REPUBLIQUE DU BENIN

MINISTRY OF LIVING ENVIRONMENT AND TRANSPORT IN CHARGE OF SUSTAINABLE DEVELOPMENT

SOCIÉTÉ DES INFRASTRUCTURES ROUTIERES ET DE L'AMÉNAGEMENT DU TERRITOIRE (SIRAT)

GRAND NOKOUÉ SUSTAINABLE URBAN MOBILITY PROJECT (GN PMUD)

ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK (ESMF)

FINAL REPORT

Financing: **World Bank (IDA) & Infrastructure Asian Investment Bank**

January 2025

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Agabhasa	
Asekna	
BEEMER	
CCES	
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CLGP	
THESE	
CFDs	
CNCEDD	
UNCED	
CPR	
DAO	
DAOM	
dB DD	
DPC	
DSA	
DSCE	
DUP	
EAS	
EHS	
EIES	
EPI	
FCFA	
GDIZ	
GES	
GIEC	
HIMO	
HS HSE	
IAM IAS	
IDA IEC	
IST	
MGP	
NEPAD	
NIES	
OMS	
ONG	
OS	
PAM	
PAP	
PAR	
PCGES	

ESMPS	: Environmental and Social Management Plan :
PMU	Emergency Measures Plan : Sustainable Urban Mobility
PMUD-GN	Plan of Greater Nokoué : Sustainable Urban Mobility
PMUS	Plan : National Environmental Management Plan :
PNGE	Minutes : Developing Countries : General Population and
PV	Housing Census : Social and Environmental Engineering
PVD	Manager Food Security Food Security Moderate Food
RGPH	Security Beninese Energy Company Electrical: Acquired
Rise	Immunodeficiency Syndrome National Water Company of
Sa	Benin: Procurement Specialist: Environmental Safeguard
Saal	Specialist: Social Safeguard Specialist: Occupational
Sam	Health and Safety: Terms of Reference: Musculoskeletal
Sabi	Disorder: Gender-Based Violence: Human
Sida	Immunodeficiency Virus: Project Area of Influence
Soneb	
SPM	
Saav	
SSS	
SST	
TDR	
TMS	
VBG	
Vih Zip	

RESUME EXECUTIF

Project Background

In order to improve the transport conditions of people and goods, reduce greenhouse gas emissions in Benin, the government of Benin has initiated the Sustainable Urban Mobility Project at the scale of the Greater Nokoué agglomeration[1]. This project is in its preparatory phase, under the supervision of the Société des Infrastructures Routières et de l'Aménagement du Territoire (SIRAT).

The Sustainable Urban Mobility Project in Greater Nokoué (PMUD-GN) in Benin is designed around five (05) components presented as follows:

- Component 1: Improving the governance of the urban mobility sector;
- Component 2: Professionalization of paratransit operators, Road safety and waterway safety;
- Component 3: Improvement of urban mobility conditions;
- Component 4: Electrification of two-wheelers;
- Component 5 – Capacity Building and Project Management.

This project is classified as "High Risk" according to the World Bank's environmental and social framework in view of its scope, the sensitivity of the sector of intervention, the geographical area as well as the possible negative impacts it could have on the biophysical and human environments of Grand-Nokoué.The Environmental and Social Management Framework (ESMF) of the Grand-Nokoué Urban Mobility Project aims to provide a general vision of the environmental and social requirements in the which the said project will be implemented. It will list the procedures and institutional and legal provisions for environmental and social screening, as well as guidelines for the preparation, implementation and monitoring of environmental works (in particular Environmental and Social Impact Assessments, summary or detailed/Environmental and Social Management Plans or environmental measures). It constitutes the reference framework within which the management efforts undertaken by the stakeholders to reduce the risks and impacts of the project on the receiving environment are part of the entire process of its implementation.

Methodological approach

The methodology used in this study is centred on a participatory and interactive approach with the involvement of key stakeholders involved in the project. The data analysed in the framework of this study are collected from a review of the documentation, observation visits to the field, consultations with key actors through interviews and public sessions in the municipalities concerned by the project. This process made it possible to take stock of the impacts as well as management measures, the perceptions and expectations of stakeholders from the point of view of the sources of documentation and the actors consulted, according to the components of the project. It has made it possible to develop an environmental and social management procedure that is very attentive to the requirements of the World Bank, the conventions signed by the Beninese State on the protection of human rights in relation to the environment, vulnerable people, indigenous peoples and local communities, etc.

[1] It is made up of the municipalities of Benin linked by Lake Nokoué, these are the municipalities such as Abomey-Calavi, Cotonou, Ouidah, Sèmè-Ppodji and Porto-Novo.

Political, legal and institutional frameworks related to the SUMP-GN

The normative framework that governs the World Bank's financing requires States not only to take into account, but also to inform, to raise awareness among the population about the environmental and social risks associated with development policies, plans, programs and projects. The mechanisms of this framework are supported and strengthened by a number of agreements and conventions ratified at the international level and giving interest to the protection and preservation of the environment and the human rights of the people who live there. Having ratified most of its agreements, Benin has domesticated these regulatory provisions in its legal arsenal, especially those that underpin the management of sectors such as the environment, water, biodiversity, land, social, economic, etc. This normative framework for development projects demonstrates the World Bank's commitment to aligning sustainability with its political will to end extreme poverty and promote shared prosperity for all. This High Risk Sustainable Urban Mobility Project in Greater Nokoué will comply with eight (08) standards out of the ten (10) governing the programs, projects financed entirely or partially from World Bank resources.

At the institutional level, the management of natural resources and the biophysical and human environment is carried out by several national public institutions, including public administrations, municipalities, private developers, civil society organizations and local communities.

Comparison of the environmental and social management systems of Benin and the World Bank

In general, Benin's environmental and social management system and that of the World Bank aim to implement the principles of sustainable development. They are in this sense with a few similar nuances. Nuances could be noted in the nature of the tools or types of environmental assessment to be used, public consultation, dissemination of information and compensation principles. The formula used is that in the event of a difference, the measure most favourable to the biophysical and human environment is analysed and applied on the basis of the two frameworks.

Synthesis of environmental and social issues

The Grand-Nokoué Sustainable Urban Mobility Project (PMUD-GN) will entail various risks and opportunities. In the context of this ESMF, a brief description of the issues at stake is necessary and will allow us to better characterize the possible impacts and sources of impact, both positive and negative. These issues, grouped into three (3) categories (biophysical, socio-economic, health-security), will be the subject of an in-depth analysis. At the biophysical and ecological levels, we will witness the modification of the landscape, the alteration of air quality, the production of waste, noise pollution and the production of tremors, floods and natural hazards and those related to climate change.

From a socio-economic and cultural point of view, the issues concern the creation of jobs and income-generating activities for local populations, the disruption of economic activities, the displacement of cultural heritage, the disruption of places of worship and sacred sites, the loss of built assets and fishing activities.

In terms of health, these will be the proliferation of respiratory diseases due to dust raising, the safety of installations and investments, the risks of contamination on the

one hand, and the improvement of the health of local populations on the other.

Risk/impact enumeration and mitigation measures

The various activities within the framework of this project will generate positive impacts as indicated in the matrix below.

Matrix for analyzing potential positive environmental and social impacts

Components	Positive Impacts
Component 1: Improving the governance of the urban mobility sector	- Job creation - Renewal and better management of the fleet - Social implementation of adapted training and professionalization programs for operators
Component 2: Professionalization of paratransit operators, Road safety and waterway safety;	- Job creation and poverty reduction - Development of commercial activities (catering activities and small businesses installed) - Reduction of the anarchic occupation of the corridor causing a lot of nuisance to users and local populations - Reduced accidents - Modernisation of transport infrastructure - Improvement of traffic flow in the cities of Grand-Nokoué - Better access to infrastructure adapted for bus-type vehicles: boarding/disembarking areas, connection areas with other modes - Convenience of transportation and improved accessibility to various services and reduction of transportation costs - Reduction of vehicle maintenance costs (buses) - Local socio-economic development of the cities of Grand-Nokoué
Component 3: Improving urban mobility conditions	- Reduced air pollution - Improvement of air quality in the cities crossed by the project; - Reduction of noise pollution.
Component 4: Electrification of two-wheelers	- Job creation - Strengthening managerial capacities - Better distribution of tasks - Achievement of Project objectives - Available transport network and improvement of traffic flow in the cities of Grand-Nokoué - Skilled operational personnel
Component 5 – Capacity Building and Project Management	- Training of the local workforce and acquisition of new skills - Job creation - Awareness raising on GBV, SEA/HS

Among the 05 components that are the subject of this ESMF, it is component 2 that will generate negative environmental and social risks/impacts as indicated in the matrix below:

Matrix of specific negative environmental and social risks/impacts

Component	Risks/Impacts	Management Actions/Approach
Component 1: Improving the governance of the urban mobility sector	- Destruction of vegetation cover (plantations) - Disturbance of aquatic fauna and migratory species	- Effective implementation of the present CGES - Carrying out ESIA/ESIS - Correct implementation of ESMPs - Systematic integration of reforestation and reconstruction of natural bird habitats activities into ESMPs - Integration of environmental and social clauses in companies' DAOs - Obligation on all companies to carry out site state-guaranteed loans
Component 2: Professionalization of paratransit operators, Road safety and waterway safety	- Risks of social conflicts - Risks of GBV/SEA/HS - Risk of corruption; - Loss of jobs; - Risk of drowning; - Risk of GHG emissions - Risk of waste proliferation	- Establish the complaint management mechanism; - Take into account the differences in the sector; - Provide the project with a social and vulnerability assessment plan;
Component 3: Improvement of urban mobility conditions	- Pollution of water resources, especially surface water resources, by waste from the works (cement, sand, excavated material); - Water pollution by accidental spills of hydrocarbons, waste oil (equipment maintenance); - Groundwater contamination by chemical pollutants - Accidental spills of hydrocarbons, waste oil (equipment maintenance); - Degradation of soil structure by compaction (movement of machinery); - Soil pollution by waste from the works (cement, sand, excavated material); - Erosion due to the use of lagoon sand for the construction of infrastructure; - Destruction of the vegetation cover (plantations); - Disturbance of aquatic fauna and migratory species; - Destruction of property and disruption of economic activities;	- Effective implementation of the present CGES; - Carrying out ESIA/ESIR; - Correct implementation of ESMPs from ESIAs; - Systematic integration of reforestation and soil restoration activities into ESMPs; - Integration of environmental and social clauses in companies' DAOs; - Obligation on companies to carry out site PGES; - Effective implementation of this CGES and the CPRP; - Completion of RAPs or livelihood restoration plans; - Effective implementation of the present CGES; - Carrying out ESIA/ESIR; - Correct implementation of ESMPs; - Integration of a waste management/pollution prevention plan into the ESMP; - Integration of environmental and social clauses in companies' DAOs; - Preparation by companies of site management plans.

Component	Risks/Impacts	Management Actions/Approach
	- Risks of social discontent in the event of non-use of local labour; - Temporary restriction of access to businesses that will likely lead to a drop in income for small traders, window dressers and other people who will be affected by the project; - Reduction of socio-economic activities.	
Component 4: Electrification of two-wheelers	- Air pollution; - Production of electronic waste; - Risks of illness due to noise pollution (noise and vibrations caused by machinery); - Loss of employment; - Traffic accident	- Implement the e-waste management plan; - Carrying out ESIA/ESIR; - Correct implementation of ESMPs from ESIAs; - Integration of a waste management/pollution prevention plan into the ESMP; - Integration of environmental and social clauses in companies' DAOs; - Preparation by companies of site management plans.
Component 5: Capacity building and project management	- Infringement of land ownership; - Risks of social discontent in the event of illegal occupation of public or private land; - Risks of gender-based violence; - Risks related to EAS/HS; - Risks of child labour on the construction site; - Risks of not taking into account vulnerable people; - Risk of suspension/cessation of Bank financing in the event of financial and/or environmental and social mismanagement of the Project; - Risk of various conflicts - Risk of damage to the image of the Project - Risks of GBV/SEA/HS - Corruption risks	- Correct implementation of ESMPs; - Integration of environmental and social clauses in companies' DAOs; - Development by companies of site management plans - Development of a mechanism for the prevention and management of cases of GBV and abuse; - Take into account all the actors of the project; - Development of an approach to assist vulnerable people who will be affected by the project.

Environmental and Social Management Framework Plan

Methodology for the preparation, approval and execution of sub-projects.

This section describes the different steps to be taken, as soon as the site of each sub-project or activity is known, with a view to identifying the environmental and social implications (including security) as well as the appropriate measures to be implemented, including institutional responsibilities. It includes the following:

- Process and stages of environmental selection of sub-projects (it concerns screening);
- Environmental and social assessment procedure for sub-projects (it concerns the phase of ESIA and NIES studies);
- Development of a waste management plan;
- Process of developing a Workforce Management Procedures (LMP) manual;
- Development of the Stakeholder Mobilization Plan (PMPP) integrating the Communication Plan;
- Development of a Complaint Management Mechanism on the project;
- Development and implementation of the training plan;
- Risk assessment of GBV/SEA/HS and development of a risk management plan;
- Establishment of GBV/EAS/HS complaint management committees;
- Implementation of the complaint management mechanism related to the VBG/EAS/HS.

In addition, to ensure the effectiveness of the project's interventions and improve the quality of the environment, a capacity-building program for the various project actors has been proposed and specific instruments will have to be developed as necessary in accordance with the guidelines of the World Bank.

Capacity building of key actors involved in the implementation of the ESMC

It aims to ensure that the implementation of environmental and social aspects will be carried out in an optimal manner. This capacity building will consist of the development and implementation of a training plan and will focus on various themes including those related to the Sustainable Mobility Project in general, in particular the SUNMP-GN and on the environmental planning of activities, environmental sorting, determination of mitigation measures, monitoring and reporting, health and safety at work, health risks, etc.

The matrix below presents some training themes.

Training topics (indicative)
Environmental and Social Assessment - Knowledge of national and World Bank environmental and social procedures; - Training and awareness-raising on the project's environmental and social safeguard documents; - Knowledge of the process of monitoring the implementation of the project's safeguarding documents; - Problem of the environmental assessment of a road development project.

Training topics (indicative)
Training on environmental and social monitoring - Environmental and social monitoring methodology; - Environmental and social monitoring/evaluation indicators; - Compliance with and application of environmental and social laws and regulations; - Raising awareness among the population on the protection and management of the environment; - Reporting system.
Health and safety training - Health, Health and Safety Plan (PHSS) in accordance with ISO 45001-2018; - Environmental, social and biodiversity management plan in accordance with ISO 14001-2018
Cultural and Physical Resource Management - Training in the "chance find" procedure; - Raising awareness of the respect of sacred sites in the chiefdoms where the project intervenes.
Gender-based violence and child protection - Raising awareness among workers on gender-based violence on construction sites; - Measures to be taken to prevent gender-based violence; - Conduct for victims of violence; - Worker awareness to prevent EAS and HS aspects; - Prohibition of access to construction sites for children; - Non-use of minor children as workers on construction sites.

Communication Plan

This communication plan aims to promote the disclosure of all relevant information in relation to the project. The communication plan will be developed just before the start of the project by SIRAT.

Disclosure of environmental and social information about the project will have to be done at the beginning of the project. As a result, launch workshops and a series of public announcements are to be expected. Local committees can be set up within each target municipality in order to facilitate the social acceptance of the project and to mobilise all the stakeholders concerned by the project if necessary.

The consultation plan will take place at the level of all the different stakeholders of the project, in particular during the days of convenience with these stakeholders. It is important that all stakeholders have the same level of information, specifically with regard to social and environmental aspects, the ESMC can be made available to the public through various channels such as the various meetings between stakeholders, launch workshops, website, World Bank Info-shop.

Institutional arrangement for the implementation of the environmental and social management procedure for sub-projects

The project implementing entity or any entity participating in the implementation of the ESMP, will not publish any request for tenders (RFP) for an activity subject to an Environmental and Social Impact Assessment or Assessment (ESIA/ESIC), without the Environmental and Social Management Plan (ESMP) for the work phase having been inserted and, will give the order for the start of the said work before the environmental and social documents of the contracting company (site ESMP, Environmental Insurance Plan (EAP), Special Waste Management and Disposal Plan (PPGED), Special Health Safety and Protection Plan (PPSPS)), the Employer's Complaint Management Mechanism (MGPE) have been approved and integrated into the overall work schedule. Also, the roles and responsibilities as described above will be integrated into the Project Implementation Manual (MEP).

Public consultation

As part of the PSUM-GN, public consultation sessions were organized in the five municipalities of Greater Nokoué, namely Abomey Calavi, Cotonou, Sèmè-Podji, Ouidah and Porto-Novo. The said sessions took place from October 07 to 11, 2024.These sessions were attended by 160 people, including 24 women. During the various sessions, participants asked questions, raised concerns and made recommendations.

The concerns of the stakeholders consulted relate to:

- The quest for information about the institutional actors in charge of the governance of the project;
- The physical framework for implementation, aspects specific to the people affected and the developments announced as part of this project. It is a quest for additional information about the ministry, the structure responsible for supervising the project, the municipalities of intervention, the targeted actors;
- Forecasts in terms of capacity building, information, education and communication, of the actors involved in the management and implementation of this component;
- Forecasts, provisions, measures to broaden exchanges with the most affected actors, facilitate their involvement, their representation and the taking into account of their concerns, opinions and opinions at all phases of the project's implementation; promote, formalize and professionalize the profession of taxi drivers and secure the employment of people working in the sector; to ensure the availability of water, in toilets, the maintenance of hygiene and cleanliness, the management of existing transport equipment and those announced as part of this project.

At the end of the various sessions, the participants recommended to:

- To build infrastructure for the benefit of mini-bus transport actors;
- Involve mini-bus transport stakeholders in raising awareness among the population;
- Raise awareness among road users of the road to be developed before its commissioning on road safety;
- Lighting the roads planned in the project;
- Install the fire hydrants along the project.
- Closely involve the Republican police and the National Road Safety Centre (CNSR) in the project;
- Take into account lessons learned from previous similar initiatives;
- Review road infrastructure to adapt it to vehicles;
- Inform the population and transport sector stakeholders so that they can prepare;
- Provide gathering places for motorcycle taxi drivers;
- Raise awareness and repress users who erect displays around fire hydrants.
- Avoid financing options to keep drivers in chains of dependency for a long time; formalize,

- Professionalize and organize the sector, the actors of the two-wheeled transport chain instead of destroying them;
- Recognize and integrate into the project monitoring plan the role of CSOs in the implementation of IECs for behavior change;
- Integrate water practitioners at the local level in the reflection on the development of road networks on Lake Nokoué;
- Take into account the Sèmè-Podji road network on the Nigerian border to reduce the risks related to insecurity;
- Evaluate the experience of contracts and financing agreements in the existing sector; - Take into account and secure the jobs of people working in the informal sector, especially in this sector.

Complaint Management Mechanism (PMM)

The implementation of the project will certainly create grievances, including those related to GBV, which will be managed through a grievance management mechanism, the main guidelines of which are detailed in the stakeholder engagement plan.

***Monitoring performance* indicators**

The key indicators to be monitored during the implementation of the NSURP-SUMP will relate to:

- % of sub-projects that have been subject to environmental and social selection;
- % of environmental and social impact studies or findings carried out, published and effectively implemented;
- % of infrastructure rehabilitated or built that has been subject to environmental monitoring and reporting;
- % of actors trained/sensitized in environmental and social management;
- % of awareness-raising actions on hygiene, health and safety carried out:
- % of accident victims covered by the project.

The estimated budget for the implementation of the environmental and social measures of the CGGP amounts to the sum **of one billion twenty-nine million** (1,029,000,000**) Francs CFA.**

EXECUTIVE SUMMARY

As part of the improvement of the conditions for the transport of people and goods in Benin, the Cities of the Grand-Nokoué (Abomey-Calavi-Cotonou, Semè-Podji, Ouidah and Cotonou have benefited of the urban mobility project funded by the World Bank. This project in its preparatory phase is under the supervision of the Société des Infrastructure Roads and Spatial Planning (SIRAT). It aims to improve Reduce mobility, long queues at the arteries and reduce greenhouse gas emissions.

The implementation of the activities of this project involves the establishment of a modern transport network. This project of Share Sound Nevergure, its sector of intervention and the geographical area concerned, it is in category A in the sense that it could have a large-scale negative environmental and social impact. Hence the need to create an Environmental and Social Management Framework (CGES). This CGES will make it possible to better manage the risks and impacts of the different components of the project on the receiving environments (biophysical and human).

The Grand-Nokoué Will be developed around four components:

- Component 1: Improving the governance of the urban mobility sector.
- Component 2: Professionalization of artisanal transport operators, road safety and safety on waterways
- Component 3: Improving the urban mobility conditions
- Component 4: Electrification of two-wheelers.
- Component 5: Capacity building and project management

This project is classified as " High Risk" according to the World Bank's environmental and social framework, in view of its scale, the sensitivity of the sector of intervention, the geographical area and the possible negative impacts it could have on the biophysical and human environments of Grand-Nokoué.

The Environmental and Social Management Framework (ESMF) of the Grand-Nokoué Aims to give a general view of the environmental and social requirements in which the said project will be implemented. It will be a matter of listing the procedures and the institutional and legal provisions for environmental screening and social, as well as guidelines for the preparation, implementation, and monitoring of environmental work (including Environmental and Social Impact Studies, summary or detailed / Environmental and Social Management Plans or environmental measures).

Methodological approach

The methodological approach used in this study is centered on a participatory and interactive approach with the involvement of the main stakeholders of the actors and partners involved in the project.

Data collection and analysis techniques have mobilized the documentary review, field raids and consultations with key players, the use of impact checklists and sub-impact management measures-Projects planned under the project.

During the field visits, public consultations were carried out (the PVs of which can be found in the annex) which made it possible to identify the perceptions of the actors and their expectations.

The procedure of environmental and social management proposed has integrated the need to comply with the environmental and social standards of the World Bank and with the national and international legal framework, in particular the agreements signed by the Beninese state in Environmental protection.

Political, legal, and institutional framework

The World Bank's environmental and social standards and the Regulation Beninese in terms of environment Recommending The consideration of environmental and social aspects in development policies, plans, programs, and projects. They give a good place to information and awareness of populations on the Environmental and social risks. This vision displayed by the World Bank and the Beninese State has been reinforced by the development of a strategy focused on the signing of agreements, conventions and the taking of decrees whose purpose is the Preservation of our environment for equitable development.

The arsenal Legal of the Benin is marked by the signature and the Ratification Of several agreements and conventions at the international level and regional aimed at the protection of the biophysical and human environment. This Legislative and regulatory arrangements cover several areas: environment, water, biodiversity, land, social, economy, etc. exist. The new environmental and social framework focused on the new environmental and social standards of the World Bank apply to all projects Of Invested SSEnv Ment Under funding from the World Bank. These environmental and social standards reflect the institution's will for sustainable development. The goal is to end extreme poverty and promote shared prosperity. On the ten (10) environmental standards and social that frame projects and programs financed in whole or in part from the resources of the World Bank, the implementation of this project will trigger eight (08) standards.

At the institutional level, the management of resources Natural and biophysical and human environmental services is provided by several national public institutions, including public administrations, municipalities, private promoters, civil society organizations and local communities.

Comparison of the environmental and social management systems of Benin and the World Bank

In general, Benin's environmental and social management system and that of the World Bank aim to Implementation of the principles of sustainable development. They are in this sense to a few nuances almost similar. The nuances could be noted at the level of the nature of the tools or types of environmental assessment to be mobilized, the public consultation, the dissemination of Information and compensation principles. The formula chosen is that in the event of a difference, the most favorable measure for the biophysical and human environment is analyzed and applied on the basis of the two frameworks.

Synthesis of environmental and social issues

The Urban Mobility Project Durable of the Grand-Nokoué (PMUD-GN)" Will cause various risks and opportunities. As part of this CGES, a brief of the Crypton of the issues is necessary and will make it possible to better characterize the possible positive and negative impacts and sources of impact.

The major issues that will be identified will be the subject of an in-depth analysis and can be grouped into things (3) categories: biophysical issues, socio-economic issues and health and safety issues.

To Biophysical plan and ecological, we will witness the modification of the landscape, the alteration of the quality of the air, waste production, noise pollution and production of Shake ESEnv S, floods, and natural hazards and those related to climate change.

From the point of View Socioeconomic and cultural issues, the challenges concern the creation of jobs and activities that generate Revenues For local populations, the disruption of economic activities, the displacement of cultural heritage, the disruption of the Places of worship and sacred sites, the loss of built goods and fishing activities.
In terms of health, it will be the proliferation of respiratory diseases due to Replacement Of dust, the safety of installations and invested ESEnv and the risk of contamination on the one hand, and the improvement of the health of riparian populations on the other hand.

Enumeration of risks/impacts and mitigation measures

The various activities included in this project will generate positive impacts as indicated in the matrix below.

Analysis matrix of potential positive environmental and social impacts

Components	Positive Impacts
Component 1: Improving the governance of the urban mobility sector	- Job creation - Fleet renewal - Social implementation of adapted training and professionalization programs for operators - Better management of the new fleet
Component 2: Professionalization of small- scale transport operators, Road and waterway safety.	- Job creation and poverty reduction - Development of commercial activities (the activities of restAuration and small shops installed) - Reduction of the anarchic occupation of the corridor causing much nuisance to users and riparian populations - Accident reduction - Modernization of transport infrastructure - Improving the fluidity of traffic in the cities of the Grand-Nokoué - Better access to infrastructure adapted for bus-type vehicles: embarkation / disembarkation areas, connection areas with other modes. - Convenience of transportation and improved accessibility to various services and reduced transportation costs - Reduction in the cost of maintenance of vehicles (buses) - Local socio-economic development of the cities of the Grand-Nokoué
Component 3: Improving urban mobility conditions	- Reduction of air pollution - Improvement of air quality in the cities crossed by the project. - Reduction of noise pollution.
Component 4: Electrification of two-wheelers	- Job creation - Building managerial capabilities - Better allocations of tasks - Achievement of the objectives of the Project - Available transport network and improvement of traffic fluidity in the cities of the Greater Nokoué - Operational qualified personnel
Component 5: Capacity building and project management	- Training of the local workforce and acquisition of new skills - Job creation - Raising awareness of GBV, EAS/HS

Among the 05 components that are the subject of this CGES, it is the Component 2 that will generate negative environmental and social risks/impacts as indicated the following matrix:

Matrix of specific negative environmental and social risks/impacts

Component	Risks/ Impacts	Management measures/approach
Component 1: Improving governance of the urban mobility sector	- Destruction of plant cover (plantations)	- Effective implementation of this CGES - Production of EIES/NIES - Correct implementation of PGES

Component	Risks/ Impacts	Management measures/approach
	- Disturbance of aquatic fauna and migratory species	- Systematic integration of reforestation and reconstruction of natural bird habitats activities into PGES - Integration of environmental and social clauses into companies' DAOs - Obligation for all companies to carry out construction site PGES
Component 2: Professionalization of artisanal transport operators, road safety and safety on waterways	- Social conflicts - VBG/EAS/HS - Corruption risk; - Loss of jobs; - Drowning; - GHG emission risk - Risk of waste proliferation	- Establish the complaints management mechanism; - Please take into account the differences in the sector; - Provide the project with a social and vulnerability assessment plan;
Component 3: Improving urban mobility conditions	- Pollution of water resources, especially surface water, by waste from works (cement, sand, rubble); - Water pollution from accidental spills of hydrocarbons and used oil (machine maintenance); - Contamination of groundwater by chemical pollutants - Accidental spills of hydrocarbons, used oils (machine maintenance); - Degradation of soil structure due to compaction (circulation of machinery); - Soil pollution by waste from the works (cement, sand, rubble); - Erosion due to the use of lagoon sand for the construction of infrastructure; - Destruction of plant cover (plantations); - Disturbance of aquatic fauna and migratory species; - Destruction of property and disruption of economic activities; - Social discontent if local labour is not used; - Temporary restriction of access to businesses which will likely result in a drop in income for small traders, window dressers and other people who will be affected by the project; - Reduction of socio-economic activities.	- Effective implementation of this CGES; - Production of EIES/NIES; - Correct implementation of PGES resulting from EIES; - Systematic integration of reforestation and soil restoration activities into PGES; - Integration of environmental and social clauses into companies' DAOs; - Obligation for companies to carry out construction site PGES; - Effective implementation of this CGES and the CPRP; - Implementation of PAR or livelihood restoration plan; - Effective implementation of this CGES; - Production of EIES/NIES; - Correct implementation of PGES; - Integration of a waste management/pollution prevention plan into the PGES; - Integration of environmental and social clauses into companies' DAOs; - Development of construction site PGES by companies.
Component 4: Electrification of two-wheelers	- Air pollution; - Production of electronic waste; - Illness due to noise pollution (noise and vibrations caused by machinery); - Loss of employment; - Traffic accident	- Implement the electronic waste management plan; - Production of EIES/NIES; - Correct implementation of PGES resulting from EIES; - Integration of a waste management/pollution prevention plan into the PGES;

Component	Risks/ Impacts	Management measures/approach
		- Integration of environmental and social clauses into companies' DAOs; - Development of construction site PGES by companies.
Component 5: Capacity building and project management	- Damage to land ownership; - Social discontent in the event of illegal occupation of public or private land; - Gender-based violence; - SEASH; - Child labor on the construction site; - Failure to take vulnerable people into account ; - Suspension/termination of Bank financing in the event of poor financial and/or environmental and social management of the Project; - Various conflicts - Deterioration of the Project's image - Corruption risks	- Correct implementation of PGES; - Integration of environmental and social clauses into companies' DAOs; - Development of construction site PGES by companies - Development of a mechanism for preventing and managing cases of GBV and abuse; - Take into account all the project stakeholders; - Development of an approach to assisting vulnerable people who will be affected by the project.

Environmental and Social Management Framework Plan

Methodology for the preparation, approval, and execution of sub-projects.

This section describes the different steps to follow, as soon as the site of each sub-project or activity is known, in order to identify environmental and social implications (including security) and appropriate measures to be implemented, including institutional responsibilities. It includes the following points:

- Process And stages of environmental selection of sub-projects (it concerns screening),
- Procedure Environmental and social assessment of sub-projects (it concerns the phase of EIES and NIES studies),
- Elaboration A waste management plan,
- Process Development of a manual of Workforce Management Procedures (PGMO);
- Elaboration Of the Stakeholder Mobilization Plan (PMPP) integrating the Communication Plan,
- Elaboration A Complaints Management Mechanism on the project,
- Elaboration And implementation of the training plan,
- Assessment Of the risks of VBG/EAS/HS and development of a risk management plan,
- Wager VBG/EAS/HS complaint management committees in place,
- Wager Implementing the complaint management mechanism related to the VBG/EAS/HS aspects.

By Elsewhere, to ensure the effectiveness of project interventions and improve the quality of the environment, a capacity building program of the various actors of the project has been proposed and instruments Specifics will have to be developed as necessary in accordance with the guidelines of the World Bank.

Capacity building of the main actors involved in the implementation of the CGES

It aims to ensure that the implementation of aspects Environmental and social will be done optimally. This capacity building will consist of the development and implementation of a training plan and will focus on various themes, including those related to the Mobility Project Durable In general, in particular at PMUD-GN And on environmental planning of activities, environmental sorting, determination of mitigation measures, monitoring and reporting, occupational health and safety, health risks, etc.

The following matrix presents some training themes.

Topics (indicative) of training
Environmental and Social Assessment
- Knowledge of national environmental and social procedures and the World Bank - Training and awareness on project backup documents - Knowledge of the process of monitoring the implementation of project backup documents - Problem of the environmental assessment of a road development project
Training on environmental and social monitoring
- Environmental and social monitoring methodology - Environmental and social monitoring/evaluation indicators - Respect and application of environmental and social laws and regulations - Raising awareness of environmental protection and management - Reporting system
Training in health and safety
- Hygiene, Health and Safety (HSS) plan in accordance with ISO 45001-2018 - Security prevention - Wearing PPE - General safety instructions
Management of cultural and physical resources
- Training in the "luck" procedure Find" - Awareness of the resPect of sacred sites in the project's intervention chiefs
Gender-based violence and child protection
- Raising workers' awareness of gender-based violence on construction sites - Provisions to prEndre to prevent gender-based violence - Conduct for victims of violence - Raising workers' awareness to prevent aspects of EAS and HS - Prohibition of access to construction sites for children - NoN use of minor children as workers on construction sites

Communication plan

This communication plan aims to promote the disclosure of all relevant information related to the project. The communication plan will be developed just before the start of the project by SIRAT.

The disclosure of the environmental and social information of the project must be done from the beginning of the project. As a result, launch workshops and a series of public announcements are to be expected. Local committees may be set up within each target municipality to facilitate social acceptance of the project and to mobilize all stakeholders involved in the project if necessary. The consultation plan will take place at the level of all the different stakeholders of the project, especially during the days of convenience with these stakeholders. It is important that all stakeholders have the same level of information, specifically for this Which concerns social and environmental aspects, the CGES can be made available to the public through various channels such as the various meetings between stakeholders, launch workshops, site Web, World Bank info-shop.

Institutional arrangement for the execution of the environmental and social management procedure of sub-projects

After the analysis of the institutional structure of the project, it is urgent to take measures that boil down to:

- ***Reinforcement Institutional:*** The Project Steering Committee will have to recruit full-time, ***A gender specialist who will take care of the aspects of VBG and EAS and HS,***
- ***Reinforcement Institutional:*** The project steering committee will have to recruit a ***Communication Specialist*** Who will work full time. This expert will implement the Communication and Training Plan.

The entity implementing the project, or any other entity involved in implementing the ESMP, will not issue a request for proposals (RFP) for an activity subject to an Environmental and Social Impact Assessment (ESIA) or Environmental and Social Impact Statement (ESIA/ESIS) unless the environmental and social management plan (ESMP) for the works phase has been included in the RFP, will not give the start-up order for the said work before the contracting company's environmental and social documents (PGES construction site, Environmental Assurance Plan (EAP), Specific Waste Management and Disposal Plan (SWMDP), Specific Health and Safety Plan (SHSP), Employer Complaint Mechanism (ECM) have been approved and integrated into the overall work schedule. The roles and responsibilities described above will be incorporated into the Project Implementation Manual (PIM).

Public consultation

As part of the PMUD-GN, public consultation sessions were organized in the five municipalities of the Grand Nokoué what Abomey Calavi are, Cotonou, Semer-Podji, Ouidah and Porto-Novo. These sessions took place from October 7 to 11, 2024 with160 attendees including 24 women. During these sessions, participants asked questions, expressed concerns, and made recommendations.

Grievance Management Mechanism (GMM)

The implementation of the project will certainly create grievances, including those related to GBV, which will be managed according to a grievance management mechanism whose main guidelines are detailed in the stakeholder mobilization plan.

Monitoring performance indicators

The key indicators to be monitored during the implementation of the PMUD-GN will relate to:

- % of sub-projects having undergone environmental and social screening;
- % of environmental and social impact studies or assessments carried out, published and effectively implemented;
- % of infrastructures rehabilitated or built that have been subject to environmental monitoring and reporting;
- % of players trained/aware of environmental and social management issues;
- % of hygiene, health and safety awareness campaigns carried out:
- % of accident victims treated by the project.

The estimated budget for implementing the PCGES environmental and social measures is one billion twenty-nine million (1,029,000,000) CFA francs.

INTRODUCTION

1.1. Background

The Greater Nokoué (GN) territory at the heart of the national urban system benefiting from the mission and the sustainable urban mobility project. The mission concerned will be carried out in the territory of Greater Nokoué, which includes five (05) Communes (Porto-Novo, Sèmè-Podji, Cotonou, Abomey-Calavi and Ouidah) and concentrates 2.5 million inhabitants (representing 20% of the population) on an area of 839 km². The latter is at the heart of the national urban system in terms of economic activities and wealth creation, and concentrates the issues and challenges to be met in terms of improving the environment and living conditions of the populations.

One of the challenges to be met in this area is intra-urban and inter-urban transport. Indeed, the movement of the populations from Porto Novo, Sèmè-Podji, Abomey Calavi and Ouidah to Cotonou and within Cotonou is done with a dilapidated fleet of vehicles, mainly made up of two-wheeled vehicles (zemidjans) and mini buses (Tokpa-tokpa) and on an insufficient road network, low density and in poor condition. This situation is exacerbated by the jumbo trucks transporting goods to the port of Cotonou to the interior of the country and to the hinterland countries. This urban and interurban dynamic results in high air pollution, which is the source of an increase in respiratory diseases in Greater Nokoué. The acceleration of urban development in the cities of Porto Novo and Abomey-Calavi in recent years deserves special attention in terms of urban service, in particular mobility and the development of river transport.

The SUMP-GN is an initiative to reverse the current trend and improve urban mobility. Since 2016, the Government, through PAG 1 and 2, has initiated projects to sustainably address the development problems of cities in terms of people's access to public services. The PSUM-GN initiated by the government with the technical and financial support of the World Bank is one of them. Its objective is to improve mobility in the GN in the short, medium and long term.

In addition, the ESMC aims to define a supervisory framework and institutional arrangements to be made before, during and after the implementation of the programme, with a view to ensuring that adverse environmental and social risks are controlled and maintained at an acceptable level. The preparation of the ESMC does not exclude specific ESIAs (summary, detailed or simple notices) for the activities that are eligible.

1.2. Objectives of the ESMC

The Environmental and Social Management Framework (ESMF) of the Project for the implementation of the SUMP-GN in the cities of Greater Nokoué aims to give a general vision of the environmental conditions in which the said Project is implemented. It will provide the procedure and institutional arrangements for environmental and social screening, as well as guidelines for the preparation, implementation and monitoring of environmental works (including Environmental and Social Impact Assessments, summary or detailed/Environmental and Social Management Plans or Environmental Measures).

The main objectives of the CGES are:

- Establish a reliable and effective process for taking into account the environmental and social dimension during the planning and implementation of components 1, 2, 3 of the Sustainable Urban Mobility Project for the cities of Greater Nokoué;
- Define the principles, rules, guidelines and procedures for the assessment of the environmental and social risks and impacts of the project;
- Identify and analyze the capacities of the structures responsible for managing the environmental and social risks and impacts of the project;
- Define the institutional modalities for the implementation of the CGES;
- Propose measures while taking into account both the World Bank's environmental and social operational policies and national regulations on environmental and social safeguards;
- Identify the main state and non-state institutions involved;
- Establish a framework for identifying, analysing and assessing the potential environmental and social impacts of the activities planned under the project;
- Determine the budgetary implications regarding the Environmental and Social Management of the Project (GHG).

1.3. Objective of the project

The objective of the project is to improve mobility conditions in the Greater Nokoué agglomeration in the short, medium and long term.

1.4. Methodological approach

The methodology used in this study is based on a participatory and interactive approach with the involvement of the main stakeholders, actors and partners concerned by the project.

The process of developing the Environmental and Social Management Framework includes six (06) main steps:

- **Scoping of the mission**: it took place with the team in charge of the preparation of the Project. This meeting made it possible to agree on the objectives of the mission, to agree on the main issues related to the preparation of this document, but also on certain specific points of the study, in particular (i) the identification of potential institutional actors to be consulted, (ii) the identification of the places (Communes) for the organization of public consultations and (iii) the identification of the actors to be invited to public consultations. Moreover, the exchanges and debates that were conducted during this session made it possible to complete the information, all of which contributed to improving the approach proposed in the framework of this mission;
- **Research and documentary analysis:** it made it possible to collect the information available in terms of documentation and relating to the description of the project, the description of the physical and socio-economic frameworks of the beneficiary municipalities, the political, legal and institutional framework relating to environmental and social assessment in Benin, as well as the consultation of other documents useful for the realization of the study. Several environmental and social safeguard documents from similar projects (CGES of the ACCESS project, COSO, PASE and P2AE) were used and made it possible to extract the data necessary to carry out this mission efficiently;

• **Site visits of potential beneficiaries:** these visits made it possible to identify the Valued Elements of the Environment (EVE) and the main environmental and social issues of the sites to host the project's activities. The tool used for field visits is the observation grid and the interview guide. Table 1 presents the summary matrix of public consultations.

Table 1: Consultation Summary Matrix

Actors/Institutions	Points discussed	Concerns and fears	Suggestions and Recommendations
Civil society organizations	-	-	-
Beneficiaries of the SUMP-GN	-		-
Institutional actors	-		-

Source : IRC, 2024

At the end of these public consultations, the information collected was useful in the consolidation of the Environmental and Social Management Framework Plan (ECSP). As part of the environmental and social assessment of the SUMP-GN, a specific approach based on the analysis of strategic documents was followed. Then, data was collected from the communes of Greater Nokoué.

These investigations helped to assess the level of involvement of the various actors, in particular grassroots actors (Municipal Councillors, Neighborhood Chiefs, development actors, Civil Society Organizations in the field of environment and social issues, transporters, young people, fishermen, craftsmen, representatives of associations of people with disabilities, Women's groups, Development actors (development associations, Transporters, Women traders)..) in the process of carrying out the project's activities and interventions. The same applies to institutional actors involved in the implementation of environmental and social measures.

- **Individual interviews and stakeholder consultations** : meetings with the beneficiary populations of the project, artisans' groups, women's and youth associations, civil society organizations, local authorities and other resource persons aim to integrate the concerns (potential impacts), opinions and recommendations of these different actors into the decision-making process with a view to aligning the project with the expectations of the beneficiaries. These consultations were essential in that they made it possible to complete the information from the literature review, to collect additional data and, above all, to discuss the environmental and social issues of the project's activities.
- **Investigations with institutional actors**: the interviews were carried out with several structures, including: SIRAT, DGDU, DDCVT, ANATT, CNSR, the umbrella organizations of passenger carriers, the umbrella organizations of freight carriers, etc.

- **Method of identification and analysis of the impacts/risks of the project:** Documentary research and socio-anthropological investigations have made it possible to understand the ecological and social context in which the present project is set. This step made it possible to identify the Valued Elements of the Environment (EVE) that may be

affected during the implementation of the different activities of the project. To this end, the different sources of impact of the project are related to the environmental components likely to be affected through the Leopold-type matrix (1971). It made it possible to align the different functions of the environment with the different activities of the project.

At this level of analysis, the components and elements of the receiving environment likely to be affected by the project were identified as well as the potential impacts of the project activities. The three (3) stages of environmental analysis used are:

- Analysis of the compatibility or otherwise of the project activities with the functions of the ecosystems of the receiving environment;
- Identification and analysis of impacts/risks;
- The development of the Environmental and Social Management Framework Plan (ECSP).

The analysis of the issues is carried out according to the different components of the environment likely to be affected by the implementation of the sub-projects (Table 2).

Table 2: Conceptual framework for issue analysis

Risk Steps Implementation of the Health and Environment Determinant								
project Public Water Air Soil Vegetation Biodiversity Staff								

Source : IRC, 2024

- **Method of analysis of the institutional and legal framework of the project**

The approach developed here consisted of comparing the laws and regulations in force on environmental and social management in Benin and the World Bank's Environmental and Social Standards (ESS) relevant to the project. In this context, the documentary research was specifically conducted in specialized structures and institutions: MCVT, Ministry of Health, etc. At the end of this documentary research, a summary of the requirements of Benin's environmental policy and the MUDP-GN was made. In addition, the constitutional provisions and the international commitments made by Benin through the ratification of international environmental conventions and agreements were also summarized and analysed (Table 3).

Table 3**:** Ratified Multilateral Conventions/Agreements Directly or Incentively Relevant to the Project

No.	Title of the agreement /agreement	Date of ratification by Benin	Objective of the agreement/agreement	Aspects of project activities and arrangements
1				
2				

Source : IRC, 2024

The SUMP GN is co-financed by the World Bank (IDA) and the Asian Infrastructure Investment Bank (AIIB), but it has been decided that World Bank instruments apply in the context of environmental and social safeguards. Thus, in the context of this study, a brief analysis of environmental and social standards is carried out to decide on the compliance of the activities provided for in the SUMP-GN with these standards (Table 4).

Table 4: Relevance of the World Bank's environmental and social standards to the activities of the SUMP

No.	WB E&S Standards	Applicability to SUMP-GN	Ad hoc provisions to supplement the national provisions applicable to the project
1			
2			
Etc.			

Source : IRC, 2024

At the end of this analysis, an overview of the strengths and weaknesses of the regulatory and institutional framework that governs the environment in Benin was made. Similarly, the various national and international texts applicable to the project were collected and analysed. The coherence of Benin's regulatory framework in relation to the World Bank's environmental and social standards was also analyzed. Subsequently, appropriate measures are proposed to ensure that in the context of the studies of this project, the national provisions are complemented by the requirements of the World Bank's NES, especially the impact assessment procedures and the resettlement procedures, to better guarantee the efficiency of the implementation of the CGES.

- **Methodology for risk management measures and potential impacts**

Here, the major guidelines for the environmental and social management of the Project are then published based on national priorities and taking into account the requirements of the World Bank's NES. These directives include guidelines for enhancing positive impacts and others for preventing, mitigating and/or eliminating potential negative impacts.

To this end, on the basis of the potential impacts of the implementation of the Project, a selection is carried out. Based on the information provided by the triage form and the field assessment, the impacts are categorized according to the level of risk and a decision is made on whether:

- A thorough environmental and social impact assessment of the various sub-projects must be carried out because the impacts are classified as high risk;
- The Project only requires a simplified Environmental and Social Impact Statement because the risks and impacts are not significant and can be addressed directly by executing a mitigation and management plan during the implementation of the Project.

The various measures are developed according to the potential impacts of each stage of the Project's implementation and the environmental and social component affected. In light of these impacts, the CGESP will identify the framework for guiding future interventions in terms of national environmental and social management priorities, taking into account the requirements of the World Bank's policies.

- **Method of development of the Environmental and Social Management Framework Plan (ECSP)**

This part focused on the major guidelines for the environmental and social management of the SUNP-GN based on the national priorities presented below and taking into account the requirements of the Bank's Environmental and Social Standards.

The Environmental and Social Management Framework Plan (ESMP) is presented in the form of a matrix in accordance with the requirements of Beninese legislation and the recommendations of the EBE guides. It specifies the roles and responsibilities of the various actors involved in implementation, the timeline and the budget for implementation.

- **Methodology used to propose a monitoring and follow-up plan for the implementation of the CGSP**

Environmental and social monitoring and follow-up are mechanisms for optimizing the implementation of proposed mitigation, compensation and maximization measures. They aim to improve the environmental performance of the project in the short, medium and long term. They aim to determine the actual impacts of the project that are of greatest concern compared to the impact prognostications made during the impact study in order to be able to make the necessary corrections to the recommended mitigation measures, if necessary.

Table 5 presents the framework of the environmental monitoring program for the implementation of the Environmental and Social Management Framework Plan (ESMP).

Table 5: Matrix of indicators for tracking CGSP actions

Elements to be evaluated	Indicators	Measurement frequency/responsibility
Screening		
Aftercare		
Inspection		
Formation		

Source : IRC, 2024

- **Methodology for proposing institutional arrangements for the implementation of the CGSP**

At this level, a number of simple and measurable environmental and social monitoring indicators relating to the planned activities have been developed. The responsibility of the various stakeholders in the implementation of the CGES measures is specified and their costs as well as those related to the implementation of the capacity building measures of the Project stakeholders on the basis of the needs identified during the interviews with the actors of the PSUM-GN.

- **Data/information processing and analysis**

The information collected in the field is processed, classified and analysed using the appropriate tools (descriptive statistics, triangulation method, etc.). The results are used to determine the environmental and social issues, impacts and risks related to the implementation of the various project activities.

- **Validation of the provisional report at the national level**

As part of the process of appropriation and validation of the draft report, a workshop is organized to validate the draft version of the said report. This workshop is organized by the EBA with reference to the provisions of Decree No. 2022-390 of July 13, 2022 on the organization of environmental and social assessment procedures in the Republic of Benin.

The validation workshop may give rise to comments, observations and recommendations, the consideration of which will lead to the final report which will be validated by the the EBA.

After validation by the EBA, the Bank will review the content of the report for approval before its publication.

2. PROJECT DESCRIPTION

2.1. Components of the Greater Nokoué Sustainable Urban Mobility Project

The Sustainable Urban Mobility Project in Greater Nokoué (PSUM-GN) in Benin is structured around several components. At the end of December 2024, five (05) components presented as follows are retained:

Component 1: Improving the governance of the urban mobility sector. Sub-component 1.1: Development of a sustainable urban mobility strategy and a freight management plan for Greater Nokoué;

Sub-component 1.2: Creation and operationalization of an organizing authority for urban mobility in Greater Nokoué;

Sub-component 1.3: Establishment of financing mechanisms for the urban mobility sector.

Component 2: Professionalisation of paratransit operators, road safety and waterway safety.

Sub-component 2.1: Professionalisation of paratransit operators **Sub-component 2.2**: Road safety

Sub-component 2.3: Safety on inland waterways (lake transport).

Component 3: Improvement of urban mobility conditions Sub-component 3.1: Introduction of public transport services by bus and boat

- Technical assistance on the modernization of public transport (land and lake); Planning of a hierarchical and multimodal public transport service system (public transport by land and waterways, service and first/last mile services) at the level of G-Nokoué. Provision of efficient public bus transport services along the two priority mobility corridors (including Abomey Calavi - Cotonou and Ouidah - Sèmè-Podji).

- Provision of public transport services by inland waterways (public transport service on Lake Nokoué) on the Cotonou-Porto Novo and Cotonou - Abomey Calavi sections, with capacity and modern stations in Cotonou, Porto Novo and Abomey Calavi.

Sub-component 3.2: Development of infrastructure supporting sustainable and multimodal urban mobility

- Improvement of land transport infrastructure for urban mobility in the GN; Development of lake transport infrastructure in favour of urban mobility in the GN; Reconstruction of the Porto Novo, Ganhi (old bridge) and Djonou bridges. It should be noted that the exchanges to date that integrate the 03 bridges within the scope of the project could evolve towards the consideration of 02 bridges only: Ganhi and Djonou.

- Improvement of traffic management along priority mobility corridors, deployment of Intelligent Transport Systems (ITS); Technical assistance for

the definition and implementation of the policy, strategy, application and management of the road network, parking and road safety.

Component 4: Electrification of two-wheelers Sub-component 4.1 Technical assistance on the planning of a motorcycle taxi fleet renewal strategy (pilot phase)

Sub-component 4.2: Deployment of a fleet of electric motorcycle taxis in Greater Nokoué;
Sub-component 4.3: Structuring of a local industrial sector for electric mobility.

Component 5 – Capacity Building and Project Management.
Sub-component 5.1: Project management **Sub-component 5.2**: Capacity building
Sub-component 5.3: Project management assistance to the project implementation unit

2.2. Presentation of the corridors of the Greater Nokoué Sustainable Urban Mobility Project

The infrastructures concerned by sub-component 3.2 (Improvement of land and lake transport infrastructure for urban mobility and traffic management) are described as follows:

- **Development for the benefit of the land transport network; Redevelopment of existing roads.**

The public transport service, as planned, will be deployed on priority corridors in the Grand-Nokoué territory. Two (02) main axes of the national inter-state roads (RNIE) are selected for this purpose:

- Axis 1 of the priority corridors is the north-south section of the RNIE2 and RNIE 1 which starts at Glo-Djigbé (GDIZ junction) and ends at the Aglangandan junction (Sèmè-Podji) via the Godomey interchange, the Cica Toyota junction, the Dantokpa market and the Ciné Concorde junction, including its ramps;
- Axis 2 of the priority corridors is the section of the RNIE 1 from Pahou (Ouidah) to the Godomey interchange on the one hand, then from the Agblangandan crossroads (Sèmè-Podji) to Porto-Novo on the other hand.

These two axes are existing developed roads, generally in 2x2 lanes + TPC + local traffic, except for the sections from GDIZ to Missessinto junction on RNIE 2 on the one hand and Sèmè – Porto-Novo junction on RNIE 1 currently being rehabilitated also into 2x2 lanes. There will therefore be no major interventions on the priority corridors within the framework of the SUMP-GN. The PSUM-GN's interventions on these priority corridor axes will focus on carrying out comfort works to improve traffic. These include, among others, works such as: (i) redevelopment of intersections, (ii) rehabilitation by resurfacing of roads on Cotonou Access and Crossings (ATC), (iii) development or redevelopment of sidewalks and side alleys, (iv) development of pedestrian paths, (v) rehabilitation and reinforcement of road safety equipment; (vi) rehabilitation of horizontal signs, (vii) rehabilitation and centralization of traffic lights (SLT/PCRT), (viii) restoration of public lighting; etc.

- **Construction of facilities for the benefit of public transport lines on the land road network**

This involves the installation of equipment and other structures to support the public bus transport service along the priority corridors that are the
RNIE1 & 2.

At this level, we can remember:

- The development of bus stops, approach areas and stop areas;
- The development of bus terminals;
- The development of park-and-ride facilities;
- The development of depots;
- The development or renovation of large lake ports.

- **Development of the "rue 200-7 bis" section of the Boulevard Urbain**

As part of the development of road infrastructure to support public transport, a 3rd road axis that is currently undeveloped has been identified. With a total length of about 24 km, this is the road along the HV line and which follows the route described as follows: RINIE 2 (Carrefour LIPS) and which passes through the wholesale market, the administrative city, the Maria-Gléta energy plant, the Maria Gléta crossroads, the crossing of the Djonou River, the crossing of the RNEI 1 in Godomey, Agla Akplomey, CEG Les Pylône – RNIE 1 (Carrefour Média Production locally known as Carrefour Agla Kanglouè).

It is an "Urban Boulevard" whose development will make it possible to relieve congestion on the axes of the priority corridors on the RNIE1 & 2 and thus optimize the scenario of public land transport in the long term.
The PSUM-GN, in its current phase, does not include the entire Urban Boulevard (BU), but takes into account the section of rue 200-7 bis of the BU which is approximately 2 x 2.3 km long between the administrative city and the Tokan crossroads (intersection with the RN30). This street was initially part of the asphalting phase B project, so its APD studies are available.

The typical cross-section adopted for street 2007-bis of the BU is as follows:

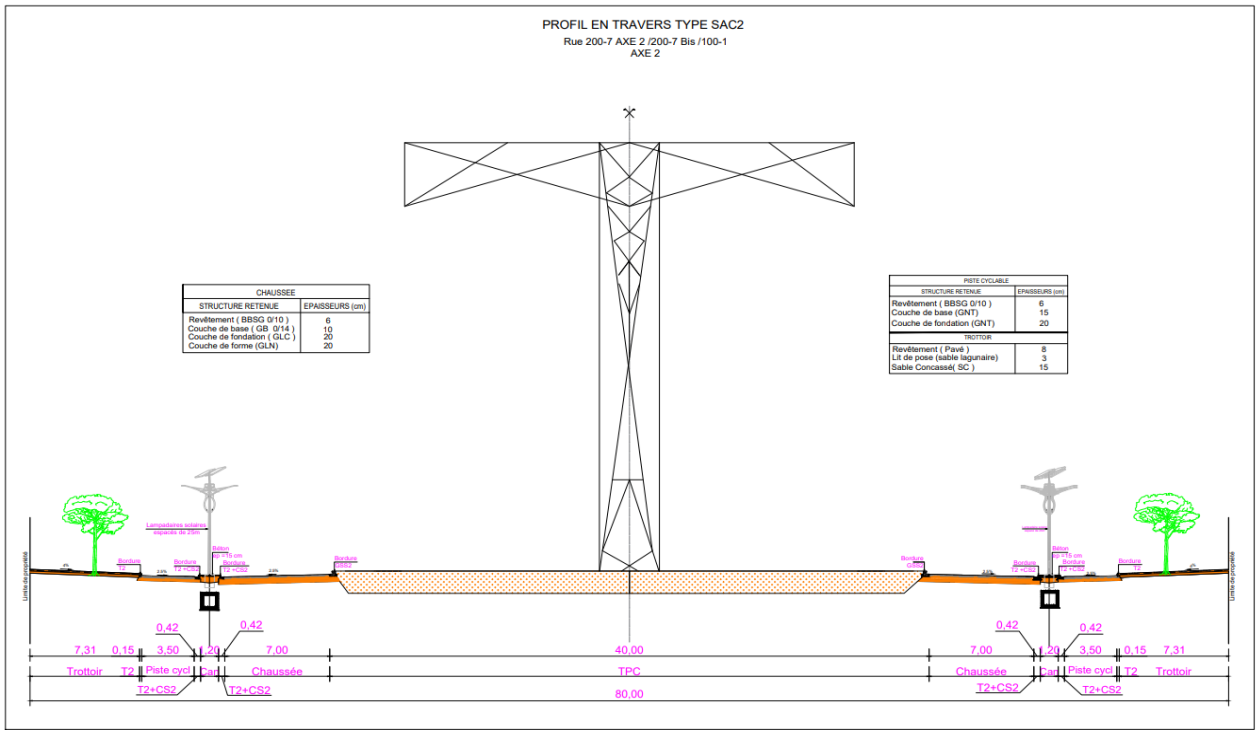


Figure 1: Cross-section type street 200-7 bis Source: SIRAT, 2024

- **Bridge reconstruction**

Three (03) bridges have been identified to be rebuilt as part of the SUMP-GN. These are the Porto Novo, Ganhi (old bridge) and Djonou bridges.

Overall, the work will consist of the reconstruction of these existing bridges into new bridges developing a 2x2 lane carriageway with a TPC and two (02) cycle lanes in order to optimize traffic flows from the point of view of regulation and safety standards.

Discussions are still underway to confirm the perimeter. These exchanges may lead to the retention of 02 bridges (Ganhi and Djonou) instead of the 03 bridges mentioned above

- **Development for the development of public transit on waterways (lake transport)**

The public transport service on inland waterways (lake transport) is one of the solutions envisaged for the modernisation and management of urban mobility in the GN. Lake Nokoué has been selected as the most suitable body of water to house this mode of transport and the two (02) priority axes identified are: (i) Cotonou - Porto-Novo and (ii) Cotonou - Abomey-Calavi.

Informally, lake transport is currently practiced on these routes. It is unstructured with boats with little capacity that do not comply with any standards and makeshift stations.

All the developments planned as part of the sustainable urban mobility project in Greater Nokoué are generally illustrated in the map below:

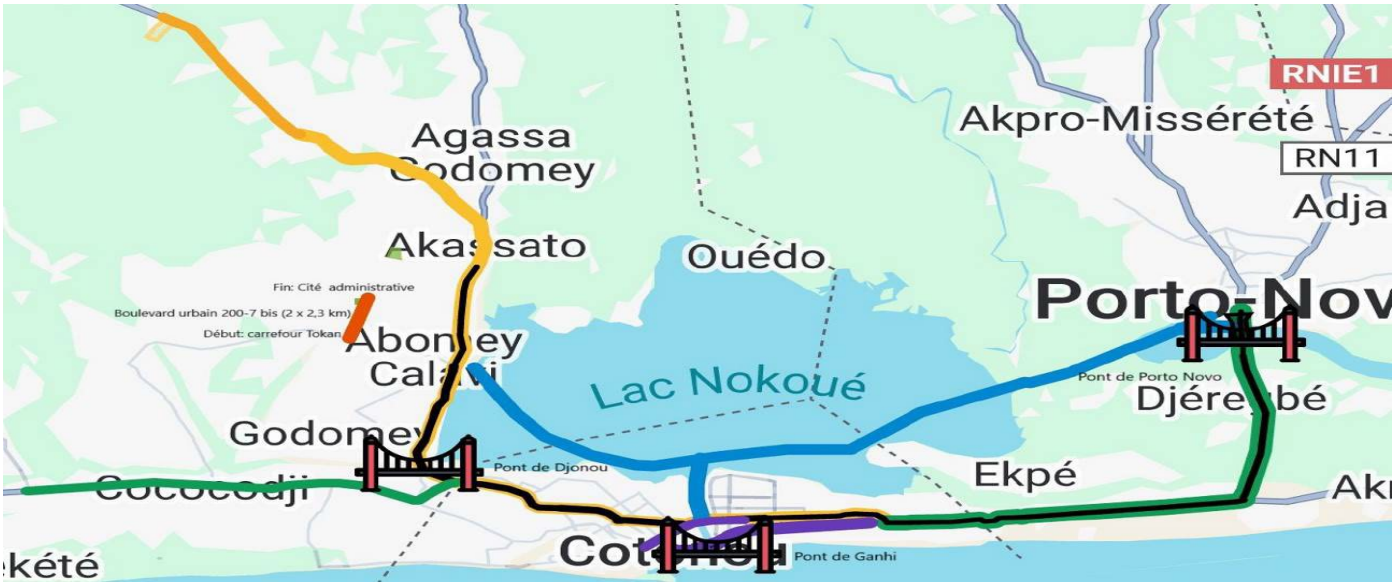


Figure 2: Planned developments as part of the project
Source: SIRAT, 2024

LEGEND

- Priority corridors on RNIE1 and RNIE2 for public transit by bus Extension of the priority corridor on RNIE1 for public transit by bus
- ATC Mobility
- PCRT/SLT
- Lake transport between Abomey-Calavi, Cotonou and Porto-Novo Section of the street 200-7 bis (2 x 2.3 km) of the Boulevard Urbain Pont

2.3. Project beneficiaries

The main beneficiaries of the GN SUMP interventions will include:

- The local populations of the areas concerned;
- Local authorities;
- Motorcycle taxi drivers' associations; cars, buses, mini-buses, jumbo jets, etc.;
- The organizations of public transport drivers, whether minibuses and transport buses commonly known as tôkpa tôkpa on the land transport circuits of Grand-Nokoué; Nonvi voyage, Gozem; Benafrique, yango, yellow taxi, etc.;
- The barquiers' associations;
- CSOs.

2.4. Description of the work to be carried out as part of the project

The work to be carried out within the framework of the project covers three (03) main axes of the national inter-state roads (RNIE) which are:

- Axis 1 of the priority corridors is the north-south section of the RNIE2 and RNIE 1 which starts from Glo-Djigbé (GDIZ crossroads) and ends at the Aglangandan

crossroads (Sèmè-Podji) via the Godomey interchange, the Cica Toyota crossroads, the Dantokpa market and the Ciné Concorde crossroads, including its ramps;

- Axis 2 of the priority corridors is the section of the RNIE 1 from Pahou (Ouidah) to the Godomey interchange on the one hand, then from the Agblangandan crossroads (Sèmè-Podji) to Porto-Novo on the other hand.

These two axes are existing developed roads, generally in 2x2 lanes + TPC + local traffic, except for the sections from GDIZ to Missessinto junction on RNIE 2 on the one hand and Carrefour Sèmè – Porto Novo on RNIE 1, on the other hand, which are currently being rehabilitated into 2x2 lanes. There will therefore be no major interventions on the priority corridors within the framework of the SUMP-GN;

- Axis 3 will start at the LIPS junction in Gbétagbo (RNIE 2), will run along the HV lines to the wholesale market and to the administrative city under construction, and will pass through the Maria-Gléta power plant, Maria Gléta – Djonou River – Agla Pylône HV line before running aground on the RNIE1 at the Média Production junction.

At the feasibility study stage, the planned works are:

- Carrefour LIBS (RNIE 2) > Wholesale market;
- Wholesale Market > Centrale de Maria Gléta;
- Maria Gléta power plant > Maria Gléta crossroads (development of the missing half of the road over 0.58 km);
- Maria Gléta crossroads > Djonou River + River crossing (3.26 km);
- Djonou River > CEG Godomey (development of the missing half of the road over 1.93 km;
- Crossing of the Passage supérieur river over RNIE n°1 (0.34 km);

- Section of the RNIE N°1 > Agla Pylon (2.23 km);
- Overpass on the RNIE n°1 Agla Pylon;
- Agla Pylon > RNIE 1 (development of the missing half of the road over 1.79 km).

- The development of this new axis is very crucial for the success of the project because it makes it possible to relieve congestion on priority corridors and thus optimize the public transit scenario in the long term. Figures 3 and 4 present the road improvements to be carried out in Greater Nokoué as part of the project.

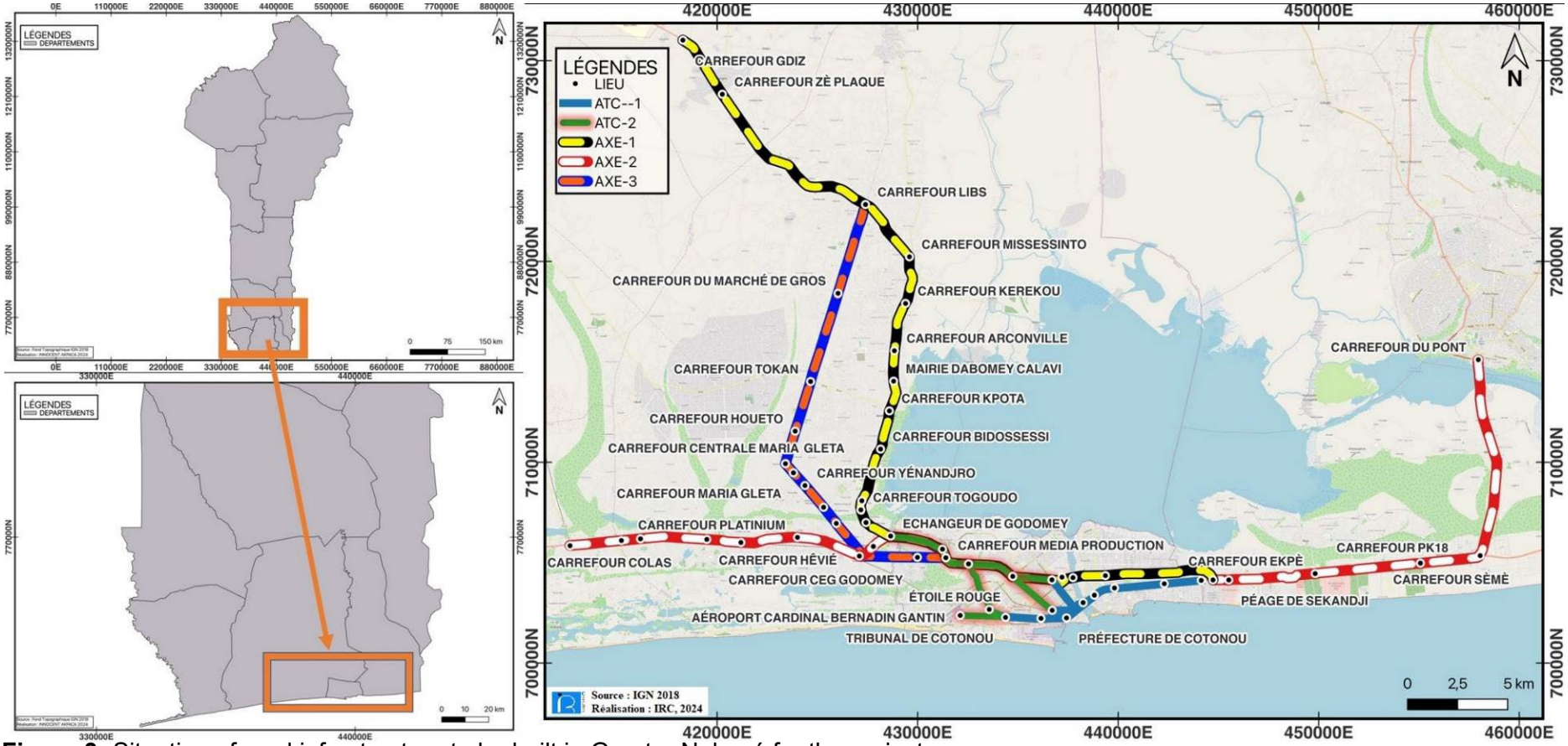


Figure 3: Situation of road infrastructure to be built in Greater Nokoué for the project

Source: IRC, 2014

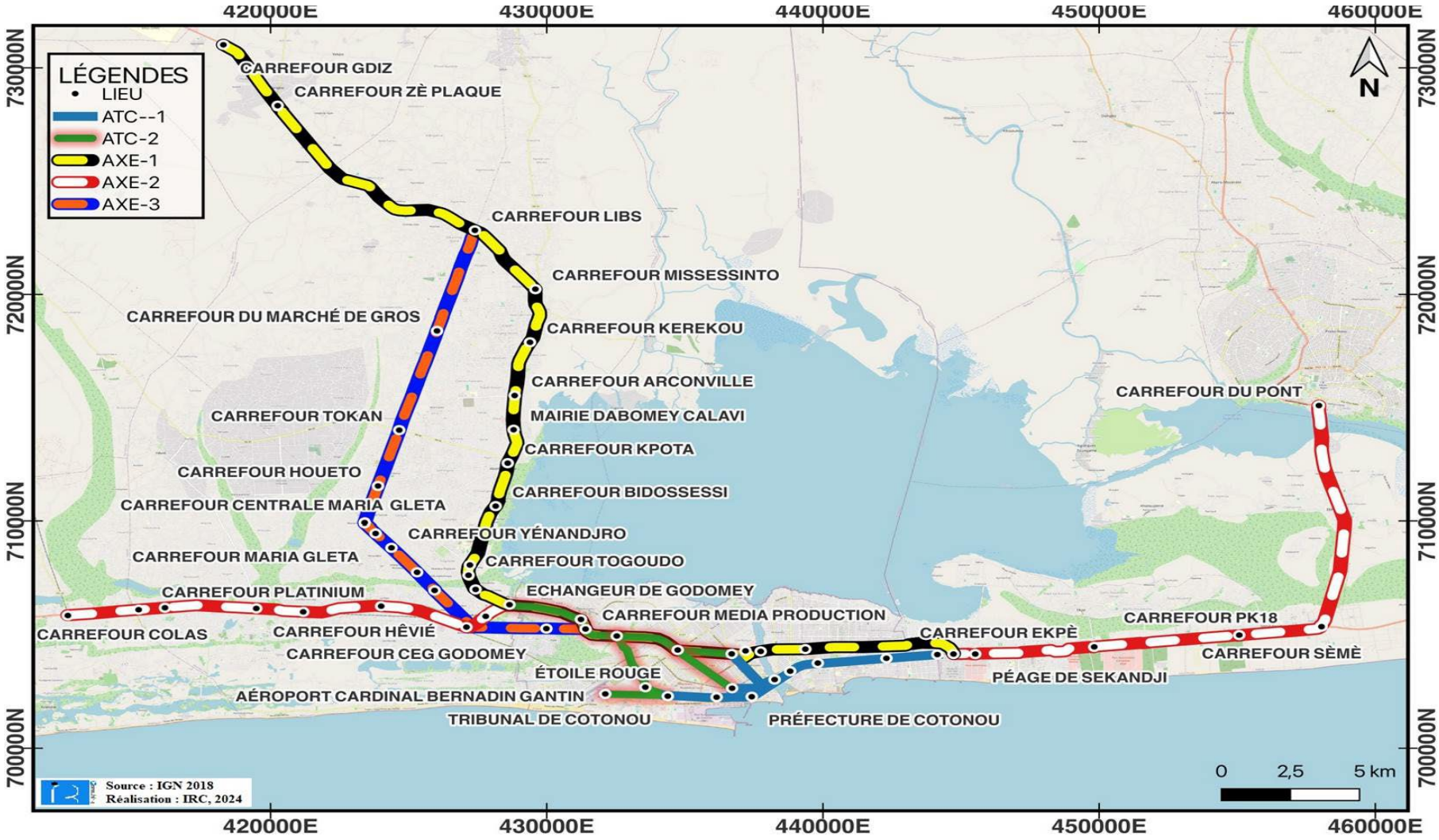


Figure 4: Presentation of the road improvements to be carried out in Greater Nokoué Source: IRC, 2024

2.5. Description of the project/river-lagoon transport

The Greater Nokoué Sustainable Urban Mobility Project (PMUD-GN) through its components 2 and 3 in the lake transport sector aims, on the one hand, to professionalize operators of small-scale lake transport and safety on waterways (lake transport) and, on the other hand, to improve urban mobility conditions. Indeed, in the lake transport sector, he will ensure the professionalization of actors, safety on waterways, technical assistance on the modernization of lake public transport, the planning of a public service system by waterways and the provision of public transport service by waterways on Lake Nokoué, the Cotonou channels and the Porto-Novo lagoon. This lake transport circuit in Greater Nokoué is made up of the Cotonou-Porto-Novo and Cotonou-Abomey-Calavi sections, with capacity and modern stations in Cotonou, Porto-Novo and Abomey-Calavi. Concerning this project, the planned river transport infrastructure can be summarized as follows:

- Boarding docks (piers/landings)
- Dock access roads
- Waterway development (dredging, and the issue of water hyacinths)

- Navigation fleet (water buses) with the appropriate equipment
- The infrastructures related to the quays (offices, maintenance workshops, car parks for wheels and wheels or even tricycles,

Figure 5 shows the location of the road (red) and river-lagoon (blue) transport axes.

2.6. Description of the project/relating to zemidjan

Through its components 2 and 4, the Greater Nokoué Sustainable Urban Mobility Project aims at the professionalization of paratransit operators (two-wheeled transport sector) and the electrification of two-wheelers (motorcycle taxis used by the zémidjan). This vision will be based on technical assistance on the planning of a motorcycle taxi fleet renewal strategy (pilot phase), the deployment of a fleet of electric motorcycle taxis in Greater Nokoué and the structuring of a local industrial sector for electric mobility.

Indeed, the PMUD-GN project will modernize the two-wheeled transport sector in Greater Nokoué, based on artisanal transport called zémidjan, by an electrification of these motorcycle taxis. Plate 1 presents the focus groups carried out with the zémidjans, the tricycle drivers and the drivers of the mini-bus known as "Tokpa-topka".

Shooting with the "Zémidjans" motorcycle taxi drivers

Shot with the drivers of mini buses known as "Tokpa-tokpa"

Shooting with craftsmen and apprentices

Shooting with the ferry drivers at the piers

Plate 1: Some views of the focus groups

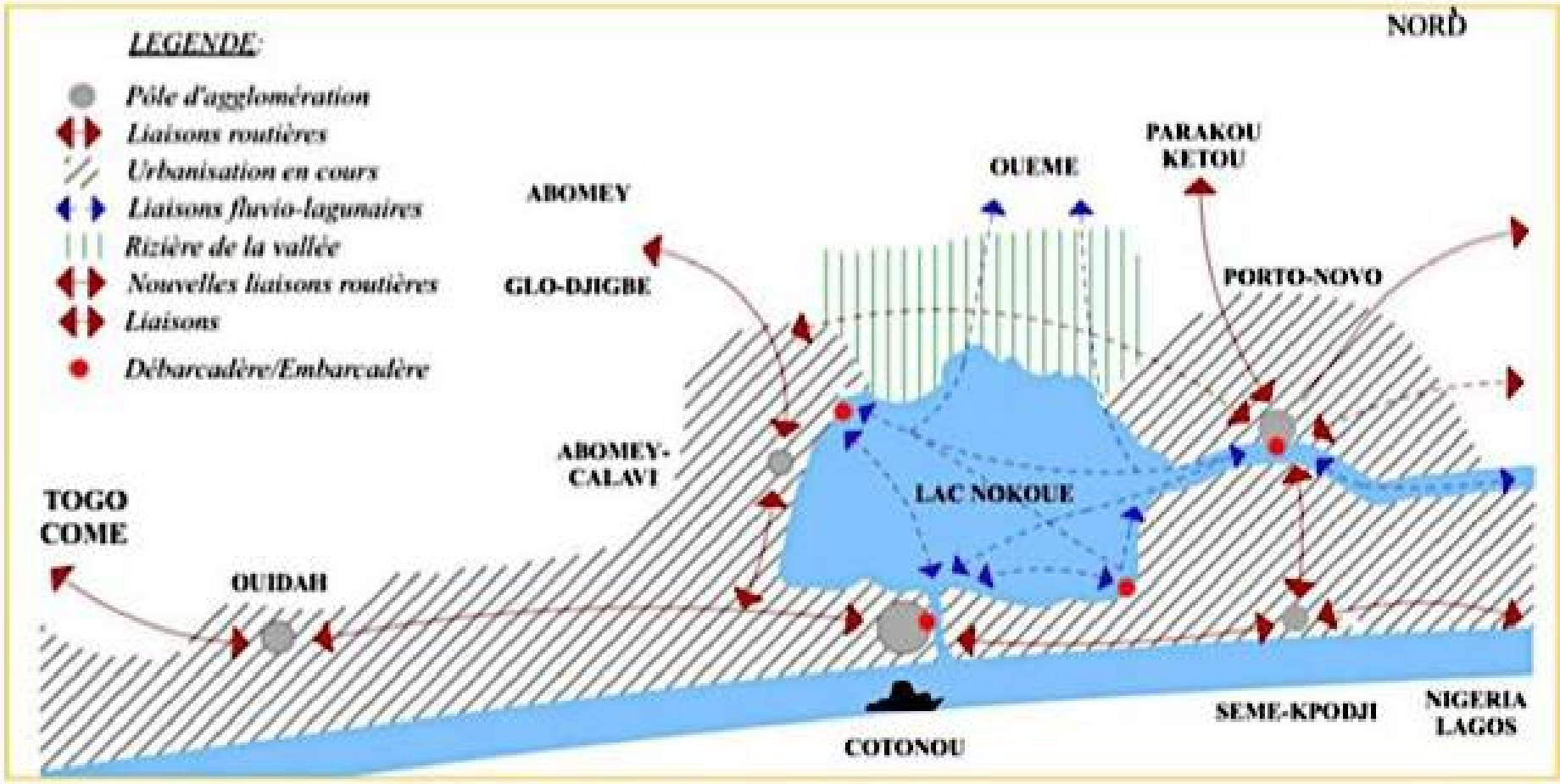


Figure 5: Location of road (red) and river-lagoon (blue) transport axes **Location of road (red) and river-lagoon (blue) transport axes**

Source : PDC, 2018

3. DESCRIPTION OF THE ENVIRONMENTAL AND SOCIO-ECONOMIC CHALLENGES OF THE CITIES OF GREATER NOKOUÉ

The information presented in this chapter is the result of the use of documents produced within the framework of the Project; scientific publications (Universities); local maps, data collected from local authorities and resource persons. In addition, consultations, site visits and field surveys have contributed to the development of this "database".

3.1. Description of the project's receiving environment

This section addresses the presentation, the biophysical, socio-environmental and economic aspects of the project implementation area as well as the environmental issues. This description of the receiving environment focuses on: the general characteristics of the receiving environment, its administrative and geographical location, its biophysical environment, environmental issues and the description of its socio-economic environment.

3.1.1. Brief overview of the communes of Grand-Nokoué

Greater Nokoué territorially brings together the municipalities of Sèmè-Podji, Abomey-Calavi, Cotonou, Ouidah and Porto-Novo. It is part of the lagoon complex of the lower Ouémé Delta which is an important component of Ramsar site 1018 but also includes part of Ramsar 1017. The receiving environment of the project is largely integrated into the coastal sedimentary basin of Benin, from the coast in the south to the line of contact between the sedimentary and the basement in the north and from the Togolese border in the west to the Nigerian border in the east. It takes into account the departments of Atlantique, Littoral and Ouémé. These Communes, due to their geographical location, are an asset for the implementation of PSUM-GN. The characteristics of the cities of Grand-Nokoué are presented in this section. Figure 6 shows the geographical location of the communes of Greater Nokoué.

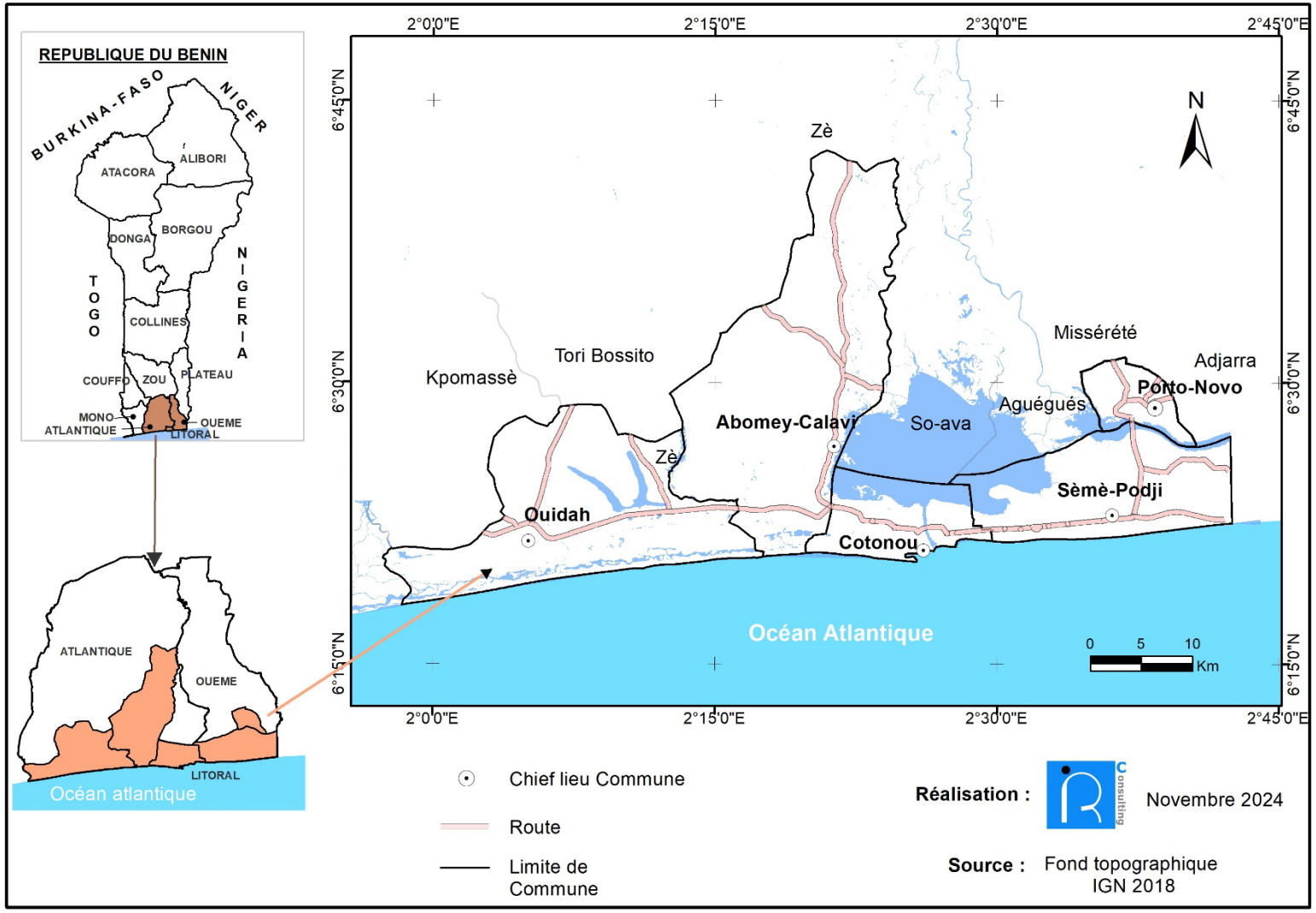


Figure 6: Geographic location of the project's receiving environment Source: IRC, 2024

The climatic, morpho-structural, pedological and hydrographic particularities of this area remain decisive for the implementation of the various project activities.

3.1.2. Physical characteristics of the project's receiving environment

3.1.2.1 Past and current climate trends in the project

The receiving environment of this project benefits from a sub-equatorial climate of the "Beninian" type. But more than rainfall is the main element of the climate, determining the seasons as everywhere in tropical environments (Boko, 2004), average annual rainfall totals are around 1350 mm (1952-2020) with an east-west gradient due to the diagonal of drought that characterizes this environment (Figure 7). The average annual number of rainy days is 140 days. The following figure shows the rainfall regime in the study area.

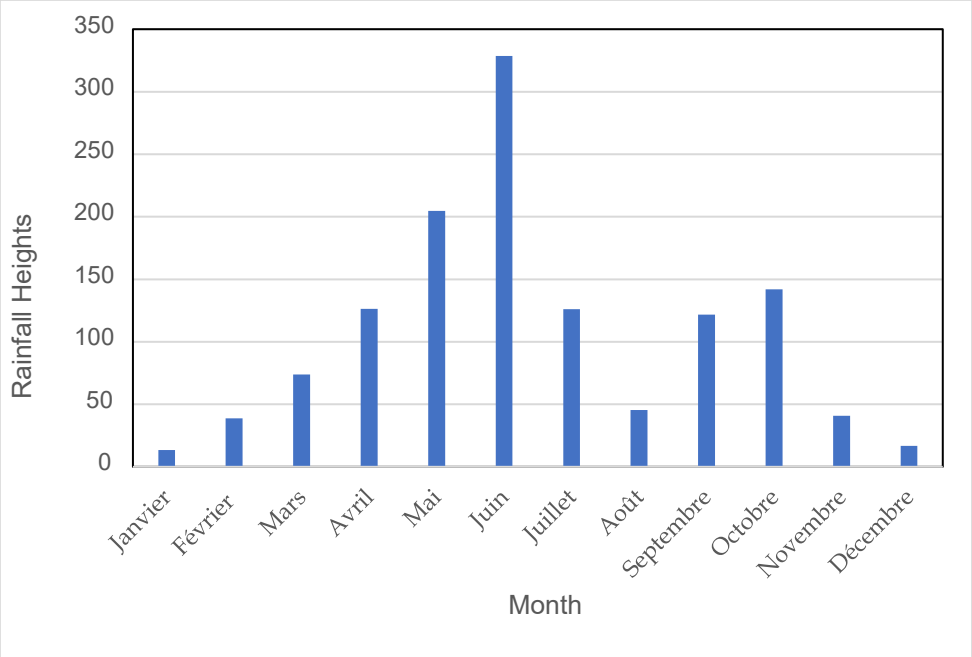


Figure 7: Rainfall pattern of the project's receiving environment
Data source: Météo-Bénin, 2024

The rainfall regime in the project's receiving environment is bimodal (Figure 7) characterized by the alternation of two rainy seasons and two dry seasons unevenly distributed. From December to March, the long dry season is observed, with rainfall of less than 40 mm or almost no rainfall in December, January, February and March. The period is characterized by breezes and especially the harmattan wind from the Libyan anticyclone which brings drought and dust. The main rainy season extends from April to July with the maximum values obtained in May (200 mm) and especially June (340 mm). This period corresponds to the presence of monsoon flows, which is the main

source of rain in Benin. Then, the short dry season occurs at the end of July and lasts until the end of August and corresponds to the period of upwelling of deep and cold marine waters. As far as the thermal values are concerned, they depend on the duration of the insolation and the maritime influence. Temperature variations remain small and the annual average is around 27°C. On a seasonal scale, it remains high in the dry season (27.5°C on average) and relatively low in the rainy season (24°C).

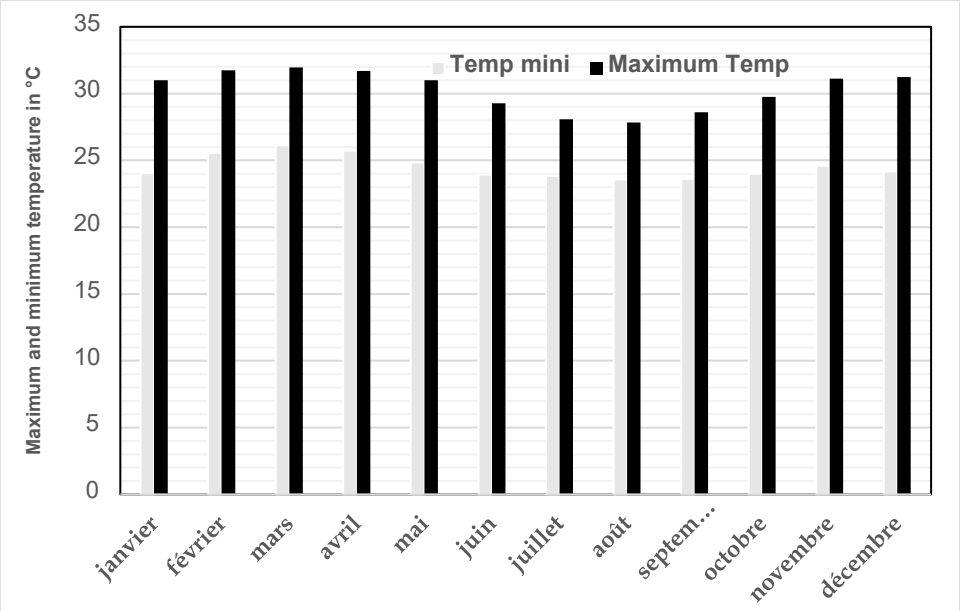


Figure 8: Trend of maximum and minimum temperatures in Cotonou Data source: Meteo-Benin, 2024

The months of February, March and April, the hottest (Figure 8), have relatively large amplitudes: cool nights (23-24°C) followed by sunny and warm days (31-33°C). In July and August, the drop is noticeable (25°C) in connection with the phenomenon of upwelling. *Overall, apart from the extreme events of the rainy seasons that can prevent the smooth running of field work, these two climatic parameters on a monthly scale do not seem to have major impacts for the implementation of this project. Thermometric conditions are also to be taken into account in the implementation of the project.*

As for the winds, it is a random phenomenon whose characteristics (speed and direction) depend on several natural parameters such as relief, vegetation, climate, etc. (Amey K. B., 2004). In the project's receiving environment, there are two types of winds with generally low speeds (Figure 9). These are those resulting from regional flows linked to pressure fields and local winds. The winds associated with the regional flows are those from the southwest sector (64%) and those from the northeast. The former blow mainly during the rainy season (March, April, May, June, October and

November) while the latter blow during the dry season (harmattan). In general, the average wind speed is low during the dry season and high during the rainy season. The highest speeds are recorded in July (5.3 m/s), August (5.5 m/s) and September (5.1 m/s) and the lowest values are recorded in November (3.6 m/s), December (3.4 m/s) and January (3.5 m/s).

Despite their low speed, these winds are capable of carrying sand particles. As the south-west *direction (64%) is dominant in the receiving environment, the latter will have to be taken into account for river transport.*

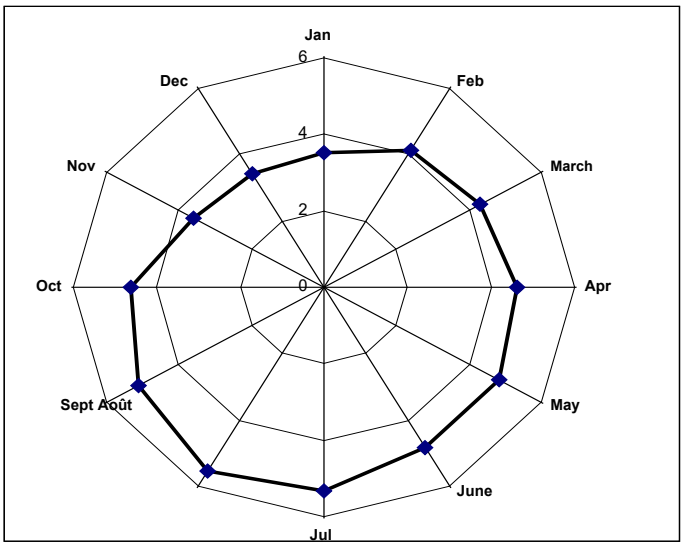


Figure 9: Monthly variation in average wind speeds in Greater Nokoué Data source: Météo-Bénin, 2024

3.1.2.2 Climate Change Issues and Associated Risks in the Receiving Environment

Beyond the average or normal values, the various climatic parameters are subject to mutations, similar to the global trend. In view of their presence on the natural components (topography and soil formations) and socio-economic conditions of populations, the changes that affect rainfall and temperature with the associated risks, in particular floods and corollaries, have attracted attention.

- ***High rainfall instability***

The irregularity of the annual totals is one of the characteristics of the rainfall variability in the receiving environment of the project (Figure 9). There is an alternation of surplus and deficit years without any apparent periodicity. The 1950s and 1960s were marked by a high incidence of surplus years, unlike the 1970s and 1980s, which were more affected by deficit situations. As for the 90s and 2000s and 2010s, they are rather contrasted without dominating one type of year.

Figure 10 shows the interannual variations in rainfall in the study environment from 1952 to 2020. The reduced centred indices of annual rainfall show a variability characterized by the alternation of dry and wet periods. Deficit periods are dominated by positive anomalies, and wet periods manifest themselves through the abundance of positive anomalies. Overall, the climatic context here is characterized by a very strong irregularity and a poor distribution of rainfall. The exceptional years are 1963, 1968, 1991 and 2010 and are considered surplus.

Rain and humidity are also factors that can have a significant impact not only on the receiving environment, but also on river transport.

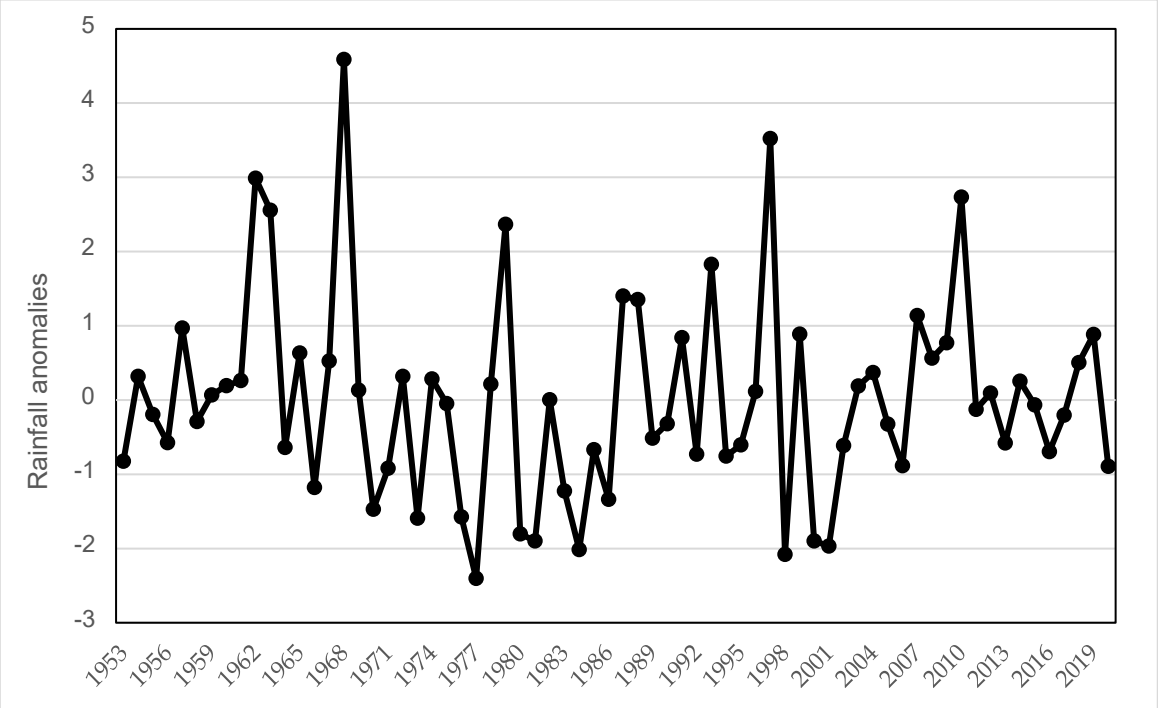


Figure 10: Interannual evolution of rainfall in the study environment Data
source : Météo-Bénin, 2024

During the month of June alone, for example, the rainfall can exceed 500 or even 600 mm (as in 2009 and 2010).

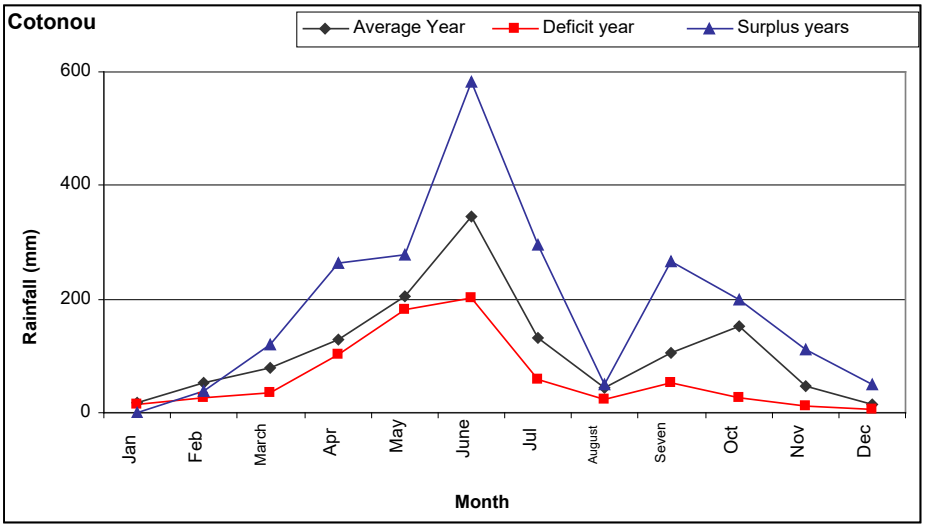


Figure 11: Monthly distribution of rainfall in surplus and deficit years

Data source: Meteo-Benin, 2024

This poor distribution of rainfall, combined with the hydrogeological context and the high human concentration, induces socio-environmental consequences, in particular floods and their corollaries. In addition to the poor temporal distribution, the cities of Greater Nokoué are also subject to extreme rainfall events, which are generally exceptional rainfall events. They refer either to a daily rainfall that gives rise to a quantity of water loaded with risks such as rainfall exceeding 40 mm (Figure 12). These types of rainfall are capable of causing flooding and/or land erosion.

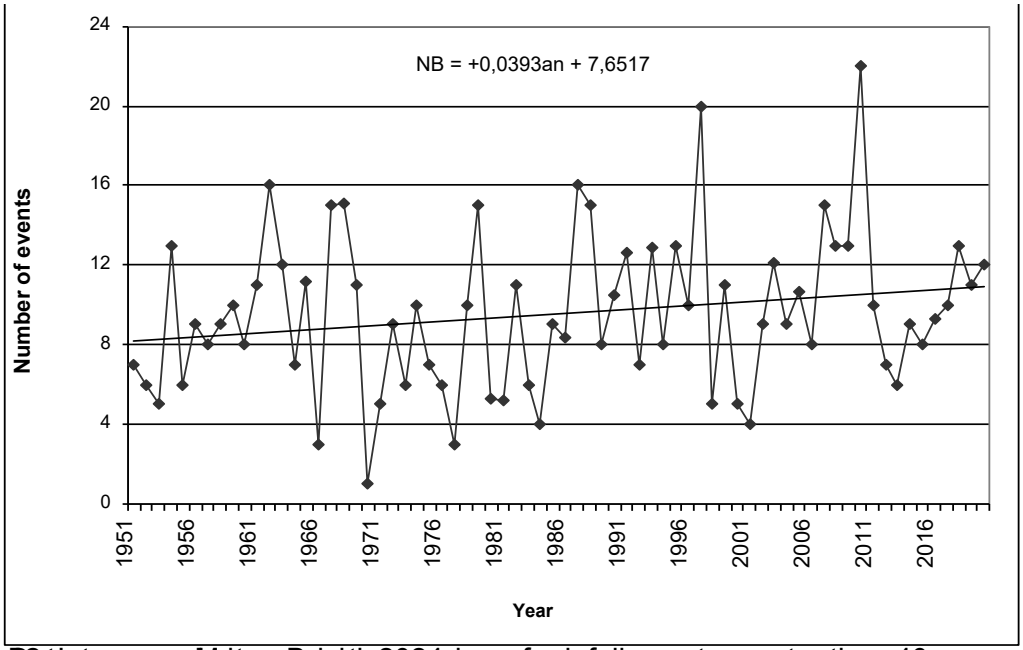


Figure 12: Interannual variation in the number of rainfall events greater than 40 mm
Data source: Meteo-Benin, 2024

Figure 12 shows an increasing trend in the number of these risk-laden events for both the environmental components and the project activities. The frequency of occurrence of these rains is higher during the 1990s, 2000s and 2010s and the record value is observed in 2010 (24). Typically, these types of rainfall occur during the rainy months when the ground is already wet, which compounds the associated risks of flooding and its consequences. Table 6 gives more details on the extreme rainfall events recorded in Cotonou and its surroundings from 1952 to the present day.

Table 6: History of extreme rainfall events in and around Cotonou

Dates	Events	Event Duration (Hour and Minutes)	Recorded water height (mm)	Observations	Wind direction
June 20, 1962	Rain	4:30 p.m.	191.5	Rain from dawn and afternoon	WSW
July 12, 1975	Rain	12:50 p.m.	193.8	Rainy and very cloudy weather all day	SW
June 3, 1982	Rain with thunderstorm	11 a.m.	148.6	Very overcast sky with presence of Cb	WSW
April 11, 1992	Heavy thunderstorm rain	5:25 a.m.	132.2	Very cloudy sky, Cb present in all NW/SW areas	ENE
13 July 2006	Rain	7:18 a.m.	129.5	Rain from dawn and afternoon	WSW
June 27, 2010	Heavy thunderstorm rain	4:40 a.m.	178.9	Rainy and very cloudy weather all day	SW
Abomey-Calavi					
June 28, 2020	Heavy rain	2 p.m.: 00	75,20	Rainy and very cloudy weather	SW
07 May 2020	Rain	11 p.m.: 00	50,80	Night rain	SW
23 May 2022	Rain	10 p.m.: 00	60,90	Night rain	SW
July 31, 2023	Rain	2 a.m.: 00	55,30	Night rain	SW
August 13, 2023	Rain	1 a.m.: 00	57,50	Night rain	SW

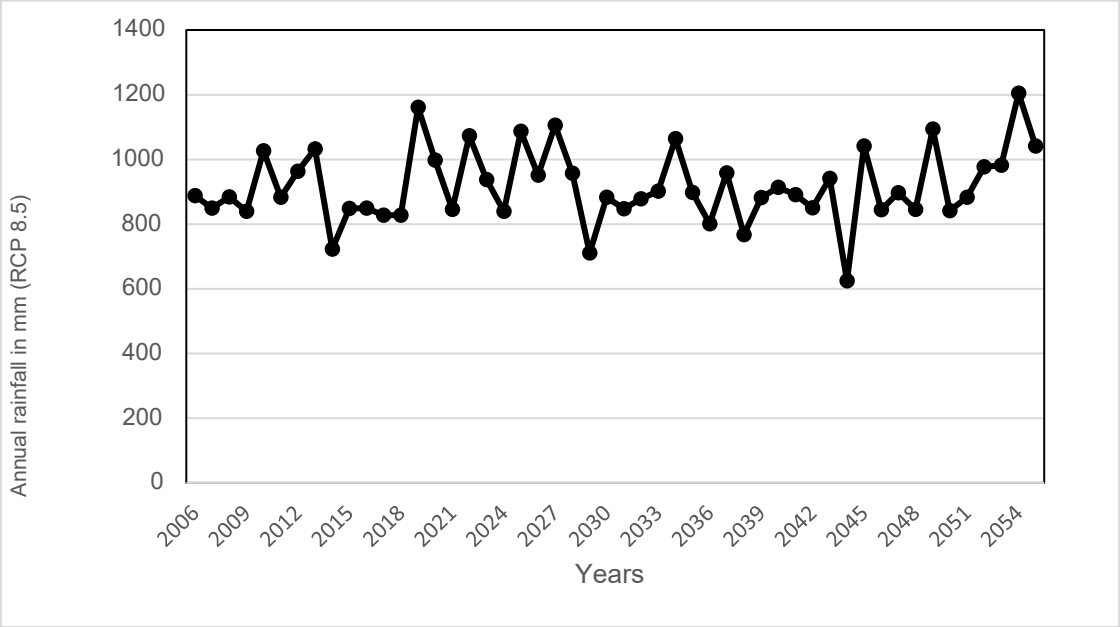
Data source: *Houndakinnou 2005, supplemented by Kouton 2011 and Atchadé, 2023.*

The data in Table 6 show that in Cotonou and its surroundings heavy rains occurred during the months of June to July (Cotonou) and May and August (Abomey-Calavi). They are linked to monsoon activities (20 June 1962, 12 July 1975, 3 June 1982, 13 July 2006 and 27 June 2010) and to the passage of easterly flows (11 April 1992) for the Cotonou station and 28 June 2020; May 07, 2020; May 23, 2022; 31 July 2023 and 13 August 2023 for the Abomey-Calavi station. These events are accompanied by catastrophic floods, especially since they occur during the rainy season when the soils are already wet. *In view of the topographical base of the cities of Greater Nokoué,*

extreme rainfall will only increase the water level in the ground, especially in the rainy season. This implies the consideration of the levels of elevation of watercourses for better protection of the latter against the risk of flooding.

3.1.2.3 Future climate trend in the receiving environment of the project

Future climate change projections project warming of about 0.2°C per decade over the next twenty years, based on projections in several SRES emission scenarios (IPCC, 2007). Even if concentrations of all GHGs and aerosols had been maintained at 2000 levels, temperatures would continue to rise at a rate of about 0.1°C per decade. In any case, continued GHG emissions at the current or higher rate are expected to increase warming and completely change the climate system in the twenty-first century. In Benin, as in the West African region, there is a high level of confidence that temperatures will rise. In contrast, there is low consensus on the direction and magnitude of potential changes in precipitation. Figure 13 shows the interannual variability of rainfall in the municipality of Ouidah by 2055 under the RCP 4.5 (Pessimistic) and RCP 8.5 (optimistic) scenarios.



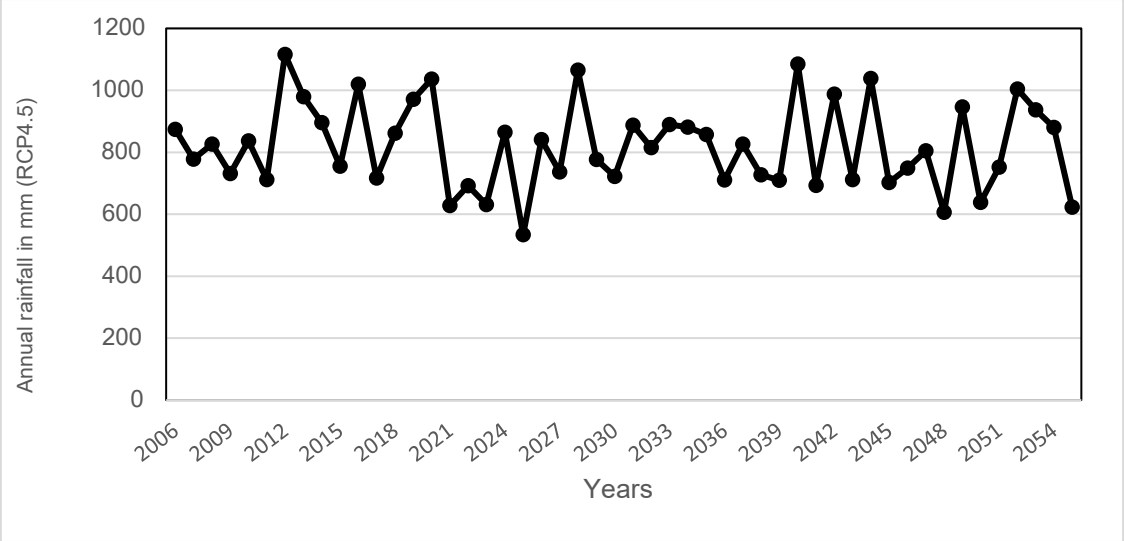


Figure 13: Interannual variability of rainfall in Greater Nokoué by 2055 under the RCP 4.5 (Pessimistic) and RCP 8.5 (optimistic) scenarios Source: IRC, 2024

The analysis of this figure shows that, regardless of the scenario used, the study environment will continue to experience significant variability in its rainfall levels. The lowest annual rainfall amounts will be observed in 2029 and 2044 while the highest values will be observed in 2040 (RCP 4.5), and 2054 under the scenario (RCP 8.5). But overall, this situation will probably not have an impact on the distribution of annual rainfall. On the contrary, there will always be a high concentration of rainfall over a short period of time, which can promote flooding phenomena or, through the runoff effect, cause the risk of land erosion. Table 7 illustrates the temperature and rainfall values according to the types of projection for 2080.

Table 7: Future climate physiognomy by scenarios used

Scenarios	Minimum temperatures	Maximum temperatures	Pluviometry
RCP4.5	Increase of 0.8 to 1.6°C	Increase of 0.2 to 0.8°C	No clear trend; Increased frequency of extreme values
RCP8.5	Increase of 1.1 to 2.6°C	Increase of 0.5 to 1.5°C	No clear trend; Increased frequency of extreme values
SAH	Increase from 0.8 to 1.4 °C	Increase of 0.3 to 0.6°C	Increase in annual totals of 30 to 50%; high concentration of rainfall during wet months; high occurrence of extreme events

Sources: Data processing and bibliographic synthesis, 2024.

The data from the model outputs under the 2 chosen scenarios do not indicate a clear trend in the annual rainfall totals at the level of the communes of Greater Nokoué. This result is the result of the high instability of rainfall compared to historical data.

However, the risk of extreme values (heavy rainfall with or without high winds) is high.

In addition, there is the occurrence of multifaceted droughts (insufficient rainfall, dry spells, late start and/or early end of rain). As far as temperatures are concerned, they will experience a fairly significant increase, especially in the minimum values. The current trend of thermal warming will thus be confirmed.

- ***Tendency to thermal heating***

The evolution of the thermal values (maximum, average and minimum) of the receiving environment, analysed by the linear regression method, is illustrated in Figure 14.

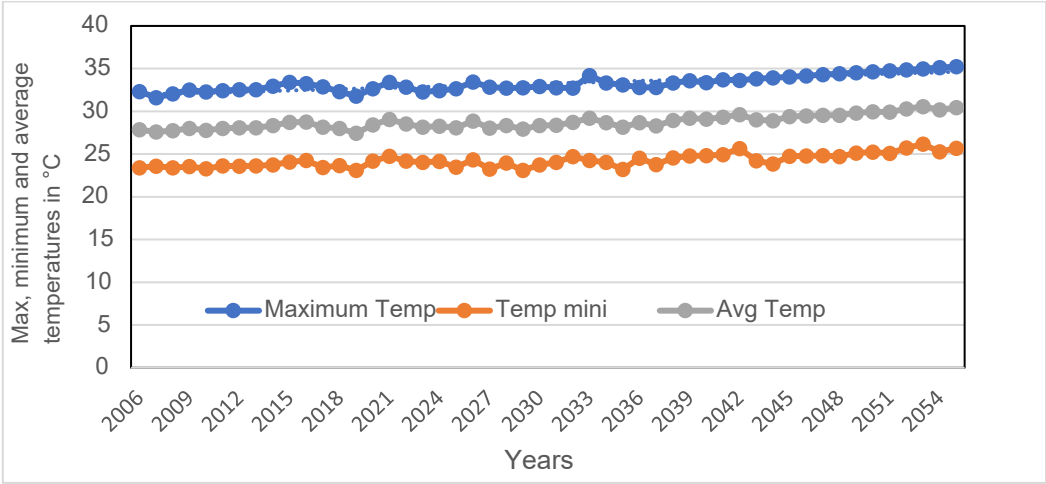


Figure 14: Evolution of temperature values (maximum, minimum and average) by 2055 Data source: Météo-Bénin, 2024

Figure 14 shows that temperatures are trending upwards overall. Thus, maximum temperatures varied from 33.32 to 35.22°C, an increase of 2.10°C respectively between 2006 and 2055. As for the minimum temperatures, they have gone from 23.40 to 26.10°C; an increase of 3.2°C. This trend is more pronounced in terms of minimum temperatures. The largest increases began in 2021 and continued steadily until the decade 2055 (Figure 13). These findings are consistent with those at the global, regional and national scales (IPCC, 2014, Lawin et *al.,* 2011). Ultimately, the tendency towards thermal warming is unequivocal in the receiving environment of the project. The largest increases started from 2021 and continued steadily until 2055. Such an increase, which is part of the ongoing global warming, is not without direct and/or indirect consequences on natural components and human settlements. *Indeed, as solar irradiation is very high, it is necessary to protect all facades (including opaque parts) from radiation as much as possible to prevent them from storing heat. It is therefore necessary to adopt an appropriate adaptation strategy and a long-term approach, in order to provide robust and future-proof solutions.*

- ***Strong oscillation of maximum wind speeds***

The analysis in Figure 15 shows a high variability in maximum speeds. Extreme values were observed in 1962 (29 m/s for the high value) and 2007 (13 m/s for the lowest value). These speeds correspond to 105 and 105 respectively
47 km/h.

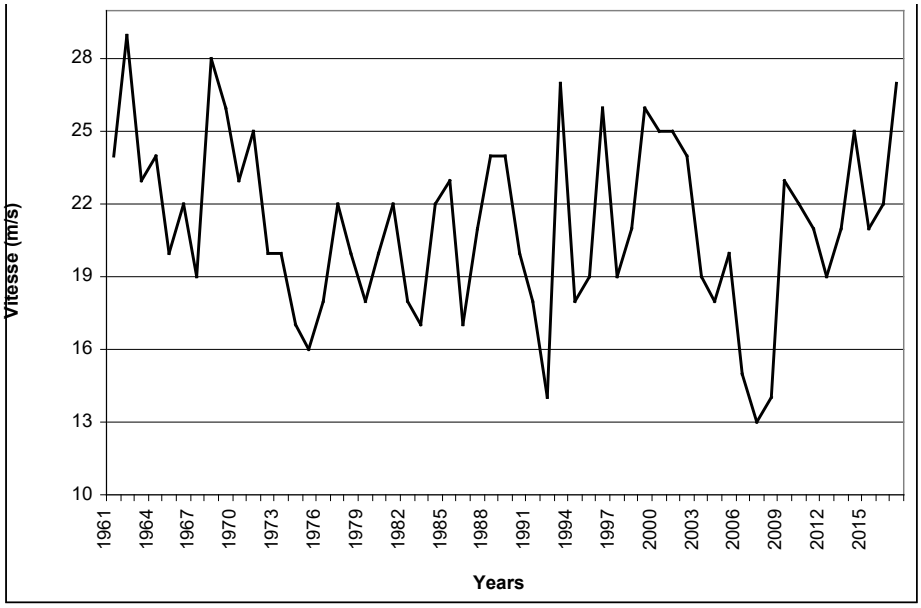


Figure 15: Interannual variability of maximum wind speeds Source:
IRC, 2024

According to the Beaufort scale used by Allé et *al.* (2013), winds of up to
90 km/h and more are described as "storms" and are capable of damaging the roofs of houses, uprooting trees, etc. Damage is greater when associated with heavy rainfall, as is sometimes the case in the receiving environment. Even if the analysis does not show a significant trend, it is still noted that 8 of the 10 highest values are recorded during the last 3 decades (1990, 2000 and 2010). The increase in violent winds and therefore fraught with risks in recent decades is worrying in view of the fragility of human settlements in the area, especially when they are accompanied by heavy rains. *It appears from these results that the implementation of the project will have to take into account the climatic context characterized by strong rainfall instability in a context of rising temperatures associated with the occurrence of strong or violent winds. The climate future in the area is also not very reassuring insofar as IPCC (2014) predicts more or less profound changes in climate parameters by 2050/2100.*

- ***Adaptation to climate change: a political necessity***

This section reports on the climate change negotiations of the last Conference of the Parties (COP17), and their implementation in Benin. Climate change is at the heart of

economic, social and environmental development. From this point of view, they require not only technical but also political treatment.

The adoption on 9 May 1992 and 11 December 1997 respectively of the UNFCCC (United Nations Framework Convention on Climate Change) and the Kyoto Protocol constitutes a consensual response at the international level to find appropriate solutions to this global phenomenon. The Conference of the Parties (COP) is the supreme forum for decision-making in this regard.
COP17 in Durban, described as the African COP, revealed the importance and importance of climate change in the definition and planning of the development of States. To reach consensus on priorities and strategies, several principles were adopted:

- Shared vision: Continued review of the long-term global goal in 2050 and peak emissions until COP18;
- Enhanced action on mitigation: continued negotiations to increase the levels of reductions in developed countries; To achieve this, it has been agreed;
- Adoption of the Guidelines for the Biennial Reporting of the DPs (Developed Countries);
- Adoption of modalities and rules for international assessment and review;
- Adoption of the guidelines for the preparation of biennial updated reports;
- Taking agriculture into account in the negotiations: countries are called upon to make their views known on this subject for decision to be taken at COP18.
- Implementation of COP decisions Different programmes arise from the climate negotiations. They are presented in the table below.

Table 8: Different support programs resulting from the climate negotiations

Title	Objectives
Pilot Project for Human Resources, Learning and Skills Development (UNITAR)	Creating a strong human resource base for better implementation of the United Nations Framework Convention on Climate Change (UNFCCC)
Capacity building in climate observation in the Lake Toho-Ouidah lagoon complex (DGEau, DNM)	Strengthen the observation system for better monitoring of climate and climate variability in the Lake Toho Lagoon Lagoon Complex of Ouidah.
Capacity Development Project on Impacts and Adaptation Strategies to CC at the Secondary School Level in Benin (UNDP-UNEP, MEHU, GUARDIAN NGO)	Addressing the capacity building needs of teachers and students in education on the impacts and strategies of adapting to climate change in schools
Economic Knowledge and Adaptive Capacity Building Project CC au Bénin– PRECAB (CRDI, IDID ONG)	Strengthen/deepen socio-economic research on adaptation options identified in farmer field schools

Source : SIRAT, 2024

- ***Relief, soils and geology***

The geological bedrock over which the study area extends consists of two main types of geological formations.

These are the Quaternary formations, which are sandy deposits of the Atlantic cordon, lagoon deposits, made of clays and sands, and alluvial deposits made up of sand and clays.

The territory of Greater Nokoué is largely occupied by tropical hydromorphic, ferralitic and ferruginous soils. Hydromorphic soils have a high water retention capacity and a high richness in organic matter (peat). With an average potassium (K) content and a fairly high phosphorus (P) level (except in flaky peat), they have a high fertility potential (www.fao.org) and therefore a high potential for the development of green spaces. Ferralitic soils, on the other hand, have good physical characteristics (depth, drainage, penetrability), a low water retention capacity, a low level of potassium (K), phosphorus (P) and organic matter. But with periodic fertiliser applications and the return of plant residues to the soil, they promote plant development. Tropical ferruginous soils, which are shallow and have a low water holding capacity, have a low content of potassium (K), phosphorus (P), and nitrogen (N). But with periodic fertiliser applications and the return of plant residues to the soil, they also promote plant development. This is an asset for the sustainable development of green spaces. Figure 16 shows the soil units of Greater Nokoué.

- ***Hydrographic network***

The hydrographic network is essentially characterized by a lake and lagoon system, including several bodies of water. Lake Nokoué is directly connected to the Atlantic Ocean by the Cotonou Channel. However, relations with the ocean can be interrupted by the more or less seasonal formation of a sandy spit. It is fed with fresh water by the Ouémé and So rivers and by rainfall and runoff. The Totché channel connects it to the Porto-Novo lagoon which is extended to the west by the Badagry-Creek, the route of which continues for more than 100 km to Lagos. The Ouémé delta separates the two lagoons. During the flood period (September – October), the low plains are submerged, with the exception of a few bank ridges where the villages on stilts are located. Figure 17 shows the hydrographic network of the communes of Greater Nokoué. . .

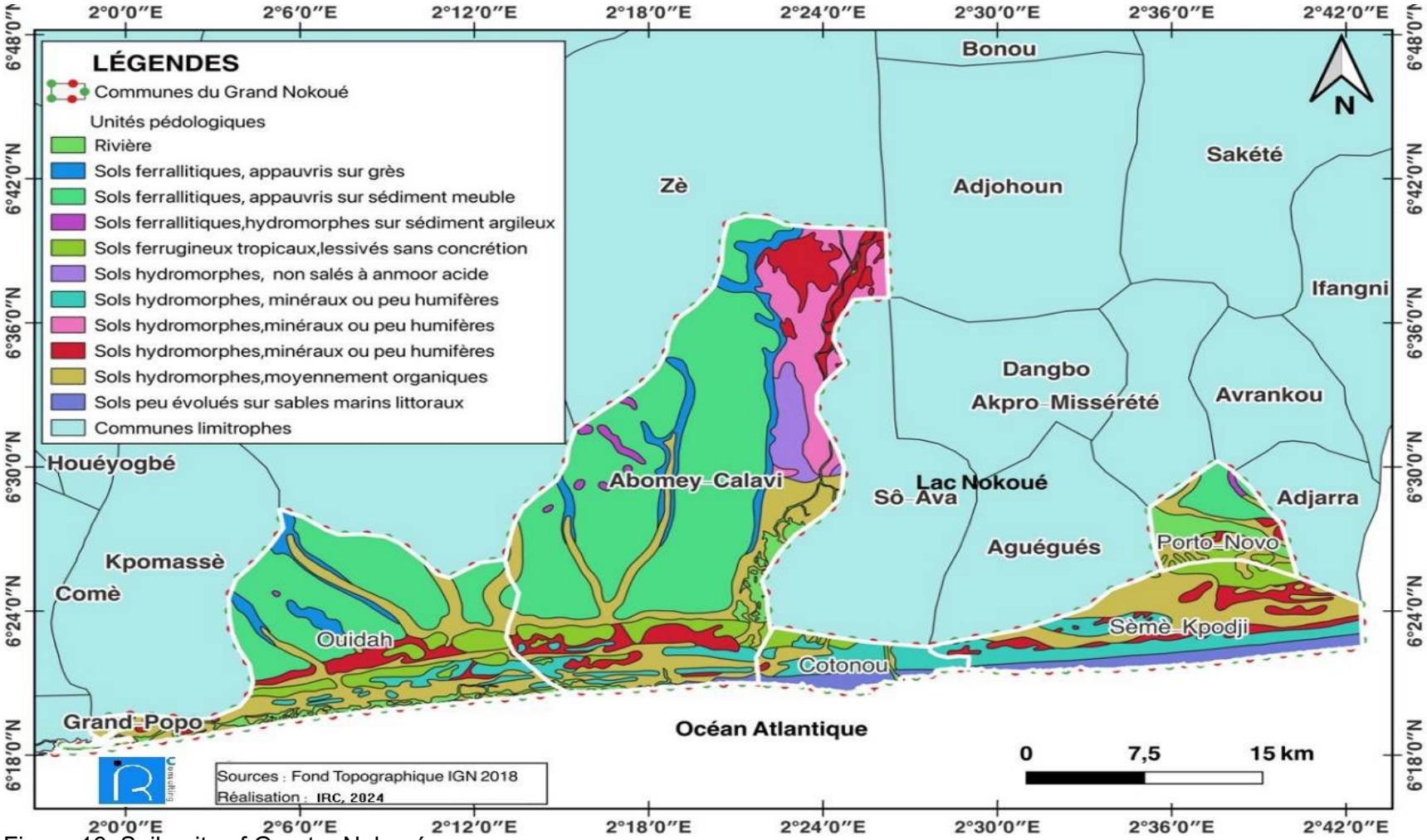


Figure 16: Soil units of Greater Nokoué.
Source : IRC, 2024

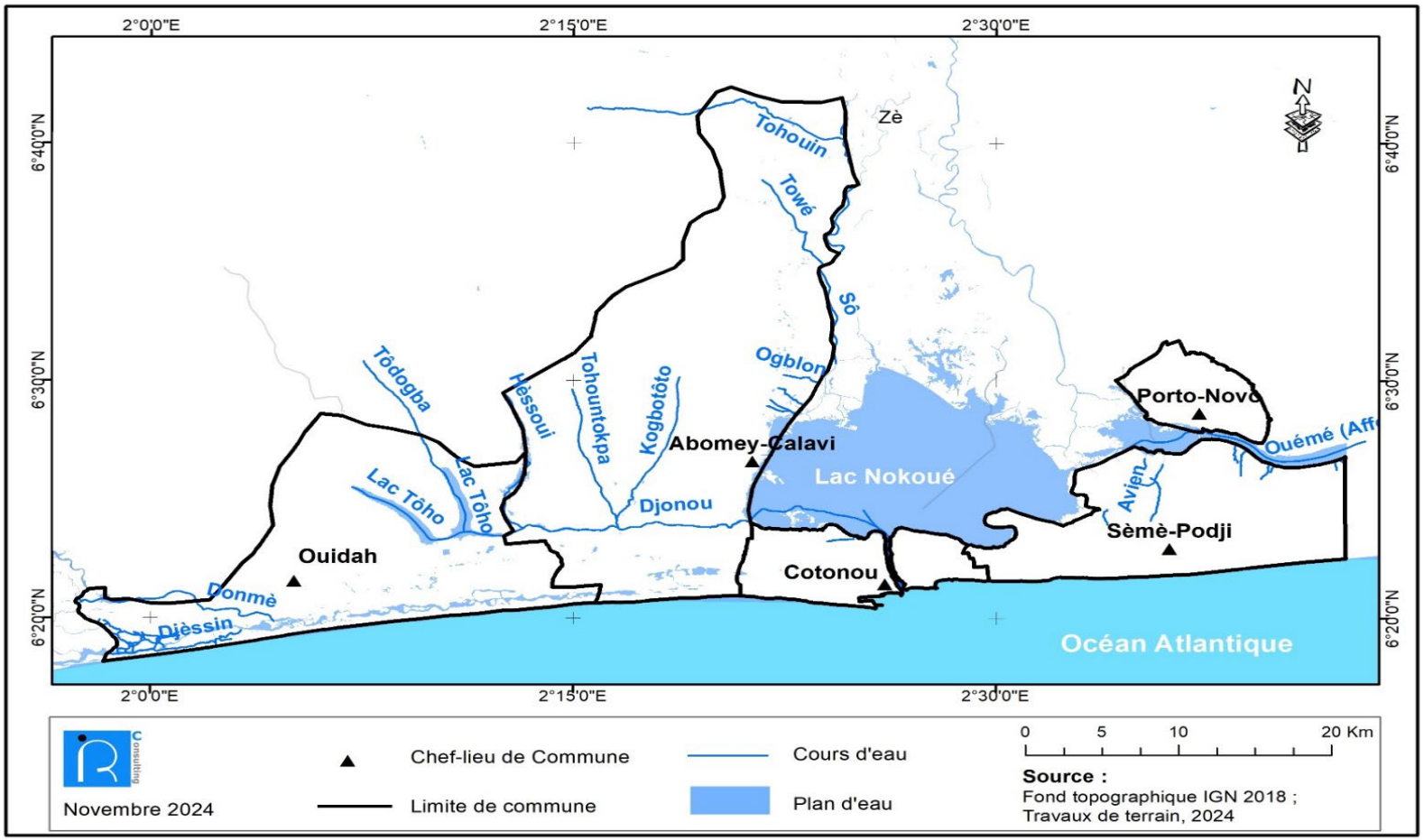


Figure 17: Hydrographic network of the communes of Greater Nokoué Source: IRC, 2024

3.1.3. Biological characteristics of the project's receiving environment

The Greater Nokoué belongs to the Guineo-Congolese chorological zone and specifically to the phytodistricts of the Ouémé valley and the coastal (Adomou, 2005). The characteristic ecosystems of Greater Nokoué are:

- gallery forests, periodically flooded riparian forests, marshy meadows, aquatic and floating meadows;
- mangrove forests remaining in the form of small, highly degraded shreds;

- Dryland ecosystems are made up of islands of dense semi-deciduous humid forests and agroecosystems with a strong human influence made up of fields, fallows and plantations;
- the bodies of water and watercourses that define the functioning of the other above-mentioned ecosystems.

These different ecosystems, a priori the mangroves, constitute for the brackish water fish species of Lake Nokoué, the Porto Novo lagoon and the reserve, spawning areas for the reproduction of marine and freshwater species and the feeding and breeding site for waterbirds. They improve the productivity of fishing systems. But they have largely been destroyed to meet the need for firewood.

3.1.3.1 Wetland flora and vegetation

Greater Nokoué is home to all the major taxonomic groups of the animal kingdom, including crustaceans, insects, molluscs, as well as vertebrates including terrestrial and aquatic mammals, birds, reptiles, amphibians. Rich and very diverse, the terrestrial and aquatic ecosystems of the Grand Nokoué Reserve are home to a diversity of plant species ranging from typically aquatic species to species from uncovered and typically terrestrial land. A total of 325 plant species divided into 178 families were inventoried. Brackish/salt coastal lagoons remain the environments that shelter the most floristic diversity with 98 species (Table 9). The characteristic plant species of the reserve are *Ficus congensis, Anthocleista vogelii, Rhizophora racemosa, Cyperus papyrus, Typha domingensis, Paspalum vaginatum, Pterocarpus santalinoides, Elaeis guineensis* and *Cocos nucifera.* The vegetation of the bodies and watercourses is mainly made up of *Eichhornia crassipes* and *Pistia stratoites*, which are invasive plants indicative of the eutrophication of the reserve's watercourses and bodies (Photo 1).

Photo 1: Invasion of the watercourse by Eichhornia crassipes (water hyacinth) making it difficult to move by canoe on the water Source: BEES-ONG, 2018

Table 9: Floristic diversity of different types of wetlands

Type of wetlands	Number of species	Number of families	Common species
Rivers and streams	9	6	*Typha domingensis, Nymphaea lotus, Cyperus papyrus, Eichhornia crassipes*
Seasonal freshwater lakes	17	11	*Eichhornia crassipes, Leersia hexandra, Persicaria lanigera, Typha domingensis,*
Permanent freshwater ponds/marshes	53	28	*Mitragyna inermis, Paspalum vaginatum, Hygrophila auriculata, Leersia hexandra, Ficus congensis, Raphia hookeri*
Tree-dominated freshwater wetlands	54	31	*Cola gigantea, Ceiba pentandra, Kigelia africana, Dialium guineense*
Wetlands dominated by bushes	11	8	*Paspalum vaginatum, Ipomoea pescaprae, Zanthoxylum zanthoxyloides, Mimosa pigra*
Wooded bogs	14	9	*Cyperus articulatus, Cyperus papyrus, Cyclosorus striatus, Melaleuca leucadendron*
Seasonally flooded farmland	98	44	*Cocos nucifera, Elaeis guineensis, Voacanga africana, Paspalum vaginatum, Elaeis guinensis, Ficus Congensis, Acacia auriculiformis, Anacardium occidentale*
Aquaculture ponds	8	6	*Ipomea aquatiqua, Nymphea lotus, Eichhornia crassipes, Pistia stratoites, Typha domingensis*
Shallow marine waters	*	*	
Intertidal forested wetlands, including mangrove swamps	27	14	*Nymphaea lotus, Cyperus articulatus Paspalum vaginatum, Eichhornia crassipes, Cyperus papyrus, Rhizophora racemosa, Ficus congensis, Anthocleista vogelii*
Brackish/salt coastal lagoons	58	35	*Cocos nucifera, Ficus congensis, Acacia auriculiformis, Elaeis guinensis, Paspalum vaginatum*
Shorelines of fine, coarse sand or cobbles	15	9	*Remirea maritima, Ipomoea brasiliensis, Cocos nucifera, Chrysobalanus icaco, Canavalia rosea, Ipomoea pes-caprae*

* = Almost absent plant species
Source: BEES-ONG, 2018

3.1.3.2 Animal species

The fauna of the Grand Nokoué reserve is very diverse in both zoological groups and species diversity and includes both aquatic and terrestrial species. A total of 302 animal species in the different taxonomic groups divided into 135 families have been recorded. Birds (207 species) and fish (51 species) are the most represented taxonomic groups. Then come mammals (21 species), crustaceans with 10 species, reptiles with 9 species, molluscs and amphibians with 6 and 4 species respectively. Figure 18 shows the distribution of the different taxonomic groups. But little information exists on certain zoological groups such as insects, herpetofauna and benthic microfauna.

Among the birds, there is an abundance of the following families: Ardeidae (9 species), Anatidae (7 species), Scolopacidae (5 species), Estrildidae (5 species) and Alcedinidae (5 species) (Lougbégnon, 2017). The most represented species are *Drendrocygna viduata, Agretta garzetta, Agretta melanocephala, Agretta intermedia, Gallinula chloropus, Actophilonis africanus, Phalacrocolas africanus,* etc.

Photo 2 shows the individuals of Intermediate Egretus and Small-bellied Egrets on the stakes of the fish traps.

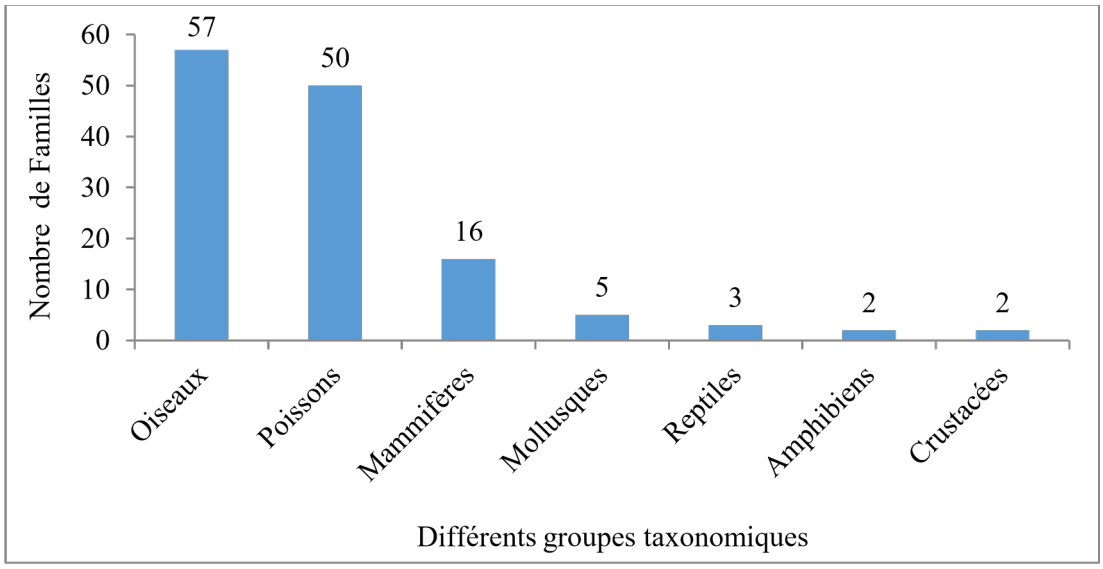


Figure 18: Diversity of animal species by family of the greater Nokoué reserve Source: Field surveys, 2018 and documentation

Photo 2: Colonie d'oiseaux
Source : BEES-ONG, 2018

In terms of fish (photo 3), the Mormyridae are the most numerous with 12 species. This is followed by Cichlidae, Characidae, Cyprinidae and Gobiidae with 10, 8, 7 and 6 species respectively (Lalèyè, 1997). They are composed of brackish water species to which marine and freshwater species are periodically added.

Photo 3: Fish species caught in Lake Nokoué by a fisherman Source: BEES-ONG, 2018

The main crustacean species are: *Macrobrachium vollenovenii, Macrobrachium macrobrachion, Macrobrachium dux, Macrobrachium felicinum, Macrobrachium raridens, Atya gabonensis, Atya africana and Desmocaris trispinosa* (Wenon, 2005). The insects most represented in the reserve are Hymenoptera (ants), Odonata, Coleoptera, Orthoptera and Diptera (Gnonhossou, 2002).

Among the aquatic mammals encountered is the manatee *(Trichechus senegalensis).* The lower Ouémé valley is the preferred habitat and refuge of the manatee *(Trichechus senegalensis),* an endangered species on the IUCN Red List. Other aquatic mammals encountered include the white-cheeked otter *(Aonyx capensis).* The terrestrial wild animals that have been reported are duikers *(Sylvicarpa grimmia, Cephalophus niger),* warthogs *(Phacochoerus aethiopicus),* hares *(Lepus crawsharyi),* primates *(Papio anubis, Cercopithecus aethiops),* numerous rodents *(Thryonomys swinderianus, Xerus erythropus, Heliosciurus gambianus, Arvicanthis niloticus, Cricetomys gambianus),* and reptiles *(Python sebae, Varanus niloticus, Crocodylus niloticus).*
It should be noted that the appearance of certain animal species at the lake level depends on the migration seasons. Examples include Palearctic birds that have intercontinental migration, fish species and mammals such as the African manatee that migrate locally.

- **Natural character**

In the Grand Nokoué reserve, ecosystems are at different levels of disturbance. In general, the naturalness of most existing habitats is undermined (Table 10).

Some ecosystems such as permanent freshwater ponds/marshes, tree-dominated freshwater wetlands, forested peatlands, and shallow marine waters can be considered habitats of minimally modified natural character. The ecosystems of the tree-dominated freshwater wetlands represented in the reserve by the relics of periodically flooded sacred forests still owe their naturalness to sacralization. Has

In contrast, ecosystems such as shrub-dominated wetlands, seasonally flooded agricultural land, intertidal forested wetlands including mangrove swamps, and brackish/salty coastal lagoons are largely modified by various anthropogenic activities. In short, a real policy to safeguard these types of wetlands should make the local communities, local elected officials and the state structures responsible for managing these types of environments. Indeed, as listed above, are under the influence of several threats related to the strong human pressure of the surrounding human populations. Therefore, in order to safeguard the resources on which the survival of the riparian populations depend, it is necessary not only to apply the texts in force but also to develop management measures specific to the context of this reserve. For example, actions of sacralization or the implication of endogenous measures to supplement the legal institutional framework would be very beneficial.

Table 10: Assessment of the ecological elements of Greater Nokoué on the basis of naturalness

Types of wetlands	Natural character	Observation
Rivers and streams	Altered	Pollution from the transport of petroleum products, Invasion by water hyacinth Depopulation of the itchyological fauna resulting from overfishing
Seasonal freshwater lakes	Altered	Eutrophication and overexploitation of fishery resources
Permanent freshwater ponds/marshes	Little changed	Environments that are difficult to access for the population, which retains some of its natural character
Tree-dominated freshwater wetlands	Little changed	Sacralization by deities of traditional cult favored the conservation of relict habitats at the level of these forests
Wetlands dominated by bushes	Highly modified	Strong extraction of bushwood for Acadja and firewood has profoundly modified the natural character of this type of environment
Wooded bogs	Little changed	Very unstable environment for the installation of anthropogenic activities has favoured the conservation of the natural character of these environments
Seasonally flooded farmland	Highly modified	Almost all the natural vegetation on these lands is degraded for the installation of agricultural plots and plantations. The misuse of chemical agricultural pesticides has also disrupted biodiversity and the physical environment
Aquaculture ponds	Altered	Modified due to the supply of external nutrients to the fish
Shallow marine waters	Little changed	Hostile environment for human activities

Types of wetlands	Natural character	Observation
Intertidal forested wetlands, including mangrove swamps	Highly modified	Various strong anthropogenic pressures on these environments (mangrove cutting, installation of human infrastructure, etc.)
Brackish/salt coastal lagoons	Highly modified	Highly polluted because it is a water receptacle for runoff water and domestic waste leading to siltation, congestion and
		Invasion by water hyacinth. Lagoon sand mining for construction needs
Shorelines of fine, coarse sand or cobbles	Altered	Environment modified by the installation of human dwellings along the beach, pollution by plastic bags and household waste as well as the departure of bushy vegetation from the beach.

Legend: Natural character (much modified: landscape made up of original habitats degraded by man to more than 75%; modified: landscape made up of original habitats degraded by man to less than 50%; little modified: landscape made up of original habitats degraded to less than 25%). Source: BEES-ONG, 2018

- **Rarity**

At the level of the reserve, some landscapes are becoming increasingly rare because of anthropogenic pressures. These are mangrove forests, relics of sacred forests, and peat bogs. For example, the mangrove ecosystems of the reserve are currently only found at the Toché Channel, the Porto-Novo lagoon and around Lake Nokoué with very small and very degraded areas, compared to the mangrove ecosystems of Ramsar Site 1017 in southern Benin and other ecological environments. This is also the situation of shreds of sacred forests, which are very small in size and without great ecological connectivity. These fragile ecosystems risk disappearing in the reserve if no rigorous and responsible conservation action that takes into account the socio-economic needs of the population is put in place. Therefore, any action aimed at increasing their surface area or conserving them in order to improve their representativeness is urgently desired.

In addition, several animal and plant species already recognized as threatened and particularly rare are also present in the reserve. Table 11 presents the list of rare species with a special conservation status at both the national and international levels for which specific management actions must be considered.

Table 11: Species with special conservation status in Greater Nokoué

Taxonomic class	Common noun	Scientific name	Status IUCN	Status IUCN Benin
Mammal	African manatee	*Trichechus senegalensis*	CONSIDERING	CONSIDERING
	Grivet in Barbados	*Cercopithecus aethiops*	LC	NT
	Stalin (Guib	*Tragelaphus spekii*	LC	CONSIDERING

Taxonomic class	Common noun	Scientific name	Status IUCN	Status IUCN Benin
	water)			
Bird	Slate Egret	*Slate Egretta*	CONSIDERING	CONSIDERING
	Purple heron	*Purple Pepper*	CONSIDERING	IN
	Great egret	*Ardea alba*	CONSIDERING	IN
	African Openbill	*Anastomus lamelligerus*	CONSIDERING	CONSIDERING
	Black-crowned night heron	*Nycticorax nycticorax*	IN	IN
	Widowed whistling duck	*Dendrocygna viduata*	CONSIDERING	CONSIDERING
	Goliath Heron	*Ardea goliath*	IN	IN
Plant	Chêne Guadeloupe	*Conocarpus erectus*	IN	IN
	Red mangrove	*Rhizophora racemosa*	CONSIDERING	CONSIDERING
Fish	Chrysichthys	*Chrysichthys nigrodigitatus*	NT	NT
	Parachanna	*Africana parachutes*	NT	NT
	Protopterus	*Protopterus annectens annectens*	NT	NT
	Scattering	*Citharichthys stampflii*	NT	NT
Reptile	Python de Sebae	*Python sebae*	NOT	CONSIDERING
	Python royal	*Python regius*	NT	NT
	Varan Du Neil	*Varanus niloticus*	NOT	NOT

Legend: EN = Endangered, NT = Near Threatened LC = Least Concern; VU = Vulnerable; NE = Not assessed Source: BEES-ONG, 2018

- **Fragility**

The Grand Nokoué Reserve and its ecosystems are subject, directly or indirectly, to various human pressures and the influences of the major demographic centres such as Cotonou, Abomey-Calavi and Porto-Novo which surround the reserve. These actions contribute enormously to the fragility and degradation of both habitats and the species that depend on them. The various human actions participating in the fragility of the ecosystems of greater Nokoué are, among others:

- Deforestation of the banks of the Ouémé and Sô rivers and around Lake Nokoué and inappropriate cultural practices accentuate water erosion of soils and the departure of a large quantity of sand and sediments into rivers and water bodies, leading to siltation and eutrophication of the latter. This situation favours the colonisation and proliferation of invasive plants such as *Eichhornia crassipes* (water hyacinth) on almost all the open spaces of the watercourses;
- ecosystems as well as fauna and flora species are exposed to varying degrees of fragility linked to the use of agricultural fertilisers and pesticides and pollution linked to run-off water. This alters the productivity of these ecosystems, which become particularly vulnerable to chemical pollutants.

- the installation of acadjas, which is a very recurrent practice in the reserve and especially on Lake Nokoué, clogs up a large part of the open water fringe and contributes to the filling and eutrophication of the water.
- The narrowness of the Cotonou channel due to human settlements and the groynes to combat coastal erosion reduces the upwelling of seawater and aquatic species in the Cotonou lagoon and their migration to the lake and rivers. This requires these phenomena to be taken into account in the management measures of aquatic ecosystems to prevent the water of the lake from changing over the years from brackish water to fresh water, which will lead to changes in the ecosystems of the greater Nokoué. The possible decrease in water salinity is detrimental to mangrove ecosystems and in particular species such as *Rhizophora racemosa* which are the most noticed mangrove species in the environment and the fishery resources that depend on it.
- The collection of potting soil and litter in forests can expose the roots of forest plant species and contribute to the intensification of water erosion. This can lead to the flight of fauna species that live in the first horizons of the soil and weaken the ecosystem in place. This phenomenon must be taken into account in awareness-raising programmes for the population and those involved in these practices.
- the transport of adulterated products as species and other toxic products on the rivers and bodies of water of the greater Nokoué area is also another challenge for fish species.

In general, it should be noted that the ecosystems of the Grand Nokoué Reserve are threatened, particularly mangroves, the viability of which is defined by the presence of brackish water, bird habitats, and aquatic species that are becoming increasingly rare due to overfishing and the filling of rivers and water bodies.

- **Typical character**

Greater Nokoué has coastal plain ecosystems. These include water bodies, marshy areas, floodplains and floodplains. They are as follows:

- mangrove forests, which include typical species such as *Rhizophora racemosa* and constitute, depending on the population, the spawning areas for fish. These ecosystems are undergoing extensive degradation as mentioned above because of its use in crafts and for firewood (Photo 4).

Photo 4: Mangrove ecosystem degraded by the intense cutting of mangrove trees for firewood in the Commune of Sèmè-Podji Source: BEES-ONG, 2018

- Swampy forests on peat bog in Sèmè-Podji made up of species such as *Cyperus articulatus, Cyperus papyrus, Cyclosorus striatus, Melaleuca leucadendron* etc. This ecosystem is now in clear decline in the reserve;
- the estuaries between Lake Nokoué and the Atlantic Ocean and the Porto Novo lagoon and the Atlantic Ocean, representing the breeding grounds of several aquatic species and the marine intrusion environment of salt water into the river and the lake necessary for the functioning of the bodies and rivers;
- Flooded land, which is land that is periodically flooded by the overflow of watercourses during the flood. These lands are the growing areas for tomatoes, vegetables, peppers, corn and sweet potatoes. These are meadows with *Typha domingensis and Paspalum vaginatum, Cyperus papyrus and Cyperus esculantus* dotted with a few shrubs such as *Acacia auriculiformis, Ficus congensis etc.* They are also the feeding and nesting areas for waterbirds.

Some species typical of aquatic environments also deserve to be mentioned. For example, species such as the sitatunga, the African manatee, monitor lizards, white-cheeked otters and Palearctic and inter-African and sedentary migratory birds can be found there.

- **Potential for improvement and/or restoration**

The Greater Nokoué ecosystems are wetland ecosystems of international importance. They provide nesting, foraging, and preferred habitat for wetland birds and other taxa. These ecosystems, particularly the mangroves, have been restored and the species of fauna including the African manatee, the Sitatunga, and waterbirds have also already been the subject of numerous awareness-raising and periodic conservation activities by non-governmental organizations such as BEES-ONG, Nature Tropicale, CREDI-ONG, AMAF-ONG, etc. These experiments have been conclusive and indicate the

capacity of these ecosystems to restore themselves with human support.

Apart from mangroves, sacred forests have a high potential for restoration and recovery. To undertake enrichment or planting at the level of the greater Nokoué, the possibilities of natural regeneration of ecosystems and monitoring of terrestrial and aquatic animal species remain very little studied and evaluated. Research should be undertaken on the regenerative capacity, ecosystem dynamics and population dynamics of animal species in the reserve.

3.1.4. Socio-economic characteristics of Greater Nokoué

Greater Nokoué is an agglomeration that brings together the municipalities of Cotonou and Porto-Novo, the residential communes: Abomey-Calavi and Sèmè-Podji and the historic commune of Ouidah. In this cosmopolitan urban agglomeration, which represents a third of Benin's GDP, about 2 million inhabitants live together (RGPH4, 2013). Traffic in this geographical area is dominated by motorized two-wheelers, which are currently experiencing strong growth.

- ***Population of Greater Nokoué***

According to the General Population and Housing Census (RGPH4, 2013), the most populous commune of the five communes that make up the Grand Nokoué is the commune of Cotonou, which has 679012 inhabitants, followed by the commune of Abomey Calavi with 656354 souls. The historic commune of Ouidah comes in last place for a population of 162034 inhabitants. Many observers have indicated that the commune of Cotonou is less populated at night than its demography indicates. Indeed, this commune is populated during the day mainly because of its administrative nature. Workers come to carry out their activities during the day and return in the evening to residential communes such as Sèmè-Podji and Porto-Novo in the east, Pahou in the commune of Ouidah in the west and in the north in Abomey Calavi in particular. The population of Greater Nokoué is shown in Table 12.

Table 12: Population of Greater Nokoué

No.	COMMON	2013		
		Men	Wives	Total
1	ABOMEY-CALAVI	323.574	332.784	656.358
2	OUIDAH	78.596	83.438	162.034
3	COTONOU	325.872	353.140	679.012
4	PORTO-NOVO	126.016	138.304	264.320
5	SEME-KPODJI	109.594	113.107	222.707
Total		963652	907666	1984431

Source : RGPH4, 2013

- ***Agriculture***

In Greater Nokoué, the main crops are cassava, maize, rice and cowpeas for food crops, tomatoes, chilli peppers and okra for vegetable crops, oil palm and coconut palms for industrial crops. Peasants continue to practice slash-and-burn agriculture with rudimentary tools such as hoes, cutters, axes, etc.

maize, and cassava, the basis of the diet of the populations of the communes of Greater Nokoué, are by far the most important. More than 80% of the area sown per year is devoted to these two crops, which are found in the communes of Abomey Calavi, which ranks first in terms of food crop production, and then follows the commune of Ouidah. The two administrative and commercial municipalities of Porto Novo and Cotonou respectively bring up the rear in the field of food crop production. As for the most dominant market gardening production (tomatoes and peppers), the commune of Sèmè-Podji takes the lead. The communes of Abomey, Calavi and Ouidah follow suit, while Cotonou and Porto Novo occupy the front and last place respectively. Despite the significant production of food and vegetable agricultural speculation by the communes of Greater Nokoué, a significant gap still remains. To fill this gap, imports will have to be made from other surrounding or remote localities. The transport on board the field and the marketing of these products both within each of the communes of the greater Nokoué area and between these communes are carried out either by land or by river. The increasing density of the populations of Greater Nokoué (nearly a third of the country's population, i.e. 1985793 inhabitants living on only 1453 km2, i.e. less than a tenth of its area) requires the construction of functional and varied road infrastructure. For the most consumed agricultural products in Greater Nokoué, Table 13 is given.

Table 13: Most consumed agricultural products in Greater Nokoué

		Food products									Market garden products					
		Cassava			Maize			Rice			Tomato			Chili pepper		
No.	COMMON	2023-2024			2023-2024			2023-2024			2023-2024			2023-2024		
		SUP (Ha)	REND (Kg/Ha)	PROD (T)	SUP (Ha)	REND (Kg/Ha)	PROD (T)	SUP (Ha)	REND (Kg/Ha)	PROD (T)	SUP (Ha)	REND (Kg/Ha)	PROD (T)	SUP (Ha)	REND (Kg/Ha)	PROD (T)
69	ABOMEY-CALAVI	6 732	17 651	118 825	15 792	907	14 325	33	3 975	132	419	7 589	3 184	444	3 064	1 359
72	OUIDAH	1 487	15 796	23 490	13 600	754	10 250	10	2 474	26	842	9 599	8 085	124	3 219	400
77	COTONOU				0	0	0	0	0	0	3	26 328	73	16	3 293	52
62	PORTO-NEW	16	8 322	133	109	947	103	0	0	0	5	17 500	80	2	3 783	7
63	SEME-PODJI	178	13 198	2 348	446	829	370				608	23 484	14 280	689	6 132	4 228
	Total			144 797			25 049			157			25 702			6 047

Source : DSA/MAEP, 2024

- ***Elevage***

Livestock farming is not very developed in the communes of Greater Nokoué, poorly organized and constitutes a secondary activity for a few individuals; in the field of ruminant farming. Of the 133175 head of ruminants produced and counted in 2023 by the services of the Ministry of Agriculture, Livestock and Fisheries (MAEP), state services, sheep are the most produced in Greater Nokoué with the highest production observed in the commune of Abomey Calavi. Goats occupy the second place in terms of production of this speculation with the commune of Abomey Calavi still at the head of the pack and also in that of pig farming. Other categories of livestock such as rabbit farming, poultry farming, etc. are also produced in Greater Nokoué. The transport of animal feed, livestock, fattening and/or slaughter animals must be transported to their place of processing by both land and inland waterways. There is then a need to build these roads The table below presents the various most important animal species produced in Greater Nokoué

Table 14: Larger animal species produced in Greater Nokoué

No.	COMMON	Cattle	Goat	Sheep	Porcine
1	ABOMEY-CALAVI	5 228	27 019	38 329	28 304
2	OUIDAH	1 911	18 761	22 728	11 936
3	COTONOU	64	1 728	896	2 102
4	PORTO-NOVO	167	940	1 207	1 197
5	SEME-KPODJI	1 910	5 136	7 151	24 468
Total		9 280 53	584 70 311		68 007
			133 175		136014

Source : MAEP, 2023

- ***Fishing***

Fish production in southern Benin in general and in Greater Nokoué in particular has fluctuated with a catch tonnage that varies from one fishing category to another. According to information from the field, it mobilizes many people, both nationals and foreigners. However, the catch is becoming less and less abundant. The main fishing categories found in Greater Nokoué are:

Inland fishing

Inland fishing, mainly carried by the communes of Greater Nokoué, recorded a 2.8% decrease in 2023 compared to the last season, i.e. a production of 37,533 tonnes against 38,608 tonnes and 41,341 tonnes respectively in 2023 and the average of the last five years. Its weight in total fish production, which averaged 51.9%, fell to 43.3% in 2023. According to the Directorate of Agricultural Statistics (DSA), this drop may be due to the actions of the brigade for the surveillance of bodies and watercourses, which consist of the repression (seizure) of prohibited gear (fishing gear causing the overexploitation of fishery resources).

Artisanal maritime production

Catches from artisanal maritime production, also mainly carried out in the communes of Greater Nokoué, are estimated at 48,593 tonnes in 2023, compared to a quantity of 33,374 tonnes in 2022, an increase of 45.6%. This production also increased by 41.2% compared to the average of the last five years of 34,404 tonnes.

Industrial marine fishing

Industrial sea fishing, carried out mainly by the populations of Greater Nokoué, has represented on average over the last five years only 0.1% of total fish production. Its production fell by 26.1% and 47.9% respectively compared to 2023 and the average of the last five years. Indeed, its production, which was 113 tons in 2022, has declined to 83 tons in 2023.

- ***Commerce***

The trade sector is unevenly developed in the five communes of Greater Nokoué. This sector is more or less developed depending on the municipality. It is mainly run by small shopkeepers and retailers. There are several markets, including daily and periodicals. Among the daily markets, there are smaller ones that don't come alive. The larger ones come alive every day, such as the Dantokpa market in Cotonou and the Ouando market in Porto Novo. Other commercial infrastructures are proliferating in the communes of Greater Nokoué, such as the service stations that officially market petroleum products. In the built-up areas, informal sellers of adulterated petroleum products commonly known as "kpayo" can be found. In addition, several commercial units were observed there throughout the municipalities. These include cement sales depots; domestic gas; of SOBEBRA products and pharmaceutical products, bookstores, stations (public and private), hardware-plumbing, bakeries and pastry shops, etc. Also note the presence of bar-restaurants, hotels, mini-markets and supermarkets.

- **Road transport in Greater Nokoué**

In the communes of Greater Nokoué, there are many bus stations and organized motorcycle taxi drivers. The communes are linked to each other and to other neighbouring or distant communes by asphalted Inter-State Roads "RNIE1" from Togo to the Nigerian border via Ouidah. Transport activities in the communes of Greater Nokoué concern both goods and people. The transport of goods is provided by tricycles (commonly known as cloboto) and light vehicles (4 wheels or more) while the transport of people is provided by four-wheeled vehicles. Goods transport activities are intensified over three (3) days depending on the frequency of the Dantokpa market (the day before, the day of the market and the day after the day of the market). Freight transport activities take place mainly around the markets of the municipalities, between and within the municipalities and then between other localities far from the municipalities. The existence of motorcycle taxis known as "zémidjans" is also an asset for the transport of goods, but especially of people.

To ensure an easy flow of goods and people in Greater Nokoué, there is an urgent need to vary and modernize the currently existing transport infrastructure.

- **Importance of river-lagoon transport**

River-lagoon transport has many great advantages, the most important of which are the following: river-lagoon transport is economical, it is a low-noise and energy-efficient mode of transport and promotes the reduction of the carbon footprint, its traffic is fast, fluid, comfortable and safe at any time of the day. In the case of inland waterway transport, accidents are rare, so it is well suited to urban passenger transport.

- **Socio-community facilities and infrastructure**

In Greater Nokoué, there are several types of housing (modern housing, semi-modern housing, precarious housing). Modern housing can be found in residential areas such as the JAK district, Cité Vie Nouvelle, etc. The three types of housing are present in certain districts of Greater Nokoué where they rub shoulders easily. The number of socio-community infrastructures differs from one commune to another in Greater Nokoué. Although the availability of drinking water is declared effective in all the municipalities in the study area, its distribution remains unequal from one municipality to another and from one type of district to another. The peripheral districts of the municipalities are devoid of them compared to the central and residential districts. This observation is similar with regard to other socio-community infrastructures such as schools and colleges, dispensaries, maternity wards and health centres. The following table presents the socio-community infrastructures of Greater Nokoué.

Table 15: Socio-Community Infrastructure

No.	COMMON	% of households	Availability of drinking water	Primary school	College 1 cycle	Collège 1 is cycle et 2 nd cycle	Dispensary	motherhood	Comprehensive Health Center
1	ABOMEY-CALAVI	54,2	Yes	678	32	28	11	14	64
2	OUIDAH	53,2	Yes	75	04	04	03	03	10
3	COTONOU								
4	PORTO-NEW	64,5	Yes	147	1	11	00	00	13
5	SEEDS-KPODJI	59,1	Yes	102	02	08	3	2	05
Total		-	-	1002	39	51	15	19	92

Source : RGPH4, 2013

- **Global Analysis of the Vulnerability and Food Security (AGVSA) of the populations of Greater Nokoué**

The Consolidated Food Security Indicator Approach (CARI) developed by WFP to understand food security in all its dimensions is being used to analyse Globally Food Vulnerability and Food Security (AGVSA) in Benin in 2017. This approach allows food security indicators to be combined in a systematic and transparent way with the aim of establishing an explicit classification of households. On the basis of the CARI, each household surveyed is classified according to a composite food security index (Food Security Index) into four categories: food security (FS), borderline food security (FS), moderate food insecurity (AMI) or

severe food insecurity (HAI). The method of combining indicators including the food consumption score; The food expenditure share and livelihood-based survival strategies were used.

The food security report table for the departments of Littoral, Atlantique and Ouémé in which the communes of Greater Nokoué are located is as follows:

Table 16: Prevalence of food insecurity in Greater Nokoué

No.	Department	Food Safety (AS) in %	Limited food security (SAL in %)	Moderate food insecurity (AMI)	Severe Food Safety (IAS in %)
1	Atlantic	48,7	43,9	7,2	0,2
2	Littoral	79,3	19,1	1,9	-
3	Ouémé	79,3	19,1	1,9	-

Source: AGVSA, 2017 The CARI approach used to assess the situation of household food insecurity in August 2017 indicates through the table above that food insecurity presents relatively significant disparities depending on the communes of Greater Nokoué. Rural households are generally and more affected by food insecurity. Indeed, the majority (48.7%) of the population living in the communes of Ouidah and Abomey Calavi is food secure compared to 79.3% for the communes of Cotonou, Sèmè-Podji and Porto Novo. This means that these households are able to meet their basic food and non-food needs without using strategies that can jeopardize their livelihoods. (43.9% of the population of the communes of Ouidah and Abomey-Calavi compared to 19.1% of Cotonou, Sèmè-Podji and Porto Novo) live in conditions of limited food security. They have adequate food consumption, but are at risk of falling into food insecurity in the event of severe or frequent shocks. However, (7.4% of the population of Ouidah, Abomey Calavi compared to 1.9% of the population of the communes of Cotonou, Sèmè-Podji and Porto Novo) are food insecure, of which (7.2% of the population of Ouidah and Abomey Calavi compared to only 1.9% of the population of Cotonou, Sèmè-Podji and Porto Novo) are moderately food insecure and (0.2% of the population of Ouidah and Abomey Calavi) are severely food insecure. This means that these populations have deficient food consumption or that they can only meet their minimum food needs by using irreversible coping strategies leading, in the severe case, to a significant loss of their livelihoods or significant food deficits. The implementation of the Urban Mobility Project (PMU) remains an opportunity for the categories of the population living in food insecurity to get out of their comfort zone.

The food security index, which is a composite indicator based on the food consumption score, the share of food expenditure and livelihood-based survival strategies, was also used. The AGVSA data, 2017 above show that 7.2% of households in the communes of Ouidah, Abomey Calavi against 1.9% of households in Cotonou Sèmè-Podji and Porto Novo have inadequate food consumption, i.e. inappropriate in terms of frequency and dietary diversity. In addition, 0.2% of households in the communes of Ouidah and Abomey Calavi spend more than 75% of their budget on food (AGVSA, 2017). This means that the remaining part of the budget is very limited to cover other types of expenses such as health costs, schooling, purchase of inputs, etc.

Finally, according to AGVSA, 2017, the percentage of food-insecure households in the Greater Nokoué area remains one of the lowest compared to other localities in the country and is between 5% and 10%. This result supports the hypothesis that "rural households are generally and more affected by food insecurity". In the long term, the (PMU) will contribute to the reduction of this food insecurity gap in Greater Nokoué by the implementation of its various components.

- **Wholesale product supply system in Greater Nokoué**

The grouping markets on the outskirts of the major cities of Greater Nokoué such as Cotonou, Abomey-Calavi and Porto-Novo, etc., provide market garden products to retailers and supermarkets. The perishable nature of these products leads sellers to the practice of the daily supply system on board the field in times of abundance. They do import these products from neighbouring regions and countries in the event of a shortage.

- **Presentation of the Grand Nokoué Agri-Food Cluster in Abomey-Calavi**

The strategic economic pole with an area of 168 ha 18 a currently under construction in the commune of Abomey Calavi is part of the Government's efforts to modernize commercial spaces and improve the working conditions of traders. The implementation of the PMU will facilitate the flow of goods and merchandise in this market.

- **Description of the receiving environment/fluvio-lagoon transport*, State of play and the question of acadjas***

The river-lagoon transport sector in Benin is mainly informal, with local transporters operating without much structure or strict regulation. The canoeists provide the trips according to demand, depending on the weather conditions and water levels. Transportation costs are relatively affordable, but not standardized. This service is provided by means of motorized or non-motorized canoes, with or without roofs. This means that at the current stage of the development of river-lagoon transport, Benin does not have experience in managing this service by water buses.
Embarkation and disembarkation docks are rudimentary, if not non-existent, especially in lakeside villages. Little public investment in boat upgrades and access points. The waters of Lake Nokoué are polluted by domestic, industrial and agricultural waste. There is a degradation of the ecosystem due to overfishing, siltation and uncontrolled human activities.

Boats are often overcrowded and do not always meet safety standards. Protective equipment, such as life jackets, is scarce or absent.

In addition, despite the ban on the practice of "acadja" (framework law n°2014-19 of 7 August 2014 on fishing and aquaculture in the Republic of Benin prohibits the establishment and exploitation of acadjas) and other forms of fishing, they occupy large portions of the water bodies, particularly on Lake Nokoué and the Porto-Novo lagoon. making some areas impassable for boats. They create physical obstacles, limiting the fluidity of river-lagoon routes. The density of

"Acadja" aggravates the siltation of water bodies. Their proliferation contributes to the degradation of water quality, affecting biodiversity and the aquatic ecosystem. The sector suffers from a lack of formal regulation, making it difficult to organise a reliable and secure transport system. River-lagoon transport in Greater Nokoué has strong economic potential, particularly for local trade and tourism, but remains underdeveloped. The Grand Nokoué, with its dense network of rivers, is ideal for developing efficient and structured river transport. The proximity of major urban markets (Dantokpa in Cotonou, and the wholesale market under construction in Abomey-Calavi for example) offers potential for the sale of agricultural and fishery products. Tourist sites such as Ganvié, nicknamed the "Venice of Africa", and the Aguégués can be enhanced thanks to organized river transport circuits.

Description of the receiving environment / relating to zemidjan

The two-wheeled transport sector in Greater Nokoué is artisanal with unprofessional and less structured players using a fleet of two-wheelers that are not very modernized. Its actors, commonly known as "zémidjan", constitute the main mode of individual transport in Greater Nokoué. This activity is important to compensate for the lack of public transport.

Risks related to the professionalization of drivers in Zémidjan

The professionalization of drivers in Zémidjan is a source of several risks, the main ones being as follows:

- **Risk of a drop in income for certain players and for petrol motorcycle mechanics.**

During professionalization, some actors, such as the zémidjans who do not have enough financial means to integrate into the process, will be forced to abandon the motorcycle driving activity. This situation will contribute to a lasting reduction in the income generated in the activity among them. Also, mechanics who specialize in the repair of two- or four-person motorcycles (motorcycles using petrol and motor oil) and who also do not have the means to integrate into the system will see their income fall.

It will be planned to strengthen the capacities of these actors in the field of electric motorcycle repair.

- **Risk of reduction of traffic arteries in the Zémidjans**

The professionalization of drivers in Zémidjan will be a source of reduction in traffic arteries for motorcyclists, including Zémidjans. They will therefore be prohibited from driving on arteries reserved for four-wheeled vehicles.

- **Risk of proliferation of WEE (Electrical and Electronic Waste)**

The professionalization of Zémidjan's drivers led to the transition from four- or two-stroke motorcycles (petrol and oil motorcycles) to electric motorcycles. The proliferation of this last category of motorcycle will be a source of proliferation of Electrical and Electronic Waste.

- **Risks related to the loss of jobs among mechanics specializing in the repair of two- or four-stroke motorcycles (gasoline-powered motorcycles) and zemidjans**

A significant part of mechanics who specialize in repairing two- or four-stroke motorcycles (gasoline motorcycles) who will not be able to fit into the process in one way or another will lose their jobs. The consequence of this situation is the drop in income. The same will apply to drivers of two- or four-stroke motorcycles (gasoline-powered motorcycles) in a similar situation as before.

- **Context of road safety in Greater Nokoué**
- **Increasing demand on the road sector**

Road traffic is very high in the cities of Greater Nokoué with an average of about 32,000 UVPs. In Cotonou, it reaches almost 70,000 UVP/day. But in the absence of a real mode of mass transport, users who are more financially well-off turn to personal modes of transport and motorcycle taxis, while the less affluent make more use of existing public transport (city taxis and minibuses and buses).

- **Land tenure**

In Benin, and mainly in Greater Nokoué, the socio-economic conditions characterized by the mutation of habits and customs, the unbridled race for illicit enrichment, and the birth of a new class of landowners have undermined the customary conception that land is a sacred asset that cannot be sold. The main problems in terms of land are:

- The lack of knowledge of their rights, of the functioning of the judicial institution which often prevents poor populations and inhabitants, as owners of plots of land, from facing administrative procedures in order to obtain their land titles; The inability of the Beninese State to regulate land tenure, to register all urban centers to implement a policy of awarding title deeds to those who may be entitled to a permanent land service;
- The sterilization of part of private savings through land hoarding.
- Rampant land speculation;
- The questioning of the rights of the buyers of plots by the heirs of their sellers.

In addition to these problems, there are others that create real land insecurity:

- Errors in the identification of rights holders. It is never certain that the seller has the right to sell the land;
- Poor identification of the terrain to which a transfer relates. The land that is thought to have been purchased is not always the one designated on the land title;

The administration itself considers that, as long as a land title has not been granted over 99% of a territory, it remains entitled to exercise a kind of property right that can go as far as taking the land it needs

3.2. Major environmental and social issues in Greater Nokoué

3.2.1. Environmental issues

Greater Nokoué has environmental problems ranging from poor solid waste management to air pollution, including inadequate management of wastewater, faecal sludge, degradation of vegetation cover, degradation of natural resources, coastal erosion, soil erosion and declining fertility of arable land, disturbance of aquatic ecosystems, etc. Since the installation of SGDS SA in 2018, there has been an improvement with a new waste management system. However, there are some difficulties for certain types of waste, including waste electrical and electronic equipment and faecal sludge.

There are multiple nuisances and environmental impacts relating to waste management (household waste, waste from markets, train stations, hospitals and industries, waste from the informal economy including car wrecks, etc.), which are multifaceted and omnipresent in most of the municipalities concerned.

In addition, air pollution in Greater Nokoué is mainly due to the release of dust from the cement industries of Cotonou and Sèmè-Podji, and smoke generated by the Beninese Brewery Company. Also, there are olfactory nuisances from the faecal sludge treatment plant of Sèmè-Okoun in the commune of Sèmè-Podji and Somè in the commune of Abomey-Calavi, not to mention the Ouèssè landfill site in the commune of Ouidah, etc.

Coastal management poses enormous environmental problems, including coastal erosion. It is manifested by a significant advance of the coastline in the interior of the continent with a catastrophic degradation of the coastline in the strict sense. Buildings are swallowed up in the Atlantic Ocean, road infrastructure damaged, etc. The situation is visible and deplorable in the communes of Sèmè-Podji and Cotonou. Also, the situation in Greater Nokoué in terms of the continued deterioration of the living environment due to flooding and poor hygiene and sanitation conditions is far from ideal.

Indeed, water and the environment are polluted by open defecation, poor management of household waste and wastewater or animal waste. This waste disrupts aquatic ecosystems. However, the efforts of SGDS SA have made it possible to reduce its waste and clean up the banks in the communes of greater Nokoué.

Attached to each of these problems are one or more complex, systemic issues, the most significant negative impacts of which can be observed on economic production and the well-being of populations.

The Nokoué lagoon is threatened by several factors such as overfishing, pollution, urban expansion, or the proliferation of invasive plants such as water hyacinth. Not to mention the effects of climate change, which modifies the hydrological cycle and promotes coastal erosion and sea level rise. In order to preserve this lagoon and put in place a sustainable management plan, it is crucial to understand and monitor its evolution, and in particular its salinity.

Abstracting from the hierarchy, and in a very synthetic way, we can list, by municipality, the following problems as being the most crucial and which are of an environmental nature:

- **Municipality of Cotonou:** (i) flooding and coastal erosion, (ii) air pollution, (iii) poor waste management, (iv) poor hygiene and sanitation conditions, (v) noise pollution.

- **Municipality of Porto Novo:** (i) poor hygiene and sanitation conditions; flooding and poor waste management; (ii) air pollution; (iii) soil erosion and declining fertility of arable land; (iv) degradation of vegetation cover.

- **Municipality of Sèmè Podji**: (i) flooding and coastal erosion (accentuated by the excessive exploitation of sea sand), (ii) soil erosion and decline in the fertility of arable land, (iii) degradation of plant cover, (iv) poor waste management, (v) poor hygiene and sanitation conditions.
- **Municipality of Abomey-Calavi**: (i) continuous degradation of the natural resources necessary for economic and cultural production (genetic erosion and deforestation, loss of biodiversity, impoverishment of agricultural land, etc.), (ii) loss of productivity of the various ecosystems accompanied by impoverishment and excessive exploitation of the resources still available, (iii) poor hygiene and sanitation conditions: poor waste management (iv) degradation of lake ecosystems: pollution, filling and siltation of water bodies.
- **Municipality of Ouidah**: (i) coastal erosion and saline intrusion into wetland ecosystems, (ii) extensive degradation of wetlands and fisheries, (iii) poor hygiene and sanitation conditions, (iv) flooding, poor waste management.

3.2.2. Socio-economic and cultural issues

These issues concern:

- **The creation of jobs and gains for local populations.** The implementation of the PSUM-GN in the cities of Greater Nokoué will require the recruitment of local labor and the creation of income-generating activities through small businesses for women in this case. There are also social issues in terms of preserving social peace in the event of a lack of transparency in the choice of sites to house the infrastructure.

- **Disruption of activities:** the presence of many small business units and small trades that open directly along the various routes of the project will be disrupted.

- **Cultural property, places of worship and sacred sites**: in terms of archaeological and cultural heritage, the implementation of the SUMP-GN can lead to the displacement of cultural property and fortuitous discoveries.
- **The loss of built property:** the presence of residential houses encroaching on the project's rights of way in the different neighbourhoods is observed, but to different degrees. This social aspect will require involuntary displacement and compensation in compliance with land and urban planning regulations.

Among the social aspects to be taken into account, there are also the networks (water, electricity and Benin Telecom) that will have to be moved or avoided during the works.

3.2.3. Health and safety issues

The implementation of the PSUM-GN will have several health issues as follows:

- **The health of corridor users and residents**: this type of issue is part of public health. Indeed, the implementation of the SUNDP-GN in the cities of Greater Nokoué may create the risk of new cases of malaria, especially following the proliferation of mosquitoes, HIV/AIDS/STI and COVID 19. It is important that measures be taken to reduce the multiplication of these risks.

- **The safety of workers, users and residents of the project's reception sites**: This type of issue is a matter of occupational health and safety and public health. The activities contain potential risks, including work accidents, traffic accidents, etc. Taking appropriate safety measures is necessary for the smooth running of the project.

- **The security of facilities and investments**: The security of facilities and investments is threatened by cases of theft or acts of vandalism of equipment and infrastructure. Its control requires the establishment of a lighting system and committees for monitoring and guarding infrastructure and equipment on construction sites.

- **Improving the health of local populations**: The implementation of this project will contribute to improving the health of the populations because waste will be better managed. This clearly contributes to the well-being of the population. Because a Waste Management Plan will be developed.
- **Risk of contamination**: the accidental spillage of used products and oils can create a foul odor and contribute to the pollution of waterways and bodies of water in the cities of Greater Nokoué.
-

3.2.4. Issues related to gender-based violence (GBV) in the project area of intervention

In the PSUM's area of intervention, gender-based violence will affect both uneducated women and those living in a polygamous regime and from poor households, and girls who are not in school. In the four communes of Greater Nokoué, the project's area of intervention, GBV care centers exist, these are Social Promotion Centers.

GBV incidents can occur, especially at project sites during the implementation phase and during the use of the various infrastructure planned by the project. The project must therefore contribute to reducing this disparity and set up a GBV management mechanism in the project's intervention area.

3.2.5. Gender issues and youth employment in the project area

Despite their recognized economic importance, women in the five communes of Greater Nokoué continue to face discriminatory practices that seriously limit the chances of the majority of them to achieve the empowerment that would truly improve their living conditions. This situation is at the root of the low rate of girls' schooling, the high rate of illiteracy among women, women's low access to land inheritance and various forms of physical, sexual, psychological and economic violence that continue to take place in an insidious manner. In addition, in this geographical area of the country, women participate in various income-generating activities

as part of their strategy to diversify their families' livelihoods and sources of nutrition. In its implementation, the project must take this issue into account to avoid discrimination.

3.2.6. Issues related to river-lagoon transport in Greater Nokoué

River-lagoon transport is a traditional and essential mode of transport, which plays a key role in the mobility of populations and the supply of urban markets, particularly in areas where rivers, lagoons and lakes dominate the landscape. It consists of using natural waterways such as rivers, lagoons and lakes to ensure the mobility of people and the transport of goods. This form of transport is particularly active in southern Benin, particularly in the Greater Nokoué region, which includes the communes of Cotonou, Abomey-Calavi, Sèmé-Podji, Porto-Novo and Ouidah and communes such as Sô-Ava and Aguégués.
This sector faces structural and environmental challenges that limit its potential.

4. POLICY, LEGAL AND INSTITUTIONAL FRAMEWORKS FOR ENVIRONMENTAL AND SOCIAL ASSESSMENTS

This chapter describes the World Bank's policy, legal, environmental and social safeguard frameworks applicable to the project, and the institutional framework for the implementation of the ESMC.

4.1. Policy, legal and institutional frameworks for the implementation of the project

4.1.1. National political and strategic framework for the implementation of the project

Benin has a legal arsenal made up of policy and strategy documents related to environmental management, the promotion of hygiene and basic sanitation and the promotion of gender and social inclusion for the implementation of development projects such as the GURP-GN.

Table 10 presents the environmental and social policies/strategies, plans and programmes related to the activities of the Grand-Nokoué Sustainable Urban Mobility Project.

Table 17: Environmental and Social Policies/Strategies, Plans and Programs Related to SUMP-GN Activities

Texts	Major provision related to the implementation of the Project	Relevance to Project Activities
Environmental Action Plan (EAP)	Since then, the Environmental Action Plan (EAP) has been the framework document for environmental management in the Republic of Benin. It comprises seven (07) sub-programmes planned for an initial horizon of fifteen (15) years and whose overall objectives concern i) the strengthening of national capacities ii) the conservation and sustainable use of biological diversity and natural resources iii) the improvement of the living environment of populations in both rural and urban areas iv) the improvement of decision-making and good governance in environmental matters. The 2001 Environmental Action Plan (EAP) defined the following strategic axes for the energy sector: - Taking into account renewable energies; - Sustained attention to the environmental impacts related to the management of conventional energies; - taking into account the fragility of the sites where equipment in the Energy sector is located; - The adoption of filtering procedures, such as environmental impact assessments; - Sustained monitoring of energy activities; - Education of all relevant stakeholders	The work to open the tracks may lead to the loss of plant species and environmental pollution. The SUMP-GN will have to take the necessary measures to preserve the living environment of the beneficiaries' populations and preserve natural resources such as rivers, flora, soil, fauna, etc.

Texts	Major provision related to the implementation of the Project	Relevance to Project Activities
National Environmental Management Program (PNGE)	The objectives of this programme are as follows: to integrate the environment into all Projects, to contribute to the protection and sustainable management of the environment, to strengthen the management capacities of future municipalities, to ensure the acquisition by the populations of the knowledge, values, behaviours and practical skills necessary in environmental management, and to develop a national capacity in environmental information management.	The implementation of this Project could lead to negative and sensitive environmental and social impacts and risks for individuals or groups of people or local communities around its area of intervention. To this end, the Project will strengthen the capacities of actors and institutions in charge of the environment.
National health policies, strategies and plans	Benin adopted a National Health Policy document in 2008 based on an objective analysis of the current health situation and the clear identification of its problems. This National Health Policy is the result of broad consultations between the main actors in health development. The objectives and orientations of this national health policy are part of the perspective of ensuring the permanent availability of quality medicines and health consumables, the effective implementation of the coercive measures provided for in the legislative texts on hygiene and basic sanitation, continuous training and the promotion of access to scientific information in the health sector, updating norms and standards for the construction and equipment of health infrastructures at all levels of the health pyramid and defining a regulatory framework governing the purchase, donation, management and use of medical equipment and devices.	The implementation of the SUNDP-GN may lead to health risks such as work accidents, COVID-19 contamination, risks of Sexual Exploitation and Abuse and Sexual Harassment (SEA/HS). As part of the Project, the various actors will be involved in popularizing good hygiene and health practices, in particular the respect of barrier gestures in the context of COVID 19, the prevention of GBV practices.
National Strategy for the Promotion of Basic Hygiene and Sanitation (SNPHAB)	In Benin, the political, legislative and institutional framework for the hygiene and sanitation sector has improved with the review and/or development of a number of texts. Thus, in 2012, the new National Hygiene and Sanitation Policy (NHSP) document was developed and adopted by the Beninese Government and replaced the National Sanitation Policy (NAP) document drawn up in November 1994. In addition to this text, there are sub-sectoral strategy documents, including: - Law No. 2022-04 of 16 February 2022 on Public Hygiene in the Republic of Benin - The Strategic Plan for Urban Sanitation - The Basic Hygiene and Sanitation Promotion Strategy Document - The National Strategy for Solid Waste Management in Benin.	The implementation of the activities of this Project could lead to the production of solid waste, the degradation of the living environment and the health of the population. The Project will have to take steps to promote good hygiene and sanitation practices as part of the implementation of the sub-projects.

Texts	Major provision related to the implementation of the Project	Relevance to Project Activities
National Waste Management Strategy	Adopted in 2008, the National Waste Management Strategy focuses more particularly on household solid waste with the following objectives: - Ensure waste management without endangering public health or the environment; - Encourage the quantitative and qualitative minimization of waste production; - Establish methods and propose infrastructures and equipment to ensure disposal at the lowest economic and environmental cost. It concerns the complete household waste chain from pre-collection (from the production sites to the collection point) to treatment (which includes disposal and/or recovery), including collection and transport. It specifies the waste management framework produced within the framework of the Project.	Within the framework of the PSUNC-GN, the production of waste and environmental degradation will be in the construction of infrastructures. It will therefore be necessary to develop a management plan for these different types of waste.
National Policy for the Promotion of Gender adopted in 2008	Benin is making progress towards gender equality and has adopted a national policy (National Policy for the Promotion of Gender, PNPG) that aims to achieve this goal by 2025 through the promotion of participation in decision-making and better access to and control of productive resources, among others. In line with this effort, the country has recently adopted a national policy to promote the gender dimension, including access to energy, as a follow-up to the ECOWAS. The implementation of the National Policy for the Promotion of Gender in Benin is guided by the following principles: (i) communication for behaviour change, (ii) capacity building for gender internalisation, (iii) the intervention logic of the PNPG must be the common thread of its implementation, (iv) to have it done, lobbying/advocacy, support and steering/guidance/monitoring and evaluation and (v) positive discrimination against men or women. The vision of the Promotion of Gender in Benin is formulated as follows: By 2025, Benin is a country where equality and equity promote the participation of men and women in decision-making, access to and control of productive resources for sustainable human development. The strategies adopted are formulated as follows: - First strategy: to put in place measures to make equality and equity between men and women effective in access to education, literacy and	The SUNP-GN plans to better involve women (entrepreneurs, female-headed households, clients) and ensure equal access to the SUNC-GN infrastructure that will be built and the socio-economic benefits associated with it. The implementation of the infrastructure will serve as a lever for the promotion of magazine-generating activities for women through better accessibility to their products

Texts	Major provision related to the implementation of the Project	Relevance to Project Activities
	decision-making structures in all spheres (individual, family, community, national and international); - Second strategy: strengthen the institutionalization of gender at all levels, as well as the effective application of national and international conventions and texts that promote equality and equity between men and women; - Third strategy: strengthen the commitment of civil society and the awareness of women and men for the promotion of gender while ensuring the proper involvement of men in the process; - Fourth strategy: ensure women's empowerment and gender mainstreaming in PDC; - Fifth strategy: reduce women's income poverty and ensure equitable access to and control over resources.	

Source: IRC document review, October 2024

4.1.2. Environmental conventions, agreements and protocols ratified by Benin for the preservation of the environment

The international conventions, agreements and protocols ratified by Benin and relevant to the implementation of the SUMP-GN are presented in Table 11.

Table 18: Ratified Multilateral Conventions/Agreements Directly or Indirectly Relevant to the NSMP-SRIP

No	Title of the Convention / Agreement/ Protocol	Date of ratification by Benin	Objective of the Convention/Agreement/Protocol	Aspects of the Project activities and arrangements
01	Convention on Biological Diversity and the Sustainable Use of its Components	June 30, 1994	Three main goals: - Conservation of biodiversity; - Sustainable use of its components; - Fair and equitable sharing of benefits arising from the use of genetic resources	Project activities may have impacts on sensitive ecosystems. To this end, the ESIAs that will be carried out will propose measures to mitigate these impacts. These measures will be reinforced by the development and implementation of the PGES-Construction Company Site
02	Convention on the Protection of the World Cultural and Natural Heritage	September 14, 1982	To ensure the identification, protection, conservation, enhancement and transmission to future generations of cultural and natural heritage	The operational phase of the sub-projects will respect the integrity of the communities' cultural sites. The Project integrates the objectives of protecting cultural and natural heritage through the development of guidelines for the protection of physical cultural resources in the present

No	Title of the Convention / Agreement/ Protocol	Date of ratification by Benin	Objective of the Convention/Agreement/Protocol	Aspects of the Project activities and arrangements
				CGES. The measures to be taken by the SUMP-GN to comply with this provision are: – Protect cultural heritage from the negative impacts of sub-Project activities and ensure their preservation; – Encourage the organization of in-depth consultations with stakeholders on cultural heritage;- Promote the equitable sharing of benefits arising from the use of cultural heritage.
03	African Convention on the Conservation of Nature and Natural Resources	November 5, 1998	This convention aims at the conservation of nature and natural resources. It unquestionably laid the foundations for the fundamental principles that govern Biosphere Reserves today, namely: - taking into account customary rights and uses; - the conservation of natural resources as an integral part of management plans; - Inter-African cooperation in the conservation and management of natural resources	The SUMP-GN will have to take the necessary measures to preserve the living environment of the beneficiaries' populations and preserve natural resources such as rivers, flora, soil, fauna, etc.
04	Stockholm Convention on Persistent Organic Pollutants (POPs)	May 2001	The main objective of this convention is to protect human health and the environment from Persistent Organic Pollutants (POPs). Through this convention, Benin has committed itself alongside the international community in the fight for the elimination of these substances.	The implementation of the activities of this Project may lead to the production of solid waste, the degradation of the living environment and the health of the population. The Project will have to take steps to promote good hygiene and sanitation practices in the implementation of the sub-projects. Soil pollution due to the accidental leakage of used oil.

Source: literature review, IRC, September 2024

Table 11 summarizes the elements showing Benin's willingness to equip itself with all the legal and political means necessary to manage its environment and, above all, to contribute to environmental conservation during the implementation of the Project.

4.2. Legislative and regulatory framework for the implementation of the Project

4.2.1. Legislative framework for environmental management

The legislative framework on the environment includes a number of laws, namely:

- **Law No. 90-032 of 11 December 1990 on the Constitution of the Republic of Benin as amended by Law No. 2019 - 40 of 7 November 2019**

The Constitution of Benin makes the environment and sustainable development one of its priorities. Article 27 of the Constitution of the Republic of Benin stipulates that "Everyone has the right to a healthy, satisfactory and sustainable environment and has the duty to defend it. The State shall ensure the protection of the environment".

Article 98 states that "the law shall determine the fundamental principles of environmental protection and conservation of natural resources". Finally, Article **74 of the Constitution** elevates to the rank of high treason by the President of the Republic, acts detrimental to the maintenance of a healthy, satisfactory, sustainable environment that is conducive to development.

The principles set out in the above-mentioned articles have been referred to in this report, insofar as they establish the necessary and useful conditions for the protection not only of the environment but also of the population, through the implementation of any development plan, programme and project.

Other legal texts clarify and operationalize this provision. These include:

- **Law No. 98-030 of 12 February 1999 on the framework law on the environment in the Republic of Benin**

  It includes provisions relating to the clarification of concepts, sanctions, the protection and enhancement of receiving environments, the protection and enhancement of the natural environment and the human environment, pollution and nuisances, impact studies, public hearings on the environment, emergency plans and incentives. This law is the basic text of the national environmental policy, in the sense that it covers all relevant aspects ranging from all sources of pollution to their control and enforcement, including environmental assessments (Strategic Environmental Assessment (SEA), Environmental Impact Assessment (EIA), Environmental Audit (EA), Environmental Inspection (EI), capacity building and environmental information management. Sections 88, 89 and 122 of the Act make environmental assessment mandatory.

- **Law No. 2022-04 of 16 February 2022 on Public Hygiene in the Republic of Benin**

This law applies to hygiene on public roads and squares, hygiene of dwellings, hygiene of water, hygiene of foodstuffs, etc. Articles 4, 8, 9, 10 and 12 of this law prohibit acts likely to undermine public health at the same time, while article 3 authorises any environmental police officer to keep a permanent watch on public health.

- **Law No. 2010-44 of 24 November 2010 on water management in the Republic of Benin**

It lays down the principles of qualitative and quantitative protection of surface and groundwater resources. Article 14 of this law clearly states that the pollution of water resources is prohibited. This law will be applied as part of the implementation

of the Project, as the Project's activities may result in water pollution from waste (accidental oil spills, DTTs, etc.).

- **Law No. 2002-016 of 18 October 2004 on the wildlife regime in the Republic of Benin**

It aims at a rational and participatory management of wildlife and its habitats, the management of protected areas and the protection of threatened, vulnerable or endemic species. The implementation of the Project, including land clearing activities, may result in the degradation of wildlife habitat.

- **Law No. 98-004 of 27 January 1998 on the Labour Code in the Republic of Benin**

It clearly defines the legislative and regulatory mechanisms for occupational health and safety management. Article 182 of this Law stipulates that "in order to protect the life and health of workers, the employer is obliged to take all necessary measures that are appropriate to the operating conditions of the enterprise, etc."

Similarly, according to Article 183 of the same Law, "every employer is required to organise practical and appropriate training in health and safety for the benefit of newly hired employees, those who change jobs or techniques and those who return to work after a work stoppage of more than six months. This training must be updated for the benefit of all staff in the event of a change in legislation, regulations or work procedures";

- **Law No. 93-009 of 2 July 1993 on the forest regime in the Republic of Benin**

The Act enacts provisions on "management, protection, exploitation of forests, trade and industry in forest and related products". Project activities may result in ecosystem modification. This is why this law advocates the more efficient and rational use of resources.

- **Law No. 2017-05 of 29 August 2017 laying down the conditions and procedure for hiring, placing the workforce and terminating the employment contract in the Republic of Benin**

It publishes the provisions on the procedures for hiring and placing workers and the conclusion of the employment contract and the termination of employment relations between employers and employees in the Republic of Benin. The implementation of the activities of the SUNP-GN is called into question by this law because its implementation could cause risks or negative impacts on the health and safety of workers and the local population if appropriate measures are not taken.

- **Law No. 2017-05 of 29 August 2017 setting the conditions for hiring, placing workers and terminating the employment contract in the Republic of Benin**

Article 3: Any head of establishment or enterprise or any employer shall freely recruit his or her staff who benefit from occupational safety and health benefits. However, he is required to inform the competent services of the Ministry of Labour of the posts for which recruitment has been carried out. It also registers and enrols workers with the structures in charge of social protection.

- **Law No. 2005-31 of 5 April 2006 on the prevention, care and control of HIV/AIDS in the Republic of Benin**

The presence of staff in all phases of the implementation of the sub-project is a source of intermingling between them and the community. There are therefore risks of the spread of HIV/AIDS. It is therefore appropriate that the various sites that will be opened during the construction phase, as well as the activities in the operation phase, be carried out in accordance with the law, in particular Articles 14 to 16 and 18 to 20.

4.2.2. Legislation specific to EAS / HS, discrimination, equality

The following legal provisions may be retained: Law No. 90-32 of 11 December 1990 on the Constitution; the Republic of Benin as amended by Law No. 2019-40 of 7 November 2019 and Law No. 2003-03 of 3 March 2003 on the suppression of the practice of female genital mutilation in the Republic of Benin; Law No. 2003604 of 3 March 2003 on sexual and reproductive health; Law No. 2002-27 of 24 August 2004 on the Code of Persons and the Family and Law No. 2006-19 of 5 September 2006 on the repression of sexual harassment and protection of victims in the Republic of Benin

- **Law No. 2006-19 of 5 September 2006 on the Suppression of Sexual Harassment and Protection of Victims in the Republic of Benin**

The activities of the sub-project must be in accordance with articles 1, 2, 8 and 21 of the Law on the Suppression of Sexual Harassment and Protection of Victims in the Republic of Benin. All forms of sexual harassment constitute an offence regardless of the status of the perpetrator or victim and regardless of where the act was committed. The victim's vulnerable situation may result from his or her age, social and economic status, as well as his or her physical or mental state or any other related situation left to the judge's discretion. Article 8 of that law states that no one may take into consideration the fact that the person concerned has suffered or refused to be subjected to the acts defined in Article 1 or has testified to such acts or has reported them, in order to decide, in particular with regard to recruitment, remuneration, training, assignment, qualification and redeployment, professional promotion, transfer, termination or renewal of employment contracts or disciplinary sanctions. In the event of non-compliance with this law, any person who is guilty of sexual harassment shall be punished by a fine of one hundred thousand (100,000) to one million (1,000,000) CFA francs and imprisonment from one (01) year to two (02) years or by one of these two penalties only.

- **Law No. 2011-26 of 9 January 2012 on the prevention and punishment of violence against women**

The project activities must be carried out in accordance with Articles 17 and 21 of the Act. Article 17 of the Act stipulates that the State must make effective the enjoyment by women of their rights to physical and moral integrity, freedom, security and equality and non-discrimination on grounds of sex. According to Article 21, an employee who is a victim of violence inside or outside the company will be entitled, at her request and after the assent of the occupational physician, to a temporary reduction or reorganization of her working hours, to a geographical transfer, to an assignment to another establishment, to the suspension of her employment contract and to resignation without notice. At the end of the suspension of her employment contract, the employee returns to her previous job. Women employed as employees in the project must be treated in accordance with the requirements of the law.

In addition, article 31 of the Act provides that any person who is guilty of or complicit in a forced or arranged marriage or forced cohabitation, as defined in article 3 of this Act, shall be punished by imprisonment for a term of one (01) to three (03) years and a fine of five hundred thousand (500,000) francs to two million (2,000,000) francs. The provisions

of these laws, specify acts that are detrimental to sexual life and the related penalties. Thus, any offender is exposed to the rigours of the law.

- **Law No. 2021-11 of 20 December 2021 on special provisions for the punishment of offences committed on the basis of the sex of persons and the protection of women in the Republic of Benin**

This law also includes the protection of women in the workplace, with regard to harassment. To this end, article 27 of this law provides in paragraph 6 that the resignation or agreement of the parties due to sexual harassment or rape is deemed to be dismissal. In addition, any dismissal following sexual harassment or rape is always abusive, when these offences are established by the competent criminal court, according to paragraph 2 of the new article 30 of this law. The promoter of this project must ensure compliance with the provisions of this law for the smooth running of the activities.

4.2.3. Texts on decentralization in Benin

Decentralization has been effective in Benin since March 2003. It now grants the local level very broad responsibilities in terms of environmental management and spatial planning. In this case, Law 97-029 of 15 January 1999 on the organization of the Communes in Benin, states that the Commune is fully competent in areas such as sanitation, waste management, environmental and natural resource management in particular. It is the municipal level that must implement all national strategies relating to the protection of the environment and natural resources within its territorial jurisdiction.

In addition, "the Municipality develops and adopts its development plan". It ensures that it is carried out in harmony with national guidelines with a view to ensuring the best living conditions for the entire population. In this context, it prepares: − The necessary planning documents: − The master plan for the development of the municipality; − The economic and social development plan; − Urban plans in agglomerated areas; − Rules relating to land use and use; − The detailed plans for urban development and subdivision; − It issues housing permits, building permits; − It ensures the permanent control of the compliance of achievements and contributions with the regulations in force".

- **Law No. 2021-14 of December 20, 2021 on the Code of Territorial Administration in the Republic of Benin**

According to this law, the commune is the decentralized territorial collectivity in the Republic of Benin (Article 24). The municipality has its own powers as a decentralised local authority. It contributes with the State and other local authorities to administration, regional planning or economic, social, health, cultural and scientific development, as well as to the protection of the environment and the improvement of the living environment (Article 26). Through this law, the municipalities of Abomey-Calavi, Cotonou, Ouidah, Porto-Novo and Sèmè Podji will have a look at environmental and social management both during the construction and operation phases of the project.

In addition, the application of environmental regulations and the various Information, Education Communication (IEC) activities for site staff, users and residents (young people, women, men) of the site also involve the participation of local authorities.

The application of environmental regulations, the negotiations for possible compensation, the implementation of a prevention system against Covid-19 on the site, the organization of awareness-raising sessions for staff, users and residents (young people, women, men) of the site on Covid-19, GBV therefore involve the participation of local authorities.

4.2.4. Environmental management instruments in Benin

Prevention and management instruments

The instruments in force in this area are: − the Environmental and Social Impact Assessment (ESIA); − environmental auditing (EA); − the public hearing on the environment; − emergency plans; − incentives.

This procedure leads to the issuance of a certificate of environmental compliance and is supplemented if necessary by the public hearing procedure.

For twenty-two years (1999 to 2021) and especially since the entry into force of the framework law on the environment (law promulgated on February 12, 1999) and the creation of the EBA, the practice of environmental impact studies has been fairly well known in Benin. In this context, practical guides have been published to explain the approach and to guide developers and professionals.

Environmental auditing is increasingly carried out either on the initiative of the companies themselves or at the request of the competent authority. The same applies to emergency plans which are drawn up either during the impact assessment procedure for new Projects or as part of an environmental audit.

4.2.5. Control and sanctioning instruments

The creation of the Environmental Police and the Health Police is a good expression of the political will to control and punish any damage caused to the environment.

These structures operate in parallel with other institutions whose traditional role is to protect either natural resources (flora and fauna in particular) or human populations (health and safety in particular).

4.2.6. Environmental standards applicable to the Project

The compliance standards applicable to the execution of the Project are defined by the various implementing texts, namely: Decree No. 2001-110 of April 4, 2001 on air quality standards in the Republic of Benin. It sets ambient air quality standards, motor vehicle discharge standards and atmospheric emission standards for stationary sources, in accordance with the provisions of Act No. 98-030 of 12 February 1999 on the framework law on the environment in the Republic of Benin (Tables 12 and 13).

Under the SUMP-GN, these national standards may be reinforced by the provisions of the World Bank Group's Environmental, Health and Safety Guidelines or other relevant international guidelines (Table 12).

Table 19: Ambient Air Quality Standards

Pollutants	Duration of the measurement period	Average value	Value (µ g/m3) according to the World Bank
Ozone (O) 3	8-hour average	0.08 ppm	160 (1st intermediate target) 100 (Guidelines)
Carbon monoxide (CO)	1-hour average	40 mg/ m3	-
	8-hour average	10 mg/ m3	-
Sulphur dioxide (SO) 2	Average in 10 minutes	-	500 (Guidelines)
	1-hour average	1300 µ g/m3	-
	24-hour average	200 µ g/m3	125 (1st Intermediate Target) 50 (2nd Intermediate Target) 20 (Guidelines)
	Annual average	80 µ g/m3	-
Suspended particles (<10 microns)	24-hour average	230 µ g/m3	150 (1st intermediate target)
		-	100 (2nd intermediate target)
		-	75 (3rd intermediate target)
		-	50 (Guidelines)
	Annual average (1 year)	50 µ g/m3	70 (1st intermediate target)
		-	50 (2nd intermediate target)
		-	30 (3rd intermediate target)
		-	20 (Guidelines)
Particulate matter (<2.5 microns)	24-hour average	-	75 (1st intermediate target)
		-	50 (2nd intermediate target)
		-	37.5 (3rd intermediate target)
		-	25 (Guidelines)
	Annual average (1 year)	-	35 (1st intermediate target)
		-	25 (2 intermediate target)
		-	15 (3rd intermediate target)
		-	10 (Guidelines)
Dioxyde d'azote (NO) 2	Average in one hour	-	200 (Guidelines)
	24-hour average	150 µ g/m3	-
	Annual average (1 year)	100 µ g/m3	40 (Guidelines)
Lead (Pb)	Annual average	2 µ g/m 3	

Source : *IRC, 2024*

Table 20: Particulate Matter Emission Criteria

Type of establishment	Parameter	Emission limit criteria
Combustion plants using hydrocarbons as fuel	Particulate matter	85 mg/MJ
	NO_x	325 ppm

Source: *Decree No. 2001-110 of 4 April 2001*

Decree No. 2022-301 of May 25, 2022 on noise regulations in the Republic of Benin

Decree No. 2022-301 of May 25, 2022 on noise regulations in the Republic of Benin defines noise standards to control the intensity of noise emitted by each source. In Chapter IV on common provisions applicable to noise in

public spaces, the decree in Chapter V on special provisions applicable to noise in public and private spaces, Article 7 specifies that the installation of any source of noise is prohibited in the vicinity of sensitive establishments (educational establishments, health facilities, barracks, residential areas and other administrative services). The noise source shall be located within a minimum radius of 200 metres from sensitive establishments. In its Article 14, it sets the noise level in decibels outside the sources of noise emission as follows:

- 70 dB between 7 a.m. and 1 p.m. and between 3 p.m. and 10 p.m.
- 50 dB between 1 p.m. and 3 p.m. and between 10 p.m. and 7 a.m. Notwithstanding these provisions, the level of noise emitted from industrial production activities does not exceed 80 dB outdoors. When it exceeds 70 dB in the enclosure, operating personnel and users wear sound protection equipment. Article 15 specifies that the noise level near dwellings located on the side of a road or a major traffic artery must not exceed 70 dB between 00 and 05:00. The work of this sub-project will generate noise emissions to a certain extent. It is important that they be carried out in accordance with the relevant national regulations. Decree No. 2003-330 of 27 August 2003 on the management of waste oils in the Republic of Benin. This decree lays down the procedures for the collection, transport, grouping, pre-treatment, disposal or recovery of waste oils in accordance with the provisions of Law No. 98-030 of 12 February 1999 on the framework law on the environment in the Republic of Benin (Article [1]. Article 2 defines waste oils as "any oils, derived from the refining of crude or synthetic oil, intended for lubrication or other purposes, and which have become unfit for their original use due to the presence of impurities or the loss of their initial properties; they include lubricating oils, hydraulic oils, metalworking oils, and insulating or heat transfer fluids."

Decree No. 2003-332 of 27 August 2003 on solid waste management in the Republic of Benin. This decree defines the objectives and provisions for the protection of the environment and human health from any harmful influence caused by waste. It aims, among other things:

- The prevention or reduction of waste and its harmfulness;
- Waste organization and disposal, limitation, monitoring and control of waste shipments;
- The assurance of the restoration of the sites.

Wastewater standards are set by Decree No. 2001-109 of 4 April 2001 on waste water quality standards in the Republic of Benin (Table 14).

Table 21: Release Standards for Conventional and Non-Conventional Contaminants in Industrial Wastewater

Physicochemical parameters	Units (in mg of contaminant per litre of liquid)	(A) Allowable Daily Average Concentration		(B) Quantity of contaminant released
		If quantity rejected < B	If quantity rejected >B	
Conventional Parameters				
BOD	mg/L	100	30	30 kg/day
MY	mg/L	100	35	15 kg/day
COD	mg/L	300	125	100 kg/day
Total Oils & Grease	mg/L	100	30	1 kg/day

ph	6 < pH <9 at all times			N/A
Temperature	°C	5°C higher than the temperature of the receiving water		N/A
Unconventional settings				
Phosphore (2)	mg/L	100	10	15 kg/day
Azote total (NTK) (2)	mg/L	200	30	g/d

Source: Decree No. 2001-110 of 4 April 2001 setting air quality standards in the BR Within the framework of the SUMP-GN, these national standards may be reinforced by the provisions of the World Bank Group's Environmental, Health and Safety Guidelines or other relevant international guidelines. Also, Decree No. 2017-332 of July 6, 2017 on the organization of environmental assessment procedures in the Republic of Benin and the World Bank's Environmental and Social Standards (ESS) are included as standards applicable to the SUMP-GN.

4.2.7. Institutional framework for environmental and social management in the Benin

The environment administration in Benin is headed by the Minister in charge of the Environment. An analysis of the institutional framework allows us to consider several key institutional actors and their services concerned by the implementation of this Project.

- **Ministry of Living Environment and Transport, in charge of Sustainable Development (MCVT)**

In order to achieve Benin's objective of giving a central place to the environment through its constitution, a Ministry of the Environment was created in 1991. Currently called the Ministry of the Living Environment and Transport in charge of Sustainable Development (MCVT), it is responsible for, among other things:

− Define and periodically update the national policy on the environment, climate change management, reforestation and protection of fauna and flora and implement related strategies and actions; − develop and implement policy on combating climate change and water, air and soil pollution; − Mobilize funding for the implementation of policies, plans, programmes and projects of the sectors concerned; − monitoring and preserving marine, coastal, coastal and riverbank ecosystems; − monitor the implementation of Benin's commitments in terms of sustainable development as well as international and regional conventions relating to its areas of competence.

In this ministry, the main services to be involved in the implementation of the CGES PMUD-GN are:

- **Beninese Environment Agency (EBA):** a public institution created in 1995, it is responsible for implementing the national environmental policy adopted by the government as part of its development plan (art. 12). It is placed under the supervision of the Minister for the Environment. As such, it works in collaboration with other ministries

local authorities, non-governmental structures, civil society and the private sector. It also manages all environmental assessment procedures.

It is competent in, among other things:

- the implementation of strategic environmental assessment (SEA) and environmental impact assessment (EIA) procedures and the evaluation of environmental impact assessment reports;
- the implementation of procedures relating to environmental audits;
- the preparation of procedures for monitoring and implementing environmental emergency plans.

In addition, according to the provisions of the Framework Law on the Environment, it gives its technical opinion to the MCVT or even to the Government before authorisation is granted to undertake or operate works or establishments subject to EIA, on the environmental feasibility of the plans, programmes and Projects to be carried out and on the initiation and execution of the external environmental audit.

These tasks will be carried out in collaboration with the environmental units and the decentralized authorities of the State which also have competence in environmental matters;

- **Directorate-General for the Environment and Climate (DGEC):** It is responsible for the development of national environmental policy;
- **Departmental Directorate of Living Environment and Transport, in charge of Sustainable Development (DDCVT):** It is responsible for, among other things:
  - monitor and control the application of standards and legislative and regulatory texts in the fields of the environment, nature protection, urban planning, land, sanitation, urban roads, urban mobility, housing, construction, mapping and cadastre;
  - To monitor all the activities of the municipalities contributing to the improvement of the living environment of the population.
- **Environmental units:** established by the above-mentioned decree, these are functional units within all sectoral ministries and municipalities. These units promote awareness of environmental issues among sectoral technicians, and above all facilitate the popularization of environmental management tools.
- **General Directorate of Water, Forests and Hunting (DGEFC):** its mission is to manage forest resources at the national level. In the field, this directorate is represented by the Forest Inspectorates, the Forest Cantonments and the Forest Posts.

- **Ministry of the Economy and Finance (MEF):** its mission is to design, implement, monitor and evaluate the general policy of the State in economic, financial and monetary matters, and in terms of the constitution and conservation of the State's land and real estate assets. The Ministry of Economy and Finance (MEF) is responsible for the supervision of the National Agency for Domain and Land (ANDF);
  - **ANDF**: National Agency for Land and Land: its mission is to strengthen and simplify the access of the State and its local authorities to land within the framework of their development policies and for their various public utility needs. The main player responsible for the management of the estate and the

The National Agency for Land and Land (ANDF), a public institution of a technical and scientific nature of a specific type created in 2014. The ANDF is a unit for the coordination of land and state management with a mission of land tenure security at the national level. It is responsible for the implementation of the land and property policy defined by the State. It is placed under the supervision of the Ministry of Economy and Finance. The Communal Offices of the Estate and Land (BCDF) constitute its branches. Its field of intervention covers the entire rural, peri-urban and urban land sector throughout the national territory. It carries out the mission of securing land estates on behalf of the State.

As part of the implementation of the NSMP-SUMP, the project implementation structure will work in collaboration with these different actors for Project activities that require the acquisition of land or the imposition of restrictions on its use. As such, the Project's activities will be carried out in accordance with the requirements of the
CFD.

- **Ministry of Health (MOH)**

Under the terms of Article 3 of Decree No. 2020-078 of 19 February 2020 on the attributions, organization and functioning of the Ministry of Health, the Ministry of Health's mission is to design and monitor and evaluate the State's health policy. State policy aims to guarantee equal access to health for all without distinction as to sex, race, religion, opinion and social origin by promoting living conditions favourable to health, improving the state of health of the population and reducing social and territorial inequalities. As such, he is responsible for

- to develop the national health policy;
- defining the national health strategy and ensuring its application;
- Coordinate the interventions of the operational structures for the implementation of policies and strategies;
- to carry out reforms in the sector;
- Ensuring the monitoring and evaluation of the sector's policy and strategies;
- to develop, update and ensure the application of legislative and regulatory provisions,
- Ensuring the financial viability of health structures by contributing to the mobilization and pooling of financial resources;
- Contribute to the effective implementation of universal health coverage;
- Promote public/private partnerships in the health sector;
- to develop collaboration with other ministerial departments for health promotion.

Within the framework of the PSUM-GN, the responsibilities (regulation, awareness, sanctions) of this institution will be exercised mainly by the hygiene services housed in the Departmental Directorate of Health. Thus, the Departmental Directorates of Health of the Atlantic, the Littoral and the Ouémé must ensure the follow-up of certain activities falling within the implementation of the PCGES, in particular in the follow-up of awareness-raising activities on the hygiene rules to be observed by the users of the infrastructures, on the means of prevention against STIs, HIV-AIDS and COVID-19.

- **Ministry of Labour and Public Service (MTFP)**

According to the provisions of Article 3 of Decree No. 2021-562 of November 3, 2021 on the attributions, organization and functioning of the Ministry of Labor and the Public Service, the mission of the MTFP is to define, develop and monitor and evaluate the State's policy on labor and the civil service as well as the monitoring of administrative and institutional reforms in accordance with the laws and regulations in force. In this capacity, it is responsible for the promotion of work:

- to develop, monitor and control labour and social security legislation;
- Define and monitor the implementation of policies to promote decent work in all sectors, in collaboration with other sectoral ministries;
- Define and monitor the implementation of social security policy for workers in the formal and informal economy;
- Define and monitor the implementation of the policy to combat child labour.

- **Departmental Directorates of Labour and Public Service (DDTFP) of the Atlantic, Littoral and Ouémé**

They will be involved in the monitoring of working conditions and activities relating to occupational safety during the work. They are called upon to implement and monitor and evaluate the State's policy on labour, civil service and administrative and institutional reform in the department, in accordance with the laws and regulations in force in the Republic of Benin, and the Government's vision and development policies. As part of this project, the DDTFP ensures compliance with labour standards on the construction sites that are open.

- **Ministry of the Interior and Public Security (MISP)**

According to Article 3 of Decree No. 2023-372 of July 19, 2023 on the attributions, organization and functioning of the Ministry of the Interior and Public Security, the Ministry of the Interior and Public Security is responsible for ensuring the implementation and monitoring and evaluation of the State's political orientations in terms of internal security programming as defined by the National Council for Defense and Security. In addition, it develops policy on the fight against radicalisation, violent extremism and terrorism, civil protection, civil status, integrated management of border areas and the preservation of public freedoms.

As such, he is responsible for public security

- Promote quality security governance by ensuring the protection of people and property as well as State institutions and facilities;
- to organize in collaboration with the competent services of the Ministry in charge of National Defense and the Ministry of Foreign Affairs;
- to ensure cooperation and collaboration between all the services contributing to internal security;
- To develop and monitor, in collaboration with the Ministry in charge of Decentralization, the training plans of village, city, district and commune councils in the field of intelligence;
- ensuring, in liaison with the Ministry in charge of Cooperation, the implementation of the State's security cooperation policy with other States and other partners;

- Record and monitor the activity of civil society organizations in the field.

In the implementation of the PSUM-GN, the MISP will intervene through the Republican Police stations located in the territory of Greater Nokoué for the security of people and property at all phases of the project.

- **Ministry of Social Affairs and Microfinance (MASM)**

According to the provisions of Article 3 of Decree No. 2022-606 of November 2, 2022 on the attributions, organization and functioning of the Ministry of Social Affairs and Microfinance, the Ministry of Social Affairs and Microfinance has the mission of defining, promoting, conducting, coordinating the implementation, monitoring and evaluating the State's policy on social and child protection, the promotion of the family and women, national solidarity and equal opportunities, the promotion of microfinance and financial inclusion. In this capacity, it is responsible for: in the field of the promotion of social affairs:

- designing, coordinating, monitoring the implementation and evaluating the national policy on national solidarity, social protection, inclusion of people with disabilities, advancement of women and protection of children and the elderly, in conjunction with the Ministry of Development;
- Contributing to the design and implementation of programmes for the promotion of equality, equity and gender, at the educational, social, economic, cultural, political and legal levels, in conjunction with the Ministry of Development;
- to coordinate support and advice to bodies and non-governmental organizations working in favour of the family, children and adolescents;
- to contribute to the development of activities contributing to the preservation of family cohesion, the improvement of the living conditions of families, the social reintegration of children in difficult situations, community life and the empowerment of women;
- initiating, in collaboration with the competent structures of the ministries concerned, draft legislative and regulatory texts on the family, women, children, the elderly, people with disabilities, and then ensuring their popularization and effective application;
- Contribute to the management of relief, aid, solidarity actions and humanitarian operations to communities;
- Organising psycho-social care actions for people infected and/or affected by infectious diseases and epidemics in collaboration with the Ministry of Health.

The Ministry of Social Affairs and Microfinance can support the project through the Single Window for Social Protection (GUPS) of Greater Nokoué will intervene in the prevention and management of possible cases of sexual harassment (HS) and sexual assault (AS).

- **Ministry of Decentralization and Local Governance (MDGL)**

Under the provisions of Article 3 of Decree No. 2022-605 of November 2, 2022 on the attributions, organization and functioning of the Ministry of Decentralization and Local Governance, the Ministry of Decentralization and Local Governance,

its mission is to define, monitor and evaluate the State's policy on decentralization, deconcentration, local governance and grassroots development, in accordance with international conventions, laws and regulations in force. As such, it is responsible for:

- Coordinate the implementation of the reform of the territorial administration;
- Define and monitor the National Policy on Decentralization and Deconcentration
- ensure the proper administration of the departments by the prefects as well as the quality of the governance of the affairs of local authorities;
- Promote the local economy and decentralized cooperation;
- ensure the promotion of civic and civic education actions in the exercise of municipal competences;
- Promote mechanisms for mobilizing and participating the population in the management of the affairs of local authorities;
- Ensuring the quality of the local public services offered to the population.

As part of the PSUM-GN, the MDGL will intervene through the Prefectures of Allada, Cotonou and Porto Novo.

- **Project execution structure**

The structure or entity implementing the project is the Société des Infrastructures Routières et de l'Aménagement du Territoire (SIRAT) which will set up a pool of experts (PSUM-GN pool) exclusively dedicated to the implementation of the project.

The SIRAT (Pool PSUM-GN) is responsible for the coordination and management of fiduciary activities, monitoring and evaluation, environmental management and communication. The composition of the GN SUMP Pool remains to be compliant, but it will have at least one (01) Environmental Safeguard Expert (ESEnv) and one (01) Social Safeguard and Gender Expert (ESSoG) who will be in charge of the environmental and social management of the Project and the dissemination of information. This team will be responsible for integrating environmental and social management clauses into the various tender documents, contracts and monitoring the implementation of the CGES/PCGES, the Environmental and Social Management Plans (ESMP) resulting from the ESIAs and the reporting of environmental and social safeguard activities, including the implementation of the ESMP, PPMP,

ESV and PGMO.

- **Prefectures**

Under the terms of the texts on decentralization, he is the guarantor of the application of the national guidelines by the municipalities that are part of the territorial jurisdiction of his department. He is thus the representative of each minister taken individually and of the government taken collectively. The Prefect is therefore responsible for the implementation of all environmental issues at the decentralised level of the State. The PMUD-GN project will involve the departments of Atlantique-Littoral and Ouémé.

- **Municipalities**

The Communes will have to take all measures to preserve public hygiene, improve the living environment of the population and protect natural resources. They will also have to ensure that the environment is taken into account in the preparation, implementation and monitoring of the

local development, but also to raise awareness and mobilize the population on environmental and social issues.

- **Civil society organizations**

Civil society, represented by NGOs and grassroots community associations (in the environmental sector, waste management, social mobilization, etc.) has a very important role to play in the protection of the environment at the local level and the mobilization of beneficiaries. These organizations could constitute important instruments for mobilizing stakeholders to promote a more vigorous dynamic in the environmental and social management of the Project.

These community structures can play an important role in monitoring the implementation of the Project's activities and mobilizing and engaging stakeholders.

World Bank Environmental and Social Requirements for SUMP-GN

In October 2018, the World Bank adopted a new Environmental and Social Framework (ESF). This new ESC, which is divided into ten (10) Environmental and Social Standards (ESS), aims to protect people and the environment from potential impacts that may arise from the implementation of World Bank-financed projects, and to promote sustainable development. This new Environmental and Social Framework (ESF) marks important advances in areas such as transparency, non-discrimination, social inclusion, public participation and accountability. The ESC also places greater emphasis on strengthening the capacity of Borrowing Governments to manage environmental and social issues. It entered into force on October 1, 2018, which justifies that this Draft under preparation be subject to compliance with its provisions. Thus, projects must comply with the relevant provisions of the World Bank Group's General Environmental, Health and Safety (EHS) Guidelines.

These Guidelines provide examples of international good practice and performance measures and levels that are considered acceptable and applicable to projects. In the event that the host country's criteria are not consistent with the measures and levels set out in the EHS Guidelines, the Bank will require the Borrower to apply or implement the most stringent provisions.

In the context of this project, the Sectoral EHS Directives on the transmission and distribution of electricity are also relevant.

By the nature, location, characteristics and scope of the activities envisaged as well as the extent of the potential environmental and social impacts associated with these activities, the Greater Nokoué Sustainable Urban Mobility Project (SUNMP-GN), is classified in the **"high risk"** category according to the World Bank's environmental categorization criteria and eight (8) Environmental and Social Standards (ESS) are triggered, namely: (i) ESN No. 1 " Assessment and management of environmental and social risks and effects ", (ii) ESN No. 2 " Employment and working conditions", (iii) ESN No. 3 " Resource efficiency and pollution prevention and management "; (iv) SEN No. 4 " Health and safety of the population "; (v) SEN No. 5 " Land Acquisition, Land Use Restrictions and Involuntary Resettlement"; (vi) NES No. 6 " Preservation of biodiversity and sustainable management of natural biological resources "; NES n°8 " Cultural heritage " and NES n°10 " Stakeholder mobilization and information.

With regard to SEA/HS risks, the project will develop an Action Plan for the Prevention and Response to SEA/HS (SEA/HS Action Plan) with the recommended mitigation measures for the moderate-risk project following the Note of Good Practices to Combat Sexual Exploitation and Abuse as well as Sexual Harassment in the Context of the Financing of Investment Projects with Major Civil Works

- **Environmental and Social Standard No. 1: Assessment and Management of Environmental and Social Risks and Impacts**

Environmental and Social Standard No. 1 sets out the Borrower's responsibilities for assessing, managing and monitoring the environmental and social risks and impacts associated with each stage of a Project supported by the Bank through the Investment Project Finance Facility (IPF), with a view to achieving environmental and social outcomes consistent with Environmental and Social Standards (ESS).

ESS No. 1 includes the following annexes which are an integral part and describe certain obligations in more detail: − Annex 1: Environmental and Social Assessment; − Annex 2: Environmental and Social Commitment Plan; − Appendix 3: Management of suppliers and service providers.

The SUMP-GN is concerned by this standard, because the implementation of its sub-Projects could give rise to environmental and social risks and impacts that will require specific environmental and social assessments. Until the exact sites of the sub-projects are known for the preparation of these specific environmental and social assessments, this Environmental and Social Management Framework (ESMF) has been prepared to serve as a guide for the development of these specific studies. The compliance of the PSUN-GN with the NES No. 1 also required the preparation of the Environmental and Social Commitment Plan (ESEP).

- **Environmental and Social Standard No. 2: Employment and Working Conditions**

Environmental and Social Standard No. 2 recognizes the importance of job creation and income-generating activities for the purpose of reducing poverty and promoting inclusive economic growth. It requires the promotion of good relations between workers and employers and aims to improve the development impact of a Project by treating Project workers fairly and providing them with healthy and safe working conditions.

ESS No. 2 will be relevant to the SUNK-GN, because the implementation of the Project will lead to job creation, hence the recruitment of workers. This standard will apply to Project workers who will be full-time, part-time, temporary, seasonal workers. This is what justified the preparation of the Workforce Management Procedures (PGMO) document.

- **Environmental and Social Standard No. 3: Rational Use of Resources and Pollution Prevention and Management**

ESS No. 3 recognizes that economic activity and urbanization are often the cause of air, water and soil pollution, and deplete already limited resources. These effects can threaten people, ecosystem services and the environment at local, regional and global scales. Current and projected atmospheric concentrations of greenhouse gases (GHGs) threaten the well-being of generations

current and future. At the same time, more efficient and efficient use of resources, prevention of pollution and GHG emissions, and mitigation techniques and practices have become increasingly accessible and feasible. Thus, it sets out the requirements for the rational use of resources and the prevention and management of pollution, throughout the life cycle of the Project, in accordance with the International Good Practices of a Sector of Activity (BPISA).

- **Environmental and Social Standard N°4: Health and Safety of the population**

This standard emphasizes the risks and effects of the Project on the health, safety and security of populations affected by the Project, and the responsibility of the Project to avoid or minimize these risks and effects, with particular attention to groups that, due to their particular circumstances, may be considered vulnerable. ESS No. 4 will be triggered by the PSUM-GN, because its implementation will cause risks or negative impacts on the health and safety of workers and the local population if appropriate measures are not taken.

- **Environmental and Social Standard No. 5: Land Acquisition, Land Use Restrictions and Involuntary Resettlement**

ESS No. 5 recognizes that the acquisition of Project-related land and the imposition of restrictions on its use can have adverse effects on communities and populations. The acquisition of land, or the imposition of restrictions on the use of land, can result in physical displacement (relocation, loss of residential land or housing), economic displacement (loss of land, assets or access to those assets, including loss of source of income or other means of livelihood), or both. "Involuntary resettlement" refers to these effects. Resettlement is considered involuntary when affected individuals or communities do not have the right to refuse the acquisition of land or restrictions on its use that is causing the displacement.

This standard includes an Appendix 1 " *Involuntary Relocation Mechanism* " describes the elements of the plans related to physical and/or economic travel. This Environmental and Social Standard applies to the SUMP-GN. To be in line with this standard, a Resettlement Policy Framework (RPC) has been developed as a separate document.

- **Environmental and Social Standard No. 6: Preservation of biodiversity and sustainable management of biological natural resources**

ESS No. 6 states that the environmental and social assessment, as set out in ESS No. 1, will examine the direct, indirect and cumulative impacts of the Project on the habitats and biodiversity they support. This assessment should take into account relevant threats to biodiversity, such as habitat loss, degradation and fragmentation, invasive alien species, overexploitation, hydrological changes, nutrient loading, pollution, bycatch, as well as the projected impacts of climate change.

The Borrower will ensure that relevant biodiversity expertise is used to conduct the environmental and social assessment and the verification of the effectiveness and feasibility of mitigation measures. Where significant risks and adverse impacts on biodiversity have been identified, the Borrower will prepare and implement a Biodiversity Management Plan.

The Ramsar 1018 site or East Complex (South-East of Benin) **includes the wetlands of the Lower Ouémé Valley, Lake Nokoué and the Porto Novo lagoon.** The plant formations of these wetlands are forest galleries, forests and marshy meadows, aquatic and floating meadows. The PMUD-GN project through its components affects this RAMSAR site as a whole, which is a biodiversity conservation area. This forces the project to trigger standard n°6 which has a differentiated risk management approach to housing according to their sensitivity and value. It addresses all habitats, classified as "modified habitats", "natural habitats" and "critical habitats", as well as "legally protected areas and areas recognized by the international and regional community for their biodiversity value", which may include habitat in any of these categories.

- **Environmental and Social Standard No. 8: Cultural Heritage**

This ESS No. 8 sets out general provisions concerning the risks and effects of a Project's activities on cultural heritage. It sets out measures to protect cultural heritage throughout the life cycle of the Project.
The SUNP-GN is concerned by this standard. Indeed, the implementation of some of its activities will lead to excavations with the possibility of bringing fortuitous discoveries to the surface. In order to anticipate possible fortuitous discoveries, a procedure for the management of fortuitous discoveries has been developed and included in this CGES; thereby bringing the SUMP-GN into compliance with ESS No. 8.

- **Environmental and Social Standard No. 10: Stakeholder Engagement and Information**

Environmental and Social Standard No. 10 recognizes the importance of open and transparent collaboration between the Project Coordination Unit and Project stakeholders, which is an essential element of international good practice. Effective stakeholder engagement can improve the environmental and social sustainability of Projects, strengthen buy-in for Projects, and contribute significantly to successful Project design and implementation.

Stakeholder engagement is an inclusive process conducted throughout the project lifecycle. When designed and implemented appropriately, it fosters the development of strong, constructive and open relationships that are important for the proper management of a Project's environmental and social risks and effects. Stakeholder engagement is most effective when initiated early in the Project development process and is an integral part of decisions made early in the Project cycle as well as the assessment, management and monitoring of the environmental and social risks and effects of the Project.

The SUNDP-GN is concerned through its various components. Thus, a Stakeholder Engagement Plan has been developed and will be integrated into the environmental and social assessment and the design and implementation of the Project, as recommended in ESS No. 1.

4.2.8. Requirements of the Bank's Environmental and Social Standards applicable to the Project and relevant national provisions

The analysis of the points of convergence and divergence between national legislation and the Environmental and Social Standards that apply to the Project aims to identify the

Deficiencies in national legislation to recommend measures to meet the requirements of the said NES and to propose measures for the implementation of the Project to address the deficiencies identified. Table 15 presents the requirements of the environmental and social safeguard policies triggered by the NSMP-SUMP and relevant national provisions

Table 22: Requirements of environmental and social standards relevant to the NSMP-SUMP and relevant national provisions

World Bank NES	Relevant national provisions applicable to the Project	Ad hoc provisions to supplement the national provisions applicable to the Project
SEN No. 0 1"Assessment and Management of Environmental and Social Risks and Effects"	– the Constitution of 11 December 1990 – the Framework Law on the Environment of 12 February 1998 – Decree No. 2022-390 of 13 July 2022 on environmental assessment procedures in the Republic of Benin requires the environmental and social assessment of any Project likely to harm the environment	The national law will be supplemented by the provisions of ESS No. 1, as the environmental and social commitment and the responsibilities of the developer are not taken into account by the national law.
	Decree No. 2022-390 of July 13, 2022 on the organization of environmental assessment procedures in the Republic of Benin: This decree provides for a categorization/classification of Projects subject to ESIA or benefiting from a categorical exclusion finding. Articles 25, 26, 27 and 28 of this decree provide for the nature of the Projects subject to an Environmental Impact Assessment. The content of these articles is: **Article 24**: Any Project whose activities are likely to have an impact on the Environment is subject to the ESIA. **Article 25**: Any Project whose activities are not likely to significantly modify the environment and whose implementation is not planned in a risk or ecologically sensitive area is subject to a simplified EIA. **Article 26**: Any Project whose activities are likely to significantly modify the environment is subject to an in-depth EIA; the same applies to any Project affecting risk areas or ecologically sensitive areas. **Article 28**: The following shall not be subject to the EIA procedure:	The national law will be supplemented by the provisions of the NES No. 1. Decree No. 2022-390 of 13 July 2022 on the organization of environmental assessment procedures in the Republic of Benin provides for the categorization/classification of Projects subject to ESIA

World Bank NES	Relevant national provisions applicable to the Project	Ad hoc provisions to supplement the national provisions applicable to the Project
	- any Project undertaken for domestic or artisanal purposes, which do not affect sensitive environments or generate discharges into the environment; - any Project relating to the exploration and prospecting of natural and mineral resources that does not involve the creation of infrastructure; - any Project that is implemented in response to an emergency and that must be implemented without delay for the protection of property or the environment, or for public health or safety	
	Law No. 90-32 of 11 December 1990 on the Constitution of the Republic of Benin, as amended by Law No. 2019-40 of 7 November 2019, Law No. 2003-03 of 3 March 2003 on the repression of the practice of female genital mutilation in the Republic of Benin. These are Articles 8 and 26. Article 8: "The human person is sacred and inviolable. The State has an absolute obligation to respect and protect it. It guarantees him full development. To this end, it shall ensure that its citizens have equal access to health, education, culture, information, vocational training and employment" "The State shall ensure equality before the law for all without distinction as to origin, race, sex, religion, political opinion or social position" Article 26 "The State shall ensure equality before the law for all without distinction as to origin, race, gender, religion, political opinion or social position. Men and women are equal before the law. The State protects the family and particularly the mother and child. He watches over the disabled and the elderly; Law No. 2003604 of 3 March 2003 on sexual and reproductive health; Law No. 2002 – 27 of 24 August 2004 on the Code of Persons and the Family;	National law does not fully comply with this provision.

World Bank NES	Relevant national provisions applicable to the Project	Ad hoc provisions to supplement the national provisions applicable to the Project
	Law 2012-26 of 9 January 2012 on the prevention and punishment of violence against women in the Republic of Benin. Law No. 2021-11 of 20 December 2021 on special provisions for the punishment of offences committed on the basis of the sex of persons and the protection of women in the Republic of Benin This law also includes the protection of women in the workplace, with regard to harassment. To this end, article 27 of this law provides in paragraph 6 that dismissal is deemed to be the resignation or agreement of the parties on the grounds of sexual harassment or rape. In addition, any dismissal following sexual harassment or rape is always abusive, when these offences are established by the competent criminal court, according to paragraph 2 of the new article 30 of this law. In addition, Benin has ratified the United Nations Convention on the Rights of the Child. With regard to women and girls, Benin has ratified the following Conventions: CEDAW: ratified on 12 March 1992 without reservation CEDAW Optional Protocol: signed on 25 May 2000 Maputo Protocol: ratified on 30 September 2005	
SEN No.^{0}2 "Employment and Working Conditions"	Article 182 of Law No. 98-004 of 27 January 1998 on the Labour Code in the Republic of Benin stipulates that "to protect the life and health of workers, the employer is required to take all useful measures that are appropriate to the operating conditions of the enterprise".	The national provisions do not fully meet the requirements of ESS No. 2. In conclusion, the national provision will be complemented by the World Bank's NES No. 2 in the framework of this Project. The specific provisions to be taken in the framework of this Project are: – Develop and implement a Grievance Management Mechanism (MGM) of the Project – Develop and implement clauses on gender-based violence and child labour – Develop and implement the Hygiene Code, Health, Safety and Environment (HSSE)

World Bank NES	Relevant national provisions applicable to the Project	Ad hoc provisions to supplement the national provisions applicable to the Project
		– To draw up a salary scale for workers and manual workers
ESS No. 0 3 "Resource Efficiency and Pollution Prevention and Management"	Law No. 2010-44 of 21 October 2010 on water management in the Republic of Benin, Law No. 2002-016 of 18 October 2004 on the wildlife regime, Law No. 93-009 of 2 July 1993 on the forest regime and Law No. 87-015 of 21 September 1987 on the Public Health Code of the Republic of Benin enact the provisions on management, the protection and exploitation of natural resources and the prevention of pollution. Act No. 91-004 of 11 February 1991 on plant protection regulations in the Republic of Benin: its provisions concern the health protection of plants and plant products through the prevention and control of harmful organisms, both at the level of their introduction and their spread within the national territory, with a view to safeguarding and guaranteeing a satisfactory environment conducive to sustainable development. Article 4 of Law No. 98-030 of 12 February 1999 on the Framework Law on the Environment in the Republic of Benin sets out the general principles: - Prevent and anticipate actions likely to have immediate or future effects on the quality of the environment; - to put an end to all pollution or degradation, or at least to limit its negative effects on the environment. Similarly, Article 50 of the same law stipulates that "Any activity that may harm animal species or their natural environments is either prohibited or subject to the prior authorization of the administration" Law No. 2018-18 of August 6, 2018 on climate change in the Republic of Benin applies to	The national law will be supplemented by the provisions of NES No. 3. ESS No. 3 will be applied to the Project.

World Bank NES	Relevant national provisions applicable to the Project	Ad hoc provisions to supplement the national provisions applicable to the Project
	Areas of activity include: the protection of human, animal and plant beings and settlements from global threats such as: greenhouse gases, ozone deterioration, loss of biological diversity, management of pastoral areas and associated conflicts, deforestation, deforestation, desertification and drought; - To combat pollution of air, soil, marine and continental surface and groundwater; - the environmentally sound management of non-renewable resources and all types of disasters; - reduce disaster risks.	
SEN No.[0] 4 "Health and Safety of the Population"	In order to protect the health and safety of the population, Article 88 of Law No. 98-030 of 12 February 1999 on the Framework Law on the Environment in the Republic of Benin specifies that "No one may undertake developments, operations, installations, plans, projects and programmes or the construction of structures without following the environmental impact assessment procedure, when the latter is required by laws and regulations". Also, Article 8 of the Constitution of December 11, 1990 as amended by Law No. 2019-40 of November 7, 2019 stipulates that "The human person is sacred and inviolable. The State has an absolute obligation to respect and protect it. It guarantees him full development. To this end, it shall ensure that its citizens have equal access to health, education, culture, information, vocational training and employment". Article 182 of Law No. 98-004 of 27 January 1998 on the Labour Code in the Republic of Benin stipulates that "to protect the life and health of workers, the employer is required to take all measures	The national law will be supplemented by the provisions of NES No. 4. ESS No. 4 will be applied to the Project. The specific measures to be taken within the framework of this Project are: 1. Develop a community traffic code as part of the Project's activities – Develop and implement a Code of Conduct that includes clauses on GBV/EAS/HS and child labour as well as disciplinary sanctions. – Develop and implement the Health, Safety and Environment (HSSE) Code

World Bank NES	Relevant national provisions applicable to the Project	Ad hoc provisions to supplement the national provisions applicable to the Project
	that are adapted to the operating conditions of the company". This labour code in Benin does not explicitly take into account GBV. However, Benin has a Gender Action Plan. There are also types of employment that are not intended for women, it is important to remember the national provisions that protect women and girls against this type of employment as well as those who are pregnant for example. Law No. 2022-17 of 19 October 2022 amending Law No. 2020-37 of 3 February 2021 on the protection of the health of persons in the Republic of Benin and Law No. 98-019 of 21 March 2003 on the Social Security Code in the Republic of Benin set out the obligations of structures in terms of the health and safety of the population.	
SEN No. 0 5 "Land Acquisition, Land Use Restrictions and Involuntary Resettlement"	The Constitution of Benin of 11 December 1990 stipulates that "the home is inviolable. Infringements or restrictions may only be made by law", and then in its article 11 that "the right to property is guaranteed to all. No one shall be deprived of his property except for reasons of public utility and under the condition of fair and prior compensation" Law No. 2017-15 amending and supplementing Law No. 2013-01 of 14 August 2013 on the Land and State Code in the Republic of Benin and its implementing decrees and specifically Decree No. 2015-013 of 29 January 2015 on the composition and functioning of the commissions of inquiry of commodo and incommodo and The Compensation Act for Expropriation in the Public Interest specifies everything that can be expropriated in the public interest, provided that the PAP has a legal or customary property right.	– The national provisions do not fully comply with the requirements of ESS No. 5. In conclusion, the national provisions will be complemented by the World Bank's NES No. 5 in the framework of this Project. - As an ad hoc arrangement, the Project will take the necessary steps to: - avoid involuntary relocation or, where unavoidable, minimize it by considering alternatives when designing the Project; - avoid forced eviction - mitigate the adverse social and economic effects of land acquisition or restrictions on access to resources; – Compensate for residual impacts

World Bank NES	Relevant national provisions applicable to the Project	Ad hoc provisions to supplement the national provisions applicable to the Project
	Informal occupants are not recognized by national legislation. There are no specific measures to assist resettlement. Economic rehabilitation is not mentioned by the State Land Code (CFD) No specific provisions in the national procedure for the care of vulnerable people. Benin's legislation does not provide for specific measures for vulnerable groups The Land and Property Code in the Republic of Benin provides for the appearance of the affected persons before the Administrative Expropriation Commission to reach an amicable agreement on compensation and in the event that the PAP is not satisfied with the handling of its file, it may refer the matter to the Court of First Instance, which establishes the expropriation compensation on the basis of an expert opinion. Decree No. 2022-390 of July 13, 2022 on the organization of environmental assessment procedures in the Republic of Benin requires consultation and public hearings when environmental studies are carried out, depending on the scope of the Project. It requires the monitoring and evaluation of the implementation of environmental and social measures	
NES n°6: Preservation of biodiversity and sustainable management of biological natural resources	The preservation of biodiversity and the sustainable management of natural biological resources in Benin is governed by Law No. 93-009 of 2 July 1993 on the forest regime in the Republic of Benin, which regulates forest land tenure. It sets out higher standards that should guide local regulations. Title III of this law concerns the forestry estate of individuals and cooperatives. This law	The law will be supplemented by the requirements of the World Bank's NES No. 6. ESS 6 talks about biodiversity, not just forests, This biodiversity can be found in a river, in the air, in the soil not necessarily just related to forests, so it is unlikely that this law meets all the criteria of ESS 6. ESS No. 6 will be applied to the SUNDP-GN.

World Bank NES	Relevant national provisions applicable to the Project	Ad hoc provisions to supplement the national provisions applicable to the Project
	mentions that the commercial exploitation of the estate can only be carried out by operators approved by the State and who have obtained the operating permit. The precautionary principle on which the policy is based is based on Law No. 98-030 of 12 February 1998 on the framework law on the environment, which makes it imperative to protect and enhance the environment. Also, this law requires any project or installation with an impact on the environment to comply with the environmental assessment procedure. In addition, Law No. 87-014 of 21 September 1987 regulating the protection of nature and the exercise of hunting in the Republic of Benin provides for restrictions on the feasibility of certain activities or projects in reserves or parks with a view to preserving species but also their habitats (Articles 13 to 17).	
SEN No.^{0} 8 "Cultural Heritage"	Law No. 90-32 on the Constitution of the Republic of Benin as amended by Law No. 2019-40 of November 7, 2019, which protects cultural heritage. Article 10 of the constitution stipulates that "Everyone has the right to culture. The State has the duty to safeguard and promote national values of civilization, both material and spiritual, as well as cultural traditions." In addition to the Constitution, there is Law No. 2021-09 of October 22, 2021 on the protection of cultural heritage in the Republic of Benin Article 2 of the law provides: "This law sets the rules for the protection of cultural heritage in the Republic of Benin. As such, it aims to identify, inventory and classify the national cultural heritage by protecting it against destruction, alteration, transformation, excavation, alienation, export, import and international transfer. Heritage	The national law satisfies this requirement of the World Bank's NES No. 8.

World Bank NES	Relevant national provisions applicable to the Project	Ad hoc provisions to supplement the national provisions applicable to the Project
	is inalienable, imprescriptible and unseizable, subject to the derogations provided for by law. The management of incidental discoveries during the work is managed in Chapter II of Incidental Discoveries. The provisions of Article 109: "When, as a result of work or any other event, monuments, ruins, remains of ancient dwellings or burials, inscriptions or other remains likely to be part of the cultural heritage are brought to light, the researcher and/or the owner of the building where they were discovered are required to suspend the work and immediately declare it to the territorially competent administrative authority. The administrative authority shall inform the Minister for Culture thereof. If the remains referred to in the first paragraph of this article are kept by a third party, the third party shall make the same declaration. and Article 111: "In the absence of voluntary suspension of the work in the cases referred to in Article 109 of this law, the Ministry in charge of culture shall notify without delay the author of the discovery and or the owner of the building, of the temporary suspension of the work and the safeguard measures to be implemented. Under the conditions referred to in the preceding paragraph, the administrative authority of the place of discovery may also, on a provisional basis, order the suspension of the work for a period not exceeding six (06) months. During the period of suspension of work in the cases referred to in or in this article, the effects of classification shall apply to the land where the discoveries have been made. " are applied. The administrative authority shall inform the Minister in charge of culture without delay". This law therefore takes full account of the principle of "management of fortuitous discoveries of physical assets of cultural heritage" (NES n°8)	

World Bank NES	Relevant national provisions applicable to the Project	Ad hoc provisions to supplement the national provisions applicable to the Project
SEN No.[0] 10 "Stakeholder Engagement and Information"	Decree No. 2022-390 of July 13, 2022 requires consultation and public hearings when environmental studies are carried out, depending on the scope of the Project. According to Article 55**:** The following are subject to the public hearing procedure on the environment: – Any classified project for an establishment or site; – Any programme or project when the Minister deems a priori that it is in the interest of the citizens concerned or when he considers that the project involves risks. The public hearing procedure is the responsibility of the Minister. The ESIA is made public as part of this process and forms part of the package compiled for this purpose. According to CFD, once the expropriation procedure is launched, the information and consultation of the PAPs is mainly done through commodo and incommodo surveys aimed at informing the populations of the implementation of the Project and to collect their observations; Information posters are posted to this effect in public places.	The national provisions do not fully meet the requirements of ESS No. 10. Indeed, public participation is mentioned but is not systematic because the public hearing through which this participation will have to be real is not systematic, because it is only mandatory for sub-projects that have required an in-depth ESIA. In addition, it remains an initiative led by the Minister in charge of the environment. In the case of this Project, stakeholder consultations will be carried out even for sub-Projects subject to simplified ESIA. These will be carried out from the beginning of the studies and will be agreed throughout the sub-project cycle. The consultants assigned to these studies will benefit from the support of the technical services and NGOs working in the area to carry out this mission.

Source: Document review, IRC 2024

A comparison of national environmental assessment regulations with the World Bank's NES triggered by the SUNP-GN shows that there are points of convergence and divergence.

- **Points of convergence**

There is conformity between the national law and the provisions of the World Bank's NES No. 1, NES No. 2 and NES No. 8.

- **Points of divergence**

The points of divergence between the national legislation and the NES relate to the World Bank's NES No. 3, NES No. 4, NES No. 5, NES No. 6 and NES No. 10.

As a result, the national provisions do not fully comply with the requirements of NES No. 3 and NES No. 4.

Also, the national provisions have not taken into account vulnerable groups, the exposure of the community to risks related to traffic in the framework of the Project and road safety, the risks of sexual exploitation and abuse, climate change issues in the design and construction of infrastructure, Thus, the national provisions will be complemented by the provisions of the World Bank's NES No. 4 in the framework of this Project.

The specific measures to be taken within the framework of this Project are:

- Develop a community traffic code as part of the Project's activities; - Develop and implement a Code of Conduct that includes clauses on GBV/EAS/HS and child labour as well as disciplinary sanctions; - develop a MGP with two channels of denunciation and management (sensitive complaints and non-sensitive complaints); - To develop and implement the Health, Safety and Environment Code (HSSE).

The national provisions do not fully meet the requirements of ESS No. 5. On the relocation of informal occupants, national legislation does not recognize informal occupants. It has not provided for any specific measures to assist them in their resettlement. Similarly, economic rehabilitation is not mentioned by the State Land Code (CFD) according to national legislation. On the other hand, NES No. 5 offers assistance for the resettlement of displaced persons. It stipulates that, in addition to the relocation allowance, persons affected by the Project are provided with assistance during resettlement and follow-up after resettlement. As for vulnerable groups, ESS No. 5 requires that special attention be paid to gender issues, the needs of poor populations and vulnerable groups.

ESS 6 talks about biodiversity, not just forests, this biodiversity can be found in a river, in the air, in the soil, not necessarily just related to forests, so it is unlikely that this law meets all the criteria of ESS 6.

The national provisions do not fully meet the requirements of ESS No. 10. Indeed, public participation is mentioned but is not systematic because the public hearing through which this participation will have to be real is not systematic and is only mandatory for sub-Projects that have required an in-depth ESIA. In addition, it remains an initiative led by the Minister in charge of the environment.

5. POTENTIAL ENVIRONMENTAL AND SOCIAL RISKS AND IMPACTS AND PROPOSED MITIGATION MEASURES

This section gives the potential positive and negative environmental and social risks related to the planned activities according to the project components. At the current stage of project formulation, it is not possible to accurately identify and assess all the impacts that may be generated by the project. Thus, the planned environmental and social assessments will make it possible to better identify the impacts related to the project and sub-projects.

5.1 Potential sources of risk and types of impacts

Potential sources of types of impacts concern the preparatory phases, construction and withdrawal of the site, and the operation and maintenance of infrastructure. The operation and maintenance of the road network can also generate impacts on the environment.

Thus, in the preparatory phase, the potential sources of impact are:

- execution studies;
- release of the right-of-way;
- installation of the site/bringing of equipment/construction of the remote site;
- network relocation (SBEE, SONEB, Benin Telecom)
- recruitment of the workforce;
- Development of diversions and signage.

During the construction and withdrawal phase of the site, the potential sources of impact mainly concern:

- opening and/or operating loans and quarries;
- earthworks/roadworks;
- sanitation work;
- coating work;
- books;
- signalisation ;
- Finishing work.

In the operation phase, the potential sources of impact mainly concern the:

- transport and traffic
- Interviews.

5.2 Potential environmental and social impacts of the project

The achievements planned as part of the project will generate positive and negative impacts. Taking into account the project's consideration of the positive impacts, the negative impacts are as follows in the table below

Table 23: Analysis of Potential Environmental and Social Impacts

Components	Sub-Components/Activities	Potential negative impacts	Mitigation measures
Component 1: Improving the governance of the urban mobility sector	**Sub-component 1.1:** Development of a sustainable urban mobility strategy and a freight management plan for Grand-Nokoué	Loss of some jobs for local residents and for certain players in land and river transport.	Establishment of a retraining system for lost jobs

Components	Sub-Components/Activities	Potential negative impacts	Mitigation measures
	Sub-component 1.2: Creation and operationalization of an organizing authority for urban mobility in Grand-Nokoué	Creation of pockets of resistance by certain key actors in the poorly modernized craft system (especially the illiterate)	Establishment of a framework for consultation and dialogue with stakeholders
	Sub-component 1.3: Establishment of financing mechanisms for the urban mobility sector.	Creation of corruption systems	Establishment of a control mechanism for the financial mechanism
Component 2: Professionalisation of paratransit operators, Road safety and waterway safety	**Sub-component 2.1:** Professionalization of paratransit operators	Soil and water pollution from oil spills and all kinds of waste	Establishment of a monitoring and evaluation mechanism and a waste management system
	Sub-component 2.2: Road safety	Observation of speeding accident cases	Implementation of awareness-raising measures on speeding and its repressive measures
	Sub-component 2.3: Safety on inland waterways (lake transport)	Observation of cases of drowning by capsizing of boats following speeding and oversized loads	
Component 3 : Improvement of urban mobility conditions	**Sub-component 3.1:** Introduction of public transport services by bus and boat	Pollution of soil and water bodies by accidental oil spills	Establishment of a monitoring and evaluation system
		Degradation of the pavement and soil compaction due to the neglect of monitoring and evaluation measures	
	Sub-component 3.2: Provision of infrastructure supporting sustainable and multimodal urban mobility	Disturbance of wetland fauna and flora (Ramsar site 1018 along the corridor) during the mobilization of materials (water and lagoon sand) for the execution of infrastructure construction works	Implementation of measures to avoid sensitive wetlands for the removal of materials
		Ecosystem disturbance at various levels (underground and above-ground)	
	Sub-component 4.1: Technical assistance on the	Job losses for some actors who	Setting up a

Components	Sub-Components/Activities	Potential negative impacts	Mitigation measures
Component 4: Electrification of two-wheelers	Planning of a motorcycle taxi fleet renewal strategy (pilot phase)	will not be taken into account	system for retraining lost jobs
		Loss of jobs among some players involved in the maintenance of gasoline-powered motorcycle taxis	
	Sub-component 4.2: Deployment of a fleet of electric motorcycle taxis in Grand-Nokoué	Increase in Waste Electrical and Electronic Equipment (WEEE) due to used batteries, spare parts out of service	Establishment of a system for the management (recycling) of DEEE
	Sub-component 4.3: Structuring a local industrial sector for electric mobility	Loss of jobs among some players involved in the maintenance of gasoline-powered motorcycle taxis	Establishment of a system for the reconversion of lost jobs
		Proliferation of Waste Electrical and Electronic Equipment (WEEE)	Establishment of a recycling system for DEEE
		Reduced income for actors who have lost their jobs or even impoverished jobs	Implementation of measures for the professional integration of vulnerable groups
		Creation of pockets of resistance to the project due to the slowness in the retraining of the newly unemployed	Establishment of a framework for consultation and dialogue with stakeholders
Component 5: Capacity building and project management	**Sub-component 5.1:** Project Management	Creation of pockets of resistance and discontented	Establishment of a framework for consultation and dialogue with stakeholders
	Sub-component 5.2: Capacity building	Brain Drain	
	Sub-component 5.3: Assistance to the project owner with the project execution unit	-	-

Source: IRC, 2024

Apart from the various impacts observed on both sides, it should be noted that the profession of zémidjan is the most developed means of transport in the cities of greater Nokoué. The arrival of the PSUM-GN project through its components 2 and 3 will lead to a modernization of the sector with the introduction of new means of transport such as electric motorcycles and the development of public transport. This reform, which will take place in the transport sector of Grand-Nokoué, is not without impacts on the lives of the actors. The most recurrent impacts include job loss, reduced daily income; the reduction of the number of Zemidjans because from now on the sector will be controlled with such modern means.

5.3 Potential Overall Negative Environmental and Social Risks

Of the components that are the subject of this ESMC, it is Component 3 that will generate environmental and social risks/impacts as shown in Table 18.

Table 24: Project-Specific Negative Environmental and Social Risks

Components	Sub-Components /Activities	Potential risks	SEN in relation to the potential risks identified
Component 1: Improving the governance of the urban mobility sector	**Sub-component 1.1:** Development of a sustainable urban mobility strategy and a freight management plan for Grand-Nokoué	Risk of job loss	Implementation of ESS No. 2: Employment and Working Conditions
		Risk of waste proliferation	Implementation of ESS No. 4: Health and Safety of the Population
	Sub-component 1.2: Creation and operationalization of an organizing authority for urban mobility in Grand-Nokoué	Risk of creating pockets of resistance by certain key players in the poorly modernized paratransit sector (especially the illiterate)	Implementation of ESS No. 10: Stakeholder Engagement and Information
		Risks of VBG/EAS/HS	
		Risks of social conflicts	
	Sub-component 1.3: Establishment of financing mechanisms for the urban mobility sector.	Risk of corruption	Implementation of ESS No. 1: Assessment and Management of Environmental and Social Risks and Effects
		Risks of social conflicts	Implementation of ESS No. 10: Stakeholder Engagement and Information
Component 2: Professionalisation of paratransit operators, Road safety and waterway safety	**Sub-component 2.1:** Professionalization of paratransit operators	Risk of soil and water pollution from oil spills and all kinds of waste	Implementation of ESS No. 1: Assessment and Management of Environmental and Social Risks and Effects
		Risks of social conflicts	Implementation of ESS No. 10: Mobilization of

Components	Sub-Components /Activities	Potential risks	SEN in relation to the potential risks identified
			Stakeholders and information
	Sub-component 2.2: Road safety	Risk of accident	Implementation of ESS No. 4: Health and Safety of the Population
	Sub-component 2.3: Safety on inland waterways (lake transport).	Risk of drowning	
Component 3 : Improvement of urban mobility conditions	**Sub-component 3.1:** Introduction of public transport services by bus and boat	Risk of pollution of soil and water bodies by accidental oil spills	Implementation of ESS No. 1: Assessment and Management of Environmental and Social Risks and Effects
		Risk of pavement degradation and soil compaction due to neglect of monitoring and evaluation measures	
	Sub-component 3.2: Establishment of infrastructure supporting sustainable urban and multimodal mobility	Risk of disturbance of wetland fauna and flora (Ramsar site 1018 along the corridor) during the mobilization of materials (water and lagoon sand) for the execution of infrastructure construction works	Implementation of ESS No. 6: Preservation of biodiversity and sustainable management of biological natural resources
		Risk of erosion by the exploitation of lagoon sand	Implementation of ESS No. 3: Resource Efficiency and Pollution Prevention and Management
		Risk of displacement of cultural and religious sites	Implementation of ESS No. 8: Cultural Heritage
		Risk of pollution of water resources, especially surface water resources, by waste from the works (cement, sand, excavated material)	Implementation of ESS No. 1: Assessment and Management of Environmental and Social Risks and Effects
		Risks of water pollution by accidental spills of hydrocarbons and waste oils	

Components	Sub-Components /Activities	Potential risks	SEN in relation to the potential risks identified
		Risks of contamination of surface and groundwater by chemical pollutants	
		Risk of degradation of soil structure by compaction (machinery traffic)	
		Risk of erosion due to the use of lagoon sand for infrastructure construction	Implementation of ESS No. 3: Resource Efficiency and Pollution Prevention and Management
		Risk of destruction of vegetation cover (plantations)	Implementation of ESS No. 6: Preservation of biodiversity and sustainable management of biological natural resources
		Risk of disturbance to aquatic wildlife and migratory bird species	
		Risk of disruption to the socio-economic activities of residents living near the project right-of-way	Implementation of ESS No. 1: Assessment and Management of Environmental and Social Risks and Effects
		Risks of social discontent if local labour with equal skills are not used	Implementation of ESS No. 10: Stakeholder Engagement and Information
Component 4: Electrification of two-wheelers	**Sub-component 4.1** Technical assistance on the planning of a motorcycle taxi fleet renewal strategy (pilot phase)	Loss of jobs among certain actors who will not be taken into account	Implementation of ESS No. 1: Assessment and Management of Environmental and Social Risks and Effects
		Loss of jobs among some players involved in the maintenance of gasoline-powered motorcycle taxis	
	Sub-component 4.2: Deployment of a fleet of electric motorcycle taxis in Greater Nokoué	Proliferation of Waste Electrical and Electronic Equipment (WEEE) by used batteries, out-of-service spare parts	Implementation of ESS No. 1: Assessment and Management of Environmental and Social Risks and Effects
	Sub-component 4.3: Structuring a sector	Risk of job losses for some players	Implementation of ESS No. 2: Employment and Working Conditions

Components	Sub-Components /Activities	Potential risks	SEN in relation to the potential risks identified
	local industrial platform for electric mobility.	involved in the maintenance of gasoline-powered motorcycle taxis	
		Risk of proliferation of waste electrical and electronic equipment (WEEE)	Implementation of ESS No. 1: Assessment and Management of Environmental and Social Risks and Effects
		Risk of reduced income for actors who have lost their jobs	Implementation of ESS No. 2: Employment and Working Conditions
		Risk of impoverishment among some actors in the craft sector	
		Risk of creating pockets of resistance to the project due to the slowness in the retraining of the newly unemployed	Implementation of ESS No. 10: Stakeholder Engagement and Information
Component 5: Capacity building and project management.	**Sub-component 5.1:** Project Management	Risk of creating pockets of resistance and discontent	Implementation of ESS No. 10: Stakeholder Engagement and Information
		Risk of corruption	
		Risk of dissatisfaction of stakeholders not taken into account and disturbed local residents	
	Sub-component 5.2: Capacity building	Risk of corruption	Implementation of ESS No. 10: Stakeholder Engagement and Information
		Risk of brain drain after professionalization (case of electric motorcycle maintainers)	
	Sub-component 5.3: Assistance to the project owner with the project execution unit	-	-

Source : IRC, 2024

- **Impacts of the proposed developments on fishing activities**

The development of the project's activities, in particular the establishment of quays, the removal of sand and the introduction of river transport, will lead to the destruction of the acadjas, the consequence of which remains the low yield of the fishermen.

- **Impacts of the project on the zémidjans in Greater Nokoué**

The "zémidjans", a word meaning "take me quickly" in Fon (a local language of Benin), refers to motorcycle taxi drivers who are ubiquitous in Greater Nokoué, a region covering the main cities of southern Benin, including Cotonou, Porto-Novo, Abomey-Calavi, Sèmè-Podji, and Ouidah.

The "zémidjans" are a fast, flexible and affordable means of transport for the inhabitants, especially in areas poorly served by four-wheeled vehicles. They make it possible to communicate from remote neighbourhoods to urban centres, especially in a context of frequent traffic congestion

5.4 General Mitigation Measures

The general mitigation measures, to be carried out during the preparatory phase, construction and during the operating period, are recorded in the table 19.

Table 25: General Mitigation Measures for the Delivery of the NS-MUDP Project

Measurements	Proposed actions
Regulatory and institutional measures	• Carry out environmental and social screening and, if necessary, ESIA/NIE for sub-projects funded under the SUMP-GN Project • Integration of environmental and social clauses into companies' DAOs • Preparation by companies of the site PGES
Technical measures	• Conduct a communication and awareness-raising campaign before the work with PVs (PAP, beneficiary communities, authorities, etc.); • Ensure compliance with health and safety measures for site facilities; • Carry out adequate signage of the work; • Employ local labour as a priority; • Ensure compliance with safety rules during work; • Ensure the collection, sorting and disposal of waste from the works; • Provide for accompanying measures in the sub-projects (rehabilitation of schools, health centres, etc.); • Conduct awareness campaigns on STI/HIV/AIDS/COVID-19 and road safety • Conduct awareness campaigns on the risks related to GBV / EAS / HS • Closely involve the services of the chiefdoms in the monitoring of the implementation of the sub-projects; • Strengthen the capacity of institutional actors in the management and maintenance of the Project's infrastructure.
Action items	• Environmental and social monitoring and follow-up of the Project
	• CGES evaluation (internal, mid-term and final)

Source : IRC, 2024

- **Construction phase**

The social impacts will manifest themselves in terms of: − loss of land; − loss of property; − destruction of graves; − temporary and permanent loss of sources of income; − conflicts related to the non-employment of local labour; − risks related to SEA/HS, child marriage; − increase in diseases related to STIs, HIV/AIDS and COVID-19; −

Gender-Based Violence (GBV).

- ***Loss of land***

The installation of the cabin transformer stations will require the acquisition of land that may belong to private owners, or it is land or administrative reserves belonging to the State but on which squatters have settled to carry out income-generating activities.

Mitigation measures

− identify the affected land; −
Compensate for the loss of land.

- ***Loss of property***

The alignment of the roads to be developed in Component 2 of the SUMP-GN could potentially affect property (houses, fence, front terrace, shop, sheds or any other physical assets located on the routes).

Mitigation measures

− Compensate for the loss of private and public
property; − identify the property and people affected.

- ***Destruction of graves***

It has been observed in certain departments, particularly in the disadvantaged neighbourhoods targeted by the extension of the networks, that the graves are often in homes and sometimes at some distance from the roads. The routes of the networks could lead to their destruction.

Mitigation measures

− to avoid the destruction of graves;
− develop and implement the procedure for the management of incidental
discoveries − review or change the route of the route.

- ***Temporary and permanent loss of income***

The routes of the project could pass in front of retail shops, service companies, or even on the side of the streets. Such an activity will temporarily or permanently lead to the loss of income for these affected people.

Mitigation measures

− identify the people and property affected; − compensate for the loss
of income of the people affected by the Project.

- ***Risks of traffic accidents***

The increase in traffic from machines to construction sites could lead to traffic accidents, particularly in agglomerations not used to this dynamism.

Mitigation measures

− provide diversions for users; − equip the
site with road signs.

- **Emergence of new cases of conditions related to STI/HIV/AIDS and COVID-19**

With the presence of site staff from the companies in charge of carrying out the work, it will be possible to see the mixing and increase of exchanges between workers from various backgrounds and the different communities present in the Project area, especially young girls.

This situation can be a source of contamination
des IST/MST/SIDA et COVID-19.

Mitigation measures

Develop and implement an action plan for the prevention and management of STI/HIV/AIDS and COVID-19 related conditions.

- **Gender-Based Violence (GBV) in the context of the GURP-GN**

GBV can manifest itself through the workers of the various construction sites who will have an easy time convincing the young girls with the small bills in exchange for sexual favours, the sexual harassment of the workers on their female colleagues, on the young saleswomen during the installation of the living quarters, the clearing of brush and during the works. In addition, the implementation of the Project is potentially fraught with risks of SEA/HS (with consequences such as unwanted pregnancies, dropping out of school, early marriage for girls; the risk of increased intimate partner violence) due to the financial power of the project workers vis-à-vis the beneficiary populations. These risks may be generated by (i) the interactions of Project workers with the beneficiary populations and the differences in social and financial status between them, (ii) the mobilization of foreign labour, social tensions and related differences, (iii) Violence Against Children (VCE) and (iv) changes in the social roles attributed to men and women due to economic aspects that can lead to exaggeration power dynamics and consequently more domestic violence (v) harassment of beneficiaries by other community members related to the questioning of traditional gender roles/norms due to the participation of women in project activities (vi) risks of tension between certain categories of Project workers and the populations due to non-compliance with practices, habits and customs in the areas of intervention of the Project.

- **Risks related to SEA/HS, child marriage**

Early and forced marriage has serious consequences for a girl's life, but also for her community and her country as a whole. Child marriages often result in sexual violence and abuse by the husband, and sexual relations are often forced.

Mitigation measures

− inform and raise awareness among the population about the MGP to denounce cases of SEA/HS; − have the code of conduct signed by all workers and stakeholders on the project; − prominently display the Corporate Code of Conduct and the Individual Code of Conduct by prominently displaying them in workers' camps, offices and public areas in the workplace; − explain orally and in writing the Company's Code of Good Conduct and the Individual Code of Good Conduct to all staff; − Ensure that sexual interaction between company employees (at any level) and members of surrounding communities is avoided. This includes relationships involving the retention/promise of a benefit (monetary or non-monetary) to members of the community in exchange for sexual activity, such sexual activity is considered "non-consensual" under this Code of Conduct.

- **Procedure for the management of cultural heritage in case of chance discovery**

In Benin, the cultural heritage is varied and diverse. It is characterized by archaeological and historical sites, human settlements, traditional cultures, and cultural and natural landscapes (historical remains, cultural and religious symbols, etc.). This heritage is protected and enhanced by **Law No. 2021-09 of October 22, 2021 on the protection of cultural heritage in the Republic of Benin.**

It defines the national heritage and defines the conditions for its management as well as the penalties in the event of non-compliance with protection and conservation measures. This law reflects the government's desire to better channel the efforts of the public authorities and the population to preserve and promote the country's heritage and cultural expressions. Article 41 of the Act provides that "when, as a result of work or any event, monuments, ruins, remains of dwellings or ancient burials, inscriptions or generally heritage objects as defined in Article 2 of this Law, are brought to light, the inventor and the owner of the building where they were discovered are required to make an immediate declaration to the administrative authority of the place of discovery. The administrative authority shall inform the Minister in charge of culture without delay. This law is in line with the World Bank's Environmental and Social Standard No. 8, which aims to avoid the deterioration of any physical cultural heritage during the implementation of development projects.

The environmental and social assessment that will be developed as part of the implementation of the SUMP-GN, as set out in ESS No. 1, will examine the direct, indirect and cumulative impact that any sub-project of the SUMP-GN could have on the cultural heritage discovered during the execution of the works and in particular during the excavations, as well as the risks that the sub-project could generate in this regard. Therefore, the implementation of a **'fortuitous discovery procedure'** will make it possible to safeguard historical remains for the benefit of culture and economic activities such as tourism. It consists of alerting the DPC in the event of the discovery of remains (ancient works of art, archaeological remains, etc.) during the opening and exploitation of quarries and loan pits, and during scouring for the buildings themselves. The contractor will be responsible for:

- Inform workers about the goods concerned and the procedure to follow;
- Immediately stop work in the case of an archaeological remains (cave, cave, furnaces, cemetery, burial) pending the decision of the CPD;
- In the case of objects (figurines, statuettes) delimit the area and alert the CPD;
- Resume work only with the authorization of the DPC.

This assessment will identify the potential risks and effects of the proposed sub-project activities on cultural heritage.

Measures will be proposed to avoid negative impacts on cultural heritage. Where it is not possible to avoid them, measures will be implemented to manage these impacts in accordance with the principle of the mitigation hierarchy.

If necessary, the Pool-MUDP-GN will proceed with the development of a Cultural Heritage Management Plan. This Cultural Heritage Management Plan will include a timeline for implementation and an estimate of the needs for each mitigation measure.

In practical terms, the actions to be taken in the case of the NSMP-SUMP are as follows in Table 20.

Table 26: Different phases and liability in the event of a fortuitous discovery

Phases	Responsibilities
Densification and expansion phase	
1- Suspend the work and immediately declare it to the territorially competent authority (district chiefs, district chiefs, Mayor of the municipality concerned and also inform the project as soon as possible	Contractor Company in charge of the work
2- Take material measures to protect the site and prohibit access to the company's staff and any external persons	Company in charge of the work
3- Inform the Minister in charge of culture	Mayor of the Municipality concerned
4- Notify the temporary suspension of work and take safeguard measures	Minister in charge of Culture
Resumption/continuation of work	Company in charge of the work

Source: field data, October 2024.

It may be implied that, depending on the nature of the cultural object unearthed and to be protected, the safeguarding measures will indicate the follow-up to be given to the work and the time frame that this follow-up implies. The need to continue the work and the conditions for this continuation will then be indicated.

All in all, it is important that the company in charge of the work appropriates the content of this law in order to adopt the nomenclature of the objects concerned by the cultural and natural heritage.

5.5. Impacts of the project on the activity of the "zémidjans in Greater Nokoué

- **Impact of track construction**

The new road infrastructure would reduce traffic congestion and rapid tire wear. A smoother flow of traffic would reduce driver and passenger fatigue.

- **Impact of the promotion of electric motorcycles**

Electric motorcycles would reduce fuel-related expenses Maintenance costs could also fall thanks to the simplicity of the electrical systems compared to combustion engines.

- **Environmental impacts**

The transition to electric motorcycles and the development of river transport would reduce air and noise pollution, contributing to an improved living environment for the people of Zemidjan and the population.

- **Social impacts**

The Zemidjans could see these changes as a short-term threat if the economic benefits are not significant Tensions could emerge if the transition does not include a support mechanism (subsidies, reorientation, etc.)

Mitigation measures

To maximize the benefits and mitigate the negative impacts, it will be necessary to:

- Subsidize the purchase or rental of motorcycles
- Create accessible and well-distributed charging infrastructure in Greater Nokoué
- Raise awareness among the people of Zemidjan about the importance of the ecological transition and the use and maintenance of electric motorcycles

- Involve the unions of the Zémidjans
- Develop better coordination between the different modes of transport (road, river-lagoon
- Strengthen regulatory frameworks to organize the coexistence of the zémidjans with new initiatives.
- Implement monitoring systems to measure real impacts on revenue and security.

5.6. Public consultation plan

5.6.1 Background and Objective

The consultation plan aims to ensure the social acceptability of the Project and the sub-projects at the community level, by putting all stakeholders in a network for sharing information on the environment, the social issues and the Project's activities. The plan aims to bring the actors to have a common vision and shared objectives of the actions undertaken by the Project at the local level in a three-dimensional logic before the Project (identification and preparation phase); during the Project (execution phase/works); after the Project (management, operation and final evaluation phase).

5.6.2 Consultation Mechanisms and Procedures

The communication, consultation and negotiation mechanisms and procedures to be put in place will be based on the following points: knowledge of the environmental and social aspects of the sub-project's area of intervention and the social acceptability of the sub-project. The tools and techniques of consultations must conform to a logic of educational and social communication and integrate measures to avoid the spread of COVID-19 and HIV/AIDS.

5.6.3 Consultation Strategy-Steps and Process

The strategy is based on information, awareness-raising and communication. The beginning of the provision of environmental and social information for the SUMP-GN should be marked by launch workshops in the selected areas, with a series of public announcements in the said areas. As part of the stakeholder consultation process, separate focus groups with women and girls were held. This is to allow them to provide information that they deem necessary.

The public consultation process should be structured around the following axes: (i) preparation of stakeholder consultation files including the elements of this ESMC, specific study reports, description of the activities already identified (location, characteristics, and survey sheets; (ii) preparatory missions to sub-Project and consultation sites; (iii) public announcements; (iv) public surveys, data collection at project sites and validation of results.

5.6.4 Dissemination of Information to the Public

During the implementation of the NSMP, all actors and stakeholders should be consulted on a regular basis. The ESMP should be made available to the public, for possible comments, by the SUNC-GN Management Unit, through the public and local press, during awareness-raising and information meetings in the localities where the activities of the Project will be carried out. In

addition, the ESMC will also have to be published on the World Bank's external website. In addition, the dissemination of information must be done to all stakeholders: administrative authorities; local traditional chiefdoms; local communities, associations/NGOs, women's groups, religious authorities.

The specific stakeholder consultations conducted in the context of the development of this ESMC are summarized in the section below.

5.6.5 Synthesis of stakeholders and institutional actors

The objective of the public consultation is to inform stakeholders about the project and to encourage their participation in order to ensure social inclusion in the planning and implementation of the activities and sub-projects of the SUMP-GN. Public consultations are very important for the implementation of the Project's activities (especially in the context of the Environmental and Social Impact Assessment (ESIA) and Resettlement Action Plan (RAP) reports to be carried out). They should identify key issues and determine how the concerns of all parties are being addressed in the implementation of activities.

To facilitate the mobilization of stakeholders, IRC sent a letter to the five communes of Greater Nokoué benefiting from the project to inform the different sections of the population for their participation in the public consultation sessions held.

As part of the development of this ESMP, stakeholder consultations were carried out in order to inform stakeholders and local populations of the new Project (MUDP-GN), the components of the SUMP-GN, the objectives of the ESMP, the impacts and mitigation measures, the compensation mechanisms and support measures for potential NAPPs and to collect the expectations of the participants. The said consultations were organized in the capitals of the Communes of Abomey-Calavi, Cotonou, Sèmè-Podji, Ouidah and Porto-Novo.

The complaints made by the girls concern cases of GBV/SE/SH. In other words, the risks of Sexual Exploitation and Abuse (SEA)/Sexual Harassment (HS) committed by workers on young saleswomen and others. They confirmed that cases of rape are also the causes of unwanted pregnancies. To this end, they wanted NGOs to organize more awareness-raising and education sessions for women. At the end of the discussions held with the women and girls' groups, the following grievances were retained:

- Raise awareness and educate to curb the rape of women and girls in dark areas;
- Raise awareness among women and girls about unwanted pregnancies; − Raise awareness and involve entrepreneurs on the sexual abuse of young female saleswomen on construction sites; − establish a frank collaboration between the project managers and the stakeholders.

5.6.5.1 Summary of the public sessions in the municipality of Abomey-Calavi

As part of the implementation of the instruments of the sustainable urban mobility project in Greater Nokoué, stakeholder consultation is undertaken. On Monday, October 07, 2024,

the session was held in the Commune of Abomey-Calavi. The said session brought together the following stakeholders: Municipal Councillors; Neighborhood chiefs; development actors; civil society organizations in the field of environment and social issues; Carriers; youths; fishermen; Craftsmen; representatives of associations of people with disabilities; women's groups; development actors (development associations): women traders and representatives of decentralized structures operating in the Municipality of Abomey-Calavi. The session was attended by 50 people, including 08 women.

After the presentation of the project, the floor is given to the participants. Overall, the participants welcome the project because it solves the problems of urban mobility in the communes of Greater Nokoué. There are questions that have passed. These questions relate to, among others:

- What are the negative impacts of the project?
- What solutions are being considered to mitigate negative impacts?
- How long does the project last?
- -What is the cost of the project?
- What safety measures will be taken on the site?
- Will the work be carried out in sections?
- Are the stopping points planned as part of the project?
- Will the project take into account the rehousing of people located in the right-of-way?
- What is the source of funding for the project? Is it the central state or the communes of Greater Nokoué?

To these concerns and questions of the participants, answers are given by the team of consultants.

Recommendations

At the end of the session, participants recommended that:

- build infrastructure for the benefit of mini-bus transport actors;
- involve mini-bus transport stakeholders in raising awareness among the population;
- raise awareness among road users of the road to be developed before its commissioning on road safety;
- Lighting the roads planned in the project;
- Install fire hydrants along the project.

Plate 1 illustrates some of the participants in the session.

Plate 2: Some participants in the public consultation session at the Abomey-Calavi City Hall

Shot: CRI, 2024

5.6.5.2 Summary of public consultation in the 12th district of Cotonou

As part of the development of the environmental and social management framework for the sustainable urban mobility project in Greater Nokoué, public consultation sessions were organized with the various stakeholders in the project. Thus, on Thursday, October 10, 2024, the Cotonou Mosque, which took place in the 12th district of Cotonou, took place. It was attended by stakeholders such as the Municipal Councillors; the Chiefs of Districts; development actors; civil society organizations in the field of environment and social issues; transporters; young people; craftsmen; representatives of associations of people with disabilities; women's groups; development actors (development associations): women traders, drivers of Zémidjan and representatives of decentralized structures operating in the Municipality of Cotonou as well as technical managers of the City Hall. The session was attended by 35 people, including 05 women.

After the presentation on the content of the project and the explanations of the different components of the project, the floor was given to the participants.

In their speech, the participants appreciated the vision of the project which they believe will solve the problem of urban mobility in the city. They believe that they are in favor of the implementation of the project but did not fail to raise some concerns materialized by five (05) questions. These questions relate to, among others:

- What is the overall cost of the project?
- When does the project start?
- What solutions are being considered to mitigate negative impacts?
- How long does the project last?
- What is the cost of the project?
- Is there a management plan for battery-related electrical waste?
- Will the damage that will be caused by the project be compensated for the property affected?
- Are there plans to install public lighting that meets the climatic conditions?
- What is planned for mini-bus drivers?
- What would be done for the old means of transport?

To these concerns and questions of the participants, answers are given by the team of consultants.

Recommendations

At the end of the session, participants recommended that:

- Take into account the recruitment of the local workforce during the implementation phase of the project;
- Develop the database of motorcycle taxi and mini-bus drivers;
- Provide speed bumps during the project implementation phase;
- Provide public toilets for users;
- Install signs and pictograms for the visually impaired;
- Provide speed bumps to limit the speed of motorists;
- To take into account health issues (HIV; GBV; COVID-19;
- Provide parking for people living with disabilities.
- Involve the real actors of the different fields concerned by the project. Plate 2 illustrates some of the participants in the session.

Plate 3: Some participants in the public consultation session *in the 12th district* of Cotonou

Shot: CRI, 2024

5.6.5.3. Summary of public consultation in the Municipality of Porto-Novo

As part of the implementation of the instruments of the sustainable urban mobility project in Greater Nokoué, stakeholder consultation is undertaken. On Friday, October 11, 2024, the meeting was held in the Municipality of Porto-Novo. The said session brought together the following stakeholders: Municipal and local councillors; representatives of the CNSR, prefecture, Ministry of Living Environment and Transport, Departmental Directorate of Health; development actors, transport actors, judicial police officers, representatives of the fire brigade Chiefs. The session was attended by 25 people, including 03 women.

After the opening of the session and the presentation of the project, the floor was given to the participants. Overall, the latter appreciated the project which, according to them, will be of great use to road users and to the development of the country. However, the participants asked some questions of understanding and recommendations were also made. These include:

- What is in store for road safety?
- Does mobility only concern the main roads?
- Did the project take into account the transport unions and the town halls?
- The project is based in which ministry?
- What are the main circuits chosen for river transport?
- What does it take into account the transport of sand and gravel?
- Did the project provide for the redevelopment and construction of piers?
- Can the project make the hydrants operational?
- Does the project take into account all the roads in Porto-Novo?

Answers to these various concerns are given by the team of consultants.

Recommendations

At the end of the session, participants recommended that:

- Closely involve the CNSR in the project;
- Consider lessons learned from previous similar initiatives;
- Review road infrastructure in order to adapt it to vehicles;
- Inform transport stakeholders so that they can prepare;
- Provide gathering places for motorcycle taxi drivers;
- Involve police officers and especially the CNSR;
- Make fire hydrants operational;
- Raise awareness and punish users who erect stalls around fire hydrants.

Some photos of the participants in the session.

Plate 4: Some participants at the Porto-Novo consultation session

Shot: CRI, 2024

5.6.5.4. Summary of public consultation in the Municipality of Ouidah

In the city of Ouidah, the consultation session took place on October 10, 2024 in the deliberation room of the City Hall. A total of 18 participants, including 13 men and 5 women, were present at this meeting. They were made up of actors such as elected officials of the municipal council, executives of administrative and technical services, representatives of the Republican Police, drivers, land and river transporters, CSOs, fishermen... etc. Following the presentation by the consultant of the objectives of the mission, the activities announced within the framework of the project, the discussions and exchanges with the participants that followed made it possible to retain the concerns and recommendations, which are as follows:

Concerns

The concerns raised are oriented towards the quest for information about the institutional actors in charge of the governance of the project, the physical framework of implementation, specific aspects of the people affected and the developments announced within the framework of this project. It is a quest for additional information about the ministry, the structure responsible for supervising the project, the municipalities of intervention, the targeted actors; forecasts in terms of capacity building, information, education and communication, of the actors concerned by the management and implementation of this component; forecasts, provisions and measures to broaden exchanges with the **most affected actors,** facilitate their involvement, representation and the consideration of their concerns, opinions and opinions at all phases of the project's implementation; promote, formalise and professionalise the profession of taxi drivers and secure the employment of people working in the sector; to ensure the availability of water, in toilets, the maintenance of hygiene and cleanliness, the management of existing transport equipment and those announced as part of this project.

Recommendations

The recommendations go to an invitation to the institutional actors in charge of the project to integrate the expectations of all stakeholders, including those of consumers of transport services; take into account ongoing experiences in the design of models, the negotiation of financing agreements; avoid financing options that keep drivers in chains of dependency for long periods of time; formalize, professionalize, organize the sector, the actors of the two-wheeled transport chain instead of destroying them; Recognize and integrate into the project monitoring plan the role of CSOs in the implementation of IECs for behaviour change; Extend information sessions to grassroots actors.

Plate 5: Public consultation session at the Ouidah town hall
Shot: IRC, 2024

5.6.5.5. Summary of public consultation in the Municipality of Sèmè-Podji

In the city of Sèmè-Podji, the consultation session took place on October 11, 2024 in the deliberation room of the Town Hall. A total of 40 participants, including 37 men and 3 women, were present at this meeting. They were made up of actors such as elected officials of the municipal council, executives of administrative and technical services, representatives of the Republican Police, drivers, land and river transporters, CSOs, fishermen... etc. Following the presentation by the consultant of the objectives of the mission, the activities announced within the framework of the project, the discussions and exchanges with the participants that followed made it possible to retain the concerns and recommendations, which are as follows:

Concerns

The concerns raised are oriented towards the quest for information about the different types of transportation and the developments announced as part of this project, its negative impacts. For river transport, concerns are raised about the forecasts, the provisions, measures taken to overcome the constraints related to traffic on Lake Nokoué (the congestion of water by the Hyacynth, specific areas under the influence of traditional property rights, extractive activities of fishery resources and sand with heavy use of prohibited gear), guarantee the safety of users, integrate existing reflections on the Tochè canal; details on the locations of the piers. Regarding land transport, the participants were concerned about the level of reflection achieved in the regulation of the two-wheeled transport sector, especially in terms of the requirement of driving licenses; the energetic solutions envisaged to support the choice of electrification of two-wheeled vehicles; the provisions, measures, forecasts to secure investments, alert about acts of vandalism of infrastructure, facilitate access to fleet renewal services, retraining to other professions, capacity building for the most affected people, take into account existing experiences in terms of agreements and contracts in the transport sector; whether or not it is possible to extend the connection of the main road networks to the Nigerian border, within the commune to the secondary road network.

Recommendations

The recommendations are an invitation to the institutional actors in charge of the project to integrate water practitioners at the local level in the reflection on the development of road networks on Lake Nokoué; take into account the Sèmè-Podji road network on the Nigerian border to reduce the risks related to insecurity; evaluate the experience of contracts and financing agreements in the existing sector; take into account and secure the jobs of people working in the informal sector, especially in this sector.

Plate 6: Public consultation session at the town hall of Sèmè-Podji
Shot: IRC, 2024

5.7 Cumulative Impacts Analysis

Cumulative effects are the result of the accumulation and interaction of several direct and indirect effects generated by the same project or by several projects in time and space. They can lead to abrupt or gradual changes in environments. Cumulative impact is produced by the sum of small impacts over time in the same area. Cumulative effects are changes to the environment as a result of combined action with other past, present and future human actions. Thus, the various projects and activities already carried out or in progress in the Greater Nokoué intervention area were analyzed for this purpose.

The cumulative effects assessment addresses a number of environmental components that correspond to the major concerns expressed by the public or identified as part of the environmental analysis. This assessment is a way of dealing with the implications of a project in a broader context of the impact assessment. In this study, the environmental components selected for the cumulative effects analysis are disturbance of aquatic ecosystems, water pollution, wildlife and wildlife, the regional economy, landscape quality, transportation, and noise pollution. For each of these components, the residual impacts of the project are considered as a whole. Where appropriate, the impacts of other projects or those caused by existing infrastructure, to which they may be combined, are briefly described and the cumulative effects are assessed. Since it is often difficult to accurately describe the state of the natural environment before human intervention and the exact magnitude of changes, cumulative effects will most often be assessed in terms of trends.

- **Cumulative impacts on the socio-economic environment**

The cumulative effects related to the use of river-lagoon transport and the operation of electric motorcycles will be of great importance. As part of the development phase of the project, several direct jobs will be created. In addition, indirect economic spinoffs will be generated.

The jobs created and the purchase of services are new sources of income for the greater Nokoué region. The project therefore has and will have a significant economic impact. With the current traffic, the cumulative impacts envisaged in the short, medium and long term are positive and significant, both locally and regionally.

Road traffic for the various projects could be quite high and the increase in road risks through the use of certain roads could then lead to a medium impact. It should also be noted that the road network improvement work will have a positive impact and will facilitate access to new areas; They will also improve travel in the study area.

The cumulative impacts related to **noise and** the degradation of air quality will be perceptible by the population. However, given the activities of the other projects, these impacts are considered to be low.

The **cumulative impacts of air contamination.** The combination of the present situation with the future will have a major impact on air pollution by dust. The ZECO4 project, which aims to change motorcycles from two-strokes to four-strokes in Greater Nokoué by banning the import of two-stroke motorcycles in Benin on the one hand and by implementing mechanisms for making four-stroke motorcycles available to motorcycles in general and to zemidjans in particular on the other hand, has contributed significantly to the reduction of air contamination in the major cities of Greater Nokoué. This project will contribute to the further reduction of this contamination through the electrification of two-wheelers.

- **Cumulative health impacts**

The cumulative impacts linked to the various projects on the health of the population, particularly with regard to the contamination of waterborne diseases and the transmission of STIs/HIV-AIDS due to the cohabitation between indigenous populations and foreign workers, will be of great importance.

- **Cumulative effects on fishing activities**

During the development phases of the project, the movements of machinery, machinery and workers will be added to those already present in the other projects. The accumulation of these activities is likely to have certain impacts on the movement of pirogues, particularly in terms of the safety of the residents of bodies and waterways. However, the cumulative impacts on fishing activities will remain negligible.

- **Cumulative effects on water pollution**

Inland waters are home to animal and plant populations, some of which are threatened. Their vicinity is often populated by ecosystems dependent on the aquatic environment (wetlands, RAMSAR 1017/1018). Disturbances to these ecosystems can threaten the maintenance of these populations. Taking biological variables into account makes it possible to assess the effects, both individual and cumulative, of several sources of disturbance, whether point or diffuse in origin, and to monitor these effects over the long term, both qualitatively and quantitatively.

- **Cumulative effects on landscape quality**

The completion of the project will make it possible to connect the cities of Greater Nokoué. River transport has many environmental advantages over other modes of transport. By using waterways, such as rivers and canals, inland waterway transport contributes to the reduction of CO2 emissions and the preservation of the environment.

- **Cumulative effects on transportation**

With regard to the cumulative effects related to transportation in Greater Nokoué, several projects are underway on the land component such as Asphaltage II and on the river component such as the ADELAC project. During the construction phase, the presence of machinery, the improvement of access roads and river-lagoon transport could temporarily slow down traffic on the lake and disrupt fishing activities. River transport also contributes to the preservation of ecosystems and biodiversity. Waterways provide a natural habitat for many animal and plant species, and river transport minimizes disturbance to these fragile ecosystems. By avoiding the construction of new terrestrial infrastructure, river transport also limits the fragmentation of natural habitats.

In summary, inland waterway transport is an environmentally friendly mode of transport. It reduces CO2 emissions, limits energy consumption and preserves ecosystems and biodiversity. By promoting the development of inland waterway transport, we can contribute to the transition to a more sustainable economy and to the preservation of our planet.

- **Cumulative effects on the soundscape**

The project will lead to an increase in traffic mobility but will strengthen the electrification of 2-wheelers (component 4). The cumulative effect of noise emissions will not be perceptible in Greater Nokoué.

6. ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK PLAN

The Environmental and Social Management Framework Plan (ESMP) determines the modalities for integrating environmental and social concerns into the process of designing, planning, managing and implementing SUNCMP-GN sub-projects through various measures. It includes:

− an environmental and social selection process or screening to identify the potential generic environmental and social impacts and risks that may result from the implementation of the various sub-projects; − an institutional mechanism for the implementation of the CGES; − a Complaints Management Mechanism (MGP); − a communication/consultation plan throughout the life of the project; − Capacity building measures in environmental and social management of the MUDP-GN; − institutional arrangements for the implementation and monitoring of the CGSP; − a Monitoring, Monitoring and Evaluation Programme and the cost of

CGESPs.

6.1 Process for the Analysis and Evaluation of the GN-SRMP Sub-Projects

This section presents the procedure for classifying and evaluating sub-projects according to their potential impacts on the environment and the human environment.

6.1.1 Sub-project screening procedures and implementation monitoring

The different steps in the environmental and social selection process to be followed for the SUNP-GN sub-projects are presented in this section. These different sub-projects will be classified taking into account the World Bank's Environmental and Social Standards. The extent of environmental and social measures required for the NSMP-SUMP sub-projects will depend on the results of the selection process. This selection process aims to: (i) determine the sub-projects that are likely to have negative environmental and social impacts, (ii) determine the appropriate mitigation measures for the sub-projects with adverse impacts, (iii) identify the sub-projects requiring ESIAs, (iv) describe the institutional responsibilities for the analysis and approval of the results of the selection, the implementation of the proposed mitigation measures, and the preparation of ESIA reports, (v) monitoring of environmental indicators during the implementation of sub-projects and their management, and (vi) identifying sub-projects that are likely to cause land acquisition or population displacement.

The different stages of the environmental and social selection process are presented below:

- **Step 1: Environmental and social screening of sub-projects**

The process of sorting sub-projects will be carried out by SIRAT experts on the basis of an environmental selection form and an environmental checklist. In addition to the potential environmental and social impacts, the screening results will also indicate: (i) the need for land acquisition; (ii) the types of public consultations that were conducted during the selection exercise; and (iii) the list of environmental and social documents to be produced for the sub-project. The completed forms and the screening report will be sent to the PSUNC-GN which will carry out their review for validation and then to the World Bank for opinion.

- **Step 2: Validation of the screening and classification of the sub-projects**

Based on the results of the screening, the appropriate environmental category for the sub-project will be determined. This step will be carried out by SIRAT experts in collaboration with the Beninese Environment Agency. The determination of the environmental categories of the SUMP-GN sub-projects will be carried out on the basis of the new classifications divided into four categories, namely: − **high-risk sub-projects:** These are projects whose proposed activities are likely to have significant and irreversible negative environmental and social risks and impacts; − **sub-projects with substantial risk:** These are projects whose activities present significant potential negative environmental risks and impacts on the biophysical and human environments but which can be mitigated in the medium and long term because they are reversible; − **Moderate-risk sub-projects:** These are projects whose environmental and social risks and impacts are considered to be low and do not require major mitigation measures, as they are reversible in the short term.

− **low-risk sub-projects:** These are projects whose environmental and social risks and impacts are considered to be very low or even negligible and do not require specific mitigation measures. To determine the appropriate risk classification of the different sub-projects, SIRAT experts will take into account relevant issues such as the nature, location, sensitivity and scope of the project.

In conclusion, it should be noted that the environmental and social impacts of the SUMP-GN are considered to be high, therefore, the SUMP-GN is classified as a "high risk" project.

• **Step 3: Preparation of the environmental and social safeguard instrument**

When the preparation of an ESIA is not necessary

After completing the screening form, when a SUMP-GN sub-project is classified as a low-risk project and does not require an Environmental and Social Impact Assessment to be carried out, it will be:

− formulate generic mitigation measures and follow-up/monitoring of the sub-project; − apply the environmental standards in force; − integrate the mitigation measures in the Tender Documents (RFP) before its publication or in the contract of the sub-project/activity company.

• ***When the development of an ESIA is necessary***

When the development of an ESIA is necessary, SIRAT through the GN SUMP Pool will carry out the following activities: preparation of the terms of reference for the preparation of the ESIA to be submitted to the EBA and the World Bank for its review and approval, recruitment of consultants or consultancy firms for the preparation of the studies, conduct of stakeholder consultations in accordance with the terms of reference and the provisions of ESS No. 10 of the the World Bank and finally the review and validation by the EBA and the World Bank of the Environmental and Social Impact Assessment drawn up.

The preparation of all environmental and social assessments as part of the implementation of the SUMP-GN must be carried out in accordance with the national procedure for the preparation of Environmental and Social Impact Assessments while respecting the requirements of the World Bank's Environmental and Social Standards. Thus, these environmental and social studies will be based on updated information, on a precise description and delimitation of the different sub-projects and on environmental and social baseline data in order to provide information on the nature and characteristics of impacts/risks as well as on mitigation measures. The assessment will assess the potential environmental and social risks and effects of these sub-projects, examine alternatives, identify ways to improve siting and the selection, planning, design and implementation of the sub-project with a view to applying the principles of mitigation hierarchy to adverse environmental and social impacts. Stakeholder engagement will be an integral part of the environmental and social assessment, in accordance with the provisions of ESS No. 10.

- **Step 4: Review, Approval of ESIA Reports and Obtaining the Certificate of Environmental and Social Compliance (CCES)**

The environmental and social impact assessment will be submitted to the EBA for review and approval and to the World Bank. EBA will ensure that all environmental and social risks and impacts have been identified and that effective, realistic and feasible mitigation measures have been proposed as part of the implementation of the sub-project. The report will be validated by the EBA and a Certificate of Environmental and Social Social Compliance (CCES) will have to be issued by the Minister of Living Environment and Transport, in charge of Sustainable Development. Indeed, the agency has five working days from the date of receipt to make the site visit. After the report has been submitted, the agency has working days to schedule its validation. If the final report is accepted by the agency, the draft certificate of environmental and social compliance is sent to the Minister no later than five (05) working days after the acceptance of the final version by the agency. However, it should be noted that these deadlines are not systematically respected with regard to the means available to the agency and the availability of managers.

- **Step 5: Stakeholder consultations and dissemination**

National legislation on environmental and social impact assessment requires that public information and participation be ensured during the preparation of the environmental and social impact assessment, in collaboration with the municipal and local authorities of the municipalities concerned. These public consultations must also take into account the requirements of the World Bank's Social Environmental Standard (SES) 10. The public consultation will include one or more meetings that will take into account the following points: the purpose, nature and scope of the different sub-projects, the duration of the activities of the sub-projects, the potential risks and effects of these sub-projects on local communities, and the measures proposed to mitigate them, highlighting the risks and effects that may disproportionately affect vulnerable and disadvantaged groups, and describing the differentiated measures taken to avoid and minimize them.

Public consultations must take into account local authorities, beneficiaries, local populations and the various stakeholders of the SUMP-GN. The aim is to inform them, to gather their opinions in order to identify the main problems and to determine how the various concerns will be taken into account during the preparation of the study. The results of these consultations will be incorporated into the HEIA report and will be made available to the public.

To meet the World Bank's consultation and dissemination requirements, the SUNKP-GN Coordination will produce a dissemination letter informing the World Bank of the approval of the ESIA, the effective dissemination of all the reports produced (ESIA) to all relevant partners and, possibly, to those who may be affected. It will also send an authorisation to the Bank to publish these documents on its website.

In future consultations, women and girls will be specifically targeted for women-only meetings facilitated by a woman and in a safe location, to encourage free and open exchanges about the project's activities and risks. This should be done both for the women members of the community as well as for the direct and indirect beneficiaries involved in the project.

For all communication strategies, issues related to the impact of project activities on girls and women will be addressed and in particular on the risks of sexual exploitation and abuse or sexual harassment (SEA/HS).

Girls and women will also be informed about the content of the Code of Conduct and consulted on safe and accessible ways in which survivors of SEA/HS could report misconduct by project staff, they will also be informed about the services available to survivors of GBV in their communities. Please note that these consultations should never attempt to identify survivors of violence, but should aim to identify general trends and challenges. If a person, during or after the counselling meeting, discloses the violence they are experiencing, the facilitator should refer them to the nearest GBV service provider (information on locally available services should be collected prior to consultations).

- **Step 6: Integration of environmental and social provisions in the Tender Documents and approval of the ESMPs**

Once the ESIA is developed and validated by the EBA and published through the necessary channels, SIRAT will ensure that the recommendations and other environmental and social management measures from the ESIA are incorporated into the tender documents and the execution of the works by the companies. Binding clauses should be accompanied by sanctions in the event of non-implementation of environmental and social measures.

Before the start of the work, the company is required to submit an Environmental and Social Management Plan for the site (PGES-Chantier) as well as a PHSS-chantier to the control office and the SIRAT for validation. After validation, this ESMP-Site should be implemented in accordance with the environmental requirements contained in the tender.

- **Step 7: Environmental and social monitoring of the implementation of the sub-project**

Environmental and social monitoring makes it possible to verify and assess the effectiveness, effectiveness and efficiency of the implementation of the environmental measures of the various sub-projects of the SUMP-GN.

- the supervision of environmental monitoring at the level of the SUNDP-GN will be carried out by the ESEnv and the ESSoG of the SUNMP GN Pool in collaboration with all the other structures directly or indirectly involved.
- local environmental and social monitoring will be carried out by the Environmental Specialist of the Control Office who will be recruited by SIRAT; − environmental and social monitoring will be carried out by the EBA; − the evaluation will be carried out by Environmental Consultants (national and/or international), at the mid-term and at the end of the SUMP-GN; − the dissemination of the monitoring report will be carried out by the environmental and social safeguard specialists of the MUDP-GN under the responsibility of the Project coordinator.

- **Etape 8 : Reporting**

For a better monitoring of the implementation of the CGES, the following reporting system is proposed: monthly or detailed periodic implementation reports produced by the Quality, Health and Safety and Environment Managers (RQHSE) of the companies awarded the works and transmitted to the control mission and the coordination of the Project. This requirement will be specified in the companies' contracts as well as the obligation to transmit these reports to the control mission.

Timeline for the implementation of the environmental measures of the SUMP-GN: Periodic reports (quarterly, half-yearly and annual) of implementation monitoring that will be produced by the control missions and transmitted to the coordination of the Project, this requirement will be specified in the contracts of the missions as well as the obligation to transmit these reports to the SIRAT.

The World Bank oversees projects to verify compliance with ESS requirements. The EBA does the same to check the project's compliance with national requirements. The EBA is the national authority, not a service provider.

Reports from companies, audit offices and SIRAT should be sent regularly to the EBA and the World Bank to inform them of the project's E&S performance. On the basis of those reports or certain risks, the EBA carries out supervision/control missions on the ground. It being understood that often the Ministries in charge of the environment do not have a budget to carry out their sovereign mission of compliance control, a protocol is established to allow the project to take charge of the EBA's field missions. SIRAT is responsible for producing quarterly and annual reports that it must submit to the Bank and the EBA.

Table 21 summarizes the analysis and evaluation stages of the PMUD-GN.

Table 27: Analysis and Evaluation Steps for the GN-SUMP Sub-Projects

Steps	Responsibilities/Implementers		Monitoring responsibilities
Step 1: Completion of the environmental and social screening form	- SIRAT (Pool PMUD GN)		- COTECH / Bm
Step 2: Approval of the environmental and social screening form	- SIRAT (Pool PMUD GN)		- COTECH / Bm
Step 3: Carrying out Environmental and Social Impact Assessments (ESIA) and Audit	- SIRAT (Pool PMUD GN)		- COTECH / Bm
Step 4: Review and Approval/Validation of ESIA Reports and Audit	- ABE (validation) - BM (approbation)		- COTECH / Bm
Step 5: Integration of environmental and social clauses in Tender Documents and in contracts/contracts	- SIRAT (Pool PMUD GN)		- COTECH / Bm
Step 6: Environmental and social monitoring of the implementation of the sub-project	Implementation	Construction companies and other service providers	- SIRAT (Pool PMUD GN)
	Environmental and social monitoring	- SIRAT (Pool)	- EBA

Steps	Responsibilities/Implementers		Monitoring responsibilities
	Environmental and social monitoring	- SIRAT (cabinets)	- Local authorities - BEE - DDCVT
	Annual Environmental and Social Compliance Audit of the Project	- SIRAT (cabinets)	- Kotek/Abe
Etape 7 : Reporting	- SIRAT (Pool PMUD GN)		- COTECH / ABE / Bm

Source: Field data and desk research, IRC, October 2024

6.1.2 Responsibilities of stakeholders in the environmental management of the PMUD-GN

The Ministry of Living Environment and Transport in charge of Sustainable Development (MCVT) is the department responsible for implementing the selection process. If necessary, in coordination with the other ministries concerned through the environmental and social safeguard specialists organized within them. The responsibilities for the environmental management of the SUNDP-GN will be shared between the different actors concerned through their respective environmental and social management units, following their specific roles for particular aspects. They will intervene during the different phases of the SUNDP-GN.

The responsibilities of the actors involved in the environmental management of the project are presented in Table 22.

Table 28: Responsibilities of the actors involved in the environmental and social management of the PMUD-GN

No.	Steps and sub-steps	Responsible	Performer
1	**Development of checklists of environmental measures and simplified sectoral guides**		
1.1	Preparation of the generic list of sub-projects and their characteristics	SIRAT	- ESEnv - ESSoG
1.2	Creation of checklists of environmental measures and simplified sectoral guides	SIRAT	- ESEnv - ESSoG
2	**Determination of the environmental category of the sub-project**		
2.1	Filling in the screening form	SIRAT	- ESEnv - ESSoG
3	**Carrying out the ESIA / RAP if necessary**		
3.1	Drafting of ToRs	SIRAT	- ESEnv - ESSoG
3.2	Approval of ToRs	ABE	-
3.3	ESIA/RAP Report	SIRAT	Cabinets
4	**Environmental monitoring of the ESMP**		
4.1	Development of monitoring indicators	SIRAT	Enterprises
4.2	Follow-up reporting	SIRAT	- ESEnv - ESSoG

Source: Literature search, IRC, October 2024

SIRAT, through the experts in charge of environmental and social safeguarding, has a very great responsibility in the different phases of execution of the different components of the project.

6.1.3 NG-SUMP Environmental and Social Management Framework Plan (GSCP)

This part presents the major guidelines for the environmental and social management of the Project. These guidelines include guidance on the prevention and mitigation of negative impacts. Due to the scope of the activities to be carried out, the current lack of a precise definition of the sites to host these activities and their potential impacts, it is necessary to plan the appropriate environmental assessment procedures in order to deepen the analyses carried out by adapting them as best as possible to the issues related to each host site in order to ensure that environmental and social concerns are effectively taken into account and that the impacts of the project are sustainable. Table 23 presents the Environmental and Social Management Framework Plan (ESMP). **Table 29** : Environmental and Social Management Framework Plan (ESMP)

Phase	Generic impacts		Mitigation measures	Responsible	Control	Aftercare
	Negative	Positive				
Preparatory	Land conflicts at identified suitable sites	Local jobs created during early development	- Realization of an Action and Resettlement Plan - Indemnisation	Companies or design offices	• SIRAT • Town halls concerned • ANDF	• COTECH • EBA • BM
	Loss of vegetation and possibly habitat	Sanitation by eliminating illegal dumps	Informing the population about the start of the project	Companies or design offices	• SIRAT • FIs concerned • Town halls concerned	• COTECH • EBA • BM
	Traffic disruption and accidents	-			• SIRAT • FIs concerned • Town halls concerned	• COTECH • EBA • BM
	Disruption of supplies at the network level (SBEE, SONEB and Benin Telecom)	-			• SIRAT • FIs concerned • Town halls concerned • SBEE • SONEB	• COTECH • EBA • BM
Construction	Loss of vegetation areas Air pollution by dust emissions Pollution of soils and agricultural land by construction site waste Temporary deterioration of the living environment of local populations	Creation of temporary jobs and sources of income in the community	- Reforestation Raising awareness among the population Applying the specific environmental measures selected in the approved PGE	Companies or design offices	• SIRAT • Town halls concerned	• COTECH • EBA • BM
	Unintentional deterioration of unrecognized physical cultural resources		Train MOCs on the recognition of physical cultural resources	Companies or design offices	• SIRAT • Town halls concerned • DDPC	• COTECH • EBA • BM

Phase	Generic impacts		Mitigation measures	Responsible	Control	Aftercare
	Negative	Positive				
			Apply the "Chance Find" procedure			
Exploitation	Deterioration of the living environment of the neighborhood	Improving household eco-citizenship	Subscription to a waste collection structure	Companies or design offices	• SIRAT • Town halls concerned • DDS concerned	• COTECH • EBA • BM
	Increase in illnesses, physical injuries	Improving people's awareness of HIV/AIDS issues and COVID-19 Improved awareness of the population to gender and human rights issues Reduction of pollution due to waste Improved maintenance of green spaces	Ongoing awareness of the environment, hygiene and sanitation Install anti-pollution prevention devices COVID-19	Companies or design offices		• COTECH • EBA • BM

Source: Field data and literature search, IRC, 2024

Conditions of employment and work in the context of the implementation of the NSUR-SUP Workers s'engagent :

− compliance with the working hours set in accordance with the legal and contractual provisions of the Labour Code in force in Benin; − the implementation of ESHS standards and HST requirements; − the prevention of GBV and ECV; − attend and actively participate in training related to GBV/EAS/HS standards, and HST requirements, HIV/AIDS, COVID 19, GBV/EAS/HS and VCE, as required by my employer; − wear personal protective equipment (PPE) at all times in the workplace or in project-related activities; − take all practical measures to implement the environmental and health and safety management documents such as the ESMP/site, the PHSS site, etc. on which they are working; − respect the zero-tolerance policy of alcohol consumption during working hours and refrain from consuming narcotics or other substances that may impair one's faculties at any time; − to treat women, children and men with respect, regardless of their race, colour, language, religion, political or other opinion, national, ethnic or social origin, level of wealth, disability, citizenship or any other status; − not address women, children or men with inappropriate, harassing, abusive, sexually provocative, degrading or culturally inappropriate language or behaviour; − not engage in sexual harassment; − not to have sexual interactions or touch other people's wives; − not take advantage of, or attempt to take advantage of, a state of vulnerability, an unequal balance of power or a relationship of trust for sexual purposes, including but not exclusively with a view to obtaining a financial, social or political advantage; − to avoid any physical intrusion of a sexual nature committed by force, under duress or in the guise of unequal intercourse, or the threat of such intrusion; − undertake to report, through the mechanisms, complaints and grievances to my manager, any suspected or proven case of GBV/EAS/HS or VCE committed by a work colleague, whether or not the latter is employed by my company, or any violation of this Code of Conduct; − not engage in sexual favours (e.g. making promises or making favourable treatment conditional on sexual acts) or other forms of humiliating, degrading or abusive behaviour.

6.2 Environmental and Social Provisions Incorporated in the SUMP-GN Selection Cycle

The summary of environmental and social management measures is listed in Table 24. This table summarizes and prioritizes the programming of the recommendations of this ESMC.

Table 30: Summary and prioritization in the programming of the provisions of the CGES

Dispositions	Activities/Recommendations
Immediate Dispositions	The Environment Specialist and the Social Specialist will support the SUNC-GN Pool in the integration of the tools and recommendations of the safeguarding documents into the various manuals and sub-projects (manuals of procurement, implementation, monitoring and evaluation procedures) and in the preparation of the Budgeted Annual Work Plan
	Organize an awareness-raising workshop to share, disseminate and operationalize the CGES. These workshops will bring together the key stakeholders (Administration, SIRAT, ABE, DGDU, ANATT, CNSR, ADELAC, DAPMF) in the implementation of the project
	Make forecasts for the realization of Environmental and Social Studies
	Monitoring of the activities of the different sub-projects
Short-term provisions (From the beginning of the 2 year	Development of a manual of good environmental and social practices, safety standards
	Train the various actors involved in the implementation of the different sub-projects of the project. The topics that will be addressed are: Environmental and Social Assessment (selection and classification of activities; identification of impacts, choice of mitigation measures and indicators), selection of mitigation measures in checklists, national environmental legislation and procedures, monitoring of environmental measures, monitoring of health and safety standards, World Bank Environmental and Social Standards.
	Monitoring and Evaluation of the activities of the GN-SUMP sub-projects
	Implementation of information and awareness campaigns for sub-project beneficiaries

Source: Field data and literature search, IRC, 2024

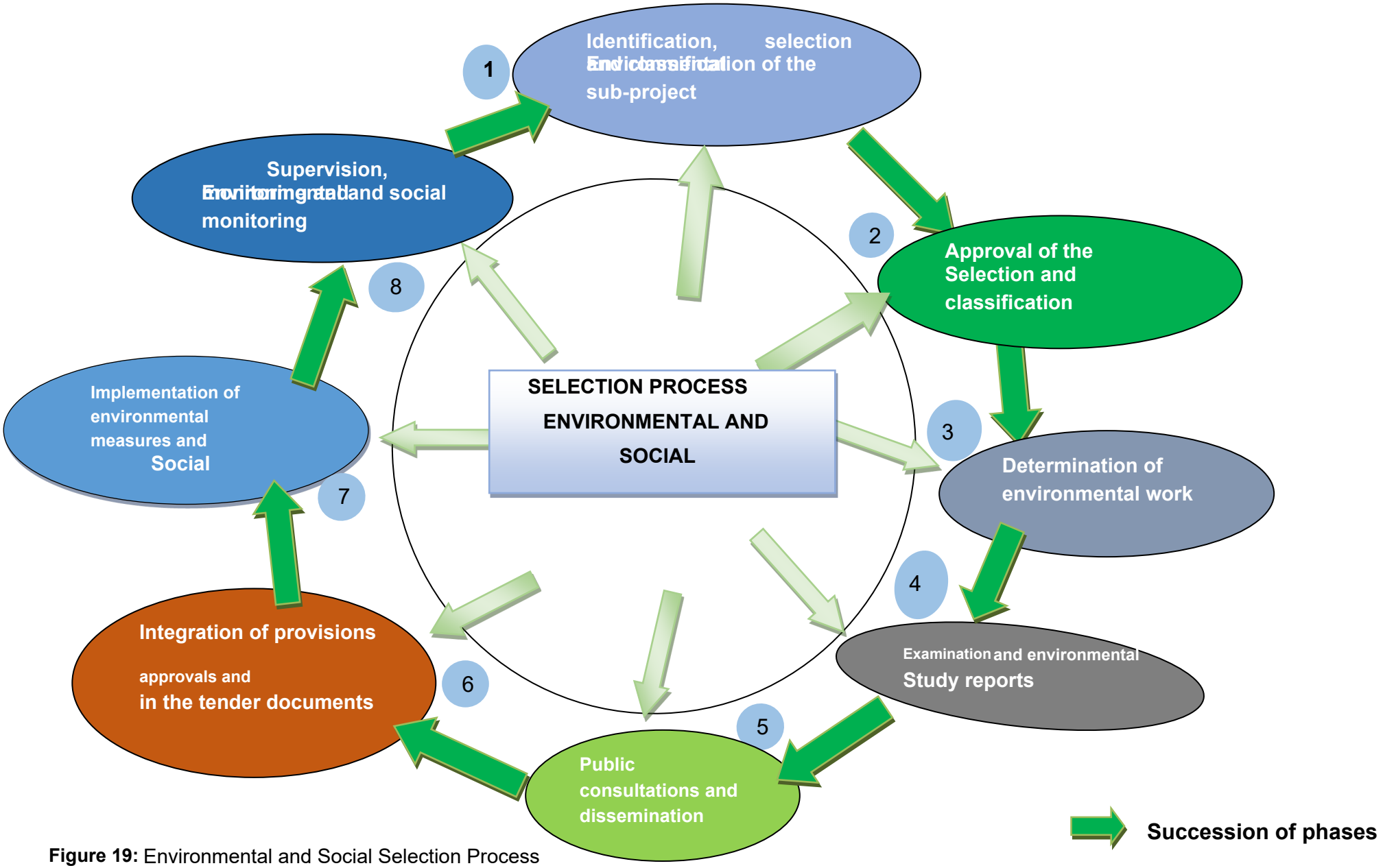


Figure 19: Environmental and Social Selection Process

Source : IRC, 2024

6.3 ENVIRONMENTAL AND SOCIAL MONITORING OF THE NMP SMP

The environmental monitoring framework for the implementation of the ESMC involves institutional arrangements, roles and responsibilities, a monitoring and evaluation timeline and the parties responsible for implementation.

NG-SUMP Environmental and Social Monitoring Objectives and Strategies

The aim here is to ensure compliance with: the measures proposed in the environmental impact study, including elimination and mitigation measures, the conditions set out in the framework law on the environment and its implementing decrees, and the requirements relating to the relevant laws and regulations. Environmental monitoring concerns the various activities to be carried out within the framework of the project. The monitoring programme can make it possible, if necessary, to reorient certain activities and possibly improve the implementation of project activities. The environmental monitoring program must contain, among other things:

- list of elements or parameters requiring environmental monitoring; − all the measures and means envisaged to protect the environment; − characteristics of the monitoring programme, where these are foreseeable (e.g. location of interventions, planned protocols, list of parameters measured, main analysis methods used, timetable for implementation, human and financial resources allocated to the programme); − intervention mechanism in the event of compliance with non-compliance with legal and environmental requirements or the initiator's commitments; − commitments by project owners and project managers regarding the submission of monitoring reports (number, frequency, content).
- –

As for environmental monitoring, it will make it possible to verify, in the field, the accuracy of the assessment of certain impacts and the effectiveness of certain mitigation or compensation measures provided for in the GGP, and for which there is still uncertainty. The knowledge acquired through environmental monitoring will make it possible to correct mitigation measures and possibly to revise certain standards for the protection of the environment and social components.

Environmental and Social Monitoring and Evaluation Program/Monitoring

Environmental and social monitoring ensures that environmental and social commitments and requirements are effectively applied during the execution of the work. It is exercised throughout the work in order to integrate environmental and social concerns. Environmental and social monitoring is both administrative and technical in nature. On the administrative level, environmental monitoring consists of carrying out an environmental assessment of the Project. The monitoring and surveillance program will consist of the following steps:

6.4 Environmental and Social Monitoring

The monitoring that includes the compliance of the SUNDP-GN sub-projects with the regulations will be ensured by the Ministry of Living Environment and Transport in charge of Sustainable Development. It will be supported on the ground by the DDCVT of the municipalities concerned by the sub-project. The inspection mission must record in writing (compliance or non-compliance sheets). In addition, the inspection mission will refer the matter to the Pool-PMUD-GN for any particular unforeseen environmental problem.

6.4.1 Inspection or supervision

Inspection or supervision must be done by the experts in charge of the E&S component of the Pool SUMP-GN:

- on the basis of verification, reports that will be submitted to it either by raids on the sites of the sub-Projects or as a result of complaints from the population or the municipal authorities; − at the time of the provisional acceptance of the works.

In the event of non-compliance or non-application of environmental and social measures, the safeguard specialists of the PMUD-GN Pool, in conjunction with the control office, initiate the formal notice process addressed to the company. The experts are required to submit a quarterly summary report to the World Bank on the status of the environmental and social management of the sub-projects, the problems encountered and the decisions taken with regard to the sub-projects.

6.4.2 Environmental and social monitoring

Environmental and social monitoring is the responsibility of the EBA with the support of the territorially competent technical structures. It makes it possible to verify, in the field, the accuracy of the assessment of certain impacts and the effectiveness of certain mitigation or compensation measures provided for in the GGP, and for which there is still uncertainty. The knowledge acquired from environmental and social monitoring will make it possible to correct mitigation measures and possibly to revise certain standards for environmental protection and social consideration. The follow-up program describes:

- the elements to be monitored; − monitoring methods/devices; − monitoring responsibilities; − the follow-up period.

For the verification of the implementation of environmental and social measures, it is proposed to carry out it at two levels:

- at the level of the delegated project owner through its Project Managers; − at the municipal or local level, by the technical agents of the municipalities and by the populations through the complaint management committees or the structures management committees which allow people who disagree with the environmental and social management of the Project to express themselves.

6.4.3 Environmental and social indicators

Environmental and social indicators are used to verify whether the environmental and social management process as defined in this Environmental and Social Management Framework (ESMF) is being followed. They are pre-identified signals that express changes in certain conditions or outcomes related to specific interventions. These are parameters whose use provides quantitative or qualitative information on the environmental and social impacts and benefits of the project. The indicators are used, on the one hand, to describe, with verifiable accuracy, the impact generated directly or indirectly by the activities of the components of a Multisectoral Project and, on the other hand, to highlight the importance of the impact.

They provide a summary description of the states, constraints and allow to observe the progress made or the degradation suffered over time or in relation to the realization of Environmental and Social studies for the project.
They reveal past trends and serve, to a certain extent, as forecasting instruments. As such, they constitute a component essentially in the Environmental and Social Assessment of the project. For the selection of environmental and social indicators, the criteria for analysis should focus on relevance, reliability, usefulness and measurability.

6.4.4 Indicators to be monitored by the SUMP-GN Pool

The strategic indicators to be monitored by the SUNK-GN Pool are provided in Table 25. Each year, the monitoring will be sanctioned by an annual report.

Table 31: Indicators for tracking CGSP actions

Measurements	Activities	Indicators	Periodicity	Responsibility
Technical measures	Environmental and Social Screening of the Activities of the Different Project Sub-Projects	Screening rate achieved	Second Quarter of the First Year of Implementation of the GN SUNP	SIRAT
	Carrying out ESIAs for programmed sub-Projects	Rate of ESIAs performed	Before the start of the sub-project concerned	SIRAT
Technical measures	Realization of the initial environmental state before the start of construction	Report of the parameters of the initial state collected	Before the start of the sub-project concerned	SIRAT
Monitoring and evaluation measures	Environmental monitoring and environmental and social monitoring of the various sub-Projects	Rate of monitoring missions carried out daily	Every quarter during the duration of the Project	ABE
Formation	Thematic training in environmental and social evaluation and monitoring of sub-projects	Rate of training sessions organized -Number of trained officers -Typology of trained officers	Every year during the first two years of the Project's implementation	SIRAT
IEC Awareness	Awareness raising and advocacy on the environmental and social issues of the sub-projects and good practices	Rate of awareness-raising sessions organized Rate of people sensitized	Every quarter during the duration of the Project	SIRAT

Source: Literature search, October 2024

6.4.5 Indicators to be monitored by the SUMP-GN Pool

The indicators to be monitored by the SUMP-GN Pool are set out in Table 26.

Table 32: Indicators for Monitoring the GSCP by the NSMP-SIMP Pool

Elements to be evaluated	Indicators	Measurement frequency/responsibility
Screening environnemental et social	Rate of SUMP-GN Sub-Projects Screened	Once a year by the Pool PMUD-GN
	Rate of identified high-risk, substantial risk, moderate or low-risk sub-projects / total number of sub-projects	Once a year by the Pool PMUD-GN
Elaboration d'EIES	Rate of sub-Projects that have undergone an enhanced or simplified ESIA	Once a year by the Pool PMUD-GN
	Rate of EBA validated ESIA reports	Once a year by the Pool PMUD-GN
Contract of companies	% of sub-projects where companies have environmental and social clauses in their contracts	Twice a year by the Pool PMUD-GN
Control	Number of environmental and social monitoring reports submitted to the World Bank / total number of reports expected to be submitted	Once a year by the Pool PMUD-GN
Aftercare	Rate of site visits carried out by the ESEnv and the ESSoG of the Pool-SUMP-GN /total number of sites of the sub-projects	Once a year by the Pool PMUD-GN
	Rate of complaints received / number of complaints processed and closed	Once a year by the Pool PMUD-GN
Inspection	Rate of inspections completed	Once a year by the Pool PMUD-GN
Capacity-building plan	Training/awareness rate of the main project stakeholders	Once a year by the Pool PMUD-GN

Source: Field data and desk research, IRC, October 2024

6.4.6 Indicators to be monitored by the EBA

The EBA will monitor the implementation of the ESMC, or if necessary a technical monitoring committee will be set up. An environmental and social monitoring plan will be designed based on indicators to allow regular monitoring of potential environmental and social impacts, particularly on the quality of groundwater, ambient air and soil, loss of property affected by the project, land acquisition, and cases of GBV/SEA/HS. The results of these specific measures will be incorporated into environmental reports. Table 27 below specifies the parameters and means of monitoring for each type of environmental and social impact.

Table 33: GGP Action Tracking Indicators

Indicators and Elements to Monitor	Tracking Methods	Tracking settings	Means of monitoring
Rubbish	Characterization follow-up	Density Composition	Visual control.

Indicators and Elements to Monitor	Tracking Methods	Tracking settings	Means of monitoring
Soil quality	Monitoring compliance of accidental spill sources	Labelling of stockpiles containing hazardous products (Devices put in place to prevent accidental spills)	In situ visualization Follow-up report and inspection reports
Air quality	Analyses qualitatives	Dust/Particles in the air	Visual inspection
Health and Safety	Monitoring compliance with requirements and recommendations	Protective equipment, including when equipment containing PCBs is handled (e.g. old transformers etc.). Fire, accident with impact on the environment and/or with complaint from local residents	Visual inspection HSE manager reports Complaint books
Health	Health monitoring of personnel exposed to dust and also of local residents	Number and type of bronchopulmonary diseases detected Number of cases of contamination related to COVID-19 and STIs/HIV-AIDS	Medical check-up Analysis and X-ray
Losses of Affected Property	Enquête incommodo et commodo	Number of complaints registered and processed	Monitoring reports and minutes (PV)
Land acquisition	Enquête incommodo et commodo	Number of complaints registered and processed	Monitoring reports and minutes (PV)
VBG/EAS/HS	Health monitoring of women and girl victims	Number of GBV/EAS/HS complaints registered and processed	Medical check-up

Source: Field data and desk research, IRC, October 2024

6.4.7 Indicators to be monitored by backup specialists

The decentralized structures of the Ministry of Living Environment and Transport in charge of Sustainable Development and the Road Infrastructure and Spatial Planning Company (SIRAT). The indicators to be monitored are summarized in Table 28. **Table 34:** Indicators

Indicators	Elements of assessment
Strategic indicators to be monitored	– % of sub-Projects have been screened; – % of ESIAs completed and ESMPs implemented; – % of training sessions organized and the number of people applying the topics received; – % of training sessions organized; – Level of involvement of local actors in environmental monitoring; – % of people trained on the provisions of the CGES; – % of awareness-raising sessions organized; – Level of compliance with health and safety measures; – % of information meetings organized for beneficiaries and stakeholders; – % of people who participated in the meetings;

Indicators	Elements of assessment
	– % of women who participated in the sessions.
Specific indicators for the implementation of social and gender measures	– % of SA&S Complaints received that were referred to the GBV Service Provider – % of awareness sessions held

Source: Field data and desk research, IRC, October 2024

6.4.8 Indicators to be monitored by other institutions

This monitoring will mainly concern the main environmental components (water, soil, vegetation and fauna, living environment, health, etc.) and will be carried out by the state structures in charge of managing these components (forestry services, agricultural services, health services, etc.). Table 29 gives the specific indicators for monitoring good environmental practices in the awareness-raising and popularization phase. **Table 35:** Indicators and monitoring of environmental and social components by institutions

Monitoring elements and Indicator	Methods and Tracking Devices	Responsible	Period
Plantations and crops	Inventory of fixtures before the work is carried out, follow-up during the execution of the work and inspection at the end of the work	ABE, DDCVT	Start, mid-term and end of the works
Waters – Pollution – Eutrophication – Sedimentation – Hydrological regime	– Monitoring of wastewater discharge procedures and facilities, – Monitoring of groundwater and surface water around construction sites, – Monitoring of surface water use activities, – Monitoring of measures taken for erosion control, – Visual assessment of stream flow	Municipalities concerned ABE municipalities	Start, mid-term and end of the works
Soil Erosion/gully Pollution/degradation	Inventory of fixtures before the work is carried out, follow-up during the execution of the work and inspection at the end of the work.	Abe, Pool-PMUD-GN, DDCVT, Sirat	Start, mid-term and end of the works
Vegetation/Wildlife - Rate of degradation - Rate of reforestation- Linear plantations	– visual assessment of vegetation degradation – visual assessment of reforestation/planting measures – control of land clearing activities	Inspection mission Forest inspection	Monthly, start, mid-term and end of work

Monitoring elements and Indicator	Methods and Tracking Devices	Responsible	Period
	– control and surveillance of sensitive areas – control of damage to wildlife		
Human environment – Living environment – Socio-economic activities	– control of the occupation of private land/agricultural fields – priority hiring of local labour – respect for historical heritage and sacred sites – control of the occupation of the right-of-way – control of impacts on sources of production	– ABE, – Pool PMUD- GN – DDCVT	Start, mid-term and end of the works
Hygiene and health Pollution and nuisances	verification of compliance with on-site sanitation measures monitoring of waste management practices	Departmental Directorate of Health DDCVT	Throughout the work
Safety on construction sites	Verification of: availability of safety instructions in the event of an accident existence of appropriate signage compliance with traffic regulations - compliance with the speed limit and wearing of adequate protective equipment	- Inspection mission for the technical services of the town halls concerned -ABE	Throughout the work

Source: Field data and desk research, IRC, October 2024

6.5 Institutional arrangements for the implementation and monitoring of the CGSP

The implementation and monitoring of the CGSP is ensured by:

• **Project Implementing Entity (GN SUMP Pool):** The Project will be implemented by SIRAT which will set up a pool of experts (GN SUMP Pool) dedicated exclusively to the implementation of the project and within which there are Safeguarding Experts (ESEnv, ESSoG) who will play the role of safeguarding specialists. They will ensure the overall monitoring of the implementation of environmental and social measures for the entire Project. However, consultants will be recruited when needed.

• **General Directorate of SIRAT, Pool/PMUD-GN:** they are responsible for monitoring compliance with the application of environmental measures. To carry out environmental monitoring properly, the Environmental Specialists of each structure will ensure the effective implementation of environmental safeguard instruments.

• **Inspection missions or offices**: Their mission is to prevent technical risks related to the construction of structures. As such, he assists the project owner, public or private, in his construction project by carrying out technical inspections of various kinds and according to needs.

• **Works contractors**: they are responsible for carrying out the works included in the Project, including the implementation of the environmental and social clauses of the tender. Before the start of the work, the companies must submit an Environmental and Social Management Plan for the site (PGES-Chantier) to the control office for validation. Reports from companies, control offices and the SUNC-GN Pool should be sent regularly to the EBA and the World Bank to inform them of the environmental and social performance of the project. On the basis of those reports or certain risks, the EBA carries out supervision/control missions on the ground. It being understood that often the Ministries in charge of the environment do not have a budget to carry out their sovereign mission of compliance control, a protocol is established to allow the project to take charge of the EBA's field missions. The design office only produces mission reports.

The SUNK-GN Pool is responsible for producing quarterly and annual reports that it must submit to the Bank and the EBA.

• **EBA**: it monitors the implementation of Environmental and Social measures and organises periodic capacity building (continuous training) for the benefit of Town Hall staff. The EBA carries out supervision/control missions on the ground. It being understood that often the Ministries in charge of the environment do not have a budget to carry out their sovereign mission of compliance control, a protocol is established to allow the project to take charge of the EBA's field missions. The EBA only produces mission reports.

• **Ministry of Living Environment and Transport, in charge of Sustainable Development (MCVT):** It is responsible for, among other things: and periodically updating the national policy on the environment, climate change management, reforestation and protection of fauna and flora and implementing related strategies and actions;

-

- Develop and implement policy on combating climate change and water, air and soil pollution;
- Mobilize funding for the implementation of policies, plans, programs and projects of the sectors concerned;
- monitor the implementation of Benin's commitments in terms of sustainable development as well as international and regional conventions relating to its areas of competence.

- Environmental governance in Benin is done by the MCVT.

• **Cultural Heritage Department**: In the event of fortuitous discoveries, it will ensure compliance with the "chance procedure funding" procedure.

• **General Directorate of Water, Forests and Hunting (DGEFC):** its mission is to manage forest resources at the national level. In the field, this directorate is represented by the Forest Inspectorates, the Forest Cantonments and the Forest Posts. As part of the implementation of

the project, the DGEFC will assist the SIRAT for compensatory reforestation operations of the species affected by the project.

• **Prefectures:** Under Law No. 2021-14 of 20 December 2021 on the Code of Territorial Administration in the Republic of Benin, the Prefect is the guarantor of the application of the national guidelines by the municipalities that are part of the territorial jurisdiction of his department. He is thus the representative of each minister taken individually and of the government taken collectively. The Prefect is therefore responsible for the implementation of all environmental issues at the decentralised level of the State. To this end, the latter will ensure compliance with environmental standards in the implementation of the. The Prefect is therefore responsible for the implementation of all environmental issues at the decentralised level of the State.

• **Town halls**: they implement their own policy for the management of the environment and natural resources, but in accordance with national laws and guidelines and the policies of the World Bank. The GN-SUMP will be implemented according to institutional mechanisms that guarantee the participation of communities at the grassroots level.

• **Municipalities:** Law No. 2021-14 of 20 December 2021 on the Territorial Administration Code in the Republic of Benin grants municipalities powers as decentralized local authorities in environmental matters. They contribute with the State and other local authorities to the administration and planning of the territory, to economic, social, health, cultural and scientific development as well as to the protection of the environment.

In accordance with the provisions of Articles 84 to 86 of Section 1, and Chapter III, the Commune shall draw up and adopt its development plan. It ensures that it is carried out in harmony with national guidelines with a view to ensuring the best living conditions for the entire population. In this context, it develops and delivers, among other things:

- the economic and social development plan;
- the rules relating to the use and use of land;
- the detailed plan for urban development and subdivision; the permits to live and to build;
- and also ensures the permanent control of the compliance of the achievements and constructions with the regulations in force.

It is consulted beforehand on all work on its public domain in order to ensure coordination of interventions. In accordance with the provisions of Articles 94 and 96 of Section 3, Chapter III, the municipality shall ensure the protection of natural resources, in particular forests, soils, wildlife, water resources and groundwater and shall contribute to their better use. It implements its own policy for the management of the environment and natural resources, but in accordance with national laws and guidelines. It gives its opinion whenever it is envisaged that any project likely to harm the environment is to be created on its territory.

The institutional arrangements for the implementation of the CGESP are shown in Table 30.

Table 36: Institutional Arrangements for the Implementation of the CGESP

No.	Steps/Activities	Responsible	Support/Collaboration	Providers
1	Identification of the location/sites and main technical characteristics of the different sub-projects of the SUMP-GN	- Town halls concerned - Pool PMUD-GN	• SIRAT • Technical services concerned • Prefectures concerned • Beneficiaries • COTECH	Consultants or design offices
2	Environmental selection (screening-filling of forms), and determination of the type of specific safeguard instrument to be developed	- SIRAT (ESEnv, ESSoG) - Pool PMUD-GN	• Beneficiaries • Town halls concerned • Technical services concerned	Consultants or design offices
3	Approval of the environmental categorization of sub-projects	- SIRAT (ESEnv, ESSoG) - Pool PMUD-GN - EBA - World Bank	-	
4.	**Preparation of specific environmental and social safeguard instruments**			
4.1	Preparation and approval of RDTs	- SIRAT (ESEnv, ESSoG) - Pool PMUD- GN	• COTECH • EBA • World Bank	
	Conduct of the study, including stakeholder consultation		• SPM • Town halls concerned • Technical services concerned • Beneficiaries	Consultants or design offices
	Approval of the study and Obtaining the Certificate of Environmental and Social Compliance (CCES)	- SIRAT (ESEnv, ESSoG) - - Bank - MCVT	• COTECH	
	Publication of the document	- SIRAT - - Bank	• COTECH • World Bank	Media
4.2	Integration into the tender documents (DAO), the DRP and DET of the sub-projects, of all the environmental and social measures for the phase of the works that can be contracted with the company	- SIRAT (ESEnv, ESSoG, SPM, Infrastructure Services)	• COTECH • Town halls concerned	Consultants or design offices in charge of developing the tenders
4.3.	Implementation of environmental and social measures of sub-projects	- SIRAT (ESEnv, ESSoG)	• Town halls concerned • DDCVT concerned	- Consultants - - - Companies in charge of the work
4.4	Execution/Implementation of measures not contracted with the construction company	- SIRAT (ESEnv, ESSoG)	• Town halls concerned • DDCVT concerned	- Consultants - - - Companies in charge of the work
4.5.	Internal monitoring of the implementation of environmental and social measures	- SIRAT (ESEnv, ESSoG) - COTECH	• SIRAT (ESEnv, ESSoG) • COTECH • Town halls concerned • World Bank	- Consultants - - - Companies in charge of the work

No.	Steps/Activities	Responsible	Support/Collaboration	Providers
4.6	External monitoring of the implementation of environmental and social measures	-ABE	• SIRAT (ESEnv, ESSoG) • COTECH • HSE of companies • DDCVT concerned • Town halls concerned	
4.7	Annual environmental and social compliance audits of the GNP-SUP	- SIRAT (ESEnv, ESSoG) - COTECH	• EBA • Town halls concerned • DDCVT concerned • World Bank	- Consultants - Design offices
4.8	Capacity building of stakeholders in the implementation of environmental and social recommendations	- SIRAT (ESEnv, ESSoG) - COTECH	• EBA • World Bank	- Individual consultants - Design offices

Source: Field data, IRC, October 2024

6.5.1. Institutional constraints for the implementation of the NSMP-SUMP at the environmental and social level

Discussions with key stakeholders in the evaluation of the institutions involved in the implementation of the SUMP-GN identified potential constraints to be overcome in order to maximize the achievement of the objectives of this important tool in the implementation of the SUMP-GN. From this evaluation, it appears that**:**

- the resources (human, material and financial) available to the decentralised technical services and local authorities do not correspond to the scale of their mission. This lack of resources has a negative impact on the quality of public service. According to the institutional actors interviewed, it is above all in terms of capacities that the issue of environmental and social assessments must be addressed;
- State services find it difficult to retain or retain their managers, who leave for Projects or organisations that offer more motivating remuneration, working conditions and a career plan;
- few specialists have had the opportunity to participate in environmental and social training;
- the multiplicity of actors at the project level could lead to difficulties in coordinating interventions;
- the populations living near the work areas are not always involved in the implementation of the Projects.

6.5.2. State of play of the environmental management capacity of key actors and capacity building needs

Table 31 presents the state of the environmental and social management capacity of the actors and the capacity building needs of these actors.

Table 37: Summary of the environmental management capacities of the NS SUMP actors

Actors	CAPACITIES		
	Assets	Bounds	Propositions
Pool PMUD-GN	CGES available	Non-ownership of all aspects of the NES	Develop and implement a capacity building plan for specialists

Actors	CAPACITIES		
	Assets	Bounds	Propositions
ABE	Existence of frameworks familiar with national and World Bank environmental assessment tools	Insufficient financial and logistical resources; High demand of The EBA	Establish a collaboration protocol or a budgeted agreement with the EBA to carry out its monitoring mission
Town hall	Existence of technical services	-lack of control of the World Bank's NES - lack of training	Train the managers of the unit as a priority and all the staff of each town hall in the field of the environment, on national legislation and the World Bank's environmental and social standards, monitoring and environmental and social assessments
	- Experience in carrying out work on all sub-projects - Recruitment of local labour as a priority	Lack of experience in taking the environment into account in the execution of the work	Provide training for the development of ESMPs for construction sites, the implementation and monitoring of ESMPs, etc. Develop and implement a capacity building plan for specialists

Source: Field data and literature search, October 2024

In relation to environmental protection concerns, the capacity-building programme for beneficiaries should include the following modules, which are summarized in table 32.

Table 38: Capacity-building modules for environmental management of the SUMP-GN

Themes	Targets	Responsibility
Awareness raising and advocacy on the environmental and social issues of the sub-projects	Beneficiaries of the Project Populations of the sub-project's intervention area	Pool-PMUD-GN SSEnv, SG-VBG et SDS du Pool- PMUD-GN
Environmental and Social Assessment of Sub-Projects	Executives and Project Agents DDCVT Executives, SIRAT	Pool-PMUD-GN SSEnv, SG-VBG et SDS
Environmental and Social Monitoring of Works Integrated Safeguard System of the World Bank	Executives and agents of the PMUD-GN; ABE	Pool-PMUD-GN SSEnv and SDS
Environmental and social monitoring of the works, reporting	Executives and agents of the PMUD-GN; MCVT Executives (DDCVT); Sub-project managers	SBEE Pool-PMUD-GN SSEnv, SG-VBG et SDS
Implementation of mitigation measures	Sub-Project Beneficiaries HEA-ME Consultant	ABE
Environmental Protection	Executives and agents of the PMUD-GN; SIRAT executives; Sub-project managers	Pool-PMUD-GN SSEnv, SG-VBG et SDS ABE

Source: Field data, October 2024

6.6. Other general environmental and social management measures

6.6.1. Social clauses on gender-based violence and child labour

Social clauses based on gender-based violence and child labour will be integrated into the DAOs of all providers.

6.6.2. Consideration of the specific SEA/HS guidelines for waste, water and sanitation facilities

The ESMC development mission took into account the World Bank's EHS guidelines to propose mitigation measures for waste, water and sanitation facilities in the tables above. In addition to these measures, the Project's activities must be carried out in accordance with applicable national regulations and international standards. To this end, a distinction will always be made between hazardous and non-hazardous waste. Where it is not possible to prevent the generation of hazardous wastes through the application of the general waste management methods mentioned above, such management shall focus on the prevention of health, safety and environmental risks, in accordance with the following additional principles:

− To know the potential impacts and risks relating to the management of the hazardous waste produced, during its entire life cycle; − Ensure that hazardous waste handling, treatment and disposal service providers are reputable and legitimate companies, accredited by regulatory bodies, and applying international best practices for the wastes they treat; − Verify compliance with applicable national and international regulations; − Store hazardous wastes in a manner that prevents or limits accidental discharges into the air, soil and water resources; − Know that on-site and off-site transportation of waste must be carried out in a manner that prevents or minimizes spills, discharges, and exposure to employees and the public. All waste containers designated for off-site transport must be secured and labelled with the contents and inherent hazards. They must be properly loaded onto transport vehicles prior to departure from the site, and be accompanied by shipping documents (e.g. pick-up note) describing the load and associated risks, in accordance with the stipulations contained in Section 3.5 on the Transport of Dangerous Goods of the World Bank's EHS Guidelines; − Construct facilities that will meet the requirements for appropriate long-term environmental storage of waste on-site (as described in another section of the EHS Guidelines) or in another suitable location until external commercial options are available. Details of these guidelines can be found at:

6.7. Respect for Human Rights and the fight against gender-based violence

The dignity of the human person is sacred and may not be subjected to inhuman, cruel and degrading treatment in any form. Therefore, the following barbaric acts are severely punished in the implementation of the PSUM-GN. Thus, we retain as VBG/EAS/HS:

- ***Moral harassment*** **(Law No. 2015-532 on the Labour Code)**

No employee, any person undergoing training or training may be sanctioned or dismissed for refusing to submit to the acts of moral or sexual harassment of an employer, his representative or any person who, abusing the authority that he or she confers his or her duties, has given

orders, made threats, imposed constraints or exerted pressure of any kind on this employee.

No employee may be sanctioned, dismissed or be subject to a discriminatory measure for having suffered or refused to undergo the acts defined above or for having witnessed such acts or having reported them.
The collective agreement and the Labour Code recognise specific rights for women workers. The employer is obliged to transfer the pregnant woman to another position if the current job exposes her to certain specific risk factors that may affect the harmonious development of the child. A decree of the Ministry of Labour and the Ministry of Health is supposed to regulate work that excludes female workers, minors and pregnant women.

A working woman may not be dismissed during pregnancy. There are no specific provisions in labour law regarding the right of a worker to return to the same job after taking advantage of her maternity leave. However, it is mentioned that the worker cannot be dismissed during the duration of his maternity leave, which implies that the right to return to work is implicitly guaranteed by law.

- ***Physical violence***

No Employee and learner of the Company, its subcontractors as well as its security and other partners shall suffer or cause to be subjected to physical violence, in any form, assault, intentional injury, physical mutilation of any human being or his personal property.

- ***Pimping, sexual harassment and violence and pedophilia***

In accordance with national texts (Ordinance No. 006/PR/2015 prohibiting child marriage and the 1995 law prohibiting female genital mutilation), regional and international legislation on procuring, sexual harassment and violence against women, paedophilia and respect for the habits and customs of the population and human relations in general, any act of procuring, harassment, abuse, sexual violence (gender-based violence/GBV), paedophilia (cf: (i) United Nations Resolution 48/104 on the Declaration on the Elimination of Violence against Women and (ii) Resolution 2011/33 on the prevention, protection and international cooperation against the use of new information technologies to abuse and/or exploit children) will be immediately punished by dismissal from the first Establishment of the fault, with transmission of the characteristic elements of the fault for legal proceedings by the competent public authority if it fails.

- ***Exploitation of children***

In accordance with national, regional and international texts: (i) Resolution 2011/33 on the prevention, protection and international cooperation against the use of new information technologies to abuse and/or exploit children and (ii) Resolution 44/25 of 20 November 1989 on the rights of children), the employment and exploitation of children are strictly prohibited within the company.

6.7.1. Rules of procedure and code of conduct

The purpose of these Rules of Procedure and Code of Conduct is to define:

- the general and permanent rules relating to discipline at work; - the main health and safety measures in the company; - respect for human rights; -

prohibited behaviour (GBV/EAS / HS); − respect for the environment; − provisions relating to the protection of employees' rights; − disciplinary measures; − the formalities for its application.

These Regulations and Code of Conduct apply without restriction or reservation to all employees and apprentices of the Company, including its subcontractors and security and other partners.

This code applies to the company, employment agencies and employees in the implementation of the ESHS and HST standards. Thus, all these actors should commit to ensuring that the Project is implemented in a way that minimizes any negative impact on the local environment, communities and its workers. To do this, the various actors should comply with environmental, social, health and safety (ESHS) standards and will ensure that appropriate occupational health and safety (HST) standards are met. Actors also commit to creating and maintaining an environment in which gender-based violence (GBV/EAS/SM) and violence against children (VCE) do not take place – they will not be tolerated for any employee, contractor, supplier, associate or representative of the company. Therefore, to ensure that all those involved in the Project are aware of this commitment, the various actors through the signing of the Code of Conduct, will commit to comply with the fundamental principles and minimum standards of behavior, which will apply without exception to all employees, associates and representatives of the company, including subcontractors and suppliers.

6.7.2. Gender Consideration and Inclusion

Within the framework of gender, the Project will promote the elimination of discrimination (social, physical and sexual) and improve the living and entrepreneurial conditions of women and marginalized people such as the disabled. Thus, during the consultations with women, the following actions emerged:

− Recruit disabled and vulnerable people for the implementation of the sub-projects; − support women's organizations for the creation of micro-enterprises and facilitate their access to Income-Generating Activities (IGAs); − Facilitate access to electricity for women and the vulnerable; − systematically involve women in the implementation of the Project.

The project will conduct regular consultations with women (in small, separate groups facilitated by a woman) throughout the duration of the project to gather their views on the project's activities, its relevance and potential risks to its implementation, accessibility to project services as well as the PMM and the effectiveness of mitigation measures in relation to GBV/SEA/SH.

6.8 COMPLAINT MANAGEMENT MECHANISM (PMM)

The Complaint Management Mechanism proposed in this document refers to the one contained in the Project's Stakeholder Engagement Plan. It integrates issues related to Sexual Exploitation and Abuse throughout the duration of the project. Thus, the important aspects for SEA/HS complaints are described as follows:

- **Reception and registration**: SEA / HS complaints will be received by entry points confirmed as safe and accessible (the Complaint Management and Intake Body) by

women during consultations and will be immediately referred to the locally identified GBV service provider. These complaints will not be managed at the local committee level and, with the consent of the survivors, will be transferred to the national level for management and verification of the link to the project;

- **Verification**: The verification of SEA/HS complaints (done at the national level by a select committee of experts with experience in GBV or at least social issues) will only aim to confirm the link between the complaint and the project and will never attempt to establish the guilt or innocence of the alleged perpetrator, as this is the job of the police and the judicial process (if the survivor chooses to continue the legal process);

- **Follow-up/proposed response**: In case of EAS/HS complaints, it is recommended that the survivor be informed by the GBV service provider of the results of the verification and the planned actions so that a safety plan can be established in case of revenge or retribution;
- **Closure of the complaint**: In cases of SEA/HS, the complainant must be informed by the GBV service provider of the outcome of the verification once it has been concluded. Before that, the GBV service provider takes the time to put in place a safety plan for the complainant, if necessary. The author is also notified by the appropriate representative within his/her structure, only after the complainant has been informed. The GBV service provider continues to play a role in supporting the survivor while respecting the survivor's choices and wishes;
- **The survivor-centred approach** means that the needs of survivors should be at the centre of decisions and activities undertaken. Like what:

− an enabling and dignified and protective environment for survivors must be created; − Informed consent of survivors must be obtained for any action taken; their rights, wishes and choices must be respected; − confidentiality must be maintained at all times.

The safety of survivors must be ensured throughout the complaint management process.

Steps, procedures and bodies for the management of SUMP-GN Complaints

As part of the implementation of the NSMP-SUMP, a complaint management procedure will be developed and implemented. The Complaint Management Mechanism (PMM) will be formally developed prior to the start of Project activities in accordance with the requirements of the ten (10) steps outlined below.

- **Step 1: Receipt and registration of complaints**

The complaint management system will retain various channels for receiving complaints. However, EAS/HS complaints will be received by entry points confirmed as safe and accessible by women during consultations and will be immediately referred to the locally identified GBV service provider. These complaints will not be managed at the local committee level and, with the consent of the survivors, will be transferred to the national level for management and verification of the link with the project.

A distinction should be made between sensitive and non-sensitive complaints with reference to the criteria set out in the PMM document. A study procedure adapted to each type will be adopted. Non-sensitive complaints will be dealt with by both the intermediary bodies and the national complaints management body. As for sensitive complaints (such as EAS/HS), the

PMU-PASE should set up a body at the national level that will deal with sensitive complaints, as GBV service providers will only provide assistance (including medical treatment when needed) so the management or 'processing' of the complaint submitted to MGP should be carried out by a structure linked to the project. To this end, the Pool-MUDP-GN must create a small committee of experts at the national level to do management, verification, etc. EAS/HS complaints. These experts may include the social (or gender) specialist of the Pool-PSUN-GN, an expert from the Ministry of Gender (or other in charge of GBV prevention), representative of the NGO GBV being part of the response protocol, if the project has contacts with large contractors, a social expert from the contractor should also be part of the committee.

- **Step 3: Verification of the merits of the complaint**

All the evidence that contributes to the establishment of the objectivity of the complaint will be collected at this level. They will form the basis of the solutions to be applied in response to the complainant's questions or complaints.
The audit of SEA/HS complaints (done at the national level by a select committee of experts with experience in GBV or at least social issues) will only aim to confirm the connection between the complaint and the project and will never attempt to establish the guilt or innocence of the alleged perpetrator, as this is the job of the police and the judicial process (if the survivor chooses to continue the legal process).
In the event that the denunciation of an offence by any official, who in the exercise of his duties has knowledge of a fact likely to be a violation of Beninese legislation is required, the Project will ensure that the victims have been informed beforehand before this is done.

- **Step 4: Proposed answers**

Referring to the documented results of the investigations, a favourable or unfavourable follow-up is sent to the complainant. It demonstrates the veracity of the decried facts or, on the contrary, the rejection of the complaint. In the case of non-sensitive complaints, the complainant shall be notified in writing that his request shall be granted only on condition that the facts decried in the request are founded and justified after the results of the investigations. When the complaint is justified, the complaints management body (depending on the level) sends the complainant in writing the key results of their investigations, the solutions adopted following the investigations, the means of implementation, the schedule and the budget for the implementation of the corrective measures. The proposed response shall be drafted within two (2) working days after the investigations. Under the same conditions, a reasoned notification will be sent to the complainant in writing when the complaint is unfounded. EAS/HS survivant.es must be informed (at best through the GBV service provider) of the outcome of the verification and the planned measures (sanctions to be imposed) before any action, so that they can take precautions for their safety by following the corrective action plan developed with a service provider.

- **Step 5: Review of responses in case of non-resolution in the first instance.**

If the corrective measures proposed by the MGP bodies do not obtain the consent of the complainant, he or she has the right to request a review of the measures from the complaints management committee or the GBV service provider. This step must be taken within a maximum period of ten (10) working days from the date of receipt of the notification to the complainant of

the follow-up given to his complaint. The Management Entity shall have five (5) working days to reconsider its decision. In this case, the Chairperson of the body should propose additional measures if necessary. Regardless of the position of the body, a written reply must be sent to the complainant. For sensitive complaints, precautions such as not mentioning SEA/HS in both the subject line and the body of the letter will be taken to ensure the confidentiality and safety of survivors will be observed by the service provider.

- **Step 6: Implementation of corrective actions**

The implementation of the measures recommended by the complaints management body follows the prior agreement of both parties, especially the complainant. This precaution is necessary to avoid any form of dissatisfaction. The procedure for the implementation of the solutions adopted is initiated five (05) working days after the acknowledgement of receipt by the complainant of the letter informing him of the resolutions adopted and, following the agreement of the complainant, recorded in a Consent Report. All the means necessary for the implementation of the resolutions agreed upon will be mobilized by the complaints management body. He will play his part in order to respect the schedule chosen. The entire process must be conducted under the seal of confidentiality and respect for all parties, and especially for the victims. A report signed by the President of the committee in charge of processing the complaint and the complainant, will sanction the end of the implementation of the solutions.

- **Step 7: Closure or extinction of the complaint**

The procedure will be closed by the bodies of the complaints management body if the mediation is satisfactory to the various parties, in particular the complainant. The agreement of the parties is sanctioned by a Minutes signed by both parties. The closure of the file takes place within three (03) working days from the date of implementation of the response for local or intermediate authorities and five (5) working days by the national authority. From this moment on, the termination of the complaint at the level of the PMM of the Project will then be documented by these different bodies according to the level(s) of processing involved.

- **Step 8: Reporting**

All complaints processed within the framework of the PMM of the PSUM-GN will be recorded in an Excel file called "processing register" five (05) working days from the date of implementation of the resolution, for local or intermediate bodies and seven (07) working days for the national body. The register will be a simple and adapted database designed for this purpose. This will document the complaint process and provide lessons learned. It will highlight, among other things, the most frequently submitted issues, the status of complainants, the geographical areas from which the most complaints originate, the resolutions implemented, suggestions or best practices and difficulties. With respect to SEA/HS complaints, these reports will only include non-identifiable information (type of violence, gender and age of the survivor (minor/adult), link to the Project and whether referral to services has been offered). This Excel file will be secured by a password in order to limit access to it only to people who will only receive an authorization.

- **Step 9: Archiving**

A physical and electronic archiving system will be designed and operationalized. Archiving will take place within six (06) working days from the end of the report. All the supporting documents of the meetings, field missions, and investigations that will have been necessary to process the complaint will be recorded in the complaint file. The archiving system will provide access to

information on: (i) complaints received, (ii) solutions found and (iii) unresolved complaints requiring further action; and (iv) the difficulties overcome. These different archiving systems will be secured either by codes or by cabinets with a locking system with key and/or padlock.

- **Step 10: Recourse to the courts**

Recourse to the courts is the result of the failure of the amicable route. This is often a path that is not recommended for the project because it can constitute a path of blockage and delay of activities. This is why the amicable resolution of complaints is the best way to recourse. The complaint management system must give priority to this recourse to the detriment of the judicial route. However, once the complaint has been processed, the dissatisfied complainant can still go to court. This last resort often requires long delays and financial resources. During the sensitization and training of the CLGP, this information will be shared with the populations while specifying that it is part of their right but that the project will not take any financial burden in relation to their decision to refer the matter to the judicial authorities. However, the efficient implementation of the complaint management process reassures the population that their concerns and complaints are properly addressed, but also awakens vigilance in the face of issues that could eventually turn into more serious conflicts.

The management of a complaint will take place in successive stages that must take place within specific deadlines (Figure (23)).

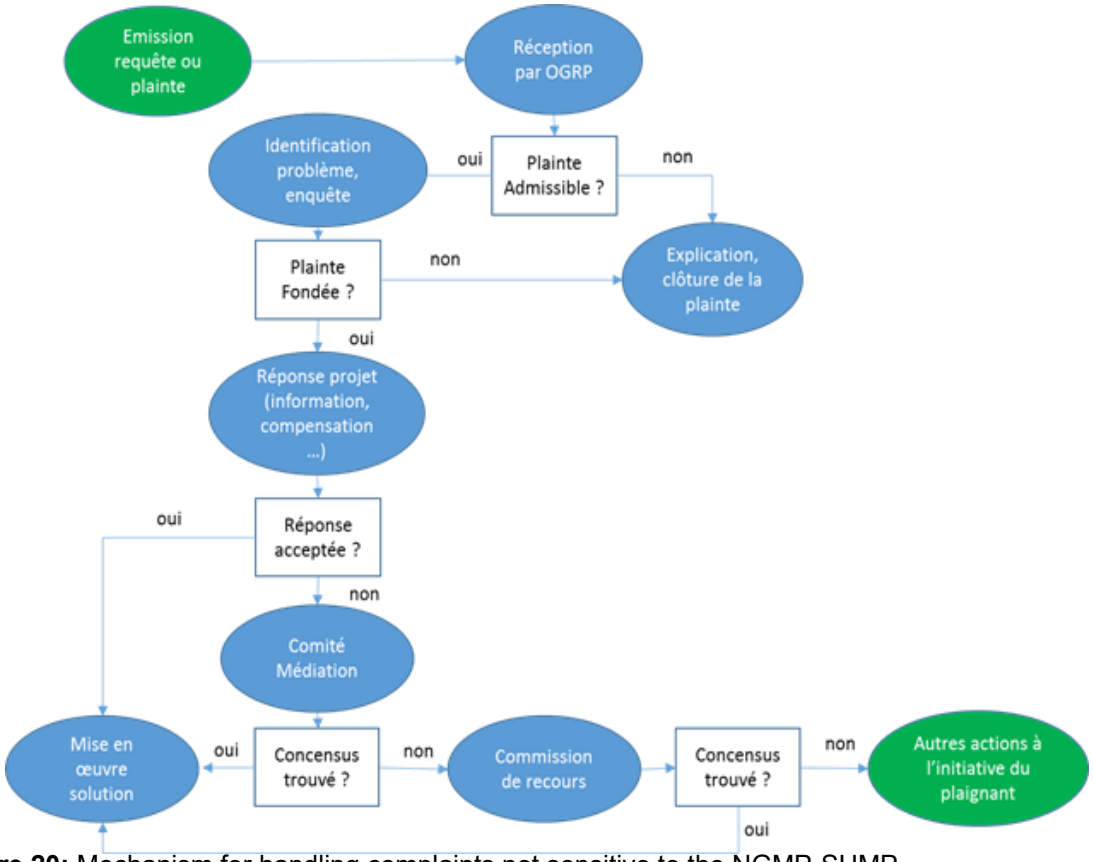


Figure 20: Mechanism for handling complaints not sensitive to the NGMP-SUMP

Source : PGMO, PMUD-GN 2024

This diagram focuses on non-sensitive complaints. As for sensitive complaints (such as EAS/HS), the Pool-SUMP-GN should set up a body at the national level that will deal with sensitive complaints,

since GBV service providers will only provide assistance (including medical treatment when needed) then the management or "processing" of the complaint submitted to MGP should be provided by a structure linked to the project. To this end, the Pool-MUDP-GN must create a small committee of experts at the national level to do management, verification, etc. EAS/HS complaints. These experts may include the social (or gender) specialist of the Pool-MUDP-GN, an expert from the Ministry of Gender (or other in charge of GBV prevention), representative of the NGO GBV who is part of the response protocol, if the project has contacts with large entrepreneurs, a social expert from the contractor should also be part of the committee.

6.9 TIMING OF ENVIRONMENTAL ASSESSMENT IMPLEMENTATION

The environmental assessment includes activities and implementation steps, namely:

- organization of restitution meetings and sharing of the CGES; − development and validation of ESIA RDTs; − recruitment of a consultant or a design office; − completion of the environmental screening form; − Carrying out ESIAs for certain sub-Projects; − approval of the environmental category; − preparation of the ESIA; − review and approval of ESIA reports; − dissemination of the safeguarding document; − implementation of the environmental measures contained in the ESMP and approval of resettlement measures.

Table 33 shows the timeline for the implementation of the PMUD-GN.

Table 39: Implementation Schedule for the NG-SUMP Environmental Measures

Measurements	Proposed actions	Completion periods					An6
		Year 1	Year 2	Year 3	Year 4	Year 5	
Measures against EAS / HS	Development of the Action Plan EAS / HS						
Mitigation measures	See list of generic mitigation measures overall and by sub-Project						
	Organisation of the CGES restitution and sharing meetings						
Technical measures	Development of TDrs						
	Conduct of ESIAs for selected sub-Projects						
	Development of environmental assessment tools						
	Drafting of environmental and social clauses to be inserted in the tenders						
Training	Training of stakeholders on the Bank's new environmental and social standards						

Measurements	Proposed actions	Completion periods					
		Year 1	Year 2	Year 3	Year 4	Year 5	An6
Measures against EAS / HS	Development of the Action Plan EAS / HS						
Sensitization	Raising awareness and mobilizing the population						
Action items	Environmental and social monitoring and monitoring of the Project						
	Mid-term CGES evaluation						
	Evaluation PGES final						

Source*:* Field data, IRC, *October 2024*

7. BUDGET FOR THE IMPLEMENTATION OF THE EMCP

Cost summary

The estimated costs of implementing the environmental and social measures are detailed in Table 34.

Table 40: Projected Costs of Implementing the NG-SUMP Environmental and Social Measures

Actions	Unit	Quantity	Unit cost	Total	0bservations
Preparation of Specific Instruments (ESIA) and RAPs	Nb	14	35 000 000	490 000 000	490,000,000 CFA francs for the development of 14 ESIAs for the 05 Communes. 14 ESIAs
Implementation of specific ESMPs	Nb	14	10 000 000	140 000 000	14 ESMPs to be implemented and monitored according to the 14 ESIAs at the rate of 10,000,000 CFA francs per ESMP for each implementation
Capacity building on: - Training on screening, procedures for taking into account environmental and social safeguard measures in the implementation of the SUNDP-GN project, and on reporting - Training on the impacts and risks related to electricity and on the required precautionary measures - Training of Project workers on occupational health, health and safety, including emergency prevention - Stakeholder training on the MGP	Nb	08	1 000 000	8 000 000	14 training workshops for capacity building throughout the duration of the Project (5 years) for specialists in safeguarding the MUDP-GN (SSEnv, SG-GBV and SDS), specialists in environmental and social safeguarding, SIRAT and CNSR at the rate of 1,000,000 FCFA the organization costs per workshop

Actions	Unit	Quantity	Unit cost	Total	0bservations
Education and Communication Information Campaigns (IEC)	Town	4	15 000 000	60 000 000	4 IEC campaigns throughout the duration of the Project at a rate of 15,000,000FCA on average per campaign according to the documentation
Development and implementation of the Environmental and Social Communication Plan (ESCP)	FF	1	20 000 000	20 000 000	20,000,000 FCFA for the development and implementation of the CGGP throughout the duration of the Project
Development and implementation of a GBV/EAS/HS Project Action Plan	FF	1	30 000 000	30 000 000	30,000,000 CFA francs to develop and implement the action plan VGB/EAS/HS
Follow-up by Environmental and Social Experts	Year	5	10 000 000	50 000 000	
Continuous monitoring of the implementation of the ESMP by the technical services, municipalities, prefectures and SUMP-GN	Year	5	10 000 000	50 000 000	The permanent monitoring of the Project's ESMP is estimated at 10,000,000 FCFA per year over 5 years
Pre-closing audit of Environmental and Social performance	FF	2	35 000 000	70 000 000	An estimate of two audits to be carried out, the amount of one of which is estimated at 35,000,000 FCFA on average per Audit
Total FCFA				**980 000 000**	
Contingencies (5% of the total amount)				**49 000 000**	An unforeseen event of 5% of the total amount is expected
Grand Total				**1 029 000 000**	

Source: Literature search, October 2024

The estimated budget for the implementation of environmental and social measures amounts to the sum **of one billion twenty-nine million** (1,029,000,000**) CFA francs.**

CONCLUSION AND RECOMMENDATIONS

The Greater Nokoué Sustainable Urban Mobility Project will cover the five (05) Communes of Greater Nokoué. It will be implemented to make traffic flow in the various municipalities concerned. The SUMP-GN has four components, namely: component 1: Improvement of the governance of the urban mobility sector; component 2, improving urban mobility conditions; Component 3: Electrification of two-wheelers, Component 4: Capacity building and project management.

Among the four components, component 2 of the SUMP-GN will have a negative impact on the human environment and the biophysical environment during the implementation of the road opening and construction activities provided for by the said component. Indeed, environmental and social concerns relate to the risks of degradation of the natural environment as a result of the works.

In addition to the negative impacts, from the construction phase of the infrastructure to the operating phase, there are enormous positive impacts relating to job creation and poverty reduction, development of commercial activities (catering activities and small businesses installed), reduction of the anarchic occupation of the corridor causing a lot of nuisance to users and local populations, reduction of accidents, modernization of transport infrastructure, improvement of traffic flow in the cities of Grand-Nokoué, better access to infrastructure adapted for bus-type vehicles: embarkation/disembarkation areas, connection areas with other modes, convenience of transport and improvement of accessibility to various services and reduction of transport costs, reduction in the cost of vehicle maintenance (buses) and the local socio-economic development of the cities of Grand-Nokoué. However, the location, characteristics and scope of the planned activities as well as the magnitude of the potential environmental and social impacts associated with these activities, the Grand-Nokoué Sustainable Urban Mobility Project, is classified in the ***"high*** risk" category"According to the World Bank's environmental categorization criteria and eight (8) Environmental and Social Standards (ESS) are triggered, namely: (i) ESS No. 1 " Assessment and Management of Environmental and Social Risks and Impacts "; (ii) SEN No. 2 " Employment and working conditions"; (iii) ESS No. 3 " Resource Efficiency and Pollution Prevention and Management "; (iv) SEN No. 4 " Health and safety of the population "; (v) SEN No. 5 " Land Acquisition, Land Use Restrictions and Involuntary Resettlement"; (vi) NES No. 6 " Preservation of biodiversity and sustainable management of natural biological resources "; NES n°8 " Cultural heritage " and NES n°10 " Stakeholder mobilisation and information ". With regard to GBV/SEA/SHS risks, the project will develop an action plan for the prevention and response to SEA/HS (SEA/HS Action Plan) with the recommended mitigation measures for the moderate-risk project following the Note of Good Practices to Combat Sexual Exploitation and Abuse as well as Sexual Harassment in the Context of the Financing of Capital Projects Involving Major Civil Works.

The implementation of the CGECP will reduce the potential negative environmental and social risks and impacts that may result from the implementation of this Project. The participatory approach throughout the process would be the essential key to the success of the Project in achieving its objectives. Similarly, awareness-raising, communication and information

campaigns must be carried out throughout the period of the Project's intervention, to improve the support of beneficiaries and stakeholders in terms of respect for the environment. Moreover, by applying the World Bank's Environmental and Social Standards (ESS) and national environmental management policies, the negative impacts of the Project on the environment and people will be relatively mitigated.

The estimated budget for the implementation of environmental and social measures amounts to the sum of one **billion twenty-nine million** (1029,000,000**) CFA francs.**

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ANNEX

Appendix 1: Minutes and Public Consultation Attendance List

Minutes Abomey-Calavi
minutes

SIRAT — Projet de Mobilité Urbaine Durable du Grand-Nokoué (PMUD-GN)

MISSION : REALISATION DU CADRE DE GESTION ENVIRONNEMENTALE ET SOCIALE (CGES), DU PLAN DE MOBILISATION DES PARTIES PRENANTES (PMPP), DU PLAN DE GESTION DE LA MAIN D'ŒUVRE (PGMO), ET D'EVALUATION SOCIALE ET DE VULNERABILITE (ESV) DU PROJET DE MOBILITE URBAINE DURABLE DU GRAND NOKOUE

PROCES-VERBAL DE CONSULTATION DU PUBLIC

Département	:	Atlantique	
Commune	:	Abomey-Calavi	
Arrondissement	:	Abomey-Calavi	
Lieu/Localité de rencontre	:	Salle de conférence de la mairie	
Date	:	07-10-2024	
Heure de début	:	15h 40	
Heure de fin	:	16h 55	
Langues de communication	:	Français, Fon	
Parties prenantes	:	Elus locaux, communaux, services déconcentrés, acteurs du développement	
Nombre de participants	:	Total : 50	Hommes : 42
			Femmes : 08

L'an deux mil vingt-quatre et le lundi sept octobre s'est tenue à la salle de conférence, la séance de consultation du public des parties prenantes dans le cadre de la mission d'élaboration des documents de sauvegardes environnementales et sociales du Projet de Mobilité Urbaine Durable du Gand Nokoué (PMUD-GN) Cadre de Gestion Environnementale et Sociale (CGES) ; Plan de Mobilisation des Parties Prenantes (PMPP), Plan de Gestion de La Main d'Œuvre (PGMO) et l'Evaluation Sociale et de Vulnérabilité (ESV). Le territoire du Grand Nokoué regroupe cinq (05) communes (Porto-Novo, Sèmè-Podji, Cotonou, Abomey-Calavi et Ouidah). Cette séance a connu la participation des acteurs : élus locaux, communaux, structures déconcentrées de l'Etat, acteurs de la société civile, artisans, conducteurs de taxis, Tokpa.

La liste de présence des acteurs consultés est jointe au présent procès-verbal.

1. Contexte et objectifs du projet (voir présentation Powerpoint)

2. Objectifs de la consultation des parties prenantes

La consultation des parties prenantes du Projet de Mobilité Urbaine Durable du Grand-Nokoué (PMUD-GN) vise plusieurs objectifs à savoir :

- informer les parties prenantes sur les activités de projet ;
- échanger sur le recensement des personnes et de leurs biens situés dans l'emprise du projet ;
- solliciter leur participation et implication pour la réussite des activités du projet ;
- recueillir leurs avis, questions, craintes, doléances, propositions et recommandations sur les différents aspects du projet.

3. Préoccupations, questions posées

N°	Intervenants	Préoccupations/questions	Réponses du consultant	Recommandations
1	TCHACHI Claude	Je remercie le commissaire pour la présentation du projet. Nous vivons avec la population les problèmes que le projet va engendrer. J'avoue quand on écoute c'est un bon projet qui va régler des problèmes de mobilité urbaine qui se posent au quotidien. Permettez-moi de vous dire que c'est un projet qui doit préoccuper les premières autorités Maire, Adjoints au maire. Le jour de la séance est mal choisi. La matinée, nous étions avec l'autorité de tutelle		

N°	Intervenants	Préoccupations/questions	Réponses du consultant	Recommandations
		Le Maire, les chefs d'arrondissement et le Préfet s'attèlent sur le terrain. Nous allons poser quelques préoccupations		
2	GUILLAUME Maxime Conseiller municipal	Le projet vient résoudre un problème. Le PMUD-GN va impacter positivement les populations. J'ai quelques questions : 1- Quels sont les impacts négatifs du projet ? 2. Quelles sont les solutions envisagées pour atténuer les impacts négatifs ? 3- Quelle est la durée et le coût du projet ?	1- les impacts négatifs que le projet peut avoir sont entre autres le déplacement des populations, la perturbation des activités, la perte de végétation 2- Il y aura l'élaboration du PGES qui va proposer des mesures d'atténuation 3- La durée et le coût du projet ne sont pas encore connus	

N°	Intervenants	Préoccupations/questions	Réponses du consultant	Recommandations
3	PIPOCA René Luc	Je suis conducteur de mini bus communément appelé Tokyo-Tokyo. - Quelles sont les mesures sécuritaires qui seront prises sur le chantier? La gestion des embouteillages pendant les travaux. Est-ce que les travaux seront exécutés en section? Par rapport aux mini-bus, est-ce que les points d'arrêt sont prévus dans le cadre du projet?	- Sur le chantier il y a les HSE pour réguler la circulation Le site devant accueillir le projet n'est pas encore une route praticable - Lors des travaux des sections déjà aménagées seront mises en circulation Dans le cadre du projet des points d'arrêt et de stationnement sont prévus pour faciliter la circulation	- Réaliser des infrastructures au profit des acteurs de transport par mini-bus - Impliquer les acteurs de transport par mini-bus dans la sensibilisation des populations.

N°	Intervenants	Préoccupations/questions	Réponses du consultant	Recommandations
4	OKRY Seline	Je remercie les organisateurs de la séance. Je veux savoir si le projet a pris en compte le volet sensibilisation sur la sécurité routière. Plus la route est meilleure plus il y a d'accidents de circulation. Les personnes à déguerpir de l'emprise de la route où il faut les reloger, est-ce que le projet a pris en compte ce volet social?	L'emprise du projet, est l'espace situé entre les pylônes. L'espace situé entre est un public appartenant à la Communauté Electrique du Bénin (CEB). Les biens et activités qui s'y mènent seront recensés et compensés.	Sensibiliser les usagers de la route à aménager avant sa mise en service sur la sécurité routière

N°	Intervenants	Préoccupations/questions	Réponses du consultant	Recommandations
5	DAKPO José	Je veux aborder le volet sensibilisation Je voudrais que les acteurs du projet aillent en contact avec les populations pour la diffusion de l'information sur le projet.		
6	DOHOU D. Alfred	Quelle est la source de financement du projet? Est-ce que c'est l'Etat central ou la Commune?	L'Etat béninois va chercher le financement du projet à la Banque mondiale. C'est l'Etat central qui porte le projet	

N°	Intervenants	Préoccupations/questions	Réponses du consultant	Recommandations
7	DECLOU NOAH. Marcellin	Je veux savoir si le projet a pris en compte le plan d'urbanisation dans chaque localité traversée par le projet Arrivée au marché de gros, le plan d'urbanisation a prévu un plan de voirie autre que celui proposé par le lotissement, cela va devenir. Est-ce que le projet sait que l'emprise n'a pas la même forme le long des pylones ?	Tous les projets de la SIRAT l'intègrent dans le plan d'urbanisation existant.	

N°	Intervenants	Préoccupations/questions	Réponses du consultant	Recommandations
8	AHISSOU M. Lucien	Il n'a pas d'activité Nouvelle pour la commune de So-Ava. Est-ce que le projet peut nous aider à aménager la route Akassato-Soava?	Le projet prend en compte les cinq communes du Grand Nokoué. L'aménagement de la route Akassato-So-Ava peut être pris en compte par un autre projet.	
9	AHOUANSTI-NOU Antonie	Le problème de sécurité se pose avec le manque d'éclairage public de la route Glo-Djigbé-Godomey. Le bouchon aux heures de pointe entre Godomey et carrefour Kpota.		- Eclairer les axes routiers prévus dans le projet. - installer les poteaux d'incendie le long du projet

N°	Intervenants	Préoccupations/questions	Réponses du consultant	Recommandations
		Qu'est-ce que le projet peut faire pour régler le problème de l'éclairage de la route ?	le tronçon est en cours de réhabilitation et à la fin des travaux, l'éclairage public sera fonctionnel.	-
10	AGOU-DOHOU Claire Elise	Quels impacts le projet peut avoir avec les cinq communes des affaires domaniales des communes de Grand-Nokoué ?	Dans la mise en œuvre du projet les directeurs des affaires domaniales et environnementales des communes sont impliqués. Ces derniers vont rendre compte au secrétariat exécutif.	

4. Synthèse des recommandations

- Réaliser des infrastructures au profit des acteurs de transport par mini-bus
- impliquer les acteurs de transport par mini bus dans la sensibilisation de la population
- Sensibiliser les usagers de la route à aménager avant sa mise en service sur la sécurité routière.
- éclairer les axes routiers prévus dans le projet
- installer les poteaux d'incendie le long du projet

La séance a pris 16h55 heures dans une note d'entente cordiale et à la satisfaction de tous les participants.

Ont signé

OKRY Soline
Chef cellule Audit de Sécurité Routière (ENSR)

EMMA MAGBINDE
Mairie Calav -

PIPOCA René Luc
Pdt ONG MA LIBERTE
Conducteur de Minibus

METHONOU Pacôme
Responsable Logistique ONG Filles en Actions

Agence AGV-Bénin

ZOSSOU Bonaventure
Guide de tourisme AB/Calavi

Myriam DAKPO

Abomey-Calavi attendance list

Projet de Mobilité Urbaine Durable du Grand-Nokoué (PMUD-GN)

MISSION : REALISATION DU CADRE DE GESTION ENVIRONNEMENTALE ET SOCIALE (CGES), DU PLAN DE MOBILISATION DES PARTIES PRENANTES (PMPP), DU PLAN DE GESTION DE LA MAIN D'ŒUVRE (PGMO), ET D'EVALUATION SOCIALE ET DE VULNERABILITE (ESV) DU PROJET DE MOBILITE URBAINE DURABLE DU GRAND NOKOUE

LISTE DE PRESENCE A LA CONSULTATION DU PUBLIC

N°	Modalité		Réponse	
1	Département	:	Atlantique	
2	Commune	:	Abomey-Calavi	
3	Arrondissement	:	Abomey-Calavi	
4	Lieu/Localité de rencontre	:	Salle de conférence de la mairie	
5	Date	:	07-10-2024	
6	Heure de début	:	15h40	
7	Heure de fin	:	16h55	
8	Langues de communication	:	Français, Fon	
9	Parties prenantes			
10	Nombre de participants	:	Total : 50	Hommes : 42 Femmes : 08

N°	NOM ET PRENOMS	SEXE (M ou F)	PROFESSION	CONTACT	SIGNATURE
1	AKOTO Lucresse	F	C/SCAD-Préfecture Atlantique	97886568	
02	[illegible] claude	M	Pdt CASSC	67528166	
03	TAPE Thomas	M	P/CAEF	96614949	
04	AGON Nestor	M	SAA/Zinvié BIT/CA	66660063	
05	GLIJJIME R. Maxime	M	Conseiller Municipal	97088405	
06	HOUNSOU C. Fidèle	M	Conseiller Municipal	96085014	
07	DÉCLOUWON H. Marcellin	M	Conseiller Municipal	95958709	
08	AHOUANDJINOU Antonin	M	Sapeur-pompier	97887865	
09	DOHOU D. Alfred	M	R/CAGE CM	96106798	
10	METHONOU Pacôme	M	OG Filles en Actions	66464050	
11	AKPO José	M	Guide de conducteur des Touristes	67275092	
12	HOUESSOU-ABATA Moussa Carim	M	Conducteur de la barque Motorisée	61442108	

N°	NOM ET PRENOMS	SEXE (M ou F)	PROFESSION	CONTACT	SIGNATURE
13	AHOLADI KPOSSOU Pierre	M	Conducteur de barque	97390151	
14	ACOKPOHOUSI Clarisse	F.	C.M Scolaire P/CADE	97986592	
15	PIPOCA René Luc	M	Conducteur de Minibus (ONG)	61 81 2045 / 65 75 9403	
16	DOHOU Maxime	M	Consultant en organisation conducteur minibus (ONG)	97 13 61 60	
17	DJIVO Emmanuel	M	Conducteur de barque	96-42-80-03	
18	LOKOSSOU Donatien	M	Guide de tourisme	61-56-24-66	
19	HOUNGA Jean	M	Conducteur de barque	97-12-03-84	
20	ANASSOU Laurent	M	Conducteur de barque	97-17-69-45	
21	AHISSOU M. Lucien	M	Guide de tourisme	68 07 9254	
22	AKPAOKA F. Raymond	M	Guide de Tourisme	97-16-30-12	
23	AKPO Marcair	M	Guide de tourisme	61 17 85 72	
24	HOUNHOUI Hervé	M	SAA / Guide-Ajigbe	97324436	

N°	NOM ET PRENOMS	SEXE (M ou F)	PROFESSION	CONTACT	SIGNATURE
25	Kanni Hanssou Noël	M	Guide de Tourisme	97 87 15 85	
26	KOUNOU Gaudja Benjamin	M	Guide de tourisme	97094940	
27	ADJIDJI O. Mathieu	M	Guide de Tourisme	97080455	
28	AGOSSOU Jéronème F.	F	SAA/Togba	97-25-71-41	
29	Zossou Bénoit	M	Guide de tourisme	64721808	
30	Ménagbo Wisky	M	Pêcheur	66363864	
31	SEKE YERIMA Z. Kamaldine/ S/C ABDOULAYE Ibrahim	M	Opérateur économique	96913145/ 62691644	
32	OKRY Soline	F	Centre National de sécurité Routière (CNSR)	97757460	
33	WORDU Justin	M	Président de l'ONG-A2S	67245114	
34	FANGNINOU C. Elie	M	Directeur exécutif ONG-A2S	96200126	
35	MAGBONDE Emma	F	C/SEAPAC	97383558	
36	AGOSSA Désiré L.	M	SAA/Grand Popo Beach	97-60 70 94	

N°	NOM ET PRENOMS	SEXE (M ou F)	PROFESSION	CONTACT	SIGNATURE
37	DAGBA Egon	M	SAA/Kpanroun	97716693	
38	AZANGBE Nicodème	M	SAA/Hevié	96051840	
39	MYRIAQWE DAKPO	M	Agence AGV-bénin	97108841	
40	GBADO Norbert	M	Fédération TI Bénin	97070798	
41	DJESSOUHO CYRILLE	M	CSTTAB	97162090	
42	AMOUSSOUTCHOU JANVIER	M	PARC ILTA/CAREFOU	97120790	
—	—	—	~~PARC~~ ~~ITA CAREFOU~~	~~97~~ —	—
43	SOVI Bruno A	M	~~SAA~~/Ouèdo	91296716	
44	ASSOGBADJO Apoline	F	C/DEA	97223938	
45	AKOTCHAYE Nicolas	M	IRC	66376082	
46	BONOU Ginette C	F	IRC	95713000	
47	AMEDAHO A. Judith	F	Etudiante/IRC	66 88 09 07	

N°	NOM ET PRENOMS	SEXE (M ou F)	PROFESSION	CONTACT	SIGNATURE
48	HOUENON Hugues	M	Consultant en Environnement IRC	66096163	
49	AGOULOYE Hervé	M	consultant en Environnement	45937222	
50	ANANI Espérance	F	SP/C-CAB	96884456	

Projet de Mobilité Urbaine Durable du Grand-Nokoué (PMUD-GN)

MISSION : REALISATION DU CADRE DE GESTION ENVIRONNEMENTALE ET SOCIALE (CGES), DU PLAN DE MOBILISATION DES PARTIES PRENANTES (PMPP), DU PLAN DE GESTION DE LA MAIN D'ŒUVRE (PGMO), ET D'EVALUATION SOCIALE ET DE VULNERABILITE (ESV) DU PROJET DE MOBILITE URBAINE DURABLE DU GRAND NOKOUE

PROCES-VERBAL DE CONSULTATION DU PUBLIC

Département	:	LITTORAL	
Commune	:	COTONOU	
Arrondissement	:	12ème Arrondissement	
Lieu/Localité de rencontre	:	Salle de Réunion d'Arrondissement	
Date	:	10/10/2024	
Heure de début	:	15H00	
Heure de fin	:	17H12	
Langues de communication	:	Français	
Parties prenantes			
Nombre de participants	:	Total : 35	Hommes : 30
			Femmes : 5

L'an deux mil vingt-quatre et le jeudi dix octobre, s'est tenue à la salle de réunion, la séance de consultation du public des parties prenantes dans le cadre de la mission d'élaboration des documents de sauvegardes environnementales et sociales du Projet de Mobilité Urbaine Durable du Gand Nokoué (PMUD-GN) Cadre de Gestion Environnementale et Sociale (CGES) ; Plan de Mobilisation des Parties Prenantes (PMPP), Plan de Gestion de La Main d'Œuvre (PGMO) et l'Evaluation Sociale et de Vulnérabilité (ESV). Le territoire du Grand Nokoué regroupe cinq (05) communes (Porto-Novo, Sèmè-Podji, Cotonou, Abomey-Calavi et Ouidah). Cette séance a connu la participation des acteurs tels que les conducteurs de taxi-motos et mini-bus, les membres de l'ONG "Ma liberté", les Conseillers Municipaux, quelques autorités et quelques usagers de la Commune de Cotonou

La liste de présence des acteurs consultés est jointe au présent procès-verbal.

1. Contexte et objectifs du projet (voir présentation Powerpoint)

2. Objectifs de la consultation des parties prenantes

La consultation des parties prenantes du Projet de Mobilité Urbaine Durable du Grand-Nokoué (PMUD-GN) vise plusieurs objectifs à savoir :

- informer les parties prenantes sur les activités de projet ;
- échanger sur le recensement des personnes et de leurs biens situés dans l'emprise du projet ;
- solliciter leur participation et implication pour la réussite des activités du projet ;
- recueillir leurs avis, questions, craintes, doléances, propositions et recommandations sur les différents aspects du projet.

3. Préoccupations, questions posées

N°	Intervenants	Préoccupations/questions	Réponses du consultant	Recommandations
1	Mrs ALOKPO Tijoho (CIDRSEI)	Pour ma part j'ai plusieurs préoccupations, la première concerne le coût globale du projet et sa durée de réalisation, la seconde préoccupation c'est de connaître le débit de réalisation des travaux. Quand à ma troisième préoccupation, elle concerne les différentes actions qui seront prises afin de soulager les peines des personnes impacter par le présent projet	Le projet est en phase de préparation et sera exécuté sur une période de 5 ans! Le démarage des travaux sera connu après approbation de la Banque Mondiale Les mesures seront proposées dans les PGES à la fin des études.	

N°	Intervenants	Préoccupations/questions	Réponses du consultant	Recommandations
2	Mrs DOMINGO Nassirou (Président FAPHB)	Merci pour votre engagement à notre égard. Néanmoins nous avons des préoccupations. Celles ci se résument en plusieurs points: Concernant un projet d'un tel envergure nous voudrions que les denivelations respectent les normes standards et que cela soit privilégiées pour les personnes handicapées. Nous voudrions également que des parkings accessibles aux personnes handicapées soient	Les ouvrages à réaliser tiendront grand compte des personnes handicapées	

N°	Intervenants	Préoccupations/questions	Réponses du consultant	Recommandations
		réalisées. Il est de même pour des garres de stationnements. Comme dernière préoccupation, nous souhaiterons que les pictogrammes ainsi que des panneaux prennent en compte les valeurs des personnes vivantes d'handicapes.		
3	Mr AHODONON Georges (Médecin DDS/ Littoral)	Merci à vous. Ma préoccupation concerne le Plan d'Action de Réinstallation, c'est à dire les personnes affectées par le projet, que l'évaluation	Nous sommes à la phase de préparation du projet. Pour l'instant il n'est pas question du	

N°	Intervenants	Préoccupations/questions	Réponses du consultant	Recommandations
		des domages engendrés par le projet soit à la hauteur des indemnisations. Autre préoccupations, c'est l'impact des bactéries usées issues des engins électriques	plan d'Action et de Réinstallation du projet	
4	Mrs FOLLY SEGBEDJI Tiburse (Agent NCOT)	Merci pour votre présentation. Pour ma part je souhaite que la sécurité des passages piétons soit de mises pour les usagers. Il est de même pour la limitation		

N°	Intervenants	Préoccupations/questions	Réponses du consultant	Recommandations
		de la vitesse des moyens roulants à deux et à quatre roues, voir plus Prévoir des toilettes publiques. Mettre en place des éclairages adaptés aux conditions climatiques Prévoir des dos d'ânes afin de limiter la vitesse des automobilistes Prendre également en compte à la phase de réalisation du projets des questions sanitaires (VIH, VBG; COVID-19)		

N°	Intervenants	Préoccupations/questions	Réponses du consultant	Recommandations
5	Mrs René-Luc PIPOCA (Président ONG Ma Liberté)	Merci à vous. J'ai trois questions, la première : Quels sont les moyens qui sont prévus pour les conducteurs de mini-bus. la deuxième question : Qu'est-ce qui serait fait pour les anciens moyens de déplacement. De grâce, que les vrais acteurs du domaine soient associés avant l'élaboration du projet.	* le projet intègre toutes les parties prenantes (Conducteurs de mini-bus, Zémidjanman etc...) * Les	

MAIRIE DE COTONOU
ADJOINT AU MAIRE
Chef d'Arrondissement
12ème ARRONDISSEMENT

4. Synthèse des recommandations

Au terme de cette séance de consultation publique avec les parties prenantes, il a été retenu l'adhésion des diverses parties. Ainsi les principales interventions ont porté sur :
- Tenir en compte le recrutement de la main d'œuvre locale lors de la phase de réalisation des travaux du projet.
- Mettre au point une base de données des conducteurs de taxi-moto et de mini-bus avant la réalisation du projet
- Prévoir des ralentisseurs lors de la phase de réalisation du projet
- Prévoir des toilettes publiques pour les usagers
- Prévoir des parckings pour des personnes vivants d'handicapes
- Mettre en place des panneaux et des pictogrammes pour des malvoyants.

La séance a pris 2h 12min heures dans une note d'entente cordiale et à la satisfaction de tous les participants.

Ont signé

FOLLY-BEBE A. Mirabeau
CA13

Dr AHOUANSOU Georges
C/SSPR DOS-Libori.

Alolcro Jiphu
CARSE (Rico)

Zinsou Yves KOUSSOUBOU
C/1ST-8 Rpt CA8

DJABAKATIE
Samirat
REPSFECO.

Attendance list Cotonou

Projet de Mobilité Urbaine Durable du Grand-Nokoué (PMUD-GN)

MISSION : REALISATION DU CADRE DE GESTION ENVIRONNEMENTALE ET SOCIALE (CGES), DU PLAN DE MOBILISATION DES PARTIES PRENANTES (PMPP), DU PLAN DE GESTION DE LA MAIN D'ŒUVRE (PGMO), ET D'EVALUATION SOCIALE ET DE VULNERABILITE (ESV) DU PROJET DE MOBILITE URBAINE DURABLE DU GRAND NOKOUE

LISTE DE PRESENCE A LA CONSULTATION DU PUBLIC

N°	Modalité		Réponse		
1	Département	:	LITTORAL		
2	Commune	:	COTONOU		
3	Arrondissement	:	12ème Arrondissement		
4	Lieu/Localité de rencontre	:	Salle de Réunion d'Arrondissement		
5	Date	:	10/10/2024		
6	Heure de début	:	15H 00		
7	Heure de fin	:	17H 12		
8	Langues de communication	:	Français		
9	Parties prenantes				
10	Nombre de participants	:	Total : 35	Hommes : 30	
				Femmes : 5	

N°	NOM ET PRENOMS	SEXE (M ou F)	PROFESSION	CONTACT	SIGNATURE
1	YAÏ Olafémi Diane	F	Environnementaliste Invitée	69825228	
2	OREKAN Chancelle	F	Environnementaliste Invitée	68 17 84 39	
3	DJABAKATIE Samirat	F	Chargée de programmes REPSFECO	65 15 28 38	
4	CHINKOUN Alain	M	SAA11 (Représentant du CA11)	96-60-47-84	
5	AGOUGOU Etienne	M	SAA4 Rapst CA4	97 74 34 43	
6	ALOKPO Sylvie	D	C/DRSE/RAF	96 91 91 19	
7	KOUKPONOU Zinsou Yves	M	C/DST-8 RPtCA-8	97 44 68 78	
8	POGNON Serge	M	C/DST-10 Dpt CA/10	96 04 61 46	
9	AÏNA Obarge O	M	C/DST-9 Dpt CA9	97 11 99 66	
10	DOMINGO Nassirou	M	Président FAPHB	67 19 39 48	
11	Kanhonou Monique-	F	CM	96 00 99 42	
12	ZINSOBÉ S-Armand	M	Vendeurs	46-33-35-05	

N°	NOM ET PRENOMS	SEXE (M ou F)	PROFESSION	CONTACT	SIGNATURE
13	GUELOUHIN THOMAS	M	TAXI MOTO	95358026	[illegible]
14	DOHOU Maxime	M	conducteur MINIBUS membre ONG MA Liberté	97136160	[illegible]
15	CODJOVI Léandre	M	Fériste	44511316	[illegible]
16	HOUNSOU Y. Antoine	M	Conchitaire	67-45-77-00	[illegible]
17	HOUESSOU Gérard	M	ONG Ma Liberté	66041286	[illegible]
18	SENOU Olivier	M	TaxiT MoTo	41538881	[illegible]
19	AKOUTA Amagonou	M	TaxiT Moto	95601131	[illegible]
20	AHODONON Georges	M	Médecin DDS Littoral	96613066 DDS - Lital	[illegible]
21	PIPOCA René Luc	M	Conducteur Minibus ONG MA LIBERTE	61812045	[illegible]
22	Houedan P. Bertille	F	Secrétaire	59-96-3651	[illegible]
23	BALLO GWEDE olivier	M	Assistant du consultant principal	66301466	[illegible]
24	OLORY Gédéon C.	M	Assistant CAIR	97328351	[illegible]

N°	NOM ET PRENOMS	SEXE (M ou F)	PROFESSION	CONTACT	SIGNATURE
25	FOLLY SEGBEDJI Tiburce T.A.	M	Agent MCOT	97487441	[illegible]
26	SOSSOU-VOVO Nicolas	M	SAA 12e	97116995	[illegible]
27	SEDJIDE Honduras	M	Conseiller Municipal	96814665	[illegible]
28	Zounfa H. Zachée	M	Conseiller Municipal	97570069	[illegible]
29	FOLLY-BEBE A. Messon	M	CA 13	97086437	[illegible]
30	ABIALA Innocent Abiodoun	M	Comptabilité IRC	67406657	[illegible]
31	BOTON -Y. Victor	M	Consultant [illegible]	67824881	[illegible]
32	AKPACA Innocent	M	Consultant IRC	96425383	[illegible]
33	AGOULOYE Hervé	M	Consultant I.R.C	45938722	[illegible]
34	BONOU GANGAN A. Janvier	M.	SAA 1er A.	97890915	[illegible]
35	HOUNDJENOUKON Sessinou Valère	M.	Conseiller Municipal	95941752	[illegible]

PV Ouidah

Projet de Mobilité Urbaine Durable du Grand-Nokoué (PMUD-GN)

MISSION : REALISATION DU CADRE DE GESTION ENVIRONNEMENTALE ET SOCIALE (CGES), DU PLAN DE MOBILISATION DES PARTIES PRENANTES (PMPP), DU PLAN DE GESTION DE LA MAIN D'ŒUVRE (PGMO), ET D'EVALUATION SOCIALE ET DE VULNERABILITE (ESV) DU PROJET DE MOBILITE URBAINE DURABLE DU GRAND NOKOUE

PROCES-VERBAL DE CONSULTATION DU PUBLIC

Département	:	ATLANTIQUE	
Commune	:	OUIDAH	
Arrondissement	:	1er Arrondissement	
Lieu/Localité de rencontre	:	Salle de reunion de la Mairie	
Date	:	10/10/2024	
Heure de début	:	10H45'	
Heure de fin	:	12H10'	
Langues de communication	:	Francais	
Parties prenantes		Transporteur poids leger et lourd, Agence Taxi-Moto, CNSA, Police Republicaine, Representant Pecheur, Transporteur Bus CSC, VBG	
Nombre de participants	:	Total : 18	Hommes : 13
			Femmes : 5

L'an deux mil vingt-quatre et le 10 octobre 2024, s'est tenue à La salle de délibération de la Mairie de Ouidah la séance de consultation du public des parties prenantes dans le cadre de la mission d'élaboration des documents de sauvegardes environnementales et sociales du Projet de Mobilité Urbaine Durable du Gand Nokoué (PMUD-GN) Cadre de Gestion Environnementale et Sociale (CGES) ; Plan de Mobilisation des Parties Prenantes (PMPP), Plan de Gestion de La Main d'Œuvre (PGMO) et l'Evaluation Sociale et de Vulnérabilité (ESV). Le territoire du Grand Nokoué regroupe cinq (05) communes (Porto-Novo, Sèmè-Podji, Cotonou, Abomey-Calavi et Ouidah). Cette séance a connu la participation des acteurs tels que les Conseillers communaux, les cadres techniques de la Mairie, les representants de la police republicaine, de transporteurs, Taxi-Moto, Responsable de pêcheurs, transporteurs fluviaux etc.

La liste de présence des acteurs consultés est jointe au présent procès-verbal.

1. Contexte et objectifs du projet (voir présentation Powerpoint)

2. Objectifs de la consultation des parties prenantes

La consultation des parties prenantes du Projet de Mobilité Urbaine Durable du Grand-Nokoué (PMUD-GN) vise plusieurs objectifs à savoir :

- informer les parties prenantes sur les activités de projet ;
- échanger sur le recensement des personnes et de leurs biens situés dans l'emprise du projet ;
- solliciter leur participation et implication pour la réussite des activités du projet ;
- recueillir leurs avis, questions, craintes, doléances, propositions et recommandations sur les différents aspects du projet.

3. Préoccupations, questions posées

N°	Intervenants	Préoccupations/questions	Réponses du consultant	Recommandations
1 -	William Dekon	Qu'est-ce qui serait les avantages personnels des individus	→ Possibilité d'avoir de soutiens pour la reconversion, le renouvellement du mobilier de transport, soutiens pour le financement du plan de vie	→ Intégrer les dispositifs de toilettes publiques dans le parcours proposé pour réduire le risque de pollution des eaux
2.	Mme Gnacegbé	Combien de communes dont ciblés ? Le projet relève de la tutelle de quel ministère ? Quels sont les cibles et qu'est ce qui est prévu en matière de renforcement de capacité ? Qui sont les acteurs cités ici.	→ les communes de Grand-Nokoué (Cotonou, Sème-Kpodji, Abomey-Calavi, Porto-Novo) → Tous les ministères ayant un lien avec le transport (Cadre de Vie, finance, affaires sociales, pêche, transport...etc)	→ Prendre en compte les transporteurs de motos-taxis dans la dénomination des points de chute, la construction des terminaux → Assainir le trafic local pour permettre aux taxi à deux roues de bien les pratiquer.
3°	Mme DIBE	Quels sont les cibles ? les conducteurs de taxi-motos sont-ils inscrits ? Qu'est-ce qui est prévu pour eux ?	→ Ceux qui sont dans la gestion des équipements marchands et commerciaux, ceux qui offrent les services de transport, les bénéficiaires des services de transports etc. → Tous les acteurs de la chaîne sont concernés → Oui les conducteurs de taxi-motos sont bien représentés. accompagnement du plan de vie, soutien au renouvellement de la flotte, soutien à la reconversion.	→ Proposer des plans de reconversion dans les industries + procédure leur d'affluence.

N°	Intervenants	Préoccupations/questions	Réponses du consultant	Recommandations
4.	Mr ~~SEKLOKA~~ Tchibozo Jonas	1. Qu'est-ce qui est prévu pour les gares ? La mairie ne prend pas en compte les responsables des gares routières	→ Les travaux de confort → l'acteur qui prend en charge les responsables de gare sera clarifié dans le cadre du projet	
5.	Mr SEKLOKA Wilfried	Qu'est-ce qui est prévu sur le plan sanitaire ?	→ les équipements de gestion de la santé publique (poubelle, WC, toilettes publiques, etc...)	
6.	Mme GNANSOU Noa Augustin	Est-ce qu'on regarde la pertinence, les aspects, l'ouverture de ce projet ? Quelle place accorde-t-on à l'information, éducation, la sensibilisation ? Quels sont les acteurs sollicités et choisis ? La question de l'emploi de ceux qui exercent dans le secteur, comment il est sécurisé, comment on formalise pour en faire carrière professionnelle surtout les conducteurs de taxi-moto devenir important dans le pays ?	→ le projet n'envisage pas détruire l'emploi, mais peut plutôt améliorer les conditions dans lesquelles s'exercent cet emploi, l'organiser le secteur pour qu'il soit profitable à toutes parties → l'informat., la sensibilisat. l'éducation est pertinente c'est le rôle des OSC, des medias publics...	

N°	Intervenants	Préoccupations/questions	Réponses du consultant	Recommandations
7	Mr Zoutoun Ambroise			→ Prendre des mesures les plus adéquates pour intégrer les attentes de toutes les parties prenantes dans la mesure où le transport est un secteur sensible. Même le Monde économique des services de transport doit être consulté → Dans la conception du mode de financement que le gouvernement prenne références des modèles qui ont lieu d'améliorer la satisfaction des transporteurs. Les maintiennent dans une certaine forme d'équilibre. → éviter les contrats qui sanctionnent et n'encouragent pas les transporteurs → Nous invite à percevoir le transport [illegible] deux roues comme une entreprise à organiser car non à détruire → Les gestionnaires projets doivent intégrer dans leur plan de monitoring les OSC comme des acteurs d'information éducation et sensibilisation pour un changement de comportement
8.	Mr William Akon			
9.	Mme Guanfodio Christine			

N°	Intervenants	Préoccupations/questions	Réponses du consultant	Recommandations
10.	Mr QUENTIN	Comment le projet a prévu faire représenter les diverses couches dans la gestion ?	Le projet en est pas encore démarré c'est le moment de faire des propositions à propos de la façon par laquelle ces diverses couches peuvent se faire représenter.	Dans la mesure où tout le monde n'est pas invité dans cette salle, il est souhaitable que les échanges soient aussi rapprochés des acteurs à la base

4. Synthèse des recommandations

Il faut que toutes les mesures soient prises en compte sans distinction afin que toutes les couches soient en compte près que ce projet soit bénéfice les uns et les autres.

La séance a pris _____ heures dans une note d'entente cordiale et à la satisfaction de tous les participants.

Ont signé

AGUEMON Theodore

97-60-12

William DEKON

AKADJA CLOVIS

Allyn

CA Kpomey Calavi

Ambroise ZOHOUN

C. Communal

Justine Tchénonou ALIA

DAIVE-Ouidah.

Tchilozou Jos

Zossoungbo Ambroise

Ceah 4

GUEDEGBE Innocencia

DE APFEM ouidah

SEKLOKA Wilfrid

RPC DDS-ATL

Ouidah attendance list

Projet de Mobilité Urbaine Durable du Grand-Nokoué (PMUD-GN)

MISSION : REALISATION DU CADRE DE GESTION ENVIRONNEMENTALE ET SOCIALE (CGES), DU PLAN DE MOBILISATION DES PARTIES PRENANTES (PMPP), DU PLAN DE GESTION DE LA MAIN D'ŒUVRE (PGMO), ET D'EVALUATION SOCIALE ET DE VULNERABILITE (ESV) DU PROJET DE MOBILITE URBAINE DURABLE DU GRAND NOKOUE

LISTE DE PRESENCE A LA CONSULTATION DU PUBLIC

N°	Modalité		Réponse	
1	Département	:	ATLANTIQUE	
2	Commune	:	OUIDAH	
3	Arrondissement	:	1er Arrondissement (Mairie)	
4	Lieu/Localité de rencontre	:	Salle de réunion de la Mairie	
5	Date	:	10 Octobre 2024	
6	Heure de début	:	10H45	
7	Heure de fin	:	12H10	
8	Langues de communication	:	Française	
9	Parties prenantes			
10	Nombre de participants	:	Total : 18	Hommes : 13
				Femmes : 05

N°	NOM ET PRENOMS	SEXE (M ou F)	PROFESSION	CONTACT	SIGNATURE
1	KINTIN V.C. Urbain	M	CA. Abonnel-Calavi FPR	97 47 34 12	
2	HOUESSENON Jocelyne	F	SAA-2	64 72 05 10	
3	DEKON William	M	Batelier DJEGBADJI	97 73 46 85	
4	Tchobozo Jonas	M	Transporteur	97 64 81 26	
5	AGUENON Théodore	M	Transporteur	97 60 12 16	
6	AKODODJA @Lovis	M	ZEM	67-18-73-82	
7	SEKLOKA Wilfrid J.	M	Technicien BTP	97 90 38 36	
8	YANSOUNOU M. Augustine	F	Sd AEPlus ONG	94 63 38 59	
9	DIDE Stéphanie	F	Consultante Formatrice	97 60 20 23	
10	GUEDEGBE Innocencia	F	D.E APFEM	97 07 63 77	
11	PRUDENCIO Fructueux	M	CAS-AUMA	97 18 84 95	
12	ADJAMAN René	M	CA GAKPE	66 30 88 78	

N°	NOM ET PRENOMS	SEXE (M ou F)	PROFESSION	CONTACT	SIGNATURE
13	ALIA Justine Théossore	F	DADE Guidah	96310098	
14	ZOHOUN Ambroise	M	C.C	96445192	
15	Zossoungbo Urbain	M	CC ch 4	97838871	
16	ZINSOU G. Rodrigue	M	Rep OMG. Bon secours	97678595	
17	BOTON S. Victor	M	Consultant Bonne	67820881	
18	AGOULOYE Hervé	M	comptable IRC	45938722	

PV of Sèmè-Podji

Projet de Mobilité Urbaine Durable du Grand-Nokoué (PMUD-GN)

MISSION : REALISATION DU CADRE DE GESTION ENVIRONNEMENTALE ET SOCIALE (CGES), DU PLAN DE MOBILISATION DES PARTIES PRENANTES (PMPP), DU PLAN DE GESTION DE LA MAIN D'ŒUVRE (PGMO), ET D'EVALUATION SOCIALE ET DE VULNERABILITE (ESV) DU PROJET DE MOBILITE URBAINE DURABLE DU GRAND NOKOUE

PROCES-VERBAL DE CONSULTATION DU PUBLIC

Département	:	Ouémé	
Commune	:	Sèmè-Kpodji	
Arrondissement	:	Sèmè-Kpodji	
Lieu/Localité de rencontre	:	Mairie de Sèmè-Kpodji	
Date	:	11-Octobre 2024	
Heure de début	:	10h 33 mn	
Heure de fin	:	12h-05'	
Langues de communication	:	Français - Goun	
Parties prenantes			
Nombre de participants	:	Total : 40	Hommes : 37
			Femmes : 03

L'an deux mil vingt-quatre et le 11 Octobre 2024, s'est tenue à La salle de délibération de la mairie de Sèmè-Kpodji, la séance de consultation du public des parties prenantes dans le cadre de la mission d'élaboration des documents de sauvegardes environnementales et sociales du Projet de Mobilité Urbaine Durable du Gand Nokoué (PMUD-GN) Cadre de Gestion Environnementale et Sociale (CGES) ; Plan de Mobilisation des Parties Prenantes (PMPP), Plan de Gestion de La Main d'Œuvre (PGMO) et l'Evaluation Sociale et de Vulnérabilité (ESV). Le territoire du Grand Nokoué regroupe cinq (05) communes (Porto-Novo, Sèmè-Podji, Cotonou, Abomey-Calavi et Ouidah). Cette séance a connu la participation des acteurs tels que les élus de la municipalité, les cadres des services techniques de la mairie, les représentants de transporteurs à deux roues du Groupement des Sapeurs Pompiers, du ministère du cadre de vie, de la préfecture de l'Ouémé, du ministère de la santé, du CNSR, etc...

La liste de présence des acteurs consultés est jointe au présent procès-verbal.

1. Contexte et objectifs du projet (voir présentation Powerpoint)

2. Objectifs de la consultation des parties prenantes

La consultation des parties prenantes du Projet de Mobilité Urbaine Durable du Grand-Nokoué (PMUD-GN) vise plusieurs objectifs à savoir :

- informer les parties prenantes sur les activités de projet ;
- échanger sur le recensement des personnes et de leurs biens situés dans l'emprise du projet ;
- solliciter leur participation et implication pour la réussite des activités du projet ;
- recueillir leurs avis, questions, craintes, doléances, propositions et recommandations sur les différents aspects du projet.

3. Préoccupations, questions posées

N°	Intervenants	Préoccupations/questions	Réponses du consultant	Recommandations
1-	M. SOKENOU	Comment le projet envisage développer le transport dans un contexte où le lac Nokoué est encombré des Acadja ? Le projet va-t-il soutenir les conducteurs de Zem ?	1) Prochainement les réflexions sur le transport vont intégrer les dynamiques qui ont affecté le secteur de la pêche depuis 2019. Elles vont tenir compte de la loi cadre sur la pêche qui a réglementé l'usage des acadja sur le Nokoué, même si son application continue de faire objet de réticence de la part des pêcheurs. → Oui, le projet va soutenir les conducteurs de Zem, → renforcer leur capacité à se conformer aux dispositifs en matière de sécurité → Proposer des alternatives de reconversion → Appui au renouvellement de la flotte 2) Nous sommes à l'étape de la formulation, la carte est une proposition des consultants.	
2-	M. KOUDERIN	Peut-on avoir les détails, propos, annexes des dispositions sécuritaires prévues sur les axes retenus dans le cadre du projet ? La carte n'a pas apporté des détails, des précisions à propos de ces aspects clés. Le projet a-t-il prévu la reconversion des transporteurs, renouvellement de leur flotte, le renforcement de leurs capacités ?		
3-	M. HOUESSOU	Les consultants n'ont pas mis l'accent sur les impacts négatifs ? Quels sont ces impacts ? A propos des transports sur le lac Nokoué, quels sont les moyens qui sont prévus, barques, les pirogues ?		

N°	Intervenants	Préoccupations/questions	Réponses du consultant	Recommandations
		En quoi ces navires tiennent compte des contraintes de navigation pour l'eau, la question des jacinthes d'eau par exemple ? Où en est on à propos des réflexions sur le permis de conduire les conducteurs d'engins et deux roues, sont elles prises en compte dans actions de renforcement ?	- des outils plus précis vous seront apportés et en son temps, vous serez encore recontacter pour apporter vos expertises Sofal : attention n'est pas de vous contraindre à adopter sans réflexion, mais de vous proposer un apport de réflexion. C'est alors une mission qui nous amène par que vous partagiez avec nous les aspects dans la même veine vous avez des expériences à propos du secteur ~~des pays~~ objet de la présente discussion.
4-	M. EFFIBOLEY	- Pourquoi le réseau fluvial n'est-il pas clairement illustré sur la carte synoptique des réseaux présentés par les consultants ? - le projet envisage-t-il quelque chose à propos des réseaux de transport combinés entre la frontière du Nigeria	→ Comme a été présenté au cours de la présentation, une pratique de transport sur l'eau existe, le gouvernement veut juste apporter des éléments de confort pour améliorer l'expérience du voyageurs. Ce sera des barges ayant un minimum de confort capable de rassurer sur la sécurité du voyageur.
5-	M. SENOU	- Le projet semble s'intéresser seulement au réseau de voies principales. Pourquoi est-il des voies secondaires encore difficile à pratiquer - Electrifier les motos, c'est une bonne chose, mais quelle serait la solution énergétique-		

N°	Intervenants	Préoccupations/questions	Réponses du consultant	Recommandations
6-	M. Amoussou	→ les expériences d'accord, de contrats avec les conducteurs de taxi-moto, le projet a-t-elle réussi, elles ont été très nombreuses, mais elles portent autant de difficultés fait prendre en compte dans le choix des options → les questions de toilette genre ont elles prises en compte dans la réflexion sur la mobilité urbaine ? que ce soit sur la terre ferme, que ce soit sur les eaux ?	l'analyse des contraintes sera faite à la façon de les contourner dans les phases préparatoires à la mise en œuvre du projet. JP ~~La question du permis de conduire pour~~ en ce qui concerne aussi de même pour la question relative à l'exigence du permis de conduire aux conducteurs de taxi-moto.	→ Par rapport du transport fluvial, il est important que le projet intègre les partenaires de l'eau dans la chaîne de réflexion. Ils ont une connaissance approfondie des zones faciles d'accès, difficile d'accès, des ~~bâtis~~ lecture des profondeurs dans chaque endroit.
7-	M. Jonhonstein	→ le transport fluvial se fera-t-il avec des pirogues ou des barques ? → Comment sécuriser les investissements du vandalisme ; réflexion sur les mécanismes d'alerte avec le ENSP ?	M.. Cf réponse apportée à la question 2d'abord n'est envisagé pour le moment à propos de la connection des réseaux à la frontière du Nigéria, on peut en faire une tolérance.	→ tolérance pour que le projet prenne en compte le réseau fermé transport fluvial en Nigéria en raison des actes d'insécurité. Qui s'y déroulent que la tolérance. la réponse à la question de la source énergétique à utiliser pour les moteurs électriques sera clarifié en fur et à mesure que le projet s'approche de la phase de mise en œuvre.
8-	M. Kpasson	→ Que prévoit le projet par rapport à l'ensablement, le sédiment de roche sur le Lac Nokoué → le transport fluvial, a-t-on une précision sur les endroits où ~~installés~~ Les embarcadères seront installés → Quel sort est réservé à l'informel ? qui pourrait la majeure partie des acteurs exerçant dans le secteur → Qu'en est-il des ~~pré~~ à propos de nos parents qui exercent des traits d'usage traditionnels sur l'eau_2	3d la construction des réseaux du projet du réseau des voies secondaires n'est pas encore envisagé maintenant, on peut en faire une tolérance L'attention dans cette demande n'est pas de confirmer les intentions particulières avec lesquels les conducteurs sont en contact ou en accord.	

N°	Intervenants	Préoccupations/questions	Réponses du consultant	Recommandations
			Mais qu'il s'agit de rassurer que le gouvernement organisera des cadres de concertations complémentaires autour de ces questions et de faire de façon consensuelle le modèle qui arrangera toutes les parties impliquées dans ces accords. 6- Pour être témoin des dynamiques de transformation engagées par le gouvernement depuis environ 5 ans, nous ne doutons pas que le gouvernement prendra des dispositions pour répondre aux préoccupations liées à l'hygiène et l'assainissement du cadre d'exercice de cette activité. Donc ces questions de toilettes publiques seront systématiquement prises en compte. 7- cf réponses à la question 3 NB c'est une question transversale qui dépasse le cadre du projet. 6 SO s'est portée volontaire pour engager des échanges avec le CNSR afin qu'une réponse consensuelle soit apportée à cette préoccupation du transport des enfants mineurs	

N°	Intervenants	Préoccupations/questions	Réponses du consultant	Recommandations
			8- les réflexions sur le transport fluviale sont lancées, elles seront poursuivi avec le temps, des séances de concertations complémentaires viendront apporter des réponses aux diverses précisions que vous sollicitez. Toutefois il ne sera pas mis en place dans un esprit de détourner l'existant, mais plutôt de l'améliorer	

4. Synthèse des recommandations

1- Il est important que le projet intègre les praticiens de l'eau dans l'élaboration du parcours car eux, ils ont une connaissance approfondie des zones navigables et non navigables

2 - Prendre en compte dans le projet le réseau sémé - kpodji - à la frontière du Nigeria pour réduire les risques d'insécurité -

3 - Veiller à la sécurité de l'emploi développé dans l'informel lié à ce secteur

4 - Prendre en compte les réflexions déjà existantes surtout à propos du canal de Toché -

5 - Evaluer les expériences de contrats d'accords entre sociétés et conducteurs de motocycles de transport existantes.

La séance a pris _____ heures dans une note d'entente cordiale et à la satisfaction de tous les participants.

Ont signé

DR KOUSSERIN Fernand

HOUESSOU Damien.

Said Olatundji LIASSOU CSRRT

Joachim S. AMOUSSOU Rep DDS-O

YLONFOUN MAÏ Daniel DE/Mairie

DE GBO Jacques

TIGOT Martin chef Centre de secours GNSP

Jacques SENOU

Sèmè-Podji attendance list

Projet de Mobilité Urbaine Durable du Grand-Nokoué (PMUD-GN)

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LISTE DE PRESENCE A LA CONSULTATION DU PUBLIC

N°	Modalité		Réponse	
1	Département	:	OUEMÉ	
2	Commune	:	SÈMÈ-KPODJI	
3	Arrondissement	:	1er Arrondissement	
4	Lieu/Localité de rencontre	:	SÈMÈ-KPODJI	
5	Date	:	18/10/2024	
6	Heure de début	:	10H15	
7	Heure de fin	:	12H00	
8	Langues de communication	:	français et gouin	
9	Parties prenantes			
10	Nombre de participants	:	Total : 40	Hommes : 37 Femmes : 03

N°	NOM ET PRENOMS	SEXE (M ou F)	PROFESSION	CONTACT	SIGNATURE
1	ABIALA Innocent Abiodoun	M	S.Com/IRC	67406657	
2	BOTON-Y. Victor	M	Consultant associé	67824881	
3	BONOU Ginette C.	F	Consultante associée	95713000	
4	AGOULOYE Hervé	M	Chargé d'étude I-R.C	95938772	

N°	NOM ET PRENOMS	SEXE (M ou F)	PROFESSION	CONTACT	SIGNATURE
01	KAKALAKA Felix	M		97523543	
02	TANLODJOU Appolinaire	M	Taxi moto	61325102	
03	AKOWANOU S. Georges	M	Taxi-Moto	97586674	
04	SENOU Jacques	M	Taxi-Moto	96713545	
05	Bossou Emile	M	Président groupement Taxi-moto Fénié	96139331	
06	TOYETONME M. Emile	M	Conducteur Taxi moto	97 17 72 01	
07	KITTI Lucien	M	Conducteur Taxi moto	47 49 15 24 97 18 92 42	
08	OUSSOU Filbert	M	Conducteur Taxi moto	97 31 59 36	
09	KIKI Mathias	M	Conducteur Taxi moto	97 39 13 31	
10	AGBANOU H. James	M	Conducteur Taxi moto	97653423	
11	DEGBO Pierre	M	Pêcheur (Président du groupe)	96629547	
12	HOUNGNIBO Fitgérald	M	Journaliste) Océan FM Invité du représentant des jeunes)	97259390	

N°	NOM ET PRENOMS	SEXE (M ou F)	PROFESSION	CONTACT	SIGNATURE
13	KOUMAGNON Jeannot	M	Enseignant (représentant des jeune)	67666465	[illegible]
14	HOUNGNIBO Fitgérald	M	invité du sept des jeune (journaliste)	97259310	[illegible]
15	TIGOZ Martin	M	Sapeur-Pompier GNSP	98114803	[illegible]
16	Dr KOUDERIN O. Edmond	M	Administrateur au CNSR	97533205	[illegible]
17	SOKENOU V François	M	C/SAEP Sèmè-Podji	97684552	[illegible]
18	HOUESSOU Damien	M	IPE/DDCVT-O	97448427	[illegible]
19	KOKODI Sylvain	M	C/SAC/Mairie Sèmè-Podji	96724202	[illegible]
20	DOSSOU Luc	M	Representant de YENAWA sur le projet transport	66611484	[illegible]
21	DEGBO Jacques	M	Transport Fluvio-Lagunaire Sème Kpodji	96555609	[illegible]
22	AMOUSSOU Y. Joachim	M	Hygiéniste DDS-O-Rep-DAS-D	97291928	[illegible]
23	BABADJITOU M. Clément L.	M	DADE	97023327	[illegible]
24	EFIBOLE G. Bernadin	M	C/SDCL	96779600	[illegible]

N°	NOM ET PRENOMS	SEXE (M ou F)	PROFESSION	CONTACT	SIGNATURE
25	SAGBOHAN F. Pulchérie	F	SAA	97008748	
26	Posso Raymond	M	C/DE à la Mairie	97896702	
27	DJOTCHOU E. Honoré	M	Conducteur Taxi-moto	96-02-63-74	
28	DOSSA H. Roulin	M	C/SDS	97725160	
29	VODOUNGNISSE Anicet	M	conducteur	96 12 94 57	
30	MEVI-I. Emmanuel	M	C/SEM M/Pom	97577127	
31	HOUNTONDJI Y. Honoré	M	Cal/SAEM	62326580	
32	LIASSOU Faïd Olatudji	M	C/SPAT Préfecture	96495218	
33	GBENIGA Timothée	PAM/Séma	PAM/Séma	57227289	
34	DJONFOUO Mawuyon A. I Daniel	M	Secrétaire Exécutif	97606625	
35	DANTON Clémence	F	Assistante C/SAS	96847751	
36	HOUNSALALA William	M	Rapt CA EKPE	97197137	

Projet de Mobilité Urbaine Durable du Grand-Nokoué (PMUD-GN)

MISSION : REALISATION DU CADRE DE GESTION ENVIRONNEMENTALE ET SOCIALE (CGES), DU PLAN DE MOBILISATION DES PARTIES PRENANTES (PMPP), DU PLAN DE GESTION DE LA MAIN D'ŒUVRE (PGMO), ET D'EVALUATION SOCIALE ET DE VULNERABILITE (ESV) DU PROJET DE MOBILITE URBAINE DURABLE DU GRAND NOKOUE

PROCES-VERBAL DE CONSULTATION DU PUBLIC

Département	:	OUEME	
Commune	:	PORTO-NOVO	
Arrondissement	:	2e ARRONDISSEMENT	
Lieu/Localité de rencontre	:	MAIRIE DE PORTO-NOVO	
Date	:	11 OCTOBRE 2024	
Heure de début	:	15h 38 mn	
Heure de fin	:	17h 13 mn	
Langues de communication	:	FRANÇAIS GOUN	
Parties prenantes		Élus locaux, communaux, services déconcentrés, acteurs du transport terrestre et fluvial, sage, police républicaine...	
Nombre de participants	:	Total : 25	Hommes : 22
			Femmes : 03

L'an deux mil vingt-quatre et le Vendredi onze octobre s'est tenue à salle de conférence de la Mairie de P. NOVO, la séance de consultation du public des parties prenantes dans le cadre de la mission d'élaboration des documents de sauvegardes environnementales et sociales du Projet de Mobilité Urbaine Durable du Gand Nokoué (PMUD-GN) Cadre de Gestion Environnementale et Sociale (CGES) ; Plan de Mobilisation des Parties Prenantes (PMPP), Plan de Gestion de La Main d'Œuvre (PGMO) et l'Evaluation Sociale et de Vulnérabilité (ESV). Le territoire du Grand Nokoué regroupe cinq (05) communes (Porto-Novo, Sèmè-Podji, Cotonou, Abomey-Calavi et Ouidah). Cette séance a connu la participation des acteurs tels que les conseillers communaux et municipaux, les représentants des services déconcentrés (préfecture, CNSR, Direction Ministère du cadre de vie et des transports, D. Dép Santé), responsables des transporteurs, quelques sages, OPJ, Sapeur pompier

La liste de présence des acteurs consultés est jointe au présent procès-verbal.

1. Contexte et objectifs du projet (voir présentation Powerpoint)

2. Objectifs de la consultation des parties prenantes

La consultation des parties prenantes du Projet de Mobilité Urbaine Durable du Grand-Nokoué (PMUD-GN) vise plusieurs objectifs à savoir :

- informer les parties prenantes sur les activités de projet ;
- échanger sur le recensement des personnes et de leurs biens situés dans l'emprise du projet ;
- solliciter leur participation et implication pour la réussite des activités du projet ;
- recueillir leurs avis, questions, craintes, doléances, propositions et recommandations sur les différents aspects du projet.

3. Préoccupations, questions posées

N°	Intervenants	Préoccupations/questions	Réponses du consultant	Recommandations
01	ATTIN Raymond (CNSR)	Qu'est-ce qui est réservé pour la sécurité routière ?	L'objectif principal du projet est d'assurer la sécurité des personnes et des biens sur les axes routiers. La construction de nvlles routes, des différents pack, les aménagements, les feux de signalisation etc. contribuent à la sécurité routière	Impliquer étroitement le CNSR au projet
02	DAGBA Eric (DST Mairie Porto-Novo)	Le PMUD est une initiative d'une grande utilité qui a déjà l'adhésion de la mairie de Porto-Novo. La mobilité concernera-t-elle seulement les grands axes ?	Les axes décrits dans la présentation sont ceux qui sont concernés par le projet.	Prendre en compte les leçons apprises des initiatives similaires antérieures et revoir les infrastructures routières afin de les adapter aux Véhicules. Informer les acteurs du secteur des transports pour qu'ils se préparent

N°	Intervenants	Préoccupations/questions	Réponses du consultant	Recommandations
03	HOUNDAI Clement (Rpt OFMAB)	La compagnie de transport Nouvi voyage fait plus de désordre dans la ville de Porto-Novo Les conducteurs de taxi moto sont laissés pour compte dans la commune, des points de regroupement ne sont pas prévus pour eux, alors que la mairie prélève des droits de taxe.	La sensibilisation concerne toutes les compagnies et même les usagers.	Prévoir des lieux de regroupement pour les conducteurs de taxi moto
04	AVOCETIEN Antoine (CA 4e Arr)	Est-ce que le projet a pris soin d'associer les syndicats des transporteurs, les mairies? Le projet est basé où? Dans quel ministère?	Tous ces acteurs cités ont été pris en compte une cartographie des acteurs a été élaborée. Le projet est logé au Ministère du cadre de Vie et des Transports.	

N°	Intervenants	Préoccupations/questions	Réponses du consultant	Recommandations
		Quels sont les grands circuits retenus pour le transport fluvial	La SIRAT en est la commanditaire	Impliquer les acteurs de la police et surtout le CHSR surtout
05	KOUVOWIN DO. Paul Chef parc Adjoint de gros patenti	Veuillez nous dire ce qui concerne les transporteurs du sable et gravier	Vous êtes également concernés en tant qu'usagers et pas les moindres. L'entretien des routes et la sécurité vous concernent.	
06	DEGBOGBA HOUN. M. Paul (Prdt APTF)	On ne peut pas parler de ce projet sans aborder la question de dragage, de réaménagement et de construction d'embarcadères	Le PMUD est tout un ensemble et les aspects dont vous venez de parler seront pris en compte en son temps	

N°	Intervenants	Préoccupations/questions	Réponses du consultant	Recommandations
07	ADJIGBE B. Prince (Sapeur pompier)	Est-ce que le projet peut relocaliser les poteaux d'incendies opérationnels ? Est-ce que le projet concerne tout Porto-Novo	Le projet n'est pas à sa phase avancée. Les différents aspects que vous évoquez seront intégrés dans le document et seront analysés. Le projet prend en compte certains axes.	Rendre opérationnels les poteaux d'incendies - Sensibiliser et réprimer les populations qui érigent des étalages autour des poteaux d'incendies.
08	DOTCHAHOU Titilayo (ADEMPN)	Revenir sur les composantes 2 et 3 et leur faisabilité	Au fait la composante 3 est une partie de la composante 2. Donc en	

N°	Intervenants	Préoccupations/questions	Réponses du consultant	Recommandations
		réalité, il y a au total 3 composantes et non 4.	L'État est entrain d'envisager la promotion des engins électriques à deux roues qui ~~pro-~~ ~~nocuisent~~ protègent l'environnement dans une certaine mesure.	

N°	Intervenants	Préoccupations/questions	Réponses du consultant	Recommandations
		réalité il y a au total 3 communes et non 4. A ce niveau l'Etat est entrain d'envisager de promouvoir les engins électrics à deux roues qui p		

4. Synthèse des recommandations

Au terme de la séance de consultation publique dans la commune de Porto-Novo, les recommandations suivantes ont été formulées:

1 – Impliquer étroitement le CNSR au projet
2 – Prendre en compte les leçons apprises des initiatives similaires antérieures, et revoir les infrastructures routières afin de les adapter aux véhicules
3 – Informer les acteurs du secteur des transports pour qu'ils se préparent.
4 – Prévoir des lieux de regroupement pour les conducteurs de taxi moto
5. Impliquer les acteurs de la police et surtout le CNSR
6 – Rendre opérationnel les poteaux d'incendies
7 – sensibiliser et réprimer les populations qui érigent des étalages autour des poteaux d'incendies.

La séance a pris _____ heures dans une note d'entente cordiale et à la satisfaction de tous les participants.

AVOCOTI EN Antoine

Ont signé

ERIC Y. DAGBA
DST/MAIRIE PORTO-NOVO

Auguste KOTAMTOU
Rpt / Commissaire 2e arrd
P/M.

KOUVONWINDO Honegbenon Paul
Chef Carrière & pable 1
Représentant Canton Ouest
97642382

Porto-Novo attendance list

Projet de Mobilité Urbaine Durable du Grand-Nokoué (PMUD-GN)

MISSION : REALISATION DU CADRE DE GESTION ENVIRONNEMENTALE ET SOCIALE (CGES), DU PLAN DE MOBILISATION DES PARTIES PRENANTES (PMPP), DU PLAN DE GESTION DE LA MAIN D'ŒUVRE (PGMO), ET D'EVALUATION SOCIALE ET DE VULNERABILITE (ESV) DU PROJET DE MOBILITE URBAINE DURABLE DU GRAND NOKOUE

LISTE DE PRESENCE A LA CONSULTATION DU PUBLIC

N°	Modalité		Réponse	
1	Département	:	OUEME	
2	Commune	:	PORTO-NOVO	
3	Arrondissement	:	2ème arrondissement	
4	Lieu/Localité de rencontre	:	Mairie de PORTO-NOVO	
5	Date	:	11 octobre 2024	
6	Heure de début	:		
7	Heure de fin	:		
8	Langues de communication	:	Français, Goun	
9	Parties prenantes			
10	Nombre de participants	:	Total : 25	Hommes : 22 Femmes : 03

N°	NOM ET PRENOMS	SEXE (M ou F)	PROFESSION	CONTACT	SIGNATURE
1	HOUESSOU Edamien	M	CSUPE/ DDCVT-O	97448427	
2	AMOUSSOU D. Joachim	M	Repr DDS-O	97291928	
3	DOSSOU Nacissite	M	Sage du pack des gros porteurs de Porto	97064560	
4	KOUVOUNDO H. Paul	M	Chef Pack adjoint des grosporteurs.	97642382	
5	ERIC Y. DAGBA	M	DST/MAIRIE PORTO NOVO	97477382	
6	SOTCHATOU O.F. Titilayo	F	DADE MPN	97668836	
7	BOLARINGNAN Sulaïman A -	M	DAAF/MPN	97667924 97247724	
8	AVOCETIEN Antoine	M	CAG	97354099	
9	KPEGBOZAN Bertha	F	Chef Agence CONFORT Lines	97.12.88.92	
10	HOUENOU Sébastien	M	CONFORT Lines	61821756	
11	ADJIGBE D. Prince	M	Représentant Cdt COSP-GP	97489192	
12	DEGBOGBAHOUN Mahugnon Gabriel	M	PDG ONLY God Pole de L'APTF Benin Nigeria	97542555	

N°	NOM ET PRENOMS	SEXE (M ou F)	PROFESSION	CONTACT	SIGNATURE
12	KOTOUNOU Auguste	M	Policier/repst de Commissaire	97 29 13 49	
14	TCHANGO Roderick	M	Rep HSE OFMAS	66 77 79 53	
15	HOUNDAI Clément	M	R/[illegible] OFMAS	67712360	
16	ATTIM Raymond	M	CASER/CASR	97877093	
17	AHOUSSINOU YVES	M	CAS P/N	97187712	
18	LIASSU Faid O.	M	C/SPRT PDO	40180488	
19	BONOU Ginette C	F	Consultante Associée	95713000	
20	ABIALA Innocent A.	M	S/Com IRC	67406657	
21	FAGNIBO Dieu-donné	M	Agent de liaison SE	69826105	
22	do-Rego M. Chakourri	M	Agent odp	90 17 15 38	
23	DANSSOU Godfried	M	Agent de liaison cne mairie	69 82 55 20	
24	BOTON N. Victor	M	Consultant Assoc	67824881	

N°	NOM ET PRENOMS	SEXE (M ou F)	PROFESSION	CONTACT	SIGNATURE
25	AGOULOYE Hervé	M	Ingénieur d'études IRC	45938722	

Appendix 2: PROCEDURES FOR TREATING GBV AND ECV

Accountability: Measures to maintain confidentiality can be achieved through the following actions:

1. Inform all employees that the confidentiality of the personal information of GBV/ECV survivors is of the utmost importance.
2. Provide training on empathetic and non-judgmental listening.
3. Take disciplinary action, including dismissal, against those who violate the survivor's confidentiality (unless a breach of confidentiality is necessary to protect the survivor or another person from serious harm or when required by law).

The GBV and ECV claim procedures must specify:

1. Who survivors can ask for information and help.
2. The process for community members and employees to file a complaint through the MRO should be presumed to be GBV or ECV.
3. The mechanism for community members and staff to escalate a request for support or notification of violence if the reporting process is ineffective due to unavailability or non-response or if the employee's concern is not resolved.

Financial and other supports for survivors may include:

1. Low-interest or interest-free loans
2. Salary advances.
3. Direct payment of medical expenses.
4. Coverage of all medical expenses related specifically to the incident.
5. Initial payments for medical expenses will later be recovered from the employee's health insurance.
6. Provide or facilitate access to child care.
7. Provide security upgrades at the employee's home.
8. Provide safe transportation to access support services or accommodations.

Based on the rights, needs and wishes of the survivor, survivor supports to ensure the safety of the survivor who is an employee may include:2

1. Change in the duration of the hours or the pattern of the hours and/or working hours of the author or survivor.
2. Redefine or change the duties of the author or survivor.
3. Changing the survivor's phone number or email address to avoid contact with the stalker.
4. Relocate the survivor or abuser to another workplace/alternative locations.
5. Provide safe transportation to and from work for a specified period.
6. Support the survivor in applying for an interim protection order or refer them to appropriate support.

---

[2] A survivor-centred approach is essential. Survivors should be fully involved in decision-making. Absent exceptional circumstances, abusers should be required to take appropriate measures that are sensitive to survivors (e.g., moving, changing schedules, etc.), rather than the other way around (i.e., making changes to survivors).

7. Take all other appropriate measures, including those provided for in the existing provisions for family-friendly and flexible working arrangements.

Leave options for survivors who are employees may include:

1. An employee experiencing GBV must be able to request paid special leave to attend a medical or psychosocial appointment, court proceedings, relocation to a place of safety, and other GBV-related activities.
2. An employee who is caring for a person experiencing GBV or ECV may do so from the care, including, but not limited to, accompanying them to the court or hospital, or caring for children.
3. Employees who are in casual employment may apply for unpaid or unpaid special leave.
4. The number of days of leave shall be determined according to the person's circumstances through consultations with the employee, management and the VVOC, as appropriate.
5. Potential sanctions for employees who commit GBV and ECV include:
6. Informal warning
7. Formal warning
8. Additional Training
9. Loss of up to one week's wages.
10. Suspension of employment (without payment of salary), for a minimum period of 1 month up to a maximum of 6 months.
11. Termination of employment.
12. Referral to the police or other authorities if justified.

Appendix 3: COMPLAINT REGISTRATION FORM

Date:____________
Complaints Committee, Municipality of ....
Dossier N°… … … ..

COMPLAINT

Name of complainant: ______________________________ Address:
_________________________________ Municipality:
_________________________________ Land and/or building affected:
____

COMPLAINT TYPE/COMPLAINT DESCRIPTION

... ...
... ...
... ...

At ...., the...................

____

Signature of the complainant

COMMITTEE'S OBSERVATIONS

... ...
... ...
... ...

At ...., the...................

____

(Signature of Committee Representative)

COMPLAINANT'S RESPONSE

... ...
... ...

At ...., the...................

____

Signature of the complainant

RESOLUTION

... ...
... ...

At ...., the...................
(Signature of the representative of the committee) (Signature of the complainant)

Appendix 4: ENVIRONMENTAL AND SOCIAL SCREENING SHEET

This selection form has been designed to assist in the initial selection of project activities and to put the information in the hands of implementers and analysts so that environmental and social impacts and related mitigation measures, if any, are identified and/or requirements for further environmental analysis are determined. This form is completed by the SCP environmentalist and then sent to the EBA for validation in accordance with Beninese legislation (EIA decree, general EIA guide).

Environmental and social screening form for sub-projects

Environmental and Social Screening Form		
1	Name of the Village/Sub-Prefecture/Commune/City/Department/Region where the sub-project will be implemented	
2	Sub-project executing agency	
3	Name, title, position and signature of the person responsible for completing this form Address (Telephone contact):	*Name, title and position* *Date and signature*
3	Name, title, function of the person responsible for certifying the completion of the screening	*Name, title and position* *Date, signature and stamp*

Part A: Brief description of the sub-project

(Planned Activities)

1. How was the site of the sub-project chosen? .. ..
2. Number of direct beneficiaries: ..... Men:..... Wives:..... Children:.....
3. Number of indirect beneficiaries: ... Men:..... Wives:... Children:.. … …
4. Ethnicity/Social Origin: Aboriginal: Non-Native, Migrant: Mixed
5. Status of the project site: Ownership: Rental: Free transfer:
6. Is there a deed attesting to the ownership, rental or free transfer? Yes: No:

If so, what is the nature of the act.....

Part B: Identification of environmental and social impacts

Environmental and social concerns	Yes	No	Observation
Sector Resources			
Will the sub-project promote the sustainable use of resources, including energy, water and raw materials?			
Will the sub-project result in significant withdrawals of construction materials (sand, gravel, laterite, water, construction timber, etc.)?			
Will the sub-project result in air, water and soil pollution, and depletion of already limited resources?			
Can the sub-project lead to emissions of air pollutants?			

Environmental and social concerns	Yes	No	Observation
Will the sub-project result in the production of hazardous and non-hazardous waste?			
Can the sub-project reduce and manage the risks and effects associated with the use of pesticides? Will the sub-project require significant land clearing?			
Will the sub-project require the acquisition of public land on a temporary or permanent basis for its development?			
Will the sub-project require the acquisition of private land on a temporary or permanent basis for its development?			
Biological diversity			
Is the sub-project likely to cause impacts on rare, vulnerable and/or important species from an economic, ecological or cultural point of view?			
Are there any areas of environmental sensitivity that could be negatively affected by the sub-project? forest, protected area, wetlands (lakes, rivers , lowlands, floodplains, etc.)			
Protected areas			
Does the sub-project area include protected areas (national parks, national reserves, protected forest, World Heritage site, etc.)?			
If the sub-project is outside of protected areas, but at a short distance, could it negatively affect the ecology in the protected area? (e.g. interference with bird flights, with mammalian migrations)			
Geology and soils			
Are there any unstable areas from a geological or soil point of view (erosion, landslides, collapse)? Are there areas at risk of salinization?			
Landscape / Aesthetics			
Will the sub-project lead to a degradation of the aesthetic value of the landscape?			
Historical, archaeological, cultural and religious sites Will the sub-project lead to the destruction of archaeological sites?			
Could the sub-project change one or more historical, archaeological, or cultural sites, or require excavations?			
Can the sub-project promote the equitable sharing of benefits arising from the use of cultural heritage?			
Does the sub-project promote the integration of the various ethnic groups?			
Does the sub-project have broad community support?			
Land Acquisition, Land Use Restrictions and Involuntary Resettlement			
Will the subproject trigger the temporary or permanent loss of habitats, crops, farmland, pasture, fruit trees?			
If so, how much?.....			
Will the sub-project trigger the temporary or permanent loss of domestic infrastructure?			
Will the sub-project result in economic displacement (loss of land, assets or access to these assets, including loss of source of income or other means of livelihood)?			
Will the sub-project result in physical displacement (relocation, loss of residential land or housing)?			
Will the sub-project trigger a restriction of access to any natural resource? (Restriction of access to protected areas e.g. NWFPs, wildlife)			
Does the implementation of the sub-project require the travel of one or more people?			
If so, how much?.....			
Will the sub-project trigger the temporary or permanent loss of formal or informal commercial infrastructure?			

Environmental and social concerns	Yes	No	Observation
Pollution			
Could the sub-project cause a high level of noise?			
Is there a risk that the sub-project will generate solid and/or liquid waste? If "yes", does the sub- project - have a plan for their collection and disposal?			
Are there the equipment and infrastructures for their proper management?			
Could the sub-project affect the quality of surface water, groundwater, drinking water sources? Is the sub-project likely to affect the quality of the atmosphere (dust, various gases)?			
Lifestyle			
Could the sub-project lead to alterations in the way of life of local populations?			
Can the sub-project have a negative impact on disadvantaged or vulnerable people? Could the sub- project lead to an accentuation of social inequalities?			
Can the sub-project lead to incompatible uses or social conflicts between the different users?			
Employment and Working Conditions			
Can the sub-project lead to the creation of jobs and income-generating activities for poverty reduction and the promotion of inclusive economic growth?			
Can the sub-project promote fair treatment, non-discrimination and equal opportunities for workers? Does the sub-project promote the increase in agricultural and other production?			
Can the sub-project induce risks of accidents for workers and the population?			
Could the sub-project lead to conflicts between certain users? Could the sub-project lead to an accentuation of certain social inequalities?			
Can the sub-project protect workers, especially those who are vulnerable such as women, persons with disabilities, children, migrant workers, etc.? ?			
Can the sub-project prevent the use of all forms of forced labour and child labour?			
Can the sub-project provide the means for project workers to talk about problems in their workplace?			
Health and Safety of the population			
Can the sub-project cause health risks to workers and the population?			
Could the sub-project lead to an increase in the population of disease vectors? Could the sub- project negatively affect the functioning of the surrounding socio- educational and health infrastructures?			
Can the sub-project encourage the integration of quality and safety considerations, and climate change issues in the design and construction of infrastructure?			
Can the sub-project avoid or minimize community exposure to traffic and road safety hazards, disease and hazardous materials?			
Gender concerns			
Does the sub-project promote the integration of women and other vulnerable groups?			
Public consultation			
Does the sub-project address women's concerns and promote their involvement in decision-making?			

Was public consultation and participation sought? (Cooperatives, populations, technical services, NGOs, local associations, etc.)
Yes No If "yes", briefly describe the measures that have been taken to this effect.
... ...
... ...

Part C: Mitigation measures

In view of Annex 1, for all "Yes" answers, please briefly describe the measures taken to this effect.

N°	Impacts or concerns	Mitigation measures

Form filled in by:

- ***Name:***
- ***First name:***
- ***Address:***
- ***Signature:*** ***Made in .... on .... /.... /202.......***

List of the team that has completed the environmental and social screening form

N°	Name and surname	Function	Responsibility (at the	

Compliance visa from the Environmental Safeguard Specialist of the sub-project

- ***Name:***
- ***First name:***
- ***Address:***
- ***Signature:***

On ..../......../202.....

Compliance visa from the Social Safeguard Specialist of the sub-project

- ***Name:***
- ***First name:***
- ***Address:***
- ***Signature:*** **......../......../202.....**

Appendix 5: SOCIAL ANALYSIS GRID

Brief description of the social environment and identification of impacts

1. Description of the socio-economic environment

(a) Describe the soil formation, topography, vegetation of/adjacent to the installation area and/or electrical equipment. _____

(b) Make an estimate and indicate the vegetation that could be cleared_____

2. Land acquisition

Is the acquisition of land or the loss, denial or restriction of access to land or other economic resources the result of the construction or rehabilitation of the proposed electrical installation and/or equipment? Oui_____ Non_____

3. Loss of soil: Will the construction or rehabilitation of the proposed installation and/or electrical equipment cause the permanent or temporary loss of soil? Oui___ Non_____

4. Loss of Building: Will the construction or rehabilitation of the proposed electrical installation and/or equipment result in the permanent or temporary loss of the building? Oui___ Non_____

5. Loss of domestic infrastructure: Will the construction or rehabilitation of the proposed electrical installation and/or equipment result in the permanent or temporary loss of domestic infrastructure? Oui___ Non_____

6. Loss of income: Will the construction or rehabilitation of the proposed electrical installation and/or equipment cause permanent or temporary loss of income? Oui___ Non_____

6. **Loss of crops or fruit trees:** Will the construction or rehabilitation of the proposed electrical installation and/or equipment result in the permanent or temporary loss of crops or fruit trees? Oui___ Non_____

Social work needed

- o No social work to be done (but specific prescriptions to be included in the ESMP)
- o PSR
- o BY

Annex 6: ENVIRONMENTAL CLAUSES

The purpose of these environmental and social clauses is to guide the work in such a way as to mitigate harmful impacts on the environment and the population.

Article 1.1: COMPLIANCE WITH THE ESMP

In addition to the general conditions presented below, the contractor will comply with the Environmental and Social Management Plan (ESMP) for the works for which it is responsible. To do this, the contractor will inquire about the existence of the ESIA or ESMP, and prepare its strategy and work plan to take into account the appropriate provisions of this safeguard document. Within thirty (30) days of the notification of the start date of the works, the contractor must submit for the prior approval of the control mission, the following Management Strategies and Implementation Plans, in order to manage the ESHS risks and impacts of the works:

- Environmental and Social Management Plan for the Construction Site (PGES-Chantier);
- Environmental Insurance Plan (EAP),
- Special Waste Management and Disposal Plan (PPGED),
- Special Safety and Health Protection Plan (PPSPS).

If the contractor does not implement the measures provided for in the ESMP after written notification by the Control Project Manager (IC) of the obligation to comply with its commitment within the prescribed time, the owner reserves the right to arrange via the CI the execution of the missing actions by a third party on the contractor's account. The ESMP will be reviewed by the Pool-PMUD-GN and the World Bank before its approval by the CI.

Article 1.2: Environmental Damage Mitigation Measures

The Contractor will implement all necessary measures to avoid adverse environmental and social impacts to the extent possible, to restore work sites to acceptable standards, and to comply with all environmental performance conditions set out in the GGP. In general, these measures will include, but will not be limited to:

- Minimize the effect of dust on the surrounding environment to ensure the safety, health and protection of workers and communities living in the vicinity of operations.
- Ensure that noise levels emanating from noisy construction machinery, vehicles and activities are kept to a minimum for the safety, health and protection of workers and communities living in the vicinity of activities.
- Prevent bitumen, oils and waste water used or produced during the execution of the work from flowing into rivers and any other water reservoirs, and also ensure that standing water is treated in the best way to avoid creating potential breeding sites for mosquitoes.
- Discourage construction workers from exploiting natural resources that could have a negative impact on the social and economic well-being of local communities. • Implement soil erosion control measures to prevent surface runoff and siltation, etc.
- Ensure that local materials are used wherever possible.
- Ensure public safety, and comply with road safety requirements during the work.
- Acquire machinery and vehicles in good condition.
- Regularly water the traffic areas of the machines in dry weather • Respect the speed limit (30 km/h)

- Systematically cover all equipment transporting materials likely to be blown away by the wind.

Article 1.3: Time frame for implementation The Contractor will ensure that significant adverse impacts resulting from the work have been adequately addressed within a reasonable period of time.

Article 1.4: Monitoring Plan

The Contractor will adhere to the proposed activity execution program and monitoring plan/strategy to ensure effective feedback of project tracking information so that impact management can be implemented, and if necessary, adapt to unforeseen conditions.

Article 1.5: Monitoring compliance with environmental requirements

In addition to the regular inspection of the sites by the Contractor, the Owner may appoint other persons to monitor compliance with environmental conditions and any proposed mitigation measures.

Article 1.6: Management of construction waste

All garbage bins and other waste generated during construction will be collected and disposed of in landfills in accordance with applicable government waste management regulations; All drainage and effluent from storage areas, workshops and construction sites will be captured and treated before being discharged in accordance with the Government's water pollution control regulations; Construction waste will be removed and reused or disposed of regularly.

Section 1.7: Excavation and Material Deposits

New extraction sites: Will not be located near cultural locations and wetlands. Will not be located next to canals as far as possible to avoid siltation of rivers will be easy to rehabilitate. Sites with minimal vegetation will be preferred. Vegetation clearance will be limited to safe construction sites. The clearing of vegetation will not be done for more than two months before the operations. Reserve sites will be located in areas where trees can act as buffers to prevent dust pollution. The Contractor will deposit the excess material according to the principles of the General Terms and Conditions, and according to the applicable measures of the ESMP, at sites approved by the local authorities and/or the CI.

Article 1.8: Rehabilitation and prevention of soil erosion

To the extent possible, the contractor will gradually rehabilitate the site so that the pace of rehabilitation is similar to the pace of construction.

To the extent possible, restore natural drainage networks where they have been changed or altered; Replant with species that reduce erosion, provide vegetative diversity and, through succession, contribute to a resilient ecosystem. The choice of species for rehabilitation will be made in consultation with the communities. The installation of the site base must comply with the Site Installation Plan (PIC). To develop specific areas for activities requiring the use of these products as defined in the CIP. Proceed with the rehabilitation of borrowing and deposit areas.

Article 1.9: Water Resources Management

The contractor will avoid at all costs being in conflict with the water demands of local communities. The abstraction of water from wetlands will be avoided. If necessary, the authorisation of the competent authorities must be obtained in advance. Water from washing and rinsing equipment will not be discharged into streams or drains.

Article 1.10: Traffic Management

The choice of diversion routes and road access will be made in consultation with the local community, particularly in large or sensitive environments; At the end of the civil works, all the access roads will be rehabilitated; The access roads will be sprayed with water in sites to eliminate dust emissions.

Article 1.11: Health and Safety

Before and during the construction work, the contractor will organize three awareness and hygiene campaigns. Workers and local residents will be made aware of the health risks, in particular AIDS. Signage at the construction site will be provided at appropriate points to warn pedestrians and motorists of construction activities, detours, etc.

Article 1.12: Public Information

It is recommended to organize information and consultation sessions with the populations (neighborhood chiefs, community leaders, etc.) concerned by the work before the start of the work. These sessions will focus on the start date of the work, the possibility for them to benefit from the work (e.g. recovery of wood and materials). During the works phase, the contractor is required to ensure regular information for the populations of the areas concerned in order to collect their concerns and grievances with regard to the preservation of the quality of their environments and their socio-economic interests.

Article 1.13: Repair of Private Property

If the contractor, deliberately or accidentally, damages private property, he will repair the property to the satisfaction of the owner and at his own expense. In cases where compensation for nuisances, crop damage, etc. is claimed by the owner, the customer must be informed by the contractor via the IC.

Article 1.14: ESMP including the Special Safety and Health Protection Plan (PPSPS), Special Waste Management and Disposal Plan

Within 30 days of notification of the start date of the works, the contractor shall prepare and submit to the Project Manager:

- a construction site management plan;
- a PPGED;
- a PPSPS;
- an EAP.

- A site/works ESMP drawn up on the basis of the project ESMP which will indicate how it will systematically implement the measures of the ESMP (including the period of mobilisation of the environmentalist) and a schedule for the execution of the ESMP worksite which must be dynamic and kept up to date. The ESMP for construction sites is developed to ensure the management of the environmental and social aspects of the works, including the fulfilment of the obligations of these general terms and conditions and any specific conditions of an ESMP for the works.

The ESMP for construction sites will achieve two main objectives:

- For the contractor, for internal reasons, to ensure that all measures are in place for environmental and social management and as an operational manual for its personnel;

- For the Project Owner (MO), the Delegated Project Owner (MOD) and the control mission to ensure that the contractor is fully prepared for the management of the environmental and social aspects of the project, and to have a tool for monitoring the execution of the contractor's ESMP on site.

a) The contractor's ESMP will provide at least:

- A description of the procedures and methods for complying with these general environmental management statements, and any specific statements indicated in the PGES;
- A description of the specific mitigation measures that will be implemented in order to reduce adverse impacts;
- A description of all planned follow-up activities; and
- The internal organization and management and internal reporting mechanisms put in place.

b) The ESMP for the site will be validated by the inspection mission and then reviewed and approved by the Project Owner (MO) before the start of the work. This review should demonstrate that the ESMP covers all identified impacts, and that it has defined appropriate measures to reduce or eliminate all potential impacts:

- A Special Hazardous Waste Management Plan (PPGED) will be developed on the basis of the draft ESMP which will indicate how it will systematically implement the measures of the ESMP. The DGMP is developed to ensure the management and disposal of waste generated during the performance of the work in accordance with the requirements of the project's ESMP.

The PPGED will achieve two main objectives:

- For the contractor, for internal reasons, to ensure that all measures are in place for the management and disposal of all waste generated during the execution of the works and as an operational manual for its personnel;
- For the MO, MOD and Engineer, to ensure that the contractor is fully prepared for the management and disposal of all waste generated during the performance of the work, and to have a tool to monitor the contractor's PPGED performance.

a) The Contractor's DMPP will provide at least:
   - A description of the procedures and methods for complying with these general management statements, and any specific statements indicated in the ESMP;
   - A description of the specific waste collection and disposal measures that will be implemented in order to reduce adverse impacts;
   - The internal organization and management and the internal control and monitoring mechanisms put in place.

b) The PPGED will be validated by the inspection mission and then reviewed and approved by the Project Owner before the start of the work. This review should demonstrate that the PPGED covers all identified wastes, and that it has defined appropriate measures to reduce or eliminate all potential impacts.

A Health and Safety Plan - Site (PHSS-Chantier) will be developed on the basis of the project's ESIA, which will indicate how the contractor will systematically implement the measures to mitigate the health, health and safety risks identified in the ESIA. The PHSS-Chantier is designed to ensure the management of the health, hygiene and safety aspects of the work. The PHSS-Chantier will achieve two main objectives:

- For the Contractor, for internal reasons, to ensure that all measures are in place for the management of safety, hygiene and health, and as a code of conduct for its personnel;
- For the control mission, to ensure that the contractor is fully prepared for the management of the safety, hygiene and health aspects of the project, and to have a tool for monitoring the execution of the contractor's PHSS-Chantier.

The contractor's PHSS-Site will provide at least:

- A description of the procedures and methods for complying with these general environmental management statements, and any specific statements indicated in the ESMP resulting from the ESIA;
- A description of the company's organizational policy for the management of safety, hygiene and health and its implementation strategy during the execution of the works,
- A description of the safety and health management measures that will be implemented in order to reduce the adverse impacts on the safety and health of workers;
- A description of all planned follow-up activities; and
- The internal organization and management and internal reporting mechanisms put in place.

The PHSS-Site will be validated by the inspection mission and then reviewed and approved by the MO before the start of the work.

* An Environmental Insurance Plan (EAP) will be drawn up on the basis of the ESIA, the project's ESMC and the tender tender provided which will indicate how it will systematically implement the ESIA measures. The EAP will be developed to ensure environmental management during the work. The EAP will achieve two main objectives:

- For the contractor, for internal reasons, to ensure that the environmental issues related to the site are properly identified and that all measures are in place for environmental management;
- For the MO, the control mission is to ensure that the contractor is fully prepared to manage the environmental aspects of the project, and to have a tool to monitor the execution of the contractor's EAP.

The contractor's EAP will provide at least:

- a description of working methods and environmental preservation;
- a procedure for dealing with probable anomalies in the field;
- a description of the environmental issues of the site;
- a description of the environmental approach to be adopted in the context of the work;
- the organisational elements within the company to meet all the requirements of the Client with regard to the environment;
- the human resources and the organisation chart of the site and the missions of the environmental specialist who will be recruited;
- the measures to be taken to meet the contractual environmental requirements b)

The EAP will be validated by the inspection mission and then reviewed and approved by the Project Owner (MO) before the start of the work. The Company will not be allowed to start the work without approvals of these documents, and this without affecting the contractual deadline.

Article 1.15: Training of Contractor's Personnel

The Contractor will provide training to its personnel to ensure that they are proficient in aspects of these Terms and Conditions, the Site ESMP, EAP, PHSS-Site and DMPP, and can perform their intended roles and functions. It is mandatory to train its employees on occupational health and safety.

Article 1.16: Management of borrowing areas

The contractor will take appropriate measures to avoid or limit soil erosion that may be caused by the execution of the work; to avoid any deforestation due to excessive felling of trees,

particularly in forest areas; and to avoid degrading agricultural land to fallow or fallow. In addition, the number of borrowing areas should be limited as much as possible and the use of open borrowing areas should be maximised. Any opening of a loan is subject to prior written authorisation from the owner(s) of the land concerned. Unless otherwise provided, in the event of non-compliance with this measure, the contractor will be required to pay any compensation that may be demanded by the victims of abuse, without compensation for the Project Owner. Environmental protection essentially concerns the rehabilitation of borrowing areas or areas of borrowing areas at the end of their operation, and used by the contractor in the context of the works. After the topsoil has been restored, the contractor must systematically reforest the areas of the borrowed areas exploited. Reforestation will be carried out using fast-growing, deep-rooted species adapted to development on the soils concerned. In the event that the contractor does not have competent forestry workers in his team or does not know of specialized nurseries, he may contact the administrative structures managing the Water, Forests and Hunting Department so that they can provide him with the information necessary to resolve this problem of competence in this area. The contractor will take the necessary steps to involve the administrative structures managing Water, Forests and Hunting, in the definition of reforestation standards and the acceptance of the works in order to evacuate the proper conduct of the reforestation works on the borrowing areas or surface of borrowing areas at the end of exploitation. The contractor shall submit to the inspection mission a Technical File for the reforestation of the borrowed areas or areas of areas at the end of the operation, and used by him in the context of the works, two (2) months before the start of the reforestation campaign. This Technical File must include an analysis of soil pedology, the standards and species of reforestation used, as well as the most effective techniques to be used, etc. The inspection mission will have fifteen (15) days to inform the contractor of its opinion with any remarks and comments. The contractor remains responsible for establishing the reforestation of the borrowing areas or areas of borrowing areas at the end of the operation. The maintenance and monitoring of loan areas or surface areas of loan areas at the end of their operation, reforested or regenerated, is the responsibility of the contractor until final acceptance. Before any tree planting operation, the company must clearly indicate the procedures leading to the success of this operation. He will therefore specify the following parameters: seasonality of the tasks, origin of the plant material, choice of shrub species, methods of evacuation of the work after a plant cycle, etc.

Article 1.17: Management of Deposit Areas

The choice of the deposit site and its access must be made in such a way as to avoid problems of stagnation. The most favourable soils are permeable and slightly sloping soils. When an access or passage route over a soil repository is required for several weeks for the operation of intermediate soil repositories, a 30 cm thick ladder runway or equivalent technical equipment must be provided. The evacuation of meteoric water from the soil deposits must be provided for by one of the following means: with a slope of at least 5% at the surface, by collecting and discharging runoff water on the upstream side of the deposit, on a draining subsoil (or gravel bed, etc.).

- **Earthworks**: Soil stripping and restoration will be carried out on dry soil, in order to avoid compaction, but under no circumstances on wet ground or in rainy periods; with a tracked machine or with minimal ground pressure and a high transport capacity. Care should be taken to avoid repeated passages on the existing floor. Stripping, the constitution of deposits and the restoration of surfaces will be carried out as far as possible in reverse. The stripping of the soil of the A horizon (topsoil) will be done by rolling on the A horizon in place, while that of the

B horizon (altered subsoil) will be done by rolling on the C horizon (soil already exposed). This way of proceeding makes it possible to avoid compaction or compaction of the soil of the B horizon and thus to preserve the permeability of the soil and its ability to observe water. The contractor is required to specify the stripping thicknesses before the work.

- **Repository site reclamation work**: Repository site reclamation work will include remodelling the land, installing appropriate drainage works, replacing topsoil and revegetating slopes. The deposit must be set up for topsoil (horizon A) at heights not exceeding 2.5 m, but a lower value is recommended for longer storage periods (1.5 m); for separate deposits composed only of soils on the B horizon over a maximum height of 5 m. In all cases, the installation must avoid subsequent displacements, the addition of materials after the fact, and repeated passages in the same place. If the soil is placed in an intermediate repository, the repository must be created as far as possible on the site of the construction site. The deposition surface should be chosen in such a way as to avoid water stagnation problems. The maintenance of soil deposits must be done by ensuring that the deposits are mowed 1 to 2 times a year before planting in order to avoid the proliferation of unwanted weeds. The soil repository must not be used as a material deposit area or for the passage of people or vehicles or for any other activity. The installation of a fence may be indicated.

Article 1.18: Compliance Costs

It is expected that compliance with these terms and conditions will be required as part of the contract. Unless otherwise provided for in the Contract, all environmental and social actions aimed at mitigating the impacts associated with the construction and operation of the works and their access roads must be taken into account in the price schedule by the company. In addition, when it is demonstrated during the works that these may have negative impacts on the socio-economic activities of the populations (e.g. expropriation, loss of arable land, destruction of plantations, involuntary displacements, destruction of cultural or religious sites, destruction of monuments, etc.), it is recommended that the Project Manager carry out an inventory of the goods and services affected by the project and inform the Project Owner for decision to take.

Article 1.19: Code of Conduct

The entrepreneur must put in place a Code of Conduct and an Action Plan to prevent gender-based violence (GBV) and violence against children (VCE).

Article 1.20: Women's employment and gender-based violence

The Company will have to take into account gender aspects in the implementation of its activities in the same way as those of health, safety and the environment. These are:

- monitoring and protection against violence against women;
- Employment opportunities for women under the project.

Article 1.21: Safety on construction sites and their surroundings

The site will be closed to the public and will be protected by appropriate markers and road signs. The various entrances will be clearly marked and lit, their surroundings will be kept clean to ensure comfort and safety. To this end, the contractor must take all appropriate measures of order and safety to avoid accidents, both with regard to personnel and with regard to third parties. He is obliged to observe all regulations and instructions of the competent authority. In particular, it ensures the lighting and security of its construction sites, as well as their signage, both inside and outside. He must take all necessary precautions to prevent the work from

causing a danger to third parties, in particular to public traffic if it has not been diverted. Dangerous crossing points, along and at the crossing of communication routes, must be protected by temporary guardrails or by any other appropriate device; they must be illuminated and, if necessary, kept. When the works concern public traffic, the signage for public use must comply with the relevant regulatory instructions: it is carried out under the supervision of the competent services by the contractor, who is responsible for the supply and installation of signs and signalling devices. The contractor must inform the competent services in writing, at least eight (8) working days in advance, of the date of commencement of the work, mentioning, if applicable, the mobile nature of the site. The contractor must, in the same manner and within the same period, inform the competent services of the withdrawal or relocation of the site. If the work provides for a diversion of traffic, the contractor is responsible for signalling at the ends of the sections where traffic is interrupted and for marking the diverted routes. Traffic policing in the vicinity of construction sites or at the ends of sections where traffic is interrupted and along diverted routes is the responsibility of the competent services.

Article 1.23: Management of objects and remains found on the site

The Contractor has no right to materials and objects of any kind found on construction sites during work, in particular in excavations or demolitions, but he is entitled to compensation if the Contracting Authority asks him to extract or preserve them. When the work brings to light objects or remains that may be of an artistic, archaeological or historical nature, the contractor must report this to the Project Owner via the inspection mission and make any declaration provided for by the regulations in force. Without prejudice to the legislative or regulatory provisions in force, the contractor must not move these objects or remains without the authorisation of the Client. He must put in a safe place those that have been accidentally detached from the ground. Without prejudice to the regulations in force, when the work brings to light human remains, the contractor immediately informs the control mission, which in turn refers the matter to the Project Owner, who in turn refers the matter to the competent authority in the territory where the work is carried out, in accordance with the chapter on the procedure to be followed in the event of fortuitous discoveries contained in the CGES.

CHAPTER II: RESPONSIBILITIES AND ROLES

Article 2.1: Contractor's Responsibilities

The entrepreneur is responsible for the effective and efficient implementation of environmental and social regulations. To be more operational, it is recommended that the contractor have an "environmental expert". The latter will be responsible for ensuring compliance with the technical, environmental and social clauses after having listed the most delicate environmental constraints on his site. Documents to be provided by the contractor: The contractor must produce and send to the project manager (30 days before the installation of the site and storage areas) an Environmental and Social Management Plan (ESMP) which will include at least:

- a map of the location of the land that will be used during the work;
- a general plan indicating the different areas of the site, the planned locations, a description of the planned developments including the location of the borrowing areas and quarries;
- a plan for the management of the planned waste, its method of collection, its method and place of storage, its method and place of disposal;
- a water management plan (place of supply, quantity, treatment system planned for sanitary and industrial water from construction sites, place of discharges, types of control planned);

- a plan for the rehabilitation of damaged sites (planned anti-erosion actions, redevelopment, etc.); In addition to the document, he will provide the EAP, PPSPS and PPMOD within the same timeframe. In addition, as soon as the work begins, the "environmental respondent" must keep a "site diary" which will attest to the objectively verifiable indicators of the environmental clauses, and to all the non-conformities observed. He is responsible for adapting the Company's internal regulations, as well as for designing, implementing and monitoring environmental and social regulations and provisions. The Contractor is required to produce on a regular basis (monthly or weekly) the Contractor's environmental and social compliance report on the execution of the work (ESMP implementation report), in accordance with the framework of the project within the framework of which the present work is carried out. a specific section on sexual harassment, sexual abuse and violence against women and situations of child exploitation on construction sites, company facilities and in contact with local populations.

At the end of the work, the Environmental Expert is required to produce the environmental and social report at the end of the work within one month. Internal regulations included in the PPSPS to prevent, prohibit and punish cases of sexual harassment, abuse and violence against women and the exploitation of children. Prevention measures could include, for example, awareness-raising activities and mandatory training of staff on national, regional and international texts on sexual harassment and violence against women, as well as the exploitation of children, including (i) United Nations Resolution 48/104 on the Declaration on the Elimination of Violence against Women, (ii) Resolution 2011/33 on the Prevention, Protection and Abuse and/or Exploitation of Children, (iii) Resolution 44/25 of 20 November 1989 on the Rights of the Child. These provisions should also specify the mechanism that will be put in place by the contractor to identify, address and report cases of sexual harassment, abuse and violence against women and the exploitation of children on construction sites. The Contractor shall provide monthly progress reports to the Contractor on compliance with these terms and conditions, the Project ESMP, and its own ESMP.

Article 2.2: Penalties

In the event of non-compliance by the CONTRACTOR with the requirements described in this document, the applicable penalties are set by the legislation in force and in particular Chapter II (Penal Provisions) of Law No. 98-030 of 12 February 1999 on the Framework Law on the Environment. In addition, the contractor may be subject to a deduction from his invoices to deal with the damage caused by the work due to poor environmental management or health and safety.

Article 2.3: Internal rules of the site

All the provisions dealing with respect for the environment must be included in the internal regulations of the site. The internal regulations relating to the protection of the environment will take into account all the potential impacts identified and will propose the actions planned for all cases of accident; for the circulation, repair and maintenance of vehicles and other machinery. In particular, it must specify the activities/behaviours prohibited during working hours as well as the type of relations prohibited with the populations living near the construction sites. These are: -compliance with the Code of Good Conduct drawn up by the company and validated by the Project Owner via the control mission; - respect for human rights. The dignity of the human person is sacred and may not be subjected to inhuman, cruel and degrading treatment in any form. Therefore, the following acts of barbarism must be severely punished:

- **Psychological and physical harassment**
  - No Employee and learner of the Company, its subcontractors as well as its security and other partners must suffer or cause to be subjected to repeated acts of psychological harassment with the object or effect of deteriorating working conditions likely to infringe on rights and dignity, to alter their physical health or compromise their professional future.
  - No employee may be sanctioned, dismissed or be subject to a discriminatory measure for having suffered or refused to undergo the acts defined above or for having witnessed such acts or having reported them.
  - Any Employee and learner of the Company, its subcontractors and its security partners who have committed such reprehensible acts is therefore liable to a disciplinary sanction.
- **Physical violence**

No Employee of the Company, its subcontractors as well as its security and other partners shall suffer or cause to be subjected to physical violence, in any form, assault, intentional injury, physical mutilation of any human being or his personal property.

- **Procuring, sexual harassment and violence and paedophilia**
  - In accordance with national, regional and international texts on procuring, sexual harassment and violence against women, paedophilia and respect for the habits and customs of the population and human relations in general,
  - Any act of pimping, harassment, abuse, sexual violence, paedophilia will be immediately punished by dismissal as soon as the misconduct is first observed, with the transmission of the characteristic elements of the misconduct for legal proceedings by the competent public authority.
- **Exploitation of children**
  - In accordance with national, regional, and international laws, the Contractor shall not engage in or prohibit the exploitation of any child under the age of 18.
  - In accordance with national, regional and international laws, the employment and exploitation of children is strictly prohibited within the company.

• The Company's internal regulations, containing specific provisions for its site installation(s), must mention in an unambiguous manner for all staff on (i) environmental protection, (ii) health and safety at work, (iii) the fight against COVID, STIs and HIV/AIDS, (iv) national, regional and international texts on harassment and sexual violence against women, as well as the exploitation of children; The regulations must be visibly displayed in the various installations and appear in the Company's vehicles and machinery in the national working language (French). It commits the Company to the implementation of the environmental and social provisions provided for in the contract, and to make all improvements to its degree of compliance if it proves to be incompatible with the contractual clauses and applicable regulations; A presentation of these internal regulations will be made to new employees regardless of their status, as well as to staff already in office, before the start of the work. A copy of these rules will be given to their representative and the original will be kept in internal archiving and

will serve as evidence in the event of a dispute with any of the Company's employees;
The regulations will cite a list of serious misconduct giving rise, possibly after a repeat offence on the part of the offender and despite knowledge of the internal regulations, to immediate dismissal by his employer, without prejudice to any legal proceedings by the public authority for non-compliance with the regulations in force:

- Drunkenness during working hours, resulting in risks to the safety of local residents, customers, users and staff, as well as to the preservation of the environment;
- Inappropriate comments and attitudes towards women Use of the services of prostitutes during construction hours;
- Violent behavior;
- Intentional attacks on the property and interests of others, or on the environment;
- Refusal to implement internal procedures despite a reminder from his superiors;
- Repeated negligence or carelessness resulting in damage or harm to the population, property or the environment, in particular in relation to the regulations to combat the spread of STIs, HIV/AIDS and the spread of STIs. COVID.
- Drug use;
- Transport, possession and/or consumption of meat, or any other animal or plant part of protected species within the meaning of the Washington Convention (CITES) and national regulations.

Even more serious offences such as procuring, harassment, sexual abuse and violence against women, paedophilia, assault and battery, drug trafficking, serious deliberate pollution, trade or trafficking in all or part of protected species will give rise to immediate dismissal as soon as the misconduct is first observed, as well as to the transmission of the characteristic elements of the misconduct to the competent State law enforcement services.

Annex 7: Generic Environmental and Social Impact Templates by Sub-Project Type Table 1: Measures to Mitigate Adverse Environmental Impacts

No.	Activities/ Sources of impact	Component of the affected environment	Title of the potential impact	Mitigation measures
1	**Recruitment of site staff**	Social	Social conflicts	• For equal skills, give priority to the local workforce. • Raise awareness among non-native workers about the habits and customs of the local populations and ensure respect; • Have all site personnel sign a code of conduct incorporating respect for the habits and customs of the localities impacted by the project
2	**Release of the right-of-way and installation of the site base**	Economic, employment and cultural activities	Loss of economic activities, employment of crops and land	• Development and implementation of the Resettlement Action Plan (RAP)
		Habitat	Loss of habitat and buildings	
3	**Installation of construction sites and remote sites, presence and movement of workers and technicians**	Human	Development of the informal economy (catering, petty trade, etc.)	• Setting up a platform near the site base for the installation of restaurants; • Supervision of restoration activities around the site, in terms of quality;
4	**Release of rights-of-way**	Social and Human	Destruction of buildings; Deterioration in living standards; Loss of source of income, loss of subsistence; Impoverishment; Loss of property	• Development of a Resettlement Action Plan (RAP) and its implementation according to the guidelines of the World Bank's Environmental Safeguard Policy; • Prior information of the households concerned. • Fair compensation for the households concerned. • Development of income-generating activity plans; • Conduct of the process in a transparent and documented manner. Accompaniment of

No.	Activities/ Sources of impact	Component of the affected environment	Title of the potential impact	Mitigation measures
				households for their resettlement.
5	**Clearing and stump removal of the right-of-way of the route chosen for the opening of trenches and borrowing areas Right-of-way clearance**	Vegetation	Loss of plant species and wildlife habitat	• Identify sites with the least possible vegetation to serve as borrowing sites; • Plan compensatory reforestation with fast-growing tree species, taking into account the floristic composition of the area and the ecology of the plants used as compensatory reforestation, all under the control of the forest inspectorates of the impacted areas. • Stripping of the right-of-way will be limited to the strict needs of the construction work, from the clearing of the right-of-way to the installation of the disposal area and the right-of-way area.
6	Material delivery	Human, material	Risk of accident for the populations of the localities crossed (bodily injury or material damage)	• Respect for the speed of progress. • Provision for special convoys (headlights, scout vehicles); • Ban on night traffic. Mobilization of trucks in good condition. • Fair compensation in the event of accidental damage caused
7	Preparation of related sites	Body of water	Silting up / degradation of watercourses or crop plots downstream	• Choice of related sites by avoiding sites at risk of erosion; • Use of previously operated sites as much as possible (e.g. for the extraction of materials); • Limitation of the right-of-way used to the strict minimum necessary;

No.	Activities/ Sources of impact	Component of the affected environment	Title of the potential impact	Mitigation measures
				• Restoration of the site (revegetation) at the end of its use; • Stabilization of the slopes at the level of the excavated areas.
8	Site installation	Soil and landscape	Waste from construction work	• Ensure appropriate waste management; • Raise awareness among the workforce (site workers) about waste management; • Set up garbage bins and ensure the transport of this garbage to public landfills; • Install appropriate and sufficient sanitary facilities in the construction site or living quarters; • The choice of the site of the remote site or site base must comply with environmental and social standards and especially take into account the distance of more than 500 meters from a watercourse
9	Destruction of cultural/religious heritage; Risk of social conflict; Loss of tourism potential	Social and tourism	Loss of tourism resources	• Avoid the cultural/religious site as far as possible. • Prior consultation with local communities and traditional authorities. • Implementation of compensation measures (following the instructions of the traditional authorities) if necessary. • Conduct of the process in a transparent and documented manner.
	PHASE DE CONSTRUCTION			
10	**Movement of machinery, transportation and movement of labour, machinery and materials**	Air quality and noise environment	Air pollution (dust and exhaust gases)	• Water the platforms regularly ranging from 2 to 3 times a day during the dry season;

No.	Activities/ Sources of impact	Component of the affected environment	Title of the potential impact	Mitigation measures
	in the borrowing quarries			• Develop and implement a traffic management plan; • Regularly maintain construction machinery and vehicles; • Make it mandatory to cover material transport trucks with tarpaulins in the dry season or to moisten powdery materials during transport; • Equip staff with face masks or dust masks FFP3 ou FFP2.
11	**Earthworks**	Ground	Accentuation of the phenomenon of erosion and soil degradation during work	• Produce a plan of the movements of the machines on the site; • Stabilize or reforest areas at risk with adapted and fast-growing species; • Insert clauses in the company's contract prohibiting the operation of borrowing areas for the purpose of real estate development; • Raise awareness among machine operators of good practices in terms of construction work; • Rationally exploit the borrowed deposits of materials and restore them at the end of the work, including reforestation; • Plan the work by avoiding periods of heavy rainfall and flooding; • Dispose of excavated material and other residues to authorized sites • Stabilize landslide areas with anti-erosion plants • Plan a sizing

No.	Activities/ Sources of impact	Component of the affected environment	Title of the potential impact	Mitigation measures
				appropriate of the works; • Raise awareness among local populations about the risks of landslides.
12	**Site Base Operation of Machinery**	Ground	Risk of various pollution (soil pollution by hydrocarbons, acids, bases, paints, etc.)	• Drain runoff water from the base camp appropriately; • Provide an emergency plan in the event of an accidental spill of hydrocarbons / oils (circumscription of the impact area, use of pollution control kits, etc.); • Arrange and stabilize the drain areas in order to waterproof them; • Collect used oil in airtight containers for recycling or reuse; • Formally prohibit employees from washing machinery and other equipment (cement mixers, wheelbarrows, etc.) in waterways; • Equip the construction site, fuel distribution stations and mechanical workshops with pollution control kits; • Avoid water sources used by the population for the needs of the works; • To develop compliant retention basins for the storage of hydrocarbons.
13	**Infrastructure development work (excavation, backfilling and cutting, operation of power plants)**	Soundscape	Noise	• Use equipment that complies with regulations (choice of low-noise machinery); • Respect the rest hours of local residents and follow the requirements of the regulations

No.	Activities/ Sources of impact	Component of the affected environment	Title of the potential impact	Mitigation measures
				National Noise Management • Maintenance of machinery (good lubrication).
14	**Earthmoving, movement of vehicles and heavy machinery**	Access, circulation and mobility	Disruption of the mobility of goods and people along the road;	• Marking and signposting work areas; • Inform and sensitize the population on the start of work and the areas affected by the disturbances; • Inform, raise awareness and disseminate the Traffic Plan to the population; • Train dispatchers for traffic management; • Raise awareness among workers and truckers in the axis on the respect of the Highway Code; • Respect the deadlines for the execution of the work; • Install temporary traffic signs and speed reduction signs; • Provide concerted temporary crossings for the local populations at the village level; • Build and maintain diversion routes
15	**Production of waste from infrastructure development work (brush clearing, excavation, backfilling, excavated material, impregnation, asphalting, etc.) and operation of the site base**	Ground	Soil pollution	• Use and, if necessary, set up sealed areas for the storage of any polluting or dangerous products; • Use and, if necessary, develop watertight areas for the parking of construction vehicles and machinery; • Avoid the spillage of used oil and fuel by emptying and washing trucks and other motorized equipment in off-site workshops;

No.	Activities/ Sources of impact	Component of the affected environment	Title of the potential impact	Mitigation measures
				• Build a mechanical workshop capable of receiving equipment, machinery and other construction vehicles for overhaul and routine maintenance operations; • Install a hydrocarbon separator in the washing and maintenance areas of vehicles and construction machinery; • Sort and collect waste for disposal; • Install garbage bins or drums on site; • Have a waste collection and disposal contract signed by an approved structure or sign a contract with the SGDS-GN for the removal of waste from the site
16	**Borrow Area Operations**	Surface and groundwater	Physical pollution of surface waters by erosion and landslide sediments and risk of silting up watercourses	• Carry out the treatment and stabilization of embankments; • Carry out the slope and stabilization of areas at risk of landslides; • Install sediment retention basins or barriers in appropriate locations; • Rehabilitate the borrowing site immediately after operation.
17	Operation of the site	Security	Accidents at work and traffic	• Develop a Health and Safety Health and Safety Plan • Point out the most dangerous places such as bends; • Provide appropriate and clearly visible signage for the rights of the works; • Raise awareness among site staff and the population about the

No.	Activities/ Sources of impact	Component of the affected environment	Title of the potential impact	Mitigation measures
				security provisions; • Materialize in a very visible way the passage of pedestrians or diversions; • Mandatory wearing of adequate PPE (hard hat, fluorescent vest, safety shoes, earphones, masks, gloves, glasses, etc.) by all workers; • Protection of the site by a fence to prevent intruders from entering.
18	**Stripping, earthworks, exploitation of borrowed areas**	Landscape	Landscape modification	• Rehabilitate areas used after construction - Reforestation of reforested areas if necessary
19	**Presence of workers on the site**	Socio-economic activities	Risks of inflation in the prices of basic necessities due to the presence of workers	• Raise awareness of the need to preserve prices.
20	**Presence of workers on the site, traffic on the axis**	Sexual Exploitation and Abuse and Sexual Harassment	Risques d'EAS/HS	• Carry out awareness-raising and education sessions for workers and local residents on the risks of SEA/HS and their consequences; • Signing of the Code of Conduct by any person involved on the site (control mission, companies, companies, consultants, etc.)
21	**Excavation**	Cultural property	Destruction of cultural or archaeological property	• Carry out archaeological surveys on the section; • Develop a procedure for managing incidental discovery; • Mobilization of an archaeologist during the excavation work
22	**Development of water reservoirs**	Pastoral activity	Disruption of beef watering activities	• Arrange a timetable for watering the animals in agreement with the shepherds;

No.	Activities/ Sources of impact	Component of the affected environment	Title of the potential impact	Mitigation measures
				• Identify areas in agreement with the shepherds to water the animals
23	**Development of water reservoirs**	Surface water	Water turbidity	Avoid depositing materials on the banks of watercourses in rainy weather;
			Disruption of the water flow regime	Restore the natural flow of water as soon as possible at the end of the work
		Fauna and flora	Temporary destruction of aquatic fauna habitats,	Limiting the work to the dedicated right-of-way
	PHASE D'EXPLOITATION			
24	Commissioning of road infrastructure (vehicle and machinery traffic)	Public Health and Safety	Accidents due to non-compliance with traffic laws	Carry out awareness and education sessions for users on the Highway Code;
25	Commissioning of the road (vehicle traffic)	Access, Traffic and Mobility	Risk of contamination and spread of communicable diseases	• Carry out an IEC for drivers and the population on barrier measures against communicable diseases; • Put posters inside mass transport vehicles to educate passengers about communicable diseases
26	Commissioning of the road (vehicle traffic)	Public health	Risk of flooding	• Identify flood zones and build drainage channels

Table 2: Risk prevention measures by phase

No.	RISK	STEPS TO PREVENT, MINIMIZE AND MANAGE RISK
PREPARATORY AND CONSTRUCTION PHASE OF ROAD INFRASTRUCTURE		
1	**Fire and/or explosion**	• Organize storage (provide separate storage places for fuel); • set up means of smoke and fire detection, alarm system; • have sufficient extinguishing resources (fire extinguishers, foam concentrates and pumping equipment) at the site base to quickly contain the fire; • equip vehicles and equipment with functional fire extinguishers; • train staff in fire extinguishing - ban smoking in well-specified places (near storage areas and equipment for example);

No.	RISK	STEPS TO PREVENT, MINIMIZE AND MANAGE RISK
PREPARATORY AND CONSTRUCTION PHASE OF ROAD INFRASTRUCTURE		
		• Establish response and evacuation plans - place fire extinguishers in a way that is visible and accessible to all (access routes must be clear of obstacles); • Strengthen surveillance measures; • Locate the site base outside homes.
2	Electricity risk	• Ensure the protection of electrical circuits; • Carry out a regular inspection of the electrical installations; • prohibit personnel from seizing any cable discovered on the site, • ensure that the source of electricity emission is interrupted before any intervention on the electricity network.
3	Risks related to the movement of construction machinery and equipment	Train staff in safety for the workplace; - draw up procedures for the use of the machines; - ensure that personal protective equipment (PPE) is worn: helmets, safety boots, appropriate gloves; - systematize the vehicle safety system (traffic signs, horn, light signal, audible reversing warning, driver assistant, etc.); - mark out the traffic areas for heavy machinery; - regularly water traffic and work areas; - Establish a traffic plan
4	Risks related to the circulation of construction machinery and vehicles	periodic maintenance of vehicles; - Correctly mark and signpost the Work areas; - develop corridors for local residents and users to pass through; - Organize travel by setting up traffic control agents; - prohibit drivers from consuming alcohol on working days; - Raise drivers' awareness of safety rules; - put up road signs in the work zones; - ensure that the speed limit is maintained for all vehicles travelling on public roads, with a maximum speed limit of 30 km/h in built-up areas and when crossing villages; - regularly water the work areas; - systematize the vehicle safety system (traffic signs, horn, light signal, audible reversing warning, etc.); - Train operators in safe driving
5	**Risks associated with manual or mechanized handling**	• Organize workstations to eliminate or reduce handling; • Use appropriate handling equipment: pallet trucks, for example; - Equip loads with gripping equipment, such as handles; • Train staff to adopt appropriate gestures and postures; • Make available and require the wearing of personal protective equipment (shoes, gloves, etc.).
6	**Risk of falling objects**	• Limit storage heights; • Mark out risk areas; • Backfilling the excavations; • check the stability of formwork elements, props, etc.; • properly secure the loads handled; • Raise awareness among site staff about safety measures; • Treat product spill sites; • clear and illuminate passageways (especially for night work); - • ensure that personal protective equipment (PPE) is worn: hard hats and safety shoes,

No.	RISK	STEPS TO PREVENT, MINIMIZE AND MANAGE RISK
PREPARATORY AND CONSTRUCTION PHASE OF ROAD INFRASTRUCTURE		
7	**Chemical accident**	• Make available and require the wearing of personal protective equipment (masks, protective glasses, shoes, gloves, etc.)
8	**Transmission of STIs and HIV/AIDS and communicable diseases**	• Raise awareness among site staff and the local population; • distribute condoms (female and male) to staff every day.
9	**Consumption of contaminated or spoiled food**	• Raise awareness of hygiene measures among site staff and food outlets; • Setting up hygienic catering sites near business parks; • Sign a temporary catering agreement between companies and restaurateurs for the hygienic feeding of workers; • Set up a canteen on the base camp or site base.
10	**Noise risk**	• Inform workers of the risks; • ensure the use of PPE (earplugs, earmuffs, etc.) • organise special medical surveillance for workers exposed to noise
11	**Risk of Sexual Exploitation and Abuse**	• Comply with the company's internal regulations and code of conduct giving risk management strategies; • Raise awareness among employees about the internal regulations and code of conduct; • Raise awareness on the radio (message to women and girls); • Have each employee sign the code of conduct.
12	**Risk Soil pollution**	• Develop and implement a solid and liquid waste management plan generated on the site and the living quarters; • Waterproof the areas where the equipment is supplied with fuel and the areas where the equipment is maintained; • provide for pollution control devices when supplying equipment with fuel
13	**Risk of Loss of Buildings**	• Mark out and respect the boundaries of work areas; • Use small tools in the vicinity of frames; • Use machines with a vibrating power adapted to the construction materials; • compensate the owners of the buildings in the event of an attack.
14	**Risks related to collapses**	• **Protections collectives** • Organize storage (reserved spaces, storage methods adapted to the objects, width of aisles compatible with the handling equipment used; • Report all dangerous places; • Mandatory wearing of PPE adapted to each trades on the site; • Limit storage heights. • **Personal protection** • Wear personal protective equipment (fluorescent vest, safety shoes, hard hats, safety boots, etc.).
15	**Risks of excavations**	• Mark out the excavation in the site area; • Setting up rigid barriers around the excavation; • Make a pedestrian access ramp or set up a staircase with a variable angle adapted to the depth,

No.	RISK	STEPS TO PREVENT, MINIMIZE AND MANAGE RISK
PREPARATORY AND CONSTRUCTION PHASE OF ROAD INFRASTRUCTURE		
		• Systematic armouring for any excavation with vertical walls with a depth of more than 1 metre and a width equal to or less than two-thirds of the depth; • Strictly prohibit any descent of workers into a vertical wall excavation before the installation of the armor; • Taluter excavation walls when there is sufficient space and the geological conditions of the land allow it.
	OPERATION AND MAINTENANCE PHASE	
16	Risk of accidents and hazards related to maintenance activities	• Inform workers about the risks; • Ensure the use of PPE (earplugs, mufflers, etc.).
17	Risks related to collapses of structures	• Enforce the axle weight of vehicles on the structures; • Carry out regular maintenance of the structures; • Raise awareness among the population about the risks of aggression to the structures; • Control urbanization around the network with a well-defined easement area
18	Noise-related risks	• Ensure speed limits
19	Pollution de l'air	• Ensure that the technical inspection dates are respected

Annex 8: TERMS OF REFERENCE FOR AN ESIA

Introduction of RDTs

The terms of reference must have an introduction in which the Consultant must present:

- the purpose of the project and the place (district and district) where it will take place;
- the legal justification for the environmental and social impact assessment and indicate the
- the design office in charge of carrying out the study;
- the context in which the public inquiry was carried out, in particular the dates, the populations (villages and NGOs), the authorities (Prefecture, Town Hall, district, etc.) who were surveyed and their concerns.

Summary of the study

It must present, among other things, the summary of the description of the project, the impacts, and the environmental and social management plan.

Introduction of EIA

It should present the elements of the general context of the study, which will be developed in the report. These include:

- the situation in the sector concerned by the project;
- major projects underway in the city;
- the contribution of the area concerned to the economy of the city of Cotonou or the national economy (job creation, payment of taxes, etc.);
- the justification of the project;
- the main lines (phases) of the project;
- the articulation of the EIA report.

Objectives and Expected Results

x ***Overall objective.*** To ensure that the project is implemented in accordance with the regulations in force, in order to preserve the environment and human health. x ***Specific objectives***

- describe the initial state of the project area, ö describe the project activities, À identify and assess the impacts of the project; Consult with local authorities and populations; Develop the environmental and social management plan (present mitigation measures); Write and validate the study report x ***the expected results.*** They should be in harmony with the specific objectives, for example: the initial state of the project area has been described; project activities have been described; impacts have been identified and assessed; The authorities and the population have been consulted; The ESMP has been drawn up (the mitigation measures have been presented) The impact assessment report has been drafted and validated; x **Methodology for producing the report and organisation of the study** The methodology; this will cover: the documentary research, while indicating the structures where it will be carried out, the collection of additional data in the field and the methods, techniques and tools to be used.

- Data compilation, processing and analysis, identification and evaluation of impacts; consultation with stakeholders and indicate the authorities and populations that will be consulted; the development of an environmental and social management plan (presentation of mitigation measures); 9 the drafting of the report.

- x the duration of the study; x the timetable for the completion of the EIA; x the composition of the consultancy team.

Legislative, regulatory and institutional framework.
The terms of reference must clearly indicate that the study is being carried out in accordance with Decree No. 2022-390 of 0136 July 2022 on the organization of environmental assessment procedures in the Republic of Benin.

x The consultant will have to cite the sectoral policies concerned by the project:
- Government Action Programme "Benin Revealed" (PAG)
- National Environmental Policy Document (NEP)
- National Environmental Management Program (PNGE)
- Environmental Action Plan (EAP)
- National Wetland Management Strategy (SNGZH)
- National Strategy for the Implementation of the United Nations Framework Convention on Climate Change (SNMO)
- Biodiversity Strategy and Action Plan 2011-2020 (SPAB)
- National Action Plan for Integrated Water Resources Management (PANGIRE) x The consultant will have to cite the national laws and regulations and the international conventions ratified by Benin, relevant to the project. x He will also have to recall the relevant provisions of the national texts and international conventions concerned:

x An institutional component that takes into account the public institutions (ministries) concerned;
x The synthesis of the normative documents that will be annexed to the EIA report
Project description It will focus on:

x Location map;
x The infrastructure ground plan;
x The alternatives of the project;
x The justification for the choice of the technological variant chosen; x the justification for the choice of site,
x the technological process and its technological schema;
x the equipment, its dates, the state of acquisition (new or used) and operation, the overhaul periods, as well as the personal protective equipment.
x presentation of the design office (its experience, references to the accreditation);
x Company Introduction (experience in the field of study or in another)

Presentation of the initial state of the project
The report will present the biological and socio-economic data of the project area, namely:

x Biophysical elements: oceanography, climate, geomorphology, geology, marine fauna and flora;
x socio-economic elements: demography, sociology, education, health, transport, and all economic activities.

The description of the physical data should be supported by thematic maps (climate, vegetation, geology and topography)

The EIA report will indicate, where possible, any difficulties or gaps and uncertainties that are expected to be identified in the project area.
Identification and analysis of projected impacts: This analysis will be carried out according to the valued elements of the environment (soil, air, water, forest, fauna) and the socio-economic elements (employment, education, socio-economic activities) and according to the different phases of the project.

This analysis will be carried out on the basis of a matrix that will be indicated.

x Impacts will be characterized according to **intensity** (low, medium or major), **extent** (regional, local and one-off) and **duration** (long, medium and short). Pollution levels will be indicated with reference to international standards;

Consultation with local authorities and populations

This consultation will be carried out in accordance with the provisions of Decree No. 2017-332 of 6 July 2017 on the organization of environmental assessment procedures in the Republic of Benin, in particular those of the public hearing (section 1 of Chapter II). Identify the stakeholders who will be the subject of the consultations. These are:

- x local authorities and populations;
- x public structures (departmental directorates of the ministries concerned) and NGOs, opinion leaders.

The minutes and minutes of these consultations, duly signed by all stakeholders, will be annexed to the report.

Environmental and Social Management Plan (Mitigation Measures)

It includes the following elements:

- x mitigation measures. These must be realistic and in line with the impacts identified;
- x a schedule for the execution of mitigation measures;
- x a summary table will present the sources of impact, mitigation measures, and residual impacts;
- x internal operation plans (contingency plan),
- x a Risk Management Plan,
- x environmental costs. These will be indicated taking into account the measures taken to mitigate the effects of the project on the environment;
- x a plan for the training and education of the population;
- x a waste management plan;
- x a social plan,
- x a societal plan
- xMonitoring bodies and procedures
- x a plan for the closure and rehabilitation of the site
- xthe budget for the implementation of the micro-project.

Conclusion and Recommendations

The EIA report will highlight a number of highlights for the environmental and business administration.

The consultant could draw the attention of the administration and the Promoter to the establishment of an HSE unit, the training of Managers and Agents.

Depending on the impacts identified and the mitigation measures proposed, the consultant will be able to decide whether or not to implement the micro-project.

Appendix 9: STANDARD ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (C-ESMP)

1. INTRODUCTION 1.1. Objectives

The purpose of this document is to serve as a methodological guide whose efficient implementation will allow us to ensure that the environmental damage resulting from the project is better taken into account.

Specifically, the purpose of this document is to:

- Limit the environmental impacts on the sites and activities under the responsibility and direct control of **the Company in charge of the works**;
- propose measures (avoidance, mitigation, compensation and maximisation) of the probable impacts applicable within the framework of the project;
- Provide adequate and effective responses to environmental incidents;
- Facilitate dialogue between the Delegated Project Manager and **the Company in charge of the work** concerning subjects relating to the management of the environment and health and safety issues of the Project;
- provide the required information to the Delegated Project Manager about the environmental aspects of the work **of the Company in charge of the works**;
- Describe emergency response strategies;
- provide the methodology for managing health and safety risks on the site,
- Develop strategies to raise awareness and combat STDs/HIV-AIDS;
- Explain the standards, regulations and general impact reduction measures to be followed for the management of site facilities, preparation of quarries, borrowing sites, site work, site retreat and redevelopment, etc.

1.2 Description of the work.

Like most road construction sites, road development and asphalting work essentially boils down to:

- The installation of the site and the folding of the equipment;
- Preparatory work (clearing of brush, felling of trees, scarification of the roadway, stripping, demolition);
- Earthworks (embankments, excavated material);
- Scupper and bridge construction;
- Pavement works;
- Sanitation (construction of gutters, prefabrication of paved edges, cornering markers; pentakilometre markers, etc.);
- Structures,
- Road equipment;

• Environmental works These are essentially road construction operations that will take place on traffic routes, crossing certain agglomerations and villages. In addition, the Company will set up a site base, a number of production facilities (crushing quarry, concrete plant, asphalt plant), upkeep or maintenance facilities (Mechanical Workshop), monitoring and coordination of work (offices) and probably a site infirmary.

1.3 Environmental Policy

- Any work carried out by a staff of the company in charge of the work is carried out in accordance with the requirements of the contract, the laws and regulations of the Beninese State on environmental management and protection;
- All necessary measures and applicable measures will be taken to avoid negative effects on the environment during the works;

- The operational management of the company in charge of the works and its employees will demonstrate a strong and visible commitment to continuous efforts to identify, eliminate and manage environmental risks during the execution of the works;
- The company in charge of the works will endeavour to prevent damage and risks through the active participation of any employee and will make every effort to put in place work methods and procedures in order to avoid as much as possible risks and consequences on the environment
- The management staff and supervisors of the Company in charge of the works are responsible for making this policy effective within the Company and must ensure that priority is given to the protection of the environment during the execution of the works;
- All subcontractors of the company in charge of the work are obliged to comply with this policy and ensure that their work is carried out without risk to the environment.

2. TECHNICAL FRAMEWORK FOR THE IMPLEMENTATION OF THE ESMP 2.1. Methodological approach to the implementation of the ESMP

The methodological approach followed for the adoption and implementation of the Environmental and Social Management Plan for the project (ESMP-C) for the project consists of several stages including: the transformation of the ESMP resulting from the ESIA into a work plan with an execution timetable, the implementation and periodic evaluation of the measures contained in the ESMP-C, functional analysis as well as work on all project sites and on the various borrowing and quarry sites.

2.2. Functional analysis

This step will allow the following actions to be carried out:

- periodically review the actions to be implemented from the beginning to the operating phase of the road in terms of compliance with the measures proposed in the ESMP;
- present the (periodic) environmental status of the occupied sites (base, garage, storage sites for hydrocarbons and other products, etc.), the sites exploited (borrow site, quarries), etc.
- develop a waste management plan (solid and liquid) on construction sites;
- periodically evaluate the actions in progress and that remain to be carried out in the context of the implementation of the PGES-C;
- periodically assess the level of involvement of women (gender approach) in the various tasks of the project.

2.3. Presentation of monitoring and surveillance tools

For a good assessment of the level of adoption of the CSMP, an Evaluation Sheet (EF) of the level of implementation of each activity is prepared. For each action, it will be a question of filling in the FE for an evaluation of the degree of application of the recommended measures. The said sheet will include the following information:

- ***Identification of the environmental action to be taken;***
- ***Objective(s) of the action (Results to be achieved by the action);***
- ***Various tasks of the action;***
- ***Implementers (implementation of the action);***
- ***Place(s) of implementation of the action;***
- ***Timeline (period) for the implementation of the action;***
- ***Indicators for monitoring the effectiveness of the action;***

Apart from this specific tool that is the evaluation sheet, other field tools will be regularly used for the collection of information. Such as the camera for the various shots, the GPS for the positioning of certain points on the site.

2.4. Fieldwork

With the help of the various tools mentioned above, an exhaustive coverage of the different sites occupied and exploited by the project will be carried out. In addition, it will also be a question of exchanging with landowners and local elected officials to assess the level of integration of environmental concerns.

2.5. Data processing and analysis

The various information collected in the field will be analysed manually. The results of the various investigations will be presented in the form of an activity report which includes graphs, photos, maps, tables, diagrams etc.

2.6. Dissemination of the ESMP

The **ESMP-C** will be disseminated by the company's Environment, Safety and Health Manager under the supervision of the Project Director. The recipients are the main actors. These are:

- Project owner Company: Original: Copy: Copy: Copy: Copy
- Project manager
- Project Representative
- Control mission

3. LIKELY IMPACT MITIGATION MEASURES APPLICABLE TO THE PROJECT

Mitigation measures are defined as all the means envisaged to prevent or reduce the importance of impacts on the environment. These measures can be general or specific. The general measures will be intended to mitigate the negative effects of the project as a whole. The specific measures will aim to mitigate the impacts on a particular component of the environment. This document presents a list of measures that we will implement from an environmental protection perspective during the implementation of the project.

3.1. General measures

Respect a protective perimeter around sensitive areas (mentioned below) and avoid any deforestation or elimination of plant cover. These are:

-banks of bodies of water and watercourses;
-recognised wildlife habitats (classified forests, for example);
-water supply basins;
-wetlands or aquatic environments.

- Control access to the work sites;
- Establish adequate procedures for training staff in environmental protection;

- Promote the reuse of dismantled materials and equipment;
- ***Encourage the employment of local labour***;
- Use appropriate road signs (temporary road signs);
- At the end of the work, clean and restore the affected components of the environment to their original state.

3.2. Specific measures

Protection of residential areas

- Ensure access for local residents to their concession;
- Guide machine operators to avoid damage to buildings or other installations bordering the right-of-way of the hunt;
- Use appropriate road signage.

Protection of surface water quality and water resources

- Control the circulation of the company's vehicles to avoid leaks and accidental spills of hydrocarbons (diesel, greases, etc.);

- Conserve vegetation near watercourses and wetlands;
- Reduce the duration of river diversions as much as possible;
- Direct and drain stormwater around the work site and direct it to vegetated areas if possible.

At the end of the work:

- Remove any temporary facilities that have been used to cross watercourses.
- Restore, if necessary, the normal flow of watercourses;
- Take all possible precautions when refueling transport vehicles and machinery on the work site to avoid accidental spills of hydrocarbons;
- When it is necessary to cross a watercourse, the necessary measures (wire mesh, net, etc.) will be taken to prevent building materials, waste or woody debris from falling into the water.

Soil erosion and destabilization

- Stabilize the soil to reduce the potential for erosion;
- Avoid construction on steep slopes and creating slope breaks;
- Construct embankments whose mass is adapted to the bearing capacity of the soil;

Alteration of air quality and noise environment

- Avoid heavy vehicle traffic and noisy work at induced times near inhabited areas;
- Maintain transport vehicles and machinery in good working order to minimize gaseous emissions and noise;
- Use dust suppressants to control dust emissions.

Destruction or alteration of vegetation cover

- Clearly define the cutting areas in order to limit deforestation;
- Keep equipment away from vegetation;
- Avoid digging a trench less than one metre from a tree.

Worker Safety and Hazardous Materials Management

- Ensure the safety of workers;
- Site personnel will be provided with protective and safety accessories specific to their activities (harnesses, safety shoes, helmets, boots, glasses, etc.)
- Inform machine drivers and operators of the safety standards to be respected at all times, through the completion of the 1/4 hour of safety at least once a month;
- Provide storage areas for contaminants and equip them with devices to protect against accidental spills.

Accident management

- Urgently transport the injured person to the infirmary so that first aid can be administered;
- Depending on the severity of the injury, refer the injured person to the nearest referral hospital;
- The construction site vehicles will be made available for transport.

Disruption of agricultural activities

- Check with farmers on the planned use of their land before the work;
- Carry out the work in such a way as to cause as little harm as possible to existing crops and cultural practices (duration, extended period);
- Minimize the areas where it will not be possible to cultivate during the work;
- Access the right-of-way via existing paths or circulate at the edge of cultivated areas and develop access in consultation with farmers;

Identification of medium and major negative impacts and environmental risks related to site installation

ACTIVITIES	ENVIRONMENTAL IMPACTS OR RISKS	MEASUREMENTS
Deforestation	Likelihood of Impairment of Surface Water Quality	We will set up a protective perimeter around the sensitive areas (mentioned below) These are: - banks of bodies of water and watercourses; - water supply basins; - wetlands or aquatic environments.
	Water flow	Runoff will be directed and drained so that it bypasses the work site and directs it to vegetated areas if possible.
	Water availability	Water withdrawals will be carried out taking into account the availability and ensuring that the uses made by the local populations are not disturbed
	Vegetation	Cutting areas will be clearly defined in order to limit deforestation; The equipment will be kept away from vegetation
	Fauna and habitats	Wildlife habitats will be disturbed as little as possible, as well as wooded areas, unnecessary tree cutting will be avoided.
	Agricultural and forest area	The company will avoid choosing a forest area or an agricultural area as the site installation area
	Soundscape	Keep transport vehicles and machinery in good working order to minimize gaseous emissions and noise.
	Natural and cultural heritage	Workers and staff will be made aware of the need to respect the habits and customs of the host environment
	Employment	Priority will be given to indigenous workers with equal skills.
STRIPPING AND EXCAVATION	Soil quality	The topsoil will be preserved and stored in a cordon around the base of the site
	Air quality	The soil will be watered each time to avoid raising dust
	Population safety	Flags will be present to orient and guide the machines as well as the regulations of traffic near the machines
EARTHWORKS	SOIL-AIR-WATER-Soundscape	All the measures taken previously are valid at this level as well
WASTE MANAGEMENT	SOIL- AIR- Aesthetic pollution	An NGO will be hired to periodically collect waste. See waste management methodology in annex

Source : IRC, 2024

1.1 Identification of medium and major adverse impacts and related environmental risks during the preparatory work

ACTIVITIES	ENVIRONMENTAL IMPACTS OR RISKS	MEASUREMENTS
Deforestation Earthworks Backfilling / Reloading	Vegetation	Cutting areas will be clearly defined in order to limit deforestation; The equipment will be far from the vegetation
	Fauna and habitats	Wildlife habitats will be disturbed as little as possible, as well as wooded areas, unnecessary tree cutting will be avoided.
	Agricultural and forest area	The company will avoid choosing a forest area or an agricultural area as the site installation area
	Soundscape	Keep transport vehicles and machinery in good working order to minimize gaseous emissions and noise.
	Natural and cultural heritage	Workers and staff will be made aware of the need to respect the habits and customs of the host environment
	Employment	Priority will be given to indigenous workers with equal skills.
	Soil quality	The topsoil will be preserved and stored in a cordon around the base of the site
	Air quality	The soil will be watered each time to avoid raising dust
	Population safety	Flags will be present to orient and guide the machines as well as the regulations of traffic near the machines
Transport of excavated material and backfill	Air quality	The material transport trucks will be covered
Various locations (on roads or structures)	Safety of users and workers	- Wearing PPE (harnesses, safety shoes, helmets) for the topographic team. - Presence of flag or regulate traffic if necessary
Creating diversions	Air Quality Road Safety	- Water diversions regularly; - Periodically maintain the diversions by passing the grader through them; - Signal the presence of a detour to users 500 m upstream and downstream with appropriate temporary signs.

Source : IRC, 2024

1.3- Identification of medium and major negative impacts and environmental risks associated with the work

ACTIVITIES	ENVIRONMENTAL IMPACTS OR RISKS	MEASUREMENTS
Brush clearing / stripping **Backfilling / Reloading**	Vegetation	- the cutting areas will be clearly defined in order to limit deforestation; - the equipment will be far from vegetation; - Limit the unscrambling and clearing of land to the right-of-way of the works, to the strict necessary; - Submit to the authorisation of the project owner, the cutting of any tree with a diameter greater than 25 cm; - Plant trees to compensate for those felled.
	Fauna and habitats	- Wildlife habitats will be disturbed as little as possible, as well as wooded areas, unnecessary cutting of trees will be avoided.
	Agricultural and forest area	- The company will avoid choosing a forest area or an agricultural area as a site installation area
	Soundscape	- Keep transport vehicles and machinery in good working order to minimize gaseous emissions and noise.
	Natural and cultural heritage	- Workers and staff will be made aware of the situation in order to respect the habits and customs of the host environment
	Employment	Priority will be given to indigenous workers with equal skills.
	Soil quality	The topsoil will be preserved and stored in a cordon around the base of the site
	Air quality	The soil will be watered each time to avoid raising dust
	Population safety	Flags will be present to orient and guide the machines as well as the regulations of traffic near the machines
Transport of excavated material and backfill	Air quality	The material transport trucks will be covered
Various locations (on roads or structures)	Safety of users and workers	- Wearing PPE (harnesses, safety shoes, helmets) for the topographic team. - Presence of flag or regulate traffic if necessary
Creating diversions	Air Quality Road Safety	- Water diversions regularly; - Periodically maintain the diversions by passing the grader through them; - Signal 500 m upstream and swallow each detour by road signs

ACTIVITIES	ENVIRONMENTAL IMPACTS OR RISKS	MEASUREMENTS
		adequate temporary presence of a diversion to the users.
Excavations / trenches	Accident risks	- Rubalize excavations and slices - Signage if possible with appropriate signs upstream and downstream as appropriate.
Dynamiting	Safety of local populations	- Move people within a radius of at least 500m; - Use audible horns within a reasonable radius; - Obtain the required authorizations for the use of dynamite.
Waste Oil & Hydrocarbon Management	- Soil pollution; - Water pollution; - Groundwater pollution	- Cement and waterproof the handling and storage area and the oil drain pit; - Tarpaulin the used oil storage area; - Make the hydrocarbon storage area watertight by cementing in order to prevent any infiltration of petroleum products into the ground.
Transport, traffic, handling of equipment	- Traffic accident; - Air pollution; - Noise environment (Increase in noise level.	- Put up flags to regulate traffic if necessary; - Put up speed limit signs; - Periodically water inhabited or occupied areas; - Cover trucks with materials that can generate dust; - Avoid the deployment of construction machinery at the hours induced in inhabited areas.

Source : IRC, 2024

1.3.1 – Earthworks

ACTIVITIES	ENVIRONMENTAL IMPACTS OR RISKS	MEASUREMENTS
Brush Clearing / Stripping	Vegetation	Cutting areas will be clearly defined in order to limit deforestation; The equipment will be far from the vegetation
	Fauna and habitats	Wildlife habitats will be disturbed as little as possible, as well as wooded areas, unnecessary tree cutting will be avoided.
	Agricultural and forest area	The company will avoid choosing a forest area or an agricultural area as the site installation area
	Soundscape	Keep transport vehicles and machinery in good working order to minimize gaseous emissions and noise.

ACTIVITIES	ENVIRONMENTAL IMPACTS OR RISKS	MEASUREMENTS
	Natural and cultural heritage	Workers and staff will be made aware of the need to respect the habits and customs of the host environment
	Employment	Priority will be given to indigenous workers with equal skills.
	Soil quality	The topsoil will be preserved and stored in a cordon around the base of the site
	Air quality	The soil will be watered each time to avoid raising dust
	Population safety	Flags will be present to orient and guide the machines as well as the regulations of traffic near the machines
Transport of excavated material and backfill. Laterite supply.	Air quality	- Material transport trucks will be covered
Various locations (on roads or structures)	Safety of users and workers	- Wearing PPE (harnesses, safety shoes, helmets) for the topographic team. - Presence of flag or regulate traffic if necessary
Creating diversions	Air Quality Road Safety	- Water diversions regularly; - Periodically maintain the diversions by passing the grader through them; - Signal the presence of a detour to users 500 m upstream and downstream with appropriate temporary signs.

Source : IRC, 2024

- **Location standards**

The company plans to build its temporary construction facilities in a way that causes the least possible disturbance to the environment, preferably in areas that have already been deforested or degraded where such sites exist, or on sites that will be reused in a later phase for other purposes. The company plans to refrain from establishing a base inside a park, a reserve or in a classified forest.

The company plans to ensure that the locations of site access roads, parking and storage areas, site offices or other temporary facilities are located more than 100 m from a permanent watercourse or lake; (ii) workers' camps are located more than 30 m from the right-of-way of a main road to reduce noise nuisance and more than 50 m from inhabited areas; (iii) sites of outstanding interest (ecological, archaeological, etc.) are avoided; parks and reserves, in order to prevent illegal logging and poaching.

The company plans to choose a site for the site in order to avoid, as much as possible, competition with the local population for local resources.

- ***Employment of local labour***

The company undertakes (apart from its technical management staff) to recruit as many workers as possible in the area where the work will be carried out.

- ***Health, Safety and Environment – On-call staff***

The company will have a Health/Safety/Environment Manager who will ensure that the rules of hygiene, safety and environmental protection are rigorously followed by all employees and at all levels of execution, both for workers and for the population and other people in contact with the site.

The company shall supply and maintain all lighting, protection, fencing, alarm and security signals at the times and places necessary or required by the Project Manager, by any other duly constituted authority and by the regulations in force, for the protection of the works and for the safety and convenience of the public.

The company plans to prohibit access to the site to the public, protect it with markers and road signs, and indicate the various accesses. The company plans to ensure the guarding, surveillance and safe maintenance of its site, including outside the hours of presence on the site. Throughout the duration of the work, the Company is required to have staff on call, outside working hours, every day without exception, day and night, to compensate for any incident and/or accident that may occur in connection with the work.

3.4. Site withdrawal standards and redevelopment

- ***General rules***

When the site is vacated, the company plans to leave the premises suitable for immediate use. It will carry out all the necessary developments for the restoration of the premises. It is also required to fold up all its equipment and materials and may not abandon them on the site or in the surrounding area.

Once the work is completed, the company plans to (i) remove temporary buildings, equipment, waste, surplus materials, fencing, etc.; (ii) rectify drainage defects and re-breed all excavated areas; (iii) reforest areas originally deforested with appropriate species; (iv) protect structures that have remained dangerous (shafts, open trenches, differences in level, projections, etc.); (vi) make roadways, sidewalks, gutters, ramps and other works rendered to the public service functional.

- ***Temporary quarries and borrowing sites***

The company plans to redevelop the quarries and borrowing sites according to the options to be defined in conjunction with the project manager. (Cf. PGE de la Carrière and PGE of borrowing sites).

- ***Measures for the transport and storage of petroleum products and contaminants***

Petroleum products (lubricants and greases) will be transported safely in leak-proof containers. Deliveries will be made by tankers in accordance with the regulations in force and drivers will be made aware of the damage in the event of an accident. Transhipment operations to storage tanks will be carried out by experienced personnel. The storage tanks will be watertight.

To install fuel, lubricant and petroleum product warehouses, a safe distance of at least 200 m from bodies of water and watercourses will be respected. Storage sites will be located outside of any flood and residential areas. Storage sites must be clearly identified to avoid collisions between construction vehicles and petroleum product tanks.

The staff will be trained and made aware of (i) the specific instructions to be followed in order to avoid any risk of accidental spillage during the handling and use of petroleum products (ii) on the intervention measures to be put in place in the event of a disaster in order to avoid any accidental spill.

- **Measures in the event of an accidental spill of petroleum products**

Measures to combat and control spills of contaminants on the site must be clearly identified and workers must be aware of them and be able to implement them in the event of an incident.

The company plans to install on the site: (i) spill control equipment (sandboxes, shovels, containers, gloves, etc.); (ii) communication equipment (mobile phones, etc.); (iii) safety equipment (signage, etc.).

- **Protection of agricultural areas and structures**

The construction schedule will be established to limit disruption to agricultural activities. The main periods of agricultural activity (seeds, harvesting, drying) are taken into account in order to adapt the schedule to these periods. Consultation with key local stakeholders (local authorities, farmers' associations, etc.) will also need to be conducted. The schedule of the works will be programmed in such a way as to minimize agricultural losses and nuisance for farmers. In the event that nuisances are unavoidable, compensation must be granted to the farmers.
If no existing access is identified to reach the work site, temporary accesses will be identified in consultation with the owners in order to minimize negative impacts on agricultural activities.

Topsoil from excavation work will be moved and stored separately from other excavated material. This soil will then be reused.
Construction materials and debris will be collected daily to prevent damage to farm equipment or ingestion by pets. When a new road divides farmland and disrupts farmland use patterns and connections between fields. It is advisable during consultation with the population to know the layout of the plots of the affected people on both sides of the road in order to avoid creating large impacts (separate plots involving long detours and thus loss of income).

Protection of wetlands, fauna and flora

The company plans to implement the following recommendations to ensure better protection of the flora and fauna existing in the wetlands during the work: (i) as far as possible, choose the period of the work so as not to disturb the migration and reproduction of animals (fish, amphibians, reptiles, mammals, birds, etc.); (ii) use techniques and devices that do not prevent animals from migrating normally and do not pose any unnecessary risk to their life or health; (iii) prohibit access to wetlands, except for a valid reason, so as not to disturb these areas; (iv) to disturb forested areas as little as possible and to avoid unnecessary cutting of trees; (v) consult with wildlife agencies and authorities prior to the commencement of work to ensure that wildlife is effectively protected; (vi) prohibit site employees from hunting in work zones.

• In the case of planting, the company intends to adapt to the local vegetation and ensure that new species are not introduced without the advice of the forestry services. Low-maintenance species should be prioritized. Plantings must respect the category of the road and its function and must not obstruct natural views.

Protection of archaeological sites

• If, during the works, cemeteries or other remains of cultural, historical or archaeological interest are discovered, the Company intends to follow the following procedure: (i) stop the works in the area concerned; (ii) immediately notify the Contractor who will take steps to protect the site from destruction; a protective perimeter must be identified and materialized on the site and no activities must take place there; (iii) notify the responsible national authorities. The Company is prohibited from removing or moving objects and remains. Work must be suspended within the protection perimeter until the national body responsible for historic and archaeological sites has given permission to continue it.

Tree felling and deforestation measures

When the site crosses a forest reserve where deforestation work is planned, it must only be started after an adversarial visit to the site with the representatives of the project manager.

The trees to be felled are identified and marked by the Project Manager after he has found that no measures can be taken to conserve them. Felling must be done in a manner that does not damage adjacent facilities and properties as well as the trees and shrubs to be preserved.

On public forest lands, such as classified forests, timber cut, both inside and outside the right-of-way, remains the property of the forest agency.

• All branches overhanging the platform must be cut vertically through the edge of the clearing area. All trees overhanging the surroundings and reducing visibility or threatening to fall onto the road and block traffic after a tornado must be cut down.

Liquid waste management

The company is prohibited from discharging liquid effluents that could cause stagnation and inconvenience to the neighbourhood, or pollution of surface, groundwater or marine water. The company plans to set up an appropriate autonomous sanitation system (septic tank).

The company will avoid any spillage or discharge of wastewater, pit drainage, sludge, hydrocarbons, and pollutants of all kinds, into surface or groundwater.

• The company plans to manage used oil (waste oil) in a way that is safe for the environment and biodiversity. Used oil will be stored in airtight drums. Part of it will be used for the formwork of the sanitation section, another part will be made available to millers, the residual stock will be made available to the competent structures for disposal.

Solid Waste Management

• The company plans to deposit household waste in waterproof bins that must be emptied periodically. The evacuation skips will be watertight so as not to let waste escape. For hygiene reasons, and so as not to attract vectors, collection will be daily, especially during hot periods.

Fight against Noise Pollution

The company will limit construction site noise likely to seriously bother local residents, either by an excessively long period of time, or by extending it outside normal working hours. Noise nuisance will be reduced to a minimum.

• The company plans to use machinery and equipment in good working order and avoid leaving engines running unnecessarily in order to reduce noise nuisance.

Combating STI/HIV/AIDS and other road-related diseases

The company plans to inform and raise awareness among its staff about the risks associated with STI/HIV/AIDS. Awareness sessions will be held every last Saturday of the month to raise awareness among workers about the risks associated with the AIDS pandemic and other STDs.

The company intends to inform and raise awareness among its staff about safety and hygiene at work. Awareness-raising sessions will be held periodically to inform workers. These sessions will be called 1/4h security.

The company is considering the following measures to combat diseases: (i) introducing the wearing of mufflers (prevention against ARI) in loans and quarries, uniforms and other suitable footwear;

Bypass roads and temporary access roads

The Company envisages, as far as possible, locating the temporary roads in the right-of-way of the future permanent road and complying with the directives and prescriptions on a technical and environmental level. Environmentally sensitive areas (residential areas, historical, cultural or religious sites, wildlife habitats, agricultural land, classified forests, etc.) will be avoided as much as possible. Otherwise, diversions parallel to the road under construction will be provided.

3.5. Career management standards.

A specific environmental and social impact study is carried out for the quarry and must include a career ESMP.

4. MEANS OF INFORMATION AND AWARENESS-RAISING

4.1. All staff

The means of informing and raising awareness among all staff of the company's commitments set out in the ESMP are:

- Transmission of the PGES to all managers and site managers;
- Transmission of the new environmental protection procedures to all management personnel.

4.2. Supervision

Specific means of informing and raising awareness among management of the company's commitments set out in the ESMP:

- Preparatory site meetings (specific environmental component)
- During periodic site meetings, make a specific environmental review ("the quarter of an hour environment").

4.3. Processor

Specific means of informing and raising awareness among subcontractors and external stakeholders of the company's commitments set out in the ESMP:

- Oral sensitization by the Environment Manager;
- Dissemination of the ESMP and procedures according to the updating of the latter;
- Oral awareness raising by the environmentalist on a daily basis.

5- ENVIRONMENTAL MEASURES MONITORING DOCUMENT

All documents in circulation relating to the environment will be centralised at the Environment Manager and will constitute the environmental journal. These evolving documents are structured around the following main axes:

Study

This part will bring together all the documents issued by the project's environmental unit (ESMP, Sectoral Environmental Management Plan) as well as the various files and installation plans.

Information

This section will include the minutes of the various meetings and meetings, circular backgrounders and any correspondence related to the environment.

Environmental monitoring and follow-up

The environmental monitoring and follow-up program will ensure that mitigation measures are applied and document certain long-term impacts of the work on the environment, especially those that cannot be anticipated. In this case, it will be necessary to ensure that the mitigation measures are properly applied. An environmental monitoring programme should be based, inter alia, on compliance with the environmental measures contained in this document.

The Environmental Procedure File (FPE)

This sheet will be drawn up before any site nuisance for the protection of the environment. This sheet will describe the origin of the nuisance (machinery, equipment, products, etc.), the nature of the nuisance, and the protection measures envisaged.

The Tracking Sheet

It will be written following visits to the site. It will identify the problems encountered and propose actions to be taken in terms of environmental protection. It will serve as an activity report.

Annex 10: METHODOLOGICAL NOTE FOR THE CALCULATION OF A GAS EMISSIONS GREENHOUSE EFFECT

- **Executive Summary**

In order to fight climate change and adapt to the context of increasing scarcity of fossil resources, commitments to reduce greenhouse gas (GHG) emissions have been made at the global and national levels. As proof of its commitment to the fight against global warming, Benin is part of this dynamic by carrying out an assessment of the greenhouse gas emissions of its activities.

This document presents the main methodological guidelines for establishing the greenhouse gas (GHG) emissions assessment of the activities of the MUDP-GN and highlighting the possible actions to reduce its footprint. Greenhouse gas emissions are represented according to 3 different scopes:

- ***Direct greenhouse gas emissions (Scope 1)***

Direct greenhouse gas emissions come from the consumption of natural gas and heating oil by the group's various sites, from refrigerant leaks from air conditioning systems and from the consumption of fuels used by the fleet of company and service vehicles.

The calculations are based on specific data for each energy source (natural gas, heating oil, diesel, petrol, LPG), multiplying the energy consumption by the relevant emission factors

- ***Indirect greenhouse gas emissions (Scope 2)***

Indirect greenhouse gas emissions come from the consumption of electricity and energy provided by heating networks in Greater Nokoué.

The calculations are based on specific data for each consumption item, multiplying the energy consumption by the relevant emission factors. Where possible, these emission factors are regionalised.

- ***Other indirect greenhouse gas emissions (Scope 3)***

The quantities of greenhouse gas emissions of the various scope 3 items correspond to the following items:

- Purchases of products and services
- Waste
- Business travel
- Use of Sold Products

- **Emission factors used for the calculation of greenhouse gas emissions**

This chapter details the different methodological choices and rules used to determine the emission factors used to calculate greenhouse gas emissions in Greater Nokoué.

The emission factors of the ADEME® (French Environment and Energy Management Agency) Carbon Base in its version 14.0 of December 2017 are used to calculate the greenhouse gas emissions linked to electricity consumption. When emission factors are not available in the

Carbon Base®, those of the GHG Protocol® are used. When the emission factor does not exist in either the Carbon Base® or the GHG Protocol®, it is the one of the region that is used.

Detailed Name of the FE	Value	Unit	Spring	Upstream + combustion ?	Uncertainty of the FE	Scope	Post ISO 14064-1
Benin	0,720	kgCO2e/kWh	Base Carbon®	Yes	10%	2	6

As indicated by the guidelines of the Intergovernmental Panel on Climate Change (IPCC)7, the ISO 14064-1 standard, and the decree of 31 October 2012, several methods of assessing GHG emissions are possible. Indeed, we can distinguish methods based on: calculation; measurement; the combination of measurement and calculation according to the items. Except in some specific cases related to direct emissions, the use of continuous or discontinuous measurement of GHG emissions is not widespread, due to implementation difficulties and costs. The most commonly used approach is the one based on calculation through the use of emission factors, documented GWPs and verifiable activity data

Table: GHG emissions assessment methods

Méthode d'évaluation	Détails	Données nécessaires
Mesurage	Multiplication des quantités directes de gaz émis par leur PRG respectifs $GES = Quantité\ de\ gaz\ émis \times PRG$ où GES = émissions en tCO_2e	Quantité directe de gaz émis : Résultat des mesures des effluents gazeux (débit, concentrations). Pouvoir de Réchauffement Global des gaz (PRG)
Calcul	Multiplication de la donnée d'activité par un facteur d'émission $GES = Donnée\ d'activité \times FE \times PRG$ où GES = émissions en tCO_2e	Donnée d'activité Facteur d'émission (FE) PRG

Emission factors Emission factors are used to convert activity data into the quantity of gas emitted.

$$Emission\ de\ GES = Donnée\ d'activité \times Facteur\ d'émission$$

Multiplying this quantity by the GWP of the gas studied makes it possible to quantify the climate impact, the unit of which is the tonne of carbon dioxide equivalent denoted tCO2e.

$$Emission\ en\ tCO_2e = \sum_{gaz} [Emission_{gaz} \times PRG_{gaz}]$$

In many cases, the emission factors already include GWPs and directly convert the activity data into tCO2e.