface water from management of waste and accidental release of oil or chemicals

There is the potential for direct impacts on surface water quality in receiving watercourses from the following sources:

- the management of solid and liquid waste generated during the construction process
- the accidental release of oil or chemicals during construction.

Surface water contamination may increase downstream substance concentrations with indirect impacts on water supplies for domestic use (see social receptors), aquatic biodiversity (see biodiversity receptors) and agricultural land (see land-based livelihoods receptors).

Receptor sensitivity has been assigned as **medium (3)** due to the importance of the surface water resources to the community. The impact magnitude has been assessed as **low (2)**, due to the short-term duration of impacts during the construction period. The resulting impact significance is **moderate (6)**.

Deterioration of water quality from impeded flow in watercourses

During the construction of watercourse crossings, the contractor may need to temporarily impede flow. There is potential for direct impacts on water quality, mainly because of downstream scour, which can increase turbidity and suspended-sediment concentrations with indirect impacts on water supplies for drinking and domestic use (see social receptors), aquatic biodiversity (see biodiversity receptors), channel morphology (see above) and possibly agricultural land (see land-based livelihoods receptors).

Specific locations where flow may need to be impeded will be identified at the time of construction.

Receptor sensitivity has been assigned as **medium (3)** due to the importance of the surface water resources to the community. The impact magnitude has been assessed as **low (2)**, due to the short-term duration of impacts during the construction period. The resulting impact significance is **moderate (6)**.

Increased runoff and flooding from altered drainage patterns

Surface flooding may occur if the drainage pattern is altered. This may occur where stockpiled soil redirects floodwaters from the normal flow direction. On sloping ground, excavations may intercept groundwater and alter drainage patterns. Surface water runoff during periods of rainfall may impact soil quality along the route during the construction period.

Specific locations where the drainage pattern may be altered are not known at this stage.

Receptor sensitivity has been assigned as **medium (3)** due to the importance of the surface water resources to the community. The impact magnitude has been assessed as **low (2)**, due to the short-term duration of impacts during the construction period. The resulting impact significance is **moderate (6)**.

Table 8-16: Impact on surface water from construction of infrastructure

Activity	Potential impact	Impact significance			Mitigation needed
		Magnitude	Sensitivity	Significance	
Construction of infrastructure	Erosion of river or channel banks, scour, sediment contamination of surface waters	Low (2)	Medium (3)	**Moderate (6)**	Y
Construction of infrastructure	Contamination of surface water	Low (2)	Medium (3)	**Moderate (6)**	Y
Construction of infrastructure	Deterioration of water quality	Low (2)	Medium (3)	**Moderate (6)**	Y

Activity	Potential impact	Impact significance			Mitigation needed
		Magnitude	Sensitivity	Significance	
Construction of infrastructure	Increased runoff and flooding	Low (2)	Medium (3)	**Moderate (6)**	Y

Mitigation measures

- Erosion:
    - The erosion control/soil management plan and reinstatement plan will include procedures to reduce and control erosion and compaction through measures developed for soil handling and management, topsoil stripping and storage, and sediment interception where required.
    - Additionally, location specific method statements for open-cut watercourse crossings will be prepared including requirements such as segregation of bed and bank material, retention of as much riparian vegetation as possible, and maintaining environmental base flows downstream of water crossings during construction.
- Contamination of surface water from management of waste and accidental release of oil or chemicals:
    - The soil management plan, reinstatement plan and the waste management plan will include measures that contribute to the management of impacts from waste management and accidental releases.
    - Spill response equipment will be available at all work sites.
    - The storage of hazardous materials will be restricted to designated hazardous materials storage areas at least 50 m from surface waters
    - The storage of hazardous materials will be covered, bunded (no drainage valves/holes) and have impermeable flooring.
    - A refuelling procedure will be developed to address mobile and static refuelling, spill prevention techniques and training.
    - Deterioration of water quality due to impeded flow in watercourses:
    - The biodiversity management plan, soil management plan and the pollution prevention plan will include measures that collectively contribute to the management of water quality deterioration.
    - Location specific method statements for watercourse crossings will be prepared where necessary to address construction activities.
    - Vehicles and equipment will cross watercourses after installation of appropriately sized temporary culverts and bridging structures.
    - During open-cut river crossings, bed and bank material will be stored away from active water channels and, where necessary, river crossing method statements will be developed.
    - Bathing or washing clothes, vehicles and equipment by project employees will be prohibited in watercourses.
- Increased runoff and flooding:
    - The following measures should be included in a drainage plan and a reinstatement plan.
    - Survey, maintain integrity of and reinstate where necessary existing irrigation and drainage infrastructure
    - Reinstate borrow pits

- New drainage will be installed where required to cater for damaged existing drains and/or to aid the soil recovery and plant establishment process.

Residual impact

With the implementation of the mitigation measures listed above, the impact magnitude is expected to decrease to **very low (1)**. The receptor sensitivity remains **medium (3)**, therefore reducing the impact significance to **minor (3)**.

8.1.5.2 Operations

Contamination of surface water from management of waste and accidental release of oil or chemicals

There is the potential for direct impacts on surface water quality in receiving watercourses from the following sources during maintenance and/or repair activities:

- the management of solid and liquid waste
- the accidental release of oil or chemicals.

Surface water contamination may increase downstream substance concentrations with indirect impacts on water supplies for domestic use (see social receptors), aquatic biodiversity (see biodiversity receptors) and agricultural land (see land-based livelihoods receptors).

Receptor sensitivity has been assigned as **medium (3)** due to the importance of the surface water resources to the community. The impact magnitude has been assessed as **low (2)**, due to the short-term duration of impacts during the construction period. The resulting impact significance is **moderate (6)**.

Table 8-17: Impact on surface water during operations

Activity	Potential impact	Impact significance			Mitigation needed
		Magnitude	Sensitivity	Significance	
Maintenance and repair of infrastructure	Contamination of surface water	Low (2)	Medium (3)	**Moderate (6)**	Y

Mitigation measures

The soil management plan, reinstatement plan and the waste management plan will include measures that contribute to the management of impacts from waste management and accidental releases during construction and operations phases.

Spill response equipment will be available at all work sites. The storage of hazardous materials will be restricted to designated hazardous materials storage areas at least 50 m from surface waters; storage will be covered, bunded (no drainage valves/holes) and have impermeable flooring. A refuelling procedure will be developed to address mobile and static refuelling, spill prevention techniques and training.

Residual impact

With the implementation of the mitigation measures listed above, the impact magnitude is expected to decrease to **very low (1)**. The receptor sensitivity remains **medium (3)**, therefore reducing the impact significance to **minor** (**3**).

8.1.6 Groundwater

Groundwater is present within a shallow aquifer in the general area of the project. During stakeholder engagement conducted by CEMP in September 2025, groundwater was identified as a critical resource across the project-affected villages, primarily accessed through boreholes and wells. Most villages possess multiple boreholes, with some equipped with solar pumps or managed under community-based maintenance schemes.

8.1.6.1 Construction

The project's water requirements during construction will be supplied by groundwater through the drilling and installation of dedicated abstraction boreholes. Along the road alignment, boreholes will be established to provide sufficient volumes of water for soil compaction, asphalt production and other construction processes. At the base camps, a dedicated borehole and storage tank will secure reliable potable water supply for domestic use.

Contamination of soil and groundwater from borehole drilling

Potential direct impacts on soil and groundwater quality may occur due to the use of fuels and hazardous chemicals and fuels during drilling operations. Potential impacts may arise due to the use of oil-based drilling fluids. Potential spills and leaks of fuel and oils from the equipment and vehicles may occur.

Receptor sensitivity has been assigned as **high (4)**. The impact magnitude has been assessed as **low (2)**, due to the anticipated implementation of protective measures by the contractor and the short duration of the activity. The resulting impact significance is **moderate (8)**.

Contamination of soil and groundwater from management of waste and accidental release of oil or chemicals

Potential direct impacts on groundwater quality may occur due to the storage, transportation, treatment and disposal of solid and liquid waste, chemicals and fuel in the construction camps, storage yards and other working areas.

The pre-mitigation impact of waste management and accidental release of oil or chemicals during construction is considered **moderate (8)** because the magnitude is **very low (1)**, sensitivity is **high (4)**, the duration is transient and the probability is unlikely.

Decreased water level due to groundwater abstraction for project use

The abstraction of groundwater to supply the project may have a direct impact on the water table near the abstraction borehole through drawdown, which may have an indirect impact on the yield of nearby boreholes and wells. In all the districts that the route traverses, groundwater is an important source of public water supply, so abstraction in districts where the project abstraction points are located may indirectly affect

communities (see socioeconomic and health receptors) and ecosystems (see biodiversity receptors).

Receptor sensitivity has been assigned as **high (4)**. The impact magnitude has been assessed as **medium (3)**, due to the likely impact on local well yields. The resulting impact significance is **major (12)**.

Table 8-18: Impact on groundwater from abstraction

Activity	Potential impact	Impact significance			Mitigation needed
		Magnitude	Sensitivity	Significance	
Borehole drilling	Contamination of soil and groundwater	Low (2)	High (4)	Moderate (8)	Y
Management of Waste and Accidental Release of Oil or Chemicals	Contamination of soil and groundwater	Low (2)	High (4)	Moderate (8)	Y
Abstraction of Groundwater	Decreased water level due to abstraction for project use	Medium (3)	High (4)	Major (12)	Y

Mitigation measures

- Borehole drilling:
    - No oil-based muds will be used for drilling of exploration and water supply boreholes.
    - All exploration and water supply boreholes will be designed by suitably experienced and qualified hydrogeologists to avoid contaminant migration pathways between different aquifers and geological formations.
    - Management of waste and accidental release of oil or chemicals:
    - Ensure appropriate transportation, storage, handling and disposal of hazardous materials
    - All contracted staff will receive appropriate training on the transportation, storage, handling and disposal of hazardous materials
    - Undertake refuelling away from sensitive areas and according to a defined procedure
    - Ensure spill response preparedness (procedure, spill kits, training)
- Abstraction of groundwater:
    - Prior to selecting borehole locations, hydraulic testing and hydrogeological impact assessments will be undertaken to evaluate the potential impact on local groundwater abstraction points. If the assessment indicates potential impacts to local users, alternative borehole locations will be considered.
    - Monitoring of groundwater levels will be undertaken monthly by the project to ensure no negative impact on local users. This can be undertaken in existing wells if they are accessible and suitable; if not, then new monitoring wells will be required.

- All project boreholes will comply with the relevant groundwater abstraction permit or licence requirements including the permissible withdrawal limits.

Residual impact

With the implementation of the mitigation measures listed above, the impact magnitude is expected to decrease to **very low (1)** for the first two impacts. The receptor sensitivity remains **high (4)**, therefore reducing the impact significance to **minor (4)**.

With the implementation of the mitigation measures listed above, the impact magnitude is expected to decrease to **low (2)** for the third impact due to abstraction. The receptor sensitivity remains **high (4)**, therefore reducing the impact significance to **moderate (8)**.

8.1.6.2 Operations

There is no planned groundwater abstraction during the operations phase for this project. Therefore, no potential impacts from planned activities are predicted.

8.1.7 Landscape and visual amenity

This section sets out the effects that the project would have on landscape and visual receptors. The full list of landscape and visual receptors are identified in the baseline Section 5.3.9. Landscape character areas are shown on Figure 5-8.

Effects during the construction and operational phases are considered for each landscape and visual character type (LCT) and visual receptor:

- LCT 01 Open Forest
- LCT 02 Wooded Savannah
- LCT 03 Grassy Savannah
- LCT 04 Mosaic Cropland/Farmland (agriculture)
- LCT 05 Radi-Concentric Urban Corridor
- LCT 06 Linear Urban Corridor
- Special qualities of the Fazao-Malfakassa National Park
- Settlements within 250 m of the proposed route
- Settlements between 250 m and 1 km of the proposed route
- Visitors to the Souroukou cascade (within Fazao-Malfakassa National Park) – up to 2 km east of the route.

8.1.7.1 Construction

Construction activities are described in full in Section 3; the construction of the project would span a duration of approximately 21 months. Landscape and visual effects during construction would arise from:

- site clearance, demolition and topsoil stripping
- extraction and processing of materials to form the sub-base and base courses
- quarrying of lateritic gravel
- production of asphalt
- drilling and use of temporary wells

- construction of project elements (including compacting, profiling and construction of sub-base, base and asphalt layers as well as drainage and crossing structures and ditches) with associated movement of plant
- erection of temporary security fencing
- introduction of construction workforce and welfare facilities at a main construction compound (PK45-50) and a satellite construction compound (PK6)
- storage of materials and stockpiling
- installation of road signage and safety measures.

It should be noted that there will also be quarrying for hard rock to be undertaken approximately 50 to 70 km away from Bassar as per the description in Section 3.

Effects on LCT 01 Open Forest

As identified within Table 5-10 and due to its partial location within the Fazao-Malfakassa National Park, the landscape value of this LCT is judged to be national. This is a landscape with prominent and dramatic landform which forms skyline features to the wider AoI. The land cover is complex and small-scale and there are some limited human influences alongside strong perceptual qualities of remoteness, wildness and tranquillity. Considering these factors, the overall landscape susceptibility of the LCT 01 Open Forest to construction of the project is high.

Receptor sensitivity has been assigned as **high** as a result of the combination of the national landscape value and high landscape susceptibility to change.

Construction activity would result in direct impacts to limited sections of this LCT at Bassar and the Souroukou slip road, with indirect impacts beyond the site boundary. Construction activity most notably vegetation clearance, earthworks, movement of plant and materials would be a noticeable addition within the RoW. Views of construction beyond the RoW and within approximately 1.5 km would have some influence on the more remote and scenic qualities expressed in this landscape but rapidly reduce with greater distance. Construction activities would be sequential in nature and only ever limited in extent. Effects beyond 1.5 km from the RoW would be limited by landform and vegetation. Considering the influence of the existing road corridor and local landform, impacts on the smaller scale intimate landscape elements would be inconsequential.

Overall, construction activities would result in a medium to small scale of change across a limited extent of this LCT and short-term in duration. The most valued elements would remain intact. Taking this into account, the impact magnitude has been assessed as **low.**

The resulting impact significance is considered to be **moderate**.

Table 8-19: Impact on LCT 01 Open Forest from construction

Activity	Potential impact	Impact significance			Mitigation needed
		Magnitude	Sensitivity	Significance	
Construction	Effects on LCT 01 Open Forest	Low	High	**Moderate**	Y

Mitigation measures

The following mitigation measures during construction would help to reduce the effects on landscape character within LCT 01 Open Forest:

- Ensure that existing vegetation outside the RoW is retained and protected throughout construction. Make efforts to translocate healthy/desired trees from within the RoW to another location where practicable.
- Where vegetation clearance is undertaken, local topsoil would be retained on site and protected for future use at operation.
- Temporary lighting to be restricted to task lighting and directed solely at the task in hand. All lighting is to be turned off during non-operational hours, with the exception of security lighting as required.

Residual impact

With the implementation of the mitigation measures listed above, the impact magnitude is expected to remain as **low**. The receptor sensitivity for LCT 01 Open Forest remain as **high**, therefore retaining the impact significance as **moderate**.

Effects on LCT 02 Wooded Savannah

As identified within Table 5-11, the landscape value of this LCT is judged to be regional. This LCT coincides with part of the Fazao-Malfakassa National Park, as well as its adjacent setting. The land cover ranges from sparse settlement to undeveloped and remote pockets of natural habitat and is of mixed condition and scenic quality. Undisturbed vegetated areas including dense wooded canopies are less tolerant of change. Built elements including power lines and radio transmission masts tend to reduce susceptibility. Considering these factors, the landscape susceptibility to change during construction would be medium.

Receptor sensitivity has been assigned as **medium** as a result of the combination of the regional landscape value and medium landscape susceptibility to change.

During construction, there would be direct impacts within the RoW that coincide with this LCT, including a limited extent within the Fazao-Malfakassa National Park.

Of particular note is the addition of the construction compound at approximately PK45-50, which would either directly or indirectly affect this LCT subject to the final route alignment. The mobilisation of the construction compound would require vegetation clearance and the installation and operation of elements such as offices, welfare facilities and security fencing as well as lighting. Construction effects would have a notable influence where the route will cross watercourses by means of a bridge or culvert and proposed quarrying sites. Together these activities would result in a characterising effect on land cover and pattern within the immediate context of the RoW.

Construction of the section of the project located the Fazao-Malfakassa National Park would result in limited impact on the recreational qualities, but there would be some impact on the scenic aspects in the limited areas where the construction activity (such as the construction compound) would be more readily perceived.

Construction would also adversely affect the more tranquil, remote and scenic qualities as well as further reducing the landscape condition and affecting the complex land cover pattern within the immediate context of the site.

Within 1.5 km of the site boundary, the scale of landscape change would be noticeable and substantial in places, such as at the location of the construction compound and the quarries. Beyond 1.5 km of the RoW, construction would have limited impact on the key characteristics.

The impact magnitude has been assessed as **medium** at most, due to the very noticeable scale of landscape change near the construction compound and quarries and noticeable scale of landscape change elsewhere within 1.5 km of the site boundary. The changes would occur over a short-term duration across an intermediate area of the LCT. The resulting impact significance is considered to be **moderate**.

Table 8-20: Impact on LCT 02 Wooded Savannah from construction

Activity	Potential impact	Impact significance			Mitigation needed
		Magnitude	Sensitivity	Significance	
Construction	Effects on LCT 02 Wooded Savannah	Medium	Medium	**Moderate**	Y

Mitigation measures

The following mitigation measures during construction would help to reduce the effects on landscape character within LCT 02 Wooded Savannah:

- Ensure that existing vegetation outside the RoW is retained and protected throughout construction. Make efforts to translocate healthy/desired trees from within the RoW to another location where practicable.
- Where vegetation clearance is undertaken, local topsoil would be retained on site and protected for future use at operation.
- Construction compounds and temporary quarries used specifically by the project should be located outside of the National Park boundary and fully restored to their existing condition on the cessation of construction activities; and
- Temporary lighting at the construction compounds are to be kept to minimum necessary for operational purposes and directed into the compounds themselves. Elsewhere, lighting to be restricted to task lighting and directed solely at the task in hand. All lighting is to be turned off during non-operational hours, except for security lighting as required.

Residual impact

With the implementation of the mitigation measures listed above, the impact magnitude is expected to remain as **medium**. The receptor sensitivity for LCT 02 Wooded Savannah remains as **medium**, therefore keeping the impact significance at **moderate**.

Effects on LCT 03 Grassy Savannah

As identified within Table 5-12, the landscape value of this LCT is judged to be regional. The landscape sits adjacent to of the Fazao-Malfakassa National Park and contains a complex and small-scale land cover pattern comprising more susceptible elements such as swathes of intact savannah grassland, enclosed woodlands and wetland as well as less susceptible elements such as open agricultural land. The LCT contains a relatively sparse linear settlement pattern, with a sense of remoteness in parts. Some elements within the landscape are more susceptible to change, with others less so. Considering these factors, the landscape susceptibility to change during construction would be medium.

Receptor sensitivity has been assigned as **medium** as a result of the combination of the regional landscape value and medium landscape susceptibility to change.

Direct impacts would occur across an intermediate area of this LCT during construction, adjacent to the Fazao-Malfakassa National Park. Construction activity would affect the complex land cover pattern within the immediate context of the site and reduce the sense of remoteness where it occurs. The construction compound at approximately PK45-50, which would either directly or indirectly affect this LCT depending on the final route alignment. The establishment of the construction compound will necessitate the clearance of vegetation, alongside the installation and operation of facilities such as offices, welfare amenities, security fencing and lighting.

There would be a noticeable scale of change within 1.5 km of the construction compounds and within 1 km of the RoW. Most of the key characteristics in particular area of natural heritage and distinctive scenic quality would remain intact.

The impact magnitude has been assessed as **medium** at most. The changes would occur over a short-term duration across an intermediate area of the LCT. The resulting impact significance is considered to be **moderate**.

Table 8-21: Impact on LCT 03 Grassy Savannah from construction

Activity	Potential impact	Impact significance			Mitigation needed
		Magnitude	Sensitivity	Significance	
Construction	Effects on LCT 03 Grassy Savannah	Medium	Medium	**Moderate**	Y

Mitigation measures

The following mitigation measures during construction would help to reduce the effects on landscape character within LCT 03 Grassy Savannah:

- Ensure that existing vegetation outside the RoW is retained and protected throughout construction. Make efforts to translocate healthy/desired trees from within the RoW to another location where practicable.
- Where vegetation clearance is undertaken, local topsoil should be retained on site and protected for future use at operation;
- Construction compounds should be located outside of the National Park boundary and fully restored to their existing condition on the cessation of construction activities; and
- Temporary lighting at the construction compounds to be kept to the minimum necessary for operational purposes and directed into the compounds themselves. Elsewhere, lighting to be restricted to task lighting and directed solely at the task in hand. All lighting is to be turned off during non-operational hours, except for security lighting as required.

Residual impact

With the implementation of the mitigation measures listed above, the impact magnitude is expected to remain as **medium**. The receptor sensitivity for LCT 03 Grassy Savannah remains as **medium**, therefore retaining the impact significance as **moderate**.

Effects on LCT 04 Mosaic Cropland/Farmland

As identified within Table 5-13, the landscape value of this LCT is judged to be community. The landscape within the LCT has a varied landscape condition with a simplistic land cover pattern and strong degree of human influence including existing roads and settlements. The closed canopy of the woodlands and upland landform within the Fazao-Malfakassa National Park forms notable backdrop to this landscape but is not particularly susceptible to the project. On balance, the landscape susceptibility to change during construction would be low.

Receptor sensitivity has been assigned as **low** as a result of the combination of the community landscape value and medium landscape susceptibility to change.

Direct impacts would occur across an intermediate area of this LCT. The addition of construction activity would extend human influence within this part of the landscape, with particularly noticeable effects where the route will cross watercourses by means of a bridge or culvert (such as to the north of Baghan and at Okou) and at the satellite construction compound at PK6. Within 1.5 km of the site boundary, the scale of landscape change would be noticeable, but increasing to substantial at the satellite construction compound and where bridge crossings and culverts would be constructed. Within the broader LCT, the overall field pattern, distinct savannah characteristics and views to the Fazao-Malfakassa National Park would remain intact.

The impact magnitude has been assessed as **medium** at most, due to the substantial scale of landscape change near the satellite construction compound and at water crossings; with a noticeable scale of landscape change within 1.5 km of the site boundary. The changes would occur over a short-term duration across an intermediate area of the LCT. The resulting impact significance is considered to be **moderate**.

Table 8-22: Impact on LCT 04 Mosaic Cropland/Farmland from construction

Activity	Potential impact	Impact significance			Mitigation needed
		Magnitude	Sensitivity	Significance	
Construction	Effects on LCT 04 Mosaic Cropland/ Farmland	Medium	Low	**Moderate**	Y

Mitigation measures

The following mitigation measures during construction would help to reduce the effects on landscape character within LCT 04 Mosaic Cropland/Farmland:

- Ensure that existing vegetation outside the RoW is retained and protected throughout construction. Make efforts to translocate healthy/desired trees from within the RoW to another location where practicable.
- Where vegetation clearance is undertaken, local topsoil would be retained on site and protected for future use at operation.
- Construction compounds are to be fully restored to their existing condition on the cessation of construction activities.
- Temporary lighting at the construction compounds are to be kept to minimum necessary for operational purposes and directed into the compounds themselves. Elsewhere, lighting to be restricted to task lighting and directed solely at the task

in hand. All lighting is to be turned off during non-operational hours, except for security lighting as required.

Residual impact

With the implementation of the mitigation measures listed above, the impact magnitude is expected to remain as **medium**. The receptor sensitivity for LCT 04 Mosaic Cropland/ Farmland remains as **low**, therefore retaining the impact significance as **moderate**.

Effects on LCT 05 Radi-Concentric Urban Corridor

As identified within Table 5-14, the landscape value of this LCT is judged to be community.

Established vegetation, small-scale and complex urban pattern and intervisibility with the forested slopes at Djimbiri, along with the scenic quality that the adjacent forest are somewhat tolerant of the project. The urban character, varied landscape condition and existing influence of the transport network are more tolerant of the project. Considering these factors, the landscape susceptibility to change during construction would be medium.

Receptor sensitivity has been assigned as **low** as a result of the combination of the community landscape value and medium landscape susceptibility to change.

During construction, there would be direct impacts across a limited area of this LCT. There would be losses of buildings and vegetation as the project is constructed, along with limited changes to the urban grain. Within 250 m of the site boundary, the scale of landscape change would be noticeable, but reduced intervisibility with the remainder of the LCT due to intervening built form means that the perceived scale of change will reduce with distance. Within the broader landscape of the LCT, the small-scale and complex urban form, and intervisibility with the adjacent forested slopes will be retained intact.

The impact magnitude has been assessed as **low** at most, due to the noticeable scale of landscape change which would occur over a short-term duration across a limited area of the LCT. The resulting impact significance is considered to be **minor**.

Table 8-23: Impact on LCT 05 Radi-Concentric Urban Corridor from construction

Activity	Potential impact	Impact significance			Mitigation needed
		Magnitude	Sensitivity	Significance	
Construction	Effects on LCT 05 Radi-Concentric Urban Corridor	Low	Low	**Minor**	N

Mitigation measures

The following mitigation measures during construction would help to reduce the effects on landscape character within LCT 05 Radi-Concentric Urban Corridor:

- Ensure that existing vegetation outside the RoW is retained and protected throughout construction. Make efforts to translocate healthy/desired trees from within the RoW to another location where practicable.

- Where vegetation clearance is undertaken, local topsoil should be retained on site and protected for future use at operation.
- Retain and protect buildings on the edge of the site boundary as far as practicable; limiting losses as far as possible.
- Temporary lighting to be restricted to task lighting and directed solely at the task in hand. All lighting is to be turned off during non-operational hours, except for security lighting as required.

Residual impact

With the implementation of the mitigation measures listed above, the impact magnitude is expected to remain as **low**. The receptor sensitivity for LCT 05 Radi-Concentric Urban Corridor remains as **low**, therefore retaining the impact significance as **minor**.

Effects on LCT 06 Linear Urban Corridor

As identified within Table 5-15, the landscape value of this LCT is judged to be community. Key characteristics that are susceptible to change from construction of the project include historic/traditional buildings, small- to medium-scale urban pattern and intervisibility with the surrounding landscapes (forest at Boulohou and Tindjassé, and savannah at Djarkpanga). However, the LCT has a variable landscape condition and its urban character and existing transport network result in an LCT which is more tolerant of change. Considering these factors, the landscape susceptibility to change during construction would be medium.

Receptor sensitivity has been assigned as **low** because of the combination of the community landscape value and medium landscape susceptibility to change.

During the construction phase of the project, direct impacts would be apparent across a localised area of this LCT. Construction activity may result in some localised losses of vegetation, existing buildings, as well as localised alterations to the urban pattern. Landscape change would be of noticeable scale within 500 m of the RoW However, elsewhere within the LCT, there would be reduced intervisibility with the construction activity due to intervening built form, so the scale of perceived change would reduce with distance. Across the wider LCT, the characteristic small to medium-scale urban form, presence of historic/traditional buildings and visual connections with surrounding landscapes will be retained intact.

The impact magnitude has been assessed as **low** at most, due to the noticeable scale of landscape change which would occur over a short-term duration across a localised area of the LCT. The resulting impact significance is considered to be **minor**.

Table 8-24: Impact on LCT 06 Linear Urban Corridor from construction

Activity	Potential impact	Impact significance			Mitigation needed
		Magnitude	Sensitivity	Significance	
Construction	Effects on LCT 06 Linear Urban Corridor	Low	Low	**Minor**	N

Mitigation measures

The following mitigation measures during construction would help to reduce the effects on landscape character within LCT 06 Linear Urban Corridor:

- Ensure that existing vegetation outside the RoW is retained and protected throughout construction. Make efforts to translocate healthy/desired trees from within the RoW to another location where practicable.
- Where vegetation clearance is required, local topsoil would be retained on site and protected for future use at operation;
- Retain and protect buildings on the edge of the site boundary as far as practicable; limiting losses as far as possible; and
- Temporary lighting to be restricted to task lighting and directed solely at the task in hand. All lighting is to be turned off during non-operational hours, except for security lighting as required.

Residual impact

With the implementation of the mitigation measures listed above, the impact magnitude is expected to remain as **low**. The receptor sensitivity for LCT 06 Linear Urban Corridor remains as **low**, therefore reducing the impact significance to **minor**.

Effects on Fazao-Malfakassa National Park

The landscape value of the National Park is national. Elements within the National Park that are particularly susceptible to change during construction include the prominent landform, which forms a skyline feature to the surrounding landscape; small-scale and complex land cover; the good landscape condition; the sparse settlement pattern; the high scenic quality; strong perceptual aspects such as remoteness, wildness and tranquillity; and strong cultural association with the landscape. Considering these factors, the landscape susceptibility to change during construction would be high.

Receptor sensitivity has been assigned as **high** as a result of the combination of the national landscape value and high landscape susceptibility to change.

During construction, there would be direct impacts across a limited area of the National Park between Folo and N'Konta, with indirect impacts on other areas of the National Park. Construction activity including earthworks, vegetation clearance, movement of plant and materials would affect the physical fabric and the special qualities related to the perceptions of wildness and tranquillity and scenic aspects of recreation. Of particular note is the addition of the construction compound at approximately PK45-50, which would either directly or indirectly affect the National Park depending on its alignment relative to the proposed route. The mobilisation of the construction compound would require vegetation clearance and the installation and operation of elements such as offices, welfare facilities and security fencing; as well as lighting. However, the prominent upland landform and distinctive skyline that appears in views from and out with the National Park would remain intact. It should be noted that the primary special quality of the National Park is its biodiversity and natural heritage and these aspects would be largely unaffected by construction of the project.

Within 1.5 km of the site boundary, the scale of landscape change within the Fazao-Malfakassa National Park would be slight, becoming substantial in places, such as at the location of the construction compound. Beyond 1.5 km from the project, the special qualities of the National Park would be remain well expressed.

The impact magnitude has been assessed as **medium** at most, due to the substantial scale of landscape change near the construction compound, which would be a short-term change across a very limited area between PK45-50. At this point, the resulting impact significance is considered to be **major**.

However, other locations within the National Park within 1.5 km of the site boundary would have a slight scale of landscape change. These changes would occur over a short-term duration across a limited area of the Fazao-Malfakassa National Park and would be an impact of **low** magnitude at most. The resulting impact significance within these areas is considered to be **moderate** at most.

Outside 1.5 km from the site boundary, the magnitude of change would be **very low** at most, reducing the impact significance to **minor** at most.

Table 8-25: Impact on Fazao-Malfakassa National Park from construction

Activity	Potential impact	Impact significance			Mitigation needed
		Magnitude	Sensitivity	Significance	
Construction	Effects on Fazao-Malfakassa National Park adjacent to the construction compound between PK45-50	Medium	High	**Major**	Y
Construction	Effects on Fazao-Malfakassa National Park within 1.5 km from the site boundary	Low	High	**Moderate**	Y
Construction	Effects on Fazao-Malfakassa National Park beyond 1.5 km from the site boundary	Very Low	High	**Minor**	N

Mitigation measures

The following mitigation measures during construction would help to reduce the effects on the special qualities of the Fazao-Malfakassa National Park:

- Ensure that existing vegetation outside the RoW is retained and protected throughout construction. Make efforts to translocate healthy/desired trees from within the RoW to another location where practicable.
- Where vegetation clearance is undertaken, local topsoil would be retained on site and protected for future use at operation;
- Construction compounds and temporary quarries should be located outside of the National Park boundary and fully restored to their existing condition on the cessation of construction activities; and

- Temporary lighting at the construction compounds are to be kept to minimum necessary for operational purposes and directed into the compounds themselves. Elsewhere, lighting to be restricted to task lighting and directed solely at the task in hand. All lighting is to be turned off during non-operational hours, except for security lighting as required.

Residual impact

With the implementation of the mitigation measures listed above, the impact magnitude is expected to remain as **medium** for parts of the Fazao-Malfakassa National Park adjacent to the construction compound between PK45-50. The receptor sensitivity for the Fazao-Malfakassa National Park remains as **high**, therefore retaining the impact significance as **major** at most.

Similarly, the impact significance for parts of the Fazao-Malfakassa National Park within 1.5 km from the site boundary would remain as **moderate** at most, and the impact significance for parts of the Fazao-Malfakassa National Park outside of 1.5 km from the site boundary would remain as **minor** at most.

Visual Effects on settlements, paths and tracks within 250 m of the proposed route

Views experienced by the people within the settlements or using the paths and tracks up to 250 m from the site boundary in locations such as Baghan, Banda and Boulohou include views of the Fazao-Malfakassa National Park; these views would be of national value. Elsewhere, the value of views is reduced to community. Residents are of high susceptibility to changes within their visual environment. Users of local paths and tracks, particularly those engaged in recreational activity, would be of high or medium susceptibility to change. Considering these factors, the overall visual susceptibility of these receptors to construction of the project is high.

Receptor sensitivity has been assigned as **high** as a result of the combination of the up to national visual value and high visual susceptibility to change.

Construction activity, including demolition, quarrying, vegetation clearance, earthworks and construction of bridges would be visible to receptors within 250 m of the project. Of particular note is the addition of the construction compound at approximately PK45-50 (visible to receptors in Kagna); as well as quarrying of lateritic gravel. The scale of change would vary subject to the extent of vegetation clearance and the filtering or screening effect of retained vegetation and buildings. Where there are open and uninterrupted views, construction activity would the most prominent element in views.

The impact magnitude has been assessed as **medium** at most, due to the substantial scale of visual change near the construction compound and noticeable scale of visual change elsewhere within 250 m of the site boundary. The changes would occur over a short-term duration across a localised extent. The resulting impact significance is considered to be **major**.

Table 8-26: Impact on settlements, paths and tracks within 250 m of the proposed route from construction

Activity	Potential impact	Impact significance			Mitigation needed
		Magnitude	Sensitivity	Significance	
Construction	Effects on settlements, paths and tracks within 250 m of the proposed route	Medium	High	**Major**	Y

Mitigation measures

The following mitigation measures during construction would help to reduce the visual effects on this receptor group:

- Ensure that existing vegetation outside the RoW is retained and protected throughout construction. Make efforts to translocate healthy/desired trees from within the RoW to another location where practicable.
- Where possible, landscape mitigation planting should be undertaken along the boundaries to the construction compounds to screen and filter views of these construction features.
- Construction compounds and temporary quarries should be located outside of the National Park boundary and fully restored to their existing condition on the cessation of construction activities.
- Temporary lighting at the construction compounds are to be kept to minimum necessary for operational purposes and directed into the compounds themselves. Elsewhere, lighting to be restricted to task lighting and directed solely at the task in hand. All lighting is to be turned off during non-operational hours, except for security lighting as required.

Residual impact

With the implementation of the mitigation measures listed above, the impact magnitude is expected to remain as **medium**. The receptor sensitivity for this receptor group remains as **high**, therefore retaining the impact significance as **major**.

Effects on settlements, paths and tracks between 250 m and 1 km of the proposed route

Views experienced by the people within the settlements or using the paths and tracks between 250 m and 1 km from the site boundary in locations such as Baghan, Banda and Boulohou include views of the Fazao-Malfakassa National Park; these views would be of national value. Elsewhere, where there are not views of the Fazao-Malfakassa National Park, the value of views is reduced to community. Residents are of high susceptibility to changes within their visual environment. Equally, users of local paths and tracks, particularly those engaged in recreational activity, would be of high or medium susceptibility to change. Considering these factors, the overall visual susceptibility of these receptors to construction of the project is high.

Receptor sensitivity has been assigned as **high** as a result of the combination of the up to national visual value and high visual susceptibility to change.

Construction activity including vegetation clearance would be visible but the scale of change would vary from slight to negligible depending on the extent to which construction activity would be visible within views due to the screening or filtering effect of intervening vegetation and built form. Where there are open and uninterrupted views of construction activity, there would be a slight change in the composition of views due to the distance from which the construction activity would be viewed and contrast with the existing features.

The impact magnitude has been assessed as **low** at most, due to the slight scale of visual change, with changes would occurring over a short-term duration across a localised extent. The resulting impact significance is considered to be **moderate** at most.

Table 8-27: Impact on settlements, paths and tracks between 250 m and 1 km of the proposed route from construction

Activity	Potential impact	Impact significance			Mitigation needed
		Magnitude	Sensitivity	Significance	
Construction	Effects on settlements, paths and tracks between 250 m and 1 km of the proposed route	Low	High	**Moderate**	Y

Mitigation measures

The following mitigation measures during construction would help to reduce the visual effects on this receptor group:

- Ensure that existing vegetation outside the RoW is retained and protected throughout construction. Make efforts to translocate healthy/desired trees from within the RoW to another location where practicable.
- Where possible, landscape mitigation planting should be undertaken along the boundaries to the construction compounds in order to screen and filter views of these construction features.
- Construction compounds and temporary quarries should be located outside of the National Park boundary and are to be fully restored to their existing condition on the cessation of construction activities.
- Temporary lighting at the construction compounds are to be kept to minimum necessary for operational purposes and directed into the compounds themselves. Elsewhere, lighting to be restricted to task lighting and directed solely at the task in hand. All lighting is to be turned off during non-operational hours, with the exception of security lighting as required.

Residual impact

With the implementation of the mitigation measures listed above, the impact magnitude is expected to remain as **low**. The receptor sensitivity for this receptor group remains as **high**, therefore retaining the impact significance as **moderate**.

Effects on visual amenity for visitors at the Souroukou cascade (within Fazao-Malfakassa National Park)

Views experienced by the people undertaking recreational activities on the path to the Souroukou cascade within the Fazao-Malfakassa National Park would be of national value. People engaged in recreational activity within the National Park, where views are important to the overall recreational experience, would be of high susceptibility to change. Considering these factors, the overall visual susceptibility of these receptors to construction of the project is high.

Receptor sensitivity has been assigned as **high** as a result of the combination of the national visual value and high visual susceptibility to change.

From elevated vantage points on the path to the Souroukou cascade, construction activity would be perceptible across a small horizontal extent of distant views within a much wider panoramic setting. Vegetation would largely screen views of construction from lower levels. Views orientated towards and on the approach to the cascade falls would not be affected.

The impact magnitude has been assessed as **very low**, due to the slight scale of visual change; with changes occurring over a short-term duration across a limited extent. The resulting impact significance is considered to be **minor**.

Table 8-28: Impact on visual amenity for visitors at the Souroukou cascade (within Fazao-Malfakassa National Park)

Activity	Potential impact	Impact significance			Mitigation needed
		Magnitude	Sensitivity	Significance	
Construction	Effects on visual amenity for visitors at the Souroukou cascade (within Fazao-Malfakassa National Park)	Very Low	High	**Minor**	N

Mitigation measures

The following mitigation measures during construction would help to reduce the visual effects on this receptor group:

- Ensure that existing vegetation outside the RoW is retained and protected throughout construction. Make efforts to translocate healthy/desired trees from within the RoW to another location where practicable.
- Where possible, landscape mitigation planting should be undertaken along the boundaries to the construction compounds to screen and filter views of these construction features.
- Construction compounds and temporary quarries should be located outside of the National Park boundary and fully restored to their existing condition on the cessation of construction activities.
- Temporary lighting at the construction compounds are to be kept to minimum necessary for operational purposes and directed into the compounds themselves. Elsewhere, lighting to be restricted to task lighting and directed solely at the task

in hand. All lighting is to be turned off during non-operational hours, except for security lighting as required.

Residual impact

With the implementation of the mitigation measures listed above, the impact magnitude is expected to remain as **very low**. The receptor sensitivity for this receptor group remains as **high**, therefore retaining the impact significance as **minor**.

8.1.7.2 Operations

Operational phase effects would be long-term and arise from the addition of a widened road carriageway (changing the road material from dirt to asphalt); the addition of a road platform with associated drainage; permanent loss of roadside verge and vegetation; and the addition of supporting infrastructure such as slip roads at Souroukou and Tindjasse, bridges and culverts. Of particular note would be the addition/reconstruction of bridges and culverts at water crossings. The construction compounds and quarry sites would be restored to their existing condition. Effects on landscape character would arise from the intensification of highway infrastructure within the landscape. The project would also increase the influence of manmade infrastructure with impacts on cultural perceptions of the landscape.

The project would also have an effect on surrounding visual receptors where highway-related infrastructure and less vegetation would affect visual amenity from some nearby receptors and visitors to scenic beauty spots at the Souroukou cascade.

Table 8-29 shows how the sensitivity of each project-specific receptor, as shown in Table 7-2, has been derived based on their value and susceptibility to change.

Table 8-29: Sensitivity for each receptor during the operations phase

Receptor	Value	Susceptibility	Sensitivity
LCT 01 Open Forest	National	High	High
LCT 02 Wooded Savannah	Regional	Medium	Medium
LCT 03 Grassy Savannah	Regional	Medium	Medium
LCT 04 Mosaic Cropland/Farmland	Community	Low	Low
LCT 05 Radi-Concentric Urban Corridor	Community	Medium	Low
LCT 06 Linear Urban Corridor	Community	Medium	Low
Special qualities of the Fazao-Malfakassa National Park	National	High	High
Settlements within 250 m of the proposed route	National	High	High

Receptor	Value	Susceptibility	Sensitivity
Settlements between 250 m and 1 km of the proposed route	National	High	High
Visitors to the Souroukou cascade (within Fazao-Malfakassa National Park) – up to 2 km east of the route	National	High	High

Effects on LCT 01 Open Forest

During operation, there would be direct impacts on limited sections of this LCT at Bassar and the Souroukou slip road. The operational road corridor would increase the influence of highway infrastructure in the LCT, resulting in slight reductions to scenic quality and perceptual qualities such as tranquillity and remoteness within the immediate context of the project. Within 0.5 km of the site boundary, the scale of landscape change would be slight. However, within the broader landscape of the LCT there would be limited perceptible change to the key characteristics.

The impact magnitude has been assessed as **very low**, due to the slight scale of landscape change (within 0.5 km of the site boundary) occurring on a permanent basis across a limited area of the wider LCT. The resulting impact significance is considered to be **minor**.

Table 8-30: Impact on LCT 01 Open Forest from operation

Activity	Potential impact	Impact significance			Mitigation needed
		Magnitude	Sensitivity	Significance	
Operation	Effects on LCT 01 Open Forest	Very Low	High	**Minor**	N

Mitigation measures

The following mitigation measures during operation would help to reduce the effects on landscape character within LCT 01 Open Forest:

- Landscape mitigation planting and establishment is recommended within the design of the road, to be located along the edges of the RoW in order to better integrate the project into the surrounding landscape.
- Landscape mitigation planting should use a diverse mix of native trees and shrubs of local provenance and be maintained during the establishment period of 5 years to ensure its successful establishment and success of the mitigation objectives. This landscape mitigation planting would need to comprise a variety of plant sizes to enhance and reinforce the prevailing forest and savannah vegetation patterns in the landscape and build a wider and more resilient green infrastructure network.
- Street lighting to be kept to a minimum and restricted to locations within settlements only.

Residual impact

With the implementation of the mitigation measures listed above, the impact magnitude is expected to remain as **very low**. The receptor sensitivity for LCT 01 Open Forest remains as **medium**, therefore retaining the impact significance as **minor**.

Effects on LCT 02 Wooded Savannah

During operation, there would be direct impacts across a localised area of this LCT, including within a small area of the Fazao-Malfakassa National Park.

The widened and surfaced road corridor, bridges and earth pits would increase the physical footprint and influence of transport infrastructure within the local landscape. However, this would occur within the context of the existing road corridor and not entirely uncharacteristic. The increased presence of such infrastructure would have some impact on the more remote qualities and scenic aspects of this landscape. Effects would be more noticeable at frame bridges over water courses or where previous vegetation clearance was expansive. The construction compound area at approximately PK45-50 and the lateritic gravel quarries would be restored to their existing condition. Over time, natural revegetation would reduce the impression of change within the landscape.

The section of the project located the Fazao-Malfakassa National Park, would result limited impact on the recreational qualities, but there would be some impact on the scenic aspects in the limited areas where the road would be more readily perceived.

Within 0.5 km of the site boundary, the scale of landscape change would be slight. However, within the broader landscape of the LCT, key characteristics of note within the LCT (such as the varied vegetation cover and sparse settlement pattern) will be retained intact.

The impact magnitude has been assessed as **low**, due to the slight scale of landscape change, which would occur on a permanent basis across a localised area of the LCT. The resulting impact significance is **moderate** at most.

Table 8-31: Impact on LCT 02 Wooded Savannah from operation

Activity	Potential impact	Impact significance			Mitigation needed
		Magnitude	Sensitivity	Significance	
Operation	Effects on LCT 02 Wooded Savannah	Low	Medium	**Moderate**	Y

Mitigation measures

The mitigation measures applied during operation to LCT 01 Open Forest during operation would also help to reduce the effects on landscape character within LCT 02 Wooded Savannah.the project

Residual impact

With the implementation of the mitigation measures listed above, the impact magnitude is expected to remain as **low**. The receptor sensitivity for LCT 02 Wooded Savannah remains as **medium**, therefore retaining the impact significance as **moderate**.

Effects on LCT 03 Grassy Savannah

Direct impacts would occur across a localised area of this LCT during operation, including within the setting of the Fazao-Malfakassa National Park. The operational road would locally reduce the sense of remoteness and tranquillity along its route, with an increase in human influence and infrastructure. This effect would be intensified where frame bridges are present. Within 0.5 km of the route, the resulting changes to the LCT during operation will be slight. Within the broader LCT, however, key characteristics of note such as the natural heritage and areas of scenic quality will remain intact.

The impact magnitude has been assessed as **low** at most, due to the slight scale of landscape change occurring on a permanent basis across a localised area of the LCT. The resulting impact significance is considered to be **moderate**.

Table 8-32: Impact on LCT 03 Grassy Savannah from operation

Activity	Potential impact	Impact significance			Mitigation needed
		Magnitude	Sensitivity	Significance	
Operation	Effects on LCT 03 Grassy Savannah	Low	Medium	**Moderate**	Y

Mitigation measures

The measures applied during operation to LCT 01 Open Forest during operation would also help to reduce the effects on landscape character within LCT 03 Grassy Savannah.the project

Residual impact

With the implementation of the mitigation measures listed above, the impact magnitude is expected to remain as **low**. The receptor sensitivity for LCT 03 Grassy Savannah remains as **medium**, therefore retaining the impact significance as **moderate**.

Effects on LCT 04 Mosaic Cropland/Farmland

Direct impacts would occur across a localised area of this LCT during operation; there would be a further reduction in perceptions of remoteness and tranquillity. The addition of the operational road would intensify the influence of transport infrastructure within this part of the landscape mostly already affected by the existing road. There would be additional effects where the route will cross watercourses by means of a bridge or culvert (such as to the north of Baghan and at Okou). Within 0.5 km of the site boundary, the scale of landscape change would be slight. Within the broader LCT, the main key characteristics would remain, such as the irregular field pattern, distinct savannah characteristics and views to the Fazao-Malfakassa National Park.

The impact magnitude has been assessed as **low** at most, due to the slight scale of landscape change; with changes occurring on a permanent basis across a localised area of the LCT. The resulting impact significance is considered to be **minor**.

Table 8-33: Impact on LCT 04 Mosaic Cropland/Farmland from operation

Activity	Potential impact	Impact significance			Mitigation needed
		Magnitude	Sensitivity	Significance	
Operation	Effects on LCT 04 Mosaic Cropland/ Farmland	Low	Low	**Minor**	N

Mitigation measures

The mitigation measures applied during operation to LCT 01 Open Forest during operation would also help to reduce the effects on landscape character within LCT 04 Mosaic Cropland/Farmland.the project

Residual impact

With the implementation of the mitigation measures listed above, the impact magnitude is expected to remain as **low**. The receptor sensitivity for LCT 04 Mosaic Cropland/Farmland remains as **low**, therefore reducing the impact significance to **minor**.

Effects on LCT 05 Radi-Concentric Urban Corridor

During operation of the road, there would be direct impacts across a limited area of this LCT through limited changes to the urban grain. Within 250 m of the site boundary, the scale of landscape change would be slight, but reduced intervisibility with the remainder of the LCT due to intervening built form means that the perceived scale of change will reduce to negligible. Within the broader landscape of the LCT, the key characteristics of the small-scale and complex urban form, and intervisibility with the adjacent forested slopes will be retained intact.

The impact magnitude has been assessed as **very low** at most, due to the slight scale of landscape change which would occur on a permanent basis across a limited area of the LCT. The resulting impact significance is **negligible**.

Table 8-34: Impact on LCT 05 Radi-Concentric Urban Corridor from operation

Activity	Potential impact	Impact significance			Mitigation needed
		Magnitude	Sensitivity	Significance	
Operation	Effects on LCT 05 Radi-Concentric Urban Corridor	Very Low	Low	**Negligible**	N

Mitigation measures

The following mitigation measures during operation would help to reduce the effects on landscape character within LCT 05 Radi-Concentric Urban Corridor:

- Street lighting to be kept to a minimum and restricted to locations within settlements only.

Residual impact

With the implementation of the mitigation measures listed above, the impact magnitude is expected to remain as **very low**. The receptor sensitivity for LCT 05 Radi-Concentric Urban Corridor remains as **low**, therefore retaining the impact significance as **negligible**.

Effects on LCT 06 Linear Urban Corridor

During the operational phase of the project, direct impacts would be apparent across a localised area of this LCT, with limited changes to the urban grain and an intensification of urban infrastructure in smaller villages. Landscape change would be of slight scale within 500 m of the site boundary. However, elsewhere within the LCT, there would be reduced intervisibility with operational road due to intervening built form, so the scale of perceived change would reduce to negligible. Across the wider LCT, the characteristic small- to medium-scale urban form, and visual connections with surrounding landscapes will be retained intact.

The impact magnitude has been assessed as **very low** at most, due to the slight scale of landscape change which would occur over a short-term duration across a localised area of the LCT. The resulting impact significance is considered to be **negligible**.

Table 8-35: Impact on LCT 06 Linear Urban Corridor from operation

Activity	Potential impact	Impact significance			Mitigation needed
		Magnitude	Sensitivity	Significance	
Operation	Effects on LCT 06 Linear Urban Corridor	Very Low	Low	**Negligible**	N

Mitigation measures

The mitigation measures during operation applied during operation to LCT 05 Radi-Concentric Urban Corridor would also help to reduce the effects on landscape character within LCT 06 Linear Urban Corridor.

Residual impact

With the implementation of the mitigation measures listed above, the impact magnitude is expected to remain as **very low**. The receptor sensitivity for LCT 06 Linear Urban Corridor remains as **low**, therefore retaining the impact significance as **negligible**.

Effects on Fazao-Malfakassa National Park

During operation, there would be direct impacts across a localised area of the National Park between Folo and N'Konta, with indirect impacts on other areas of the National Park. The operational road would locally increase the physical area and perceptual influence of highway infrastructure in the National Park with a localised impact on the perceptions of remoteness, wildness, tranquillity and scenic quality. The construction compound at approximately PK45-50 would be restored back to its previous condition. There would be some limited impacts on the scenic quality experienced from the more elevated areas at Souroukou cascade. However, the prominent landform and skyline views; as well as other physical characteristics and special qualities throughout the majority of the National Park would remain intact and well expressed. Within 0.5 km of the site boundary, the

scale of landscape change within the Fazao-Malfakassa National Park would be slight. Landscape effects beyond 0.5 km of the project would be barely discernible. It should be noted that the primary special quality of the National Park is its biodiversity and natural heritage and these aspects would be largely unaffected by the project.

The impact magnitude has been assessed as **low** at most, due to the slight scale of landscape change occurring on a permanent basis across a localised area of the Fazao-Malfakassa National Park. The resulting impact significance is considered to be **moderate**.

Table 8-36: Impact on Fazao-Malfakassa National Park from operation

Activity	Potential impact	Impact significance			Mitigation needed
		Magnitude	Sensitivity	Significance	
Operation	Effects on Fazao-Malfakassa National Park within 0.5 km from the site boundary	Low	High	**Moderate**	Y
Operation	Effects on Fazao-Malfakassa National Park beyond 0.5 km from the site boundary	Very Low	High	**Minor**	N

Mitigation measures

The mitigation measures applied during operation to LCT 01 Open Forest during operation would also help to reduce the effects on landscape character within the Fazao-Malfakassa National Park.the project

Residual impact

With the implementation of the mitigation measures listed above, the impact magnitude is expected to remain as **low**. The receptor sensitivity for the Fazao-Malfakassa National Park within 0.5 km of the site boundary remains as **high**, therefore retaining the impact significance as **minor**.

The impact significance for parts of the Fazao-Malfakassa National Park outside of 0.5 km from the site boundary would remain as minor at most.

Effects on settlements, paths and tracks within 250 m of the proposed route

The operational road and associated bridges, signage and traffic would be visible to receptors within 250 m of the project. While these elements would be visible, the scale of change would vary subject to the extent of project visibility and/or the screening effect of intervening vegetation and built form. Where there are open and uninterrupted views of the road, there would be a slight change in the composition of views and contrast with the existing features. At the site of the construction compounds and quarries, the land would be restored to its original condition and adverse views experienced by these receptors would reduce.

The impact magnitude has been assessed as **very low**, due to the slight at most scale of visual change, which would occur on a permanent basis across a limited extent. The resulting impact significance is considered to be **minor**.

Table 8-37: Impact on settlements, paths and tracks within 250 m of the proposed route from operation

Activity	Potential impact	Impact significance			Mitigation needed
		Magnitude	Sensitivity	Significance	
Operation	Effects on settlements, paths and tracks within 250 m of the proposed route	Very Low	High	**Minor**	N

Mitigation measures

The following mitigation measures during operation would help to reduce the visual effects for these receptors:

- Landscape mitigation planting and establishment is recommended within the design of the road, to be located along the edges of the RoW in order to better soften and screen views of the project.
- Landscape mitigation planting should use a diverse mix of native trees and shrubs of local provenance and be maintained during the establishment period of 5 years in order to ensure its successful establishment and success of the mitigation objectives.
- Street lighting is to be kept to a minimum and restricted to locations within settlements only.

Residual impact

With the implementation of the mitigation measures listed above, the impact magnitude is expected to remain as **very low**. The receptor sensitivity for this receptor group remains as **high**, therefore retaining the impact significance as **minor**.

Effects on settlements, paths and tracks between 250 m and 1 km of the proposed route

At operation, the project would be largely screened by intervening vegetation or built form from most of this group. There is the potential that there would be some more open views of the widened road corridor from some areas of settlement but unlikely to be of notable influence or focus beyond the existing condition.

The impact magnitude has been assessed as **very low**, due to the negligible scale of visual change, with changes occurring on a permanent basis across a limited extent. The resulting impact significance is considered to be **minor** at most.

Table 8-38: Impact on settlements, paths and tracks between 250 m and 1 km of the proposed route from operation

Activity	Potential impact	Impact significance			Mitigation needed
		Magnitude	Sensitivity	Significance	
Operation	Effects on settlements, paths and tracks between 250 m and 1 km of the proposed route	Very Low	High	**Minor**	N

Mitigation measures

The mitigation measures recommended for the 'settlements, paths and tracks within 250 m of the proposed route' receptor during operation would also help to reduce the visual effects for these receptors.the project

Residual impact

With the implementation of the mitigation measures listed above, the impact magnitude is expected to remain as **very low**. The receptor sensitivity for this receptor group remains as **high**, therefore retaining the impact significance as **minor**.

Effects on visual amenity for visitors at the Souroukou cascade (within Fazao-Malfakassa National Park)

From elevated viewpoints on the path to the Souroukou cascade, people undertaking recreational activities would experience views of the operational road, in particular the Souroukou slip road and bridges over water crossings. However, the scale of change negligible at most due to the intervening distance and height of proposed elements.

Intervening vegetation would screen or heavily filter views from lower elevations along the path. Where there are open and uninterrupted views of the operational road, there would be a very slight change in the composition of views and oblique to the main focus within other aspects of the National Park.

The impact magnitude has been assessed as **very low** at most, due to the negligible scale of visual change; with changes occurring on a permanent basis across a limited extent. The resulting impact significance is considered to be **minor** at most.

Table 8-39: Impact on visual amenity for visitors at the Souroukou cascade (within Fazao-Malfakassa National Park)

Activity	Potential impact	Impact significance			Mitigation needed
		Magnitude	Sensitivity	Significance	
Operation	Effects on visual amenity for visitors at the Souroukou cascade (within Fazao-Malfakassa National Park)	Very Low	High	**Minor**	N

Mitigation measures

The mitigation measures recommended for the 'settlements, paths and tracks within 250 m of the proposed route' receptor during operation would also help to reduce the visual effects for these receptors.the project

Residual impact

With the implementation of the mitigation measures listed above, the impact magnitude is expected to remain as **very low**. The receptor sensitivity for this receptor group remains as **high**, therefore retaining the impact significance as **minor**.

8.2 Biodiversity impact assessment

This section includes an assessment of the potential impacts on biodiversity during construction and operation of the project.

The biodiversity receptors taken into account in this assessment are:

- legally protected areas and internationally recognised areas for biodiversity conservation (henceforth known as 'protected areas'), i.e., Fazao-Malfakassa National Park, KBA and IBA; Bassar Forest Reserve and Bassari-Montagne Forest Reserve
- priority habitats, i.e., natural habitats such as undisturbed or unmodified habitats such as watercourses, riparian habitat and primary gallery forest, bushland and woodland and priority species of flora, e.g., IUCN globally and nationally threatened species
- priority species of fauna, e.g., IUCN globally and nationally threatened species, qualifying species/listed features of the IBA
- potential and confirmed critical habitat triggers.

All receptors have a sensitivity score of high (4) on a precautionary basis, as they include areas of international importance, such as Upper Guinean Forest, or species populations that are critically endangered or endangered, such as White-thighed Colobus.

8.2.1 Construction

8.2.1.1 Protected areas

Habitat loss and degradation

The proposed project involves the rehabilitation and upgrading of a 93.8 km degraded earth track and connecting slip roads. The route crosses the Fazao-Malfakassa National Park for approximately 2.8 km and the Fazao-Malfakassa National Park IBA for approximately 3.5 km. The ecological AoI of the alignment overlaps the national park for approximately 18.5 km and the Bassar Forest Reserve for approximately 1.9 km. There are no associated developments proposed within protected areas.

The existing road is generally between 5 m and 8 m in width, and the road will be upgraded within a maximum expropriation zone of 30 m in width (comprising a 20 m execution zone and a 10 m allowance for extensions). Full details of the construction footprint are given in Section 3.3). The habitats within the expropriation zone of the road are generally highly disturbed with low or rank vegetation, such as grasses, scrub or bare ground (see Figure 5-25 as an example), although native trees are present in some

areas. The land use adjacent to the road within protected areas generally comprise farm-bush, agriculture/plantations and settlements, with small patches of natural habitat such as woodland, bushland and gallery forest/riparian vegetation.

The land clearance will result in permanent and temporary loss of habitat that is generally modified or disturbed, but may include small areas of primary forest, woodland, bushland and riparian habitat, which could support qualifying/important species of protected areas. This habitat loss could have a direct effect on protected areas due to a reduction in foraging, breeding and sheltering resources.

Degradation of habitat (which may include areas of natural habitat) within protected areas could occur due to the smothering of vegetation caused by dust emissions during construction. An accumulation of dust on leaves can block stomata and thereby impact on normal photosynthetic, transpiration and cellular respiration rates (Sharifi et al., 1997) and finer dust can be directly taken into the stomatal openings (Farmer, 1993) impairing the biological fitness of plants. Prior to the application of mitigation measures, smothering of flora by dust during construction could therefore lead to a localised decline in habitat in protected areas.

The receptor sensitivity is **high (4)** as Fazao-Malfakassa National Park IBA is internationally recognised, even though it is generally degraded within much of the AoI.

The impact magnitude of habitat loss and degradation in protected areas has been assessed as **very low (1).** Given the expectedly localised extent of this impact (mostly in modified/degraded habitats), the extent of habitat loss is considered to be negligible when compared to the total extent of the affected protected areas. It is therefore considered highly unlikely that the road improvements will affect the overall integrity of protected areas due to permanent and temporary habitat loss and degradation.

The resulting impact significance is considered to be **minor (4)** (see Table 8-40**)**.

Disturbance and direct mortality of species during construction

The road improvement has the potential for disturbance and direct mortality of species that are qualifying/important species of the IBA and national park. Changes in visual, noise and vibration stimuli due to the increased presence of people and machinery could result in the temporary disturbance and displacement of species that may be present within the AoI of the project. The predominant noise emissions generated during the construction phase will be generated by sources such as vehicle traffic, plant vehicles, pneumatic drills and machinery such as generators. Construction noise emissions will be relatively localised, temporary and generated over a maximum period of 30 months over the full alignment. The impact of visual disturbance, as well as noise and vibration generated during project construction, could be significant within approximately 500 m of active work areas at certain locations. However, this effect is expected to be substantially reduced in most locations due to the moderating influence of existing topography, natural visual and acoustic barriers and the current baseline of disturbance

Unfamiliar and/or loud noise and vibration emissions are known to evoke a flight reaction in certain species of fauna. If noise or vibration is perceived as a threat, animals can increase vigilance and anti-predator behaviour (Francis and Barber, 2013), which may decrease foraging and resting time. Mammals and birds are also known to experience stress, reduced biological fitness and decreased breeding success on exposure to noise (Francis and Barber, 2013). Chronic stress can increase species' susceptibility to

diseases, pathogens and parasites (e.g., Dhabhar, 2002). High noise and vibration levels may also compromise hearing by damaging inner-ear structures, provided that the acoustic energy is within an animal's sensory range and the animal is close to the source (Barber et al., 2010).

Species that are quickly able to adapt to changes in ambient noise and vibration levels are less affected than species that are unable to adapt. For certain bird species, Cutts et al. (2013) states that 'loud' works in a generally 'loud' environment may cause little actual ongoing disturbance as the birds are already tolerant or habituated. It is therefore anticipated that noise and vibration emissions arising from construction activities may result in some displacement of fauna from habitats near the project footprint, but due to existing levels, most species present in these areas can become tolerant of new sources disturbance and are likely to quickly become habituated (if the disturbance is frequent).

Additional construction traffic on existing roads could also result in an increase in road casualties, particularly reptiles, amphibians, small and medium size mammals and low-flying birds. Scavengers may then become attracted to carcasses on or near the construction site. Construction work and workers could also adversely affect habitats and species associated with the protected areas by using these areas as a latrine, littering, trampling and disturbance. Open excavations could result in trapping of certain animals.

The receptor sensitivity is **high (4)** and the impact magnitude of disturbance and direct mortality is considered to be **very low (1)** prior to mitigation, due to the temporary nature of the works, the limited extent of the project within the protected areas and the existing levels of disturbance within protected areas. It is considered unlikely that the works will result in disturbance and direct mortality of designated/listed species to the extent that it affects the sites' overall integrity.

The resulting impact significance is **minor (4)** (see Table 8-40).

Changes to water quality

There is the potential for uncontrolled pollution events such as discharges of hazardous substances (e.g., diesel fuel, asphalt, oil and bitumen), grey water and sediment during the construction phase of the road improvements, which may enter watercourses. Such events would be considered an unintended impact but if they occurred it would be as a result of planned construction activities. This could impact aquatic and riparian habitat downstream of the works within protected areas.

This impact would most likely occur immediately adjacent to the project footprint (particularly at watercourse crossings), near workers facilities/construction camps (e.g., the camp located at km 45) or the source of the spillage. However, the risk of pollution affecting protected areas is considered to be very low, as the majority of watercourses within these areas are situated upstream of the project, with only a negligible extent of watercourses within protected areas downstream of the project.

The receptor sensitivity is **high (4)** and the impact magnitude of changes to water quality is **very low (1)** prior to mitigation as the effects of pollution events are also likely to be localised and reversible over time and therefore considered highly unlikely to affect the integrity of protected areas.

The resulting impact significance is considered to be **minor (4)** (see Table 8-40).

Influx of people resulting in increased pressure on natural resources

The construction of the project is expected to result in in-migration to the area by workers (anticipated to be approximately 550, although this may increase depending on the workload and project needs), relatives and people seeking employment and business opportunities associated with the project. This may result in a temporary increase in pressure on natural resources and local food resources, with the potential to increase in hunting and bushmeat extraction from protected areas, as is common in much of West Africa (see e.g., Hermann et al., 2020) and gold mining/sand extraction from watercourses. Similarly, the demand for firewood and charcoal and agricultural land will expectedly increase proportionally.

The population within the project and wider area (i.e., Bassar and Mô prefectures) is approximately 205,000 people. It is considered unlikely that any population increase in the project area because of the in-migration during the construction phase will be significant in relation to the pressure on natural resources from existing populations. This impact is likely to be non-reversible and generally widespread. However, the proposed main construction camp is due to be located at km 45, which is within 500 m of Fazao-Malfakassa National Park. Therefore, there may be localised impacts that could potentially affect areas of high importance to qualifying/important species within the national park, such as watercourses, escarpments and natural habitats.

The receptor sensitivity is **high (4).** The magnitude of the impact cannot be quantified, as the total number of people potentially moving into the project area is unknown but has been assessed to be **medium (3),** on a precautionary basis. It is unlikely that the integrity of any protected areas will be significantly affected, uncertainty remains due to proximity of the main construction camp to Fazao-Malfakassa National Park (within walking distance) and the limited understanding of the ecological value of certain habitats in the vicinity. Therefore, the potential for localised adverse effects, that could lead to the integrity of protected areas being affected, cannot be ruled out.

The resulting impact significance is assessed as **major (12)** (see Table 8-40**)**.

Introduction of invasive species

Mobilisation and construction works involve collection, transportation, handling, storage and disposal of various types of materials, some of which may cause introduction of invasive or non-native floral or faunal species into protected areas. These species, such as *Azadirachta indica*, *Senna obtusifo*lia and Giant African Snail *Achatina fulica* (Kokou et al., 2021), may out-compete or predate upon the native species in areas that these species are dominant and natural habitat is present, resulting in a shift of ecological structure in the area.

Such an introduction would be considered an unintended impact but may occur as a result of planned construction activities and could have far-reaching consequences which may affect the integrity of protected areas, if left unmitigated. The introduction of a fast-growing competitor and/or predatory species could therefore represent a significant impact on the native flora and fauna and ecosystems of the protected sites, pre-mitigation.

The receptor sensitivity is **high (4)** and the impact magnitude of the introduction of invasive species is considered **high (4)** on a precautionary basis, as the integrity of protect areas could be compromised.

The resulting impact significance is assessed as **major (16)** (see Table 8-40).

Summary of the impacts of the construction phase on protected areas

Table 8-40 below summarises the pre-mitigation impact analysis for protected areas from construction activities.

Table 8-40: Impacts on protected areas during construction

Activity	Potential impact	Impact significance			Mitigation needed
		Magnitude	Sensitivity	Significance	
Construction of improved road	Habitat loss and degradation	Very low (1)	High (4)	**Minor (4)**	Y precautionary approach
Construction activities	Direct mortality and disturbance of species	Very low (1)	High (4)	**Minor (4)**	Y
Construction activities - uncontrolled pollution events	Changes to water quality	Very low (1)	High (4)	**Minor (4)**	Y precautionary approach
Influx of people/in-migration	Increase in pressure on natural resources	Medium (3)	High (4)	**Major (12)**	Y
Construction activities	Introduction of invasive species	High (4)	High (4)	**Major (16)**	Y

8.2.1.2 Priority habitat and flora

Please note that the potential impacts on priority habitat and flora during construction are similar to those for protected areas above (except for direct impacts on fauna). To ensure clarity and completeness, these impacts are summarised below.

Habitat loss and degradation

The proposed project involves the rehabilitation and upgrading of a 93.8 km degraded earth track and connecting slip roads. A temporary construction camp of approximately 3 ha will be constructed at km 45 and a satellite camp of approximately 0.5 ha will also be established at km 6. Full details of the construction footprint are given in Section 3.3. Approximately 20 potential lateritic gravel quarry sites along or near to the Bassar-Tindjassé Road have been identified (see Figure 3-1), many of which have previously been quarried. At the end of construction, all quarries and borrow sites are required to be restored to pre-existing conditions. Full details are provided in Section 3.3.6.

The habitats to be cleared are generally highly disturbed but may include small areas of priority habitats and which would support priority flora. The receptor sensitivity is **high (4)** and the impact magnitude is **very low (1)** due to the expectedly localised extent of this impact. Please refer to Section 8.2.1.1 under Protected Areas for further details.

The impact significance is assessed as **minor (4)** (see Table 8-41).

Changes to water quality

There is the potential for uncontrolled pollution events during the construction phase, particularly adjacent to the project footprint and associated developments, which could impact priority aquatic and riparian habitat downstream of the works. The receptor sensitivity is **high (4)** and the impact magnitude is considered to be **low (2)** due to the expectedly localised extent and short-term nature of this impact. Please refer to Section 8.2.1.1 under Protected Areas for further details.

The resulting impact significance is assessed as **moderate (8)** (see Table 8-41**)**.

Influx of people resulting in increased pressure on natural resources

The construction of the project is expected to result in in-migration to the area. This may result in a temporary increase in pressure on natural resources, although it is unlikely that this will substantially increase beyond existing levels. The receptor sensitivity is **high (4)** and the impact magnitude is considered to be **low (2)** on a precautionary basis (i.e., short term and a good possibility as opposed to transient and improbable) as the potential numbers of people migrating to the project area during construction is not known. Please refer to Section 8.2.1.1 under Protected Areas for further details.

The resulting impact significance is assessed as **moderate (8)** (see Table 8-41**)**.

Introduction of invasive species

Mobilisation and construction works may cause introduction of invasive or non-native species into priority habitats that may significantly affect areas of priority habitat and associated priority species of flora. The receptor sensitivity is **high (4)** and the impact magnitude of the introduction of invasive species is considered to be **high (4)** on a precautionary basis. Please refer to the relevant impact in Section 8.2.1.1 under Protected Areas for further details.

The resulting impact significance is assessed as **major (16)** (see Table 8-41).

Summary of the impacts of the construction phase on priority habitats and flora

Table 8-41 below summarises the pre-mitigation impact analysis for priority habitat and flora during construction.

Table 8-41: Impacts on priority habitats and flora during construction

Activity	Potential impact	Impact significance			Mitigation needed
		Magnitude	Sensitivity	Significance	
Construction of improved road	Habitat loss and degradation	Very low (1)	High (4)	**Minor (4)**	Y precautionary approach

Activity	Potential impact	Impact significance			Mitigation needed
		Magnitude	Sensitivity	Significance	
Construction activities - uncontrolled pollution events	Changes to water quality	Low (2)	High (4)	**Moderate (8)**	Y
Influx of people/in-migration	Increase in pressure on natural resources	Low (2)	High (4)	**Moderate (8)**	Y
Construction activities	Introduction of invasive species	High (4)	High (4)	**Major (16)**	Y

8.2.1.3 *Priority fauna*

Please note that the potential impacts on priority fauna are similar to those for protected areas above. To ensure clarity and completeness, these impacts are summarised below.

Habitat loss and degradation

The proposed project involves the rehabilitation and upgrading of a 93.8 km degraded earth track and associated slip roads, a temporary construction camp and approximately 20 potential quarry sites. Full details of the construction footprint and quarries are provided in Section 3.3. The habitats to be cleared are generally highly disturbed but may include areas of habitat that supports priority fauna. The receptor sensitivity is **high (4)** and the impact magnitude is **very low (1)** due to the expectedly localised extent of this impact. Please refer to the relevant impact in Section 8.2.1.1 under Protected Areas for further details.

The resulting impact significance is assessed as **minor (4)** (see Table 8-42).

Severance of populations/barrier effect

The construction of bridges, culvert and pipes along watercourses crossed by the Bassar-Tindjassé Road may temporarily disrupt aquatic connectivity due to in-channel works and dewatering requirements. These activities can lead to short-term fragmentation of aquatic habitats, reducing movement and exchange between upstream and downstream populations of aquatic organisms, as well as species dependent on riparian zones such as amphibians and waterbirds. Such disruption may impair access to spawning grounds, feeding areas, refuge habitats and other resources for priority species of fauna. The receptor sensitivity is **high (4)** and the magnitude of impact is assessed as **low (2)**, given the temporary nature and localised extent of these works.

The impact significance is assessed as **moderate (8)** (see Table 8-42).

Disturbance and direct mortality of species during construction

The road improvement has the potential for disturbance to priority fauna due to changes in visual, noise and vibration stimuli and an increase in direct mortality. The receptor sensitivity is **high (4)** and the impact magnitude is assessed as **very low (1)** due to the

temporary nature of the works and the existing levels of disturbance. Please refer to the relevant impact in Section 8.2.1.1 under Protected Areas for further details.

The resulting impact significance is assessed as **minor (4)** (see Table 8-42).

Changes to water quality

There is the potential for uncontrolled pollution events during the construction phase, particularly adjacent to the project footprint and associated developments. This could affect aquatic and riparian habitat downstream of the works that supports priority fauna. The receptor sensitivity is **high (4)** and the impact magnitude is considered to be **low (2)** due to the expectedly localised extent and short-term nature of this impact. Please refer to the relevant impact in Section 8.2.1.1 under Protected Areas for further details.

The impact significance is assessed as **moderate (8)** (see Table 8-42).

Influx of people resulting in increased pressure on natural resources

The construction of the project is expected to result in in-migration to the area. This may result in a temporary increase in pressure on natural resources, including priority fauna, although it is unlikely that this will substantially increase beyond existing levels. The receptor sensitivity is **high (4)** and the impact magnitude is considered to be **low (2)** on a precautionary basis (i.e., short term and a good possibility as opposed to transient and improbable) as the potential numbers of people migrating to the project area during construction is not known. Please refer to the relevant impact in Section 8.2.1.1 under Protected Areas for further details.

The resulting impact significance is assessed as **moderate (8)** (see Table 8-42).

Introduction of invasive species

Mobilisation and construction works may cause introduction of invasive or non-native species into habitats which may significantly affect populations of priority species of fauna. The receptor sensitivity is **high (4)** and the impact magnitude of the introduction of invasive species is considered to be **high (4)** on a precautionary basis. Please refer to the relevant impact in Section 8.2.1.1 in Protected Areas for further details.

The resulting impact significance is assessed as **major (16)** (see Table 8-42).

Summary of the impacts of the construction phase on priority fauna

Table 8-42 below summarises the pre-mitigation impact analysis for priority fauna from construction activities.

Table 8-42: Impacts on priority fauna during construction

Activity	Potential impact	Impact significance			Mitigation needed
		Magnitude	Sensitivity	Significance	
Construction of improved road	Habitat loss and degradation	Very low (1)	High (4)	**Minor (4)**	Y precautionary approach
Construction of improved road	Severance of populations/ barrier effect	Low (2)	High (4)	**Moderate (8)**	Y

Activity	Potential impact	Impact significance			Mitigation needed
		Magnitude	Sensitivity	Significance	
Construction activities	Direct mortality and disturbance of species	Low (2)	High (4)	**Moderate (8)**	Y
Construction activities - uncontrolled pollution events	Changes to water quality	Low (2)	High (4)	**Moderate (8)**	Y
Influx of people/in-migration	Increase in pressure on natural resources	Low (2)	High (4)	**Moderate (8)**	Y
Construction activities	Introduction of invasive species	High (4)	High (4)	**Major (16)**	Y

8.2.1.4 *Critical Habitat trigger: Fazao-Malfakassa National Park*

The potential impacts on Fazao-Malfakassa National Park are the same as those for protected areas above. Please refer to Section 8.2.1.1 for details. Table 8-43 below summarises the pre-mitigation impact analysis for protected areas from construction activities.

Table 8-43: Impacts on Critical Habitat trigger Fazao-Malfakassa National Park during construction

Activity	Potential impact	Impact significance			Mitigation needed
		Magnitude	Sensitivity	Significance	
Construction of improved road	Habitat loss and degradation	Very low (1)	High (4)	**Minor (4)**	Y precautionary approach
Construction activities	Direct mortality and disturbance of species	Very low (1)	High (4)	**Minor (4)**	Y precautionary approach
Construction activities - uncontrolled pollution events	Changes to water quality	Very low (1)	High (4)	**Minor (4)**	Y precautionary approach
Influx of people/in-migration	Increase in pressure on natural resources	Medium (3)	High (4)	**Major (12)**	Y
Construction activities	Introduction of invasive species	High (4)	High (4)	**Major (16)**	Y

8.2.1.5 *Critical Habitat triggers: Kyabobo National Park*

Habitat loss and degradation, disturbance and direct mortality of species, changes to water quality, influx of people resulting in increased pressure on natural resources and introduction of invasive species

The project is approximately 13.5 km from and downstream of, Kyabobo National Park at its closest point (i.e., the southern end of the Saliboudé slip road). The receptor sensitivity is **high (4)**. Due to the project being located downstream of the national park and the considerable distance between them, the magnitude of all impacts is considered to be **very low (1),** i.e., negligible or non-detectable effects.

The resulting impact significance is assessed as **minor (4)** (see Table 8-44).

Table 8-44: Impacts on Critical Habitat trigger Kyabobo National Park during construction

Activity	Potential impact	Impact significance			Mitigation needed
		Magnitude	Sensitivity	Significance	
Construction of improved road	Habitat loss and degradation	Very low (1)	High (4)	**Minor (4)**	N
Construction activities	Direct mortality and disturbance of species				
Construction activities - uncontrolled pollution events	Changes to water quality				
Influx of people/in-migration	Increase in pressure on natural resources				
Construction activities	Introduction of invasive species				

8.2.1.6 *Critical Habitat trigger: Syzygium kerstingii*

Please note that the potential impacts on the Critical Habitat trigger *Syzygium kerstingii* are generally similar to those for priority species of flora above. Please refer to Section 8.2.1.1 and 8.2.2.2 for further details. To ensure clarity and completeness, these impacts are summarised below.

Habitat loss and degradation, changes to water quality and invasive species

The project is approximately 12.5 km from and downstream of, the closest record of *Syzygium kerstingii.* The receptor sensitivity is **high (4)**. Due to the project being located downstream of the closest known individual and the considerable distance between them, the impact magnitude of habitat loss and degradation, changes to water quality

and invasive species is considered to be **very low (1)**, i.e., negligible or non-detectable effects.

The resulting impact significance is assessed as **minor (4)** (see Table 8-45).

Influx of people resulting in increased pressure on natural resources and direct mortality

The construction of the project is expected to result in in-migration to the area which may result in a temporary increase in pressure on natural resources. This impact is likely to be non-reversible and generally widespread. The receptor sensitivity is **high (4)**. The impact magnitude is considered to be **medium (3)** on a precautionary basis (i.e., there could be a decline in abundance such that natural recruitment would not return the population of the species to former levels within several generations). There is considerable distance between the project and the known locations of *Syzygium kerstingii* and therefore significant impacts are not anticipated, but this cannot be ruled out as the loss of one individual could be significant.

The resulting impact significance is assessed as **major (12)** (see Table 8-45).

Summary of the impacts of the construction phase on the Critical Habitat trigger *Syzygium kerstingii*

Table 8-45 below summarises the pre-mitigation impact analysis for *Syzygium kerstingii* from construction activities.

Table 8-45: Impacts on Critical Habitat trigger *Syzygium kerstingii* during construction

Activity	Potential impact	Impact significance			Mitigation needed
		Magnitude	Sensitivity	Significance	
Construction of improved road	Habitat loss and degradation	Very low (1)	High (4)	**Minor (4)**	N
Construction activities - uncontrolled pollution events	Changes to water quality				
Construction activities	Introduction of invasive species				
Construction activities	Direct mortality	Medium (3)	High (4)	**Major (12)**	Y
Influx of people/in-migration	Increase in pressure on natural resources				

8.2.1.7 *Critical Habitat triggers: Adélé Raspy Cricket, Ukami Reed Frog and Grooved-toothed Forest Mouse*

Habitat loss and degradation, disturbance and direct mortality of species, changes to water quality, influx of people resulting in increased pressure on natural resources and introduction of invasive species

The proposed project is located approximately 9 km, 17.5 km and 33 km from the known distribution ranges of Adélé Raspy Cricket, Ukami Reed Frog and Grooved-toothed Forest Mouse at their closest points. The receptor sensitivity for these species is **high (4)**. Due to the considerable distance between the project and the species' known distribution range, the magnitude of all impacts is considered to be **very low (1),** i.e., negligible or non-detectable effects.

The resulting impact significance is assessed as **minor (4)** (see Table 8-46).

Table 8-46: Impacts on Critical Habitat triggers Adélé Raspy Cricket, Ukami Reed Frog and Grooved-toothed Forest Mouse during construction

Activity	Potential impact	Impact significance			Mitigation needed
		Magnitude	Sensitivity	Significance	
Construction of improved road	Habitat loss and degradation	Very low (1)	High (4)	**Minor (4)**	N
Construction activities	Direct mortality and disturbance of species				
Construction activities - uncontrolled pollution events	Changes to water quality				
Influx of people/in-migration	Increase in pressure on natural resources				
Construction activities	Introduction of invasive species				

8.2.1.8 *Critical Habitat trigger: Nubian Flapshell Turtle*

Please note that with the exception of habitat loss and degradation, the potential impacts on the Critical Habitat trigger Nubian Flapshell Turtle and subsequent significance values are the same as those for priority fauna. Please refer to Section 8.2.1.1 and 8.2.2.3 for details. To ensure clarity and completeness, habitat loss and degradation impacts are summarised below.

Habitat loss and degradation

The proposed project involves the rehabilitation and upgrading of a 93.8 km degraded earth track and associated slip roads, a temporary construction camp and approximately 20 potential quarry sites. Full details of the construction footprint and quarries are provided in Section 3.3. The vegetation clearance and degradation may include small areas of aquatic and riparian habitat suitable for Nubian Flapshell Turtle.

The receptor sensitivity is **high (4)** and the impact magnitude is considered to be **low (2)**. The area of suitable habitat to be lost is considered to be negligible in extent when compared to the total extent of suitable habitat in the wider area. However, it cannot be ruled out that Nubian Flapshell Turtle is present with the construction and downstream AoIs. Due to the likely low population numbers of this species within the extended AoI and Togo, the loss of a small number of individuals would be significant.

The resulting impact significance is assessed as **moderate (8)** (see Table 8-47).

Summary of the impacts of the construction phase on the Critical Habitat trigger Nubian Flapshell Turtle

Table 8-47 below summarises the pre-mitigation impact analysis for Nubian Flapshell Turtle from construction activities.

Table 8-47: Impacts on Nubian Flapshell Turtle during construction

Activity	Potential impact	Impact significance			Mitigation needed
		Magnitude	Sensitivity	Significance	
Construction of improved road	Habitat loss and degradation	Low (2)	High (4)	**Moderate (8)**	Y
Construction of improved road	Severance of populations/ barrier effect	Low (2)	High (4)	**Moderate (8)**	Y
Construction activities	Direct mortality and disturbance of species	Low (2)	High (4)	**Moderate (8)**	Y
Construction activities - uncontrolled pollution events	Changes to water quality	Low (2)	High (4)	**Moderate (8)**	Y
Influx of people/in-migration	Increase in pressure on natural resources	Low (2)	High (4)	**Moderate (8)**	Y
Construction activities	Introduction of invasive species	High (4)	High (4)	**Major (16)**	Y

8.2.1.9 Critical Habitat triggers: large vertebrates (White-backed Vulture, Hooded Vulture, White-thighed Colobus, African Forest Elephant, African Savanna Elephant, African Wild Dog and Cheetah)

Please note that with the exception of increase in pressure on natural resources due to project in-migration, the potential impacts on the Critical Habitat triggers: large vertebrates (henceforth referred to as 'CH large vertebrates') are similar to those for protected areas above. Please refer to Section 8.2.1.1 for details. To ensure clarity and completeness, increase in pressure on natural resources impacts are summarised below.

Influx of people resulting in increased pressure on natural resources

The construction of the project is expected to result in in-migration to the area which may result in a temporary increase in pressure on natural resources, including hunting,

bushmeat extraction and collection for the pet trade and religious practices. This impact is likely to be non-reversible and generally widespread. The receptor sensitivity is **high (4).** The impact magnitude is considered to be **low (2)** on a precautionary basis as significant impacts on populations of CH large vertebrates are not anticipated, although localised effects cannot be ruled out. Due to the likely low population numbers of these large species within the extended AoI and within Togo, the loss of a small number of individuals would be significant.

The resulting impact significance is assessed as **moderate (8)** (see Table 8-48).

Summary of the impacts of the construction phase on critical habitat triggers: large vertebrates

Table 8-48 below summarises the pre-mitigation impact analysis for priority fauna from construction activities.

Table 8-48: Impacts on critical habitat triggers: large vertebrates during construction

Activity	Potential impact	Impact significance			Mitigation needed
		Magnitude	Sensitivity	Significance	
Construction of improved road	Habitat loss and degradation	Very low (1)	High (4)	**Minor (4)**	Y precautionary approach
Construction activities	Direct mortality and disturbance of species	Very low (1)	High (4)	**Minor (4)**	Y precautionary approach
Construction activities - uncontrolled pollution events	Changes to water quality	Very low (1)	High (4)	**Minor (4)**	Y precautionary approach
Influx of people/in-migration	Increase in pressure on natural resources	Low (2)	High (4)	**Moderate (8)**	Y
Construction activities	Introduction of invasive species	High (4)	High (4)	**Major (16)**	Y

8.2.1.10 Mitigation measures

The following mitigation measures will be used to avoid the impacts on biodiversity receptors from project activities during construction.

- Ensure the footprint of the project is not increased through poor working practices on site to minimise habitat loss. Areas of sensitive habitat (such as watercourses, riparian vegetation, gallery forest and primary woodland/bushland), should be demarcated with marking pegs or tape as 'no-go zones' to prevent damage by vehicles or workforce during land clearance. Demarcate vehicle access routes, turning circles and parking areas to existing tracks or degraded routes or sites where possible and instruct staff not to traverse areas outside of these areas.

Micro-siting of the road widening and associated development should be undertaken to avoid sensitive habitats where possible.

- Herbicide and fire will not be permitted as a means to clear vegetation during construction.
- The project should enforce a strict ban on illegal logging and poaching/taking of animals among its employees and this should be communicated during induction training and toolbox talks to all staff. This should be indicated within a Biodiversity Management Plan.
- Monitoring of contractor's compliance with method statements during construction works should be undertaken by a clerk of works or equivalent by carrying out daily/weekly inspection as appropriate. 'Toolbox talks' to be provided by a construction environment manager, clerk of works or equivalent to ensure workforce are aware of required mitigation and environmental legislation.

The following mitigation measures will be used to reduce the impacts to protected areas from project activities during construction:

- During all dust generating activities, appropriate suppression techniques (road surface dampening, water spraying during fine material handling etc.) should be employed to prevent smothering of adjacent vegetation. Appropriate air quality monitoring should also be put in place during the construction phase.
- Reduce noise, vibration and visual disturbance in areas within and adjacent to protected areas by working as far from natural habitat (such as intact woodland and gallery forest and watercourse banks) as practicable. The soft-start duration of plant should be a period of not less than 20 minutes.
- Use of poison at waste sites should not be allowed. Ensure all deep excavations are covered at night or ramps/sloping sides provided where practicable to allow animals to escape. These measures should be indicated within a Biodiversity Management Plan.
- Ensure measures are taken to prevent spread of invasive species. An invasive species prevention protocol or management plan should be implemented to prevent the introduction and transfer of invasive species. This should include pre-construction checks to determine the location of invasive species within the works areas, avoiding site clearance in, and the movement of soils, from areas containing invasive species and appropriate treatment of individuals plants where applicable. All heavy-duty machines such as excavators and lorries should drive through sterile dips to prevent seed spread from within the treads of tires. Further, aggregate and imported fill material should be screened before loading to ensure no dispersal of seed from elsewhere. Regular monitoring of immediate surrounds for the introduction of invasive species should be conducted under a biodiversity action and monitoring plans which should also provide protocols for removal of any bio-security threats to native flora and fauna.
- A suitably robust pollution prevention plan such as an Emergency Preparedness and Response Plan should be produced and adopted during construction. This should adhere to appropriate industry standards such as the UK's Guidance for Pollution Prevention (GPP) (Net Regs, n.d.) and CIRIA (2025) guidance on the control of water pollution from construction sites. Develop an emergency response plan and adequate provision of spill kits/booms and wash down areas. Appropriate management of aqueous discharges and waste should be undertaken. The Monitoring Plan should include the regular collection of water quality data comprising the relevant parameters required by the Togo regulators and international standards.
- To reduce direct mortality of species, a trained, on-site ecologist should be deployed in all protected areas to capture and relocate more sessile species that

may be important for the integrity of protected areas, e.g., amphibians, reptiles and small mammals, as the works progress along the alignments. This information should be provided within Biodiversity Management Plan.

The following mitigation measures will be used to restore/rehabilitate natural habitats if required:

- Any priority/IUCN endangered or vulnerable species of flora in clearance zones (such as *Afzelia africana, Khaya senegalensis Pterocarpus erinaceus* and *Vitellaria paradoxa* saplings) should be dug out where possible so they can be transplanted in to appropriate habitats/locations.
- Develop and implement a restoration plan or protocol (as part of the Biodiversity Management Plan) at the end of the construction phase for the areas temporary affected to re-establish species and support ecological processes in protected areas. This programme should include monitoring and maintenance for at least two years or until such time as natural restoration is secured.

The following measures should be included in a drainage plan and a reinstatement plan:

- Survey, maintain integrity of and reinstate where necessary existing irrigation and drainage infrastructure
- Reinstate borrow pits and spoil disposal sites
- New drainage will be installed where required to cater for damaged existing drains and/or to aid the soil recovery and plant establishment process.

Residual impact

With the correct implementation of successful mitigation, the impact magnitude of habitat loss and degradation, direct mortality and disturbance of species, changes in water quality and the introduction of invasive species on important biodiversity receptors is expected to decrease to **very low (1).** The receptor sensitivity remains **high (4)** for all receptors, therefore reducing the impact significance to **minor (4)**.

8.2.2 Operations

8.2.2.1 Protected areas

Severance of populations/barrier effect

The improvement and widening of the road, combined with increased traffic volumes and higher vehicle speeds, may create a physical and functional barrier that restricts the movement of species (including designated/important species of designated sites) across the landscape. This severance can disrupt migration routes, foraging patterns and genetic exchange, particularly for species that rely on contiguous habitats. Over time, these barrier effects may lead to population declines, reduced resilience and heightened vulnerability to local extinction, especially for species with limited dispersal ability or specific habitat requirements, such as those that are reliant on wooded habitats (e.g., de Rivera et al., 2022 and Westekemper et al., 2021).

Bridge and culvert works at watercourse crossings may further exacerbate fragmentation of habitats by permanently altering aquatic connectivity. The extension of structures to accommodate the widened road could restrict the natural movement of aquatic organisms, resulting in long-term severance of populations of species dependent on aquatic and riparian habitats for breeding or feeding. These structures could also restrict

movement of terrestrial species along natural wildlife corridors provided by riparian habitats and gallery forest.

The receptor sensitivity is **high (4)**, and the magnitude of this impact is considered to be **very low (1)**. The proposed upgrade, structural extensions and increase in traffic may result in a substantial increase in barrier effect for qualifying/important species of the IBA and national park, compared to the existing road. However, the extent of the project within protected areas is very limited (i.e., within Fazao-Malfakassa National Park for approximately 2.8 km and Fazao-Malfakassa National Park IBA for approximately 3.5 km) therefore highly unlikely to significantly restrict movement within protected areas.

The impact significance is therefore assessed as **minor (4)** (see Table 8-49).

Direct mortality of species during operation

Road traffic collisions (RTCs) are anticipated to increase as a result of the proposed road widening and improvement, primarily affecting mobile reptiles, amphibians, mammals and low-flying or ground-dwelling birds, including designated/listed species of designated sites. The risk will be elevated due to higher traffic volumes, increased vehicle speeds and a wider carriageway which would extend crossing times for fauna. Additional victims may include scavenger species attracted to food waste discarded by travellers and to carcasses resulting from previous collisions. Collision likelihood is further heightened during periods of reduced visibility, particularly at night.

The receptor sensitivity is **high (4)** and the impact magnitude of direct mortality of species of fauna is considered to be **low (2).** Given the limited spatial extent of the project within protected areas and the existing baseline levels of traffic and disturbance, which is likely to deter certain animals from areas subject to regular human activity and noise, it is considered unlikely that direct mortality of species will occur at a scale that compromises the overall ecological integrity of protected areas.

The resulting impact significance is assessed as **moderate (8)** (see Table 8-49).

Changes to water quality

There is the potential for uncontrolled water pollution events such as discharges of hazardous substances (e.g., diesel fuel, asphalt, oil and bitumen), grey water and sediment during the during maintenance and/or repair activities of watercourse crossing, drainage infrastructure and the road surface. Such events would be considered an unintended impact but if they occurred it would be as a result of planned activities during operation. This could impact aquatic and riparian habitat downstream of the works within protected areas.

This impact would most likely occur immediately adjacent to the project footprint (particularly at watercourse crossings) or the source of the spillage. However, the risk of pollution affecting protected areas is considered to be low, as the majority of watercourses within these areas are situated upstream of the project, with only a negligible extent of watercourses within protected areas downstream of the project.

The receptor sensitivity is **high (4)** and the impact magnitude of changes to water quality is considered to be **very low (1)** prior to mitigation as the effects of pollution events are also likely to be localised and reversible over time and therefore considered highly unlikely to affect the integrity of protected areas.

The resulting impact significance is assessed as **minor (4)** (see Table 8-49).

Influx of people resulting in increased pressure on natural resources

The operation of the project is anticipated to result in some in-migration to the area by people seeking employment and business opportunities. This may result in a permanent increase in pressure on natural resources in protected areas, such land for agriculture, firewood and charcoal, gold mining/sand extraction from watercourses, and hunting and bushmeat extraction. This impact is likely to be relatively widespread, non-reversible and long-term.

The population within the project and wider area (i.e., Bassar and Mô prefectures) is approximately 205,000 people. It is considered highly unlikely that any population increase in the project area as a result of the in-migration during the operational phase will be significant in relation to the pressure on natural resources from existing populations. Therefore, it is therefore considered unlikely that this will significantly affect the overall integrity of the protected areas.

The receptor sensitivity is **high (4)**. The magnitude of the impact cannot be quantified, as the total number of people potentially moving into the project area during operation is unknown but has been assessed to be **low (2)**, on a precautionary basis. It is unlikely that the integrity of any protected areas will be significantly affected, although uncertainty remains due to proximity of the main construction camp to Fazao-Malfakassa National Park (within walking distance) and the limited understanding of the ecological value of certain habitats in the vicinity. Therefore, the potential for localised adverse effects, that could lead to the integrity of protected areas being affected, cannot be ruled out.

The resulting impact significance is assessed as **moderate (8)** (see Table 8-49).

Enhanced access to protected areas provided by the upgraded road

The road upgrade will facilitate further encroachment into natural habitats, potentially leading to an increase in activities that result in habitat degradation, deforestation and increased exploitation of wildlife and forest resources, compared to existing levels. The existing road is an earth track in an overall state of disrepair and severely degraded in many sections. During the rainy season, the road can become impassable in places. The road improvement will make it easier and quicker for people and vehicles (e.g., two-wheel drive as well as four-wheel drive), during both the dry and wet season, to reach areas of natural vegetation and undertake activities such as logging, charcoal production, hunting and sand extraction. For example, an increase in transportation infrastructure (including roads) has shifted the use of crocodiles and other bushmeat species from local, subsistence consumption to commercial exploitation for regional and even global bushmeat markets (Thorbjarnarson and Eaton, 2004, and Milius, 2005, in Eaton, 2010).

This impact is likely to be relatively widespread, non-reversible and long-term. The spatial extent and magnitude of such induced impacts cannot, however, currently be determined with confidence.

The receptor sensitivity is **high (4)** and the impact magnitude of direct mortality of species is considered to be **medium (3).** It is considered unlikely that enhanced access will significantly affect the overall integrity of protected areas. However, there may be localised impacts that could potentially affect areas of high importance to biodiversity

within the national park in the long-term, such as watercourses, escarpments and natural habitats.

The resulting impact significance is assessed as **major (12)** (see Table 8-49).

Reduction in dust emission and sedimentation due to road improvements

It is anticipated that there will be an increase in the number of vehicles using the upgraded road and therefore an associated increase in particulate matter and other vehicular emissions (see Section 8.1.1.2). However, fugitive dust emissions will reduce during the operation of the road due to the improvement of the road from an unpaved earth track to a modern asphalt-paved corridor. The paving will bind and seal loose materials and fine particles, preventing them from becoming airborne when disturbed by vehicle tyres and wind. In addition, improved drainage, reduced erosion and lower maintenance frequency will further limit dust generation. Sedimentation in nearby watercourses caused by windblown dust settling in aquatic habitats will also be reduced. Overall, this improvement will likely lead to a significant enhancement in local air and water quality and reduced impacts on nearby vegetation in protected areas.

The impact significance of the reduction in dust emission and sedimentation due to road improvements is assessed as **positive (0)** (see Table 8-49).

Summary of the impacts of the operations phase on protected areas

Table 8-49 below summarises the pre-mitigation impact analysis for protected areas from operational activities.

Table 8-49: Impacts on protected areas during operation

Activity	Potential impact	Impact significance			Mitigation needed
		Magnitude	Sensitivity	Significance	
Operation of upgraded road	Severance/ barrier effect	Very low (1)	High (4)	Minor (4)	Y precautionary approach
Use of upgraded road	Direct mortality	Low (2)	High (4)	Moderate (8)	Y
Maintenance and repair of infrastructure	Changes in water quality	Very low (1)	High (4)	Minor (4)	Y precautionary approach
Influx of people/ in-migration	Increase in pressure on natural resources	Low (2)	High (4)	Moderate (8)	Y
Enhanced access	Increase in pressure on natural resources	Medium (3)	High (4)	Major (12)	Y
Use of upgraded road	Decrease in dust emissions / sedimentation	N/A	High (4)	Positive (0)	n

8.2.2.2 *Priority habitats and flora*

Please note that the potential impacts on priority habitat and flora during operations are similar to those for protected areas above (with the exception of direct impacts on fauna). To ensure clarity and completeness, these impacts are summarised below

Changes to water quality

There is the potential for uncontrolled pollution events during the operational phase, particularly adjacent to the project footprint, which could impact priority aquatic and riparian habitat downstream of the works. The receptor sensitivity is **high (4)** and impact magnitude is considered to be **low (2)** due to the expectedly localised extent and short-term nature of this impact. Please refer to Section 8.2.2.1 under Protected Areas for further details.

The resulting impact significance is assessed as **moderate (8)** (see Table 8-50).

Influx of people resulting in increased pressure on natural resources

The operation of the project is anticipated to result in some in-migration to the area which may result in a permanent increase in pressure on natural resources in priority habitat, although it is considered highly unlikely that this will substantially increase beyond existing levels. The receptor sensitivity is **high (4)** and the impact magnitude is considered to be **low (2)** on a precautionary basis (i.e., a good possibility as opposed to improbable) as the potential numbers of people migrating to the project area during operation is not known. Please refer to Section 8.2.2.1 under Protected Areas for further details.

The resulting impact significance is assessed as **moderate (8)** (see Table 8-50).

Enhanced access to protected areas provided by the upgraded road

The road upgrade will facilitate further encroachment into natural habitats, potentially leading to an increase in exploitation of wildlife and forest resources, compared to existing levels. The receptor sensitivity is **high (4)** and the impact magnitude is considered to be **medium (3)** on a precautionary basis. It is considered unlikely that enhanced access will significantly affect priority habitats or populations of priority species; however, there may be significant localised impacts on priority habitats and flora. Please refer to Section 8.2.2.1 under Protected Areas for further details.

The resulting impact significance is assessed as **major (12)** (see Table 8-50).

Reduction in dust emission and sedimentation due to road improvements

It is anticipated that there will be an increase vehicles using the upgraded road and an associated increase in particulate matter (see Section 8.1.1.2). However, dust emissions and sedimentation will reduce during operation and this will likely lead to a significant enhancement in local air and water quality. Please refer to Section 8.2.2.1 under Protected Areas for further details.

The impact significance of the reduction in dust emission and sedimentation due to road improvements is assessed as **positive (0)** (see Table 8-50).

Summary of the impacts of the operations phase on priority habitat and flora.

Table 8-50 below summarises the pre-mitigation impact analysis for priority habitat and flora from operational activities.

Table 8-50: Impacts on priority habitat and flora during operation

Activity	Potential impact	Impact significance			Mitigation needed
		Magnitude	Sensitivity	Significance	
Maintenance and repair of infrastructure	Changes in water quality	Low (2)	High (4)	**Moderate (8)**	Y
Influx of people/ in-migration	Increase in pressure on natural resources	Low (2)	High (4)	**Moderate (8)**	Y
Enhanced access	Increase in pressure on natural resources	Medium (3)	High (4)	**Moderate (12)**	Y
Use of upgraded road	Decrease in dust emissions / sedimentation	N/A	High (4)	**Positive (0)**	n

8.2.2.3 *Priority fauna*

Please note that the potential impacts on priority fauna during operations are similar to those for protected areas above. To ensure clarity and completeness, these impacts are summarised below.

Severance of populations/barrier effect

The improvement and widening of the road, including bridge and culvert works, combined with increased traffic volumes and higher vehicle speeds, may restrict movement of priority terrestrial species. The receptor sensitivity is **high (4)**, and the magnitude of this impact is considered to be **medium (3)** on a precautionary basis. The proposed upgrade may result in a substantial increase in barrier effect for certain priority species of fauna compared to the existing road. Please refer to Section 8.2.2.1 under Protected Areas for further details.

The impact significance is therefore assessed as **major (12)** (see Table 8-51).

Changes to water quality

There is the potential for uncontrolled pollution events during the operational phase, particularly adjacent to the project footprint, could impact aquatic and riparian habitat downstream of the works that support populations of priority species. The receptor sensitivity is **high (4)** and the magnitude of the impact is considered to be **low (2)** due to the expectedly localised extent and short-term nature of this impact. Please refer to Section 8.2.2.1 under Protected Areas for further details.

The resulting impact significance is assessed as **moderate (8)** (see Table 8-51).

Direct mortality of species during operation

RTCs are anticipated to increase as a result of the proposed road widening and improvement, which may include priority species of fauna (including scavengers attracted to food waste and carcasses). The receptor sensitivity is **high (4)** and the impact magnitude is **low (2)** as it is considered highly unlikely that this mortality will affect the viability of populations of priority species. Please refer to Section 8.2.2.1 under Protected Areas for further details.

The resulting impact significance is assessed as **moderate (8)** (see Table 8-51).

Influx of people resulting in increased pressure on natural resources

The operation of the project is anticipated to result in some in-migration, which may result in a permanent increase in pressure on natural resources in priority habitat, although it is considered highly unlikely that this will substantially increase beyond existing levels. The receptor sensitivity is **high (4)** and the impact magnitude is considered to be **low (2)** on a precautionary basis (i.e., a good possibility as opposed to improbable) as the potential numbers of people migrating to the project area during operation is not known. Please refer to Section 8.2.2.1 under Protected Areas for further details.

The resulting impact significance is assessed as **moderate (8)** for priority fauna (see Table 8-51).

Enhanced access to protected areas provided by the upgraded road

The road upgrade will facilitate further encroachment into natural habitats, potentially leading to an increase in exploitation of wildlife and forest resources, compared to existing levels. The receptor sensitivity is **high (4)** and the impact magnitude is considered to be **medium (3)** on a precautionary basis. It is considered unlikely that enhanced access will significantly affect populations of priority species of fauna in the wider area. However, there may be localised impacts that could potentially affect areas that are of high importance to biodiversity, including priority species.

The resulting impact significance is assessed as **major (12)** (see Table 8-51).

Reduction in dust emission and sedimentation due to road improvements

It is anticipated that there will be an increase vehicles using the upgraded road and an associated increase in particulate matter (see Section 8.1.1.2). However, dust emissions and sedimentation will reduce during operation and this will likely lead to a significant enhancement in local air and water quality. Please refer to Section 8.2.2.1 under Protected Areas for further details.

The impact significance of the reduction in dust emission and sedimentation due to road improvements is assessed as **positive (0)** (see Table 8-51).

Summary of the impacts of the operations phase on priority fauna

Table 8-51 below summarises the pre-mitigation impact analysis for priority fauna from operational activities.

Table 8-51: Impacts on priority fauna during operation

Activity	Potential impact	Impact significance			Mitigation needed
		Magnitude	Sensitivity	Significance	
Operation of upgraded road	Severance/ barrier effect	Medium (3)	High (4)	**Major (12)**	Y
Maintenance and repair of infrastructure	Changes in water quality	Low (2)	High (4)	**Moderate (8)**	Y
Use of upgraded road	Direct mortality	Low (2)	High (4)	**Moderate (8)**	Y
Influx of people/ in-migration	Increase in pressure on natural resources	Low (2)	High (4)	**Moderate (8)**	Y
Enhanced access	Increase in pressure on natural resources	Medium (3)	High (4)	**Major (12)**	Y
Use of upgraded road	Decrease in emissions / sedimentation	N/A	High (4)	**Positive (0)**	n

8.2.2.4 Critical Habitat trigger: Fazao-Malfakassa National Park

The potential impacts on the Critical Habitat trigger Fazao-Malfakassa National Park during operations are the same to those for protected areas above. Please refer to Section 8.2.2.1 for details.

Table 8-52 below summarises the pre-mitigation impact analysis for the Critical Habitat trigger Fazao-Malfakassa National from operational activities.

Table 8-52: Impacts on Fazao-Malfakassa National Park during operation

Activity	Potential impact	Impact significance			Mitigation needed
		Magnitude	Sensitivity	Significance	
Operation of upgraded road	Severance/ barrier effect	Very low (1)	High (4)	**Minor (4)**	Y precautionary approach
Use of upgraded road	Direct mortality	Low (2)	High (4)	**Moderate (8)**	Y
Maintenance and repair of infrastructure	Changes in water quality	Very low (2)	High (4)	**Minor (4)**	Y precautionary approach
Influx of people/ in-migration	Increase in pressure on natural resources	Low (2)	High (4)	**Moderate (8)**	Y
Enhanced access	Increase in pressure on	Medium (3)	High (4)	**Major (12)**	Y

Activity	Potential impact	Impact significance			Mitigation needed
		Magnitude	Sensitivity	Significance	
	natural resources				
Use of upgraded road	Decrease in dust emissions / sedimentation	N/A	High (4)	**Positive (0)**	n

8.2.2.5 *Critical Habitat trigger: Kyabobo National Park*

Severance/barrier effect, changes in water quality, direct mortality of species, influx of people and enhanced access resulting in increased pressure on natural resources

The project is approximately 13.5 km from and downstream of, Kyabobo National Park at its closest point (i.e., the southern end of the Saliboudé slip road). The receptor sensitivity is **high (4)**. Due to the project being located downstream of the national park and the considerable distance between them, the magnitude of all impacts is considered to be **very low (1)**, i.e., negligible or non-detectable effects.

The resulting impact significance is assessed as **minor (4)** (see Table 8-53).

Table 8-53: Impacts on Kyabobo National Park during operation

Activity	Potential impact	Impact significance			Mitigation needed
		Magnitude	Sensitivity	Significance	
Operation of upgraded road	Severance/ barrier effect	Very low (1)	High (4)	**Minor (4)**	N
Maintenance and repair of infrastructure	Changes in water quality				
Use of upgraded road	Direct mortality				
Influx of people/ in-migration	Increase in pressure on natural resources				
Enhanced access	Increase in pressure on natural resources				

8.2.2.6 *Critical Habitat trigger: Syzygium kerstingii*

Changes in water quality

The operational phase of the proposed road improvements may result in changes in water quality and may facilitate further encroachment into natural habitats. The receptor sensitivity is **high (4).** Due to the project being located downstream of the closest known individual and the considerable distance between them (12.5 km), the impact magnitude is considered to be **very low (1)**.

The resulting impact significance is assessed as **minor (4)** (see Table 8-55).

Influx of people and enhanced access resulting in increased pressure on natural resources

The operational phase of the proposed road improvements may result in in-migration to the area and facilitate further encroachment into natural habitats. The project footprint is approximately 12.5 km from the closest record of *Syzygium kerstingii.* The receptor sensitivity is **high (4)**. The impact magnitude is considered to be **medium (3)** as a precaution. There is considerable distance between the project and the known locations of *Syzygium kerstingii*, but the loss of one individual could be significant.

The resulting impact significance is assessed as **major (12)** (see Table 8-55).

Table 8-54: Impacts on Critical Habitat trigger: *Syzygium kerstingii* during operation

Activity	Potential impact	Impact significance			Mitigation needed
		Magnitude	Sensitivity	Significance	
Maintenance and repair of infrastructure	Changes to water quality	Very low (1)	High (4)	**Minor (4)**	N
Influx of people/ in-migration	Increase in pressure on natural resources	Medium (3)	High (4)	**Major (12)**	Y
Enhanced access	Increase in pressure on natural resources				

8.2.2.7 *Critical Habitat triggers: Adélé Raspy Cricket, Ukami Reed Frog and Grooved-toothed Forest Mouse*

Severance/barrier effect, changes in water quality, direct mortality of species, influx of people and enhanced access resulting in increased pressure on natural resources

The operational phase of the proposed road improvements may result in a physical and functional barrier that restricts animal movement, changes in water quality, an increase in RTCs and an increased pressure on natural resources. The project footprint is approximately 9 km, 17.5 km and 33 km from the known distribution ranges of Adélé Raspy Cricket, Ukami Reed Frog and Grooved-toothed Forest Mouse respectively at their closest points.

The receptor sensitivity for these species is **high (4).** Due to the project being located a considerable distance from these species' known distribution ranges, the magnitude of all impacts is considered to be **very low (1),** i.e., negligible or non-detectable effects.

The resulting impact significance is assessed as **minor (4)** (see Table 8-55).

Table 8-55: Impacts on Critical Habitat triggers: Adélé Raspy Cricket, Ukami Reed Frog and Grooved-toothed Forest Mouse during operation

Activity	Potential impact	Impact significance			Mitigation needed
		Magnitude	Sensitivity	Significance	
Operation of upgraded road	Severance/ barrier effect	Very low (1)	High (4)	**Minor (4)**	N
Maintenance and repair of infrastructure	Changes in water quality				
Use of upgraded road	Direct mortality				
Influx of people/ in-migration	Increase in pressure on natural resources				
Enhanced access	Increase in pressure on natural resources				

8.2.2.8 *Critical Habitat trigger: Nubian Flapshell Turtle*

Please note that with the exception of severance/barrier effect and direct mortality (i.e., RTCs, which has been scoped out of the potential impacts), the potential impacts on the Critical Habitat trigger Nubian Flapshell Turtle and subsequent significance values are the same as those for priority fauna. Please refer to Section 8.2.2.3 and 8.2.2.1 for details. To ensure clarity and completeness, severance/barrier effect impacts are summarised below.

Severance/barrier effect

Bridge and culvert works at watercourse crossings may exacerbate fragmentation of habitats by permanently altering aquatic connectivity and may impair access to breeding grounds, feeding areas, refuge habitats and other resources used by Nubian Flapshell Turtle. The receptor sensitivity is **high (4)** and the magnitude of this impact is considered to be **low (2)**, as the extent of these works is anticipated to be highly localise. However, the loss of a small number of individuals could potentially significantly affect local populations of Nubian Flapshell Turtle.

The impact significance is therefore assessed as **moderate (8)** (see Table 8-56).

Summary of the impacts of the operations phase on Nubian Flapshell Turtle

Table 8-56 below summarises the pre-mitigation impact analysis for priority fauna from operational activities.

Table 8-56: Impacts on Nubian Flapshell Turtle during operation

Activity	Potential impact	Impact significance			Mitigation needed
		Magnitude	Sensitivity	Significance	
Operation of upgraded road	Severance/ barrier effect	Low (2)	High (4)	**Moderate (8)**	Y
Maintenance and repair of infrastructure	Changes in water quality	Low (2)	High (4)	**Moderate (8)**	Y
Influx of people/ in-migration	Increase in pressure on natural resources	Low (2)	High (4)	**Moderate (8)**	Y
Enhanced access	Increase in pressure on natural resources	Medium (3)	High (4)	**Major (12)**	Y
Use of upgraded road	Decrease in dust emissions/ sedimentation	N/A	High (4)	**Positive (0)**	N

8.2.2.9 Critical Habitat triggers: large vertebrates (White-backed vulture, Hooded Vulture, White-thighed Colobus, African Forest Elephant, African Savanna Elephant, African Wild Dog and Cheetah)

Please note that with the exception of severance/barrier effect, the potential impacts on the Critical Habitat triggers large vertebrates (henceforth referred to as 'CH large vertebrates') and subsequent significance values are the same as those for priority fauna. Please refer to Section 8.2.2.3 and 8.2.2.1 for details. To ensure clarity and completeness, severance/barrier effect impacts are summarised below.

Severance of populations/barrier effect

The improvement and widening of the road, including bridge and culvert works, combined with increased traffic volumes and higher vehicle speeds, may restrict the movement of certain CH large vertebrates. The receptor sensitivity is **high (4)** and the magnitude of this impact is considered to be **low (2)** on a precautionary basis. There may be a substantial increase in the barrier effect for large mammals, compared to the existing road. However, these species are generally confined to protected areas, and the extent of the project in these areas is very limited. It is therefore highly unlikely to significantly restrict movement of CH large vertebrates within their known ranges.

The impact significance is assessed as **moderate (8)** (see Table 8-57).

Summary of the impacts of the operations phase on priority fauna

Table 8-57 below summarises the pre-mitigation impact analysis for priority fauna from operational activities.

Table 8-57: Impacts on Critical Habitat triggers: large vertebrates during operation

Activity	Potential impact	Impact significance			Mitigation needed
		Magnitude	Sensitivity	Significance	
Operation of upgraded road	Severance/ barrier effect	Low (2)	High (4)	**Moderate (8)**	Y
Use of upgraded road	Direct mortality	Low (2)	High (4)	**Moderate (8)**	Y
Maintenance and repair of infrastructure	Changes in water quality	Very low (1)	High (4)	**Minor (4)**	Y precautionary approach
Influx of people/ in-migration	Increase in pressure on natural resources	Low (2)	High (4)	**Moderate (8)**	Y
Enhanced access	Increase in pressure on natural resources	Medium (3)	High (4)	**Major (12)**	Y
Use of upgraded road	Decrease in dust emissions	N/A	High (4)	**Positive (0)**	n

8.2.2.10 Mitigation measures

The following mitigation measures will be used to minimise the impacts to important biodiversity receptors during operation:

- Ensure culverts and habitats under new bridges maintain natural substrate and water flow for aquatic species and riparian fauna.

The following mitigation measures will be used to minimise the impacts to important biodiversity receptors during operation:

- Minimise the width of the road widening and vegetation clearance at sensitive locations such as known and/or likely crossing points, for example watercourses and between natural woodlands habitats.
- Speed limits, traffic calming measures and (animal) warning signs to be implemented at sensitive locations to prevent RTCs.
- Provision of underpasses or safe places for mammals, reptiles and amphibians to cross the road, e.g., underneath bridges or within culverts adjacent to known and/or likely crossing points such as along watercourses and between natural woodlands, where local topography allows.
- Use fencing or directional barriers to guide animals towards safe crossing points and prevent random road entry. Design fencing to allow passage for smaller fauna where appropriate.
- The project should work to raise awareness among affected communities regarding the sustainable use of natural resources as specified in a Community Health, Safety and Security Management Plan. This may include development of community food programmes, use of fuel-efficient stoves for cooking and support for forestry stewardship programmes. These programmes should aim to ensure that the influx of people arriving as part of the project do not overburden the resources in the immediate area. Similarly, the project should enforce a strict ban on poaching and illegal logging and taking of wildlife among its maintenance

employees and this should be communicated during induction training to all staff. This should be indicated within a Biodiversity Management Plan.

- A suitably robust pollution prevention plan such as an Emergency Preparedness and Response Plan should be produced and adopted during construction. This should adhere to appropriate industry standards such as the UK's Guidance for Pollution Prevention (GPP) (Net Regs, n.d.) and CIRIA (2025) guidance on the control of water pollution from construction sites. Develop an emergency response plan and adequate provision of spill kits/booms and wash down areas. Appropriate management of aqueous discharges and waste should be undertaken. The Monitoring Plan should include the regular collection of water quality data comprising the relevant parameters required by the Togo regulators and international standards.

The following mitigation measures will be used to restore/rehabilitate natural habitats if required:

- Develop and implement a restoration plan or protocol (as part of the Biodiversity Management Plan) at the end of the construction phase for the areas temporary affected to re-establish species and support ecological processes in protected areas. This should include the re-vegetation of sensitive locations such as known and/or likely crossing points to ensure cover is provided to aid the movement of animals. This programme should include monitoring and maintenance for at least two years or until such time as natural restoration is secured.

Residual impacts

With the implementation of successful mitigation, the impact magnitude for the increase in direct mortality, severance/barrier effect and increase in pressure on natural resources due to in-migration on important biodiversity receptors is expected to decrease to **very low (1)**. The receptor sensitivity remains **high (4)** for all receptors, therefore reducing the impact significance to **minor (4)**.

With the implementation of appropriate mitigation the impact magnitude of the increase in pressure on natural resources due to enhanced access is expected to fall to **low (2)**. The receptor sensitivity remains **high (4)** for all receptors, therefore reducing the impact significance to **moderate (8)**.

8.3 Social impact assessment

The social impact assessment (planned activities) is structured under nine key areas of impact: local and regional economy; employment and skills development; labour and working conditions; land access and livelihoods; community health, safety, security; infrastructure and services and archaeology and cultural heritage.

8.3.1 Construction

8.3.1.1 Local and regional economy

Potential impact: opportunities for local businesses to supply goods and services to the project, generating multiplier effects across the economy

The project will generate opportunities for local and regional businesses to supply goods and services, which is expected to have positive economic effects through procurement-related multiplier impacts. However, baseline conditions indicate that industrial

development in the Kara and Centrale regions is limited. Existing facilities include a small cement plant, an iron factory and a few processing units, while mining activity remains marginal apart from iron and marble. Although sand, laterite and gravel quarries are present locally, extraction is generally small-scale and informal, suggesting limited capacity to meet large-volume requirements.

The construction phase will require substantial quantities of materials, including approximately 350,000 tons of aggregate, 49,000 tons of cement, 1,730,000 m³ of laterite, 9,250 tons of bitumen and 3,000 tons of reinforcement steel, as well as explosives, engine oil and road construction supplies. These volumes significantly exceed typical local production capacity. While opportunities exist for quarry operators and suppliers of ancillary goods and services (e.g., camp supplies, transport and maintenance), regional or national providers are likely to dominate procurement where local capacity is insufficient. This impact is **positive (0).**

Enhancement measures

To enhance the positive impacts of construction phase procurement, the following enhancement measures will be adopted:

- Develop and implement a Procurement Plan to enhance local content. The Procurement Plan will include the following mitigation measures:
    - include a commitment to prioritise procurement from local suppliers of goods and services where they are of sufficient quality and availability and are price competitive and then national and regional suppliers.
    - ensure that national, local and regional suppliers understand the required standards that are necessary for this project.
- Information about the project's recruitment strategy and key messages about the scale, scope and process of accessing project-related employment and business opportunities will be given to local communities to ensure that stakeholder expectations are suitably managed.

Potential impact: local price inflation indirectly arising from economic opportunities generated by the project, leading to increased living costs for PAC members

The project's procurement of goods and services from local suppliers may increase demand and create competition with other businesses, potentially driving up prices. This inflationary pressure could raise the cost of essential goods and services for project-Affected Communities (PAC), particularly households with limited disposable income. Additional pressure may result from local employment and potential migration of workers seeking jobs, increasing competition for housing, food and other necessities. Baseline data indicates surveyed PACs already experience seasonal food insecurity, especially during the May–July "famine" period, and rely heavily on local markets for staple goods such as maize, millet and yams, where prices fluctuate significantly (e.g., maize ranges from 250 to 700 CFA/kg). Given existing food insecurity concerns, exacerbated by recent droughts, any price increases could significantly affect vulnerable households.

Receptor sensitivity has been assessed as **medium (3**) as PAC members have very limited disposable income and already face food insecurity. This makes them moderately vulnerable to price changes. The magnitude has been assessed as **low (2)** as the scale of project procurement and employment is relatively small compared to the broader

economy, so inflationary pressure is likely limited. Therefore, the impact significance is considered **moderate (6)**.

Mitigation measures

To mitigate the potential adverse impact of inflationary pressure on prices of goods and services generated by the project activities, the following mitigation measures will be adopted:

- FB Group will implement the existing Community Grievance Mechanism to ensure that PAC residents and other stakeholders have unrestricted access and opportunity to raise concerns and grievances related to the project.
- Prepare and implement a Community Relations Plan that includes community-focused stakeholder engagement during the construction phase to build trust and maintain respectful relationships with affected stakeholders. These sessions aim to reduce tensions by managing unavoidable impacts, raise awareness of regulations and rights, and ensure communities understand and can access the project's Community Grievance Mechanism.

Residual impact

Following the application of mitigation measures, the impact magnitude is expected to decrease to **very low (1)** and the sensitivity is expected to remain medium (3) therefore reducing the impact significance to **minor (3).**

Table 8-58: Impacts on local and regional economy during construction

Activity	Potential impact	Impact significance			Mitigation needed	Residual impact significance
		Magnitude	Sensitivity	Significance		
Construction	Opportunities for local businesses to supply goods and services to the project, generating multiplier effects across the economy			**Positive**	N	**Positive**
Construction	Local price inflation indirectly arising from economic opportunities generated by the project, leading to increased living costs for PAC members	Low (2)	Medium (3)	**Moderate (6)**	Y	**Minor (3)**

8.3.1.2 Employment and skills development

Potential impact: project-related employment opportunities, leading to an improvement in household living standards and well-being.

Baseline data indicates that surveyed PACs rely primarily on subsistence agriculture and petty trade, with informal businesses such as shops, mechanics, seamstresses and hairdressers common along the corridor. Skills such as welding, masonry and carpentry are present, but formal employment opportunities are extremely limited, and youth unemployment is high due to declining agricultural yields and the absence of vocational training centres. Women face additional barriers to formal employment because of high illiteracy rates and cultural norms restricting their participation, although they are active in market gardening and informal trade.

The opportunity to participate in the road construction and maintenance works will open up new employment and income generating opportunities for the local community. During the construction phase, the project will optimise the use of local content, with a target of 80 to 90% of the workforce to comprise Togolese labour, wherever possible and where experience and skills are compatible with project needs. Stakeholder consultations revealed strong revealed strong community aspirations for inclusive economic opportunities, particularly for women and young people.

It is also expected that during construction, small businesses may open near to the construction camps and along the construction corridor; providing goods and services to the construction workers. Project-related employment will improve household standards of living and generate multiplier effects across the local economy. This impact is **positive (0).**

Enhancement measures

To enhance potential positive impacts from project employment opportunities, the following additional enhancement measures shall be adopted by FB Group:

- FB Group will prioritise the employment of people from communities located near the construction corridor, followed by people from other parts of Togo.
- As part of the tendering process, contractors will be required to state the proportion of workers who will be hired from local communities and/or the wider region
- Contractors' recruitment activities will be overseen by FB Group to ensure adherence to local hiring requirements.
- Information about the project's recruitment strategy and key messages about the scale, scope and process of accessing project-related employment and business opportunities will be given to local communities to ensure that stakeholder expectations are suitably managed.

Potential impact: provision of on-the-job training and skills building.

On-the-job training and skills development opportunities will be provided to the workforce to ensure they are able to fulfil their roles and promote capacity building. This will include trainings on health and safety and labour management. The impact is **positive (0)**.

Enhancement measures

To ensure positive impacts from the provision of training and skills building, the following additional enhancement measures will be implemented:

- A training programme will be developed along with a system for assessing the competency and training needs of all project workers. This includes but is not limited to induction training, worker awareness training, financial literacy and skills training and training to ensure competent and safe performance of duties, appropriate for the work being performed
- Worker training records shall be recorded and statistics on worker progress kept
- End of labour certificates will be issued to all workers (including skills used and training provided) and/or references, to support upskilling and employability
- Periodic performance monitoring and review will be undertaken by FB Group to track progress on worker performance, training and skills building.

Potential impact: reduced ability of vulnerable people to access project employment and training opportunities

Baseline data and stakeholder consultations identify women, widows and persons with disabilities, as vulnerable groups within the AoI who could be employed. These groups face systemic barriers to formal employment, including high illiteracy rates (especially among women), lack of vocational training centres and cultural norms that restrict women's participation in paid formal work. Poor road conditions and long travel distances further limit access to job sites and training opportunities.

Stakeholders expressed strong aspirations for inclusive economic opportunities and voiced concerns about fairness in recruitment. Failure to address these barriers could exacerbate social and economic inequality and increase the risk of grievances. While women may benefit indirectly through opportunities in food provision, accommodation and petty trade, their limited access to formal employment remains a critical issue.

The project aims to encourage women's participation, with a target of up to 5% of the workforce and can accommodate workers with disabilities (up to three positions depending on site conditions).

Receptor sensitivity has been assessed as **high (4)** due as vulnerable groups, especially women, have very limited access to formal employment and face systemic barriers. The magnitude has been assessed as **low (2)** due as the number of jobs available is relatively small compared to the size of the vulnerable population. The impact significance is considered **moderate (8).**

Mitigation measures

The following mitigation measures are proposed to limit the potential for impacts related to reduced ability of vulnerable groups to access employment and training opportunities:

- Develop and implement a Labour Management Plan that promotes non-discrimination and equal opportunities. The Labour Management Plan will include the following mitigation measures:
    - prioritise hiring of local workers, especially for unskilled labour within the Area of Influence (AoI), subject to skills availability.
    - establish hiring mechanisms in collaboration with contractors to ensure no employee or job applicant is discriminated against based on gender, marital status, nationality, ethnicity, age, health status, religion or sexual orientation.
    - proactively identify vulnerable groups and design targeted engagement activities to ensure they are aware of employment opportunities. These efforts will begin before project mobilisation and continue throughout the project lifecycle.
- Implement the existing Community Grievance Mechanism to ensure that PAC residents and other stakeholders have unrestricted access and opportunity to raise concerns and grievances related to the project.
- Develop and implement a Community Relations Plan that includes community-focused stakeholder engagement during the construction phase to build trust and maintain respectful relationships with affected stakeholders. These sessions aim to reduce tensions by managing unavoidable impacts, raise awareness of regulations and rights, and ensure communities understand and can access the project's Community Grievance Mechanism.

Residual impact

With the implementation of the mitigation measures listed above, the impact magnitude is expected to decrease to **very low (1).** The receptor sensitivity remains **high (4)**, therefore reducing the impact significance to **minor (4).**

Potential impact: unmet expectations, leading to dissatisfaction and loss of support for the project among PACs

There is a risk that unmet expectations regarding project benefits—particularly employment opportunities—could lead to dissatisfaction among PACs. Baseline data and stakeholder consultations indicate high unemployment and strong expectations for project-related employment and economic benefits. Communities expressed concerns about the limited number of jobs relative to demand and the recognition of existing skills—particularly masonry and carpentry. Failure to meet these expectations or ensure transparent recruitment could create perceptions of unfair exclusion, fuelling grievances and potentially leading to protests.

These risks are amplified by systemic barriers such as lack of vocational training centres, gender inequalities and limited alternative livelihoods. Stakeholders emphasised fairness and inclusivity in recruitment as critical to maintaining trust and social cohesion. The area is also characterised by significant ethnic diversity, with historical migration shaping a mix of Bassar, Tem, Kabyè, Konkomba and other groups, alongside Fulani pastoralists who are viewed as outsiders. While current tensions are largely linked to livelihoods—particularly conflicts between sedentary farmers and Fulani herders over crop damage—perceptions that certain groups benefit disproportionately from employment opportunities could exacerbate these sensitivities. In communities such as Djarkpanga and Tindjassé, where land disputes already exist, inequitable access to jobs may compound grievances.

To mitigate these risks, FB Group's existing Anti-Bribery and Corruption Policy will be applied rigorously to recruitment and procurement processes. This ensures transparency, fairness and integrity in employment practices, reducing the likelihood of perceived favouritism or corrupt practices that could further erode trust. Ensuring transparent and inclusive recruitment processes that consider ethnic representation and local dynamics is therefore essential to avoid reinforcing divisions or triggering inter-group conflict.

Receptor sensitivity has been assigned as **high (4)** given the high levels of unemployment in the surveyed PACs and the existing expectations for project employment. The magnitude of this impact is **medium (3)** as unmet expectations could lead to grievances and a general loss of support for the project among the PACs. The impact significance is considered **major (12).**

Mitigation measures

The following mitigation measures are proposed to limit the potential for impacts related to unmet expectations, leading to dissatisfaction and loss of support for the project among PACs:

- Develop and implement a Labour Management Plan. The Labour Management Plan will include the following mitigation measures:
    - prioritises employment of people from local communities first, followed by individuals from other parts of Togo.

    - is developed in consultation with local authorities.
    - aligns with the overarching recruitment strategy of the project.
- FB Group will oversee all contractor recruitment activities to ensure adherence to local hiring requirements and compliance with project standards.
- Implement the existing Community Grievance Mechanism to ensure that PAC residents and other stakeholders have unrestricted access and opportunity to raise concerns and grievances related to the project.
- Prepare and implement a Community Relations Plan that includes community-focused stakeholder engagement during the construction phase to build trust and maintain respectful relationships with affected stakeholders. These sessions aim to reduce tensions by managing unavoidable impacts, raise awareness of regulations and rights, and ensure communities understand and can access the project's Community Grievance Mechanism.

Residual impact

With the implementation of the mitigation measures listed above, the impact magnitude is expected to decrease to very **low (1).** The receptor sensitivity remains **high** (**4**), therefore reducing the impact significance to **minor (4).**

Potential impact: retrenchment of workers, leading to economic shock and reduced living standards at the household level.

Baseline data and stakeholder consultations indicate that PAC households are highly dependent on seasonal agriculture and informal trade, with limited alternative income sources and no formal safety nets. Large average household sizes (7-8 people) and widespread poverty amplify vulnerability to sudden income loss. Most local employment will occur during the construction phase, after which a significant portion of the workforce will be retrenched. Without adequate preparation for contract termination, this could lead to economic shock, food insecurity and reduced living standards for affected households. Dissatisfaction may arise if notice periods are perceived as inadequate, potentially resulting in grievances or disruptive actions such as roadblocks or protests. Communities have expressed strong concerns about the temporary nature of jobs and requested clear communication and support for livelihood continuity.

Receptor sensitivity has been assessed as **high (4)** as employed PACs will rely heavily on income from the project and sudden job loss could severely impact livelihoods and standards of living. The magnitude has been assessed as **medium (3)** as retrenchment could affect a large number of workers at once, but the impact is temporary and can be mitigated. The impact significance is considered **major (12).**

Mitigation measures

The following mitigation measures are proposed to limit the potential for impacts related to economic shock and reduced living standards at household level:

- The Labour Management Plan will include demobilisation support and end of contract documentation. FB Group's approach will align with IFC guidelines on retrenchment which requires early planning and consultation with workers, transparent communication about the reasons and timing of retrenchment, fair and non-discriminatory selection processes, and provision of severance and transition support consistent with national law and good international practice.
- During recruitment and throughout employment, FB Group and contractors will:
    - clearly communicate the temporary nature of employment.

- state contract duration explicitly in employment agreements.
- regularly remind workers and discuss the need to prepare for contract termination.

Residual impact

With the implementation of the mitigation measures listed above, the impact magnitude is expected to decrease to **very low (1).** The receptor remains to **high (4)**, therefore reducing the impact significance to **minor (4).**

Table 8-59: Impacts on employment and skills during construction

Activity	Potential impact	Impact significance			Mitigation needed	Residual impact significance
		Magnitude	Sensitivity	Significance		
Construction	Project-related employment opportunities, leading to an improvement in household living standards and well-being	N/A	N/A	**Positive (0)**	N	**Positive (0)**
Construction	Provision of on-the-job training and skills building	N/A	N/A	**Positive (0)**	N	**Positive (0)**
Construction	Reduced ability of vulnerable people to access project employment and training opportunities	Low (2)	High (4)	**Moderate(8)**	Y	**Minor (4)**
Construction	Unmet expectations, leading to dissatisfaction and loss of support for the project among PACs.	Medium (3)	High (4)	**Major (12)**	Y	**Minor (4)**
Construction	Retrenchment of workers, leading to economic shock and reduced living standards at the household level.	Medium (3)	High (4)	**Major (12)**	Y	**Minor (4)**

8.3.1.3 Labour and working conditions

Potential impact: violation of labour rights by contractors and sub-contractors

Labour rights enforcement in Togo is weak, and awareness of occupational health and safety (OHS) among employers and workers is low. Baseline data indicates that most PAC residents work in informal sectors with limited exposure to formal labour standards, making them vulnerable to exploitation. High illiteracy rates and lack of vocational training further reduce workers' ability to understand and assert their rights.

During construction, standard working hours will be 10 hours per day, 6 days per week, in line with national regulations. However, there is a risk that contractors and sub-contractors (particularly smaller local enterprises with limited international experience) may violate labour standards related to pay, working conditions, freedom from forced

labour, equal treatment and workplace safety. Such violations could harm workers' health, safety and long-term economic prospects, especially among unskilled and vulnerable groups.

Receptor sensitivity has been assessed as **high (4)** as workers have limited alternative employment options and are vulnerable to exploitation; child labour risk adds to sensitivity. The impact magnitude has been assessed as **medium (3)** as poor enforcement of labour codes and widespread violations in the region make this a realistic risk, but the impacts can be mitigated. The impact significance is considered **major (12).**

Mitigation measures

The following mitigation measures are proposed to limit violation of labour rights by contractors and sub-contractors:

- Develop and implement an Occupational Health, Safety and Security Management Plan. The plan should define how the project will ensure the health, safety and welfare of employees, contractors and visitors in a workplace. The plan should identify, assess and outline measures to control risks associated with workplace activities
- In all contracts, FB Group should make explicit reference to the need to abide by the requirements of the IFC PS2: Labor and Working Conditions, Togolese Labor Law and the ILO conventions ratified by Togo.
- As part of the contractor and supplier selection process, FB Group should take into consideration performance regarding worker management, worker rights, and health and safety as outlined in Togolese law and international standards.
- Regular construction contractor audits by FB Group should be undertaken to ensure the relevant labour laws and occupational health and safety plans are always adhered to. This will include efforts to ensure that no children or forced labour is employed directly by the Contractor and to the extent possible by third parties related to the project
- All workers (including those of contractors and subcontractors) should, as part of their induction, receive training on health and safety and should receive updated training routinely, as well as when undertaking new tasks, such as working at heights or working in confined spaces.
- All workers (including those of Contractors and subcontractors) will, as part of their induction, receive training on worker rights in line with Toglese legislation to ensure that positive benefits around understanding labour rights are enhanced. This process will be formalised within the Code of Conduct.
- All workers (including those of Contractors and subcontractors) will have contracts which clearly state the terms and conditions of their employment and their legal rights. Contracts will be verbally explained to all workers where this is necessary to ensure that workers understand their rights. Contracts must be in place prior to workers commencing work.
- The Contractor and FB Group will put in place a Worker Grievance Mechanism that will be accessible to all workers, whether permanent or temporary, or directly or indirectly employed. This Worker Grievance Mechanism shall be open to all the project workers if their grievance is not adequately resolved by their direct employer.

Residual impacts

With the implementation of the mitigation measures listed above, the impact magnitude is expected to decrease to **low (2).** The receptor sensitivity for remains **high (4**), therefore reducing the impact significance to **moderate (8).**

Potential impact: increased risk of child labour and school drop out

Baseline data and stakeholder consultations indicate that children are highly vulnerable to school dropout due to economic pressures, cultural norms and inadequate education infrastructure. Although the Child Code (2007) establishes protections for minors, including minimum age requirements and restrictions on hazardous work, child labour continues to be a widespread concern in Togo—particularly in agriculture, domestic work and mining. Enforcement of laws prohibiting child labour remains inadequate, with limited government resources allocated to monitoring violations. Communities also acknowledge the risk of child trafficking, especially in peri-urban zones where children are recruited into domestic servitude. Rehabilitation services remain limited (Amnesty International, 2018).

Construction activities may increase demand for goods and services, creating economic incentives for families to involve children in income-generating activities such as petty trade and agriculture.

Receptor sensitivity has been assessed as **high (4)** as although education is valued, economic vulnerability persists within the PACs. The impact magnitude has been assessed as **medium (3),** to acknowledge existing child labour issues. Therefore, the impact significance is considered **major (12).**

Mitigation measures

The following mitigation measures are proposed to limit the increased risk of child labour and school drop out:

- FB Group's CLO will engage regularly with schools and traditional leaders to monitor school attendance.
- FB Group will implement the existing Community Grievance Mechanism to ensure that PAC residents and other stakeholders have unrestricted access and opportunity to raise concerns and grievances related to the project.
- Prepare and implement a Community Relations Plan that includes community-focused stakeholder engagement during the construction phase to build trust and maintain respectful relationships with affected stakeholders. These sessions aim to reduce tensions by managing unavoidable impacts, raise awareness of regulations and rights, and ensure communities understand and can access the project's Community Grievance Mechanism.

Residual impacts

With the implementation of the mitigation measures listed above, the impact magnitude is expected to decrease to **low (2).** The receptor sensitivity for remains **medium (3),** therefore reducing the impact significance to **moderate (6).**

Potential impact: failure of contractors and sub-contractors to provide adequate accommodation

Approximately 60 expatriate specialists and 150 local workers will be housed in a temporary construction camp (around 3 ha) at km 45, which will include offices, parking, kitchen and dining facilities, welfare and recreational spaces, a medical centre, workshops and storage areas. A smaller satellite camp (0.5 ha) will be located at km 6. If contractors and sub-contractors fail to provide safe, hygienic and comfortable accommodation that meets health and welfare standards, workers could experience poor living conditions, reduced well-being and increased health risks, potentially leading to tension and grievances.

Receptor sensitivity has been assessed as **medium (3)** as workers depend on accommodation facilities for daily living; poor conditions could affect health and morale. The magnitude has been assessed as **low (2)** as the risk is limited to the accommodation camps and impacts can be mitigated. The impact significance is considered to be **moderate (6).**

Mitigation measures

The following mitigation measures are proposed:

- Develop and implement a Camp Management Plan. The plan should define comprehensive standards and procedures for the planning, establishment and ongoing management of workforce accommodation camps. It should prioritise the health, safety, security and overall well-being of the workforce while ensuring minimal impact on surrounding communities and the environment.
- Develop and implement an Occupational Health, Safety and Security Management Plan. The plan should define how the project will ensure the health, safety and welfare of employees, contractors and visitors in a workplace. The plan should identify, assess and outline measures to control risks associated with workplace activities
- FB Group will ensure that any worker accommodation provided directly or through contractors complies with the principles of IFC/EBRD Guidance Note on Worker Accommodation: Processes and Standards (2009), as well as the requirements of IFC PS2. Accommodation will meet standards relating to space, hygiene, safety, welfare facilities, security and management practices and will be subject to regular inspection and monitoring for compliance.
- The Contractor and FB Group will put in place a Worker Grievance Mechanism that will be accessible to all workers, whether permanent or temporary, or directly or indirectly employed. The Worker Grievance Mechanism shall be open to all the project workers in the event that their grievance is not adequately resolved by their direct employer.

Residual impacts

With the implementation of the mitigation measures listed above, the impact magnitude is expected to decrease to **very low (1).** The receptor sensitivity for remains **medium (3),** therefore reducing the impact significance to **minor (3)**.

Table 8-60: Impacts on labour and working conditions during construction

Activity	Potential impact	Impact significance			Mitigation needed	Residual impact significance
		Magnitude	Sensitivity	Significance		
Construction	Violation of labour rights by contractors and sub-contractors	Medium (3)	High (4)	**Major (12)**	Y	**Moderate (8)**
Construction	Increased risk of child labour and school drop out	Medium (3)	High (4)	**Major (12)**	Y	**Moderate (6)**
Construction	Failure of contractors and sub-contractors to provide adequate accommodation	Low (2)	Medium (3)	**Moderate (6)**	Y	**Minor (3)**

8.3.1.4 Land access and livelihoods

Potential impact: permanent and temporary land acquisition leading to physical and economic displacement

The project will require permanent land acquisition for the right-of-way (20 m, with a legal expropriation corridor up to 30 m) and temporary land take for construction camps, laydown areas, service roads and borrow pits. This will cause permanent loss of roadside businesses and agricultural plots, resulting in both physical and economic displacement. Given high dependency on land-based livelihoods, limited tenure security and systemic gender barriers, any loss of land or business space risks exacerbating poverty, food insecurity and social tensions. The sensitivity of the receptor has been assessed as **high (4)** because surveyed PACs rely heavily on land for agriculture and roadside trade, with limited alternative livelihoods. Land use is predominantly agricultural supporting both staple crops and cash crops that are essential for food security and household income. Holdings are small and fragmented, reflecting land scarcity and high dependency. Tenure is customary and informal, leaving households without legal security, while gender-based restrictions and exclusion of widows further heighten vulnerability, particularly for female-headed households. The magnitude of impact is assessed as **medium (3**) because any land acquisition or restriction would directly affect agricultural production and income, with limited capacity to absorb losses due to scarcity and fragmentation. Vulnerable groups face increased risk of economic displacement, although the extent may vary depending on the scale of land take and mitigation measures. The impact significance is considered to be **major (12).**

Mitigation measures

A Resettlement Policy Framework (RPF) for the project has already been prepared. Mitigation of land acquisition and displacement impacts will be undertaken in accordance with the RPF, which establishes the overarching principles, procedures and institutional arrangements for managing physical and economic displacement in compliance with national legislation and IFC PS5.

Key mitigation commitments include:

- Prepare and implement a Resettlement Action Plan (RAP). The RAP will include the following mitigation measures:
- Conduct a detailed census and socioeconomic survey of all affected households and businesses.
- Identify and map all assets to be affected (land, crops, structures, businesses).
- Provide fair and timely compensation based on replacement cost principles.
- Offer relocation assistance, including housing and infrastructure for physically displaced households.
- Establish monitoring and evaluation systems to track RAP implementation and outcomes.
- Prepare and implement a Livelihood Restoration Plan (LRP). The LRP will include the following mitigation measures:
- Develop programmes to restore or improve income streams for economically displaced persons.
- Provide skills training, agricultural support and access to microfinance or credit facilities.
- Facilitate employment opportunities within the project or through local business development.
- Monitor livelihood restoration progress and adjust measures as needed to ensure sustainability
- Implement the existing Community Grievance Mechanism to ensure that PAC residents and other stakeholders have unrestricted access and opportunity to raise concerns and grievances related to land acquisition.

Residual impacts

With the implementation of the mitigation measures listed above, the impact magnitude is expected to decrease to **low** (**2**). The receptor sensitivity will remain **high (4),** therefore reducing the impact significance to **moderate (8**).

Potential impact: temporary restriction of access to natural resources supporting livelihoods (wild foods, medicinal plants, fuelwood, charcoal and bushmeat)

The following natural resources are collected in the surveyed PACs:

- Wild foods and medicinal plants (fruits, wild honey; neem, jatropha, shea, eucalyptus, lemon) are vital for nutrition, traditional healthcare and coping during lean seasons.
- Fuelwood and woody biomass are essential for cooking; charcoal production provides supplementary income, especially when agricultural yields are low (all PACs trade charcoal; typical price ~10,000 CFA per bag).
- Hunting contributes supplementary food/income but availability of wildlife is declining.

These activities are informal, often without tenure or use rights and are frequently undertaken by women, youth and low-income groups. As a result, temporary access restrictions disproportionately affect these groups.

Construction activities involving vegetation clearance, earthworks and the establishment of work sites within the right of way will temporarily restrict access foraging areas, woody biomass collection zones, water points and common hunting grounds. This will affect

households who rely on these resources for subsistence and supplementary income. Likely effects include:

- increased time and effort to reach resources; higher costs for households and vendors.
- short-term income loss for charcoal traders and market gardeners (particularly women).
- compounded dry-season water stress for households and livestock.
- elevated potential for localised disputes where alternative access routes funnel users into fewer points.

Receptor sensitivity has been assessed as **high (4)** due to PACs daily dependency on natural resources and the dependence on vulnerable groups such as women and youth on natural resources. The magnitude has been assessed **low (2)** as restrictions are temporary and localised to work areas. The impact significance is considered **moderate (8).**

Mitigation measures

The following mitigation measures are proposed:

- Prepare and implement an LRP to restore and, where possible, improve livelihoods for households affected by temporary restrictions on access to natural resources during construction.
- Provide timely notice to communities before vegetation clearance or other access restrictions and inform communities of periods with increased workforce presence.
- Maintain safe temporary access routes around work sites where practicable.
- Clearly mark construction boundaries to prevent accidental entry.
- Allow communities to collect usable wood from cleared vegetation where safe and feasible.
- Maintain equipment to minimise noise and restrict working hours near sensitive areas for hunting.
- Implement the existing Community Grievance Mechanism to ensure that PAC residents and other resource user stakeholders have unrestricted access and opportunity to raise concerns and grievances related to land acquisition.
    - Targeted communication will be undertaken to ensure natural resource users are aware of and able to access the Community Grievance Mechanism.
- Prepare and implement a Community Relations Plan that includes community-focused stakeholder engagement during the construction phase to build trust and maintain respectful relationships with affected stakeholders. These sessions aim to reduce tensions by managing unavoidable impacts, raise awareness of regulations and rights, and ensure communities understand and can access the project's Community Grievance Mechanism.

Residual impacts

With the implementation of the mitigation measures listed above, the impact magnitude is expected to decrease to **very low (1).** The receptor sensitivity remains **high (4),** therefore reducing the impact significance to **minor (4).**

Potential impact: increased demand for natural resources from incoming workers

A temporary construction workforce will be present during the construction phase. If not adequately managed, the presence of workers may increase demand for locally available natural resources, including wild foods, medicinal plants, fuelwood and bushmeat. These resources are used by nearby communities for household consumption, income generation and health needs. Increased competition for these resources may place additional pressure on areas already relied upon by local users.

Receptor sensitivity is assessed as **high (4)** because communities depend on these natural resources for nutrition, energy, income and traditional medicine, with limited alternatives. The magnitude is assessed as **low (2)** as any increased demand would be temporary, spatially limited and controllable through workforce management measures. The impact significance is therefore considered **moderate (8)**.

Mitigation measures

The following mitigation measures are proposed:

- The contractor will provide adequate food, water and basic supplies for workers to avoid reliance on locally collected natural resources.
- Develop and enforce a Workers' Code of Conduct which prohibits workers from the collection of wild foods, medicinal plants, fuelwood and bushmeat from community resource areas.
- Workers will receive induction training on acceptable conduct and restrictions related to natural resource use.
- Compliance with workforce rules will be monitored by site supervision staff.
- Local communities will receive advance notice of periods with increased workforce presence.

Residual impacts

With the implementation of the mitigation measures listed above, the impact magnitude is expected to be **low (2)**. Receptor sensitivity remains **high (4)**, therefore the residual impact significance is **minor (4)**.

Potential impact: restriction of access to small businesses, street vendors and local markets during construction (e.g., due to temporary obstructions, road closures).

The road corridor and surveyed PACs host numerous small businesses, street vendors and local markets that depend on the corridor for access to consumers of their goods as well as for transporting products such as yams and charcoal to other markets. Women represent most of the vendors. Baseline data confirms that surveyed PACs rely heavily on roadside trade and informal commerce for daily income and food security. Regional hubs such as Bassar and Djarkpanga and Tindjassé serve multiple villages.

Construction activities including temporary obstructions, road closures and diversions that may restrict access to these businesses and markets, reducing customer footfall, delaying transport of goods and the supply chain for these businesses and causing temporary income loss for vendors and traders. Where works temporarily restrict access to nearby resource areas (e.g., woody biomass patches or water points), cooked-food vendors and charcoal sellers may also experience input constraints and higher costs, compounding income losses.

Sellers typically source most goods locally from their own or surrounding villages, highlighting their dependence on local supply chains. Cross-border trade adds further complexity: the Tindjassé market attracts customers from Ghana, meaning access restrictions could disrupt regional economic linkages. Seasonal vulnerabilities amplify this risk: during the rainy season, flooding already makes Tindjassé markets impassable. Infrastructure gaps such as lack of electricity, water and storage facilities further constrain profitability and resilience to shocks.

Baseline evidence illustrates the lack of resilience to change: When a market day in Tindjassé was shifted from Thursday to Tuesday, attendance dropped sharply and even after reverting to Thursday, sales never returned to pre-change levels. This demonstrates the importance of continuity and effective communication, as even temporary disruptions can have long-lasting economic impacts.

Vendors lack formal documentation of ownership or occupancy rights (e.g., title deeds or leases), leaving them without legal protection against temporary displacement or income loss. Given that market income is essential for household survival, any disruption could severely affect household welfare and exacerbate gender inequalities.

Receptor sensitivity has been assessed as **high (4)** as PACs depend heavily on roadside trade and small-scale commerce for daily income, with limited alternative income sources. Women, who make up most of the vendors, are particularly vulnerable to income disruptions, which can directly affect household welfare. The impact magnitude has been assessed as **medium (3)** as although access restrictions will be temporary and localised, supply chain disruption could cause noticeable economic impact for multiple vendors and traders. The impact significance is considered **major (12).**

Mitigation measures

The following mitigation measures have been proposed to reduce impacts from restriction of access to small businesses, street vendors and local markets during construction:

- Develop and implement a Traffic Management Plan. The Traffic Management Plan will include the following mitigation measures:
    - ensures construction method statements consider the importance of minimise restrictions in access, with particular focus on not blocking access as much as possible and (if unavoidable) for as little time as possible. Put in place alternative access routes, with clear signage
    - avoids full closures and heavy works on peak market days (e.g., Thursday in Tindjassé) and communicate changes well in advance to prevent demand shocks
    - efforts to ensure a single lane remains useable as much as possible such that community traffic can continue.
- Construction sequencing to ensure that at least one traffic service lane remains open at all times.
- Construction around sensitive locations such as schools and market areas will follow restricted working hours.
- Community notifications will be issued at least 48 hours prior to any temporary traffic disruption.
- Develop and implement a Community Relations Plan. The Community Relations Plan will include the following mitigation measures:

- uses chiefs (since they grant stall permissions), market heads and radio/noticeboards to communicate closures, detours and timing
- community-focused stakeholder engagement during the construction phase to build trust and maintain respectful relationships with affected stakeholders including market vendors. These sessions aim to reduce tensions by managing unavoidable impacts, raise awareness of regulations and rights, and ensure communities understand and can access the project's Community Grievance Mechanism.

- Develop and implement and a LRP as previously detailed to support market vendors and roadside sellers whose income may be disrupted during construction, ensuring measures to restore and, where possible, improve their livelihoods.
- Implement the existing Community Grievance Mechanism to ensure that PAC residents and other stakeholders have unrestricted access and opportunity to raise concerns and grievances related to land acquisition.

Residual impacts

With the implementation of the mitigation measures listed above, the impact magnitude is expected to decrease to **low (2).** The receptor sensitivity remains **high (4**), therefore reducing the impact significance to **moderate (8).**

Potential impact: increase in conflicts or exacerbation of existing conflicts between livestock owners and crop farmers due to crop damage

During baseline studies, farmers surveyed PACs reported recurring conflicts with Fulani pastoralists, primarily due to livestock encroaching on crop fields. These disputes are generally mediated by village chiefs but remain a persistent source of tension. Women highlighted gender-specific risks, reporting incidents of assault by pastoralists when accessing grazing areas.

Except for Djarkpanga and Tindjassé, most villages reported no internal land disputes between community members or neighbouring villages. In Djarkpanga and Tindjassé, however, land conflicts are prevalent, typically linked to boundary encroachments and competition for cultivable land. In Djarkpanga, disputes often involve unauthorised land allocation for cultivation and construction, illegal transactions bypassing the Canton chief and the sale of administrative lands without proper oversight. In Tindjassé, conflicts arise when occupants of cultivable land encroach on others' domains, leading to intra-community disputes

Project construction activities such as land clearance, temporary land take and disruption of traditional movement patterns may exacerbate these conflicts by reducing available grazing space or damaging crops, increasing competition for land and resources. This could lead to heightened tensions, physical confrontations and deterioration of community cohesion.

Receptor sensitivity has been assessed as **high (4)** due to existing conflicts and high dependency on land-based livelihoods. Violence and gender-based risks have already been reported. Any increase in disputes could significantly affect social stability and safety. The impact magnitude has been assessed as **medium (3)** as the project may indirectly intensify conflicts by altering land use and movement patterns. Although these effects are likely temporary and localised, given the existing tensions, even minor triggers could escalate. The impact significance is considered **major (12).**

Mitigation measures

The following mitigation measures are proposed to limit the exacerbation of existing conflicts:

- Prepare and implement a RAP as described earlier to ensure that any physical or economic displacement is managed fairly, with compensation and relocation assistance provided to maintain pre-project living standards and prevent land-related disputes
- Prepare and implement an LRP as described earlier to restore or improve income streams for affected households, reducing pressure on land and resources and mitigating the risk of conflict between farmers and pastoralists.
- Implement the existing Community Grievance Mechanism to ensure that pastoralists and farmers have unrestricted access and opportunity to raise concerns and grievances related to access restrictions or reporting disputes
- Prepare and implement a Community Relations Plan that includes community-focused stakeholder engagement during the construction phase to build trust and maintain respectful relationships with affected stakeholders. These sessions aim to reduce tensions by managing unavoidable impacts, raise awareness of regulations and rights, and ensure communities understand and can access the project's Community Grievance Mechanism.

Residual impacts

With the implementation of the mitigation measures listed above, the impact magnitude is expected to decrease to **low (2**). The receptor remains **high (4),** therefore reducing the impact significance to **moderate (8).**

Potential impact: disruption of movement of herds due to access restrictions

Fulani pastoralists graze their livestock along routes that intersect the existing road alignment. Construction activities, such as temporary road closures, diversions and restricted access to certain sections, may disrupt these movement patterns. Such disruptions could force herders to take longer alternative routes, increasing travel time and costs, reducing access to grazing land and potentially causing livestock stress or loss of condition.

A critical risk identified during baseline consultations is access to water. Water sources are scarce at certain times of the year, and even short delays in reaching them can result in livestock mortality. If construction activities cut off access to water points, the impact could be severe and immediate, with significant economic and livelihood consequences for pastoralists. This may also increase the risk of conflict with crop farmers if herds stray into cultivated areas while seeking alternative water sources.

Receptor sensitivity has been assessed as **high (4)** as Fulani pastoralists rely on traditional grazing routes and water points for their livelihoods, with limited alternatives. Disruption can directly affect income, food security and social stability. The impact magnitude has been assessed as **medium (3)** as access restrictions will be temporary and localised but could significantly disrupt herd movement and water access. The impact significance is considered **major (12**).

Mitigation measures

The following mitigation measures are proposed to limit disruption of movement of herds due to access restrictions:

- Prepare and implement a Community Relations Plan. The Community Relations Plan will include the following mitigation measures:
- Identify and maintain safe temporary crossing points for herds during construction.
- Engage community leaders and pastoralist representatives in planning and monitoring to minimise disruption.
- focused stakeholder engagement during the construction phase to build trust and maintain respectful relationships with affected stakeholders. These sessions aim to reduce tensions by managing unavoidable impacts, raise awareness of regulations and rights, and ensure communities understand and can access the project's Community Grievance Mechanism
- Implement the existing Community Grievance Mechanism to ensure that pastoralists have unrestricted access and opportunity to raise concerns and grievances related to access restrictions or reporting disputes

Residual measures

With the implementation of the mitigation measures listed above, the impact magnitude is expected to **very low** (**1**). The receptor sensitivity remains **high (4**), therefore reducing the impact significance to **minor (4).**

Potential impact: Exclusion of women and vulnerable groups from resettlement or livelihood restoration measures

There is a risk that women and vulnerable groups may be excluded from resettlement and livelihood restoration measures.

The sensitivity of the receptor is assessed as **high (4)** because women in communities surrounding the project are actively engaged in income-generating activities. Cultural norms and patrilineal inheritance systems in Togo largely exclude women from land ownership, leaving them reliant on informal arrangements such as land loans or gifts, which provide limited tenure security. Widows and other vulnerable groups, including the unemployed, elderly, youth, low-income households, persons with disabilities and orphans, face systemic barriers to accessing resources and opportunities, increasing their vulnerability to displacement. The magnitude of impact is assessed as **medium (3)** because land acquisition and restrictions will directly affect women's income-generating activities and informal trade, with limited capacity to absorb losses due to dependency on informal systems and lack of alternative livelihoods. Vulnerable groups may experience economic displacement and exclusion from livelihood restoration measures, particularly when eligibility is tied to formal land ownership or documented economic activity. The impact significance is considered to be **major (12).**

Mitigation measures

The following mitigation measures have been put in place to reduce the potential for exclusion of vulnerable groups from resettlement or livelihood restoration measures:

- Prepare and implement a RAP, as described earlier, that confirms that 'lack of formal tenure shall not be a barrier to compensation'

- Prepare and implement an LRP, as described earlier, with particular attention to the equitable inclusion of women and vulnerable groups. Their participation should be ensured throughout the compensation process and the planning, implementation and monitoring of livelihood restoration initiatives to promote fairness, sustainability and long-term resilience
- Proactively identify vulnerable groups and develop specific engagement methods/activities where necessary to ensure vulnerable groups are fully engaged in the resettlement and livelihood restoration processes.
- Provide induction training to all CLOs to support their understanding of vulnerable groups and their specific needs.
- Provide gender awareness training for project staff, local leaders and implementing partners.

Residual impacts

With the implementation of the mitigation measures listed above, the impact magnitude is expected to decrease to **very low (1).** The receptor sensitivity remains **high (4),** therefore reducing the impact significance to **minor (4).**

Table 8-61: Impacts on land access and livelihoods during construction

Activity	Potential impact	Impact significance			Mitigation needed	Residual impact significance
		Magnitude	Sensitivity	Significance		
Construction	Permanent and temporary land acquisition leading to physical and economic displacement	High (4)	High (4)	Major (16)	Y	Moderate (8)
Construction	Temporary restriction of access to natural resources supporting livelihoods (wild foods, medicinal plants, fuelwood, charcoal and bushmeat)	Low (2)	High (4)	Moderate (8)		Minor (4)
Construction	Increased demand for natural resources by incoming workers	Low (2)	High (4)	Moderate (8)	Y	Minor (4)
Construction	Restriction of access to small businesses, street vendors and local markets during construction (e.g., due to temporary	Medium (3)	High (4)	Major (12)	Y	Moderate (8)

Activity	Potential impact	Impact significance			Mitigation needed	Residual impact significance
		Magnitude	Sensitivity	Significance		
	obstructions, road closures).					
Construction	Increase in conflicts or exacerbation of existing conflicts between livestock owners and crop farmers due to crop damage	Medium (3)	High	Major (12)	Y	Moderate (8)
Construction	Disruption of movement of herds due to access restrictions	Medium (3)	High (4)	Major (12)	Y	Minor (4)
Construction	Exclusion of women and vulnerable groups from resettlement or livelihood restoration measures	Medium (3)	High (4)	Major (12)	Y	Minor (4)

8.3.1.5 Community safety and security

Potential impact: Increased risk of accidents during construction

Construction will occur within the existing road footprint, but certain sections will be widened, including urban areas where construction traffic and heavy machinery will be present. Local residents—including children—regularly use these roads for daily movement and may attempt to cross or cut through active construction zones, significantly increasing the risk of accidents involving pedestrians, vehicles and construction equipment. Excavation pits with steep sides also pose dangers of falls and drowning, particularly for children and livestock. Inadequate access control could allow community members to enter excavation sites, exposing them to hazards such as open trenches and heavy machinery.

Increased traffic from transporting aggregates from approximately 20 temporary quarries will further elevate accident risks, particularly for vulnerable groups such as schoolchildren and market vendors (predominantly women). Several schools are located directly alongside the road, and consultations reveal that younger children often play outside during school hours without adequate supervision. Additional hazards include detours, temporary road closures and open trenches near junctions, which may force road users onto unfamiliar and unsafe routes. Alcohol or substance abuse by drivers could further increase accident risks. Potential consequences include severe injuries and fatalities.

Receptor sensitivity has been assessed as **high (4)** as local communities have low awareness of construction related risk; accidents could cause severe harm. The impact magnitude has been assessed as **medium (3)** as risks are significant due to increased

traffic and construction activities, but impacts can be mitigated as construction will occur in sections and not continuously along the entire road. The impact significance is considered **major (12).**

Mitigation measures

- Develop and implement a Community Health Safety and Security Management Plan. The plan will outline the health, safety, security and environmental requirements throughout the project. The plan will cover community health, safety and security, including risk identification and management of community notification, traffic and road safety and community awareness programmes.
- Once locations of quarry sites have been determined, integrate traffic safety measures into construction planning, including consideration of sensitive social receptors.
- Safety signage must use clear pictograms and be accompanied by Community Liaison Officer (CLO) engagement to explain hazards and safe practices.
- Install clearly marked, safe pedestrian crossings near all schools located along the project road.
- Community safety awareness raising by the CLOs with people living next to the quarries, next to the construction sites (worker transport each day) and in general along the road route.
- Implement the existing Community Grievance Mechanism to ensure that PAC residents and other stakeholders have unrestricted access and opportunity to raise concerns and grievances related to the project.
- Prepare and implement a Community Relations Plan that includes community-focused stakeholder engagement during the construction phase to build trust and maintain respectful relationships with affected stakeholders. These sessions aim to reduce tensions by managing unavoidable impacts, raise awareness of regulations and rights, and ensure communities understand and can access the project's Community Grievance Mechanism.

Residual impacts

With the implementation of the mitigation measures listed above, the impact magnitude is expected to decrease to **low (2).** The receptor sensitivity remains **high (4),** therefore reducing the impact significance to **moderate (8).**

Potential impact: Increased risk of incidents of gender-based violence, sexual exploitation and harassment (GBV/SEA/SH)

Baseline data and stakeholder consultations confirm that gender disparities in the AoI are deeply entrenched. Women face systemic barriers to land ownership, formal employment and decision-making power, while cultural norms perpetuate social vulnerability. Intimate partner violence including sexual, emotional and physical abuse is prevalent across surveyed PACs, and access to legal and psychosocial support remains extremely limited. Stakeholders repeatedly raised concerns about GBV and unwanted pregnancies linked to the presence of external workers, highlighting this as one of the most significant social risks during construction.

The influx of workers even at modest levels may exacerbate these vulnerabilities, increasing risks of gender-based violence (GBV), sexual exploitation and abuse (SEA) and sexual harassment (SH). These risks are heightened when male workers with higher disposable incomes interact closely with local communities, particularly in remote areas

or along access routes. Women and girls are disproportionately affected due to cultural norms, poverty and lack of protection services. Without proactive measures, these dynamics could lead to serious harm, undermine community trust and damage the project's social licence to operate.

The receptor sensitivity has been assessed as **high (4)** as existing gender inequalities, prevalence of GBV, and lack of support systems make women and girls highly vulnerable. The impact magnitude has been assessed as **medium (3)**. The impact significance is considered **major (12).**

Mitigation measures

The following mitigation measures are proposed to limit increased risk of incidents of gender-based violence, sexual exploitation and sexual harassment (GBV/SE/SH):

- Develop and implement a Community Health Safety and Security Management Plan that outlines the health, safety, security and environmental requirements throughout the project. The plan will cover community health, safety and security, including risk worker-community interaction, sexual and communicable disease and community awareness programmes.
- Develop and enforce a Workers' Code of Conduct including:
    - zero tolerance for GBV, SEA and SH, with clear disciplinary actions for violations
    - mandatory induction and refresher training on GBV/SEA/SH prevention, respectful behaviour and consequences of misconduct
    - prohibition of sexual relationships with minors and transactional sex under any circumstances
    - respect for local customs and cultural norms, ensuring workers do not exploit social vulnerabilities
    - clear reporting and grievance procedures for workers and community members, linked to the Community Grievance Mechanism
    - monitoring and enforcement mechanisms, including regular audits
    - the Worker Code of Conduct should be on display at camps and be part of employment contracts.
- Prepare and implement a Community Relations Plan that includes community-focused stakeholder engagement during the construction phase to build trust and maintain respectful relationships with affected stakeholders. This should include sessions to educate and sensitise local communities on GBV, SEA and SH, and encourage women to report abuses to the police, other state agencies and support groups in the area.
- Implement the existing Community Grievance Mechanism to ensure that PAC residents and other stakeholders have unrestricted access and opportunity to raise concerns and grievances related to the project.

Residual impacts

With the implementation of the mitigation measures listed above, the impact magnitude is expected to decrease to **low (2).** The receptor sensitivity should decrease to medium **(3),** therefore reducing the impact significance to **moderate (6).**

Potential impact: increased risk of illicit behaviour and crime and perceived insecurity within the PACs

Baseline data and stakeholder consultations indicate that PACs are generally considered safe; however, petty crime and prostitution are already present and could be exacerbated by new economic activity and population movement during construction. The influx of construction workers, service providers and individuals seeking employment opportunities (PIIM) may increase risks of theft, physical assaults, substance abuse, prostitution and other illicit behaviour. These risks are heightened by limited law enforcement coverage in rural areas and the proximity of the project to the Ghana border, which facilitates cross-border migration and could increase the number of strangers in PACs.

Stakeholders expressed strong concerns about security and social stability, including fears of extremist groups from northern Togo targeting road construction works. Increased competition for jobs and economic opportunities may also create tensions between locals and newcomers, further undermining community cohesion. These factors may contribute to both perceived and actual insecurity, generating anxiety among residents and increasing vulnerability to crime and social conflict.

The receptor sensitivity has been assessed as **high (4)** as PACs are small and rural and have limited formal security presence, making them highly vulnerable to crime and insecurity. The impact magnitude has been assessed as **medium (3)** as risks are potentially significant but localised to the construction phase. The impact significance is considered **major (12).**

Mitigation measures

The following mitigation measures are proposed:

- Develop and implement a Community Health Safety and Security Management Plan which outlines the health, safety, security and environmental requirements throughout the project. The plan will cover community health, safety and security, including risk identification and management of worker-community interaction.
- Develop and implement a Labour Management Plan. The Labour Management Plan will include the following mitigation measures:
    - prohibits recruitment at the gate/project site to avoid attracting unemployed people to the site
    - requires all recruitment (including casual workers) to follow formal processes
    - conducts security screening for all prospective workers to avoid employing convicted criminals
    - prioritises recruitment of local community members, followed by workers from other parts of Togo, to minimise unnecessary population influx
    - ensures salaries are paid into workers' bank accounts to reduce cash circulation and theft risks
- Develop and enforce a Workers' Code of Conduct. The Workers' Code of Conduct will include the following mitigation measures:
    - clear sanctions for criminal behaviour (e.g., dismissal)
    - clauses against theft, violence and harassment
    - mandatory induction training on the Code for all workers.

- Develop and implement a project Security Management Plan and Camp Management Plan. These will include the following mitigation measures:
- Security measures will include CCTV installation in workers' camps and project facilities, as well as the presence of trained security patrols.
- security personnel will operate in accordance with FB Group's Security Management Procedures and be aligned with IFC's Good Practice Note on the Use of Security Forces concerns., including terrorism-related risks
    - construction camp rules will be implemented restricting unnecessary movements of non-local workers outside working hours.
    - CCTV will be installed in camps and project facilities and maintain trained security patrols.
    - engage with local police and gendarmerie for open communication on emerging security concerns.
- Provide adequate facilities and amenities in worker accommodation camps (recreation spaces, dining, medical centre) to reduce off-camp movement.
- Prepare and implement an Emergency Preparedness and Response Plan, including security emergencies.

Residual impacts

With the implementation of the mitigation measures listed above, the impact magnitude is expected to decrease to **very low (1).** The receptor sensitivity remains **high (4),** therefore reducing the impact significance to **minor (4).**

Potential impact: Conflict between or within PACs over representation of community views and interests regarding the project, the resettlement process and other project-related issues

Surveyed PACs are small, tightly knit communities with strong social ties and a high sensitivity to perceptions of fairness. While no internal conflicts were reported during baseline data collection, underlying vulnerabilities exist: Land tenure systems are predominantly customary, with significant gender-based restrictions. Women and widows often lack land ownership rights, and youth face limited access to farming plots. Economic dependence on subsistence agriculture and informal trade creates structural fragility, compounded by seasonal food insecurity and high unemployment among women and youth. Previous land disputes and recurrent conflicts with Fulani pastoralists over crop damage highlight the potential for tensions when resources or benefits are perceived as unequally distributed. Vulnerable groups including women, youth, widows and persons with disabilities are at heightened risk of exclusion from decision-making and benefit-sharing due to entrenched socio-cultural norms and limited access to information channels.

Stakeholder engagement revealed concerns about fairness in compensation and benefit allocation. Potential conflicts may arise from real or perceived inequities in access to project benefits, such as employment opportunities, livelihood restoration programmes and compensation for land acquisition. Disputes could also occur over reduced access to land or resources, including grazing areas and water points, and over representation in consultations, where certain individuals or groups claim to speak for the community.

Receptor sensitivity has been assessed as **high (4)** due to PACs reliance on land-based livelihoods and vulnerability to perceived inequities in benefit-sharing, which could escalate into conflict and undermine community stability. The impact magnitude has been

assessed as **medium (3)** as conflicts may affect multiple PACs and persist during construction and compensation processes, but impacts can be mitigated. The impact significance is considered **major (12).**

Mitigation measures

The following mitigation measures are proposed:

- FB group will provide clear, transparent communication regarding compensation, employment opportunities and project procedures through the CLO and the village chief.
- FB Group will support mediation and conflict resolution through community structures, including facilitated workshops involving traditional leaders.
- Prepare and implement a Community Relations Plan that includes community-focused stakeholder engagement during the construction phase to build trust and maintain respectful relationships with affected stakeholders. These sessions aim to reduce tensions by managing unavoidable impacts, raise awareness of regulations and rights, and ensure communities understand and can access the project's Community Grievance Mechanism.
- Implement the existing Community Grievance Mechanism to ensure that PAC residents and other stakeholders have unrestricted access and opportunity to raise concerns and grievances related to the project

Residual impacts

With the implementation of the mitigation measures listed above, the impact magnitude is expected to decrease to **very low (1)**. The receptor sensitivity will remain **high (4)**, therefore reducing the impact significance to **minor (4)**.

Table 8-62: Impacts on community safety and security during construction

Activity	Potential impact	Impact significance			Mitigation needed	Residual impact significance
		Magnitude	Sensitivity	Significance		
Construction	Increased risk of accidents during construction	Medium (3)	High (4)	**Major (12)**	Y	**Moderate (8)**
Construction	Increased risk of incidents of gender-based violence, sexual exploitation and harassment (GBV/SEA/SH).	Medium (3)	High (4)	**Major (12)**	Y	**Moderate (6)**
Construction	Increased risk of illicit behaviour and crime and perceived insecurity within the PACs	Medium (3)	High (4)	**Major (12)**	Y	**Minor (4)**
Construction	Conflict within PACs over representation of community	Medium (3)	High (4)	**Major (12)**	Y	**Minor (4)**

Activity	Potential impact	Impact significance			Mitigation needed	Residual impact significance
		Magnitude	Sensitivity	Significance		
	views and interests regarding the project, the resettlement process and other project-related issues					

8.3.1.6 Public health

Potential impact: Increased risk of malaria and water-borne diseases from unrehabilitated excavation sites

Approximately 20 temporary quarries and borrow pits will be excavated to supply rock and lateritic gravel. If these sites are left unrehabilitated, stagnant water may accumulate, creating mosquito breeding grounds and heightening the risk of malaria and waterborne diseases. These risks are compounded by the existing prevalence of malaria and waterborne diseases within the surveyed PACs and low community awareness of health hazards.

Receptor sensitivity has been assessed as **high (4)** as surveyed PACs already face high malaria prevalence and waterborne disease risks. The impact magnitude has been assessed as **medium (3)** as the number and distribution of excavation sites create significant health risks, but impacts can be mitigated through rehabilitation and awareness measures. The impact significance is considered **major (12).**

Migration measures

The following mitigation measures are proposed to reduce increased risk of accidents and spread of malaria and water-borne diseases due to open excavation sites:

- All quarries and borrow sites to be restored through reintroduction of topsoil (including soil amendments) and revegetation (trees, shrubs, lawns etc.). Monitoring of the efficacy of the landscaping process is required.
- Landowners should be informed of the environmental and social implications of the excavation works at the time of identification of the gravel pits. The end use and rehabilitation requirements of the borrow-pit should clearly be stated in the lease agreement with the landowner, as far as reasonably possible.

Residual impacts

With the implementation of the mitigation measures listed above, the impact magnitude is expected to decrease to **low (2).** The receptor sensitivity remains to **high (4),** therefore reducing the impact significance to **moderate (8).**

Potential impact: Project-induced in-migration (PIIM) and project employment leading to transmission of new communicable and endemic diseases

Anticipated PIIM will include both project workers and individuals arriving in search of employment or informal economic opportunities. This dynamic is reinforced by the high

mobility of local populations, as documented in the baseline: surveyed PACs experience frequent seasonal and circular migration for livelihoods, with residents moving to and from other regions of Togo and neighbouring countries such as Ghana, Benin and Nigeria. The PACs are situated along an existing road corridor and close to the Ghana border, which facilitates cross-border movement and trade. These factors, combined with cultural ties and established migration patterns, make PIIM more likely and increase the risk of introducing new communicable diseases.

Consultations revealed strong concerns about health risks linked to labour influx and interaction between workers and local populations. Communities fear the introduction of diseases such as HIV/AIDS, Hepatitis B and C, and sexually transmitted infections, as well as the spread of endemic diseases like malaria and dengue fever. Increased demand for informal services, including transactional sex, could further heighten vulnerability to sexually transmitted infections. The limited existing healthcare capacity and lack of emergency response mechanisms were repeatedly cited as key concerns, with participants stressing that any increase in disease burden would overwhelm local facilities and worsen existing health inequalities.

Labour influx and close interaction between workers and PACs during construction create a two-way risk of disease transmission, from workers to communities and vice versa. Vulnerable groups such as children, elderly, immunocompromised individuals and women are particularly at risk. Increased disease prevalence could strain already fragile health systems, reduce household well-being and heighten socioeconomic vulnerability.

Receptor sensitivity has been assessed as **medium (3)** because, although healthcare capacity is limited and vulnerable groups are present, the population is highly mobile and accustomed to movement for livelihoods, which reduces sensitivity to additional influx compared to more isolated communities. The impact magnitude has been as assessed as **medium (3)** as labour influx and close interaction between workers and informal workers and PACs create a possible risk of disease transmission. The impact significance is considered **moderate (9).**

Mitigation measures

The following mitigation measures are proposed to limit the potential for impacts related to transmission of new communicable diseases:

- Develop and implement a Community Health Safety and Security Management Plan, which will include measures to prevent communicable diseases between workers and communities and vice versa. These measures should include education and awareness campaigns for the communities and workers on safe sexual relations; STD and HIV/AIDS, COVID-19 transmission and respiratory diseases.
- Conduct pre-employment health screening and medical checks for non-local workers, including tests for communicable diseases, aligned with FB Group's health and safety standards.
- A Worker Code of Conduct as previously described should be developed providing a worker code of behaviour including worker-worker interactions, worker-community interactions and development of personal relationships with members of the local communities.
- Develop and implement a PIIM Management Plan. Monitor scale and implications of PIIM and develop appropriate mitigation in conjunction with local authorities if issues arise

- Accommodation will be provided to workers from outside the project area in accordance with international good practice on workers' accommodation, including IFC standards to prevent transmission of diseases associated with poor living conditions
- Prepare and implement a Community Relations Plan that includes community-focused stakeholder engagement during the construction phase to build trust and maintain respectful relationships with affected stakeholders. These sessions aim to reduce tensions by managing unavoidable impacts, raise awareness of regulations and rights, and ensure communities understand and can access the project's Community Grievance Mechanism.
- Implement the existing Community Grievance Mechanism to ensure that PAC residents and other stakeholders have unrestricted access and opportunity to raise concerns and grievances related to the project

Residual impact

With the implementation of the mitigation measures listed above, the impact magnitude is expected to decrease to **low (2).** The receptor sensitivity remains **medium (3),** therefore reducing the impact significance to **moderate (6).**

Potential impact: PIIM and project employment leading to an increase in unwanted pregnancies

PIIM will involve two distinct groups:

- Project employees, who will be formally recruited and housed in work camps or nearby areas. Their presence introduces risks of sexual relationships—both consensual and exploitative—with local women and girls, particularly where social norms and poverty increase vulnerability.
- Individuals arriving in search of employment or informal economic opportunities (PIIM), who may settle in PACs without formal arrangements.

Baseline data shows PACs are already highly mobile that, when combined with proximity to the Ghana border and location along an existing road corridor, makes PIIM more likely and amplifies risks of social disruption.

Stakeholder engagement revealed strong concerns about these dynamics. Participants noted that increased disposable income among project workers and some PAC members could incentivise prostitution and transactional sex, heightening the risk of unintended pregnancies. If unmanaged, this impact could lead to severe social consequences, including school dropouts, unsafe abortions and heightened GBV.

Receptor sensitivity has been assigned as **high (4)** due to high levels of poverty among PACs, limited access to reproductive health services, cultural reliance on traditional healers for abortion and existing concerns about unwanted pregnancies in the PACs. The impact magnitude is assessed as **medium (3)** reflecting the relatively small number of project workers but high likelihood of PIIM. The significance is considered **major (12).**

Mitigation measures

The following mitigation measures are proposed to limit the potential for an increase in wanted pregnancies:

- Develop and implement a Community Health Safety and Security Management Plan to include sexual and reproductive health training for workers and

communities. Awareness campaigns should specifically address the risks associated with seeking unsafe procedures from traditional practitioners.

- A Worker Code of Conduct as previously described should be developed providing a worker code of behaviour including worker-worker interactions, worker-community interactions and development of personal relationships with members of the local communities.
- Prepare and implement a Community Relations Plan that includes community-focused stakeholder engagement during the construction phase to build trust and maintain respectful relationships with affected stakeholders. These sessions aim to reduce tensions by managing unavoidable impacts, raise awareness of regulations and rights, and ensure communities understand and can access the project's Community Grievance Mechanism.
- Implement the existing Community Grievance Mechanism to ensure that PAC residents and other stakeholders have unrestricted access and opportunity to raise concerns and grievances related to the project.
- Develop and implement a PIIM Management Plan. Monitor scale and implications of PIIM as part of a Social Management Plan and develop appropriate mitigation in conjunction with local authorities if issues arise.

Residual impact

With the implementation of the mitigation measures listed above, the impact magnitude is expected to decrease to **low (1).** The receptor sensitivity remains **medium (3),** therefore reducing the impact significance to **moderate (6).**

Potential impact: Anxiety, irritation and reduced well-being among PACs resulting from general construction-related disturbances (noise, dust, access restrictions and workforce influx)

During the construction phase, general disturbances associated with construction activities, including increased ambient noise, restricted access, dust generation and the influx of workers and vehicles, may cause anxiety, irritation and reduced well-being among PACs. Individuals with underlying mental health conditions are particularly vulnerable.

Receptor sensitivity has been assigned as **high (4)** as PACs are located close to the road alignment, and vulnerable individuals may experience heightened impacts. The impact magnitude has been assessed as **medium (3)** as noise will occur intermittently and in localised areas, but its wellbeing impacts can be significant. The resulting impact significance is considered **major (12).**

Mitigation measures

The following mitigation measures are proposed to limit the potential for anxiety, irritation and reduced well-being among PACs resulting from an increase in ambient noise levels:

- See mitigation measures in Section 8.1.2 noise and vibration and 8.1.1 air quality
- Develop and implement a Community Health Safety and Security Management Plan which identifies the risks to public health associated with each contractor's scope of work and detail mitigation measures as appropriate.
- Prepare and implement a Community Relations Plan that includes community-focused stakeholder engagement during the construction phase to build trust and maintain respectful relationships with affected stakeholders. These sessions aim to reduce tensions by managing unavoidable impacts, raise awareness of

regulations and rights, and ensure communities understand and can access the project's Community Grievance Mechanism.

- Implement the existing Community Grievance Mechanism to ensure that PAC residents and other stakeholders have unrestricted access and opportunity to raise concerns and grievances related to the project.

Residual impacts

With the implementation of the mitigation measures listed above, the impact magnitude is expected to decrease to **low (2**). The receptor sensitivity remains **high (4)** therefore reducing the impact significance to **moderate (8).**

Potential impact: Increase in respiratory conditions or exacerbation of existing respiratory conditions resulting from a decline in local air quality

Construction activities will take place in sections along the road alignment and for a short period, resulting in short-term disturbances to the air quality baseline. Construction impacts, including combustion emissions and dust generation, may lead to a decline in local air quality, potentially increasing respiratory conditions or exacerbating existing ones in PACs. Vulnerable groups such as the elderly and children are particularly sensitive. Seasonal factors, such as the Harmattan during the dry season, already contribute to respiratory infections and dusty conditions.

The sensitivity of the receptor is assessed as **high (4)** because PACs are located close to the road alignment and already experience seasonal dust exposure during the Harmattan and dry season, contributing to eye infections and respiratory discomfort. Vulnerable groups—including children under five, the elderly and individuals with chronic health conditions—are particularly at risk, and poor sanitation combined with reliance on biomass fuels for cooking further exacerbates respiratory vulnerabilities. Health receptors include residential areas and schools where prolonged exposure is possible, increasing the likelihood of respiratory irritation and related health impacts. The magnitude of the impact is assessed as **medium (3)** because dust and emissions from construction activities and heavy traffic will be intermittent and localised, with potential for short-term respiratory irritation. Stakeholder engagement revealed strong concerns about dust exposure and its link to respiratory diseases, particularly near homes, markets and schools, and highlighted the absence of protective measures and limited emergency response capacity in local health centres. While dust was one of the most frequently mentioned environmental concerns, impacts will be temporary and can be substantially reduced through mitigation measures such as water spraying and awareness campaigns. The impact significance is considered **major (12).**

Mitigation measures

The following mitigation measures are proposed to limit the potential impact of increased dust levels:

- See mitigation measures in Section 8.1.1 air quality
- Develop and implement a Community Health Safety and Security Management plan which identifies the risks to public health associated with each contractor's scope of work and detail mitigation measures as appropriate.
- Prepare and implement a Community Relations Plan that includes community-focused stakeholder engagement during the construction phase to build trust and maintain respectful relationships with affected stakeholders. These sessions aim

to reduce tensions by managing unavoidable impacts, raise awareness of regulations and rights, and ensure communities understand and can access the project's Community Grievance Mechanism.

- Implement the existing Community Grievance Mechanism to ensure that PAC residents and other stakeholders have unrestricted access and opportunity to raise concerns and grievances related to the project.

Residual impacts

With the implementation of the mitigation measures listed above, the impact magnitude is expected decrease to **low (2)**. The receptor sensitivity remains high **(4)** therefore reducing the impact significance to **moderate (8).**

Table 8-63: Impacts on public health during construction

Activity	Potential impact	Impact significance			Mitigation needed	Residual impact significance
		Magnitude	Sensitivity	Significance		
Construction	Increased risk of malaria and water-borne diseases from unrehabilitated excavation sites	Medium (3)	High (4)	Major (12)	Y	Moderate (8)
Construction	PIIM and project employment leading to transmission of new communicable and endemic diseases	Medium (3)	Medium (3)	Moderate (9)	Y	Moderate (6)
Construction	PIIM and project employment leading to an increase in unwanted pregnancies	Medium (3)	High (4)	Major (12)	Y	Moderate (6)
Construction	Anxiety, irritation and reduced well-being among PACs resulting from general construction-related disturbances (noise, dust, access restrictions and workforce influx)	Medium(3)	High (4)	Major (12)	Y	Moderate (8)
Construction	Increase in respiratory conditions or exacerbation of existing respiratory conditions resulting from a decline in local air quality	Medium (3)	High (4)	Major (12)	Y	Moderate (8)

8.3.1.7 *Infrastructure and services*

Potential impact: Increased pressure on existing health services because of project activities

Health infrastructure in surveyed PACs is limited and unevenly distributed. Stakeholder engagement revealed concerns about the ability of local health facilities to cope with additional demand during project implementation.

The majority of project workers will be recruited locally, meaning the project itself is unlikely to significantly increase demand for health services. Construction camps will accommodate both expatriate and local workers and include onsite medical facilities for routine care and minor emergencies. This will reduce pressure on local health centres for project-related needs.

However, stakeholders highlighted that construction-related accidents, occupational health and safety (OHS) incidents and increased traffic could still lead to emergency cases requiring treatment at local facilities. Furthermore, PIIM may result in population growth in PACs, which could increase demand for all services, including healthcare. Participants emphasised that existing facilities are already overstretched and lack the capacity to handle sudden surges in patients. Women and health staff expressed fears that increased demand could delay treatment for local residents, reduce service quality and exacerbate health inequalities. Stakeholders also requested support measures such as mobile clinics, improved referral systems and provision of medicines during construction.

Significant construction activities, including heavy equipment use and increased traffic, raise the risk of OHS incidents and accidents involving workers or community members. While the project will provide onsite medical facilities for its workforce, PAC residents will continue to rely on local health centres, increasing pressure on already fragile health systems. Additional demand may strain resources, delay treatment for local populations and reduce overall service quality.

Receptor sensitivity is considered **high (4)** as health services in PACs are limited and critical for community well-being. The impact magnitude is considered **low (2)** as while OHS incidents and accidents may occur, most routine medical needs will be handled at onsite facilities. Project-related health and safety incidents involving the community are very unlikely due to planned safety measures and controlled access. The impact significance is considered **moderate (8).**

Mitigation measures

The following mitigation measures are proposed to limit increased pressure on existing health services because of project activities:

- Ensure accommodation camp clinics are fully equipped and staffed to handle routine medical needs and minor emergencies.
- Develop a comprehensive Emergency Preparedness and Response Plan for severe cases, including clear referral to hospitals.
- Develop and implement a Traffic Management Plan to minimise accidents involving construction vehicles.
- Provide OHS training for workers and enforce use of personal protective equipment (PPE).

- Community safety awareness raising by the CLOs with people living next to the quarries, next to the construction sites (worker transport each day) and in general along the road route.
- Track all OHS incidents and community accidents to identify trends and adjust mitigation measures.
- Implement the existing Community Grievance Mechanism to ensure that PAC residents and other stakeholders have unrestricted access and opportunity to raise any issues that occur in relation to damage to or loss of archaeological sites during construction
- Develop and implement a PIIM Management Plan. Monitor scale and implications of PIIM as part of a Social Management Plan and develop appropriate mitigation in conjunction with local authorities if issues arise.

Residual impacts

With the implementation of the mitigation measures listed above, the impact magnitude is expected to **very low (1).** The receptor sensitivity remains **medium (3),** therefore reducing the impact significance to **minor (3).**

Potential impact: Temporary loss of access to community health and education infrastructure and services (e.g., due to access restrictions)

PACs along the road corridor rely heavily on local health centres and schools for essential services. Baseline data shows that health facilities are limited, often lacking specialist services, adequate staff and essential medicines. Many communities must travel long distances to reach hospitals in Bassar or Ghana, and poor road conditions further constrain access, especially during the rainy season. Vulnerable groups including pregnant women, children under five, the elderly and persons with disabilities are particularly at risk when access is disrupted. Education infrastructure is also fragile: schools are overcrowded, lack basic amenities and are often located along the road alignment, requiring children to walk across hazardous routes. Attendance rates are high once enrolled, but financial and physical barriers already contribute to dropout risks. These factors make PACs highly sensitive to any temporary restrictions on movement.

Construction activities, such as temporary road closures, diversions and restricted access, may limit community members' ability to reach these facilities. This could result in delayed medical care, missed school attendance and increased vulnerability for groups such as children, pregnant women and the elderly. While these disruptions are temporary, they can have significant short-term effects on health outcomes and education continuity.

Receptor sensitivity has been assessed as **high (4)** as health and education services are critical for community well-being. PACs have limited alternatives, and any restriction can disproportionately affect vulnerable groups. The impact magnitude has been assessed as **low (2)** as access restrictions will be temporary and localised but could cause noticeable disruption to essential services. The impact significance is considered **moderate (8).**

Mitigation measures

The following mitigation measures have been proposed to reduce temporary loss of access to community health and education infrastructure and services:

- Develop and implement a Traffic Management Plan. The Traffic Management Plan will include the following mitigation measures:
    - maintain safe and reliable access to health and education facilities.
    - provide advance notice of construction schedules and access restrictions to affected communities.
    - establish temporary pedestrian and vehicle access routes to schools and clinics where feasible.
- Implement the existing Community Grievance Mechanism to ensure that PAC residents and other stakeholders have unrestricted access and opportunity to raise concerns and grievances related to the project.
- Develop and implement a PIIM Management Plan. Monitor scale and implications of PIIM as part of a Social Management Plan and develop appropriate mitigation in conjunction with local authorities if issues arise

Residual impacts

With the implementation of the mitigation measures listed above, the impact magnitude is expected to decrease to very **low (1).** The receptor sensitivity remains **high (4),** therefore reducing the impact significance to **minor (4)**.

Potential impact: Generation of solid and liquid waste leading to deterioration in environmental conditions and potential outbreak of diseases

Surveyed PACs lack organised solid waste management and sewerage systems. Waste is typically disposed of in open areas, contributing to unsanitary conditions and increasing vulnerability to disease outbreaks. Open defecation is widespread (up to 99% in some PACs), and pit latrines are often inadequate. Seasonal water scarcity further compounds sanitation challenges, while poor drainage systems heighten the risk of stagnant water and vector-borne diseases such as malaria and dengue fever. Informal roadside businesses including petty traders and street vendors generate additional waste along the road corridor, which is rarely collected or treated. These structural gaps make PACs highly sensitive to any increase in waste volumes.

The proposed road rehabilitation will generate various waste streams, including excavated earth material, hazardous waste and domestic waste from construction activities. Improper management could create environmental nuisances, compromise sanitation and increase health risks, potentially leading to disease outbreaks. Furthermore, PIIM may contribute to increased domestic waste generation in PACs, placing additional strain on local waste management systems and exacerbating sanitation challenges.

Receptor sensitivity has been assessed as low **(2)** as PACs already face poor waste management and sanitation conditions, increasing vulnerability to additional waste-related impacts. The impact magnitude has been assessed as **low (2)** as improper waste handling could cause noticeable but temporary deterioration in environmental and health conditions. The impact significance is considered **minor (4).**

Mitigation measures

The following mitigation measures have been proposed:

- Develop and implement Waste and Wastewater Management Plans that define the approach to reducing potential waste and wastewater, the waste management

hierarchy and waste and wastewater management processes from identification to final disposal.

- Implement the existing Community Grievance Mechanism to ensure that PAC residents and other stakeholders have unrestricted access and opportunity to raise concerns and grievances related to the project.
- Develop and implement a PIIM Management Plan. Monitor scale and implications of PIIM and develop appropriate mitigation in conjunction with local authorities if issues arise.

Residual impacts

With the implementation of the mitigation measures listed above, the impact magnitude is expected to decrease to **very low** (**1**). The receptor sensitivity remains **low** (**2**), therefore reducing the impact significance to **negligible (2).**

Potential impact: Real or perceived reduction in groundwater water availability or quality for local communities due to abstraction for project use

The projects' water requirements during construction will be met through the drilling of dedicated wells. However, groundwater abstraction for project purposes may cause localised drawdown of the water table near abstraction points, indirectly reducing yields of nearby boreholes and wells.

Access to reliable water is already constrained across surveyed PACs, with the greatest scarcity occurring during the dry season. Communities rely heavily on groundwater abstracted from boreholes and, to a lesser extent, wells for drinking water and domestic consumption. Wells are rare and seasonal and often oversubscribed, which has led to disputes over water access. Boreholes frequently experience breakdowns, and water scarcity during the dry season forces households to reduce consumption or seek alternative sources (river water). Drinking water quality varies, with concerns about discoloration and pollution from cattle in some PACs (e.g., Djarkpanga). These factors make communities highly sensitive to any perceived or actual reduction in groundwater availability.

Stakeholder engagement highlighted water as one of the most frequently mentioned community needs. Stakeholders emphasised the importance of reliable and accessible drinking water, noting that existing boreholes are aging or inadequate and distribution networks do not reach all households. Communities identified improved water supply as essential for household consumption, agriculture and health. While no explicit concerns about project-related abstraction were raised during engagement, the strong emphasis on water scarcity and infrastructure gaps indicates that any visible extraction by the project could be perceived as contributing to shortages.

Receptor sensitivity has been assigned as **high (4)** as PACs are heavily reliant on groundwater. The impact magnitude has been assessed as **medium (3)** as the impact is likely to be localised but significant, particularly during the dry season. The resulting impact significance is considered to be **major (12).**

Mitigation measures

The following mitigation measures have been proposed:

- See mitigation measures in Section 8.1.6 groundwater.

- Clear and regular communications delivered to stakeholders regarding the project, including any water requirements, timings, volumes and locations of extraction.
- Groundwater volume monitoring systems should be implemented for the project duration and if there is a risk of impacting local supplies, contingency measures should be employed.
- Develop and enforce a Workers' Code of Conduct that prohibits workers from using community boreholes and wells.
- Prepare and implement a Community Relations Plan that includes community-focused stakeholder engagement during the construction phase to build trust and maintain respectful relationships with affected stakeholders. These sessions aim to reduce tensions by managing unavoidable impacts, raise awareness of regulations and rights, and ensure communities understand and can access the project's Community Grievance Mechanism.
- Implement existing Community Grievance Mechanism to assist in identifying if/when any issues with water use come up.
- Targeted communication will be undertaken to ensure ground water users are aware of and able to access the Community Grievance Mechanism.

Residual impacts

With the implementation of the mitigation measures listed above, the impact magnitude is expected to decrease to **low (2)**. The receptor sensitivity **remains high (4),** therefore reducing the impact significance to **moderate (8).**

Potential impact: Real or perceived reduction in surface water quality or availability for local communities due to temporary flow restrictions

During construction of watercourse crossings, temporary flow impediments may occur. This can lead to increased turbidity and suspended sediment concentrations downstream, affecting water quality. According to the project description, there are 208 locations requiring upgrade or installation of infrastructure. New structures (culverts and bridge structures) will be required at six locations.

Surface water systems such as the Mo River provide vital water resources for household drinking, domestic use and irrigation of market gardens in surveyed PACs. Rivers are the most common alternative water source when boreholes or wells run dry, particularly during the dry season. The Mo River is also used by Fulani pastoralists for cattle watering, which has already caused pollution concerns and disputes with local communities. These factors highlight the critical role of surface water and the sensitivity of PACs to any disruption in access or quality.

Stakeholder engagement identified improved access to clean water as one of the most frequently mentioned community needs. Stakeholders emphasised that reliable water supply is essential for household consumption, agriculture and health.

Receptor sensitivity has been assigned as **high (4)** due to the importance of the surface water resources to the community. The impact magnitude has been assessed as **low (2),** due to the short-term duration of impacts during the construction period. The resulting impact significance is considered to be **moderate (8).**

Mitigation measures

The following mitigation measures have been proposed:

- See mitigation measures in Section 8.1.5 surface water.
- Communities will be notified in advance when works will affect access to water points.
- Develop and enforce a Workers' Code of Conduct which prohibits workers from collecting surface water.
- Prepare and implement a Community Relations Plan that includes community-focused stakeholder engagement during the construction phase to build trust and maintain respectful relationships with affected stakeholders. These sessions aim to reduce tensions by managing unavoidable impacts, raise awareness of regulations and rights, and ensure communities understand and can access the project's Community Grievance Mechanism.
- Implement existing Community Grievance Mechanism to assist in identifying if/when any issues with water use come up.
- Targeted communication will be undertaken to ensure surface water users are aware of and able to access the Community Grievance Mechanism.

Residual impacts

With the implementation of the mitigation measures listed above, the impact magnitude is expected to decrease to **very low (1).** The receptor sensitivity remains **high (4),** therefore reducing the impact significance to **minor (4).**

Table 8-64: Impacts on infrastructure and services during construction

Activity	Potential impact	Impact significance			Mitigation needed	Residual impact significance
		Magnitude	Sensitivity	Significance		
Construction	Increased pressure on existing health services because of project activities	Low (2)	High (4)	Moderate (8)	Y	Minor (3)
Construction	Temporary loss of access to community health and education infrastructure and services (e.g., due to access restrictions).	Low (2)	High (4)	Moderate (8)	Y	Minor (4)
Construction	Generation of solid and liquid waste leading to deterioration in environmental conditions and potential outbreak of diseases	Low (2)	Low (2)	Minor (4)	Y	Negligible (2)
Construction	Real or perceived reduction in groundwater water availability or quality for local communities due to abstraction for project use	Medium (3)	High (4)	Major (12)	Y	Moderate (8)

Activity	Potential impact	Impact significance			Mitigation needed	Residual impact significance
		Magnitude	Sensitivity	Significance		
Construction	Real or perceived reduction in surface water quality or availability for local communities due to temporary flow restrictions	Low (2)	High (4)	Moderate (8)	Y	Minor (4)

8.3.1.8 Cultural heritage

Potential impact: Damage to, or loss of, known graves and cemeteries due to project activities (e.g., road construction, trench excavation, movement of HGVs and equipment)

Surveys conducted during the scoping and baseline phase identified three graves located within a 30 m buffer of the proposed road alignment. Graves and cemeteries are highly sensitive cultural heritage features that hold strong cultural and emotional value for communities. Their presence along the road corridor and near the right-of-way (RoW) creates a requirement to survey and remove them, as well as a risk of accidental damage during construction activities such as road works, trench excavation and movement of heavy equipment.

While stakeholder engagement did not explicitly raise concerns about graves or cemeteries, stakeholders emphasised the importance of preserving cultural heritage sites and community assets during project implementation. Communities expressed expectations for protective measures to safeguard culturally significant locations.

Construction activities could damage or destroy known graves and cemeteries if adequate protective measures are not implemented.

The sensitivity has been assessed as **high (4)** as graves and cemeteries are highly sensitive cultural heritage features which hold strong cultural and emotional value for communities. The magnitude has been assessed as **medium (3)** as while some sites are known, others are not. If damage occurs, the effect could be severe and long-term. The impact significance is considered **major (12)**.

Mitigation measures

The following mitigation measures are proposed to limit damage to or loss of graves and cemeteries during construction:

- Develop and implement a CHMP which defines the approach to the identification, assessment and mitigation of potential impacts on graves and cemeteries. The CHMP will include the following mitigation measures:
- Conduct a more targeted survey to identify, map and document all graves and cemeteries.
- The identified sites should be properly demarcated and delineated prior to the start of any project-related activities.
- protect the identified graves and cemeteries and ensure that workers behave appropriately in the vicinity of these sites (included in the CHMP).
- Prepare and implement a Community Relations Plan that includes community-focused stakeholder engagement during the construction phase to build trust and

maintain respectful relationships with affected stakeholders. These sessions aim should to reduce tensions by managing unavoidable impacts, raise awareness of regulations and rights, and ensure communities understand and can access the project's Community Grievance Mechanism.

- Implement the existing Community Grievance Mechanism to ensure that PAC residents and other stakeholders have unrestricted access and opportunity to raise any issues that occur in relation to damage to graves or cemeteries.

Residual measures

With implementation of these measures, the receptor sensitivity remains **high (4)** and the impact magnitude is expected to decrease to **very low (1)** resulting in a residual impact significance of **minor (4).**

Potential impact: Damage to, or loss of, known religious sites due to project activities (e.g., road construction, trench excavation, movement of HGVs and equipment).

Surveys during the scoping and baseline phase identified the following religious sites within a 30 m buffer of the proposed road alignment:

- 13 mosques
- 3 churches
- 3 fetish sites

Fetish shrines hold deep cultural and spiritual significance within Vodun practices and are often considered immovable. The baseline also notes that shrines, fetish sites and sacred forests serve as venues for religious ceremonies, ancestral worship, initiation rites and ongoing Vodun practices. Permission for relocation is always required from the fetish owner. Their proximity to the right-of-way (RoW) creates a risk of accidental damage during construction activities such as road works, trench excavation and movement of heavy equipment.

Mosques and churches also play a central role in community life, serving not only as places of worship but as venues for social gatherings, education and cultural events. Damage or restricted access to these sites could disrupt religious practices and community cohesion, potentially leading to grievances and reputational risks for the project. There is a risk that construction activities could damage these sites if adequate protective measures are not put in place.

The sensitivity is therefore considered to be **high (4)**. The magnitude is considered **high (4)** as some of these sites are located near the project's RoW. The impact significance is considered **major (16).**

Mitigation measures

The measures to mitigate damage to or loss of known religious sites due to project activities will be the same as those above (damage to or loss of known graves or cemeteries).

Residual impacts

With implementation of these measures, the receptor sensitivity remains **high (4)** and the impact magnitude is expected to decrease to **very low (1)** resulting in a residual impact significance of **minor (4)**.

Potential impact: Disruption of rituals and ceremonies or community events (e.g., festivals, music and dance celebrations) due to project-related road closures and increased traffic flows.

The Kara and Centrale regions are characterised by a rich intangible cultural heritage, with numerous festivals and ceremonies celebrated throughout the year. The sensitivity of this receptor is assessed as **high (4)** as these rituals and ceremonies are central to community identity and some community events in Bassar are of national importance. The magnitude has been assessed as **low (2)** as disruption is likely to be temporary and intermittent, primarily during construction and road closures, and can be mitigated through proactive planning. The impact significance is considered **moderate (8).**

Mitigation measures

The following mitigation measures are proposed to limit disruption to rituals, ceremonies and community events during construction:

- Develop and implement a CHMP that defines the approach to the identification, assessment and mitigation of potential impacts on tangible and intangible cultural heritage. The CHMP will include the following mitigation measures:
- Verify the location of any important local cultural sites and any associated practices or events that take place and through engagement understand how they are used by project-affected villages.
- Agree alternate access points and any other mitigation measures, such as control of noise, where needed and appropriate and/or schedule work to reduce impacts.
- Prepare and develop a Community Relations Plan that includes ongoing stakeholder engagement throughout the project life cycle with villages, traditional leaders and relevant authorities, e.g., Directorate of Cultural Heritage and the National Commission for Cultural Heritage.
- Implement the existing Community Grievance Mechanism to ensure that PAC residents and other stakeholders have unrestricted access and opportunity to raise any issues that occur in relation to disruption of rituals, ceremonies or community events during construction

Residual impacts

With implementation of these measures, the receptor sensitivity remains **high (4)** and the impact magnitude is expected to decrease to **very low (1)** resulting in a residual impact significance of **minor (4).**

Table 8-65: Impacts on cultural heritage during construction

Activity	Potential impact	Impact significance			Mitigation needed	Residual impact significance
		Magnitude	Sensitivity	Significance		
Construction	Damage to or loss of known graves and cemeteries due to project activities (e.g., road construction, trench excavation, movement of	Medium (3)	High (4)	**Major (12)**	Y	**Minor (4)**

Activity	Potential impact	Impact significance			Mitigation needed	Residual impact significance
		Magnitude	Sensitivity	Significance		
	HGVs and equipment).					
Construction	Damage to or loss of known religious sites due to project activities (e.g., road construction, trench excavation, movement of HGVs and equipment).	High (4)	High (4)	**Major (16)**	Y	**Minor (4)**
Construction	Disruption of rituals and ceremonies or community events (e.g., festivals, music and dance celebrations) due to project-related road closures and increased traffic flows.	Low (2)	High (4)	**Moderate (8)**	Y	**Minor (4)**

8.3.2 Operations

8.3.2.1 Local and regional economy

Potential impact: Enhanced regional economic integration

Surveyed PACs rely heavily on agriculture and informal trade, but poor road conditions currently limit access to larger markets and cross-border trade. Communities reported that they struggle to transport crops to regional hubs and must sell to intermediaries at low prices. Men in several PACs (Saiboudè, Boulohou, Djarkpanga and Tindjassé) noted that they sell agricultural outputs internationally in Ghana and Burkina Faso but face increasing difficulties crossing borders, which constrains income potential. These challenges underscore the importance of improved connectivity for economic resilience and market access.

Stakeholder engagement revealed strong aspirations for better transport and accessibility (19% of aspirations raised) and improved market and business opportunities (20%). Communities emphasised that a more reliable road would make it easier and cheaper to travel, reach services and move agricultural products, while also attracting traders and stimulating local economic activity. Stakeholders linked improved connectivity to broader economic growth and income-generating opportunities, particularly for women and youth.

The successful operation of the rehabilitated road is expected to strengthen economic linkages between Togo and neighbouring Ghana by improving cross-border connectivity

and reducing transportation costs. Enhanced accessibility will facilitate the movement of goods, services and people, promoting trade and regional integration. Regional enterprises can expand operations, creating opportunities for investment and economic diversification. Over time, these improvements are likely to contribute to sustained economic growth and competitiveness for both countries. The impact is considered **positive (0).**

Potential impact: Improved market access and stimulation of local economic activity

Agriculture is the primary livelihood across all surveyed PACs, with 100% of households engaged in farming and market gardening. Farmers currently face major challenges transporting produce due to poor road conditions, which increase travel time, transport costs and post-harvest losses. Communities also noted that poor connectivity forces them to sell to intermediaries at low prices, while cross-border trade with Ghana and Burkina Faso is constrained by transport difficulties. Men reported that crop prices are too low to sustain livelihoods, and women highlighted inadequate market infrastructure—such as lack of electricity, water and storage facilities—which limits selling hours and profitability.

Informal businesses, including shops, mechanics, seamstresses and petty traders, are concentrated along the road corridor, forming the backbone of local economic activity. Baseline data shows that poor road conditions currently limit mobility and access to markets, constraining sales and profitability. These factors underscore the importance of improved road access for agricultural competitiveness, household income and business growth.

Stakeholder engagement revealed strong aspirations for better transport and accessibility (19% of aspirations raised) and improved market and business opportunities (20%). Communities emphasised that a rehabilitated road would make it easier and cheaper to travel, reach services and move agricultural products, while attracting traders and stimulating local economic activity. Stakeholders linked improved connectivity to increased income-generating opportunities, particularly for women and youth, and expressed hopes for stronger local markets and business growth.

The rehabilitation of the road and construction of access roads will significantly improve connectivity between rural PACs and nearby markets. Upgraded roads will reduce transport constraints, enabling quicker and more reliable access to markets, lowering costs and improving the competitiveness of local produce. Enhanced mobility will encourage more frequent visits to markets and roadside businesses, resulting in higher sales volumes and greater economic activity. Increased accessibility may also attract private entities to establish businesses along the corridor, creating new investment opportunities and employment prospects. These changes will contribute to long-term improvements in socioeconomic conditions and living standards, including greater economic empowerment for women and youth. The impact is considered **positive (0).**

Table 8-66: Summary of impacts on local and regional economy during operations

Activity	Potential impact	Impact significance			Mitigation needed
		Magnitude	Sensitivity	Significance	
Operations	Enhanced regional economic integration	N/A	N/A	**Positive (0)**	N
Operations	Improved market access and stimulation of local economic activity	N/A	N/A	**Positive (0)**	N

8.3.2.2 *Employment and skills development*

No impacts on employment and skills development are expected during operations.

8.3.2.3 *Labour and working conditions*

No impacts on labour and working conditions are expected during operations.

8.3.2.4 *Land access and livelihoods*

Potential impact: Permanent changes in access to natural resources (wild foods, medicinal plants, fuelwood, charcoal and bushmeat)

Operation of the road will result in ongoing changes in how communities access natural resource areas and use land adjacent to the corridor. Higher traffic speeds and vehicle frequency will influence movement across the road, affecting access to areas used for collecting wild foods, medicinal plants and fuelwood. In addition, continuous traffic noise, vehicle movement and human presence will reduce wildlife activity in areas adjacent to the road, potentially affecting the availability of species commonly hunted by communities.

These impacts do not involve any further land take beyond the areas acquired during construction. However, they represent long-term changes resulting from the permanent presence of the road. Effects are expected to be concentrated within the immediate road corridor and adjacent areas, where disturbance from traffic and human presence is greatest.

Receptor sensitivity is assessed as **high (4)** because communities rely on natural resources for food, domestic needs, health and livelihoods, while hunting provides supplementary food and income. The magnitude is assessed as **low (2)** as impacts are limited to access conditions and disturbance within the immediate corridor. The impact significance is therefore considered **moderate (8)**.

Mitigation measures

The following mitigation measures are proposed to reduce impacts related to changes in access to natural resource areas and hunting during operation:

- Provide targeted road-safety awareness to communities, with specific attention to natural resource users and hunters who regularly cross the road.
- Communicate expected changes in movement patterns and wildlife behaviour near the road corridor during the early operational phase.

- Maintain the Community Grievance Mechanism for at least the first six months of operation and ensure it is clearly communicated to natural resource users and hunters as a means to raise access- or safety-related concerns.
- Ensure no additional land acquisition or physical restrictions on access to natural resource areas occur during operation.

Residual impacts

With the implementation of the mitigation measures listed above, the impact magnitude is expected to remain **low (2)**. Receptor sensitivity remains **high (4)**; therefore, the residual impact significance is **minor (4)**.

Table 8-67: Impacts on provisioning services during operations

Activity	Potential impact	Impact significance			Mitigation needed	Residual impact significance
		Magnitude	Sensitivity	Significance		
Operations	Changes in community access to natural resources (wild foods, medicinal plants, fuelwood, charcoal and bushmeat)	Low (2)	High (4)	**Moderate (8)**	Y	**Minor (4)**

8.3.2.5 *Community safety and security*

Potential impact: social cohesion and safety risks from PIIM

Improved road access and population mobility may also disrupt existing social structures and local security systems. While roads can expand economic opportunities, rapid demographic shifts often heighten crime and GBV risks due to economic stress, changing household roles and increased interaction between residents and newcomers. These dynamics can erode social cohesion and exacerbate vulnerabilities, particularly for women and girls.

The sensitivity of this receptor has been assessed as **high (4)** due to limited security resources, existing GBV prevalence and vulnerability of women, youth and persons with disabilities. The magnitude has been assessed as **medium (3)** as risks are likely to be gradual but long-term, with severe consequences for affected individuals if unaddressed. The impact significance is **major (12).**

Mitigation measures

No external-facing staff are expected to be retained during operations to oversee social change therefore operational mitigation measures focus on preparing for an effective handover:

- Develop and implement a PIIM Management Plan. Monitor scale and implications of PIIM as part of a Social Management Plan and develop appropriate mitigation in conjunction with local authorities if issues arise.
- FB Group will encourage collaboration between local authorities and community leaders to monitor and address emerging social risks during the transition phase. As part of construction demobilisation, the project will develop and implement a comprehensive handover strategy in coordination with local authorities.

Residual impacts

With these measures, the impact magnitude is expected to decrease to **low (2).** The receptor sensitivity remains **high (4),** reducing the overall significance to **moderate (8**).

Table 8-68: Summary of impacts on community health and safety during operations

Activity	Potential impact	Impact significance			Mitigation needed	Residual impact significance
		Magnitude	Sensitivity	Significance		
Operations	Social cohesion and safety risks from PIIM	Medium (3)	High (4)	**Major (12)**	Y	**Moderate (8)**

8.3.2.6 Public health

Potential impact: Public health risks from PIIM

Health infrastructure across surveyed PACs is limited and unevenly distributed. Many local health centres lack specialist services, adequate staff and essential medicines, forcing residents to travel long distances to Bassar or Ghana for childbirth and emergency care. Poor road conditions further constrain access, especially during the rainy season. Vulnerable groups—including pregnant women, children under five, the elderly and persons with disabilities—face heightened health risks due to structural gaps in service provision and reliance on traditional healers for serious illnesses. Baseline data also indicates high prevalence of malaria and diarrhoeal diseases, compounded by seasonal water scarcity and poor sanitation practices (open defecation rates reach 80–99% in some PACs). These factors make communities highly sensitive to any increase in population density or health service demand.

The improved road infrastructure is expected to attract new residents and businesses to the area, leading to gradual population growth. While this can create economic opportunities, it may also place pressure on existing health facilities and sanitation systems. Increased population density and mobility can heighten the risk of communicable disease transmission, including respiratory infections and waterborne illnesses, particularly if waste management and hygiene infrastructure are inadequate. Additionally, the influx of people may lead to higher prevalence of sexually transmitted infections (STIs) if preventive measures and awareness programmes are not implemented. These factors could negatively affect community health and strain local health services.

Receptor sensitivity has been assessed as **high (4)** as PACs have limited health infrastructure and are highly vulnerable to increased demand for services and disease outbreaks. The magnitude of the impact has been assessed as **medium (3**) since

population growth is likely to be gradual but long-term, with noticeable effects on public health systems. The impact significance is considered **major (12).**

Mitigation measures

- Develop and implement a PIIM Management Plan. Monitor scale and implications of PIIM as part of a Social Management Plan and develop appropriate mitigation in conjunction with local authorities if issues arise
- FB Group will encourage collaboration between local authorities and community leaders to monitor and address emerging social risks during the transition phase. As part of construction demobilisation, the project will develop and implement a comprehensive handover strategy in coordination with local authorities.

Residual impacts

With these measures, the impact magnitude is expected to decrease to **low (2).** The receptor sensitivity remains **high (4),** reducing the overall significance to **moderate (8).**

Table 8-69: Summary of impacts on public health during operations

Activity	Potential impact	Impact significance			Mitigation needed	Residual impact significance
		Magnitude	Sensitivity	Significance		
Operations	Public health risks from PIIM	Medium (3)	High (4)	**Major (12)**	Y	**Moderate (8)**

8.3.2.7 Infrastructure and services

Potential impact: Improved access to community health and education infrastructure and services

The successful operation of the rehabilitated road will significantly improve connectivity between PACs and essential health[15] and education facilities[16]. Currently, poor road conditions and seasonal inaccessibility hinder timely access to clinics, hospitals, schools and other social services, particularly during the rainy season. Upgraded roads will reduce travel time and costs, enabling faster access to emergency medical care, routine health services and maternal health facilities, while also improving school attendance and reducing dropout rates. This impact is considered to be **positive (0).**

Potential impact: Pressure on existing infrastructure and services from PIIM

Surveyed PACs have limited infrastructure and social services. Water supply is constrained, with boreholes often aging or inadequate and wells rare and seasonal, leading to disputes over access during dry periods. Sanitation systems are poor, with open defecation practiced by 80–99% of residents in some PACs. Health facilities are unevenly distributed and lack specialist services, adequate staff and essential medicines, forcing residents to travel long distances for emergency care. Education infrastructure is also insufficient, with overcrowded classrooms, poor building conditions and limited

[15] Based on GIS analysis of data collected during the scoping and baseline visits, there are approximately three health facilities located within a 30 m buffer of the alignment.

[16] Based on GIS analysis of data collected during the scoping and baseline visits, there are approximately six schools located within a 30 m buffer of the alignment.

access to electricity and water. These structural gaps make communities highly sensitive to any increase in population or service demand.

The successful operation of the rehabilitated road is expected to attract new residents and businesses to the area, leading to gradual population growth. Improved connectivity and reduced travel times will make the corridor more desirable for settlement and commerce, encouraging in-migration from other regions. While this can create positive economic opportunities, such as increased trade and service provision, it may also place pressure on existing infrastructure and social services, including water supply, sanitation, schools and health facilities. Additionally, rapid population growth could lead to informal settlements, environmental degradation and potential social tensions if resource competition arises.

Receptor sensitivity has been assessed as **high (4)** as PACs have limited infrastructure and services, making them vulnerable to sudden demographic changes. The magnitude of the impact has been assessed as **medium (3)** since population growth is likely to be gradual but long-term. The impact significance is considered **major (12).**

Mitigation measures

- Develop and implement a PIIM Management Plan. Monitor scale and implications of PIIM as part of a Social Management Plan and develop appropriate mitigation in conjunction with local authorities if issues arise
- FB Group will encourage collaboration between local authorities and community leaders to monitor and address emerging social risks during the transition phase. As part of construction demobilisation, the project will develop and implement a comprehensive handover strategy in coordination with local authorities.

Residual impacts

With these measures, the impact magnitude is expected to decrease to **low (2).** The receptor sensitivity remains **medium (3),** reducing the overall significance to **moderate (6).**

Table 8-70: Summary of impacts on infrastructure and services during operations

Activity	Potential impact	Impact significance			Mitigation needed	Residual impact significance
		Magnitude	Sensitivity	Significance		
Operations	Improved access to community health and education infrastructure and services	N/A	N/A	**Positive (0)**	N	N/A
Operations	Pressure on existing infrastructure and services from PIIM	Medium (3)	High (4)	**Major (12)**	Y	**Moderate (6)**

8.3.2.8 *Cultural heritage*

No impacts on cultural heritage are expected during operations.

8.4 Ecosystem services impact assessment

This section assesses the potential impacts (planned activities) on ecosystem services during the construction and operational phases of the project. The assessment is structured under the four categories of ecosystem services, specifically provisioning services, regulating services, supporting services and cultural services.

8.4.1 Construction

8.4.1.1 *Provisioning services*

Temporary disruption to community access to key natural resources, including wild foods, medicinal plants, fuelwood, charcoal and bushmeat

Construction activities involving vegetation clearance, earthworks and the establishment of work sites within the right of way will temporarily restrict community access to natural resource areas. This may affect the collection of wild foods, medicinal plants, fuelwood, charcoal and bushmeat. These resources support household food security, health and supplementary income generation.

In addition, construction-related noise, vehicle movements and increased human presence may disturb wildlife species commonly hunted by communities, potentially reducing hunting opportunities in areas close to construction activities.

Temporary disruptions to community access are assessed in Section 8.3.1.4 on access to natural resources.

Disruption of access to water sources by communities

Construction near shallow wells, surface water points or river access locations will temporarily restrict access to water used for drinking, domestic use and livestock watering. Water scarcity is already observed during the dry season in some communities.

The full assessment of water access is provided in Section 8.3.1.7 on ground water and surface water availability and quality.

Increased demand for natural resources from incoming workers

A temporary construction workforce will be present throughout the construction period. Without adequate provisions, workers may collect wild foods, medicinal plants, fuelwood resources or water from nearby areas, increasing pressure on resources that local communities rely on.

The impacts associated with incoming workers are assessed in Section 8.3.1.4 on increased demand for natural resources.

8.4.1.2 *Regulating services*

Rainfall variability affecting soil stability and runoff

Vegetation removal and earthworks will expose soils within the right of way, reducing soil cover and disrupting natural runoff pathways. This will increase the susceptibility of disturbed areas to erosion and alter how water moves across the construction footprint.

A full assessment of erosion, drainage and runoff impacts is provided in Section 8.1.4.1 on erosion and Section 8.1.5.1 on surface water.

Contamination impacting soil quality and water regulation

Construction activities will generate dust, combustion emissions and soil sentiments, all of which will affect soil and water regulation functions in the immediate construction zone.

Air quality, soil pollution and water quality impacts are assessed in detail in Section 8.1.1.1 on air quality, Section 8.1.4.1 on the reduction of soil quality, Section 8.1.6.1 on surface water and Section 8.1.6.1 on ground water.

Disruption of natural water purification and soil filtering functions

During construction, dust, emissions and accidental contamination will reduce the ability of soils and vegetation near the works to naturally filter pollutants before they enter water bodies. This will temporarily reduce natural filtering functions that help maintain soil and water quality in and around the construction corridor.

Disruption of natura purification and filtering functions are addressed in Section 8.1.1.1 on air quality, Section 8.1.4.1 on erosion and Section 8.1.5.1 on surface water.

8.4.1.3 *Supporting services*

Habitat loss and fragmentation reduce ecosystem functions

Vegetation clearance within the right of way will remove habitat and fragment ecological continuity, which will affect supporting functions such as wildlife movement, soil formation and nutrient cycling. These changes occur only within the clearance footprint.

Habitat loss, fragmentation and ecological process impacts are fully assessed in Section 8.2.1.2 on priority habitat and flora and Section 8.2.1.3 on priority fauna.

8.4.1.4 *Cultural services*

Risk of damage to culturally significant trees and associated practices

Culturally significant trees, including baobab and fetish trees, exist in several communities along the alignment. In at least three communities, these features are located within 30 m of the road. Such trees support cultural ecosystem services by serving as sites for rituals, ceremonies and traditional spiritual practices that contribute to community identity, belief systems and social cohesion.

All cultural heritage screening, site identification and mitigation are detailed in Section 8.3.1.8 on disruption of rituals and ceremonies and damage to, or loss of, known religious sites.

8.4.2 Operations

8.4.2.1 Provisioning services

Long-term changes in community access to natural resource, including wild food, medicinal plants, fuelwood and bushmeat

During operation, increased traffic speeds and vehicle frequency will influence how communities cross the road to access nearby natural resource areas. This could affect access to wild foods, medicinal plants, fuelwood and hunting areas located close to the road. While the upgraded road will not physically restrict access or reduce the overall availability of these resources once construction is complete, road-crossing safety may be a concern and adjustments to access routes may be required.

In addition, increased traffic, noise and human presence along the road corridor may create continuous disturbance, reducing wildlife presence in areas immediately adjacent to the road. This could limit the availability of commonly hunted species near the road.

A detailed assessment of long-term access changes is provided in Section 8.3.2.4 on permanent changes to access to natural resources.

8.4.2.2 Regulating services

Ongoing surface water contamination

Maintenance and repair activities could affect surface water in nearby streams and rivers. Possible sources of contamination include poor handling or disposal of solid and liquid waste and accidental spills of oil or chemicals.

Surface water contamination impacts are fully assessed in Section 8.1.5.2 on water from management of waste and accidental release of oil or chemicals.

8.4.2.3 Supporting services

Ongoing habitat loss and fragmentation

Construction of the road will permanently remove habitat within the right of way and create a barrier to species movement. These effects continue during operation, resulting in permanent habitat fragmentation and long-term alteration of supporting functions such as connectivity and ecological processes. No new habitat clearance occurs during operation, but the construction-related changes persist.

Habitat loss and fragmentation impacts are fully assessed in Section 8.2.2.2 on priority habitat and flora and Section 8.2.2.3 on priority fauna.

8.4.2.4 Cultural services

No impacts on cultural heritage are expected during operations.

8.5 Cumulative impact assessment

Cumulative impacts result from the successive, incremental and/or combined effects of a project or activity, when added to other past, existing, planned and/or reasonably anticipated future ones (IFC, 2013).

Following review of the district development plans and national development plans and other sources described in Section 7.5.2 and outputs from the stakeholder consultation (Section 6), no reasonably defined or foreseeable third-party projects within the cumulative impact assessment (CIA) study area have been screened in to the CIA. Table A2 in Appendix 2, presents the projects screened out of the CIA along with justification.

No cumulative impacts are therefore predicted at the time of writing.

If new projects are identified during the preconstruction and/or construction phases of the project, it is best practice to undertake a CIA in accordance with the IFC Good Practice Handbook methodology described in Section 7.

Based on Table A2, RSK recommends that FB Group aligns road construction activities with the installation of the fibre optic cable along the same route; this will minimise disruption.

8.6 Climate change risk assessment

A Climate Change Risk Assessment (CCRA) aligned with EP4 is presented in Appendix 10. The physical CCRA takes a double materiality approach by identifying the risks that climate change may have on the financial performance of the project (i.e. financial materiality) and the impacts to society and the environment posed by the project, for example, the potential for the project to exacerbate climate change impacts within the AoI (i.e. impact materiality). A short qualitative transition CCRA outlines possible impacts associated with the transition to a low carbon economy.

8.7 Greenhouse gas assessment

The greenhouse gas (GHG) assessment is included as part of Appendix 10, which provides more detail on methodology, data, assumptions and results.

The assessment comprises scope 1 (direct GHG emissions) and scope 3 (indirect emissions) emissions. Scope 2 (indirect emissions from energy consumption, e.g., electricity) emissions were not applicable for this project. The assessment was only conducted on the Construction phase; operational and decommissioning emissions are excluded from the project scope. During the operational phase primarily traffic and road-use emissions are not expected to change significantly from baseline use, meaning no additional material contribution to the total lifecycle footprint. Given the project's relatively short 20-year lifespan, maintenance emissions are also considered negligible and are therefore excluded. The overall impact of construction emissions is summarised here.

8.7.1 Construction

Construction activities will inevitably cause the emission of GHGs. Total scope 1 and 3 emissions from the construction phase are calculated at 102,549 tonnes of carbon dioxide equivalent (tCO_2e), which over a construction programme of 2.5 years equate to 41,020 tCO_2e annually. Most of the emissions from this project are from the embodied carbon emissions associated with the production of materials (indirect scope 3 emissions), followed by the consumption of diesel during construction (direct scope 1 emissions).

IFC and EP4 frameworks utilise the scope 1 and 2 emissions to determine the overall magnitude of GHG emissions. Total scope 1 emissions from the project are 7,383 tCO_2e, or 2,953 tCO_2e per year during the construction phase. This does not trigger the need under IFC or EP4 frameworks for annual quantification or reporting of GHG emissions, nor the need for a transition risk assessment.

The receptor for GHG emissions is the global climate. Receptor sensitivity has been assigned as **high (4)**. The impact magnitude has been assessed as **very low (1)**, due to the low magnitude of scope 1 emissions (scope 2 emissions are not applicable to this project). The resulting impact significance is **minor (4)**.

Table 8-71: Impact on climate from construction phase

Activity	Potential impact	Impact significance			Mitigation needed
		Magnitude	Sensitivity	Significance	
Direct and indirect GHG emissions from the construction of the project	Increase in GHG emissions	Very Low (1)	High (4)	**Minor (4)**	N

8.7.1.1 Mitigation measures

It is unavoidable that GHG emissions will occur due to the construction of the project, namely due to the emissions from the materials used in construction of the project, as well as heat and power for construction plant and equipment. However, emissions can be decreased through a number of measures:

- Consider low carbon alternatives: use materials with a lower embodied carbon content, such as recycled steel and low carbon concrete.
- Re-use material on-site where possible.
- Consider the use of renewable energy and efficiency improvements in material production
- Use locally available materials to reduce emissions from transport
- Implement measures to decrease fuel use by maximising energy efficiencies, for example to ensure all vehicles switch off engines when stationary and ensure construction vehicles are well maintained and conform to current emissions standards.
- Where possible, source imported energy from renewable sources.
- Give suitable training to operators to maximise the efficiency of equipment use and to reduce idling.
- More fuel efficient and low carbon fuels can be used and the use of sustainable fuels in construction vehicles should be promoted.
- Where possible make use of electric vehicles to reduce fuel consumption.
- Ensure that periodic inspections of vehicles are carried out to ensure optimum performance and energy efficiency.

8.7.1.2 *Residual impact*

With the implementation of the mitigation measures listed above, the impact magnitude is expected to remain at **very low (1)**. The receptor sensitivity for natural habitats remains **very low (1)**, therefore the impact significance reduced to **negligible (1)**.

8.8 Transboundary impacts

8.8.1 Impacts on cross-border trade and impacts from PIIM during construction

Potential impacts on cross-border trade and from PIIM, including from Ghana, during construction are discussed in Sections 8.3.1.4, 8.3.1.6 and 8.3.1.7.

8.8.2 Regional economic impacts during road operation

The positive impacts on the economy from operation of the road, including cross-border trade, are discussed in Section 8.3.2.1.

8.8.3 Cross-border infrastructure impacts

The results of fieldwork and discussions with local authorities, including the Prefect of the Mo Plain (border area with Ghana) indicates that road conditions on the Ghanaian side of the border are generally comparable to the Togolese side of the border, and in some sections more degraded. While limited maintenance has been carried out in the past, these interventions have not been robust, and the current condition remains variable. There is no known short-term programme or formally planned project on the Ghana side aimed at upgrading or coordinating the road connection with Togo at present. The project may have a potential cross-boundary impact (induced) by prompting authorities in Ghana to effect similar road upgrades and reinforce the strengthening of road linkages between the two countries. Any upgrades to roads in Ghana would have associated environmental and social impacts.

8.8.4 Potential surface water impacts

The project will cross numerous watercourses along its alignment resulting in impacts on surface water receptors. However, none of the affected watercourses cross the boundary into Ghana and impacts are not anticipated to occur.

8.9 Summary of potential environmental and socioeconomic impacts

The potential environmental and social impacts identified and assessed for planned and unplanned events in this section are summarised in Table 8-72 below.

Table 8-72: Summary of environmental and social impacts for planned events

Activity	Potential impact	Project phase	Impact significance			Mitigation needed	Residual impact significance
			Magnitude	Sensitivity	Significance		
Physical environment – air quality							
Demolition activities	Increased dust emissions	Construction	Medium (3)	High (4)	**Major (12)**	Y	**Moderate (8)**
Earthworks activities	Increased dust emissions	Construction	High (4)	High (4)	**Major (16)**	Y	**Moderate (8)**
Construction activities	Increased dust emissions	Construction	Medium (3)	High (4)	**Major (12)**	Y	**Moderate (8)**
Trackout activities	Increased dust emissions	Construction	Medium (3)	High (4)	**Major (12)**	Y	**Moderate (8)**
Operation of construction plant and equipment	Increased exhaust emissions	Construction	Very low (1)	High (4)	**Minor (4)**	N (but best-practice mitigation measures have been recommended	**Minor (4)**
Construction traffic	Increased exhaust emissions	Construction	Very low (1)	High (4)	**Minor (4)**	N (but best-practice mitigation measures have been recommended	**Minor (4)**
Operational traffic	Increased exhaust emissions	Operation		High (4)			

Activity	Potential impact	Project phase	Impact significance			Mitigation needed	Residual impact significance
			Magnitude	Sensitivity	Significance		
Physical environment – noise and vibration							
Earthworks (excavation, grading, levelling)	Increased noise from heavy machinery and intermittent low-level vibration	Construction	Medium (3)	High (4)	**Major (12)**	Y	**Minor (4)**
Rock breaking, demolition, crushing and vibratory compaction	High noise levels and perceptible vibration, strongest of construction sources	Construction	High (4)	High (4)	**Major (16)**	Y	**Minor (4)**
Concrete batching, asphalt plants and stationary equipment	Continuous background noise from fixed plant	Construction	Medium (3)	High (4)	**Major (12)**	Y	**Minor (4)**
Construction traffic (HGVs, tippers, trailers)	Intermittent noise and occasional perceptible vibration in settlements	Construction	Low (2)	High (4)	**Moderate (8)**	Y	**Minor (4)**
Operation of generators, pumps and auxiliary equipment at camps	Localised equipment noise affecting nearby receptors	Construction	Low (2)	High (4)	**Moderate (8)**	Y	**Minor (4)**
Operational road traffic (cars, motorcycles, HGVs)	Increased ambient noise for roadside residents	Operation	Medium (3)	High (4)	**Major (12)**	Y	**Moderate (8)**

Activity	Potential impact	Project phase	Impact significance			Mitigation needed	Residual impact significance
			Magnitude	Sensitivity	Significance		
Heavy vehicle movements during operation	Occasional low-level vibration near the road edge	Operation	Very low (1)	High (4)	**Minor (4)**	Y	
Physical environment – traffic and transport							
Transport of people and movement of heavy vehicles	Severance and intimidation of communities	Construction	Medium (3)	Low (2)	**Moderate (6)**	Y	**Minor (4)**
Transport of lateritic gravel from quarries within Project area	Increased impact of traffic on sensitive receptors	Construction	Medium (3)	Low (2)	**Moderate (6)**	Y	**Minor (4)**
Transport of rock from quarries outside the project area	Increased impact on road safety due to larger distances covered outside of project area	Construction	Medium (3)	Low (2)	**Moderate (6)**	Y	**Minor (4)**
Transport of people and equipment	Increased vehicular traffic	Operation	Low (2)	Low (2)	**Minor (4)**	N	**N/A**
Physical environment – landscape and visual							
Construction	Effects on LCT 01 Open Forest	Construction	Low	High	**Moderate**	Y	**Moderate**
Construction	Effects on LCT 02 Wooded Savannah	Construction	Medium	Medium	**Moderate**	Y	**Moderate**
Construction	Effects on LCT 03 Grassy Savannah	Construction	Medium	Medium	**Moderate**	Y	**Moderate**
Construction	Effects on LCT 04 Mosaic Cropland/Farmland	Construction	Medium	Low	**Moderate**	Y	**Moderate**

Activity	Potential impact	Project phase	Impact significance			Mitigation needed	Residual impact significance
			Magnitude	Sensitivity	Significance		
Construction	Effects on LCT 05 Radi-Concentric Urban Corridor	Construction	Low	Low	**Minor**	N	**Minor**
Construction	Effects on LCT 06 Linear Urban Corridor	Construction	Low	Low	**Minor**	N	**Minor**
Construction	Effects on Fazao-Malfakassa National Park adjacent to the construction compound between PK45-50	Construction	Medium	High	**Major**	Y	**Major**
Construction	Effects on Fazao-Malfakassa National Park within 1.5 km from the site boundary	Construction	Low	High	**Moderate**	Y	**Moderate**
Construction	Effects on Fazao-Malfakassa National Park beyond 1.5 km from the site boundary	Construction	Very low	High	**Minor**	N	**Minor**
Construction	Effects on settlements, paths and tracks within 250 m of the proposed route	Construction	Medium	High	**Major**	Y	**Major**
Construction	Effects on settlements, paths and tracks between 250 m and 1 km of the proposed route	Construction	Low	High	**Moderate**	Y	**Moderate**
Construction	Effects on visual amenity for visitors at the Souroukou cascade (within Fazao-Malfakassa National Park)	Construction	Very low	High	**Minor**	N	**Minor**
Operation	Effects on LCT 01 Open Forest	Operation	Very Low	High	**Minor**	N	**Minor**
Operation	Effects on LCT 02 Wooded Savannah	Operation	Low	Medium	**Moderate**	Y	**Moderate**

Activity	Potential impact	Project phase	Impact significance			Mitigation needed	Residual impact significance
			Magnitude	Sensitivity	Significance		
Operation	Effects on LCT 03 Grassy Savannah	Operation	Low	Medium	**Moderate**	Y	**Moderate**
Operation	Effects on LCT 04 Mosaic Cropland/Farmland	Operation	Low	Low	**Minor**	N	**Minor**
Operation	Effects on LCT 05 Radi-Concentric Urban Corridor	Operation	Very low	Low	**Negligible**	N	**Negligible**
Operation	Effects on LCT 06 Linear Urban Corridor	Operation	Very low	Low	**Negligible**	N	**Negligible**
Operation	Effects on Fazao-Malfakassa National Park within 0.5 km from the site boundary	Operation	Low	High	**Moderate**	Y	**Minor**
Operation	Effects on Fazao-Malfakassa National Park beyond 0.5 km from the site boundary	Operation	Very low	High	**Minor**	N	**Minor**
Operation	Effects on settlements, paths and tracks within 250 m of the proposed route	Operation	Very low	High	**Minor**	N	**Minor**
Operation	Effects on settlements, paths and tracks between 250 m and 1 km of the proposed route	Operation	Very low	High	**Minor**	N	**Minor**
Operation	Effects on visual amenity for visitors at the Souroukou cascade (within Fazao-Malfakassa National Park)	Operation	Very low	High	**Minor**	N	**Minor**
Physical environment – soils							
Early works and construction	Erosion and reduced soil quality	Construction	Medium (3)	Very low (1)	**Minor (3)**	Y	**Negligible (2)**

Activity	Potential impact	Project phase	Impact significance			Mitigation needed	Residual impact significance
			Magnitude	Sensitivity	Significance		
Excavation of quarries	Reduction of soil resources at quarry sites	Construction	Medium (3)	Low (2)	**Moderate (6)**	Y	**Negligible (2)**
Physical environment – surface water							
Construction of infrastructure	Erosion of river or channel banks, scour, sediment contamination of surface waters	Construction	Low (2)	Medium (3)	**Moderate (6)**	Y	**Minor (3)**
Construction of infrastructure	Contamination of surface water	Construction	Low (2)	Medium (3)	**Moderate (6)**	Y	**Minor (3)**
Construction of infrastructure	Deterioration of water quality	Construction	Low (2)	Medium (3)	**Moderate (6)**	Y	**Minor (3)**
Construction of infrastructure	Increased runoff and flooding	Construction	Low (2)	Medium (3)	**Moderate (6)**	Y	**Minor (3)**
Maintenance and repair of infrastructure	Contamination of surface water	Operation	Low (2)	Medium (3)	**Moderate (6)**	Y	**Minor (3)**
Physical environment – groundwater							
Borehole drilling	Contamination of soil and groundwater	Construction	Low (2)	High (4)	**Moderate (8)**	Y	**Minor (4)**
Management of Waste and Accidental Release of Oil or Chemicals	Contamination of soil and groundwater	Construction	Low (2)	High (4)	**Moderate (8)**	Y	**Minor (4)**
Abstraction of Groundwater	Decreased water level due to abstraction for project use	Construction	Medium (3)	High (4)	**Major (12)**	Y	**Moderate (8)**

Activity	Potential impact	Project phase	Impact significance			Mitigation needed	Residual impact significance
			Magnitude	Sensitivity	Significance		
Biodiversity – protected areas							
Construction of improved road	Habitat loss and degradation	Construction	Very low (1)	High (4)	**Minor (4)**	Y precautionary approach	**Minor (4)**
Construction activities	Direct mortality and disturbance of species	Construction	Very low (1)	High (4)	**Minor (4)**	Y	**Minor (4)**
Construction activities - uncontrolled pollution events	Changes to water quality	Construction	Very low (1)	High (4)	**Minor (4)**	Y precautionary approach	**Minor (4)**
Influx of people/in-migration	Increase in pressure on natural resources	Construction	Medium (3)	High (4)	**Major (12)**	Y	**Minor (4)**
Construction activities	Introduction of invasive species	Construction	High (4)	High (4)	**Major (16)**	Y	**Minor (4)**
Operation of upgraded road	Severance/barrier effect	Operation	Very low (1)	High (4)	**Minor (4)**	Y precautionary approach	**Minor (4)**
Use of upgraded road	Direct mortality	Operation	Low (2)	High (4)	**Moderate (8)**	Y	**Minor (4)**
Maintenance and repair of infrastructure	Changes in water quality	Operation	Very low (1)	High (4)	**Minor (4)**	Y precautionary approach	**Minor (4)**
Influx of people/ in-migration	Increase in pressure on natural resources	Operation	Low (2)	High (4)	**Moderate (8)**	Y	**Minor (4)**
Enhanced access	Increase in pressure on natural resources	Operation	Medium (3)	High (4)	**Major (12)**	Y	**Moderate (8)**

Activity	Potential impact	Project phase	Impact significance			Mitigation needed	Residual impact significance
			Magnitude	Sensitivity	Significance		
Use of upgraded road	Decrease in dust emissions	Operation	N/A	High (4)	**Positive (0)**	N	**Positive (0)**
Biodiversity – priority habitats and flora							
Construction of improved road	Habitat loss and degradation	Construction	Very low (1)	High (4)	**Minor (4)**	Y precautionary approach	**Minor (4)**
Construction activities - uncontrolled pollution events	Changes to water quality	Construction	Low (2)	High (4)	**Moderate (8)**	Y	**Minor (4)**
Influx of people/in-migration	Increase in pressure on natural resources	Construction	Low (2)	High (4)	**Moderate (8)**	Y	**Minor (4)**
Construction activities	Introduction of invasive species	Construction	High (4)	High (4)	**Major (16)**	Y	**Minor (4)**
Maintenance and repair of infrastructure	Changes in water quality	Operation	Low (2)	High (4)	**Moderate (8)**	Y	**Minor (4)**
Influx of people/ in-migration	Increase in pressure on natural resources	Operation	Low (2)	High (4)	**Moderate (8)**	Y	**Minor (4)**
Enhanced access	Increase in pressure on natural resources	Operation	Medium (3)	High (4)	**Major (12)**	Y	**Moderate (8)**
Use of upgraded road	Decrease in dust emissions	Operation	N/A	High (4)	**Positive (0)**	N	**Positive (0)**

Activity	Potential impact	Project phase	Impact significance			Mitigation needed	Residual impact significance
			Magnitude	Sensitivity	Significance		
Biodiversity – Fauna							
Construction of improved road	Habitat loss and degradation	Construction	Very low (1)	High (4)	**Minor (4)**	Y precautionary approach	**Minor (4)**
Construction of improved road	Severance of populations/barrier effect	Construction	Low (2)	High (4)	**Moderate (8)**	Y	**Minor (4)**
Construction of improved road	Direct mortality and disturbance of species	Construction	Low (2)	High (4)	**Moderate (8)**	Y	**Minor (4)**
Construction activities - uncontrolled pollution events	Changes to water quality	Construction	Low (2)	High (4)	**Moderate (8)**	Y	**Minor (4)**
Influx of people/in-migration	Increase in pressure on natural resources	Construction	Medium (2)	High (4)	**Moderate (8)**	Y	**Minor (4)**
Construction activities	Introduction of invasive species	Construction	High (4)	High (4)	**Major (16)**	Y	**Minor (4)**
Operation of upgraded road	Severance/barrier effect	Operation	Medium (3)	High (4)	**Major (12)**	Y	**Minor (4)**
Maintenance and repair of infrastructure	Changes in water quality	Operation	Low (2)	High (4)	**Moderate (8)**	Y	**Minor (4)**
Use of upgraded road	Direct mortality	Operation	Low (2)	High (4)	**Moderate (8)**	Y	**Minor (4)**
Influx of people/ in-migration	Increase in pressure on natural resources	Operation	Low (2)	High (4)	**Moderate (8)**	Y	**Minor (4)**
Enhanced access	Increase in pressure on natural resources	Operation	Medium (3)	High (4)	**Major (12)**	Y	**Moderate (8)**

Activity	Potential impact	Project phase	Impact significance			Mitigation needed	Residual impact significance
			Magnitude	Sensitivity	Significance		
Use of upgraded road	Decrease in dust emissions	Operation	N/A	High (4)	**Positive (0)**	N	**Positive (0)**
Biodiversity – Fazao-Malfakassa National Park							
Construction of improved road	Habitat loss and degradation	Construction	Very low (1)	High (4)	**Minor (4)**	Y precautionary approach	**Minor (4)**
Construction activities	Direct mortality and disturbance of species	Construction	Very low (1)	High (4)	**Minor (4)**	Y precautionary approach	**Minor (4)**
Construction activities - uncontrolled pollution events	Changes to water quality	Construction	Very low (1)	High (4)	**Minor (4)**	Y precautionary approach	**Minor (4)**
Influx of people/in-migration	Increase in pressure on natural resources	Construction	Medium (3)	High (4)	**Major (12)**	Y	**Minor (4)**
Construction activities	Introduction of invasive species	Construction	High (4)	High (4)	**Major (16)**	Y	**Minor (4)**
Operation of upgraded road	Severance/barrier effect	Operation	Very low (1)	High (4)	**Minor (4)**	Y precautionary approach	**Minor (4)**
Use of upgraded road	Direct mortality	Operation	Low (2)	High (4)	**Moderate (8)**	Y	**Minor (4)**
Maintenance and repair of infrastructure	Changes in water quality	Operation	Very low (1)	High (4)	**Minor (4)**	Y precautionary approach	**Minor (4)**
Influx of people/ in-migration	Increase in pressure on natural resources	Operation	Low (2)	High (4)	**Moderate (8)**	Y	**Minor (4)**

Activity	Potential impact	Project phase	Impact significance			Mitigation needed	Residual impact significance
			Magnitude	Sensitivity	Significance		
Enhanced access	Increase in pressure on natural resources	Operation	Medium (3)	High (4)	**Major (12)**	Y	**Moderate (8)**
Use of upgraded road	Decrease in dust emissions / sedimentation	Operation	N/A	High (4)	**Positive (0)**	N	**Positive (0)**
Biodiversity – Kyabobo National Park							
Construction of improved road	Habitat loss and degradation	Construction	Very low (1)	High (4)	**Minor (4)**	N	**Minor (4)**
Construction activities	Direct mortality and disturbance of species	Construction		High (4)	**Minor (4)**	N	**Minor (4)**
Construction activities - uncontrolled pollution events	Changes to water quality	Construction		High (4)	**Minor (4)**	N	**Minor (4)**
Influx of people/in-migration	Increase in pressure on natural resources	Construction		High (4)	**Minor (4)**	N	**Minor (4)**
Construction activities	Introduction of invasive species	Construction		High (4)	**Minor (4)**	N	**Minor (4)**
Operation of upgraded road	Severance/barrier effect	Operation	Very low (1)	High (4)	**Minor (4)**	N	**Minor (4)**
Maintenance and repair of infrastructure	Changes in water quality	Operation					
Use of upgraded road	Direct mortality	Operation					
Influx of people/ in-migration	Increase in pressure on natural resources	Operation					

Activity	Potential impact	Project phase	Impact significance			Mitigation needed	Residual impact significance
			Magnitude	Sensitivity	Significance		
Enhanced access	Increase in pressure on natural resources	Operation					**Moderate (8)**
Biodiversity – *Syzygium kerstingii*							
Construction of improved road	Habitat loss and degradation	Construction	Very low (1)	High (4)	**Minor (4)**	N	**Minor (4)**
Construction activities - uncontrolled pollution events	Changes to water quality	Construction					
Construction activities	Introduction of invasive species	Construction					
Construction activities	Direct mortality	Construction	Medium (3)	High (4)	**Major (12)**	Y	**Minor (4)**
Influx of people/in-migration	Increase in pressure on natural resources	Construction					
Maintenance and repair of infrastructure	Changes in water quality	Operation	Very low (1)	High (4)	**Minor (4)**	N	**Minor (4)**
Influx of people/ in-migration	Increase in pressure on natural resources	Operation	Medium (3)	High (4)	Major (12)	Y	**Minor (4)**
Enhanced access	Increase in pressure on natural resources	Operation	Medium (3)	High (4)	Major (12)	Y	**Moderate (8)**
Biodiversity – Adélé Raspy Cricket, Ukami Reed Frog and Grooved-toothed Forest Mouse							
Construction of improved road	Habitat loss and degradation	Construction	Very low (1)	High (4)	**Minor (4)**	N	**Minor (4)**
Construction activities	Direct mortality and disturbance of species	Construction					

Activity	Potential impact	Project phase	Impact significance			Mitigation needed	Residual impact significance
			Magnitude	Sensitivity	Significance		
Construction activities - uncontrolled pollution events	Changes to water quality	Construction					
Influx of people/in-migration	Increase in pressure on natural resources	Construction					
Construction activities	Introduction of invasive species	Construction					
Operation of upgraded road	Severance/barrier effect	Operation	Very low (1)	High (4)	**Minor (4)**	N	**Minor (4)**
Maintenance and repair of infrastructure	Changes in water quality	Operation					
Use of upgraded road	Direct mortality	Operation					
Influx of people/ in-migration	Increase in pressure on natural resources	Operation					
Enhanced access	Increase in pressure on natural resources	Operation					**Moderate (8)**
Biodiversity - Nubian Flapshell Turtle							
Construction of improved road	Habitat loss and degradation	Construction	Low (2)	High (4)	**Moderate (8)**	Y	**Minor (4)**
Construction of improved road	Severance of populations/ barrier effect	Construction	Low (2)	High (4)	**Moderate (8)**	Y	**Minor (4)**
Construction activities	Direct mortality and disturbance of species	Construction	Low (2)	High (4)	**Moderate (8)**	Y	**Minor (4)**

Activity	Potential impact	Project phase	Impact significance			Mitigation needed	Residual impact significance
			Magnitude	Sensitivity	Significance		
Construction activities - uncontrolled pollution events	Changes to water quality	Construction	Low (2)	High (4)	**Moderate (8)**	Y	**Minor (4)**
Influx of people/in-migration	Increase in pressure on natural resources	Construction	Low (2)	High (4)	**Moderate (8)**	Y	**Minor (4)**
Construction activities	Introduction of invasive species	Construction	High (4)	High (4)	**Major (16)**	Y	**Minor (4)**
Operation of upgraded road	Severance/barrier effect	Operation	Low (2)	High (4)	**Moderate (8)**	Y	**Minor (4)**
Maintenance and repair of infrastructure	Changes in water quality	Operation	Low (2)	High (4)	**Moderate (8)**	Y	**Minor (4)**
Influx of people/ in-migration	Increase in pressure on natural resources	Operation	Low (2)	High (4)	**Moderate (8)**	Y	**Minor (4)**
Enhanced access	Increase in pressure on natural resources	Operation	Medium (3)	High (4)	**Major (12)**	Y	**Moderate (8)**
Use of upgraded road	Decrease in dust emissions/ sedimentation	Operation	N/A	High (4)	**Positive (0)**	N	**Positive (0)**
Biodiversity – large vertebrates							
Construction of improved road	Habitat loss and degradation	Construction	Very low (1)	High (4)	**Minor (4)**	Y precautionary approach	**Minor (4)**
Construction activities	Direct mortality and disturbance of species	Construction	Very low (1)	High (4)	**Minor (4)**	Y precautionary approach	**Minor (4)**

Activity	Potential impact	Project phase	Impact significance			Mitigation needed	Residual impact significance
			Magnitude	Sensitivity	Significance		
Construction activities - uncontrolled pollution events	Changes to water quality	Construction	Very low (1)	High (4)	**Minor (4)**	Y precautionary approach	**Minor (4)**
Influx of people/in-migration	Increase in pressure on natural resources	Construction	Low (2)	High (4)	**Moderate (8)**	Y	**Minor (4)**
Construction activities	Introduction of invasive species	Construction	High (4)	High (4)	**Major (16)**	Y	**Minor (4)**
Operation of upgraded road	Severance/barrier effect	Operation	Low (2)	High (4)	**Moderate (8)**	Y	**Minor (4)**
Use of upgraded road	Direct mortality	Operation	Low (2)	High (4)	**Moderate (8)**	Y	**Minor (4)**
Maintenance and repair of infrastructure	Changes in water quality	Operation	Very low (1)	High (4)	**Minor (4)**	Y precautionary approach	**Minor (4)**
Influx of people/ in-migration	Increase in pressure on natural resources	Operation	Low (2)	High (4)	**Moderate (8)**	Y	**Minor (4)**
Enhanced access	Increase in pressure on natural resources	Operation	Medium (3)	High (4)	**Major (12)**	Y	**Moderate (8)**
Use of upgraded road	Decrease in dust emissions	Operation	N/A	High (4)	**Positive (0)**	N	**Positive (0)**
Socioeconomic – local and regional economy							
Construction	Opportunities for local businesses to supply goods and services to the project, generating multiplier effects across the economy	Construction	N/A	N/A	**Positive (0)**	N	**Positive (0)**

Activity	Potential impact	Project phase	Impact significance			Mitigation needed	Residual impact significance
			Magnitude	Sensitivity	Significance		
Construction	Local price inflation indirectly arising from economic opportunities generated by the project, leading to increased living costs for PAC members	Construction	Low (2)	Medium (3)	**Moderate (6)**	Y	**Minor (3)**
Operations	Enhanced regional economic integration	Operation	N/A	N/A	**Positive (0)**	N	**-**
Operations	Enhanced circulation of money in the local economy, leading to overall economic growth	Operation	N/A	N/A	**Positive (0)**	N	**-**
Socioeconomic – employment and skills development							
Construction	Project-related employment opportunities, leading to an improvement in household living standards and well-being	Construction	N/A	N/A	**Positive (0)**	N	**Positive (0)**
Construction	Provision of on-the-job training and skills building	Construction	N/A	N/A	**Positive (0)**	N	**Positive (0)**
Construction	Reduced ability of vulnerable people to access project employment and training opportunities	Construction	Low (2)	High (4)	**Moderate (8)**	Y	**Minor (4)**
Construction	Unmet expectations, leading to dissatisfaction and loss of support for the project among	Construction	Medium (3)	High (4)	**Major (12)**	Y	**Minor (4)**
Construction	Retrenchment of workers, leading to economic shock and reduced living standards at the household level	Construction	Medium (3)	High (4)	**Major (12)**	Y	**Minor (4)**

Activity	Potential impact	Project phase	Impact significance			Mitigation needed	Residual impact significance
			Magnitude	Sensitivity	Significance		
Socioeconomic – labour and working conditions							
Construction	Violation of labour rights by contractors and sub-contractors	Construction	Medium (3)	High (4)	**Major (12)**	Y	**Moderate (8)**
Construction	Increased risk of child labour and school drop out	Construction	Medium (3)	High (4)	**Major (12)**	Y	**Moderate (6)**
Construction	Failure of contractors and sub-contractors to provide adequate accommodation	Construction	Low (2)	Medium (3)	**Moderate (6)**	Y	**Minor (3)**
Socioeconomic – land access and livelihoods							
Construction	Permanent and temporary land acquisition leading to physical and economic displacement	Construction	High (4)	High (4)	**Major (16)**	Y	**Moderate (8)**
Construction	Temporary restriction of access to natural resources supporting livelihoods (wild foods, medicinal plants, fuelwood, charcoal and bushmeat)	Construction	Low (2)	High (4)	**Moderate (8)**	Y	**Minor (4)**
Construction	Increased demand for natural resources by incoming workers	Construction	Low (2)	High (4)	**Moderate (8)**	Y	**Minor (4)**
Construction	Restriction of access to small businesses, street vendors and local markets during construction (e.g., due to temporary obstructions, road closures).	Construction	Medium (3)	High (4)	**Major (12)**	Y	**Moderate (8)**

Activity	Potential impact	Project phase	Impact significance			Mitigation needed	Residual impact significance
			Magnitude	Sensitivity	Significance		
Construction	Increase in conflicts or exacerbation of existing conflicts between livestock owners and crop farmers due to crop damage	Construction	Medium (3)	High (4)	**Major (12)**	Y	**Moderate (8)**
Construction	Disruption of movement of herds due to access restrictions	Construction	Medium (3)	High (4)	**Major (12)**	Y	**Minor (4)**
Construction	Exclusion of women and vulnerable groups from resettlement or livelihood restoration measures	Construction	Medium (3)	High (4)	**Major (12)**	Y	**Minor (4)**
Operations	Changes in community access to natural resources (wild foods, medicinal plants, fuelwood, charcoal and bushmeat)	Operation	Low (2)	High (4)	**Moderate (8)**	Y	**Minor (4)**
Socioeconomic – community safety and security							
Construction	Increased risk of accidents during construction	Construction	Medium (3)	High (4)	**Major (12)**	Y	**Moderate (8)**
Construction	Increased risk of incidents of gender-based violence, sexual exploitation and harassment (GBV/SEA/SH)	Construction	Medium (3)	High (4)	**Major (12)**	Y	**Moderate (6)**
Construction	Increased risk of illicit behaviour and crime and perceived insecurity within the PACs	Construction	Medium (3)	High (4)	**Major (12)**	Y	**Minor (4)**

Activity	Potential impact	Project phase	Impact significance			Mitigation needed	Residual impact significance
			Magnitude	Sensitivity	Significance		
Construction	Conflict within PACs over representation of community views and interests regarding the project, the resettlement process and other project-related issues	Construction	Medium (3)	High (4)	**Major (12)**	Y	**Minor (4)**
Operations	Social cohesion and safety risks from PIIM	Operation	Medium (3)	High (4)	**Major (12)**	Y	**Moderate (8)**
Socioeconomic – public health							
Construction	Increased risk of malaria and water-borne diseases from unrehabilitated excavation sites	Construction	Medium (3)	High (4)	**Major (12)**	Y	**Moderate (8)**
Construction	PIIM and project employment leading to transmission of new communicable and endemic diseases	Construction	Medium (3)	Medium (3)	**Moderate (9)**	Y	**Moderate (6)**
Construction	PIIM and project employment leading to an increase in unwanted pregnancies	Construction	Medium (3)	High (4)	**Major (12)**	Y	**Moderate (6)**
Construction	Anxiety, irritation and reduced well-being among PACs resulting from general construction-related disturbances (noise, dust, access restrictions and workforce influx)	Construction	Medium (3)	High (4)	**Major (12)**	Y	**Moderate (8)**
Construction	Increase in respiratory conditions or exacerbation of	Construction	Medium (3)	High (4)	**Major (12)**	Y	**Moderate (8)**

Activity	Potential impact	Project phase	Impact significance			Mitigation needed	Residual impact significance
			Magnitude	Sensitivity	Significance		
	existing respiratory conditions resulting from a decline in local air quality						
Operations	Public health risks from PIIM	Operation	Medium (3)	High (4)	**Major (12)**	Y	**Moderate (8)**
Socioeconomic – infrastructure and services							
Construction	Increased pressure on existing health services because of project activities	Construction	Low (2)	High (4)	**Moderate (8)**	Y	**Minor (3)**
Construction	Temporary loss of access to community health and education infrastructure and services (e.g., due to access restrictions).	Construction	Low (2)	High (4)	**Moderate (8)**	Y	**Minor (4)**
Construction	Generation of solid and liquid waste leading to deterioration in environmental conditions and potential outbreak of diseases	Construction	Low (2)	Low (2)	**Minor (4)**	Y	**Negligible (2)**
Construction	Real or perceived reduction in groundwater water availability or quality for local communities due to abstraction for project use	Construction	Medium (3)	High (4)	**Major (12)**	Y	**Moderate (8)**
Construction	Real or perceived reduction in surface water quality or availability for local communities due to temporary flow restrictions	Construction	Low (2)	High (4)	**Moderate (8)**	Y	**Minor (4)**

Activity	Potential impact	Project phase	Impact significance			Mitigation needed	Residual impact significance
			Magnitude	Sensitivity	Significance		
Operations	Improved access to community health and education infrastructure and services	Operation	N/A	N/A	**Positive (0)**	N	**N/A**
Operations	Pressure on existing infrastructure and services from PIIM	Operation	Medium (3)	High (4)	**Major (12)**	Y	**Moderate (6)**
Socioeconomic – cultural heritage							
Construction	Damage to or loss of known graves and cemeteries due to project activities (e.g., road construction, trench excavation, movement of HGVs and equipment)	Construction	Medium (3)	High (4)	**Major (12)**	Y	**Minor (4)**
Construction	Damage to or loss of known religious sites due to project activities (e.g., road construction, trench excavation, movement of HGVs and equipment)	Construction	High (4)	High (4)	**Major (16)**	Y	**Minor (4)**
Construction	Disruption of rituals and ceremonies or community events (e.g., festivals, music and dance celebrations) due to project-related road closures and increased traffic flows	Construction	Low (2)	High (4)	**Moderate (8)**	Y	**Minor (4)**
Ecosystem services							

Activity	Potential impact	Project phase	Impact significance			Mitigation needed	Residual impact significance
			Magnitude	Sensitivity	Significance		
Construction and operations	Ecosystem services impacts are assessed within the categories above, reflecting the integrated nature of ecosystem services across social and environmental considerations.						
Greenhouse gas assessment							
Direct and indirect GHG emissions from the construction of the project	Increase in GHG emissions	Construction	Very low (1)	High (4)	**Minor (4)**	N	**Negligible (1)**

8.10 Impact assessment for unplanned events

'Credible' unplanned events during the construction phase and operational phase activities leading to environmental or social impacts were identified during the impact assessment process.

A summary of unplanned events associated with the project is presented in Table 8-73. This includes an overview of the project activity, receptor, potential impact, project phase event could occur, severity of impact, likelihood of impact, overall risk ranking and mitigation measures.

Unplanned ecosystem services impacts are discussed within the categories outlined in Table 8-73, reflecting the overlap between ecosystem services, social and environmental considerations.

Table 8-73: Potential impacts during unplanned events

Potential impact	Project activity	Environmental or social aspect	Project phase	Impact significance			Mitigation measure(s)
				Severity	Likelihood	Risk ranking	
Accidental spills or leaks of fuel or hazardous chemicals	Transport of fuel or chemicals during road construction	Soil quality	Construction	High (4)	Possible (3)	**Severe**	FB Group to implement measures to ensure that accidents are avoided, speed limits are adhered to and staff are trained to address spills or accidental leaks
		Groundwater quality	Construction	High (4)	Possible (3)	**Severe**	
		Surface water quality	Construction	High (4)	Possible (3)	**Severe**	
	All construction activities at surface water crossings	Surface water quality	Construction	High (4)	Possible (3)	**Severe**	
Accidental or additional vegetation clearance and/or damage outside the RoW. Leading to loss of habitat and foraging and breeding resources, characteristic landscape features and increased views of construction.	Additional vegetation clearance during construction	Biodiversity, landscape and visual amenity	Construction	Medium (3)	Unlikely (2)	**Material**	FB Group to ensure contractors clearly demarcate construction zones and restrict equipment movement and stockpiling outside designated areas. FB Group to ensure contractors implement buffer zones between construction sites and woodland. FB Group to train workers on environmental protection protocols to prevent accidental intrusion and spillage. FB Group to implement Community Grievance Mechanism for PACs to report vegetation damage.
Additional quarries required for hard rock and/or lateritic gravel due to unsuitable. Leading to of habitat and foraging and breeding resources, increased presence of quarrying and landform alteration within the landscape, increased vegetation clearance and increased views of quarrying.	Mineral extraction during construction	Biodiversity, landscape and visual amenity	Construction	Medium (3)	Unlikely (2)	**Material**	FB Group to commission analysis of the mineral provision (quality and quantity) at proposed extraction sites and identify alternatives at the earliest opportunity.
Landslip from steep slopes of the Fazao-Malfakassa requiring temporary diversion of the road to undertake repairs. Leading to increase of highway infrastructure within the landscape, increase in vegetation clearance and increased views of the road.	Operation of the road corridor	Biodiversity, landscape and visual amenity	Operation	High (4)	Unlikely (2)	**Material**	FB Group to prepare an Emergency Response Plan.
Fire outbreak leading to loss of priority habitat, increased risk of wildlife injury or fatalities, loss of foraging and breeding resources	Construction and maintenance activities	Biodiversity	Construction and operation	High (4)	Possible (3)	**Severe**	FB Group to prepare a Fire Management Plan, which includes an emergency preparedness and response plan; prohibit open burning; maintain firebreaks; implement safe fuel storage; equip sites with extinguishers and water tanks; train worker and ensure staff notify authorities of fire immediately.
Increased risk of zoonotic disease transmission between workers/migrants and wildlife, potential spread of pathogens to local fauna (particularly primates)	Construction and maintenance activities	Biodiversity	Construction and operation	High (4)	Unlikely (2)	**Material**	FB group to prepare a Health and Hygiene Plan or equivalent, provide clean water and sanitation, health screening, awareness campaigns and vaccination programmes. Isolation and treatment protocols to be implemented. Ill staff to liaise with health authorities promptly.
Accidental damage to crops and livestock due to construction or maintenance activities	Construction	Land access and livelihoods	Construction	High (4)	Possible (3)	**Severe**	FB Group to ensure contractors clearly demarcate construction zones and restrict equipment movement outside designated areas. FB Group to ensure contractors implement buffer zones between construction sites and farmland.

Potential impact	Project activity	Environmental or social aspect	Project phase	Impact significance			Mitigation measure(s)
				Severity	Likelihood	Risk ranking	
							FB Group to train workers on environmental protection protocols to prevent accidental intrusion and spillage. FB Group to implement a Grievance Mechanism for farmers to report crop damage. FB Group to provide compensation for verified crop and livestock losses in line with national regulations and IFC PS5.
Increased volume of traffic, leading to an increased risk of road traffic accidents involving community members and/or livestock	Construction	Community safety and security	Construction	High (4)	Probable (4)	**Severe**	FB Group and contractors to communicate construction schedule to stakeholders and local communities. FB Group and contractors to identify and announce alternative routes for any diversions in advance. FB Group to implement a Traffic Management Plan (routes, speed limits, driver conduct, hours, detours, rest stops, accident reporting). FB Group to apply the Community Grievance Mechanism for concerns. FB Group to ensure contractor's provide safe, clearly marked pedestrian routes near schools. FB group to conduct traffic safety awareness programmes in schools if needed. Once locations of quarry sites have been determined, integrate traffic safety measures into construction planning, including consideration of sensitive social receptors
	Operations	Community safety and security	Operations	Medium (3)	Possible (3)	**Material**	FB Group to ensure contractors install appropriate road safety signage and speed control devices (e.g., speed bumps) in populated areas. FB Group's CLO to implement community road safety awareness programmes targeting vulnerable groups. FB Group to coordinate with local authorities to strengthen enforcement of traffic regulations
Accidental disruption to existing roadside utilities resulting in temporary supply-cut offs for some areas near or far from the project site	Construction	Infrastructure and services	Construction	Medium (3)	Possible (3)	**Material**	FB Group and contractors to liaise with utility's owners (e.g., MOOV, YasTogo, CEET and TdE), to develop and implement an easement acquisition plan focused on all public utilities or infrastructure within the project footprint both along and across the project roads. FB Group's CLO should inform the affected residents about potential disruption to public utilities as a result of the project in advance.
Accidental contamination of community water sources due to spills, waste mismanagement or erosion	Construction	Infrastructure and services	Construction	Medium (3)	Possible (3)	**Material**	FB Group to implement a Grievance Mechanism to assist in identifying if/when any issues with water use come up. FB Group's CLO to provide clear and regular communications delivered to stakeholders regarding the project, including any water requirements, timings, volumes and locations of extraction. If users are impacted by any temporary or permanent reduction in water availability due to project activities, the project should address this through providing fresh water for example by providing alternative water supply sources. Groundwater volume monitoring systems should be implemented for the project duration and if there is a risk of

Potential impact	Project activity	Environmental or social aspect	Project phase	Impact significance			Mitigation measure(s)
				Severity	Likelihood	Risk ranking	
							impacting local supplies, contingency measures should be employed. FB Group to prepare an Emergency Response Plan
Accidental damage to or loss of unknown cultural heritage (e.g., archaeological artifacts religious sites, fetish shrines, graves or cemeteries due to project activities	Construction	Cultural heritage	Construction	Very high (5)	Possible (3)	**Severe**	Develop and implement a Chance Finds Procedure, within the CHMP, to ensure that any unknown archaeological sites are identified prior to construction and processes put in place to record and manage the site and object discovered. Identify and report to the appropriate government agency as required by national legislations, on the location of any important unknown cultural heritage sites and any unknown associated practices and events. Implement avoidance measures (e.g., access points) to minimise loss of access to or use of sacred or culturally important sites. If cultural heritage such as human or structural remains, fossils, archaeological deposits or artefacts are found, archaeological advice shall be sought from the appropriate government authorities. FB Group to implement a Grievance Mechanism for PACs to report cultural heritage concerns.

8.11 Conclusions

In conclusion, a general reduction in the significance of impacts on the physical, biodiversity and social environment is a result of pre-existing road conditions, where construction activities will largely be contained within or close to the existing RoW.

In terms of the physical environment, the assessment of impacts identified that construction activities have the potential to generate short-term effects on air quality, noise, soils and water resources. For air quality, uncontrolled construction dust emissions present major pre-mitigation impacts at sensitive receptors due to high sensitivity and medium to high dust magnitude. Exhaust emissions from plant and construction traffic, however, are predicted to result in only minor impacts, due to their low magnitude and temporary nature. Construction-phase noise and vibration result in moderate to major effects, particularly where activities such as rock breaking and heavy vehicle movements occur near settlements. Traffic and transport impacts have been assessed as moderate, resulting from increased HGV movements, congestion and severance effects during peak construction periods. Impacts on soils and surface water are primarily associated with erosion, contamination risks, altered drainage and sedimentation, with significance generally in the minor to moderate range prior to mitigation. In all cases, the implementation of robust mitigation such as dust suppression, noise management, controlled drainage, monitoring and adherence to management plans will reduce the residual effects to moderate or minor, with several impacts reduced further to negligible.

The biodiversity assessment indicates that the majority of construction-related impacts, including habitat loss, disturbance and pollution, are of low to very low magnitude, resulting in minor to moderate significance, given the degraded road and the restricted extent of habitats. However, in-migration increasing demand for natural resources and the potential introduction of invasive species pose considerable pre-mitigation risks due to the higher sensitivity of protected areas and priority species. Implementing biodiversity mitigation measures, such as no-go zones, vegetation protection, invasive species controls, pollution prevention and workforce management, can reduce impacts to minor or moderate residual levels, with no significant long-term effects on protected areas, priority habitats or Critical Habitat triggers.

The social impact assessment identifies moderate to major risks during construction, such as land and livelihood impacts, labour and working conditions issues, community safety and public health risks and pressures related to project-induced in-migration. However, these risks can be significantly reduced by implementing project management plans, engaging stakeholders and establishing strong grievance mechanisms. The project introduces several complex social risks particularly related to PIIM, vulnerable groups, labour practices, safety and land/livelihoods. However, with robust mitigation and sustained community engagement, no significant long-term residual social impacts are expected, and the project can deliver meaningful socio-economic benefits for affected communities.

The assessments of ecosystem services, cumulative impacts, GHG emissions and transboundary effects show that the project will generate only minor, temporary impacts during construction and no significant long-term residual impacts once mitigation is applied. No meaningful cumulative or cross-border effects are expected, and climate-related impacts remain negligible.

Overall, while construction works introduce a range of environmental pressures typical of large linear infrastructure projects, the assessment concludes that with full application of the proposed mitigation measures, no significant residual impacts on the environment are anticipated.

9 ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK

9.1 Introduction

This Environmental and Social Management Framework (ESMF) outlines the key processes implemented by the project to manage the defined environmental and social impacts and implement the commitments identified in the ESIA. The ESMF describes how these processes are organised and includes the roles and responsibilities of the project and of contractors/subcontractors during construction and implementation.

The purpose of the ESMF is to:

- provide an overview of the environmental and social standards and specifications applicable to the project
- document and direct project personnel and other stakeholders on how project environmental and social risks are managed to conform with applicable project standards and specifications
- outline organisational structure, key roles and responsibilities associated with environmental and social management.

The scope of this ESMF includes the construction and commissioning stages of the project. The ESMF will be updated prior to the operational phase when the road will be handed over to the Ministry of Public Works.

9.1.1 Management and monitoring approach

The project's approach to environmental and social management follows the 'plan, do, check, act' continuous improvement principles of ISO 14001: Environmental Management Systems (2015) and ISO 45001: Occupational Health and Safety Management Systems (2018) international environmental management system standards (Figure 9-1).

Figure 9-1: Plan-do-check-act continuous improvement principles
Source: IFC (2014)

Environmental and social impacts are managed throughout the construction and commissioning phases of the project and the entire value chain through the implementation of an ESMS, which includes the project ESMF documents and other supporting documents.

A suite of Construction Environmental and Social Management Plan (CESMP) documents will be prepared prior to construction and will include management and monitoring requirements for the construction phase of the project.

Minimum requirements for CESMP documents are included in Section 9.6 and comprise a set of topic-specific plan frameworks (e.g., waste management, labour management, soil management) that address the environmental and social commitments made in the ESIA as detailed in the project environmental and social commitments register ('commitments register') (included as Appendix 12). The final CESMP documents will be used to coordinate and review the environmental and social performance of the project. For each commitment made within this ESIA, the commitments register lists the applicable project phase and responsible parties for implementation.

Commitments detailed in the commitments register will be finalised following approval of the ESIA by ANGE, taking account of any issues raised during the ESIA disclosure process, permit conditions and contractual arrangements between the project and subcontractors/suppliers.

Table 9-1 contains further information on how the plan-do-act-check process will be applied to the project and in Section 9.5.

Table 9-1: Plan-do-check-act description

Stage	Description
Plan	• Identify hazards and risks to the project, for example, through the ESIA process. 'Plan' also involves identifying legal and other requirements and setting goals and targets. • The ESMF documents list relevant commitments that have been generated in the ESIA process and assigns the responsibility for each commitment that will be implemented in the 'do' stage of the cycle. The ESMF documents are 'live' documents and will be updated during the course of the project, as required.
Do	• The ESMS will include the ESMF documents containing several management plans to be developed for the project. • Training and skills development plans will be implemented either directly by the project or via its contractors to ensure that required competencies are available and appropriate to the defined risks. The training programme (including daily toolbox meetings) will be updated in accordance with changes to the scope of work, incident statistics and/or regulatory requirements. • Priorities for capacity development of the project workforce in relation to environmental and social will be identified. Capacity development activities will be tailored to the needs of the workforce and be accessible in the appropriate language. • The project will proactively identify vulnerable groups and develop specific engagement activities/methods where necessary to ensure vulnerable groups are aware of employment and training opportunities. Targets and hiring criteria will be included where possible and appropriate to ensure active inclusion of women and for the training of women.
Check	• The project and subcontractors/suppliers will implement environmental and social audit and assurance processes aimed to confirm that the commitments made during the ESIA are fulfilled. • The ESMF documents will specify key indicators for environmental and social performance. • The project and subcontractors will develop an environmental and social monitoring and reporting plan that reflects the specific monitoring requirements contained within the ESMMP documents and will produce environmental and social monitoring reports on a monthly basis accordingly.
Act	• Where performance monitoring identifies non-conformance (i.e., deviations from project requirements) or noncompliance (i.e., failure to comply with a legal requirement), these will be investigated to identify likely causes and appropriate corrective/preventive actions. • All non-conformances/non-compliances will be assigned a corrective action, and preventative action where appropriate. • Procedures will be developed for non-conformance/non-compliance management, action tracking and the management review process.

9.2 Policies and applicable standards

Applicable requirements include Togolese regulatory requirements, EIFO requirements, EP4, IFC PS, World Bank EHS Guidelines, and other requirements (as described in

Section 2). The project identifies and follows applicable national, international, and local legislation on environmental and social resources, including labour and health and safety. Further details are provided in Section 2. Responsibilities for identifying and tracking changes to legislation and other applicable standards are detailed in Section 9.3, and implications for environmental and social management and monitoring will be handled in accordance with the management of change procedure, as described in Section 9.13.

9.2.1 Corporate policies

The following policies are applicable to the project:

- Code of Ethics and Business Conduct
- Anti-bribery and Corruption Policy
- Office of Foreign Assets Control (OFAC) Compliance Program Policy
- Health and Safety Policy
- Human Rights Policy
- Corporate Social Responsibility (CSR) Policy
- Environmental and Social Policy.

The project provides a copy of the above policies, where relevant, to all employees and contractors upon induction.

9.3 Roles and responsibilities

This section describes the organisational structure, including roles and responsibilities for the project.

9.3.1 EPCF Contractor – FB Group

Figure 9-2 below outlines the FB Group project team's organisational structure. The project team is organised into three main sub-teams:

- project management (on-site support):
    - technical office
    - accounting
    - administrative and affairs
    - quality assurance and control
    - health and safety
    - environmental and social
- Lome support team – finance and accounting
- construction
    - mechanical plant
    - asphalt plant
    - batching plant
    - workshop
    - survey
    - asphalt works
    - earthworks
    - structural works.

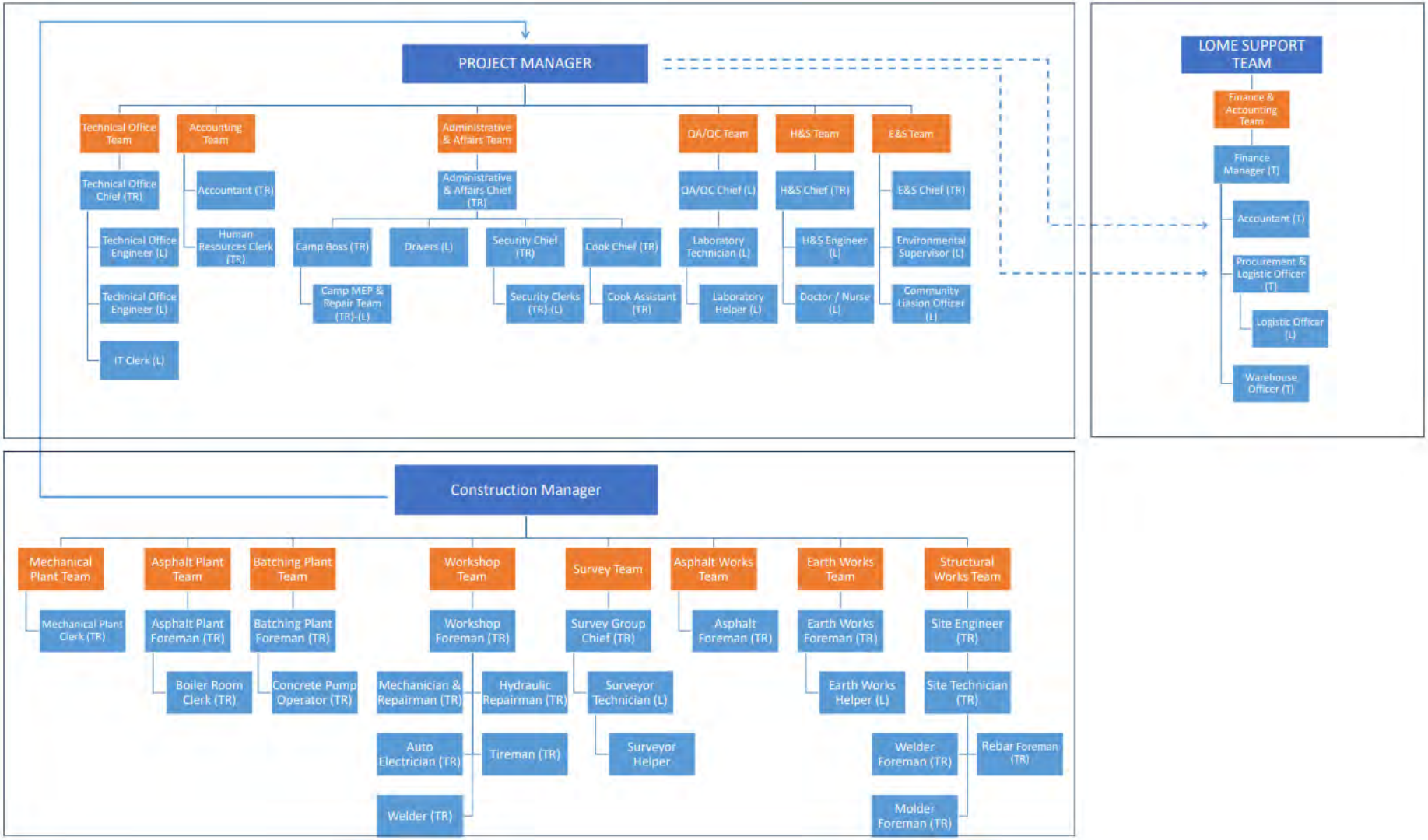

Figure 9-2: FB Group project team organisational structure

Table 9-2 below describes the key roles and responsibilities within FB Group's management team.

Table 9-2: FB Group ESMS roles and responsibilities

Role	Responsibility
FB Group Senior Management Team	• Ensures overall commitment to the implementation of the ESMF and ESMS. • Allocates adequate resources (human, financial, technical) to support effective environmental and social management. • Reviews periodic performance reports and ensures alignment with corporate sustainability goals.
FB Group Environmental and Social Management Team	• Oversees the implementation of the ESMF and site-level environmental and social plans. • Ensures compliance with national legislation, company procedures, and applicable international standards. • Coordinates monitoring, reporting, and training activities. • Acts as the primary point of contact for regulatory bodies and external stakeholders on environmental and social matters.
Site Project Manager	• Has overall responsibility for implementation of the ESMF. • Allocates adequate resources to support effective environmental and social management.
Site Construction and Other Discipline Managers	• Integrate environmental and social requirements into project planning and execution. • Supervise the work of contractors and subcontractors to ensure adherence to ESMF provisions. • Ensure timely reporting of incidents, near misses, and non-compliances. • Ensure that all project personnel under their supervision receive appropriate environmental and social trainings.
Site Environmental and Social Manager	• Implements and coordinates all environmental and social requirements outlined in the ESIA, ESMF, and site-specific environmental and social sub-management plans. • Ensures that all environmental and social mitigation measures are effectively implemented at the site level. • Conducts daily inspections and supervises environmental and social site conditions, Coordinates site-level environmental monitoring activities (e.g., air quality, noise, waste, wastewater). • Leads the implementation of the SEP at the site level, ensuring timely, inclusive, and culturally appropriate communication with all relevant stakeholders. • Organises and participates in consultations, public meetings, and information disclosure activities with affected communities and other stakeholders.

Role	Responsibility
	• Supports the CLO(s) in grievance management, ensuring grievances from employees and community members are properly recorded, assessed, and resolved in a timely manner. • Collaborates with local leaders, vulnerable groups, and women's representatives to foster inclusive engagement and promote social license to operate. • Ensures that stakeholder feedback is documented and considered in project decision-making and site-level planning. • Supports emergency preparedness and response activities. • Ensures that workers and contractors receive necessary environmental and social induction training, task-specific trainings, and toolbox talks (TBTs). • Maintains site records related to waste, emissions, incidents, stakeholder engagement, and training. • Prepares and submits regular environmental and social performance reports to the central Environmental and Social Manager or FB Group Senior Management Team.
Site Health and Safety Manager	• Implements and enforces occupational health and safety policies, procedures, and standards in line with national regulations and international best practices. • Identifies workplace hazards, assesses associated risks, and ensures the implementation of appropriate mitigation measures. • Coordinates and oversees site-level safety inspections, audits, and incident investigations. • Leads safety training, inductions, and toolbox talks to ensure all personnel understand health and safety requirements. • Collaborates with the environmental and social Manager and other site managers to ensure integrated and proactive management of health, safety, and environmental risks. • Maintains records of safety performance indicators, incidents, and corrective actions, and reports regularly to the Site Project Manager and FB Group senior team.
Site Security Manager	• Develops and implements site security protocols and access control measures to safeguard personnel, equipment, and property. • Conducts security risk assessments and ensures that site-specific security plans are up to date and effectively applied. • Coordinates with local law enforcement and community representatives to ensure alignment on security-related matters. • Manages the security team, monitors contractor and visitor compliance with site security procedures.

Role	Responsibility
	• Responds to security incidents and emergencies, ensuring appropriate reporting and investigation. • Provides security awareness training to all site personnel and maintains up-to-date logs of security-related events.
Environmental Supervisor(s)	• Supports the environmental and social Manager in implementing and monitoring the ESMF and subplans. • Conducts regular site inspections to identify environmental risks. • Reports environmental incidents and maintain accurate environmental records and documentation. • Delivers or supports environmental training and awareness programs for site personnel to promote compliance and risk prevention.
CLO(s)	• Acts as a communication bridge between the environmental and social manager and local communities. • Supports the implementation of the SEP. • Registers, tracks, and helps resolution of both employees' and community grievances in coordination with the Environmental and Social Manager. • Participates in community meetings, consultations, and information sessions.

All personnel, employed either directly or indirectly by FB Group, are responsible for following established environmental and social procedures and attending required trainings.

9.3.2 Subcontractors and suppliers

Subcontractors and suppliers are responsible for:

- complying fully with the ESMF and associated sub-plans
- appointing qualified personnel responsible for environmental and social compliance
- reporting environmental and social performance and incidents to FB Group's environmental and social team on a regular basis.

9.3.3 Operation and maintenance – Ministry of Public Works

Once the road is constructed and commissioned, FB Group will hand over the road to the Ministry of Public Works, which will be responsible for its operation and maintenance.

9.4 Identification and assessment of risks and impacts

FB Group and any subcontractors will take full responsibility of the environmental and social management of the construction and commissioning of the project. The ESMS will address the project description as detailed in the Section 3. The identification of environmental and social risks and impacts is a continuous process and is reassessed

following abnormal operating conditions, emergencies, or unforeseen circumstances experienced by project activities and facilities. The identification process addresses direct, indirect, and cumulative impacts. Furthermore, the risk and impact identification process encompass all project activities, including those carried out on behalf of the project by a subcontractor and associated subcontractors.

The identification and assessment process initiated during the project planning phase is continued in this ESIA (see Section 7.7). As a result, environmental and social management and monitoring will be guided through the project ESMS, and specifically by the tailored, topic-specific ESMF documents that will be developed or commissioned by the project prior to construction.

To ensure that all environmental and social hazards are appropriately identified and the impacts and risks are assessed, the project will conduct a periodic review of the identification of hazards and risk assessments initiated as part of the impact assessment process and subsequent applicable studies, including this ESIA.

The project's Site Environmental and Social Manager is responsible for leading this process in collaboration with the project's Health and Safety Manager, and Environmental Supervisor(s). In this role, the project's Site Environmental and Social Manager will periodically review the planned project activities, identify hazards or risks, update the commitments' register (see Appendix 12) and assess their potential impacts. The project's Site Environmental and Social Manager will form a risk assessment team, which will include members of the project's and subcontractor's teams responsible for compliance, community relations, security, engineering, construction and other related teams.

Based on the information reviewed, the team will use the commitments register as a guideline to identify environmental and social impacts and risks. The assessment will consider the activities and equipment used under all construction and commissioning phases of the project's lifecycle and will include normal operating conditions, transient or unstable operating conditions (e.g., tests, commissioning, start-up, shutdown, recycling, or maintenance) and potential emergencies. The periodic assessment examines direct, indirect, and cumulative environmental and social risks and impacts. The goal of this assessment process is to ensure that no new or developing risks and impacts go unnoticed or unmitigated.

Once the risks and impacts have been identified, the project's Site Environmental and Social Manager will assess the risks. The highest impacts (with greatest significance) and risks (with the greatest severity rating and the greatest probability of occurring) are managed first. The lowest impacts (with lower significance) and risks (with a lower severity rating and the lowest probability of occurring) are managed in descending order of importance. Mitigation measures following the risk mitigation hierarchy are applied. Once the team has established the mitigation and control measures, the impacts and risk(s) will be reassessed. The project's Site Environmental and Social Manager is then responsible for recording the resulting reduced impact and risk (i.e., residual) in the commitments register.

The identification and assessment of environmental and social risks and impacts, the corresponding risk assessment registers and relevant documentation, is reviewed at least annually and whenever there is a change that may affect the existing risks, such as changes to facilities, activities, installations, the communities, or the environment; a

significant change in compliance obligations; or when emergency incidents happen. See Section 9.11 for further details of the management review process.

The project's environmental and social commitments register will serve as a tool, linking sources of internal and external requirements. The register details potential risks and impacts that are applicable to environmental and social aspect. The register also includes a description of what mitigation measures will be implemented to address the identified risks during different project phases, and assigned responsible parties.

Appendix 12 provides the commitments register as it stands at the time of writing.

9.5 Environmental and social management

The project ESMS outlines the implementation of environmental and social management and monitoring during the construction, commissioning, and operational phases, including the topic-specific management plans detailed in Section 9.6.

The ESMS aims to enable users to reliably anticipate and mitigate concerns, while also assisting in the prevention of potential environmental and social incidents and repercussions throughout construction and operations. The objective is to guarantee the establishment of the relevant policies, plans, and procedures and ensure that personnel are adequately trained to implement the ESMS through ongoing and improved learning.

9.6 ESMF documents

The ESMF documents that will be created to aid in the ESMS's implementation are described in Table 9-3 below. The list is preliminary and only includes important ESMF documents; it could be modified as the project develops to reflect decisions made by management and the contracting strategy.

The management plans will include the following components:

- objectives
- legislative and institutional framework
- summary of identified issues, impacts and risks
- performance targets/indicators
- mitigation and management measures
- monitoring requirements and activities
- audit and inspection requirements
- implementation schedules
- responsibilities
- reporting and record keeping.

As a minimum, ESMF documents will be reviewed annually, or more frequently as needed in response to lessons learnt, project modification, or adaptive management. The project will be responsible for the content, drafting, implementation and revisions of the management plans described in this section.

Table 9-3: Preliminary key ESMF documents

Document	Minimum content
Biodiversity Management Plan	Identified ecologically sensitive areas and defines the approach to reduce impacts on biodiversity prior to, during and post construction. This will include footprint management, pre-construction surveys, restrictions on the timings of works and plans for habitat management. A restoration plan or protocol for at the end of the construction phase for the areas temporary affected to re-establish species and support ecological processes in protected areas.
Water and Wastewater Management Plan	Details water consumption, groundwater and surface water management and sustainable management activities. Include wastewater management activities.
Erosion Control/Soil Management and Reinstatement Plan	Defines the approach to soil management and temporary erosion control reinstatement, including requirements relating to construction planning surveys and assessments; erosion and sedimentation control techniques; contaminated land; and topsoil stripping, storage and use. The plan will also outline quarry closure requirements, including final slopes, drainage stability, topsoil thickness and revegetation success indicators.
Construction Noise and Vibration Management Plan	Identifies noise-generating activities and outlines control measures (e.g., scheduling, shielding and equipment maintenance) for noise and vibration in line with regulatory and good international industry practice. Also outlines monitoring locations and permissible limits.
Air Quality Management Plan	Outlines control measures for managing air quality (e.g., dust suppression techniques) in line with regulatory and good international industry practice.
Waste Management Plan	Identifies waste streams and outlines the 'cradle to grave' management practices to be employed for the collection, storage, handling, treatment and disposal of waste. Aligned with the waste hierarchy, and regulatory and good international industry practice. Including measures relating to hazardous waste.
Procurement Plan Management	Defines procurement principles and procedures to ensure environmentally and socially responsible sourcing of goods and services. Includes requirements for supplier pre-qualification, application of E&S criteria in contracts, local content opportunities, labour and human rights compliance, contractor performance monitoring, and alignment with project environmental and social standards.
Labour Management Plan	Outlines requirements for the recruitment, employment, and demobilisation of all project workers. Includes requirements for recruitment plans, inclusion, identifying opportunities for enhancing local content (both workforce and businesses), demobilisation support, and end of contract documentation. The Contractor and FB Group will put in place a Worker Grievance Mechanism that will be accessible to all workers, whether permanent or temporary, or directly or indirectly employed. This Worker Grievance Mechanism shall be open to all the project workers if their grievance is not adequately resolved by their direct employer.

Document	Minimum content
Camp Management Plan	Defines comprehensive standards and procedures for the planning, establishment, and ongoing management of workforce accommodation camps. Prioritises the health, safety, security, and overall well-being of the workforce while ensuring minimal impact on surrounding communities and the environment.
Environmental and Social Training Plan	Provides a structured framework for building awareness and capacity among employees, contractors and stakeholders on environmental and social requirements. Includes requirements for training and additional assistance for women; culturally appropriate training programmes and the communication of these programmes.
Livelihood Restoration Plan	Prepared for individuals and groups who experience temporary or permanent economic displacement due to land acquisition in the wellfield site or pipeline works. Outlines measure to ensure vulnerable groups are identified and provided with equivalent restoration in line with PS5 and the Human Rights Policy.
Resettlement Action Plan	Outlines how the project will fairly compensate and adequately support individuals and groups who experience temporary or permanent physical resettlement as a result of the project.
Community Relations Plan	Defines the approach for building and maintaining positive relationships with communities throughout the project lifecycle. Includes community liaison arrangements, information disclosure, community consultation processes, management of community concerns and grievances, culturally appropriate engagement methods, and coordination with other environmental and social management plans.
Stakeholder Engagement Plan	Provides an overview of the planned stakeholder engagement process including stakeholder identification and analysis, the stakeholder engagement programme, and data management. Also includes a Grievance Mechanism.
Community Health, Safety and Security Management Plan	Outlines the health, safety, security and environmental requirements throughout the project. The plan will cover community health, safety and security, including risk identification and management of community notification, traffic and road safety, worker-community interaction, sexual and communicable disease and community awareness programmes.
Occupational Health, Safety and Security Management Plan	Defines how the project will ensure the health, safety, and welfare of employees, contractors, and visitors in a workplace. The plan will identify, assess, and outline measures to control risks associated with workplace activities.
Project Security Management Plan	Outlines management and mitigation measures necessary to ensure that security is adequately managed, including security risk assessments, security contractor management, physical security (such as fencing, signage, lighting etc.), protocols for security issues, and incident reporting, investigating and resolving.
Emergency Preparedness and Response Plan	Emergency response will be covered, including the approach to emergency risk analysis, emergency preparedness, response planning and incident management, and will include a Spill Prevention and Response Plan.

Document	Minimum content
Traffic Management Plan	Guides project logistics and supports community and driver road safety during transportation activities. The plan includes requirements relating to site access/egress; loading, unloading and laydown areas; site routes; worker access and pedestrian management; transportation of equipment and materials; vehicle maintenance and safety checks; and emergency responses and reporting of hazards.
CHMP	Defines the approach to the identification, assessment and mitigation of potential impacts on documented tangible and intangible cultural heritage. Also includes a Chance Finds Procedure.
Project-Induced In-Migration (PIIM) Management Plan	Identifies and assesses risks associated with project-induced in-migration. Outlines measures to manage population influx impacts on services, housing, livelihoods, community health and social cohesion, including coordination with local authorities, monitoring of demographic changes, and adaptive management measures.
Monitoring Plan	Establishes clear procedures for monitoring and verifying compliance with environmental and social management measures. Defines key parameters, monitoring frequencies, roles and responsibilities, and reporting protocols to drive continuous improvement and ensure full regulatory compliance.

9.7 Awareness, training and capacity building

The project is committed to the implementation of a training and development plan that ensures the necessary workforce competencies for the identified risks. Both the project and subcontractors will implement an environmental and social training programme that includes a system for assessing the competency and training needs of all personnel.

The environmental and social training programme will include:

- induction training – both a worksite induction and construction camp induction (where relevant) are provided to all new workers, contractors and subcontractors before they commence any activity to ensure alignment with FB Group's standards and procedures
- toolbox talks – short and focused training sessions held regularly on site, usually before the start of a new task or shift. They are practical discussions that address specific risks, safety procedures, environmental sensitivities, or social behaviour expectations related to the immediate work being carried out
- worker awareness training, including topics such as:
    - FB Group's Code of Ethics and Business Conduct
    - Workers Code of Conduct
    - Workers Grievance Mechanism
    - workers' rights, grievance mechanism and how to register a grievance
    - health awareness
    - cultural heritage protection and the chance find procedure
    - spill prevention and response
    - waste management and hazardous material handling

    - biodiversity protection
- emergency preparedness and response training – practical drills and simulations to ensure workers know how to respond in case of emergencies such as fire, spills, accidents, or community incidents
- financial literacy training
- skills training to:
    - ensure competent and safe performance of duties, appropriate for the work being performed
    - optimise skills development for local staff.
- refresher training – to update and reinforce specific knowledge, and to ensure that employees remain competent and current with revised standards, new procedures, or lessons learned from incidents.

The training programme (including daily toolbox meetings) will be updated in accordance with changes in the project scope, lessons learnt from incidents, participant feedback and/or regulatory requirements.

A programme will also be developed for workers that addresses social conduct, including gender-based violence, harassment, drug and alcohol misuse.

Worker training records shall be recorded and statistics on worker progress kept. End of labour certificates will be issued to all workers (including skills used and training provided) and/or references, to support upskilling and employability. Periodic performance monitoring and review will be undertaken by FB Group to track progress on worker performance, training and skills building.

9.7.1 Capacity building

Capacity building involves equipping individuals with the necessary understanding, skills, and access to information, knowledge, and training to perform effectively. It is acknowledged that some project staff may lack experience in managing environmental and social impacts as required by the project. To address this gap, the Environmental and Social Training Plan will outline priorities for capacity development and implement measures to enhance the skills and capabilities of the project workforce, contractors, and subcontractors. Capacity development priorities include:

- waste management
- health and safety training
- emergency response and preparedness training
- safe driving
- rules of engagement for security personnel
- first aid training
- human rights training.

FB Group will also deliver community-focused training during the construction phase to build trust and maintain respectful relationships with affected stakeholders. These sessions aim to reduce tensions by managing unavoidable impacts, raise awareness of regulations and rights, and ensure communities understand and can access the project's grievance redress mechanism.

9.8 Emergency preparedness and response

The Emergency Preparedness and Response Plan (EPRP) aims to offer comprehensive guidance for responding to accidental and emergency situations identified through hazard identification and risk assessments. It will ensure close coordination with local, state, and national government agencies, as well as emergency response officials throughout all project phases. The plan will comply with Togolese regulations and international standards, including IFC PS and World Bank Group EHS General Guidelines.

The purpose of the EPRP is to minimise injury, illness, fatalities, and environmental or infrastructure damage. The EPRP will be distributed to all employees and contractors, with subcontractors required to comply. The Site Health and Safety Manager oversees implementation, updates and revisions based on changes, drills, or lessons learned. Workers, including subcontractors, will report the results of exercises, simulations, and drills to the Site Health and Safety Manager, including any identified nonconformities and corrective actions.

The EPRP outlines the specific activities, roles and responsibilities, equipment, and resources required to respond to emergencies and minimise harm to employees, contractors, and local communities. The EPRP will be communicated, reviewed, and updated regularly. Contractors will ensure that emergency procedures relevant to the project are practiced periodically.

Comprehensive training will be provided by qualified instructors, including emergency response drills with local responders to ensure integration with community systems.

9.9 Stakeholder engagement

An SEP was established as part of the ESIA to ensure active participation of all stakeholders in the consultation process, so that they are informed about project stages and given a forum for addressing their concerns.

The SEP adheres to IFC PSs to assess and manage environmental and social impacts associated with the project that may affect stakeholders. After the ESIA report is completed and construction begins, the project will continue to engage with stakeholders, review, and update the SEP throughout the project's lifecycle. This will be based on stakeholder feedback, changes in project circumstances, and evolving best practices in environmental and social management.

During construction, local communities, government agencies, NGOs, Indigenous People and other stakeholders will be contacted to solicit feedback and recommendations. A grievance mechanism has also been developed (see Section 6.5).

9.10 Performance monitoring and review

FB Group will monitor the major impacts and risks associated with the project using internal inspections, KPIs, and audits to measure its environmental and social performance. The level of monitoring by the project will be appropriate to the environmental and social risks and impacts of the project, as well as the needs of the lender and related regulations.

Team Leaders within each division or department will be responsible for measuring and tracking progress towards the environmental and social performance targets/objectives. Team Leaders/Specialists report progress to the Site Environmental and Social Manager, who is subsequently responsible (with support from the Environmental Supervisor[s]) for compiling the data into a clear presentation for the Site Project Manager during the construction phase.

On a regular basis during construction, FB Group's Environmental and Social Management Team is also responsible for reviewing the effectiveness of the ESMS implementation using systematic data collection (e.g., KPIs) and analysis. Based on the findings of this review, the Environmental and Social Management Team will take the necessary steps to ensure that the company's environmental and social policies, procedures, programmes, plans, and instructions are effectively implemented, deviations are corrected as needed, and a path of continuous improvement is established.

The project will consider involving representatives from local communities in monitoring activities.

9.10.1 Environmental and social monitoring

Environmental monitoring will commence at the start of construction and follow a schedule aligned with the nature, intensity, and location of activities and any specific regulatory requirements. It will cover key parameters such as waste management, biodiversity and sensitive habitats, ambient air quality, drinking and utility water quality, groundwater, noise and vibration levels. Accredited third-party laboratories will be engaged for specialised sampling, analysis and reporting of critical parameters as needed

Additionally, social monitoring will ensure transparent communication with PAPs, PACs, and other stakeholders. It will focus on stakeholder interactions, the functionality and responsiveness of grievance mechanisms for PAPs/PACs and workers, and the effectiveness of engagement activities.

9.10.2 Internal audits

Internal audits, including regular site inspections across all active construction sites, will be conducted to ensure that the project and subcontractors are properly executing the arrangements in the ESMS and that those arrangements are suitably managing the project's environmental and social impacts. Where these audits uncover non-conformances with project requirements, corrective/preventive actions will be identified and tracked until closing.

9.10.3 External audits

The project will utilise external audits (e.g., regulatory, third-party, Lenders) and inspections, where relevant, to verify compliance and progress towards desired environmental and social objectives and targets. External monitoring will be adjusted according to the relevant regulatory authorities and will be managed by the project.

9.10.4 Performance reporting

The project and subcontractors will develop a comprehensive reporting system which describes:

- internal reporting of environmental and social performance including the outcome of compliance assurance activities and subcontractors' performance against KPIs
- external reporting to government relating to:
    - permitting and licensing requirements, e.g., notification before starting an activity
    - monitoring results in accordance with the terms and conditions of any licences or consents
    - annual environmental and social audits
    - environmental and social incidents as required by legal requirements.

Subcontractors will provide environmental and social performance reports to the project; the project and the subcontractors will agree on the frequency (weekly, monthly, etc.), format, and content of the reports.

9.10.5 Key performance indicators (KPIs)

Environmental and social KPIs are measurable values that indicate how effectively environmental and social objectives are being achieved. These KPIs are included in ESMF subplans and will be refined between the project and sub-contractors before site mobilisation. The construction KPIs will be communicated to all relevant parties before the start of construction.

Performance will be measured against the KPIs and findings provided in monthly environmental and social performance reports to the project by subcontractors.

Where KPI performance indicates that the project's requirements are not being met, the relevant considerations will be documented in an action tracking system (ATS). The project and subcontractors will collaborate to identify ways to improve performance, and the agreed actions will be implemented.

The project commits to conducting an annual review to assess the effectiveness of implementation and the applicability of monitoring and control measures in accordance with the KPIs.

9.10.6 Environmental and social monitoring reports

The overall objectives and targets will be tracked and recorded in a monthly environmental and social monitoring report, prepared by the Site Environmental and Social Manager. This report will identify non-conformance events and document the progress of corrective actions taken to prevent recurrence. It will also include progress and results from internal audits and inspections. Once operations begin, environmental and social monitoring reports are expected to become bi-annual.

9.10.7 Non-conformance management

FB Group's Project Management team, in collaboration with the Environmental and Social Manager, is responsible for investigating all reported non-conformances and ensuring that appropriate corrective actions are defined, implemented, and verified. The

objective of this process is to identify root causes and prevent recurrence, focusing on facts and corrective measures rather than assigning blame.

Non-conformances detected through oversight activities, assurance reviews, or monitoring results that fall outside environmental or safety requirements are managed through the ATS. Each case is assigned corrective actions proportionate to its severity and tracked until closure. The Environmental and Social Manager monitors progress and evaluates effectiveness through follow-up inspections, audits, and performance reviews. All findings are documented and used to drive continuous improvement within the ESMS.

The non-conformance management process ensures that:

- the project Management Team is promptly informed of significant or recurring environmental and social non-conformances affecting compliance or performance
- all non-conformances are tracked and verified to confirm corrective actions have been effectively implemented
- formal closure occurs only after corrective measures are completed and validated
- root cause analysis and targeted actions prevent recurrence of similar issues
- periodic trend analysis identifies systemic improvements and strengthens overall project performance.

9.11 Management review

Management review is a critical component of the ESMS, acting as the formal mechanism for closing the adaptive management loop and driving continuous improvement in alignment with the principles of ISO 9001, ISO 14001 and ISO 45001.

9.11.1 Environmental and social coordination meetings

The Site Environmental and Social Manager will lead weekly and monthly environmental and social coordination meetings with the wider Environmental and Social Management Team.

9.11.2 Project management meetings

The Site Project Manager will conduct regular project management meetings with other site managers and personnel as appropriate.

9.11.3 Senior Management Team review meetings

FB Group's Senior Management Team will conduct formal reviews of the ESMS and related policies and procedures at least once per year during the construction phase. The purpose of these reviews is to ensure the ongoing suitability, adequacy, and effectiveness of all ESMS elements.

The scope of the management reviews will include:

- annual environmental and social performance, including the extent to which the project has achieved the established environmental and social objectives and targets
- the status and closure of non-conformances and recommended actions from previous management reviews

- opportunities for continual improvement in the upcoming reporting period, including prioritising preventative measures, and identifying and managing environmental and social risks
- trends in environmental and social incidents, root causes, and response effectiveness
- results from monitoring activities (including internal and external audits) and the status of any resulting corrective/preventive actions taken
- changes in business strategy, assets, operations, technologies, and associated environmental and social impacts
- new and emerging issues affecting the project and interested environmental and social stakeholders
- communications from external stakeholders, including grievances
- adequacy and allocation of environmental and social resources
- compliance with legal requirements and project commitments.

Each annual management review (as well as any associated meeting minutes) will be documented electronically according to the project's document control standards (see Section 9.12). The Site Environmental and Social Manager is responsible for ensuring that all relevant changes are incorporated into the ESMS and communicated to relevant teams.

9.12 Document control and record keeping

The project will establish a records retention policy, which governs the identification, maintenance, timely retrieval, retention, and disposition of environmental and social records to demonstrate conformance to the requirements of the ESMS and document environmental and social performance. The project considers the following materials to be ESMS-related records:

- training records
- stakeholder engagement records (e.g., meeting minutes, official letters from stakeholders)
- any records generated internally or externally, which detail measured environmental, health, and safety performance
- internal or external inspection and audit reports
- environmental and social incident forms/register
- grievance forms and register
- corrective and/or preventive action plans to address identified significant nonconformances.

The Site Environmental and Social Manager is responsible for implementing and controlling ESMS-related records. This responsibility also includes ensuring records remain legible, identifiable, and traceable. Additionally, the Site Environmental and Social Manager will prevent the unintended use of outdated or obsolete versions of records.

9.13 Management of change

The project is responsible for ESMF implementation performance and related decisions, as well as continuous improvement efforts. The Environmental and Social Management Team are responsible for approving changes to the ESMF and related plans or

procedures. Where these changes involve revisions or changes to compulsory and legal compliance obligations, the project will approve these changes.

A management of change procedure will be established to ensure that any alterations to the project are thoroughly assessed, and appropriate management and mitigation measures are identified and implemented. Examples of changes include changes to project areas, project activities, design, footprint, specific deviations, or technical specifications. This also encompasses updates to this ESMF and its associated subplans.

The project will ensure that any deviations from the approved project design and/or method statements (where required by law) will only be permitted with prior approval from relevant parties, including the project owner. This will be facilitated through a formal review process before any deviations are undertaken, in accordance with this change management procedure.

The management of change procedure will include:

- environmental and social appraisal/assessment guidelines of the change including the identification of new or revised mitigation measures
- emerging environmental and social issues
- health and safety evaluation
- consultation with engineering and HSE disciplines
- consultation with ANGE (or other authority) on the need for amendments to the ESIA, permits and/or consents
- update of management plans
- management of change approval process
- communicating the change.

Following management of change approval, changes to relevant documents will be implemented.

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APPENDIX 1 CONSTRUCTION MACHINERY AND EQUIPMENT LIST

Table A1: Construction machinery and equipment list (estimation)

Item		Quantity
Excavator	40 t	4
	30 t	3
	25 t	1
	20 t (wheel excavator)	2
Dozers	D8	1
	D7	3
Grader (18 t)		5
Loader (21-24 t)		6
Soil roller	16 t (sheep foot)	2
	16 t (flat tandem)	8
Dump truck (8*4)	Subbase	10
	Base	10
	Asphalt works	10
	Culvert works	1
	Quarry works	6
Dump truck (6*4)	Exc. embankment	6
	Exc. Borrow pit	20
	Foundation level	4
	Surface dressing	5
Truck (6*4) + water tank (20 t)		11
Asphalt plant (160 ton/hr)		1
Asphalt paver	Vögele 2100-5	1
	Vögele 2100-5	1
	Sany 90C-8	1
Rubber tyre roller		4
Asphalt tandem roller		2
Mini tandem roller		1
Mobile aggregate washing machine		1
Chip sealing paver (3.5-4 m)		1
Truck (8*4) + bitumen distributor		2
Bitumen relay tank (25-30 t)		2
Skid steer loader + sweeper attachment		1

Item		Quantity
Concrete batching plant (60 m^3/hr)		1
Concrete mobile batching plant (30 m^3/hr)		1
Truck (6*4) + concrete pump (24 m)		1
Truck (8*4) + concrete transmixer (10 m^3)		10
RT crane (80 t)		1
Hydrolic breaker		2
Plate compactor (medium weight 300-400 kg)		6
Road marking machine (No:1=1 pcs)		1
Truck (6*2) + hi-up crane (35 t)		2
Light truck (7-10 t)		1
Maintanence truck		1
Telescopic forklift (4 t-10 m)		1
Tractor truck (6*2) + low bed (50 t)/flat bed		2
Light tower 7.5 mt (6*100 w)		4
Generator	500 kw	1
	1100 kw	1
	600 kw	2
	200 kw	2
	100 kw	1
	50 kw	4
	7.5 kw	7
Forklift		1
Air compressor	Mobile	1
	Stationary	2
Rock drill		1
Fuel truck		2
Tractor + equipment		2

APPENDIX 2 SCREENED OUT THIRD PARTY PROJECTS

Table A2: Third party projects screened out of the CIA

Third party project	Proponent	Location	Description	Source	Status/ timeframe	Screening
Future projects						
National Water Programme-Phase 2 project/ National Development Programme (PND)	Togolese government	Kara and Plateaux regions	Expansion and modernisation of drinking water infrastructure in urban and semi-urban areas.	Togo First (2025a) Ministère de l'Eau et de l'Hydraulique Villageoise (2025)	Completion by December 2026.	Screened out due to the project location not being reasonably defined.
Rural Electrification	Togolese State (Ministry of Mines and Energy Resources)	Togo – no specific location identified	Extension of medium- and low-voltage (MV/LV) electricity distribution networks in 172 rural localities across Togo.	Ministry of Industry and Trade – Egypt (2025) Togo First (2025b)	Commences November 2025. Duration: 18-months.	Screened out due to the project location not being reasonably defined.
Universal Access to Sexual and Reproductive Health Services project phase II	Unknown	Centre Hospitalier Préfectoral (CHP) Djarkpanga	Rehabilitation of maternity services and construction of an operating room at CHP Djarkpanga.	Locally sourced information from CEMP.	Study phase	Screened out due to project not reasonably defined and unlikely to lead to cumulative impacts.
Existing projects						
75 km-long Sokodé-Bassar road	Soroubat, Togo	Sokode-Bassar road	Reconstruction of the 75 km Sokodé-Bassar road.	Sahel Liberty News (2025) Togo First (2025b)	Assumed to be completed.	Road assumed to be completed and therefore unlikely to lead to cumulative impacts.

Third party project	Proponent	Location	Description	Source	Status/ timeframe	Screening
Togo - Agro-Food Processing Zone Project - (PTA-TOGO)	Ministère de l'agriculture, de l'élevage et de la pêche (MAEP)	Bassar	Pilot project under the Togo Agropoles Strategic Development Plan (2017–2030) and Feed Africa Initiative (2016–2025) to boost private investment in agricultural processing, input supply, and marketing in the Kara region.	African Development Bank (2025)	Status: ongoing. Planned completion date: December 2027.	Screened out due project unlikely to lead to cumulative impacts.
Integrated Development Project of the Mô Plain (PDRI-MÔ)	Arab Bank for Economic Developmen t in Africa (BADEA) and the Togolese Republic	Kara region including Bassar	Enhancement of rural infrastructure (roads, schools, health facilities, water supply) including 212.7 km of rural tracks to increase rice producers' incomes and reduce rice imports by improving national self-sufficiency. 180 sites covering 2,938 ha including: • 1,425 ha to be developed. • 1,513 ha to be rehabilitated.	Ministère de l'Agriculture et de l'Élevage (2025)	Implementation period of 5 years (2022-2026)	Screened out due to project being not being reasonably defined and unlikely to lead to cumulative impacts.
Souroukou Waterfall Development Project (Near Djarkpanga)	Ministry of Tourism	2.5 km from Boulohou	Sustainable development of infrastructure around the waterfall to boost tourism and improve living conditions in Mo prefecture.	Togo First (2024)	Feasibility study validated by Ministry of Tourism: June 28, 2024. Project length: 3 years.	Screened out due to project unlikely to lead to cumulative impacts.
Project "Quality essential health services for universal health coverage", SSEQCU (P174266)	Ministry of Health, Public Hygiene and Universal Access to Care	Bassar 1 and Mô 1	Construction and rehabilitation of health centres with sanitation and water facilities, and solar electrification.	World Bank (2021a)	Ongoing	Screened out due to project unlikely to lead to cumulative impacts.
Universal Access to Sexual and Reproductive		CHP Bassar	Construction and rehabilitation health centres, including the Sonu project which involves housing and an incinerator.	Locally sourced information from CEMP.	Ongoing	Screened out due to project unlikely to lead to cumulative impacts.

Third party project	Proponent	Location	Description	Source	Status/ timeframe	Screening
Health Services project phase II						
Support project for improving the quality and equity of basic education (PAQEEB) in Togo	Ministry of Primary, Secondary, and Technical Education and Handicraft (MEPSTA)	Prefectures of Mô and Bassar	Construction of primary schools including new primary and lower-secondary classrooms, latrines, water points and school fencing.	World Bank (2021b)	Ongoing	Screened out due to project unlikely to lead to cumulative impacts.
Extension of optic fibre cable on the Bassar Tindjassé axis		Along the Bassar to Tindjassi route	Installation of fibre-optic cabling along the route of the Bassar to Tindjassi road.	Locally sourced information from CEMP.		Screened out due to project unlikely to lead to cumulative impacts.

APPENDIX 3 ATTENDANCE LIST (SCOPING PHASE AND DISCLOSURE PHASE)

Scoping meeting with Ministry of Public Works on 15 September 2025

Bassar Road ESIA

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PROJET D'AMENAGEMENT ET DE BITUMAGE DE LA ROUTE BASSAR-TINDJASSE Y COMPRIS LES BRETELLES DE SAIBOUDE ET SOUROUKOU (PROJECT FOR THE DEVELOPMENT AND ASPHALTING OF THE BASSAR-TINDJASSE ROAD INCLUDING THE RAMPS OF SAIBOUDE AND SOUROUKOU)

MISSION DE CADRAGE (SCOPING MISSION)

LISTE DE PRÉSENCE

Lieu : **Date :**

N°	NOM & PRENOMS	FONCTION/ INSTITUTION	LOCALITE	SEXE	CONTACTS	AUTORISATION DE PRISE DE PHOTO	SIGNATURE
1	AMAH Nayadjakina	DGTP Ministère TP et Infrastructures	Lomé	M	90040370	oui	
2	BOYINDJO Tchontchoko	DCRR Ministère TP et Infrastructures	Lomé	M	90212243	oui	
3	NAMBIEMA Nodah-Wattara	Chef division/DGTP	Lomé	M	91662589	oui	
4	BAICHAM Ibrahim	Expert planification Urbaine CEMP	Lomé	M	93365341	oui	
5	SIMTCHOU Maliwessong	Expert /CEMP	Lomé	M	91278193	oui	
6	KOULEY Kokou	Expert cartography/ CEMP	Lomé	M	93 85 81 10	oui	

Disclosure meeting in the prefecture of Bassar

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CONSULTATION DES PARTIES PRENANTES DANS LE CADRE DE LA DIVULGATION DU RAPPORT D'EIES DU PROJET D'AMENAGEMENT ET DE BITUMAGE DE LA ROUTE BASSAR-TINDJASSI Y COMPRIS LES BRETELLES DE SAIBOUDE ET SOUROUKOU

Date:

Nombre total de participants :

Lieu :

RGPD Clause de non-responsabilité : En signant cette liste de présence, je consens à ce que les détails personnels ci-dessus (nom, prénom, sexe, lieu, organisation, poste) et les photographies et commentaires pris lors de cette réunion soient inclus dans le rapport EIES qui sera rendu public. RSK a été engagé par le groupe FB pour travailler avec le CEMP afin d'entreprendre une EIES conformément aux réglementations nationales et aux normes internationales. Les informations et les photos seront conservées et utilisées conformément à la loi britannique sur la protection des données (RGPD), car RSK est une entreprise britannique. Pour plus d'informations ou si vous ne consentez pas, veuillez contacter le CEMP pendant l'événement. Pour plus d'informations sur la façon dont nous traitons vos données personnelles, veuillez consulter la politique de confidentialité de RSK : rskgroup.com/privacy.

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No.	NOM & PRENOMS	FONCTION/ INSTITUTION	LOCALITE	SEXE	CONTACTS (Tel & Email)	SIGNATURE
	KOUTCHEOU Ngbambé	chef canton	BAGHAN	M	91996766	
	KOUTCHEOU Tighanlya	Notable	Baghan	M		
	DJERI Kondo	chef quartier	Baghan	M	92-56 25 30	

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	GNANDI Ali	chef Quartier	Baghan	M	70-71-09-18	
	KONAME Komma	Membre du Village	Baghan	M	98-02-35-62	
	KITCHEOU Piou		Baghan	M	92103847	
	OUNO Issifou		Baghan	M	—	
	KONDI Bawa		Baghan	M	91284850	
	GNANDI Kokou	CCD	Baghan	M	91363701	
	OBARBA Yao		Baghan	M	79523075	
	KONDI Nglambe		Baghan	M	—	
	NIKABOU Nikabou		Bghan	M	70333175	
	KOUTCHEOU Kpadja		Baghan	M	91484075	
	KOUTCHEOU Djore	chauffeur	Baghan	M	90715850	
	DJERI Sangbo		Baghan	M	—	
	DGBATI Nikabou		Baghan	M	71899858	

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	KPAPOU Ouyi	Etudiant	Baghan	M	79567891	
	DJOUWA Nikabou	Enseignant	Baghan	M	92893509	
	NAFOURMEK. Manoba	Enseignant	Baghan	M	90728437	
	KONAM. Dare	Forestier	Baghan	M	92-86-81-89	
	NIKABOU Afia	Menagère	Baghan	F	91-83-72-01	
	KONDI Issofa	cultivateur	Baghan	M	71-67-07-30	K
	DJOUWA BAWA	cultivateur	Baghan	M	97917817	
	SAMIL yao	cultivateur	Baghan	M	71419395	
	YEMSSO - yao	cultivateur	Baghan	M	—	
	KOUTCHEOU N'cointda	cultivateur	Baghan	M	91677317	
	KOUTCHEOU KISSAO	Cultivateur	Baghan	M	71-11-20-35	
	ALI KOKOU	cultivateur	Baghan	M	92027180	

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	Mkonam Kondi	Cultivateur	Baghan	M	70 444 888	
	Katchita Digoula	cultmerçant	Baghan	M	91614540	
	Tchala Albina	commerçante	Baghan	F	70 10 90 43	
	Koubarba Koffi	cultivateur	Baghan	M	96 43-10 42	
	AGBA Ami	commerçante	Baghan	F	—	
	KOUYOLI - Gnandi	cultivateur	Inaba	F		
	BADJA Ouguinali	cultivateur	Baghan	M	91280046	
	BADJA Amanga	cultivateur	Baghan	M	92-67 33 11	
	BABAKIM Konlani	cultivateur	Baghan	M	91830315	
	BABAKIM Kodjo	Cultivateur	Baghan	M	92-30-21-07	
	GBATI Dané	maçon	BAGHAN	M	71-899858	
	OUNASSE Kodjo	Cultivateur	BAGHAN	M	71-41 44-22	

	NASSAM Nabine	cultivateur	Tchessi	M	90956805	
	KOLOBÉ Kpanté	cultivateur	Tchessi	M	93262518	
	GNON Amadou	cultivateur	Tchessi	M	—	
	GNON-Kpanté	chauffeur	Baghan	M	91161991	
	Tchala-Sogohou	cultivateur	Baghan	M	91296637	
	YATA-ABOU	cultivateur	Baghan	M	93287960	
	GNANDI-Doré	cultivateur	Baghan	M	91964931	
	Nadjombé Nédané	commerçante	Baghan	F	93171759	

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6.	ABDOU NASSIROU	cultivateur	SAI'BOUDE	M	71-66-4205	
7.	SONDOU-TETE	cultivateur	TINDJASSI	M	91-80 08 87	
8.	WADJA IDJAWAKOU	cultivateur	TINDJASSI	M	91 49 85 54	
9.	IDJIBIA Kodjo	cultivateur	Tindjassi	M	71 94 60 57	
10.	TAMOBA Bisangaï	cultivateur	Tindjassi	M	98 08 85 34	
11.	PRAL KOKOU	cultivateur	Tindjassi	M	91 47 11 36	
12.	SEXI Koffi	chef canton	Tindjassi	M	93 07 07 80	
13.	ALADJI SA Komla	chef OKAU	OKAU	M	-	
14.	BELEI Kpelnga	Propriétaire Tindassi	Tindjassi	M	91 57 23 05	
15.	ASSIH Komla	Prêtre Traditionnel	Tindjassi	M	93 12 99 32	
16.	ATAKZAN Kokou	TSGS	Sarlo (Sarlo)	M	90 95 75 55	

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18.	KALAYA Badibalaki	Adjt Maire	Tindjassi	M	91608955	
19.	ADJIFILE DJIBRILA	chef canton	Saïboudé	M	93379514	
20.	MOUSSA Bassarou	DPENSPCCC Mo	Djarkpanga	M	90135535	
21.	PATIZELE K. Padassiré	Maire	Djarkpanga	M	90306889	
22.	N'LAMABE Kossi	Adjoint maire	Djarkpanga	M	91698693	
23.	BAGNA ISSAKA	chef canton	BOULOHOU	M	90515240	
24.	TCAGARA MOUSSA	NOTABLE	BOULOHOU	M	93407547	
25.	OURO-BAWINNY AYENE	Regent	DJARKPANGA	M	91876882	
26.	LANGBETRE GUENIOU	Cultivateur	Boulohou	M	72 M 2117	
27.	OURO TIACHIRAU ISSAKA	chef Village	SOURAKAU	M	92708136	
28.	TCHAYAO SAIBOU	cultivateur	ADJONRO (DJARKPANGA)	M	71662880	
29.	GNOZITCHAO IDRISSOU	cultivateur	DJARKPANGA	M	91811403	

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30	OURO TCHEDRE YAGAIBEU	cultivateur	DJARKPANGA	M	91626346	
31	OURO-IFA Foussoni	chef	Djarkpanga	M	91709070	
32	ADOULI Soulemane	chef	Djarkpanga	M	-	
33	ALAZA SIRIKI	cultivateur	BESSIYO	M	70774762	
34	AKALA FOUSOU	cultivateur	BAILOHAI	M	91846046	
35	BERKOU A. Mawmani	Topographe	Darkpanga	M	92982434	
36	ALASSANI Fozane	Géomètre Topographe	Djarkpanga	M	71131381	
37	BAWINAM Abondemna	ONG JS	Djarkpanga	M	90237267	
38	TCHABA JACQUELINE	Couturière	ADJONRO	F	91273105	
39	OURO KPIRIKI TCHAYAO	cultivateur	ADJONRO	M	-	
40	OURO ADJONGAI	chef quartier	ADJONDO	M	71928715	
41	ISSIFOU ALAZA	chef Canton	KAGNIGBARA	M	70389732	
42	DRIME Kodjo Assoba	CCD	Kagnigbara	M	93683849	

APPENDIX 4 STAKEHOLDER ENGAGEMENT MATERIALS (BASELINE PHASE AND DISCLOSURE PHASE)

Background Information Document (BID) (baseline phase)

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Projet de route Bassar-Tindjassé
Document d'information sur le projet (DIP)
Évaluation d'impact environnemental et social (EIES)

Ce document fournit des informations générales sur le Projet d'aménagement et de bitumage de la route Bassar-Tindjassé y compris les bretelles d'accès de Saïboudé et Sourouékou au Togo, ainsi que sur le processus d'évaluation d'impact environnemental et social (EIES) qui est actuellement en cours. Dans le cadre de ce processus, nous vous invitons à nous faire part de vos commentaires sur le Projet.

Sur quoi porte le projet et pourquoi est-il nécessaire ?

Le Projet de la route Bassar-Tindjassé, développé par le groupe FB pour le gouvernement du Togo, permettra de réhabiliter 93,8 km de routes dégradées entre Bassar et Tindjassé et de construire deux bretelles d'accès (7 km à Saïboudé, 2,6 km à Sourouékou). L'itinéraire traverse les régions Centrale et de la Kara, en longeant des zones environnementales importantes telles que la forêt classée de Bassar et le Parc National de Fazao-Malfakassa.

La route actuelle est souvent impraticable, enclavant les communautés et augmentant les coûts de transport. Le Projet permettra de construire une route bitumée moderne pour améliorer l'accès, le transport des marchandises et les liaisons transfrontalières avec le Ghana. Une fois terminé, le Projet fournira un itinéraire fiable toute l'année, réduira les coûts de transport, soutiendra les communautés locales et l'agriculture, et fera progresser les objectifs de développement régional et de réduction de la pauvreté du Togo.

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La construction devrait commencer en Mai 2026, prendre environ 30 mois, et la route devrait être opérationnelle d'ici Juillet 2028.

Le processus d'EIES et d'engagement des parties prenantes

Une EIES est en cours de réalisation conformément à la législation nationale et aux normes internationales. Il est préparé par RSK Environnement en partenariat avec le Cabinet d'Expertise en Management (CEMP), un cabinet de conseil basé au Togo.

- L'étude de cadrage de l'EIES (étape 1) est terminée
- Le rapport de cadrage et les Termes de Référence (TdR) ont été soumis à l'ANGE.
- Les TdR définissent la portée de l'EIES, les enjeux clés et les méthodes d'évaluation.

L'EIES vise à :

- mener des études de référence (étape 2) couvrant le climat, l'air, le bruit, l'eau, les sols, la biodiversité et les conditions socio-économiques
- identifier les impacts environnementaux et socio-économiques potentiels (étape 3) et élaborer des mesures de gestion et de surveillance pour réduire les effets négatifs et améliorer les résultats positifs (étape 4)
- faciliter la participation des parties prenantes pour s'assurer que les communautés locales et d'autres groupes peuvent apporter leur contribution à l'EIES, soulever des préoccupations et aider à façonner le projet. En tant que partie prenante, vous serez invité à deux séries de réunions :
  - Tout d'abord, lors des études de référence environnementales et sociales (étape 2), où les détails du projet et le processus d'EIES seront partagés (c'est l'étape actuelle).
  - Deuxièmement, pendant la phase de divulgation (étape 5), après que la soumission du rapport provisoire d'EIES à l'Agence Nationale pour la Gestion de l'Environnement (ANGE), lorsque les conclusions, y compris les impacts potentiels et les mesures d'atténuation, seront présentées.

Qui contacter ?

En plus des réunions, toutes les parties prenantes sont invitées à partager leurs points de vue et préoccupations concernant le projet et/ou le processus d'EIES à tout moment en parlant directement avec les membres de l'équipe d'EIES.

Numéro de téléphone : +228 98 51 72 94 et Email : info@cempconsultinggroup.com

Un mécanisme de gestion des griefs sera établi par le groupe FB avant la construction, permettant aux communautés de faire part de leurs préoccupations et d'obtenir des réponses en temps opportun.

Le chargé de Liaison Communautaire (CLO) Bassem Indjaa peut être contacté au : +228 71 96 67 47

PowerPoint Presentation (baseline phase)

PLAN DE LA PRESENTATION

1. Contexte
2. Présentation du projet
3. Présentation de l'Etude d'Impact Environnemental et Social (EIES)
4. Impacts potentiels et études de référence
5. Mécanisme de retour d'information et de gestion des plaintes pour l'EIES
6. Questions et réponses

1

Introduction

Contexte

Ancrage stratégique

- Axe 2 de la feuille de route Gouvernementale 2020-2025 visant à dynamiser la création d'emplois en s'appuyant sur les forces de l'économie
- Développement d'infrastructures modernes et résilientes pour soutenir la croissance économique inclusive et l'intégration régionale

Finacement

- Gouvernement de la République Togolaise, à travers le Ministère délégué chargé des travaux publics et des infrastructures, en partenariat avec Groupe FB,
- Projet d'aménagement et de bitumage de la route Bassar–Tindjassé (93,8 km), y compris les bretelles de Saïboudé (7 km) et Souroukou (2,6 km)
- Contrat d'ingénierie, d'approvisionnement, de construction et de financement (EPCF)

Exigences ESF

- **Cadre international**
  - Principes de l'Équateur
  - Normes de performance de la Société financière internationale (SFI)
  - Exigences ESF de FB Groupe
- **Cadre national**
  - Exigences environnementale et sociales nationales (Certificat de conformité environnementale)

L'équipe projet

FB Group

- Ingénierie , d'approvisionnement, de construction et de financement

RSK Environment Ltd

- Réalisation de l'EIES et mobilisation des parties prenantes

Cabinet D'expertise En Management (CEMP)

https://cempconsulting-group.com

- Cabinet national:
- Appui à la mobilisation des parties prenantes et collecte des données sociales de référence.

5

2

Présentation du Projet

Nécessité du Projet

Défis actuels

- Route en mauvais état, impraticable pendant la saison des pluies
- Accès limité pour le transport et la commercialisation des produits agricoles
- Coûts de transport élevés et activité économique limitée, surtout en agriculture

Importance stratégique

- Relie la préfecture de Bassar à la plaine fertile de Mô, zone agricole clé
- Sert de corridor régional, favorisant le commerce et la mobilité entre le Togo et le Ghana
- Soutient la cohésion nationale en reliant les communautés rurales aux centres économiques.

Impact du développement

- Soutient la stratégie du Togo pour réduire les coûts de transport, améliorer la productivité agricole et l'accès au marché, réduire la pauvreté rurale et renforcer l'intégration régionale et le commerce transfrontalier avec le Ghana
- Restaure une route fiable et durable, favorisant une croissance inclusive et durable

Présentation du Projet

AU SUJET DU PROJET

- Réhabilitation et modernisation de 93,8 km de route en terre dégradée entre Bassar et Tindjassé.
- Construction de deux routes de raccordement :
  - 7 km à Saiboudé
  - 2,6 km à Souroukou.
- Route finale bitumée selon les normes modernes, assurant durabilité et fiabilité.

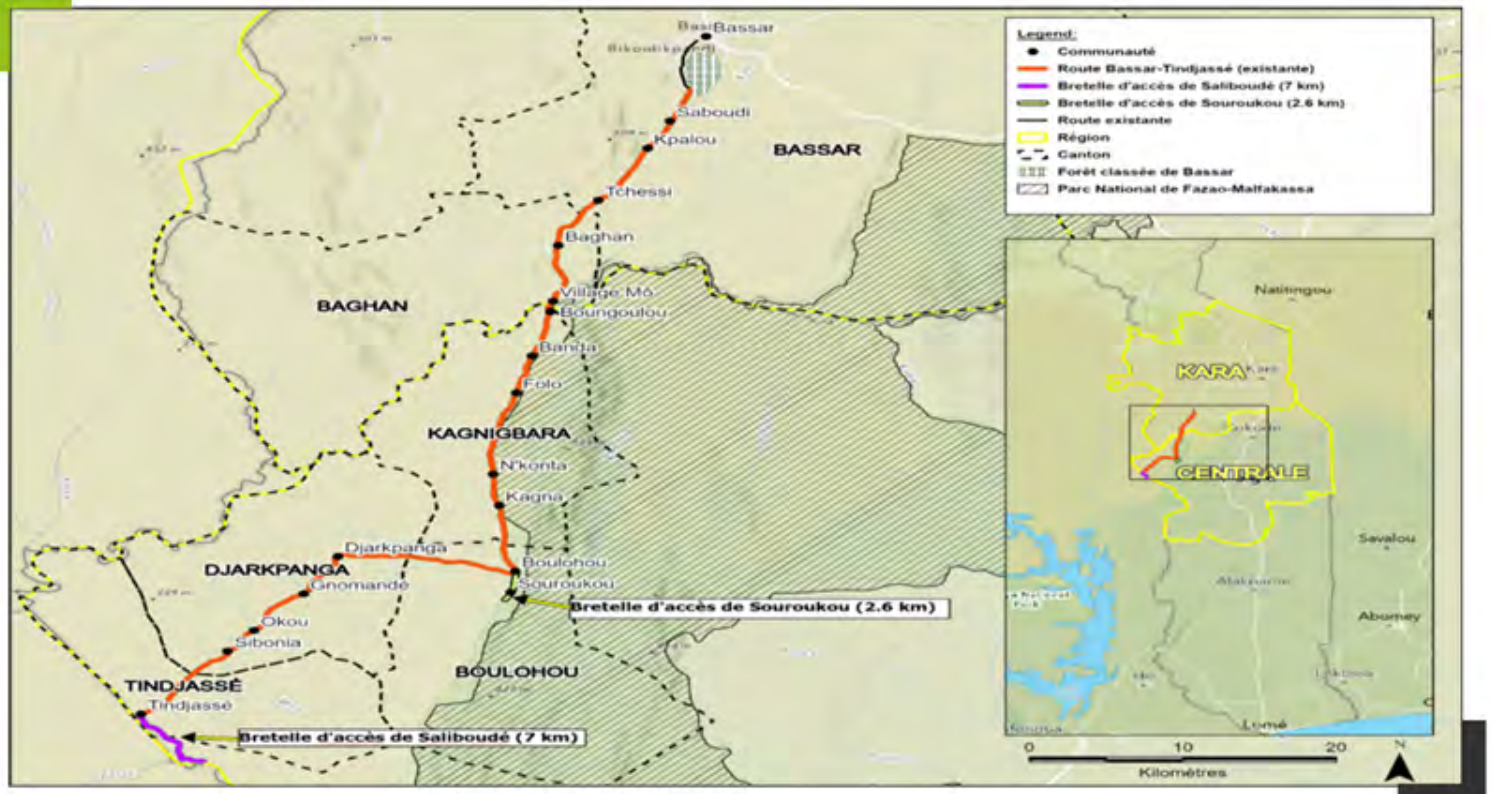
LOCALISATION

- Située dans le nord du Togo, de Bassar à la frontière ghanéenne à Tindjassé.
- Traverse les régions Centrale et Kara, reliant des zones agricoles clés.
- Passe près de zones écologiquement importantes, dont la forêt classée de Bassar et le parc national Fazao-Malfakassa.

CALENDREIR

- Début des travaux prévu en Mai 2026.
- Durée estimée de construction : 30 mois.
- Mise en service prévue pour Juillet 2028.

Zone du Projet



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Entités administratives affectées par le Projet

Région	Préfecture	Commune	Canton
Kara	Bassar	Bassar 1	Bassar
			Baghan
Centrale	Mô	Mô 1	Kagnigbara
			Djarkranga
			Boulohou
		Mô 2	Tindjassé
			Saiboudè

Composants du projet

Route principale

La route Bassar-Tindjassé de 93.8 km sera modernisée selon les normes de bitume dans une zone **d'expropriation de 30m** incluant une zone d'exécution de 20 m. La structure de la chaussée comprendra du béton bitumineux, une base stabilisée au ciment et une fondation en gravier.

Carrières et matériaux

Une carrière de roche de 50 000 m³ et environ 20 sites de gravier latéritique fourniront les matériaux. Tous les sites seront réhabilités après utilisation par remise en sol et revégétalisation.

Infrastructures de construction

Un camp principal de 3 ha au km 45 et un camp satellite de 0,5 ha au km 6 fourniront bureaux, logements, stockage et équipements. Les camps seront démantelés et les sites restaurés après la construction.

Drainage et traversées

Le projet inclut 17 ponts, 82 ponceaux et 109 tuyaux en béton, ainsi que des fossés et des dispositifs de contrôle de l'érosion pour réduire les risques d'inondation.

Routes secondaires

Deux bretelles d'accès (7 km à Saiboudé et 2,6 km à Souroukou) seront construites selon les mêmes normes pour améliorer la connectivité locale.

Accès temporaire

Une route de service de 5 m permettra l'accès pendant la construction. Des déviations temporaires et des dispositifs de sécurité seront installés selon les normes internationales.

Stratégie de main d'œuvre pendant la phase de construction

Main d'œuvre pendant la phase de construction

- Le projet emploiera environ 550 personnes pendant la période de construction:
  - 60 expatries techniques
  - 490 travailleurs locaux
- Tous les travailleurs seront sous contrat avec FB Group.
- Le nombre de travailleurs pourra augmenter pendant les phases de construction les plus intenses, selon la charge de travail et les besoins du projet.

Main d'œuvre pendant la phase de construction

- Le projet vise à optimiser l'utilisation de la main-d'œuvre locale pendant la construction.
- Objectif : 80 % de la main-d'œuvre composée de travailleurs togolais, dans la mesure du possible.
- Priorité à l'embauche locale lorsque l'expérience et les compétences sont compatibles avec les besoins du projet.
- Cette approche soutient la croissance économique locale et le développement des compétences.

Main d'œuvre pendant la phase de construction

- FB Group assurera la gestion de tous les contrats de personnel et des opérations liées à la main-d'œuvre.
- La stratégie d'emploi comprend :
  - Des postes spécialisés occupés par des expatriés
  - La majorité des postes occupés par des travailleurs locaux
  - Une flexibilité pour ajuster les effectifs selon les exigences du projet
- Une attention particulière sera portée au transfert de compétences, au respect du droit du travail, à la sécurité et à la formation des travailleurs, ainsi qu'à une intégration efficace des équipes locales et expatriées.

3

Présentation de l'EIES

AMCC+
PROJET : RENFORCEMENT DE LA RESILIENCE DES AIRES PROTÉGÉES DU TOGO FACE AU CHANGEMENT CLIMATIQUE
CONTRAT DE SUBVENTION : Actions extérieures de l'UE : ENV / 2018 /400-339
Activités réalisées : - Redynamisation du Comité de gestion
- Délimitation, matérialisation et cartographie
- Constitution de dossiers de Création
- Appui aux activités génératrices de revenu
JVPMR
MISE EN OEUVRE PAR : ONG ODIAE ET JVPMR

Retenue d'Eau de FOLO
PREFECTURE DE HO

Objectifs et finalités de l'EIES

Objectifs

L'EIES vise à fournir une évaluation approfondie du projet proposé et de son interaction avec l'environnement et les communautés avoisinantes. Les objectifs clés incluent :

1. **Description du projet et zone d'influence:** décrire clairement le projet et définir sa portée géographique et sociale.
2. **Identification et évaluation des impacts:** Identifier et évaluer les impacts environnementaux et sociaux, négatifs et positifs, sur les milieux physiques, biologiques et humains pendant la phase de construction et d'exploitation.
3. **Analyse et évaluation des variantes:** Examiner les alternatives du projet, y compris les sites et les tracés, afin de minimiser les nuisances et maximiser les bénéfices.
4. **Analyse des parties prenantes et des communautés:** Identifier les communautés et parties prenantes les plus concernées afin de répondre à leurs préoccupations.
7. **Mesures d'atténuation et d'amélioration :** Proposer des mesures pour prévenir ou réduire les impacts négatifs et renforcer les effets positifs.
8. **Conformité et autorisation :** Assurer le respect des lois environnementales togolaises et des normes internationales, et obtenir les autorisations nécessaires auprès des autorités telles que l'Agence Nationale pour la Gestion de l'Environnement (ANGE).
9. **Plan de Gestion Environnementale et Sociale (PGES):** Élaborer un PGES détaillant les actions pour gérer les risques et optimiser les bénéfices tout au long du cycle de vie du projet.

Utilité dans la prise de décision

Les résultats du processus d'EIES sont essentiels pour orienter la conception et la mise en œuvre du projet, en garantissant sa conformité aux réglementations locales et aux meilleures pratiques internationales en matière de développement durable.

Processus d'engagement des parties prenantes et EIES

Évaluation préliminaire et étude de cadrage

L'objectif de cette phase est d'identifier le champ d'application de l'EIES, la zone d'étude, les informations disponibles ainsi que les impacts potentiels majeurs qui devront être évalués plus en détail au cours de l'EIES.

Études de référence environnementales

Ces études sont réalisées afin de comprendre l'environnement physique et biologique. Des inventaires du milieu local et des recherches sont menés pour mieux appréhender les conditions environnementales.

Études de référence socio-économiques

Ces études sont réalisées afin de comprendre l'environnement socio-économique local. Des spécialistes échangent avec les populations et mènent des recherches dans les communautés locales pour mieux appréhender leur mode de vie.

Evaluation des impacts

Les bénéfices potentiels positifs et les impacts négatifs potentiels sont identifiés, définis et évalués en fonction de leur importance pour les populations, les moyens de subsistance et l'environnement naturel.

Plans de gestion

Des plans de gestion sont élaborés et mis en œuvre afin de minimiser les impacts négatifs potentiels et de maximiser les bénéfices positifs potentiels.

Divulgation

Après la finalisation du projet d'EIES, une période de divulgation des informations est prévue afin de permettre aux parties prenantes de commenter les résultats de l'étude et d'expliquer comment leurs préoccupations ont été prises en compte ou seront prises en compte.

ENGAGEMENT DES PARTIES PRENANTES

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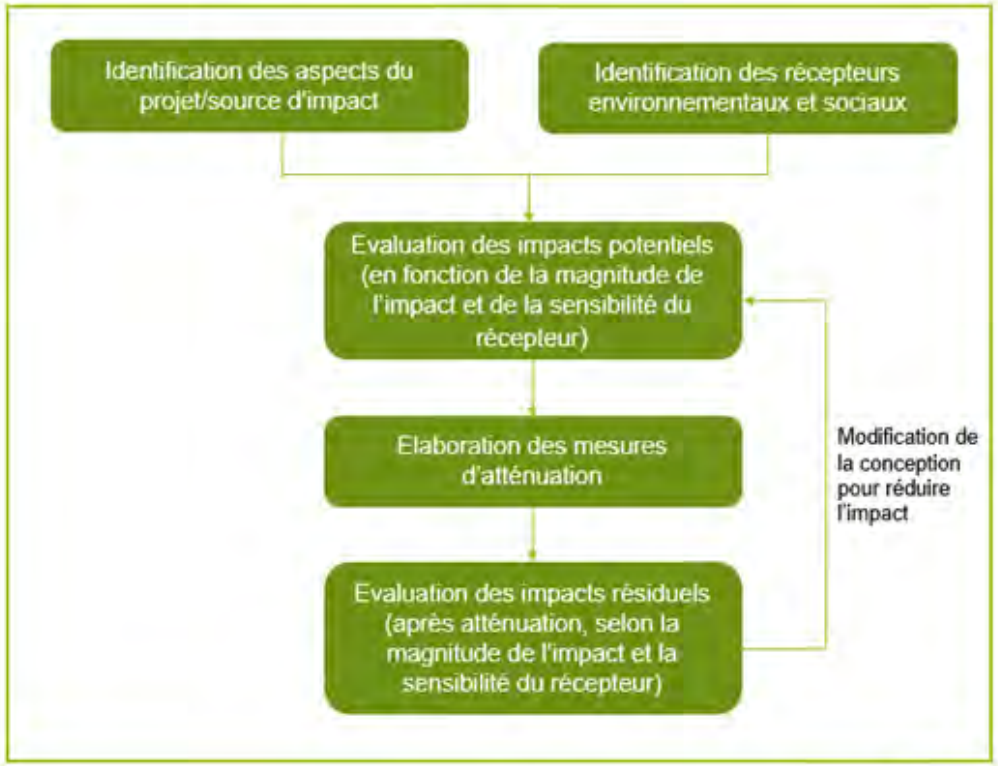
Processus d'engagement des parties prenants et de l'EIES

Processus d'évaluation des impacts

L'évaluation des impacts environnementaux et sociaux potentiels du projet repose sur un processus systématique qui comprend :

- L'identification des activités du projet et des aspects ou sources d'impact associés.
- L'identification des récepteurs environnementaux et sociaux concernés.
- L'évaluation des effets du projet sur ces récepteurs.

Des mesures d'atténuation sont alors appliquées pour réduire l'ampleur des impacts.



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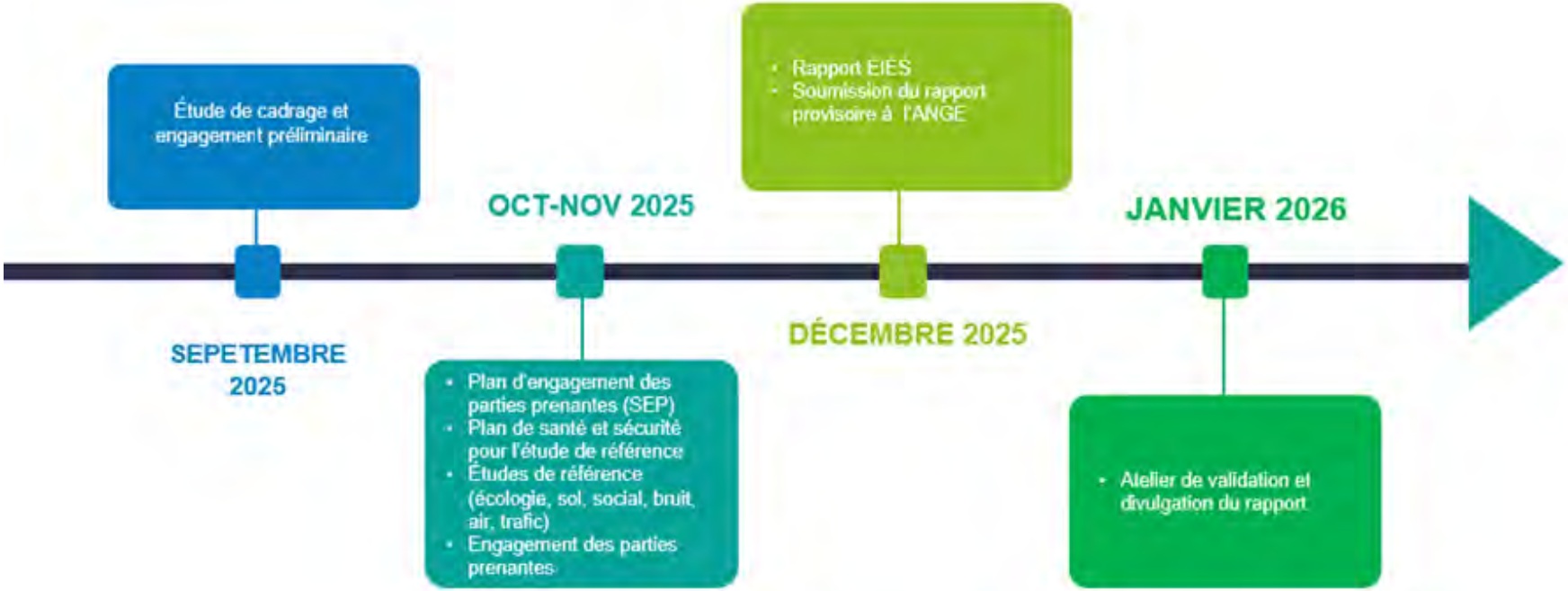
Calendrier de l'EIES



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Loi britannique sur la protection des données & Règlement général sur la protection des données de l'UE

- Lors de l'engagement des parties prenantes, des **informations personnelles** sont collectées et des **photographies** sont prises pour alimenter le processus de l'EIES
- Il est essentiel de faire preuve de **clarté** et de **transparence** envers les parties prenantes tout au long de l'engagement, en expliquant comment leurs données personnelles seront utilisées et conservées
- Pour garantir cela, les données sont collectées et stockées conformément à la Loi britannique sur la protection des données de 2018, qui constitue la mise en œuvre du **Règlement général sur la protection des données (RGPD)** de l'UE
- Le projet visera également à respecter l'ensemble du cadre juridique national du Togo en matière de protection des données.

Data Protection Act 2018

GDPR

4

Impacts potentiels et études de référence

Types d'impacts à évaluer et à atténuer dans l'EIES

Les **potentiels positifs impacts** suivant seront à évaluer lors de l'EIES

- ✓ Opportunités d'emploi à court terme pour les communautés locales pendant la construction
- ✓ Programmes de formation technique
- ✓ Développement continu des compétences via les initiatives d'entretien routier
- ✓ Amélioration de la connectivité routière
- ✓ Accès renforcé à l'éducation, aux soins de santé et aux marchés
- ✓ Renforcement des moyens de subsistance ruraux
- ✓ Efficacité accrue du transport
- ✓ Soutien au développement agricole
- ✓ Intégration régionale entre le Togo et le Ghana

Les **potentiels impacts négatifs** suivant seront a atténuer lors de l'EIES

- × L'afflux de travailleurs peut exercer une pression sur le logement et les services.
- × La construction peut perturber les déplacements et affecter les moyens de subsistance locaux
- × Risques pour la santé et la sécurité liés à la poussière, au bruit, au trafic et aux produits chimiques.
- × Pression temporaire sur les infrastructures (écoles, cliniques, services publics).
- × Risque de perturbation de sites culturels.
- × Une migration accrue peut augmenter la demande sur les services sociaux.
- × Les changements d'usage des terres peuvent affecter l'accès aux exploitations agricoles.
- × Le manque de compétences locales peut limiter les bénéfices en matière d'emploi.
- × L'augmentation du trafic peut accroître les risques d'accidents.

Etudes de référence environnementales et sociales

Environnement physique et biologique

- Climat
- Gaz à effet de serre
- Air
- Bruit
- Paysage
- Géologie
- Hydrologie
- Biodiversité.

Environnement socio-économique

- Démographie
- Economie et moyens de subsistance
- Foncier
- Education
- Sante
- Infrastructures et services
- Sécurité communautaire
- Droits humains
- Patrimoine culturel
- Services écosystémiques

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5

Mécanisme de retour d'information et de gestion des plaintes pour l'EIES

Retour d'information sur l'EIES

L'EIES implique la participation du public et des parties prenantes tout au long du processus. FB Group continuera à rechercher des moyens de dialoguer, d'écouter et de partager des informations sur ses activités.

Toutes les parties prenantes sont invitées à exprimer leurs opinions et préoccupations concernant le projet et/ou le processus d'EIES à tout moment, en s'adressant directement aux membres de l'équipe EIES.

Numéro de téléphone : 98 51 72 94

Email: info@cempconsultinggroup.com

Mécanisme formel de gestion des plaintes

La procédure de gestion des plaintes restera pleinement opérationnelle pendant toute la durée de l'EIES et offrira aux parties prenantes un moyen continu de soumettre leurs préoccupations liées au projet.

1	RECEPTION	Assurer l'accessibilité du mécanisme au plaignant. Assurer la confidentialité si nécessaire.
2	ACCUSE DE RECEPTION	Fournir une réponse tangible avec un délai défini.
3	EVALUATION ET ATTRIBUTION	Définir la portée et les limites du problème afin de mener une évaluation.
4	ENQUETE	Établir les faits, assurer une communication claire et encourager le dialogue.
5	PROPOSITION	Clarifier la solution proposée, documenter et communiquer avec le plaignant.
6	SUIVI ET CLOTURE	Documenter les résultats et le niveau de satisfaction.

6

Questions et réponses

MERCI

www.rskgroup.com

Posters (baseline phase)

Processus d'engagement des parties prenantes et EIES

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Plans de gestion

Des plans de gestion sont élaborés et mis en œuvre afin de minimiser les impacts négatifs potentiels et de maximiser les bénéfices positifs potentiels.

Divulgation

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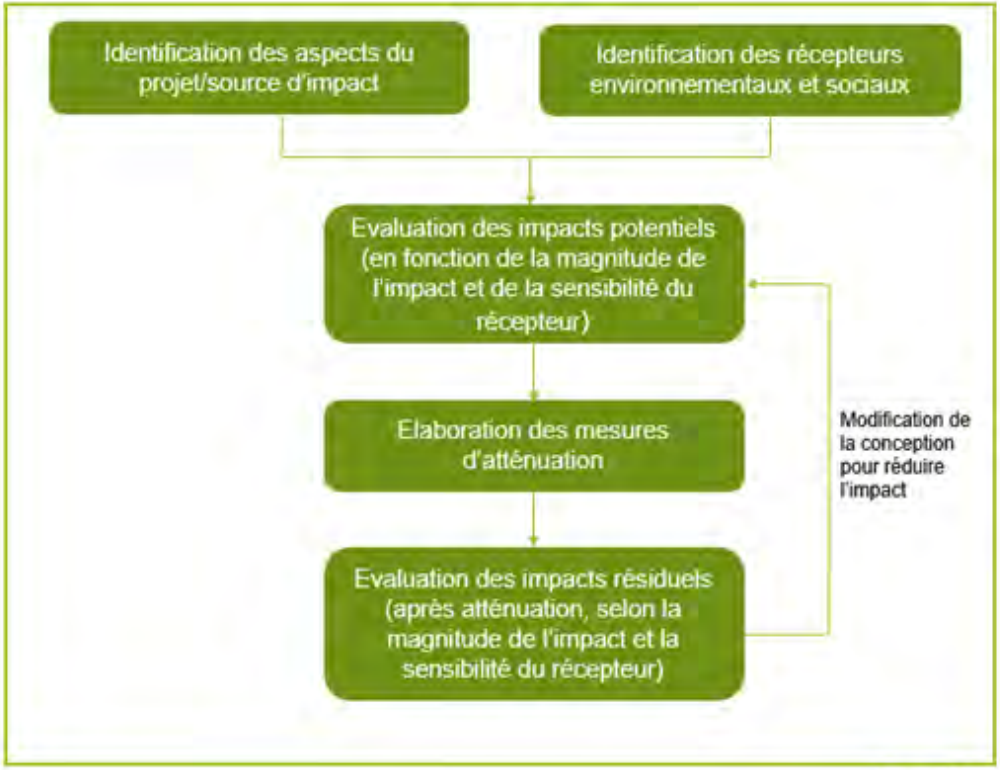

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6	SUIVI ET CLOTURE	Documenter les résultats et le niveau de satisfaction.

PowerPoint Presentation (disclosure phase)

PLAN DE LA PRESENTATION

1. Contexte
2. Présentation du projet
3. Présentation du rapport de l'Etude d'Impact Environnemental et Social (EIES) (Méthodologie, impacts et mesures de bonification ou de mitigation)
4. Approche de divulgation
5. Mécanisme de retour d'information et de gestion des plaintes pour l'EIES
6. Questions et réponses

1

Introduction

Contexte

Ancrage stratégique

- Axe 2 de la feuille de route Gouvernementale 2020-2025 visant à dynamiser la création d'emplois en s'appuyant sur les forces de l'économie
- Développement d'infrastructures modernes et résilientes pour soutenir la croissance économique inclusive et l'intégration régionale

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- Projet d'aménagement et de bitumage de la route Bassar–Tindjassé (93,8 km), y compris les bretelles de Saïboudé (7 km) et Souroukou (2,6 km)
- Contrat d'ingénierie, d'approvisionnement, de construction et de financement (EPCF)

Exigences ESF

- **Cadre international**
  - Principes de l'Équateur
  - Normes de performance de la Société financière internationale (SFI)
  - Exigences ESF de FB Groupe
- **Cadre national**
  - Exigences environnementale et sociales nationales (Certificat de conformité environnementale)

L'équipe projet

FB Group

- Ingénierie , d'approvisionnement, de construction et de financement

RSK Environment Ltd

- Réalisation de l'EIES et mobilisation des parties prenantes

Cabinet D'expertise En Management (CEMP)

- Cabinet national:
- Appui à la mobilisation des parties prenantes et collecte des données sociales de référence.

2

Présentation du Projet

Nécessité du Projet

Défis actuels

- Route en mauvais état, impraticable pendant la saison des pluies
- Accès limité pour le transport et la commercialisation des produits agricoles
- Coûts de transport élevés et activité économique limitée, surtout en agriculture

Importance stratégique

- Relie la préfecture de Bassar à la plaine fertile de Mô, zone agricole clé
- Sert de corridor régional, favorisant le commerce et la mobilité entre le Togo et le Ghana
- Soutient la cohésion nationale en reliant les communautés rurales aux centres économiques.

Impact du développement

- Soutient la stratégie du Togo pour réduire les coûts de transport, améliorer la productivité agricole et l'accès au marché, réduire la pauvreté rurale et renforcer l'intégration régionale et le commerce transfrontalier avec le Ghana
- Restaure une route fiable et durable, favorisant une croissance inclusive et durable

Présentation du Projet

AU SUJET DU PROJET

- Réhabilitation et modernisation de 93,8 km de route en terre dégradée entre Bassar et Tindjassé.
- Construction de deux routes de raccordement :
  - 7 km à Saiboudé
  - 2,6 km à Souroukou.
- Route finale bitumée selon les normes modernes, assurant durabilité et fiabilité.

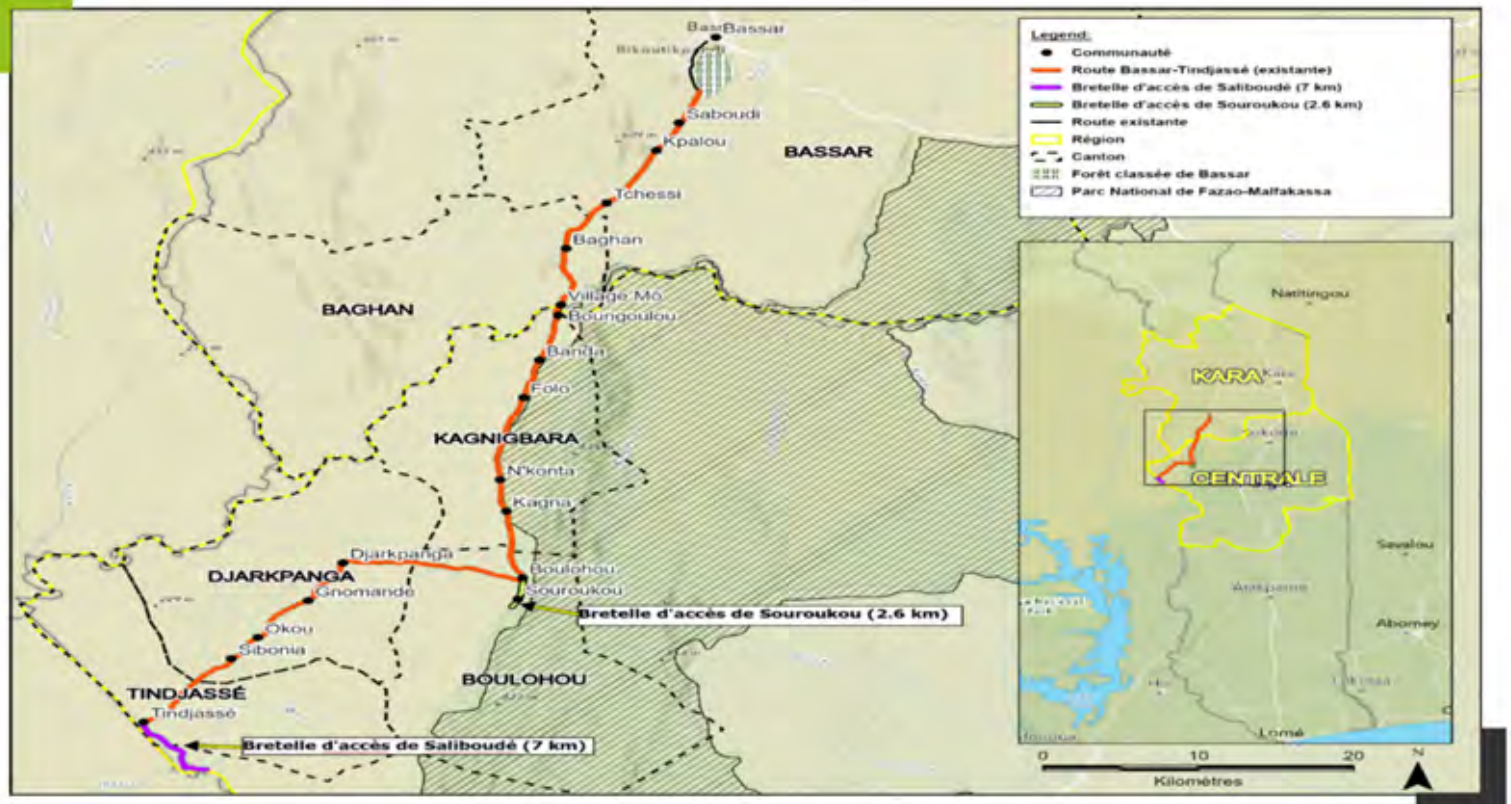
LOCALISATION

- Située dans le nord du Togo, de Bassar à la frontière ghanéenne à Tindjassé.
- Traverse les régions Centrale et Kara, reliant des zones agricoles clés.
- Passe près de zones écologiquement importantes, dont la forêt classée de Bassar et le parc national Fazao-Malfakassa.

CALENDREIR

- Début des travaux prévu en Mai 2026.
- Durée estimée de construction : 30 mois.
- Mise en service prévue pour Juillet 2028.

Zone du Projet



Entités administratives affectées par le Projet

Région	Préfecture	Commune	Canton
Kara	Bassar	Bassar 1	Bassar
			Baghan
Centrale	Mô	Mô 1	Kagnigbara
			Djarkranga
			Boulohou
		Mô 2	Tindjassé
			Saiboudé

Composants du projet

Route principale

La route Bassar-Tindjassé de 93.8 km sera modernisée selon les normes de bitume dans une zone **d'expropriation de 30m** incluant une zone d'exécution de 20 m. La structure de la chaussée comprendra du béton bitumineux, une base stabilisée au ciment et une fondation en gravier.

Carrières et matériaux

Une carrière de roche de 50 000 m³ et environ 20 sites de gravier latéritique fourniront les matériaux. Tous les sites seront réhabilités après utilisation par remise en sol et revégétalisation.

Infrastructures de construction

Un camp principal de 3 ha au km 45 et un camp satellite de 0,5 ha au km 6 fourniront bureaux, logements, stockage et équipements. Les camps seront démantelés et les sites restaurés après la construction.

Drainage et traversées

Le projet inclut 17 ponts, 82 ponceaux et 109 tuyaux en béton, ainsi que des fossés et des dispositifs de contrôle de l'érosion pour réduire les risques d'inondation.

Routes secondaires

Deux bretelles d'accès (7 km à Saiboudé et 2,6 km à Souroukou) seront construites selon les mêmes normes pour améliorer la connectivité locale.

Accès temporaire

Une route de service de 5 m permettra l'accès pendant la construction. Des déviations temporaires et des dispositifs de sécurité seront installés selon les normes internationales.

Stratégie de main d'œuvre pendant la phase de construction

Main d'œuvre pendant la phase de construction

- Le projet emploiera environ 550 personnes pendant la période de construction:
  - 60 expatries techniques
  - 490 travailleurs locaux
- Tous les travailleurs seront sous contrat avec FB Group.
- Le nombre de travailleurs pourra augmenter pendant les phases de construction les plus intenses, selon la charge de travail et les besoins du projet.

Main d'œuvre pendant la phase de construction

- Le projet vise à optimiser l'utilisation de la main-d'œuvre locale pendant la construction.
- Objectif : 80 % de la main-d'œuvre composée de travailleurs togolais, dans la mesure du possible.
- Priorité à l'embauche locale lorsque l'expérience et les compétences sont compatibles avec les besoins du projet.
- Cette approche soutient la croissance économique locale et le développement des compétences.

Main d'œuvre pendant la phase de construction

- FB Group assurera la gestion de tous les contrats de personnel et des opérations liées à la main-d'œuvre.
- La stratégie d'emploi comprend :
  - Des postes spécialisés occupés par des expatriés
  - La majorité des postes occupés par des travailleurs locaux
  - Une flexibilité pour ajuster les effectifs selon les exigences du projet
- Une attention particulière sera portée au transfert de compétences, au respect du droit du travail, à la sécurité et à la formation des travailleurs, ainsi qu'à une intégration efficace des équipes locales et expatriées.

3

Présentation de l'EIES

AMCC+
PROJET : RENFORCEMENT DE LA RESILIENCE DES AIRES PROTÉGÉES DU TOGO FACE AU CHANGEMENT CLIMATIQUE
CONTRAT DE SUBVENTION : Actions extérieures de l'UE : ENV / 2018 /400-339
Activités réalisées : - Redynamisation du Comité de gestion
- Délimitation, matérialisation et cartographie
- Constitution de dossiers de Création
- Appui aux activités génératrices de revenu
MISE EN OEUVRE PAR : ONG ODIAE ET JVPMR
JVPMR

Retenue d'Eau de FOLO
PREFECTURE DE IRÔ

Objectifs et finalités de l'EIES

Objectifs

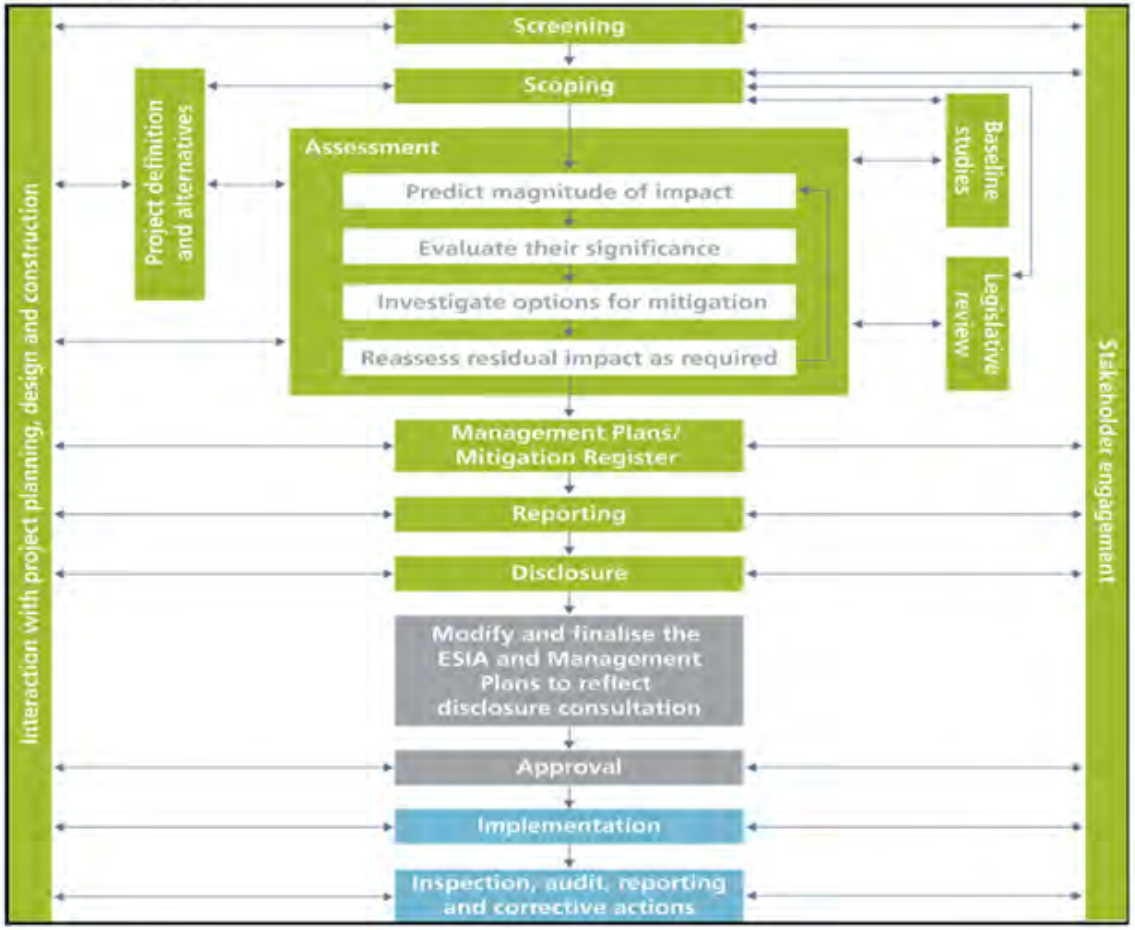
L'EIES vise à fournir une évaluation approfondie du projet proposé et de son interaction avec l'environnement et les communautés avoisinantes. Les objectifs clés incluent :

1. **Description du projet et zone d'influence:** décrire clairement le projet et définir sa portée géographique et sociale.
2. **Identification et évaluation des impacts:** Identifier et évaluer les impacts environnementaux et sociaux, négatifs et positifs, sur les milieux physiques, biologiques et humains pendant la phase de construction et d'exploitation.
3. **Evaluation des alternatives:** Examiner les alternatives du projet, y compris les sites et les tracés, afin de minimiser les nuisances et maximiser les bénéfices.
4. **Analyse des parties prenantes et des communautés:** Identifier les communautés et parties prenantes les plus concernées afin de répondre à leurs préoccupations.
7. **Mesures d'atténuation et d'amélioration :** Proposer des mesures pour prévenir ou réduire les impacts négatifs et renforcer les effets positifs.
8. **Conformité et autorisation :** Assurer le respect des lois environnementales togolaises et des normes internationales, et obtenir les autorisations nécessaires auprès des autorités telles que l'Agence Nationale pour la Gestion de l'Environnement (ANGE).
9. **Plan de Gestion Environnementale et Sociale (PGES):** Élaborer un PGES détaillant les actions pour gérer les risques et optimiser les bénéfices tout au long du cycle de vie du projet.

Utilité dans la prise de décision

Les résultats du processus d'EIES sont essentiels pour orienter la conception et la mise en œuvre du projet, en garantissant sa conformité aux réglementations locales et aux meilleures pratiques internationales en matière de développement durable.

Méthodologie de l'EIES



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Impacts positifs

Récepteur	Activité du projet	Description de l'impact	Mesures clés d'amélioration
Phase de construction			
Économie locale et régionale	Construction	Opportunités pour les entreprises locales de fournir des biens et services au projet, générant des effets multiplicateurs à l'échelle de l'économie	Les bénéfices économiques locaux seront soutenus par un plan d'approvisionnement qui favorise le contenu local, ainsi qu'une communication claire aux communautés sur les processus de recrutement et les opportunités afin de garantir une bonne gestion des attentes.
Emploi et développement des compétences	Construction	Opportunités d'emploi liées aux projets, conduisant à une amélioration du niveau de vie et du bien-être des ménages	L'emploi local sera priorisé en privilégiant les travailleurs issus des communautés situées le long du corridor de construction, les entrepreneurs devant spécifier les objectifs d'embauche locaux. FB Group supervisera le recrutement afin d'assurer le respect de ces engagements et assurera une communication claire aux communautés concernant les opportunités d'emploi et les processus de recrutement afin de gérer les attentes.
		Fourniture de formations en travail et de développement des compétences	Les compétences et compétences des travailleurs seront renforcées grâce à un programme de formation structuré, une évaluation régulière des besoins en formation, la tenue des dossiers de formation et la délivrance de certificats endoflabour pour soutenir l'employabilité future. La surveillance continue des performances par FB Group garantira un développement continu des compétences et une capacité efficace des travailleurs tout au long de la construction

Impacts négatifs et mesures de mitigation

Présentation de certains impacts et lecture complète dans le document Word qui a été partagé aux parties prenantes: ***Comprendre la lecture du tableau et se prononcer sur les impacts et mesures proposés (Page 25 à 41)***

Récepteur	Activité du projet	Description de l'impact	Mesures clés d'amélioration	Signification de l'impact résiduel
Phase de construction				
Qualité de l'air	Démolition, travaux de terrassement, travaux de construction, sortie de voie	Augmentation des émissions de poussière	La poussière sera contrôlée par une surveillance proactive et une réponse rapide, incluant la saisie et le traitement des plaintes, des inspections régulières des sites, l'utilisation de balayeuses assistées par l'eau, l'application d'une politique stricte de dégagement et l'installation de moustiquaires ou barrières autour des activités poussiéreuses.	Modéré
Bruit et vibrations	Terrassements, broyage, centrales et trafic	Augmentation du niveau sonore	Le bruit sera réduit en limitant les activités à fort bruit aux heures de jour, en plaçant des équipements fixes loin des habitations, en utilisant des barrières temporaires près des hamagréments, en maximisant la distance avec les récepteurs sensibles lors des travaux nocturnes nécessaires, et en mettant en place un plan dédié de gestion du bruit et des vibrations de la construction (également applicable à d'autres impacts).	Secondaires
Circulation et transports	Transport de personnes et déplacement de véhicules lourds, gravier latéritique depuis les carrières à l'intérieur et à l'extérieur de la zone du projet	• Séparation et intimidation des communautés • Impact accru du trafic sur les récepteurs sensibles • Impact accru sur la sécurité routière en raison des distances plus larges parcourues en dehors de la zone du projet	Les impacts sur la circulation seront réduits par la mise en place d'un Plan de gestion du trafic de chantier (applicable également à d'autres impacts), la limitation des déplacements des véhicules aux voies d'accès désignées, la délimitation des zones de travail et l'utilisation de minibus pour transporter les travailleurs afin de minimiser le nombre total de trajets en véhicule.	Secondaires

Processus d'engagement des parties prenantes et EIES

Évaluation préliminaire et étude de cadrage

L'objectif de cette phase est d'identifier le champ d'application de l'EIES, la zone d'étude, les informations disponibles ainsi que les impacts potentiels majeurs qui devront être évalués plus en détail au cours de l'EIES.

Études de référence environnementales

Ces études sont réalisées afin de comprendre l'environnement physique et biologique. Des inventaires du milieu local et des recherches sont menés pour mieux appréhender les conditions environnementales.

Études de référence socio-économiques

Ces études sont réalisées afin de comprendre l'environnement socio-économique local. Des spécialistes échangent avec les populations et mènent des recherches dans les communautés locales pour mieux appréhender leur mode de vie.

Evaluation des impacts

Les bénéfices potentiels positifs et les impacts négatifs potentiels sont identifiés, définis et évalués en fonction de leur importance pour les populations, les moyens de subsistance et l'environnement naturel.

Plans de gestion

Des plans de gestion sont élaborés et mis en œuvre afin de minimiser les impacts négatifs potentiels et de maximiser les bénéfices positifs potentiels.

Divulgation

Après la finalisation du projet d'EIES, une période de divulgation des informations est prévue afin de permettre aux parties prenantes de commenter les résultats de l'étude et d'expliquer comment leurs préoccupations ont été prises en compte ou seront prises en compte.

ENGAGEMENT DES PARTIES PRENANTES

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Séance de consultations des parties prenantes

21

Processus d'engagement des parties prenants et de l'EIES

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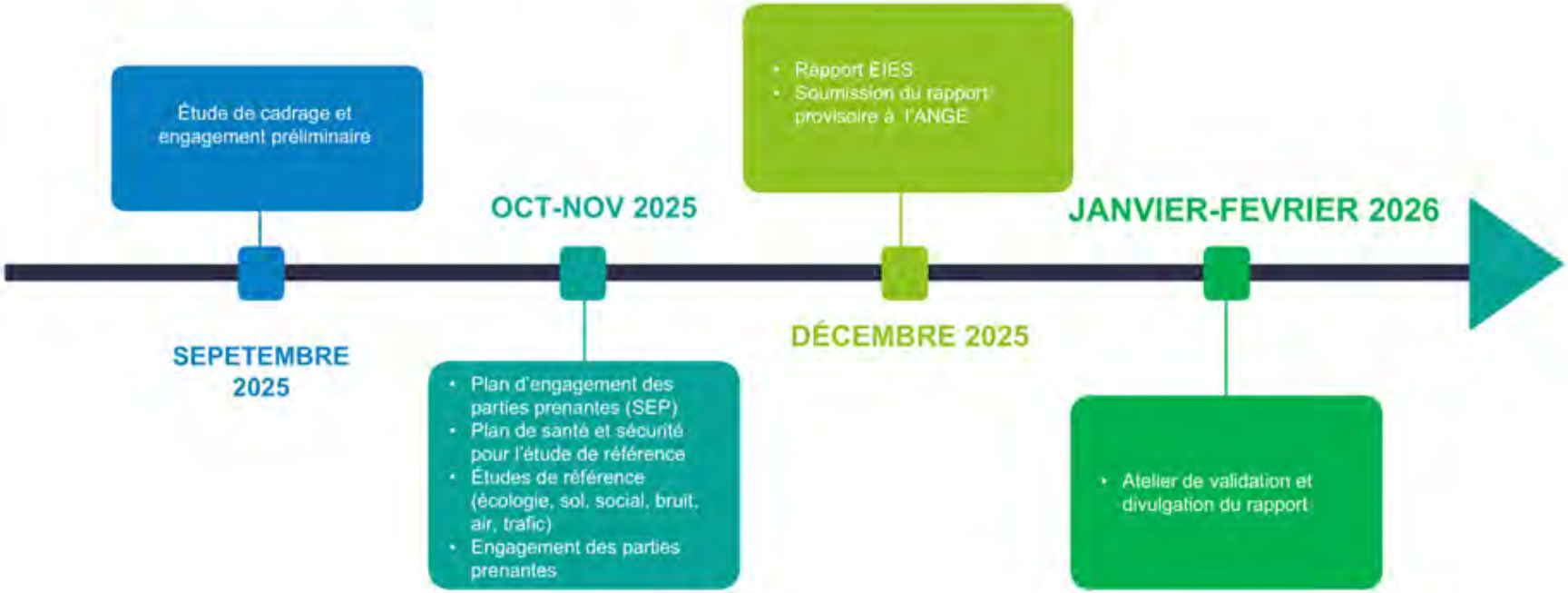
Calendrier de l'EIES



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Calendrier indicatif de développement du projet

Jalon clé	Dates
Mobilisation et travaux préparatoires	Avril–octobre 2026
Terrassements et remblais	Octobre 2026–juin 2027
Travaux de chaussée	Janvier 2027–février 2028
Travaux d'asphalte	Octobre 2027–avril 2028
Drainage et travaux annexes	Octobre 2026–avril 2028
Finition, signalisation et sécurité	Juillet 2028
Mise en service	Juillet 2028

Résumé de l'approche de divulgation.

- Le document sera présenté avec un accent particulier sur les impacts du projet, les risques identifiés et les mesures d'atténuation proposées.
- Les sections sur les impacts et les mesures d'atténuation seront lues dans leur intégralité et traduites dans les langues locales pour s'assurer que toutes les parties prenantes les comprennent bien.
- Le consultant vas ensuite expliqué la structure du résumé non technique, permettant aux participants de mieux naviguer dans le document. Il a été convenu que des copies du rapport seraient déposées à la mairie et auprès des chefs de canton pour faciliter l'accès du public.
- Les participants seront également été informés de la manière dont leurs préoccupations et suggestions avaient été prises en compte, ainsi que des limites du projet, en précisant clairement ce que le projet peut et ne peut pas faire.
- Remise des documents au niveau des Mairies et des chefs de cantons.

Registre des commentaire

FB|GROUP CEMP RSK

REGISTRE DE REMONTÉE DES COMMENTAIRES – PÉRIODE DE DIVULGATION

Projet : EIES – Projet d'aménagement et de bitumage de la route Bassar-Tindjassi y compris les bretelles de Saiboude et Souroukou
Localité / Site : .....
Période de divulgation : du 19/01/2026 au 18/02/2026

Documents divulgués : EIES

Objectif : Consigner l'ensemble des commentaires, préoccupations et suggestions des parties prenantes durant la période de divulgation, conformément aux Normes de performance de la SFI (PS1)

N°	Date	Localité	Nom (facultatif)	Catégorie de partie prenante	Thématique	Partie du document	Commentaire exprimé	Suggestion de prise en compte

RSK

Loi britannique sur la protection des données & Règlement général sur la protection des données de l'UE

- Lors de l'engagement des parties prenantes, des **informations personnelles** sont collectées et des **photographies** sont prises pour alimenter le processus de l'EIES
- Il est essentiel de faire preuve de **clarté** et de **transparence** envers les parties prenantes tout au long de l'engagement, en expliquant comment leurs données personnelles seront utilisées et conservées
- Pour garantir cela, les données sont collectées et stockées conformément à la Loi britannique sur la protection des données de 2018, qui constitue la mise en œuvre du **Règlement général sur la protection des données (RGPD)** de l'UE
- Le projet visera également à respecter l'ensemble du cadre juridique national du Togo en matière de protection des données.

Data Protection Act 2018

GDPR

Retour d'information sur l'EIES

L'EIES implique la participation du public et des parties prenantes tout au long du processus. FB Group continuera à rechercher des moyens de dialoguer, d'écouter et de partager des informations sur ses activités.

Toutes les parties prenantes sont invitées à exprimer leurs opinions et préoccupations concernant le projet et/ou le processus d'EIES à tout moment, en s'adressant directement aux membres de l'équipe EIES.

Numéro de téléphone : 98 51 72 94

Email: info@cempconsultinggroup.com

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Mécanisme formel de gestion des plaintes

La procédure de gestion des plaintes restera pleinement opérationnelle pendant toute la durée de l'EIES et offrira aux parties prenantes un moyen continu de soumettre leurs préoccupations liées au projet.

1	RECEPTION	Assurer l'accessibilité du mécanisme au plaignant. Assurer la confidentialité si nécessaire.
2	ACCUSE DE RECEPTION	Fournir une réponse tangible avec un délai défini.
3	EVALUATION ET ATTRIBUTION	Définir la portée et les limites du problème afin de mener une évaluation.
4	ENQUETE	Établir les faits, assurer une communication claire et encourager le dialogue.
5	PROPOSITION	Clarifier la solution proposée, documenter et communiquer avec le plaignant.
6	SUIVI ET CLOTURE	Documenter les résultats et le niveau de satisfaction.

6

Questions et réponses

Non Technical Summary NTS (disclosure phase)

Due to size, NTS appendix is separate from this document – refer to separate appendix

APPENDIX 5 ATTENDANCE LISTS INSTITUTIONAL MEETINGS (BASELINE PHASE)

National ministry meeting, Lome, 28.10.25

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Date: 28 Octobre 2025

Réunion des parties perennates:

Lieu de la réunion (village/ville/district) : Salle de Conférence du Ministère délégué chargé des travaux publics et des infrastructures

Nombre total de participants :

GDPR disclaimer: En signant cette liste de présence, je consens à ce que les détails personnels ci-dessus (nom, prénom, sexe, lieu, organisation, poste) et les photographies et commentaires pris lors de cette réunion soient inclus dans le rapport ESIA qui sera rendu public. RSK a été engagé par le groupe FB pour travailler avec le CEMP afin d'entreprendre une EIES conformément aux réglementations nationales et aux normes internationales. Les informations et les photos seront conservées et utilisées conformément à la loi britannique sur la protection des données (RGPD), car RSK est une entreprise britannique. Pour plus d'informations ou si vous ne consentez pas, veuillez contacter le CEMP pendant l'événement. Pour plus d'informations sur la façon dont nous traitons vos données personnelles, veuillez consulter la politique de confidentialité de RSK : rskgroup.com/privacy.

Aux participants: Veuillez noter que des photographies seront prises tout au long de l'événement, qui pourront être incluses dans le matériel promotionnel et les publications pour inclure ESIA et les médias sociaux et LinkedIn pour lesquels cela pourrait convenir. Veuillez contacter l'organisateur de l'événement si vous ne donnez pas votre consentement pour que votre photographie soit utilisée à ces fins.

No.	Name	Gender	Position/role and Residency (Village, Town, District)	Contact Details	Signature
1	ABOU Hamidou Ayouba	M	DPESE	[redacted]	
2	SANI IMANG YUMBAM	M	DGA (FB GROUP)		
3	JARBOU RASSOU	M	FB GROUP		

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4	Ismut FEP	M	FB Group	[redacted]	
5	BASSABOU Méhimati	M.	MSGFPE/Lomé		
6	SIMZA Atiyodi	M	COMEX		
7	APEWOYOU-K. Félix	M	MDTPI		
8	DJIMEDO Folly Ekoue I. D.	M	MDTPI		
9	KOLANI Nakadjouna	M	CNDH		
10	DJOBO Balarbi	M	DPESE		
11	BAGUILIMA Katiba	M	MATUH/GDUH		
12	ISABELLA KRABBE	F	RSK		
13	DIWEDIGA Badabaté	M	MDDL		
14	KPANDEKPA Yabia	M	MATGLAC		
15	HAINIKOYE NATCHABA Amina	F	ONAT		

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16	GOKA Adjo Sandrine Judith	F	CEMP	79841666	
17	BATCHAM Ibrahim	M	Expert developpement durable Cabinet CEMP	[redacted]	
18	MIDIZIWA-BABA Laoupessi	M	Expert SES/CEMP		
19	PANAWAI Hodabalo	M	MTPI Informaticien		

Togolese Union of NGOs (UONGTO), Lome, 29.10.25

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Date: 29 Octobre 2025

Réunion des parties perennates:

Lieu de la réunion (village/ville/district) :
Siège UONGTO / Lomé

Nombre total de participants :

GDPR disclaimer: En signant cette liste de présence, je consens à ce que les détails personnels ci-dessus (nom, prénom, sexe, lieu, organisation, poste) et les photographies et commentaires pris lors de cette réunion soient inclus dans le rapport ESIA qui sera rendu public. RSK a été engagé par le groupe FB pour travailler avec le CEMP afin d'entreprendre une EIES conformément aux réglementations nationales et aux normes internationales. Les informations et les photos seront conservées et utilisées conformément à la loi britannique sur la protection des données (RGPD), car RSK est une entreprise britannique. Pour plus d'informations ou si vous ne consentez pas, veuillez contacter le CEMP pendant l'événement. Pour plus d'informations sur la façon dont nous traitons vos données personnelles, veuillez consulter la politique de confidentialité de RSK : rskgroup.com/privacy.

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No.	Name	Gender	Position/role and Residency (Village, Town, District)	Contact Details	Signature
1	DJENDA Aristide	M	Lomé, DE UONGTO	[redacted]	
2	AIMONTCHE Jean Bosco	M	Lomé / UONGTO	[redacted]	
3	OURO ADAMOU Loumane	M	Lomé Sociologue CEMP	[redacted]	

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RSK

4	AZIAGBEDE Yawa Delali	F	Lomé Géographe CEMP
5	NOUWOTO Kombanu claude	M	Lomé ONG IFD
6	ONOUADOE Ayelerou	M	Lomé / UONGTO
7	KATANADEOU Aur	M	Lome ONG RADS
8	WEGBA Kofi Ebénézer	M	Lomé Gestionnaire de Projet CEMP
9	METSIYA Agbeko Wonyui Guillaume	M	UONGTO Lomé / chargé d'organisation
10	PEDESI Eto-Id'nam	M	Lomé / ONG Jeun Veil
11	TASSA-ATCHRITI Odette	F	Lomé ONG ODDS UONGTO
12	GOKA Sandrine	F	CEMP Analyste financier et de projets
13	BATCHALE Biéram	M	Lomé, CEMP Expert Sauvegarde E&S
14	BADJO Kombéralla	F	Assistante Administrative Lomé UONGTO

[redacted]

Scanné avec CamScanner

Meeting with Centrale Regional stakeholders in Sokode Hotel, 30.10. 25

GROUP

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Date :

Réunion des parties perennates:

Lieu de la réunion (village/ville/district) :

Nombre total de participants :

GDPR disclaimer : En signant cette liste de présence, je consens à ce que les détails personnels ci-dessus (nom, prénom, sexe, lieu, organisation, poste) et les photographies et commentaires pris lors de cette réunion soient inclus dans le rapport ESIA qui sera rendu public. RSK a été engagé par le groupe FB pour travailler avec le CEMP afin d'entreprendre une EIES conformément aux réglementations nationales et aux normes internationales. Les informations et les photos seront conservées et utilisées conformément à la loi britannique sur la protection des données (RGPD), car RSK est une entreprise britannique. Pour plus d'informations ou si vous ne consentez pas, veuillez contacter le CEMP pendant l'événement. Pour plus d'informations sur la façon dont nous traitons vos données personnelles, veuillez consulter la politique de confidentialité de RSK : rskgroup.com/privacy.

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No.	Nom	Genre	Poste/rôle et résidence (village, ville, district)	Coordonnées	Signature
1	TCHINBIANDJA Yendoukoa Douti	M	Prefet de TCHAOUDJO	[redacted]	
2	PALI TCHABI Passabi	M	Prefet de Sotouboua		
3	JOVO Komlavi	M	DRTP/RC		

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4					
5	Isabella Krabbe	F			
6	POLORIGNI Kado	M	Chef Section Constr. ARE/C		
7	BEWI Esso-Dolom	M	Ing. GC à la DRE - Centrale		
8	KONJO Kokou	M	Inspecteur du Travail		
9	CHANGO Patayodi	M	AE à L'ONG RADAR		
10	ANADI Boyodjéda	M	DR/DRAPRASA-C Résidence : SOKodé		
11	AWESSO Ekenmodom	M	DR CEET Résidant à Sokodé		
12	ILABRO Malbié	M	DSP (Centrale)		
13	SIMBA Issaka	M	23° BIM (Sokodé)		
14	AROUNA Charkiyatou	F	Représentante Comptable RESOBRC		
15	Colt. TCHAGAFO Essowazina	M	DR/DRERFPCCC-C		

[redacted]

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RSK

16	Père Aimé-Jacob BANIZI	M	Sokodé curé de la Paroisse cathédrale
17	DERMAN ARIMYAO	M	UNATROT Sokodé ~~UNATOT~~
18	SAITM Bonenagana	M	UNATROT Sokodé
19	AFOLABI Soulé	M	Gendarmerie
20	SONGUINE Lamoute	M	Gouvernorat de la Région Centrale
21	OURO-GOUNI Esofa	M	IDE SOKODÉ
22	GARBA Sadath	M	Président d'Association
23	OURO-BANA Marzouk	M	Président des collectif des jeunes pr la Paix et le développ CJPD
24	IDRISSOU Abdou Rasidou	M	OPH MONDE RADIEUX
25	OUMOROU Mohamed Moustapha	M	Représentant du DRS RC
26	OURO-KOURA Waliyou	M	ONG Dimension Humain
27	BODJOCK LADANI Labatib	F	Représentante du DRC

[redacted]

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28	ALBARKA Abouhérim	M	Directeur exécutif ONG JED-Afrique
29	KABOUTI Florence	F	Association des femme commerçante de Sokodé
30	KOUABOUTI AYIGHANE	F	Responsable des commerçantes
31	BOULOUFEI ESSOWÈ	M	MOOV AFRICA-TOGO S/C KROL TECH GROUP
32	AGBADA Padamilim	F	Représentante Maire de Sotouboua
33	AYASSOU Holali	M	ANADEB
34	OURO-DJERI Abdul-Razak	M	DR PDAT-RC / DR
35	TIEM D. G Rodrigue	M	DGTCP / TRC
36	MISSA Essozolim	M	Conseil Régional
37	AYEVA Kamaloudine	M	DRTP / RC
38	POLORIGNI Théna	M	chef Division des TP/R Tchamba
39	BIWE-ISSOJO Essoténa	M	chef Division des TP Sotouboua

[redacted]

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RSK

40	BEKETI S. Cédric	M	Manager Tech YAS	[redacted]	
41	Tchacorom B. Amizotou	F	presidente de la coperative		
42	TORO KOKOU Raoul	M	Expert CEMP		
43	DEDNGAR Raymadje Sabine	F	Experte CEMP		
44	MIDIZINA-BABA Lawpgessi	M	Expert CEMP		
45	GAKLI Dossèh	M			

Meeting with Bassar Prefectural stakeholders, Bassar Prefect Government Office, 31.10.25

GROUP

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RSK

Date : 31 octobre 2025

Réunion des parties perennates:

Lieu de la réunion (village/ville/district) : Bassar

Nombre total de participants :

GDPR disclaimer : En signant cette liste de présence, je consens à ce que les détails personnels ci-dessus (nom, prénom, sexe, lieu, organisation, poste) et les photographies et commentaires pris lors de cette réunion soient inclus dans le rapport ESIA qui sera rendu public. RSK a été engagé par le groupe FB pour travailler avec le CEMP afin d'entreprendre une EIES conformément aux réglementations nationales et aux normes internationales. Les informations et les photos seront conservées et utilisées conformément à la loi britannique sur la protection des données (RGPD), car RSK est une entreprise britannique. Pour plus d'informations ou si vous ne consentez pas, veuillez contacter le CEMP pendant l'événement. Pour plus d'informations sur la façon dont nous traitons vos données personnelles, veuillez consulter la politique de confidentialité de RSK : rskgroup.com/privacy.

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No.	Nom	Genre	Poste/rôle et résidence (village, ville, district)	Coordonnées	Signature
1	ASIAH Hodabalo	M	Préfet de Bassar	[redacted]	
2	GBATI Djani L. Vokan	M	Maire Commune Bas		
3	YAWANKE B. Waké	M	Chef Canton Bassar		

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04	Isabella Krabbe	F	RSK
05	NIMAN Sorakawa Martin	M	Consultant CEMP
06	DJABARE Essofah	M	CCD Bassar
07	DJIWA A. Judith	F	Représentant Action social Bassar
08	KPANDJAN. David	M	CCD Baghan
09	BETCHEA Donwasson	M	TP Bassar
10	DJORE Nadjombé	M	DJ APHABA-Bassar
11	KOUTOM Akossi	M	Chef Village Sabounde
12	AKALO Komivi	M	DP Environnement Bassar
13	KOUYOLE Kpandjapou	F	GE Bassar
14	BOUNDJOU K. Faré	M	D.E. AVLS Bassar
15	BASSAR Napo	M	Chef quartier Monde Bassar

[redacted]

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RSK

16	NAPO PONDIKPA	M	Chef Bimaparba
17	TCHANDIKOU KOFFI	M	Chef Coutumier Mondé
18	SIMYALI Malou	M	chef Village Kpalou
19	KONTIOU GBANDI	M	Président UNATIKO
20	TANGBANDJA GBATI	M	chef Village Langonde
21	KOUTCHEOU Ngbombé Mokonya	M	chef Canton Bagbao
22	NAPO N. Nanawaye	F	Commerçante Bas
23	WADJA Ogebi	F	Reine Bassar
24	SONHAYE Bossa	F	Présidente Préfectorale des Femme
25	NISSAO Ayindo	F	Femme salariée Bassar
26	NAPO Ikpinde	F	Responsable Femmes salariée Bassar
27	SERTCH Kpébou	F	Présidente Groupement DISSASSOL Bassar

[redacted]

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RSK

28	AKOUTI OSSÉ Kossi Mivomaou	M	Juriste / Préfecture de Bassar
29	GNOFAME Napo N'nome	M	Inspecteur à l'Inspect du travail Bassar
30	KPAYILE Natchipou	M	Responsable des jeunes Bassar
31	MIDIZIRA-BABA L.	M	Expert SE/CEMP
32	TORO Kokou Raoul	M	Expert CEMP
33	DEDINGAR Raymadje Sabine	F	Experte CEMP

[redacted]

Meeting with Governor of Kara and regional government directorates, 31.10.25

Attendance list not available.

Meeting with Mo Prefecture officials, Mo Prefecture Government office, 03.11.25

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RSK

Date 03-11-2025

Réunion des parties perennates:

Lieu de la réunion (village/ville/district) : Prefecture de MÔ

Nombre total de participants :

GDPR disclaimer: En signant cette liste de présence, je consens à ce que les détails personnels ci-dessus (nom, prénom, sexe, lieu, organisation, poste) et les photographies et commentaires pris lors de cette réunion soient inclus dans le rapport ESIA qui sera rendu public. RSK a été engagé par le groupe FB pour travailler avec le CEMP afin d'entreprendre une EIES conformément aux réglementations nationales et aux normes internationales. Les informations et les photos seront conservées et utilisées conformément à la loi britannique sur la protection des données (RGPD), car RSK est une entreprise britannique. Pour plus d'informations ou si vous ne consentez pas, veuillez contacter le CEMP pendant l'événement. Pour plus d'informations sur la façon dont nous traitons vos données personnelles, veuillez consulter la politique de confidentialité de RSK : rskgroup.com/privacy.

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No.	Name	Gender	Position/role and Residency (Village, Town, District)	Contact Details	Signature
01	ANAKPA Mani	M	Préfet de MÔ	[redacted]	
02	KLOUX Bayé	M	Maire de Mô 1		
03	KALAYA Badibalaki	M	Adjoint au maire MÔ2		

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RSK

4	BAWINAY Aboudermane	M	Coordinateur ONG J Djankpompa
5	YARA Abdoul Raouf	M	Representant des pers Handicapées
6	KAUGKÉ Pakyendou	M	Repres. DPEnvironnement MÔ
7	ABOUDOULAYE Alilou	M	Rep CCD Baulohou
8	DRIMEKODJO ASSOLINA	M	Kagnigbaki President CCD
9	NIMON Abalo	M	V/S président CCD Tindjassi
10	SIBABI Jaya	M	President CCD Djankpompa
11	PRAL Kokou	M	Responsable Syndicat
12	N'TOKOTI Balatobe	M	Conseiller Municipal
13	TCHAPOU Nakpème	M	CCD Saïborde
14	SOULEMANE Adam	M	SP: IEPPMÔ
15	ASSIH E. Masalo	F	DP Djankpanga Solidarité Genre

[redacted]

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RSK

16	SOGOYOU Rezébodom	F	représentante des associations Djarkpanga
17	GBAÏ Azima	F	Femme leader Tindjassi
18	ATCHAHOLO A Simon	M	Juriste Préfecture de MO
19	ABINA Tchalla	M	DP/DPAPRASA Djarkpanga
20	AGNALA Kossiwa	F	VEC Tindjassi
21	DJEROU Salami	M	Représentant du service Technique
22	OLIYENGA Hantou P.	M	Représentant OSC (HCDP-MO)
23	MOUSSA Abourbakar	M	Représentant des jeunes MO
24	ADOULI ASSIYA	F	présidente du commercial MO
25	PANAKINAO N. Akili-Esso	M	ICAI Djarkpanga représentant du CAO
26	ETRIO Tokoa	M	Prêtre traditionnel Kafnikara
27	TCHODIE K. KEZIE	M	Prêtre traditionnelle TINDJASSI

[redacted]

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RSK

28	N'DEI Koffi Eyana	M	Mairie Comptable Mô
29	YAYA soulémana	M	Chef canton Bous
30	OURO-BAWINAY AYENE	M	chef canton DJARKPANEA
31	ALASSANI Issifou	M	chef canton Kagnigbadu
32	SEYI Koffi	M	chef de canton
33	ADJFILE DJIBrila	M	chef canton Saïbo
34	SALIFOU Charifou	M	SG de Préfecture
35	ATOUZOU KOKOU	M	chargé de la structure s
36	TADJINDI Onyome	M	Association des jeunes
37	BATCHAM Ibrahim	M	Expert developpe durable/CEMP.
38	TOKAH Abotchi	M	Association jeunes

[redacted]

APPENDIX 6 ATTENDANCE LISTS COMMUNITY MEETINGS (BASELINE PHASE)

Kpalou community meeting 01.11.25

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RSK

Date : 01-11-2025

Réunion des parties perennates:

Lieu de la réunion (village/ville/district) : KPALOU

Nombre total de participants :

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No.	Nom	Genre	Poste/rôle et résidence (village, ville, district)	Coordonnées	Signature
1	SIPAYALI MALOU	M	Chef de village Kpalou	[redacted]	
2	AGO Tomtassou	M	CVD KPALOU		
3	KPATCHO WOUTI	M	Pretre traditionnelle KPALOU		

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RSK

4	GNOSSIKE MAWELOUÉ	F	ménagere	[redacted]
5	NGHAN LIDJOBOUO	M	cultivateur	
6	PITOU KOMNA	M	"	
7	MAFEITOM KOKOU	M	"	
8	KPADJO MALAMÉ	M	"	
9	KPAKA YAO	M	"	
10	BISSANG TAMO	F	ménagere	
11	TITA KARADJI	M	cultivateur	
12	KAROUWÉ ABINA	F	ménagere	
13	TAKIYA ATTA	F	"	
14	GNAMA SISSADEMA	M	cultivateur	
15	BISSANG DJATO	M	"	

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RSK

16	BISSANG Kpangalam	M	Etudiant	[redacted]
17	TCHALIM YAA	F	menagere	
18	AHATA MAYABA	M	Tailleur	
19	MESSA AHIM	F	menagere	
20	ATCHAO ESSOYOMAVÉ	F	〃	
21	DOGO BIYAGO	F	〃	
22	KOFFI NAKA	F	cutrice	
23	LAO ESSO	M	cultivateur	
24	GNOSSA ABINA	F	ménagere	
25	TCHALA FEYEKPABÉ	F	〃	
26	KADJIA SAMFEYI	M	cultivateur	
27	LAO BAWOUMADOME	M	〃	

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RSK

28	AFRAM KOFFI	M	cultivateur
29	FARADA DALAKOUVE	M	|||
30	KAGBAGNOU MABAFEI	M	||||
31	TCHALA TAZO	M	||||
32	DAVI LEON	M	menagere
33	KAGBAGNOU BALAKigem	M	|||
34	LAO GNAMTOU	M	||||
35	KPAKA Eric	M	Electricien
36	KADJIA IDRISSOU	M	cultivateur
37	GNAMA Assaï	M	cultivateur
38	BOUKARI YAMIDIYE	F	menagère
39	AMANA ESSOLAKINA	M	cultivateur

[redacted]

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RSK

40	BATAKI ASSANGHI D1	M	cultivateur
41	PITOU N'NI	F	menagère
42	KOMMA ABINA	F	"
43	ABOULAYE YACOUBOU	M	cultivateur
44	KAROU ESSONAME	M	ASC
45	KETEWA AKANDJA	M	cultivateur
46	TCHALA KOOMA AISA	M	ASC miti
47	TIYAMÈ N'LIPÈ	F	menagère
48	LEMOU Magnouewa	F	Etiduante
49	AGNARITOGO ADJOUA	F	menagère

[redacted]

Baghan community meeting 02.11.25

GROUP

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RSK

Date : 02-11-2025

Réunion des parties perennates:

Lieu de la réunion (village/ville/district) : Banghan

Nombre total de participants :

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No.	Nom	Genre	Poste/rôle et résidence (village, ville, district)	Coordonnées	Signature
01	KOUTCHEOU N'gbambé Mabouya	M	Chef canton de banghan	[redacted]	
02	Kitchéou Piou	M	cultivateure		
03	Koutchéou Tighanlapa	M	cultivateure		

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RSK

04	Gnandi Rokou	M	cultivateure
05	Nikabou Nikabou	M	cultivateure
06	Bagnasodeume Afoga	F	Ménagere
07	yanwoni Assana	F	Ménagere
08	Dare Farima	F	Ménagere
09	N Tchadji Mere	F	Ménagere
10	Boutchéou Gname	F	Ménagere
11	Nandja sogban	F	Ménagere
12	Aboubakare Bidagia	F	Ménagere
13	Afoulo Akouya	F	Menagere
14	Akpame Abina	F	Ménagere
15	Nambou Assana	F	Menagere

[redacted]

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RSK

16	Akparanta Kpandja	M	cultivateure
17	Amoukou Kassharome	M	cultivateure
18	GNON Kpawté	M	charffeur
19	KPANDJAN Koffi	M	cultivateure
20	LOKO Kokou	M	cultivateur
21	KOUTCHEOU N'cintcha	M	cultivateur
22	KONDI GNANDI	M	cultivateur
23	Koutchéou Kpadja	M	cultivateur
24	GNON - gnon	M	cultivateur
25	GNON Djawen	M	cultivateur
26	BINGUITCHA Piou	M	Agent CIPCEL
27	DOUWA BA WA	M	cultivateur

[redacted]

Rename file

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RSK

28	KONDI Amidou	M	cultivateur
29	DJERI Kondoh	M	cultivateur
30	KONAME Nikabou	M	cultivateur
31	BORAKPIN Ntchimbo	M	cultivateur
32	ALI Kondi	M	cultivateur
33	GNANDI ALI	M	Cultivateur
34	AMOUKOU Auemaron	M	Cultivateur
35	TAMAKA Kossi	M	Menusier
36	TCHONTCHOKO Alowa	F	Menagere
37	BISKLE Latifa	F	Menagere
38	Kondi Issofa	M	cultivateur
39	NiWintcha Gnon	M	cultivateur

[redacted]

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RSK

40	Amoukou Komi	M	cultivateure	[redacted]	

Djarkpanga community meeting 03.11.25

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RSK

Date: 03-11-2025

Réunion des parties perennates:

Lieu de la réunion (village/ville/district) : Canton de DJARKPANGA

Nombre total de participants :

GDPR disclaimer: En signant cette liste de présence, je consens à ce que les détails personnels ci-dessus (nom, prénom, sexe, lieu, organisation, poste) et les photographies et commentaires pris lors de cette réunion soient inclus dans le rapport ESIA qui sera rendu public. RSK a été engagé par le groupe FB pour travailler avec le CEMP afin d'entreprendre une EIES conformément aux réglementations nationales et aux normes internationales. Les informations et les photos seront conservées et utilisées conformément à la loi britannique sur la protection des données (RGPD), car RSK est une entreprise britannique. Pour plus d'informations ou si vous ne consentez pas, veuillez contacter le CEMP pendant l'événement. Pour plus d'informations sur la façon dont nous traitons vos données personnelles, veuillez consulter la politique de confidentialité de RSK : rskgroup.com/privacy.

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No.	Name	Gender	Position/role and Residency (Village, Town, District)	Contact Details	Signature
1	OURO-BAWINAY Ayèrè	M	Chef Canton Djarkpanga	[redacted]	
2	TCHALA Adjanka	M	SG chef Djarkpanga		
3	BAKINASSO Abdou	M	Notable du chef		

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4	BAWINAY Aboubakar	M	Cultivateur
5	ADOULI Souleman	M	Chef village Waragni
6	GNOZITCHAO Idrissou	M	Notable du chef Waragni
7	ADOULI Abdou Salam	M	Cultivateur Djarkpong.
8	BAWINAY Abdermane	M	ONG JS
9	TIDO Tchakoura Wahabou	M	SG Union Musulman/Mô
10	GNOZITCHAO Kerim	M	Notable du chef canton
11	OURO ATCHOUNOU Amidou	M	Chef village Adjondo 2
12	KPALA-OURO Alassani	M	cultivateur
13	OURO-IFA Foussèni	M	Chef village Kpérahoudé
14	TCHEDRE Abdoulay	M	Chef village Adjondo 1
15	GUEWOURAYE Assoumanou	M	Notable du chef

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16	KANGBA Nghabiba	M	cultivateur Djarkpanga
17	KORIKO Issaka	M	cultivateur
18	SAYIBOU Wékilou	M	cultivateur
19	ATCHIRI Issa	M	cultivateur
20	TCHAFOBOU Abibou	M	Cultivateur
21	AKALA Abubaka	M	Responsable des Jeunes
22	TIOU SALASSI Wayidou	M	Cultivateur
23	PEKPESSI Chérita	F	Commerçante
24	GNOZITCHAO Mounirou	M	cultivateur
25	ADOULI Mohamed	M	Eleveur
26	SIDI Adjéwilou	M	IMAM Centrale Djarkp
27	KPEKPASSI Abdoulaye	M	Imam Adjondo

[redacted]

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28	SEIBOU Imaka	M	CVD Adjondo 2
29	SIDI Kaounénou	M	cultivateur
30	IDJASSI Assidou	M	Cultivateur
31	SOUBOROU Bassiro	M	Président CVD Wamagni
32	SIBABI Yaya	M	CCD Djarhpanga
33	KARMA AMAMA	F	couturière Djarhpanga
34	DJEROU Koudousse	M	Securite du chef
35	PEYELEKE Essoklilina	M	Mécanicien
36	ATCHIRI Abibou	M	enseignant
37	WOROU Abdoulaye	M	cultivateur
38	TCHEDRE-KAFA Youssif	M	cultivateur
39	KPEGOUNI Souleman	M	

[redacted]

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40	GUEWOU RAY Idrissou	M	cultivateur
41	ABALO Kossi	M	Tailleur
42	YEKPLE Isoffi	M	Pasteur
43	KORIKO Faridou	M	chauffeur
44	BAWINA Abdoulay	M	cultivateur
45	OURO-IFA Zinabou	F	Revendeuse
46	ADOULI Assia	F	Responsable de femme
47	SIBABI Amisetou	F	Revendeuse
48	TCHAYAO Adiyatou	F	Responsable femmes de canton
49	TCHAKA-DURO Tachida	F	Revendeuse
50	KOMNA Sadiya	F	Revendeuse
51	BAWINAY Bahadia	F	Revendeuse

[redacted]

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52	TCHASSALA Solamatou	F	Ménagère	[redacted]
53	OURO-BAGNA Afouwatou	F	Ressortissante Ménagère	
54	OURO-AGUDA Kouhématou	F	Ressortissante	
55	TIDU Rahini	F	Commerçante	
56	ADOULI Adjéwilou	M	cultivateur	
57	GUENDURAY Pouweni	M	Cultivateur	
58	BIKINASSO Séidou	M	Président CVD Kpessou	
59	BAWINA Moutawakilou	M	Tailleur	
60	OURO-AGUDA Iliyasou	M	Coiffeur	

Tindjassé community meeting 04.11.25

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RSK

Date: 04/11/2025

Réunion des parties perennates:

Lieu de la réunion (village/ville/district) : Grande Salle des affaires sociales de TINDJASSI

Nombre total de participants :

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No.	Name	Gender	Position/role and Residency (Village, Town, District)	Contact Details	Signature
1	GNIGMI Faré	M	Producteur/Katabin	[redacted]	
2	SEYI BALE	M	Producteur/Commerçant Katabinji		
3	NOUMOUNI Abouclamla	M	commerçant		

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4	KADISOLI BACHIROU	M	Producteur/LAO2
5	ASSINDA YAO	M	Producteur/LAO1
6	AGOUDA Kodjo Parfait	M	cultivateur/LAO
7	SIAKAPI ALIOU	M	CHOFEUR
8	PRAKA KOKOU	M	Responsables des jeunes
9	TIYAKANTOB BASSINBO	M	chef/TOUKOUDJO
10	N'TOKOTI Balatobe	M	Conseiller municipal
11	TCHEMBE Assèh-Réne	M	Responsable de l'Action social
12	POYODI Awadéou	M	Comptable/Mairie
13	~~PAGNAMBE~~	~~M~~	~~KAPATCHA~~
14	PAGNAMBE KAPATCHA	M	Kordonnie
15	TCHODIE K. KEZIE	M	chef LAO1

[redacted]

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16	ABOUKARIM Mohammadou	M	Toukoudjou/chef
17	ASSAMINA YAYA	M	Producteur Toukoudjou/
18	WADJA IDJAWANKO	M	chef / Lominan
19	ASSIH KOMINA	M	Producteur/LAO
20	SONDOU TETE	M	chef Qu/LAO2
21	KOURASSO MOUSSA	M	chef Sarakawa
22	TAMOBA BISSANGHAÏ	M	chef / Katabin
23	ADAM ADAMA	F	boucher/Toukou
24	NANDO ABINA	F	Sarakawa commerçante/
25	BALAME KOUYA	F	Manager/LAO
26	AFO AIAKOBA	M	TdF
27	BATAKI KEZIE	M	Producteur/LAO

[redacted]

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	BATCHAM Ibrahim	M	Expert ate retoppement durable/CEMP
	NITIAM ESSOHANAT	F	Experte en développement social
	TORO Raoul	M	Expert CEMP
	MIDIZINA-BABA L.	M	Expert CEMP

[redacted]

Saiboudè community meeting 04.11.25

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Date: 04 – 11 – 2025

Lieu de la réunion (village/ville/district) : SAIBOUDE

Réunion des parties perennates:

Nombre total de participants :

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No.	Name	Gender	Position/role and Residency (Village, Town, District)	Contact Details	Signature
1	ADSIFILE Djibrila	M	chef canton Saïbou	[redacted]	
2	TCHAPOU Nakpane	M	CLD Saïboudé		
3	TIDU Komna	M	Resp. des jeunes		

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	KOUICHANGOU Nangba	M	chef Village Akoutoto
	MABI Nakondja	M	chef Village Sodjalai
	PASSINDA Simon	M	chef Village Sabondjidi
	NADJOMBE Gbati	M	chef Village Essowazina
	ASSENIERE Wonta	M	chef Village Gbanjabaoto
	NLANDJO Ainyao	M	chef Village Bikpalila
	TCHASSAMA Fabilatou	F	Resp. de femme Saibondé
	KANIIM Djabi	F	Représentante Sodjalai
	AGNARO Fassim	M	CVD Gbanjabandé
	BIPERE Pobilbou	M	CVD/ APE Saibondé
	GMAPOA Lidjol	M	Participant
	GMAPOA Nakiwi	M	chef Village Silla

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	DJOUA Fatima	F	commerçante	[redacted]
	TCHEDRE Nima	F	Resp. de femme saïhou	
	ASSAMANA Lami	F	Apprentie	
	ASSIMANOU Amana	F	Resp. femme Essowa	
	ABOULAYE Saratou	F	Participante	
	BIKANÉ Akoua	F	Resp. femme Bikpalibé	
	ALASSE Yawa	F	Resp. femme Akoutoto	
	MOUHAMED Aridja	F	Resp. femme Kouida	
	ADJIFILE Nafissatou	F	Apprentie saïhoudé	
	NIAMON Ipaline	F	Resp. femme Essowa	
	BAYIM Issa	M	CVD Kouida	
	SAIBOU Amoussou	M	notable chef canton	

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	AKOHSI Issao	M	Secrétaire du chef
	MOMOM Moudassirou	M	Imam
	MOMOM Nassirou	M	CVD Sodjalaye
	N'TOKOTI Bolatobe	M	Conseiller municipal
	TORO Raoul	M	Expert CEMP
	BATCHAM Ibrahim	M	Expert développement durable CEMP
	DEDINGAR R. Sabine	F	Experte CEMP consulting

[redacted]

Boulohou community meeting 05.11.25

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Date : 05-11-2025

Réunion des parties perennates:

Lieu de la réunion (village/ville/district) : BOULOHOU

Nombre total de participants :

GDPR disclaimer : En signant cette liste de présence, je consens à ce que les détails personnels ci-dessus (nom, prénom, sexe, lieu, organisation, poste) et les photographies et commentaires pris lors de cette réunion soient inclus dans le rapport ESIA qui sera rendu public. RSK a été engagé par le groupe FB pour travailler avec le CEMP afin d'entreprendre une EIES conformément aux réglementations nationales et aux normes internationales. Les informations et les photos seront conservées et utilisées conformément à la loi britannique sur la protection des données (RGPD), car RSK est une entreprise britannique. Pour plus d'informations ou si vous ne consentez pas, veuillez contacter le CEMP pendant l'événement. Pour plus d'informations sur la façon dont nous traitons vos données personnelles, veuillez consulter la politique de confidentialité de RSK : rskgroup.com/privacy.

Aux participants : Veuillez noter que des photographies seront prises tout au long de l'événement, qui pourront être incluses dans le matériel promotionnel et les publications pour inclure ESIA et les médias sociaux et LinkedIn pour lesquels cela pourrait convenir. Veuillez contacter l'organisateur de l'événement si vous ne donnez pas votre consentement pour que votre photographie soit utilisée à ces fins.

No.	Nom	Genre	Poste/rôle et résidence (village, ville, district)	Coordonnées	Signature
01	BAGNA ISSAKA	M	chef canton de Boulohou	[redacted]	
02	OURO-MATchiro Issaka	M	chef de village		
03	TCHAGBARA MOUSSA	M	Notable du chef canton		

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04	AKALA	Fondon	M	Notable du chef canton
05	FOFANA	Moumouni	M	Notable du chef musulman
06	ABDOULAYE	Kassimou	M	Imame du quartier
07	FOFANA	Tahirou	M	chef musulman du canton
08	LABARANE	Soulemane	M	Imame du canton de Boulohou
09	ALI FOFANA	Daoude	M	Notable du chef musulman
10	LAMGBATIRE	HPAROU	M	chef village du village de BESSYO
11	ABOUBOULAZIZOU	Sourkrameni	M	chef quartier.
11	KAO	KOMNA	M	Notable du chef Lossso.
13	OKENE	YAO	M	Notable du chef lossso
14	LEMTE	Souley	M	chef Lossso
15	LABRAINE	Hassirou	M	APE président LYCEE

[redacted]

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16	AMADOU	Adyatou	F	Ménagère
17	ASSAGNO	AMINA	F	Ménagère
18	IDJASSINA	Hafsatou	F	chef —> des femmes
19	ZIBÉDOU	Aïchatou	F	Présidente de 3elées
20	SEI	Abyasa	f	mabre de 3elée
21	IDJASSINA	Fridesse	f	membré de 3elées
22	ALIDOU	Hafsatou	f	mabre de 3elées
23	AKALA	Fatou	M	Agriculteur
24	ASSAGNO	HAMIDOU	M	Agriculteur
25	YAO	MENEM	M	Agriculteur
26	IDJASSINA	Foussémi	M	Notable du chef
27	NASSAM	Idrissou	F	Agriculteur

[redacted]

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28	ALAZA SERIKI	M	A. CVD BESSYO
29	TCHAKALA Fousseni	M	
30	TCHIBERE Bouraïma	M	Chef quartier
31	N'KYARIN Foussénu	M	Président CCD
32	SALIFOU Aboubakar	M	CVD Sourouborou
33	N'KYARIN Moustafa	M	Membre
	LINTA Soulemane	M	Chef quartier
34	ALKAMATOU Alhassane	M	Notable du chef musulman
35	BAGNA Zabari	M	Notable du chef canton
36	YAYA Soulémana	M	SG. chef canton
37	NASSAM Nonhonhe	M	chef quartier
38	OURO-NBONOU ASMAÏLA	M	Notable du chef canton

[redacted]

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39	OURO - YEDOU - Felila	F	Boulohou	[redacted]
40	AKONO - Badiya	F	Boulohou	
41	ASSAGNO - Adia	F	Boulohou	
42	NASSAME - Sadiya	F	Boulohou	
43	BRAM - Salamatou	F	Boulohou	
44	LABARANI Aïcha	F	Boulohou	
45	ZAKARI - Rahamatou	F	Boulohou	
46	FOFANA - ILIFAOU	F	Boulohou	
47	IDJASSINA - Fati	F	Boulohou	
48	IDJASSINA - Fileratou	F	Boulohou	
49	MOROU - Ardjatou	F	Boulohou	
50	SASSAKA - Beyinatou	F	Boulohou	

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51	SEÏ - Foussena	F	Boulohou
52	OURO-TOUROUMI - AZIMI	F	Boulohou
53	YAYA - ASSOTOU	F	Boulohou
54	ABOU - MOUSSILIYA	F	Boulohou
55	YAO Alaza	M	Notable du chef canton
56	MIDIZINA - BABA L.	M	Expert CEMP
57	DEDINGAR R. Sabine	F	Experte CEMP
58			
59			
60			

[redacted]

Kagnigbara community meeting 06.11.25

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RSK

Date: 05/11/2025

Réunion des parties perennates:

Lieu de la réunion (village/ville/district) : KAGNIGBARA

Nombre total de participants :

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No.	Name	Gender	Position/role and Residency (Village, Town, District)	Contact Details	Signature
1	ISSIFOU Alaza	M	chef canton Kagnigbara	[redacted]	
2	DRIME Kodjo Assolina	M	President CCD Kagnigbara		
3	AYOTÉ Komi	M	chef cartier Kagnigbara		

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4	KAZAFEI Yao	M	cultivateur Dagnigbara
5	KOM KOUWÉTOU	M	cultivateur Dagnigbara
6	KATOUSSI Koffi	M	cultivateur Dagnigbara
7	FOYOH Merigya	M	chef terrier Dagnigbara
8	KPAMBINA Moussa	M	ASL Dagnigbara
9	BALI ISMAIEL	M	Notable du chef canton Dagnigbara
10	ISSIFOU ARIDJA	F	Ménagère Dagnigbara
11	KATOM Rosaline	F	Menagère Dagnigbara
12	NASSE AYAA	F	Menagère Dagnigbara
13	TASSARIM Komi	M	chauffeur
14	ALASSANI Kokou	M	C.V.D Kagma
15	PASSAH Kodjo	M	CVD N'Konta

[redacted]

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16	KOUKOUBA Tchakodja	M	chef village de Banda
17	KASSELE Ronkon	M	chef village de centre
18	DJARE Bilobi	M	chef village de Folo
19	ADJI Sèwa	M	chef des femme membre Banda
20	MOUSSA Abina	F	chef des femme Kagna
21	AYIKITA Onimba	F	chef des femme Folo
22	YAO Amina	F	membre Kagna
23	KOUTCHANGOU Kokou	M	membre Kagniglara
24	TCHA WALISSIM	M	CDQ Kagniglara
25	MEWEZINO Tchaa	M	secretaire du chef Kagniglara Cartier
26	ALI Yao	M	chef des jeunes Kagna
27	LANGUIME KOUYADJA	M	chef des jeune Banda

[redacted]

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28	KOUKOUBA Bombogi	M	Notable du def Bandla
29	AWEROU Abadji	M	CVA
30	KARABOU AWÈTAM	M	Membre
31	SAMANI-ABARA	M	Chauffeur
32	ISSIFOU Idrisson	M	cultivateur
33	SAMANI ALOU KOKOU	M	cultivateur
34	WIDJIKI Kodjo michel	M	cultivateur
35	AMANGA Jao-Gérémo	M	Coiffeur
36	KPELINGHAN-ESSO	M	Villageois
37	AMANAO KPETO	M	cultivateur
38	ISSIFOU Aboulai	M	cultivateur
39	Dratoussi Alaza	M	cultivateur

[redacted]

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	BATCHAM Ibrahim	M	Expert développement durable/CEMP
	TORO Raoul	M	Expert CEMP
	MITIAM ESSOHANNAD	F	Expert CEMP

[redacted]

APPENDIX 7 WET SEASON BOTANY SURVEY REPORT (CEMP, 2025)

Due to size, Appendix 7 is separate from this document – refer to separate appendix.

APPENDIX 8 AIR QUALITY IMPACT ASSESSMENT METHODOLOGY

Construction phase dust assessment methodology

To assess the potential impacts, construction activities are divided into demolition, earthworks, construction and trackout. The descriptors included in this section are based upon the IAQM construction dust guidance. The assessment follows the steps recommended in the guidance.

Step 1: Screen the requirement for assessment

The first step is to screen out the requirement for a construction dust assessment, this is usually a somewhat conservative level of screening. An assessment is usually required where there is:

- a 'human receptor' within:
    - 250 m of the boundary of the site; or
    - 50 m of the route used by construction vehicles on the public highway, up to 250 m from the site entrance(s)
- an 'ecological receptor':
    - 50 m of the boundary of the site; or
    - 50 m of the route(s) used by construction vehicles on the public highway, up to 250 m from the site entrance(s).

Step 2A: Defining the potential dust emission magnitude

Demolition

The dust emission magnitude category for demolition is varied for each site in terms of timing, building type, duration and scale. Examples of the potential dust emission classes are provided in the guidance as follows:

- Large: Total building volume >75,000 m^3, potentially dusty construction material, on-site crushing and screening, demolition activities >12 m above ground level.
- Medium: Total building volume 12,000 m^3 – 75,000 m^3, potentially dusty construction material, demolition activities 6 m – 12 m above ground level.
- Small: Total building volume <12,000 m^3, construction material with low potential for dust release, demolition activities <6 m above ground, demolition during wetter months.

Earthworks

The dust emission magnitude category for earthworks is varied for each site in terms of timing, geology, topography and duration. Examples of the potential dust emission classes are provided in the guidance as follows:

- Large: Total site area >110,000 m^2, potentially dusty soil type (e.g. clay), >10 heavy earth moving vehicles active at any one time, formation of bunds >6 m in height.
- Medium: Total site area 18,000 – 110,000 m^2, moderately dusty soil type (e.g. silt), 5 – 10 heavy earth moving vehicles active at any one time, formation of bunds 3 – 6 m in height.
- Small: Total site area < 18,000 m^2, soil type with large grain size (e.g. sand), <5 heavy earth moving vehicles active at any one time, formation of bunds <3 m in height.

Construction

The dust emission magnitude category for construction is varied for each site in terms of timing, building type, duration, and scale. Examples of the potential dust emissions classes are provided in the guidance as follows:

- Large: Total building volume >75,000 m^3, on site concrete batching, sandblasting.
- Medium: Total building volume 12,000 – 75,000 m^3, potentially dusty construction material (e.g. concrete), on site concrete batching.
- Small: Total building volume <12,000 m^3, construction material with low potential for dust release (e.g. metal cladding or timber).

Trackout

Factors which determine the dust emission magnitude class of trackout activities are vehicle size, vehicle speed, vehicle number, geology and duration. Examples of the potential dust emissions classes are provided in the guidance as follows:

- Large: >50 HDV (>3.5 t) trips in any one day, potentially dusty surface material (e.g. high clay content), unpaved road length >100 m.
- Medium: 20 – 50 HDV (>3.5 t) trips in any one day, moderately dusty surface material (e.g. high clay content), unpaved road length 50m – 100 m.
- Small: <20 HDV (>3.5 t) trips in any one day, surface material with low potential for dust release, unpaved road length <50 m.

Step 2B: Defining the sensitivity of the area

The sensitivity of the area is defined for dust soiling and human health. The sensitivity of the area takes into account the following factors:

- the specific sensitivities of receptors in the area
- the proximity and number of those receptors
- in the case of PM10, the local background concentration
- site-specific factors, such as whether here are natural shelters such as trees, to reduce the risk of wind-blown dust

Table A8.1 has been used to define the sensitivity of different types of receptors to dust soiling and health effects.

Table A8.1: Sensitivity of the area surrounding the site

Sensitivity of area	Dust soiling	Human receptors
	• Users can reasonably expect enjoyment of a high level of amenity. • The appearance, aesthetics or value of their property would be diminished by soiling. • The people or property would reasonably be expected to be present continuously, or at least regularly for extended	• Locations where members of the public are exposed over a time period relevant to the air quality objective for PM_{10} (in the case of the 24-hour objectives, a relevant location would be one where individuals may be exposed for eight hours or more in a day) • Examples include residential properties, hospitals, schools and residential care homes

Sensitivity of area	Dust soiling	Human receptors
	periods, as part of the normal pattern of use of the land. • Examples include dwellings, museums and other culturally important collections, medium and long term car parks and car showrooms.	should also be considered as having equal sensitivity to residential areas for the purposes of this assessment.
	• Users would expect to enjoy a reasonable level of amenity, but would not reasonably expect to enjoy the same level of amenity as in their home. • The appearance, aesthetics or value of their property could be diminished by soiling. • The people or property wouldn't reasonably be expected to be present here continuously or regularly for extended periods as part of the normal pattern of use of the land. • Examples include parks and places of work.	• Locations where the people exposed are workers and exposure is over a time period relevant to the air quality objective for PM_{10} (in the case of the 24-hour objectives, a relevant location would be one where individuals may be exposed for eight hours or more in a day). • Examples include office and shop workers, but will generally not include workers occupationally exposed to PM_{10}, as protection is covered by Health and Safety at Work legislation.
	• The enjoyment of amenity would not reasonably be expected. • Property would not reasonably be expected to be diminished in appearance, aesthetics or value by soiling. • There is transient exposure, where the people or property would reasonably be expected to be present only for limited periods of time as part of the normal pattern of use of the land. • Examples include playing fields, farmland (unless commercially-sensitive horticultural), footpaths, short term car parks and roads.	• Locations where human exposure is transient. • Indicative examples include public footpaths, playing fields, parks and shopping streets.

Based on the sensitivities assigned of the different types of receptors surrounding the site and numbers of receptors within certain distances of the site, a sensitivity classification for the area can be defined for each. Tables A8.2 to A8.3 indicate the method used to determine the sensitivity of the area for dust soiling and human health impacts, respectively.

For trackout, as per the IAQM construction dust guidance, it is only considered necessary to consider trackout impacts up to 50 m from the edge of the road.

Table A8.2: Sensitivity of the area to dust soiling effects on people and property

Receptor sensitivity	Number of receptors	Distances from the source (m)			
		<20	<50	<100	<250
High	>100	High	High	Medium	Low
	10-100	High	Medium	Low	Low
	1-10	Medium	Low	Low	Low
Medium	>1	Medium	Low	Low	Low
Low	>1	Low	Low	Low	Low

Table A8.3: Sensitivity of the area to human health impacts

Receptor sensitivity	Annual mean PM10 conc.	Number of receptors	Distances from the source (m)			
			<20	<50	<100	<250
High	>32 µg/m^3	>100	High	High	High	Medium
		10-100	High	High	Medium	Low
		1-10	High	Medium	Low	Low
	28-32 µg/m^3	>100	High	High	Medium	Low
		10-100	High	Medium	Low	Low
		1-10	High	Medium	Low	Low
	24-28 µg/m^3	>100	High	Medium	Low	Low
		10-100	High	Medium	Low	Low
		1-10	Medium	Low	Low	Low
	<24 µg/m^3	>100	Medium	Low	Low	Low
		10-100	Low	Low	Low	Low
		1-10	Low	Low	Low	Low
Medium	>32 µg/m^3	>10	High	Medium	Low	Low
		1-10	Medium	Low	Low	Low
	28-32 µg/m^3	>10	Medium	Low	Low	Low
		1-10	Low	Low	Low	Low
	24-28 µg/m^3	>10	Low	Low	Low	Low
		1-10	Low	Low	Low	Low
	<24 µg/m^3	>10	Low	Low	Low	Low
		1-10	Low	Low	Low	Low
Low	-	>1	Low	Low	Low	Low

Step 2C: Defining the risk of impacts

The final step is to use both the dust emission magnitude classification with the sensitivity of the area, to determine a potential risk of impacts for each construction activity, before the application of mitigation. Tables A8.4 to A8.6 indicate the method used to assign the level of risk for each construction activity.

Table A8.4: Risk of Dust impacts from demolition

Sensitivity of area	Dust emission magnitude		
	Large	Medium	Small
High	High Risk	Medium Risk	Medium Risk
Medium	High Risk	Medium Risk	Low Risk
Low	Medium Risk	Low Risk	Negligible

Table A8.5: Risk of dust impacts from earthworks/construction

Sensitivity of area	Dust emission magnitude		
	Large	Medium	Small
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Medium Risk	Low Risk
Low	Low Risk	Low Risk	Negligible

Table A8.6: Risk of dust impacts from trackout

Sensitivity of area	Dust emission magnitude		
	Large	Medium	Small
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Medium Risk	Low Risk
Low	Low Risk	Low Risk	Negligible

Operational phase air quality traffic assessment methodology

To assess the impacts of a development on the surrounding area, the EPUK-IAQM 2017 guidance recommends that the degree of an impact is described by expressing the magnitude of incremental change as a proportion of the relevant assessment level and examining this change in the context of the new total concentration and its relationship with the assessment criterion. Table A8.7 presents the suggested framework, provided within the EPUK/IAQM guidance, for describing the impacts.

Table A8.7: Impact descriptors for individual receptors

Long term average concentration at receptors in assessment year	% Change in concentration relative to air quality assessment level (AQAL)			
	1	2-5	6-10	>10
75% or less of AQAL	Negligible	Negligible	Slight	Moderate
76-94% AQAL	Negligible	Slight	Moderate	Moderate
95-102% of AQAL	Slight	Moderate	Moderate	Substantial
103-109% of AQAL	Moderate	Moderate	Substantial	Substantial
110% or more of AQAL	Moderate	Substantial	Substantial	Substantial

Notes

AQAL = Air Quality Assessment Level, which for this assessment related to the WHO Air Quality Guidelines.

Where the % change in concentrations is <0.5%, the change is described as 'negligible' regardless of the concentration.

Where concentrations increase the impact is described as adverse, and where it decrease as beneficial.

The EPUK/IAQM guidance notes that the criteria in Table A8.7 should be used to describe impacts at individual receptors and should only be considered as a starting point to make a judgement on significance of effects, as other influences may need to be accounted for. The EPUK/IAQM guidance states that the assessment of overall significance should be based on professional judgement, taking into account several factors, including:

- the existing and future air quality in the absence of the development
- the extent of current and future population exposure to the impacts
- the influence and validity of any assumptions adopted when undertaking the prediction of impacts.

The EPUK/IAQM guidance states that for most road transport related emissions, long-term average concentrations are the most useful for evaluating the severity of impacts.

APPENDIX 9 NOISE AND VIBRATION IMPACT ASSESSMENT

Due to size, Appendix 9 is separate from this document – refer to separate appendix.

APPENDIX 10 CLIMATE CHANGE RISK ASSESSMENT AND GREENHOUSE GAS ASSESSMENT

Due to size, Appendix 10 is separate from this document – refer to separate appendix.

APPENDIX 11 CRITICAL HABITAT ASSESSMENT

Due to size, Appendix 11 is separate from this document – refer to separate appendix.

APPENDIX 12 COMMITMENTS REGISTER

Due to size, Appendix 12 is separate from this document – refer to separate appendix.