



**Verified Carbon
Standard**

COMMUNITY-BASED MANGROVE CONSERVATION AND RESTORATION IN GUINEA



WEST AFRICA BLUE

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LIST OF ABBREVIATIONS

ABG	Aboveground Biomass
ACAD	Association- Conseil pour les Actions de Développement
ACI	Africa Conservation Initiative
AD	Activity Data
AD-C	Activity Data Categories
AFOLU	Agriculture, Forestry and Other Land Use
AGEDD	Guinean Association for Awareness of Sustainable Development
AGEDD	Guinean Association for Awareness of Sustainable Development
AGEE	Agence Guinéenne d'Évaluation Environnementale
ANAFIC	The National Agency for the Financing of Communities
APWD	Avoiding Planned Wetland Degradation
ARR	Afforestation, Reforestation, and Revegetation
AUDD	Unplanned Deforestation and/or Degradation
AUWD	Avoiding Unplanned Wetland Degradation
BGB	Belowground Biomass
CBD	Convention on Biological Diversity
CCB	Climate, Community, Biodiversity
CÉRE	Center for Environmental Studies and Research
CFD	Code foncier et domanial
CH4	Methane
CIW	Conservation of Intact Wetlands
CNSOE	Centre National de Surveillance et d'Observation Environnementale
CO2	Carbon Dioxide
COSE	Centre for Observation and Environmental Monitoring
DBH	Diameter at breast height
DG	Mouloukou Souleymane SIDIBE
DNFF	Direction Nationale des Forêts et de la Faune
DSAS	Digital Shoreline Analysis System
DW	Deadwood
EGF	États généraux sur le foncier
FAO	Food and Agriculture Organization of the United Nations
Fcbm	Forest Cover Benchmark Map
FFI	Fauna & Flora International
FPIC	Free, Prior and Informed Consent
GBF	Global Biodiversity Framework
GHG	Greenhouse Gas
GIS	Geographic information system
GPS	Global Positioning System

HCV	High Conservation Value
HDI	Human Development Index
HRP	Historical Reference Period
IFM	Improved forest management
IFSOS	improved fish smoking ovens
IPCC	Intergovernmental Panel on Climate Change
IRAG	Institut de Recherche Agronomique de Guinée
IUCN	International Union for Conservation of Nature
JBVP	Jurisdictional Baseline Validity Period
LC	Local Community
LOA	Loi d'orientation agricole
LPDA	Policy Letter for Agricultural Development
MEDD	Ministère de l'Environnement et du Développement Durable
MT	Metric Ton
N2O	Nitrous Oxide
NBSAP	National Biodiversity Strategy and Action Plan
NFAP	National Forestry Action Plan
NOAA	National Oceanic and Atmospheric Administration
NPRT	Non-Permanence Risk Tool
OGPR	Office Guinéen des Parcs et Réserves
PD	Project Design
PESE	Energy Sector Study Program
PIA	Project Activity Instance
PNDES	National Economic and Social Development Plan
REDD	Reducing Emissions from Deforestation and Forest Degradation
RWE	Restoring Wetland Ecosystems
SDAM	Mangrove Development Scheme
SDG	Sustainable Development Goal
SLR	Sea Level Rise
SOC	Soil Organic Carbon
SRE	Sherbro River Estuary
SRI	System of Rice Intensification
UGANC	Gamal Abdel Nasser University of Conakry
UGLC SC	The General Lansana Conté University of Sonfonia
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
VCS	Verified Carbon Standard
VSLAs	Village Savings and Loans Associations
WRC	Wetlands Restoration and Conservation

CONTENTS

1	PROJECT DETAILS	6
1.1	Summary Description of the Project.....	6
1.2	Audit History.....	6
1.3	Sectoral Scope and Project Type.....	7
1.4	Project Eligibility	7
1.5	Project Design	12
1.6	Project Proponent.....	15
1.7	Other Entities Involved in the Project	15
1.8	Ownership.....	16
1.9	Project Start Date	16
1.10	Project Crediting Period	16
1.11	Project Scale and Estimated GHG Emission Reductions or Removals	17
1.12	Description of the Project Activity	17
1.13	Project Location	21
1.14	Conditions Prior to Project Initiation	23
1.15	Compliance with Laws, Statutes and Other Regulatory Frameworks	31
1.16	Double Counting and Participation under Other GHG Programs	33
1.17	Double Claiming, Other Forms of Credit, and Scope 3 Emissions	34
1.18	Sustainable Development Contributions	34
1.19	Additional Information Relevant to the Project.....	35
2	SAFEGUARDS AND STAKEHOLDER ENGAGEMENT.....	35
2.1	Stakeholder Engagement and Consultation	35
2.2	Risks to Stakeholders and the Environment	43
2.3	Respect for Human Rights and Equity	44
2.4	Ecosystem Health.....	45
3	APPLICATION OF METHODOLOGY.....	46
3.1	Title and Reference of Methodology	46
3.2	Applicability of Methodology.....	48
3.3	Project Boundary.....	55
3.4	Baseline Scenario	58
3.5	Additionality	58

3.6	Methodology Deviations	60
4	QUANTIFICATION OF ESTIMATED GHG EMISSION REDUCTIONS AND REMOVALS	60
4.1	Baseline Emissions.....	60
4.2	Project Emissions	60
4.3	Leakage Emissions	60
4.4	Estimated GHG Emission Reductions and Carbon Dioxide Removals	60
5	MONITORING	60
5.1	Data and Parameters Available at Validation.....	60
5.2	Data and Parameters Monitored	61
5.3	Monitoring Plan.....	61

1 PROJECT DETAILS

1.1 Summary Description of the Project

West Africa Blue aims to develop a grouped, community-based, large-scale mangrove conservation (REDD+/CIW) and restoration (ARR/RWE) project in Guinea, sustainably financed through the sale of high-quality, certified carbon credits.

The project is based in Guinea, with its first instance situated in the Forécariah prefecture and the second instance in the Boffa prefecture. Additional areas will be included in subsequent instances.

GHG emission reductions are expected to be generated by avoiding unplanned deforestation. To do so, a panel of activities will be implemented in the first instance, potentially including: efficient cookstoves, System of Rice Intensification (SRI), solar salt and a high-level education campaign, awareness and sensibilization as part of Blue's commitment to Free, Prior and Informed Consent (FPIC).

The project is also expected to generate carbon dioxide removals, by restoring abandoned rice paddies into a fully functioning mangrove forest.

In the past 10 years prior to the implementation of the project, the mangroves of Guinea have undergone a deforestation rate of about 0.28%/year. This is equivalent to 4,350 ha deforested. Out of this number, 2,250 ha were deforested in Forécariah, which represents about 50% of the total deforestation of national mangroves. These trends are due to multiple drivers of deforestation, including salt extraction, rice cultivation, logging for commercial use and wood harvesting for domestic uses.

The large amounts of abandoned rice paddies due to salt intrusion is undoubtedly linked with the observed deforestation. These abandoned rice fields provide an opportunity for restoration initiatives.

For conservation, the project area of 22,600 ha is estimated to avoid an annual average emission reduction of 22,366 tCO₂e/year, and the total emission reductions during the 30 years crediting period are estimated to be of 670,983 tCO₂e. For restoration, the project area of almost 4,732 ha is expected to enhance the removals of 300,510 tCO₂e/year, thus 9,015,314 tCO₂e over the time of 30 years. This amounts to a total of 9,686,297 tCO₂e.

The project's community objectives are the enhancement of sustainable livelihoods within the nearby communities. The project's biodiversity objectives are the preservation of endemic and threatened species through the conservation of their habitat: mangrove forests.

The project is not located within an existing jurisdiction covered by a jurisdictional REDD+ program. Guinea is not listed as having REDD+ programs or initiatives.

1.2 Audit History

The project does not have an audit history. The first audit will be completed at the time of project validation and initial verification.

1.3 Sectoral Scope and Project Type

Sectoral scope	<i>14: Agriculture, forestry, and other land use</i>
AFOLU project category ¹	<i>Wetlands Restoration and Conservation (WRC)</i>
Project activity type	<i>Conservation of Intact Wetlands (CIW), more specifically Avoiding Unplanned Wetland Degradation (AUWD) + combination with REDD+ Restoring Wetland Ecosystems (RWE) combined with ARR.</i>

1.4 Project Eligibility

1.4.1 General eligibility

The project is eligible under the scope of the VCS Program, as described in the VCS Standard v4.6 due to the following aspects:

- Reduction of Kyoto Protocol greenhouse gases: carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O)
- Project activities supported by VCS methodologies: ARR+RWE and REDD+/WRC, covered under the VM0033 and VM0007 methodology.

The VCS Standard v4.7 has a set of requirements for AFOLU projects and specifically ARR+RWE and WRC activities, which are described in Appendix 1 of the Standard document. Table 1 and Table 2 below present these requirements and how the project will comply with them.

Table 1. Eligibility conditions for ARR activities (from Appendix 1 of the VCS Standard V4.7).

Eligibility condition	Compliance
<i>Eligible ARR activities are those that increase carbon sequestration and/or reduce GHG emissions by establishing, increasing, or restoring vegetative cover (forest or non-forest) through the planting, sowing or human-assisted natural regeneration of woody vegetation.</i>	<i>The project aims to restore degraded lands by planting mixed native mangrove species and facilitating natural revegetation. The direct outcomes of the project's activities will be the conversion of land cover from degraded forest to forest lands all while conserving the established forest. This nature-based solution will allow improved biomass production as well as soil carbon sequestration, providing real and measurable contributions to climate change mitigation.</i>
<i>Eligible ARR projects may include timber harvesting in their management plan.</i>	<i>The project does not include timber harvesting in its management plan.</i>

¹ See Appendix 1 of the VCS Standard

The project area shall not be cleared of native ecosystems within the 10-year period prior to the project start date.	The rice paddy areas in Forecariah that are included in the project were cleared from mangroves over 10 years ago. Future field work and community surveys will help identify more abandoned paddies that are suitable for restoration that meet this criterion,
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1.4.2 AFOLU project eligibility

Table 2. Eligibility conditions for WRC activities (from Appendix 1 of the VCS Standard V4.7)

Eligibility condition	Compliance
Eligible WRC activities are those that increase net GHG removals by restoring wetland ecosystems or that reduce GHG emissions by rewetting or avoiding the degradation of wetlands.	The project will increase net GHG removals thanks to the restoration of the mangrove ecosystem.
The project area shall meet an internationally accepted definition of wetland, such as from the IPCC, Ramsar Convention on Wetlands, those established by law or national policy, or those with broad agreement in the peer-reviewed scientific literature for specific countries or types of wetlands.	According to the Ramsar Convention (1971) "wetlands are areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six meters". According to IPCC (2000)² "wetlands are defined as areas of land that are inundated for at least part of the year, leading to physicochemical and biological conditions characteristic of shallowly flooded systems". Based on them both the project area is indeed a wetland.
Common wetland types include peatland, salt marsh, tidal freshwater marsh, mangroves, wet floodplain forests, prairie potholes and seagrass meadows. WRC activities may be combined with other AFOLU project categories.	The project area is mainly comprised of mangrove forests and restorable areas.

² R. T. Watson et al., "Land Use, Land-Use Change and Forestry: A Special Report of the Intergovernmental Panel on Climate Change.", *Land Use, Land-Use Change and Forestry: A Special Report of the Intergovernmental Panel on Climate Change.*, 2000, <https://www.cabdirect.org/cabdirect/abstract/20083294691>.

Activities that generate net reductions of GHG emissions from wetlands are eligible as WRC projects or combined category projects (such as REDD on peatland).	The project will increase net GHG removals by restoring the mangrove ecosystem, combined with conservation of existing mangrove forests.
Activities that actively lower the water table depth in wetlands are not eligible.	The project will not actively decrease the water table depth in the conservation area. This section will be completed in a later version of the PD for the restoration area.
Eligible WRC activities include Restoring Wetland Ecosystems (RWE): This category includes activities that reduce GHG emissions or increase carbon sequestration in a degraded wetland through restoration activities. Such activities include enhancing, creating and/or managing hydrological conditions, sediment supply, salinity characteristics, water quality and/or native plant communities. For the purpose of these requirements, restoration activities are those that resistant, resilient systems integrated within the landscape.	Prior to planting mangroves, the edaphic, salinity and soil conditions need to be assessed and modified for optimum mangrove growth. The Project activities will include enhancing and managing hydrological conditions through the opening of channels, sediment supply through topographical work, salinity characteristics through the re-connection to fresh water and sea, water quality through the improving of the water flow and native plant communities by the planting of a mixed combination of native species of mangroves.
Activities where drainage is continued or maintained are not eligible. This includes, for example, projects that require the maintenance of drainage channels to maintain the pre-project drainage level on a partially drained peatland (e.g., where periodic deepening may be needed to counteract peat subsidence).	Drainage is not part of the project activities for the conservation area. This section will be completed in a later version of the PD for the restoration area.
Projects that allow selective harvesting that results in a lowering of the water table depth (e.g., by extracting timber using drainage canals) or affects the ability of vegetation to act as a major hydrological regulation device (e.g., extracting trees which support the peat body) are also not eligible.	Selective harvesting is not part of the project activities.
Project activities may include selective harvesting where harvesting does not lower the water table, for example by extracting timber using wooden rails instead of drainage canals.	Selective harvesting is not part of the project activities.

Activities that generate net GHG emission reductions by combining other AFOLU project activities with wetlands restoration or conservation activities are eligible as WRC combined projects. RWE may be implemented without further conversion of land use, or it may be combined with ARR, ALM, IFM, REDD or ACoGS activities, referred to as ARR+RWE, ALM+RWE, IF M+RWE, REDD+RWE or ACoGS+RWE, respectively. CIW may be implemented on nonforest land or combined with IFM, REDD or ACoGS activities, referred to as IFM+CIW, REDD+CIW or ACoGS+CIW, respectively	The baseline scenario in this project is degraded wetland and forest with deforestation and degradation as the main land use. Project activities include restoration of wetlands (mangroves) and revegetation. There is no further conversion of land use. Therefore, this project is a WRC project combining ARR and RWE.
Combined category projects shall use the relevant WRC requirements and the respective AFOLU project category requirements for quantifying GHG emissions/ removals unless former may be deemed de minimis or conservatively excluded	See section 3.

Table 3: Eligibility conditions for REDD+ activities (from Appendix 1 of the VCS Standard V4.7)

Eligibility condition	Compliance
Eligible REDD activities are those that reduce net GHG emissions by reducing deforestation and/or degradation of forests. Deforestation is the direct, human-induced conversion of forest land to non-forest land. Degradation is the persistent reduction of canopy cover and/or carbon stocks in a forest due to human activities such as animal grazing, fuelwood extraction, timber removal or other such activities, but which does not result in the conversion of forest to non-forest land (which would be classified as deforestation), and qualifies as forests remaining as Appendix 1 Eligible AFOLU Project Categories forests, such as set out under the IPCC 2003 Good Practice Guidance. The project area shall meet an internationally accepted definition of forest, such as those based on UNFCCC host-country thresholds or FAO definitions and shall qualify as forest for a minimum of 10 years before the project start date. The definition of forest may include mature forests, secondary forests, and degraded forests. Under the VCS Program, secondary forests are considered to be forests that have been cleared and have recovered naturally and that are at least 10 years old and meet the lower bound of the forest threshold parameters at the start of the project.	According to the UNFCCC, a forest is defined as: An area of land spanning more than 0.05-1.0 hectares with tree crown cover (or equivalent stocking level) of more than 10-30% with trees having the potential to reach a minimum height of 2-5 meters at maturity in situ. The mangrove forests in the project area meet such requirements.

Forested wetlands, such as floodplain forests, peatland forests and mangrove forests, are also eligible provided they meet the forest definition requirements mentioned above.	
Activities covered under the REDD project category are those that are designed to stop planned (designated and sanctioned) deforestation or unplanned (unsanctioned) deforestation and/or degradation. Avoided planned degradation is classified as IFM.	Activities for this project are designed to stop unplanned deforestation and/or degradation.
Activities that stop unsanctioned deforestation and/or illegal degradation (such as removal of fuelwood or timber extracted by non-concessionaires) on lands that are legally sanctioned for timber production are eligible as REDD activities. However, activities that reduce or stop logging only, followed by protection, on forest lands legally designated or sanctioned for forestry activities are included within IFM. Projects that include both avoided unplanned deforestation and/or degradation as well as stopping sanctioned logging activities, shall follow the REDD guidelines for the unplanned deforestation and/or degradation and the IFM guidelines for the sanctioned logging activities, and shall follow the requirements set out in Section 3.6.2.	The activities do not stop logging and are not on the IFM scope. They stop unsanctioned deforestation and unplanned degradation.
Eligible REDD activities include: 1) Avoiding Planned Deforestation (APD): This category includes activities that reduce net GHG emissions by permanently stopping or reducing deforestation on forest lands that are legally authorized and documented for conversion. Planned deforestation encompasses activities where a forest system would have been cleared and replaced by a different forest system with a lower carbon stock and where the recovery of timber was not the primary objective of the initial forest clearance. 2) Avoiding Unplanned Deforestation and/or Degradation (AUDD): This category includes activities that reduce net GHG emissions by stopping deforestation and/or degradation of degraded to	The activities of this project fall under the scope of Avoiding Unplanned Deforestation and/or Degradation.

mature forests that would have occurred in any forest configuration.

1.4.3 Transfer project eligibility

This is not a transfer project.

1.5 Project Design

Indicate if the project has been designed as:

- ☐ Single location or installation
- ☐ Multiple locations or project activity instances (but not a grouped project)
- ☒ Grouped project

1.5.1 Grouped project design

This is a grouped project with the following eligibility criteria for the inclusion of new project activity instances:

	Eligibility condition	Compliance
Baseline scenario and additionality	Grouped projects shall specify one or more clearly defined geographic areas within which project activity instances may be developed. Such geographic areas shall be specified using geodetic polygons as set out in Section 3.11 below. Geographic areas with no initial project activity instances shall not be included in the project unless it can be demonstrated that the same (or at least as conservative) baseline scenario and rationale for the demonstration of additionality is applicable to such an area as a geographic area that does include initial project activity instances.	The grouped project area as well as the first instance are detailed in the "Project Location" section below. The future instances will soon be defined but the baseline scenario is the same in the entire grouped project area as well as the additionality demonstration (see below).
	Determination of baseline scenario and demonstration of additionality are based upon the initial project activity instances. The initial project activity instances are those that are included in the project description at validation and shall include all project activity instances currently implemented on the issue date of the project description. The initial project activity instances may also include any instances of the project activity that have been planned and developed to	At this stage, only the first instance will be included in the present PDD. However, the baseline scenario as well as the additionality demonstration are the same for the entire grouped project area as for the first instance.

	a sufficient level of detail to enable their assessment at validation	
	As with non-grouped projects, grouped projects may incorporate multiple project activities (see Section 3.6.1 – 3.6.3 for more information on multiple project activities). Where a grouped project includes multiple project activities, the project description shall designate which project activities may occur in each geographic area	Project activities are detailed in the “Description of the Project Activities” section below, as well as their geographic location.
	The baseline scenario for a project activity shall be determined for each designated geographic area, in accordance with the methodology applied to the project. Where a single baseline scenario cannot be determined for a project activity over the entirety of a geographic area, the geographic area shall be redefined or divided such that a single baseline scenario can be determined for the revised geographic area or areas	The grouped project area is considered one project area, with one same baseline scenario for the entire grouped project.
	The additionality of the initial project activity instances shall be demonstrated for each designated geographic area, in accordance with the methodology applied to the project. Where the additionality of the initial project activity instances within a particular geographic area cannot be demonstrated for the entirety of that geographic area, the geographic area shall be redefined or divided such that the additionality of the instances occurring in the revised geographic area or areas can be demonstrated	The grouped project area is considered one project area, with the same additionality demonstration for the entire grouped project.
	Where factors relevant to the determination of the baseline scenario or demonstration of additionality require assessment across a given area, the area shall be, at a minimum, the grouped project geographic area. Examples of such factors include, inter alia, common practice; laws, statutes, regulatory frameworks, or policies relevant to demonstration of regulatory surplus; determination of regional grid emission factors; and historical deforestation and degradation rates	The grouped project area is considered one single project area, with one baseline scenario and one additionality demonstration for the entire grouped project. More details on the baseline scenario and the additionality demonstration are provided in the relevant sections.
New project activity instance eligibility criteria	Grouped projects shall include one or more sets of eligibility criteria for the inclusion of new project activity instances. At least one set of eligibility criteria for the inclusion of new project activity instances shall be provided for each combination of project activity and geographic area specified in the project description. Where grouped projects include multiple baseline scenarios or	As the grouped project area is one single project area with the same additionality demonstration and baseline scenario, as well as the same activities, only one set of eligibility criteria is needed for all instances.

	demonstrations of additionality, such projects will require at least one set of eligibility criteria for each combination of baseline scenario and demonstration of additionality specified in the project description.	They are defined above in the relevant sections.
	New project activity instances shall: 1) Occur within one of the designated geographic areas specified in the project description. 2) Conform with at least one complete set of eligibility criteria for the inclusion of new project activity instances. Partial conformance with multiple sets of eligibility criteria is insufficient. 3) Be included in the monitoring report with sufficient technical, financial, geographic, and other relevant information to demonstrate conformance with the applicable set of eligibility criteria and enable evidence gathering by the validation/verification body. 4) Be included in an updated project description, with updated project location information (as set out in Section 3.11), which shall be validated at the time of verification against the applicable set of eligibility criteria. 5) Have evidence of project ownership, in respect of each project activity instance, held by the project proponent from the respective start date of each project activity instance (i.e., the date upon which the project activity instance began reducing or removing GHG emissions). 6) Have a start date that is the same as or later than the grouped project start date. 7) Be eligible for crediting from the start date of the project activity instance through to the end of the project crediting period (only). 8) Only eligible for crediting from the start of the verification period in which they were added to the grouped project. 9) Not be or have been enrolled in another VCS project. 10) Adhere to the clustering and capacity limit requirements for multiple project activity instances set out in 3.6.8 - 3.6.9.	1) Future project activity instances will be within the grouped project boundaries, as defined in the "Project location" section. 2) New instances will follow the set of eligibility criteria described above. 3) Future instances will be included in the monitoring report. 4) Future instances will be included in an updated project description document. 5) The project ownership will be the same for future instances as it is for the first instance. 6) The future instances will have a later start date than the start of the grouped project. 7) The future instances will only be eligible for crediting from the start date of the project activity instance through to the end of the project crediting period. 8) The future instances will only be eligible for crediting from the start of the verification period in which they were added to the grouped project. 9) Future instances will not/have not been enrolled in other VCS projects. 10) Yes.
	Where inclusion of a new project activity instance necessitates the addition of a new project proponent to the project, such instances shall be	No additional project proponents will be added to future instances. In the unlikely event that there will be

	included in the grouped project description within five years of the project activity instance start date, where the project activity is an AFOLU activity.	additional instance, it will be added within the 5-year time frame.
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1.6 Project Proponent

Organization name	West Africa Blue
Contact person	Alain Guy Tanefo Fopa
Title	Country Director
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1.7 Other Entities Involved in the Project

Organization name	Ministère de l'Environnement et du Développement Durable (MEDD)
Role in the project	Partner
Contact person	Dr. Karim Samoura
Title	Secrétaire Général du MEDD
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Telephone	+224 625 69 29 02
Email	samourakarim6@gmail.com / samourakarim@yahoo.fr

Organization name	Direction Nationale des Forêts et de la Faune (DNFF)
Role in the project	Partner
Contact person	Colonel Mohamed FOFANA
Title	Directeur National du DNFF
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Email	boutouraby841@gmail.com

1.8 Ownership

Mangroves in Guinea are classified as public property, specifically falling under the public maritime domain. This means they are owned by the state and cannot be privately owned or transferred. The primary challenges for obtaining ownership of mangroves include:

- **Inalienability:** The public maritime domain is inalienable, imprescriptible, and unseizable, meaning the state cannot cede ownership or allow private acquisition through occupation.
- **Legal Restrictions:** Existing laws, such as the Environmental Code and Maritime Code, explicitly state that mangroves are part of the public domain, preventing any form of private ownership or long-term leases.

To manage the project and legally secure ownership over the carbon credits generated by the project, several mechanisms can be utilized:

- **Concession convention:** according to the Environmental Code, the state of Guinea can conduct conventions with third parties that can contribute to the protection of the environment. Entities can obtain temporary occupation permits or concessions from the state, allowing them to manage or exploit mangrove areas without transferring ownership.
- **Regulatory Frameworks:** The government can create protected areas through decrees, allowing for sustainable management while preserving mangrove ecosystems.
- **Community Rights:** Local communities have customary rights for activities like fishing and agriculture. Thus, relevant agreements have to be made with them as well.

West Africa Blue is intended to generate agreements with both the relevant authorities and the rightful communities to secure the legal transfer of the carbon rights and therefore further demonstrate project ownership.

This section will be appropriately updated in the PD submitted for validation.

1.9 Project Start Date

Project start date	September 1, 2025
Justification	The listed start date marks the launch of project activity scaling following the completion of the FPIC process and project activity piloting, which took place between 2024 and mid-2025.

1.10 Project Crediting Period

Crediting period	☒ <i>Seven years, twice renewable</i> ☐ <i>Ten years, fixed</i> ☐ <i>Other (state the selected crediting period and justify how it conforms with the VCS Program requirements)</i>
Start and end date of first or fixed crediting period	<i>Section to be completed in the PD submitted for validation.</i>

1.11 Project Scale and Estimated GHG Emission Reductions or Removals

The estimated annual GHG emission reductions/removals of the project are:

- ☐ < 300,000 tCO₂e/year (project)
☒ ≥ 300,000 tCO₂e/year (large project)

1.12 Description of the Project Activity

For this project, the first step was defining the threats to stable mangroves by looking at the possible drivers of deforestation. Then for these threats, desired outcomes were defined. After that the necessary outputs were determined by working backwards from these outcomes to determine preconditions, meaning the different activities that could be implemented.

The next step was then to prioritize which activities to implement first, aligning with the CCB Priorization requirements. This was done using the following criteria: eligibility, leakage, permanence, no-regret, feasibility, impact, geographical scope, net positive impact, stakeholder appetite, support.

The resulting Theory of Change is the following:

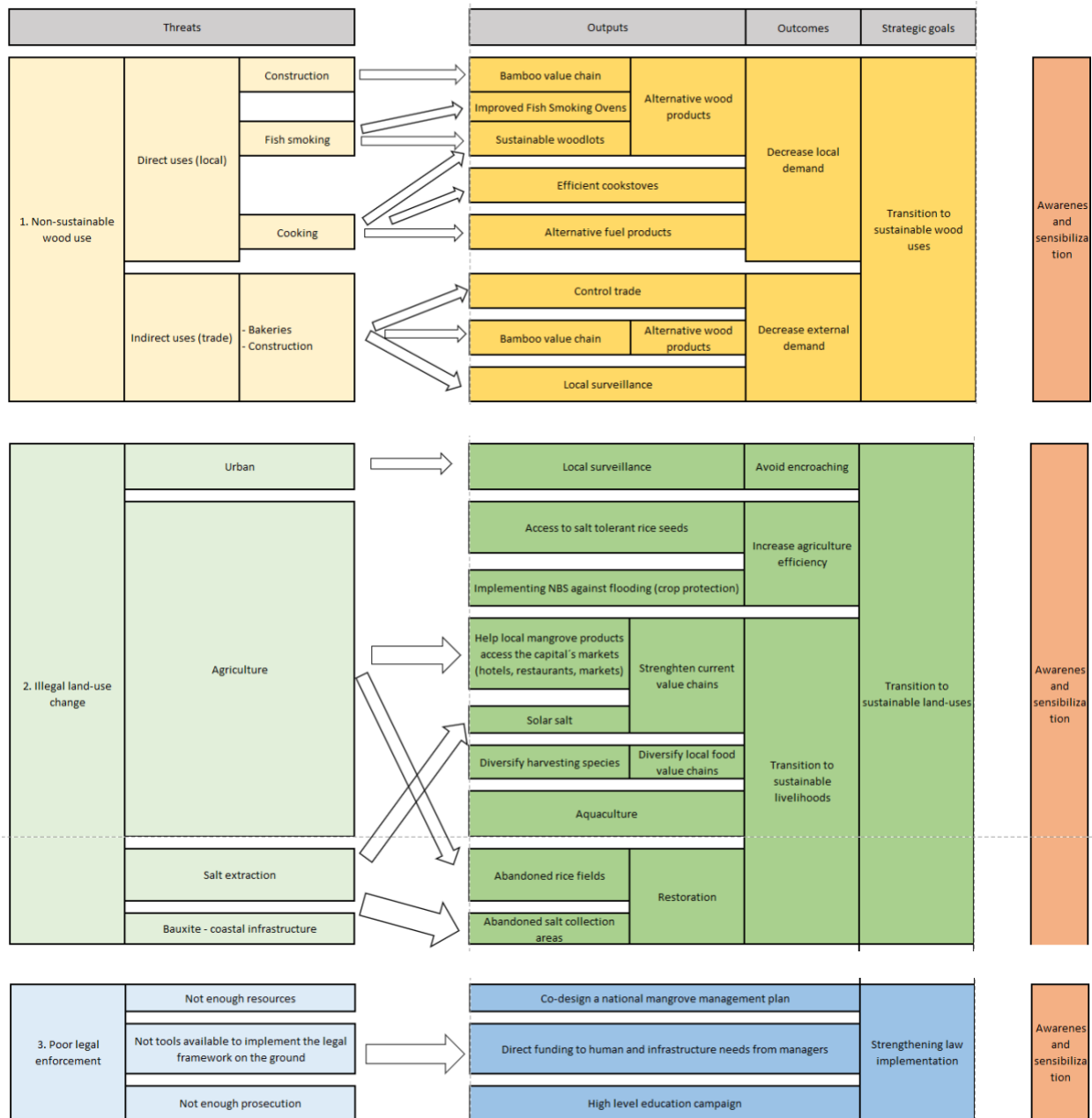


Figure 1: Theory of change.

The list of possible activities to implement in the project falls into four categories:

1) Transition to sustainable wood uses

This category includes the following potential activities: bamboo value chain, sustainable woodlots, efficient cookstoves, improved fish smoking ovens (IFSOs), alternative fuel products, and improved control of mangrove trade including local surveillance.

2) Transition to sustainable land uses

This category includes the following potential activities: local surveillance, salt tolerant rice crop, SRI, implementing NBS against flooding (crop protection), help local mangrove products access the capital's markets (hotels, restaurants, markets), solar salt, diversify harvesting species (mud crabs), aquaculture, restoration of abandoned rice fields, restoration of abandoned salt collecting areas.

3) Strengthening law implementation

This category includes the following activities: co-designing a national mangrove management plan, direct funding to human and infrastructure needs from managers, high level education campaign.

4) Transversal

This category includes awareness and sensibilization.

After the design of the prioritization process, the activities chosen to be implemented in the first instance are the following:

Efficient cookstoves:

Efficient cookstoves play a crucial role in fostering sustainable development for both communities and mangroves.

In many regions, traditional cooking methods often involve the use of open fires or inefficient stoves, contributing to deforestation, air pollution, and adverse health effects.

Transitioning to efficient cookstoves helps mitigate these challenges by enhancing energy efficiency and thus reducing the demand for wood and charcoal, consequently alleviating pressure on mangrove ecosystems that are often exploited for fuel.

These stoves also significantly decrease indoor air pollution, promoting better respiratory health among community members.

Sustainable woodlots:

Implementing sustainable woodlots can significantly contribute to mangrove conservation efforts.

By creating alternative and sustainable sources of wood and non-timber forest products through well-managed woodlots, the pressure on mangrove ecosystems for fuelwood and construction materials can be alleviated.

Economic trees, such as those yielding valuable timber or fruits, provide local communities with alternative income sources, reducing their reliance on mangrove resources for livelihoods.

Furthermore, cultivating health-food trees not only diversifies local diets but also encourages sustainable harvesting practices.

Establishing nurseries for these trees promotes reforestation initiatives and strengthens the overall resilience of coastal ecosystems.

Aquaculture:

Aquaculture stands out as an important income generating activities and food source in the region.

It is primarily centered around the harvest of oysters that thrive naturally in mangrove forests, thanks to their intricate root system.

However, the conventional method involves cutting down mangrove roots, which damages the trees and contributes to overall ecosystem degradation.

To mitigate deforestation related to this activity, several solutions can be considered:

Information campaigns can be launched to promote sustainable harvesting practices that do not harm the ecosystem.

Implementation of infrastructure near villages to grow oyster spats can discourage communities from venturing into mangrove forests for aquaculture needs, while safeguarding their economic interests.

System of Rice Intensification (SRI):

SRI is a set of practices aimed at enhancing rice paddies yields, thereby reducing their impact on environmental resources.

This method entails modifying conventional practices: transplanting fewer, younger seedlings with wider spacing; providing intermittent irrigation (no continuous flooding); increasing organic matter in preference to chemical fertilizers; or using a simple mechanical weeder to control weeds and aerate soil.

Implementing these practices can have a significant influence on land uses. As rice yields improve through SRI, the necessity to clear nearby mangrove forests for increased production diminishes, meeting community needs without resorting to deforestation.

Restoration

The main restoration activity to be implemented is the restoration of abandoned rice paddies into functioning mangrove forests. This includes both hydrological restoration as well as the plantation of native species to help the ecosystem regenerate. The process to be used for this activity is described in Figure 2.

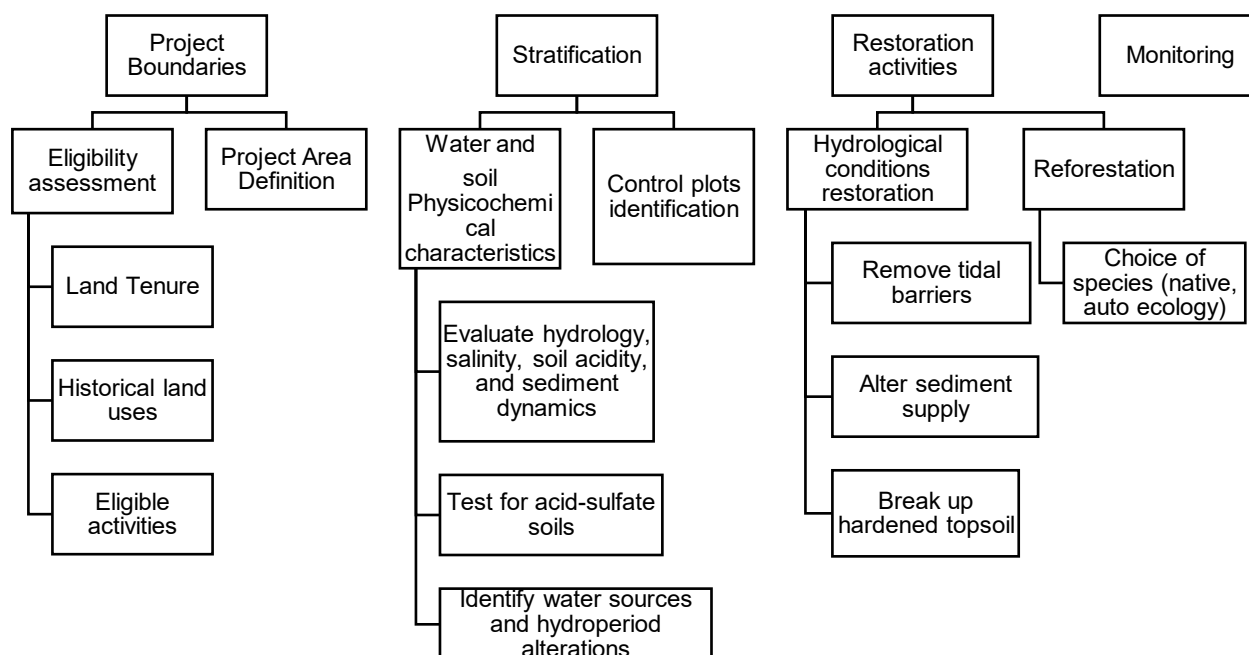


Figure 2: Restoration strategy to implement in deforested areas.

The steps to implement the restoration activities will be as follow:

- 1) Definition of the restoration boundaries

The area needs to be assessed to make sure the eligibility criteria are established.

- 2) Stratification

An analysis of the water and soil physicochemical characteristics needs to be undergone. Indeed, to define the restoration strategy, the baseline needs to be assessed, and the area understood. This will ensure the right activities are implemented, at the right place and the right time. This will include an evaluation of the hydrology, salinity, soil acidity and sediment dynamics, as well as a test of acid-sulfate soils and an identification of water sources and hydroperiod alterations.

- 3) Restoration activities

Based on this thorough assessment, hydrological activities will be implemented. These can range from the removal of tidal barriers, the alteration of sediment supply, or the breaking up of hardened soil.

After these hydrological activities have been implemented, then reforestation will occur. The choice of species to plant will be decided on site specific bases at a later stage.

1.13 Project Location

In Guinea, mangroves are estimated to cover about 182,000ha, representing 7% of mangroves in Africa and 5% of the area in Guinea. These mangrove areas can be divided into six management blocks, including: Tristao, Kamsar, Boffa, Dubreka, Coyah, and Forécariah (Figure 3).



Figure 3: The six mangrove blocks in Guinea within the scope of the grouped project.

The grouped project area includes all coastal Guinea. Initial Project activities in the first instance will focus on the Southern block of Forécariah (Figure 4) as the preliminary analysis has identified the greatest level of mangrove threat, with the goal of later expanding to include additional blocks.

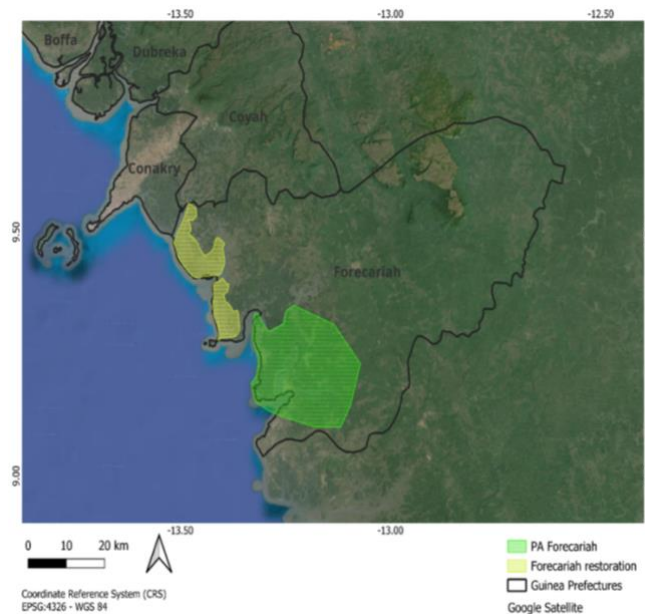


Figure 4: Conservation (in green) and restoration (in yellow) project areas in the first instance.

1.14 Conditions Prior to Project Initiation

Avoided mangrove deforestation activity

- **Ecosystem type:** Mangrove forests encompassing pristine mangrove areas and degraded/deforested mangrove areas along Guinea's coast over a coastal mud substrate.
- **Current and historical land-use:** The current and historical land use is mangrove forests with areas that have been degrading rapidly due to unsustainable overharvesting of mangrove wood.
- **Has the land been cleared of native ecosystems within 10 years of the project start date?**

☐ Yes

☒ No

Mangrove restoration activity

- **Ecosystem type:** Secondary/restored mangrove forests over coastal mud substrate.
- **Current and historical land-use:** The historical land-use was mangrove forest. The areas have been deforested for rice paddies and salt mining over 10 years ago and are currently abandoned due to coastal erosion, flooding, and saltwater intrusion. The current land use is muddy bare ground.
- **Has the land been cleared of native ecosystems within 10 years of the project start date?**

☐ Yes

☒ No

Analysis of satellite imagery shows that targeted restoration areas have been cleared of mangroves more than 10 years from the project start date.

Overview of mangrove sites and conditions in Guinea

Guinea's coastal area is 320 km long and is dotted with inlets, estuaries, and numerous offshore islands. Except in Cape Verga and Kaloum Island, mangroves are a common feature along other parts of the coastline of Guinea, where they extend 10 to 40 km inland in the estuaries of major rivers. Mangroves in Guinea can be divided into six management blocks, including: Tristao, Kamsar, Boffa, Dubreka, Coyah, and Forécariah (Figure 5).

Different sources have provided different coverage of mangroves in Guinea. According to the UN's Food and Agriculture Organization (FAO), the area of mangroves in Guinea is estimated at 250,000 ha (FAO, 2020). However, FAO cautions that this estimate is based on figures taken from several reports which do not necessarily contain detailed explanations of the data employed or the methods used to derive the results. In the current study, an extensive remote sensing biomass assessment of mangrove in Guinea was performed using remotely sensed data. The current field campaigns focused on ground truthing and validation of mangrove forest conditions, biomass, and sediment carbon in Guinea.



Figure 5: Distribution of mangroves in Guinea.

Climate

The climate of Guinea may be classified as tropical to subtropical with two distinct seasons. The rainy season runs from May - October followed by the dry season in November - April (Figure 6). Annual rainfall in Guinea ranges from 2000 - 4000 mm. Temperature remains uniformly high throughout the year ranging from 24°C to 27°C in the dry season, and 24°C to 25°C in the wet season. Temperatures are generally higher on the coast than inland. Relative humidity ranges from 65-80%, with evapo-transpiration estimated to be between 3-5 mm daily. Along the coast, the average relative humidity is about 82% during the wet season and 78% during the dry period. The relative humidity may occasionally

fall below 30% during the Harmattan (period when dry, heavily dust-laden winds from the Sahara Desert blow over the country between December and March).

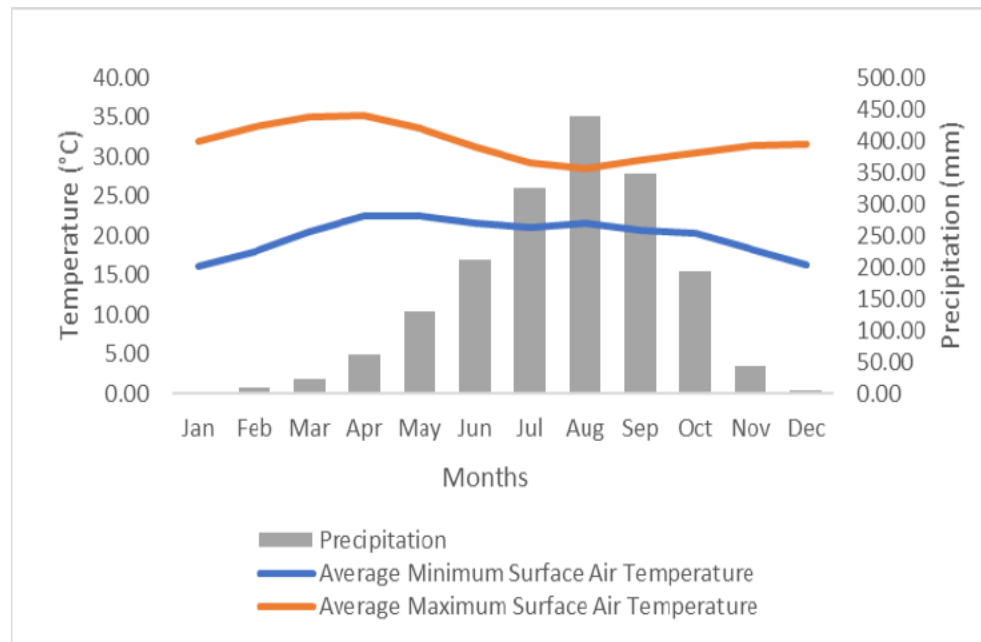


Figure 6: Climate diagram of Guinea (source: Guinea-Climatology | Climate Change Knowledge Portal worldbank.org)

Economic activities

The main sectors of Guinea's economy are agriculture, mining, hydropower resources, manufacturing, and services sectors. Agriculture, including fisheries and forestry employ close to 40.5% of the country's population and provide about 57% of the income to the rural population. Guinea is one of the leading exporters of bauxite, accounting for 95% of Africa's production and 24% of global bauxite production.³ It also has considerable reserves of iron ore, diamonds, gold, and uranium⁴. The primary sources of energy are biomass, hydropower, and oil, with biomass, especially charcoal, providing about 78% of the energy requirements to the population.

The National Economic and Social Development Plan (PNDES) of Guinea aims to respond to the various development challenges posed by the socio-economic and environmental situation in Guinea, while aligning with regional and global development agendas - the Sustainable Development Goals (SDGs), the Paris Agreement, Post 2020 Global Biodiversity Framework (GBF), and the African Union's Agenda 2063 among others. PNDES has set itself the overall objective of "promoting strong, quality growth to improve the well-being of Guineans and bring about a structural transformation of the economy, while putting the country on the path of sustainable development". Some of the targets of PNDES are:

³ "Bauxite Mining Market Analysis by Reserves, Production, Assets, Demand Drivers and Forecast to 2030," accessed October 16, 2024, <https://www.globaldata.com/store/report/bauxite-mining-market-analysis/>.

⁴ 75, "Guinea - Mining and Minerals," April 24, 2024, <https://www.trade.gov/country-commercial-guides/guinea-mining-and-minerals>.

- Reduce the incidence of poverty from 55.2% to at least 45.0%.
- Increase the country's forest cover from 25.9% to at least 28%, and
- Reduce the proportion of species plants and animals threatened from 5,4% to 5.0%.

Improved management of mangrove forests in Guinea through blue carbon projects would accelerate achievements of the goals and objectives of PNDES.

Mangrove Biodiversity in Guinea

There are seven true mangrove species in Guinea, including: *Acrostichum aureum*, *Avicennia germinans*, *Conocarpus erectus*, *Laguncularia racemosa*, *Rhizophora mangle*, *Rhizophora harrisonii* and *Rhizophora racemosa*. Like other mangrove areas around the world, mangroves in Guinea display horizontal zonation of species. *Avicennia* spp, *Laguncularia* spp, and *Conocarpus* spp often occupy the elevated zone inland of intertidal areas. *Rhizophora* spp, are common in deep substrate and are found in the mid zone and along the water edges. *Rhizophora racemosa* can reach 25 meters in height in Kakounsou and in the Bay of Sangaréya, but in other areas, the trees seldom exceed 8.0 m and are often much smaller. In the same zone, *Avicennia germinans* growing up to 15m and *Conocarpus erectus* can also be found. Thickets of *Acrostichum aureum* are common in degraded mangrove sites across Guinea. Associated mangrove flora in Guinea include the herbs *Sesuvium portulacastrum* (Aizoaceae), and *Phyloxerus vermicularis* (Amaranthaceae); and the grass *Paspalum vaginatum* (Poaceae).



Figure 7: A tall mangrove forest in Forécariah.



Figure 8: A scrub mangrove forest in Forécariah.

Together with the floral biodiversity, mangroves in Guinea provide habitats and feeding grounds for several migratory shorebird species, offshore fisheries, and important marine species. The common bird species include the African spoonbill (*Platalea alba*), common pratincole (*Glareola nuchaltis*), the near threatened curlew (*Numenius arquata*) and the vulnerable Rufus fishing owl (*Scotopelia ussheri*)^{5 6}.

Vertebrate faunae include the threatened West African manatee (*Trichechus senegalensis*), the Water Chevrotain (*Hyemoschus aquaticus*) and the common Bottlenose dolphin (*Tursiops truncatus*). The Konkouré and Tristao Ramsar sites are home to the vulnerable African dwarf crocodile (*Osteolaemus tetraspis*), the Nile crocodile (*Crocodylus niloticus*), and the African sharp-nosed crocodile (*Mecistops cataphractus*). Other reptile species include the common Senegal mabuya (*Trachylepis affinis*), the rare Nimba snake-eyed skink (*Panaspis tristaoi*), the half-toed gecko (*Hemidactylus albivertebralis*) and the African rock python (*Python sebae*).

Primates including the endangered Red Colobus monkey (*Procolobus badius*), the small green monkey (*Cercopithecus sabeus*) and the common patas monkey (*Erythrocebus patas*) can also be spotted in the mangroves of Guinea. Guinea's beaches are breeding grounds for leatherback (*Dermochelys coriacea*), loggerhead (*Caretta caretta*), green (*Chelonia mydas*), and olive ridley (*Lepidochelys olivacea*) sea turtles and the mangroves provide important nursery areas for juvenile sea turtles and fish. Fish species of commercial importance found in Guinea's mangroves include the Tilapia spp, the endangered Senegalese otolith (*Psuedotolithus senegalensis*), the near threatened Sea banana (*Albula vulpes*), the Mullet (*Mugil cephalus*), the Shrimps (*Palaemon hastatus*) and the crabs (*Portunus validus*)⁷.

⁵ "Important Bird Areas in Africa and Associated Islands. Priority Sites for Conservation. 2001. | Biodiversity and Conservation," accessed October 16, 2024, <https://link.springer.com/article/10.1023/a:1016864606424>.

⁶ "Guinea - BirdLife Country Profile," accessed October 16, 2024, <https://datazone.birdlife.org/country/guinea>.

⁷ Beth A. Polidoro et al., "The Status of Marine Biodiversity in the Eastern Central Atlantic (West and Central Africa)," *Aquatic Conservation: Marine and Freshwater Ecosystems* 27, no. 5 (October 2017): 1021–34, <https://doi.org/10.1002/aqc.2744>.

Threats and drivers of change

Mangrove forests in Guinea face several threats emanating from both anthropogenic as well as natural causes. The primary contributors to the decline and deterioration of these mangroves include habitat conversions for rice cultivation and salt production, excessive harvesting of wood products for energy and construction purposes, pollution, and the development of infrastructure. FAO has identified the conversion of mangroves to rice fields as the greatest threat with an estimated 13% of the national rice production in Guinea originating from converted mangrove areas. Rice farming provides livelihoods for over 50,000 farmers⁸.



Figure 9: Conversions of mangrove forests into rice paddies at Bel-air, Boke.

Harvesting of mangrove wood products in Guinea is being carried out without a management plan; and there is a mismatch between demand and supply. The harvested wood is used for smoking fish and building; or traded locally and in urban centres. The most targeted mangrove tree species are *Rhizophora mangle*, *R. racemosa*, *Avicennia germinans* and *Laguncularia racemosa*. The annual utilization of mangrove wood products in Guinea is estimated at 220,630 MT⁹, with fish smoking consuming nearly 30% of these (Table 4).

Table 4: Uses of mangrove wood products in Guinea.

Mangrove Use	Tons/year	Percentage (%)
Salt production	45,000	20.4
Fish smoking	78,000	35.4
Domestic Conakry	51,140	23.2

⁸ United Nations Environment Programme, *Mangroves of Western and Central Africa* (UNEP, 2016), <https://wedocs.unep.org/xmlui/handle/20.500.11822/7768>.

⁹ "Mangroves Afforestation and Restoration_Guinea Conakry.Pdf," accessed October 16, 2024, [https://www.wacaprogram.org/sites/waca/files/knowdoc/Mangroves%20Afforestation%20and%20Restoration_Guinea%20Conakry.p](https://www.wacaprogram.org/sites/waca/files/knowdoc/Mangroves%20Afforestation%20and%20Restoration_Guinea%20Conakry.pdf)df.

Domestic Rural	46,490	21.1
Total	220,630	100

Another sector impacting mangroves in Guinea is mining. The greatest threat from mining, however, occurs during the construction of roads, railways, and ports needed to export mining products. These activities involve clearance of forests to pave way for mining sites and living space for workers. Mining may also increase sedimentation into the mangrove areas that leads to death of the forest. Soil erosion and clearing of mangrove sites has been documented for the mangroves of Boke¹⁰ and observed in Boffa.

The greatest concern now for the mangroves of Guinea is the uncontrolled exploitation of the forests as the result of rapid human population growth. Guinea has among the highest and most rapidly growing population densities in West Africa¹¹. At least 23.3% of the population in Guinea resides within 100 km of the coastline¹². Urban expansion and intensifying demands for charcoal, fuel wood, and land are growing drivers of mangrove loss and degradation in Guinea. These factors are combined with climate related impacts such as rising sea levels, erosion from extreme weather, and increased storm surges.



Figure 10: Active use of mangrove trees for charcoal and fuel in Forécariah.

Current mangrove management in Guinea

¹⁰ "(PDF) Bauxite Mining in the Boké Region (Western Guinea): Method Used and Impacts on Physical Environment," ResearchGate, accessed October 16, 2024, <https://doi.org/10.29333/ejosdr/5735>.

¹¹ "World Population Prospects - Population Division - United Nations," accessed October 16, 2024, <https://population.un.org/wpp/>.

¹² Center For International Earth Science Information Network-CIESIN-Columbia University, "National Aggregates of Geospatial Data Collection: Population, Landscape, And Climate Estimates, Version 3 (PLACE III)" (Palisades, NY: NASA Socioeconomic Data and Applications Center (SEDAC), 2012), <https://doi.org/10.7927/H4F769GP>.

There are currently no formal regulations protecting mangroves in Guinea. The continuous marginalization of mangroves is owed to the difficulty of government to perceive direct economic benefits from these ecosystems; coupled with the relatively small size of mangrove forests compared to terrestrial forests in the country. Poverty and high population densities along Maritime Guinea have contributed greatly to the loss and degradation of mangroves through the over-exploitation of resources, conversion pressure, pollution, and climate change. There are strong local and national desires for restoration of degraded mangrove areas to further prevent environmental degradation in Guinea^{13 14}.

Multiple mangrove projects in Guinea have reported initial successes in mangrove restoration activities¹⁵. Each project has used similar models involving education and awareness, identification of income generating activities, and improving local level governance. Since 2019, Guinée Ecologie (BirdLife Partner in Guinea) has been involved in the restoration of mangroves in the country. At least 1,400 ha of degraded mangroves in the Tristao Islands' Ramsar sites were restored from 2019 to 2022¹⁶. Alternative income generating activities such as apiculture, tree nurseries, and fuel woodlot development were also introduced to ease pressure on the mangrove resource.

Between 2018 and 2023, the World Bank initiated a project to understand the nexus of mangroves and women in Guinea¹⁷. About 65 percent of the women interviewed believed that the number of people who are dependent on mangrove resources have increased. This project shed light on the vulnerability of women living in coastal areas and their heavy dependence on mangrove products.

Guinea has established 4 Ramsar Sites with mangroves, namely, Iles Tristao, Konkouré, Rio Kapatchez and Rio Pongo; with a combined area of 225,000 ha. These Ramsar sites support nesting of wintering birds, fish, and hippopotamuses.

The Abidjan Convention, in which Guinea is Party to, has developed the Calabar Protocol on Sustainable Mangrove Management in the region. According to the Protocol, Parties 'shall take measures that lead to the sustainable management and enable local bordering communities to make use of the mangrove resources from the standpoint of sustainability'. A blue carbon project for Guinea holds the potential to

¹³ Zebedee Njisu Feka, "Sustainable Management of Mangrove Forests in West Africa: A New Policy Perspective?," *Ocean & Coastal Management* 116 (November 1, 2015): 341–52, <https://doi.org/10.1016/j.ocecoaman.2015.08.006>.

¹⁴ Njisu Z. Feka and Gordon N. Ajonina, "Drivers Causing Decline of Mangrove in West-Central Africa: A Review," *International Journal of Biodiversity Science, Ecosystem Services & Management* 7, no. 3 (September 2011): 217–30, <https://doi.org/10.1080/21513732.2011.634436>.

¹⁵ Z. N. Feka and Isaac Morrison, "Managing Mangroves for Coastal Ecosystems Change: A Decade and beyond of Conservation Experiences and Lessons for and from West-Central Africa," *Journal of Ecology and the Natural Environment*, 2017, <https://www.semanticscholar.org/paper/Managing-mangroves-for-coastal-ecosystems-change%3A-A-Feka-Morrison/363599ebb9f79d4b42e6005bb884945951489fe9>.

¹⁶ "Restoring Vital Mangrove Ecosystems in Guinea," BirdLife International, October 19, 2023, <https://www.birdlife.org/news/2023/10/19/restoring-vital-mangrove-ecosystems-in-guinea/>.

¹⁷ "Technical Report: Understanding the Nexus of Mangroves and Women in Guinea-Conakry | WACA," accessed October 16, 2024, <https://www.wacaprogram.org/knowledge/technical-report-understanding-nexus-mangroves-and-women-guinea-conakry>.

yield significant climate, community, and biodiversity benefits, aligning directly with the objectives outlined in the Calabar Protocol ¹⁸.

1.15 Compliance with Laws, Statutes and Other Regulatory Frameworks

The carbon sequestration project through the protection of mangrove areas appears to be in line with the environmental policy of the Republic of Guinea and should be accepted and approved by the authorities within a legal framework to be defined and agreed upon. Additional laws and regulations relevant for the project are listed below.

International legal instruments ratified by Guinea

- Convention sur le commerce international des espèces de Faune et de Flore sauvages menaces d'extinction (CITES) ou Convention de Washington (3 mars 1973 à Washington)
- Convention cadre des Nations Unies sur la diversité Biologique (juin 1992 à Rio)
- Convention cadre des Nations Unies sur les Changements Climatiques (juin 1992 à Rio)
- Kyoto protocol (ratified by Guinea in September 2000 and applied in February 2005)
- Paris Agreements (12/12/2015)
- Convention de Ramsar (18/03/1993)

Land Governance Legal Framework

- Code on Private and State-owned Land (CFD — Code foncier et domanial) was adopted in 1992 to provide a framework for land issues in the country and reinstates access to individual property for natural and legal persons while maintaining the presumption of State ownership of vacant and ownerless land. This reform also set up land commissions at the level of each prefecture of Guinea.
- National land registry (Bureau de la Conservation Foncière) is where land rights must be registered. It is responsible for maintaining the land registry and processing formal land transactions.
- Rural Land Policy was adopted in 2001 to facilitate the recognition of local land rights. It envisions the decentralization of rural land management to local governments (collectivités locales) in the form of local-level land tenure and property rights administration institutions.
- Pastoral Land Code, local governments are responsible for pastureland management tasks.
- Recent land governance reforms:

¹⁸ Ibukun Jacob Adewumi, "UNEP Abidjan Convention Secretariat, Abidjan, Côte d'Ivoire," in *Encyclopedia of Sustainable Management*, ed. Samuel Idowu et al. (Cham: Springer International Publishing, 2020), 1–4, https://doi.org/10.1007/978-3-030-02006-4_1008-1.

- National Land Forum (EGF — États généraux sur le foncier),
- Agricultural Framework Bill (LOA — Loi d’orientation agricole),
- National Reference Framework (Référentiel national)
- To harmonize practices for the resettlement of communities affected by development projects.

Water Legal Framework

- Code Maritime regulates the maritime waters under the jurisdiction or sovereignty of the Republic of Guinea; vessels registered in the Republic of Guinea, their crews, and passengers on board, as well as to all individuals, regardless of their nationality, who, although not present on board, have committed an offense under the provisions of this law; the crews and passengers of foreign vessels, under the same conditions as in the previous paragraph; floating platforms located in waters under national jurisdiction.
- Code de la Pêche maritime regulating maritime fishing in the Republic of Guinea defines the rules applicable to fishing in the maritime zones under Guinean sovereignty or jurisdiction, as well as the rules applicable to Guinean fishing vessels operating beyond these zones.
- Code de l'Eau regulates water resources, defined as all continental waters in all phases of the water cycle. Rational management is defined as the set of measures to be taken to ensure their permanent quantitative and qualitative inventory, protection, enhancement, and optimal use, taking into account the social, economic, and cultural needs of the nation.

Forestry Legal Framework

- Guinea’s Forestry Code, 1999 (Loi L/99/013/AN portant Code Forestier), governs the country’s forests. The Code also establishes guides for the protection of the national forests and the management of its key resources. The Code recognizes the need to engage the rural population in a participatory management process for both classified and community forests, and the right for communities to manage forests through local forest associations. It devolves control of the forest to the country’s elected rural councils, supported by forestry service representatives. The Code recognizes the need for forest management plans (plans d’aménagement) to be prepared in collaboration with the local population and calls for the transformation of forest service agents from enforcers to advisors.
- The Wildlife Code (Loi L/99/038/AN), enacted in 1998, sets out the policy on the protection of wildlife and their habitats as well as the regulation of hunting of unprotected species.
- The Environmental Protection Law (Code de la Protection et de la Mise en Valeur de L’environnement, Ordonnances N°045/PRG/87 et N°022/PRG/89) seeks to combine protection of the environment with sustainable development of natural resources.

Biodiversity Legal Framework

- The MEDD oversees the implementation of the majority of conventions, protocols and agreements related to biodiversity which assists in identifying synergies in actions among responsible structures.
- The National Directorate for Biological Diversity and Protected Areas belongs to the MEDD.
- The Centre for Observation and Environmental Monitoring (COSE) have been established for implement a formal monitoring system for protected areas does not yet exist although indicators and the however the lack of material and financial resources to operate the structure remains a limiting factor.
- The adoption of legislation (e.g. Forest Code, Wildlife Protection Code) and sectoral policies focused on environment issues are contributing to the expansion of a national framework for CBD implementation. Further, because of the implementation of the National Environment Action Plan (1994), sectoral strategies and plans for natural resource management (e.g. National Forestry Action Plan (NFAP), Mangrove Development Scheme (SDAM), Energy Sector Study Program (PESE), Policy Letter for Agricultural Development (LPDA) have been produced.
- First Guinea's National Biodiversity Strategy and Action Plan (NBSAP)
 - Adopted in 2001 - period (2001-2016) - 4 main objectives: conservation of biological diversity; sustainable use of biological diversity; general measures for the conservation and sustainable use of biodiversity; international cooperation.
 - 68 projects have been developed: terrestrial ecosystems (33 projects), inland water ecosystems (10 projects), coastal and marine ecosystems (7 projects), valuation of biological diversity (13 projects), institutional and legal framework (5 projects).
- NBSAP 2011-2020 & Aichi Targets currently awaits Government adoption.
 - NBSAP: 9 national priorities: stakeholder involvement and commitment; capacity-building (systemic and institutional); inventorying and valuation of traditional knowledge; reducing or halting pressures on biodiversity; protecting representative ecosystems; valuation of the benefits derived from biodiversity and ecosystem services; participatory planning for traditional knowledge management and capacity-building; coordination; and resource mobilization.
 - Guinea has adopted 18 of the 20 Aichi Biodiversity Targets as national targets. For the first five-year period (2016-2020), activities, indicators, main implementation actors, supporting actors, follow-up actors and timeframes have been established for each national target.

1.16 Double Counting and Participation under Other GHG Programs

1.16.1 No Double Issuance

No activity implemented as part of the project, including the improved cookstoves and IFSO activities, will be registered under the VCS or any other GHG program.

☐ Yes ☒ No

1.16.2 Registration in Other GHG Programs

The project has not been registered nor is seeking registration under any other GHG program.

☐ Yes ☒ No

1.16.3 Projects Rejected by Other GHG Programs

The project has not been rejected by any other GHG program.

☐ Yes ☒ No

1.17 Double Claiming, Other Forms of Credit, and Scope 3 Emissions

1.17.1 No Double Claiming with Emissions Trading Programs or Binding Emission Limits

Project reductions and removals and project activities are not included in an emissions trading program or binding emission limit.

☐ Yes ☒ No

1.17.2 No Double Claiming with Other Forms of Environmental Credit

The project activity has not sought, received, nor is planning to receive credit from another GHG-related environmental credit system.

☐ Yes ☒ No

1.17.3 Supply Chain (Scope 3) Emissions

This section is not applicable as the project does not involve supply chain (Scope 3) emissions.

1.18 Sustainable Development Contributions

The proposed project will contribute directly to achieving the following five SDG's of the United Nation's Agenda 2030.

SDG 5: Gender equality

The monitoring and restoration activities will employ and count on the participation of men and women from the community in equal measure. The benefits of the project will also benefit men and women equally.

SDG 8: Decent work and economic growth

Project activities will be community based and employ people during all the years of the project. Activities promoted in the Theory of Change such as aquaculture, SRI or eco-tourism allow the local inhabitants to maintain their traditional livelihoods, but to make them more sustainable.

SDG 13: Climate action

Mangroves sequester and store more carbon per unit area than any terrestrial forests (3 to 5 times more than tropical forests) and are now being recognized for their role in adaptation to climate change.

SDG 14: Life below water

Mangrove forests provide many ecosystem services. They are considered biodiversity hotspots and act as a habitat and nursery for many species. They also play a crucial role in the protection of coastal areas against natural disasters such as floods, hurricanes, or soil erosion. Mangroves also act as commercial fish nursery areas, supporting local economies. By protecting the mangrove habitat, all the associated species will also be protected, increasing the equilibrium between species.

SDG 15: Life on earth

Mangroves are notable avifauna reserves and are host to a wide range of fauna and flora that are specific to the ecosystem.

1.19 Additional Information Relevant to the Project

1.19.1 Leakage Management

Section to be completed in the PD submitted for validation.

1.19.2 Commercially Sensitive Information

No commercially sensitive information has been excluded from this document.

1.19.3 Further Information

No further information needs to be provided at this time.

2 SAFEGUARDS AND STAKEHOLDER ENGAGEMENT

2.1 Stakeholder Engagement and Consultation

2.1.1 Stakeholder Identification

Stakeholder Identification

To effectively engage stakeholders in the project development, it was agreed to adhere to best practices such as the CCB guidelines and the FPIC Principles established by the FAO (Free, Prior, and Informed Consent). A relevant matrix has been utilized to assess the level of influence that all stakeholders have on both the degradation, or threats faced and the project itself, as well as the impact of these factors on each stakeholder group. For local stakeholders, it is crucial to identify specific elements including next steps, what needs to change, how changes will be implemented, cost implications, and incentives for participation. This approach not only ensures the involvement and commitment of stakeholders but also guides strategic decisions regarding priorities, milestones, and overall project orientation. By following these structured methodologies, the project fosters inclusive participation, enhance stakeholder relationships, and ultimately lead to more sustainable outcomes.

The following stakeholder groups have been identified:

- National Government: Ministry of Environment and Sustainable Development (MEDD), Direction Nationale des Forêts et de la Faune (DNFF), Centre National de Surveillance et d'Observation Environnementale (CNSOE), Office Guinéen des Parcs et Réserves (OGPR), Agence Guinéenne d'Évaluation Environnementale (AGEE) - Mouloukou Souleymane SIDIBE (DG), Ministry of Agriculture and Livestock, Ministry of Fisheries, Aquaculture and Maritime Economy, Ministry of Mines and Energy/ Ministère des Mines et de la Géologie, Ministère de l'Administration du Territoire et de la Décentralisation/ Ministry of Territorial Administration and Decentralization of Guinea, Ministry of Construction and Public Land Management, The National Agency for the Financing of Communities (ANAFIC), Ministry of Social Action and Promotion of Women and Children Guinea/ Ministère de l'Action Sociale de la Promotion Féminine et de l'Enfance, République de Guinée,
- Regional Government : ANAFIC – Agence Nationale de Financement des Collectivités Locales, Centre national de gestion des catastrophes et des urgences environnementales, Conseil préfectoral des organisations de la société civile, Confédération nationale des organisations paysannes de Guinée.
- NGOs: RENASCEDD, Guinée Ecologie, Carbone Guinée, Guinean Association for Awareness of Sustainable Development (AGEDD), Biotope, Le Gret, Wild Chimpanzee Foundation, Fauna & Flora International (FFI), GERES, Guinean Association for Awareness of Sustainable Development (AGEDD).

	• <u>Population associations/representatives</u>: Women Centers, Youth centers, Fishermen, Livestock owners, Farmers, Loggers / Wood harvesters, Hunters, Landowners, Religious leaders / Religious institutions, Ecotourism operators. • <u>Education and Research Institutions</u>: Gamal Abdel Nasser University of Conakry (UGANC), Herbier National De Guinée, Center for Environmental Studies and Research (CÉRE), The Faculty of Environmental and Agronomic Sciences, The General Lansana Conté University of Sonfonia (UGLC SC), Institut de Recherche Agronomique de Guinée (IRAG). • <u>Other</u>: Unassociated fishers, Unassociated farmers, and other local community members, The Curatorial Corps & The National Navy, Association- Conseil pour les Actions de Développement (ACAD), Sylvatrop Consulting, Fondation Di-Singhe pour les Communautés
Legal or customary tenure/access rights	Article 17 of the Forestry Code states that “the products derived from natural forests, reforestation, and enrichment through forest plantations, included in the lands acquired under the provisions of the Land and Property Code, belong to their owners.” However, according to Article 33 of the Maritime Code, “the shoreline of the sea and a coastal strip of one hundred meters from the high-water mark are incorporated into the maritime public domain,” indicating that mangrove forests and lands currently belong to the State of Guinea. Furthermore, Article 34 emphasizes that “the maritime public domain is inalienable, imprescriptible, and unseizable,” which means it is impossible to acquire ownership rights over mangrove areas. Despite this, local communities possess customary rights to engage in agricultural activities, fishing, salt production, wood cutting for fuel, or other necessary activities. The challenges for ownership stem from these legal restrictions that prevent private acquisition. Solutions include obtaining temporary occupation permits or concessions from the state and recognizing community rights for sustainable use of resources.
Stakeholder diversity and changes over time	Section to be completed in the PD submitted for validation.
Expected changes in well-being	Section to be completed in the PD submitted for validation.
Location of stakeholders	Section to be completed in the PD submitted for validation.

Location of resources	<i>Section to be completed in the PD submitted for validation.</i>
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2.1.2 Stakeholder Consultation and Ongoing Communication

Date of stakeholder consultation	<i>14-July-2022</i>
Stakeholder engagement process	<i>The stakeholder engagement process began with careful planning, including the establishment of terms of reference and a communication plan. The mission team contacted the Secretary General of the Wonkifong Rural Commune to invite district representatives to a meeting scheduled for July 14, 2022.</i> <i>The focus was on two sub-prefectures, Wonkifong and Benty, for mangrove conservation efforts.</i> <i>Subsequently, the team met with local authorities in Wonkifong, where the Secretary General welcomed participants and emphasized the project's significance. The meeting aimed to inform stakeholders about the project's scope, which encompasses various sectors such as fishing, agriculture, and women's income-generating activities.</i>
Consultation outcome	<i>During the consultations, stakeholders discussed critical issues affecting mangrove areas, such as poverty-driven deforestation and external pressures from urban populations. Participants raised questions regarding the motivations behind mangrove woodcutting, highlighting economic challenges faced by local communities. The local authorities expressed their commitment to support the initiative and engage their communities effectively.</i> <i>The discussions led to a consensus on the importance of collaboration among all stakeholders to ensure project success. The Mayor and district representatives committed to disseminating information about the project to their communities.</i>
Stakeholder input	<i>Stakeholders provided valuable insights during the consultations. Notably, there were calls for increased representation of women in project activities and a need for community involvement in decision-making processes. Participants emphasized that effective communication and continuous awareness-raising are essential for fostering community support.</i> <i>Key recommendations included establishing written commitments from beneficiaries to ensure accountability and participation in project activities. Stakeholders also suggested forming management committees for better resource allocation and project oversight.</i> <i>In summary, the document highlights a structured approach to stakeholder engagement that facilitated meaningful dialogue and collective ownership of mangrove conservation initiatives in Wonkifong.</i>

Date of stakeholder consultation	16-July-2022
Stakeholder engagement process	<i>The stakeholder engagement process began with the planning of an action plan, terms of reference, and communication strategies for the mission focused on the mangrove conservation in Benty. Initial contacts were made with local authorities, including the Mayor of Benty, to invite district representatives to a meeting on July 16, 2022. The mission involved representatives from the West Africa Blue project and local government officials, who facilitated discussions about the project's objectives and the importance of mangrove conservation.</i>
Consultation outcome	<i>During the consultation held in Benty, local authorities and community members expressed their support for the project. The Prefect welcomed the mission and emphasized the need for collaboration in conserving mangroves. Participants discussed challenges such as illegal logging and poverty, which drive local communities to exploit mangrove resources. The Mayor committed to disseminating information about the project and its benefits to local communities, highlighting opportunities for green activities and sustainable practices.</i>
Stakeholder input	<i>Stakeholder input included various perspectives on the conservation efforts. Community leaders urged cooperation among landowners to facilitate project implementation. Concerns were raised about illegal logging activities and the need for community awareness regarding the ecological significance of mangroves. Participants also discussed innovative ideas for sustainable development and expressed a collective commitment to protecting mangrove ecosystems for future generations. The mission concluded with recommendations for further engagement and written commitments from beneficiaries.</i>

Date of stakeholder consultation	January 18 th to 20 th , 2024
Stakeholder engagement process	<i>The stakeholder engagement process for the socio-economic pre-survey in Benty, Guinea, involved a structured approach to gather data on community participation and needs regarding mangrove conservation. The West Africa Blue project initiated this mission from January 18 to 20, 2024, targeting various community members across districts including Benty Centre and Morikaniah. The methodology included administering questionnaires to 58 respondents and conducting focus group discussions to capture diverse perspectives on conservation activities, local governance, and socio-economic conditions.</i>
Consultation outcome	<i>The consultation revealed a strong awareness of conservation initiatives among community members. Participants expressed a mix of satisfaction and dissatisfaction with existing programs, rating their experiences variably from 0 to 10. While some appreciated initiatives like the Programme d'Appui aux Communautés Villageoises, others noted</i>

	<i>shortcomings in infrastructure development. The community identified critical needs for improved involvement in program implementation, transparency, and tailored initiatives that respect local contexts.</i>
Stakeholder input	<i>Stakeholder input highlighted several key areas for improvement. Community members emphasized the need for enhanced engagement in conservation efforts and greater transparency in project management. Specific requests included agricultural training, better infrastructure such as schools and health facilities, and support for income-generating activities. Additionally, there was a consensus on the importance of protecting mangroves and promoting sustainable livelihoods as vital to alleviating pressure on local resources. Overall, the community demonstrated a willingness to participate actively in initiatives aimed at addressing these challenges.</i>

Date of stakeholder consultation	<i>February 29th to March 2nd, 2024</i>
Stakeholder engagement process	<i>The stakeholder engagement process in Kakossa, Guinea, involved a socio-economic and demographic data collection mission conducted from February 29 to March 2, 2024. The primary objectives were to identify local community participation in conservation activities, assess the effectiveness of Village Savings and Credit Associations (VSLAs), analyze community needs, and gather information on agricultural practices and wood harvesting dynamics. A questionnaire was administered to 50 respondents from various social strata, including youth, women, and local authorities, using face-to-face interviews in both Sousou and French languages.</i>
Consultation outcome	<i>The consultation revealed significant challenges faced by the community, particularly regarding mangrove conservation and agricultural practices. The presence of mangrove conservation NGOs was minimal, leading to a lack of awareness about the benefits of mangroves in protecting rice fields from saltwater intrusion. While some respondents expressed satisfaction with NGO initiatives, there were also feelings of disappointment when commitments were not fulfilled. The community highlighted the urgent need for infrastructure improvements, including dike construction to mitigate flooding and saltwater damage to rice fields. Additionally, the consultation identified VSLAs as crucial for providing financial support and improving living conditions through investments in agriculture and small businesses.</i>
Stakeholder input	<i>Stakeholders provided valuable input on their primary needs and concerns. Key inputs included:</i> <i>- Improvement of Living Conditions: Community members emphasized the need for better agricultural tools, chemicals, infrastructure rehabilitation (like bridges and dikes), and health facilities.</i>

- *Agricultural Support: There was a strong demand for agricultural machinery, financial assistance for farming activities, and technical support to enhance yields affected by rising saltwater levels.*
- *Mangrove Protection: Stakeholders requested support for reforestation efforts and sustainable livelihood programs to reduce reliance on mangrove wood cutting.*
- *Community Engagement: Recommendations included enhancing transparency in project implementation and fostering greater community involvement in conservation initiatives*

Overall, the engagement process underscored the interconnection between environmental sustainability and community livelihoods, highlighting the need for coordinated efforts to address these challenges effectively.



Figure 11. Focus group discussion in Benty in 2024.



Figure 12. Discussion in Wonkifong in 2022.

Ongoing Communication

Project activities will be regularly monitored and evaluated in line with the project's monitoring plans and standard operating procedures for each activity. The information gathered from these monitoring and evaluation efforts, along with ongoing consultations with stakeholders, will inform future actions and decision-making, supporting the adaptive management of the project and its interventions.

Section to be updated in the PD submitted for validation.

2.1.3 Free Prior and Informed Consent

Description of process for obtaining consent

The process for obtaining consent to implement project activities involves several key steps to ensure that the rights and interests of Indigenous Peoples (IPs), local communities (LCs), and customary rights holders are respected.

Stakeholder Identification: The first step is identifying all relevant stakeholders, including IPs, LCs, and customary rights holders. This ensures that all voices are heard in the decision-making process.

Information Sharing: Comprehensive information about the project activities, potential impacts, and benefits will be shared with stakeholders in a culturally appropriate manner. This may include meetings, workshops, and distribution of written materials in local languages to ensure understanding.

Consultative Meetings: Regular consultative meetings will be held to discuss project details, gather feedback, and address concerns. These meetings will be designed to facilitate open dialogue and ensure that stakeholders can express their views freely.

Documentation of Consent: Once a transparent agreement is reached, written documentation of consent will be obtained from all concerned parties. This documentation will outline the terms of the agreement, and any conditions agreed upon by the stakeholders.

Outcome of FPIC process

The outcome of the Free, Prior, and Informed Consent (FPIC) process is a transparent agreement that reflects the consensus reached among IPs, LCs, and customary rights holders regarding the project activities.

Transparent Agreement: The agreement will detail the rights of all parties involved, including any commitments made by the project implementers to address stakeholder concerns. It will also outline how information was disclosed prior to reaching this agreement.

Information Disclosure: Prior to establishing a transparent agreement, stakeholders will be provided with detailed information about:

- *The scope and purpose of the project*
- *Potential environmental and social impacts*
- *Benefits expected from the project.*
- *Mechanisms for grievance redress*

The project will not encroach on land or relocate people without their consent. There will be no forced physical or economic displacement.

Appropriate restitution or compensation has been allocated for any parties whose lands have been or will be affected by the project. This compensation will be fair, just, and aligned with local customs and laws.

Section to be completed and updated in the PD submitted for validation.

2.1.4 Grievance Redress Procedure

A grievance mechanism will be established to address concerns related to the project in the Project Zone and Leakage Belt. This mechanism will align with international best practices and will include steps to identify potential risks, concerns, and conflicts associated with the project. An appropriate grievance mechanism will be drafted to respond to grievances and integrate feedback during the project's design and implementation phases. A grievance register will be maintained to document all complaints and resolutions. The system will enable Indigenous Peoples and local communities to express their concerns, complaints, or grievances effectively. Additionally, a feedback mechanism will be developed to enhance internal protocols for Free, Prior, and Informed Consent (FPIC) as the project progresses.

Section to be completed and updated in the PD submitted for validation.

2.1.5 Public Comments

Section to be completed in the PD submitted for validation.

2.2 Risks to Stakeholders and the Environment

2.2.1 Management Experience

West Africa Blue was co-founded by Solon Capital Partners (Solon) to develop large-scale, community-focused carbon offset projects to finance mangrove conservation and restoration throughout West Africa. A first project is located in the Sherbro River Estuary (SRE) and covers more than 60,000 hectares of mangroves, or more than 50% of the mangrove area in Sierra Leone (according to a USAID study). West Africa Blue is a Mauritius-domiciled company, with wholly owned project companies established in each country of operation. The project company in Sierra Leone is called Africa Conservation Initiative (ACI) and its sister company for the Guinea operation is being established under the banner West Africa Blue (Guinea). Solon is a leading investor focused on West Africa and headquartered in Sierra Leone. Since 2011, Solon and its non-profit organization, the Solon Foundation, have partnered with SRE communities to implement development initiatives in education, health, conservation, and small-scale mangrove restoration.

West Africa Blue currently has offices located in Freetown, Sierra Leone and Conakry, Guinea. Team members are involved full-time in fundraising, scientific studies, project management, community engagement, outreach and education. The company and its affiliates have more than 10 years of experience operating for-profit and non-profit organizations in West Africa, in partnership with SRE communities and in collaboration with the Government of Sierra Leone. The skill set within West Africa Blue covers finance, project management, international development, impact investing, environmental science, carbon offset projects, community development, law, technology, and many other areas. Blue is currently recruiting at all levels, but with a focus on scientific expertise relevant to carbon project development.

In addition, local partners are being identified to support community engagement, rural development, and project activity implementation. Institutions and organizations with such skills include:

- The Faculty of Environmental and Agronomic Sciences at the University of Nzérékoré;
- The General Lansana Conté University of Sonfonia;
- The Curatorial Corps;
- The Guinean Environmental Assessment Agency;
- The Ministry of Fishing and the Blue Economy;
- The Ministry of Agriculture and Livestock;
- The Ministry of Women's Promotion, Childhood and Vulnerable Persons;
- The Ministry of Territorial Administration and Decentralization;
- The National Agency for the Financing of Communities (ANAFIC);
- The National Navy;
- Non-Governmental Organizations (i.e. RENASCEDD and Guinea Ecologie).

2.2.2 Risk Assessment

Section to be completed in the PD submitted for validation.

2.3 Respect for Human Rights and Equity

2.3.1 Labor and Work

Section to be completed in the PD submitted for validation.

2.3.2 Human Rights

Section to be completed in the PD submitted for validation.

2.3.3 Indigenous Peoples and Cultural Heritage

Section to be completed in the PD submitted for validation.

2.3.4 Property Rights

Section to be completed in the PD submitted for validation.

2.3.5 Benefit Sharing

Process used to design the benefit sharing plan	Section to be completed in the PD submitted for validation.
Summary of the benefit sharing plan	Section to be completed in the PD submitted for validation.
Approval and dissemination of benefit sharing plan	Section to be completed in the PD submitted for validation.

2.4 Ecosystem Health

Section to be completed in the PD submitted for validation.

2.4.1 Rare, Threatened, and Endangered Species

Section to be completed in the PD submitted for validation.

2.4.2 Introduction of Species

Species introduced	Classification	Justification for use	Adverse effects and mitigation
<i>Avicennia germinans</i>	Native	Section to be completed in a later version of the PD.	Section to be completed in a later version of the PD.

<i>Laguncularia racemosa</i>	Native	Section to be completed in a later version of the PD.	Section to be completed in a later version of the PD.
<i>Rhizophora harrisonii</i>	Native	Section to be completed in a later version of the PD.	Section to be completed in a later version of the PD.
<i>Rhizophora mangle</i>	Native	Section to be completed in a later version of the PD.	Section to be completed in a later version of the PD.
<i>Rhizophora racemosa</i>	Native	Section to be completed in a later version of the PD.	Section to be completed in a later version of the PD.

Existing invasive species	Mitigation measures to prevent the spread or continued existence of invasive species
<i>Andropogon gayanus</i>	This species of grass was identified in the project area during a biodiversity assessment that was conducted in November 2023. It is not expected that the project activities will affect the spread of this species. The plantation and nurseries will be closely monitored and in case this grass is spotted immediate action will be taken to remove it and stop its spread.

Section to be updated and completed in the PD submitted for validation.

2.4.3 Ecosystem Conversion

Section to be completed in the PD submitted for validation.

3 APPLICATION OF METHODOLOGY

3.1 Title and Reference of Methodology

Type (methodology, tool, module)	Reference ID (if applicable)	Title	Version
Methodology	VM0007	VM0007 REDD+ Methodology Framework (REDD+MF)	1.7
Tool	VT0007	JNR Risk Mapping Tool	0.1

Module	VMD0055	VMD0055 – Estimation of Emission Reductions from Avoiding Unplanned Deforestation	1.0
Module	VMD0051	VMD0051-Methods-for-Monitoring-Carbon-Stock-Changes-in-Tidal-Wetland-Restoration-and-Conservation-Activities-M-TW	V1.1.1
Module	VMD0015	VMD0015-Methods-for-Monitoring-Greenhouse-Gas-Emissions-and-Removals-M-REDD	V2.3
Module	VMD0007	Estimation of baseline carbon stock changes and greenhouse gas emissions from unplanned deforestation and unplanned wetland degradation (BL-UP)	V3.3
Module	VMD0050	Estimation of Baseline Carbon Stock Changes and Greenhouse Gas Emissions in Tidal Wetland Restoration and Conservation Project Activities (BL-TW)	V1.0
Methodology	VM0033	VM0033 Methodology for Tidal Wetland and Seagrass Restoration	2.1
Module	ADD-AM/VMD0052	VMD0052 Demonstration of additionality of tidal wetland restoration and conservation project activities	V2.0
Tool	X-STR	VMD0016 Methods for stratification of the project area	V1.3
Tool	VMD0019	Methods to Project Future Conditions	V1.0
Tool	NPRT	AFOLU Non-Permanence Risk Tool	v4.2
CDM Module		CDM AR Tool for testing significance of GHG emissions in A/R CDM project activities	V1
CDM Module		CDM AR Tool 2 Combined tool to identify the baseline scenario and demonstrate additionality for A/R CDM project activities	V01

CDM Module		CDM AR Tool 3 for Calculation of the number of sample plots for measurements within A/R CDM project activities	V2.1
CDM Module		CDM AR Tool 14 Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities	V4.2
CDM Module		CDM AR Tool 12 Estimation of carbon stocks and change in carbon stocks in dead wood and litter in A/R CDM project activities	V3.1

3.2 Applicability of Methodology

Table 5: All REDD+ Activity types applicability.

Reference ID/Title	Applicability condition	Justification of conformance
VM0007	Land in the project area has qualified as forest (following the definition used by VCS; in addition, see Section 5.1.2) for at least the 10 years prior to the project start date. Mangrove forests are excluded from any tree height requirement in a forest definition, as they consist of (close to) 100% mangrove species, which often do not reach the same height as other tree species and occupy contiguous areas and their functioning as a forest is independent of tree height.	The forests in the project area are mangrove forests and are thus excluded from any tree height requirements.
	If land within the project area is peatland or tidal wetlands and emissions from the SOC pool are deemed significant, the relevant WRC modules (see Table 3) must be applied alongside other relevant modules.	The relevant WRC modules to account for the SOC pool have been applied.
	Baseline deforestation and forest degradation in the project	The baseline deforestation and degradation in the project area fall under the category

	area fall within one or more of the following categories: Unplanned deforestation (VCS category AUDD) Planned deforestation/degradation (VCS category APD) Degradation through extraction of wood for fuel (fuelwood and charcoal production) (VCS category AUDD)	“Unplanned deforestation (VCS category AUDD)”
	Leakage avoidance activities must not include: Agricultural lands that are flooded to increase production (e.g., rice paddy) Intensifying livestock production through use of feed-lots and/or manure lagoons	Leakage avoidance activities will not include agricultural lands that are flooded to increase production (e.g., rice paddy) or intensifying livestock production through use of feed-lots and/or manure lagoons.

Table 6: Applicability conditions for avoiding unplanned deforestation.

Reference ID/Title	Applicability condition	Justification of conformance
VM0007	Baseline agents of deforestation must: (i) clear the land for tree harvesting, settlements, crop production (agriculturalist) or ranching or aquaculture, where such clearing for crop production or ranching or aquaculture does not amount to large scale industrial agriculture or aquaculture activities (ii) have no documented and uncontested legal right to deforest the land for these purposes; and (iii) be either residents in the reference region for deforestation (cf. Section 5.1.2 in VM0007) or immigrants. Under any other condition this methodology must not be used.	In the first instance, baseline agents of deforestation have: - Cleared the land for tree harvesting (domestic and logging), rice and salt production. - Have no documented and uncontested legal right to deforest the land for these purposes

...	<i>If, in the baseline scenario of avoiding unplanned deforestation project activities, post deforestation land use constitutes reforestation, this methodology may not be used</i>	<i>Post deforestation land uses do not include reforestation (see Land Use scenarios)</i>
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Table 7: Applicability conditions for ARR

Reference ID/Title	Applicability condition	Justification of conformance
VM0007	<i>ARR activities are applicable under the following conditions:</i> <i>The project area is non-forest land or land with degraded forest.</i> <i>In strata with drained organic soil, ARR activities must be combined with rewetting.</i>	<i>The ARR project area is made of former rice paddies, which are non-forest lands. Restoration activities in abandoned rice paddy areas will only occur in areas that are no longer productive due to erosion and saltwater intrusion.</i>
...	<i>ARR activities are not eligible under the following conditions:</i> <i>- The project scenario involves the application of nitrogen fertilizers.</i> <i>- If ARR activities enhance peat oxidation. Therefore, on peatland, the project must include at least some degree of rewetting. In a tidal system where the tidal regime is restored or continues to be in place, ARR activities are considered not to enhance peat oxidation.</i>	<i>The project scenario does not involve the application of nitrogen fertilizers.</i> <i>The ARR activities do not take place on peatland.</i>

Table 8: Applicability conditions for WRC activities.

Reference ID/Title	Applicability condition	Justification of conformance
VM0007	<i>WRC activities are not eligible under the following conditions:</i>	<i>Project activities will not lower the water table. This would happen only if the</i>

	- Project activities lower the water table, unless the project converts open water to tidal wetlands, or improves the hydrological connection to impounded waters. - Changes in hydrology do not result in the accumulation or maintenance of SOC stock, noting that a) this pertains to projects that intend to sequester carbon through sedimentation and/or vegetation development and b) this does not pertain to projects that increase salinity to reduce CH₄ emissions. Projects that aim to decrease CH₄ emissions through increased salinity must account for any changes in SOC stocks. - Hydrological connectivity of the project area with adjacent areas leads to a significant increase in GHG emissions outside the project area. - Project activities include the burning of organic soil. - Nitrogen fertilizer(s), such as chemical fertilizer or manure, are applied in the project area during the project crediting period.	hydrological connectivity of former rice paddies needs to be improved. The changes in hydrology that could happen will not result in accumulation of SOC by themselves. The hydrological restoration will be designed so that zones outside the project area are not affected. Project activities do not include the burning of soil. Nitrogen fertilizers will not be used.
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Table 9: Applicability conditions for RWE activities.

Reference ID/Title	Applicability condition	Justification of conformance
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Example: VM0007	For RWE project activities, prior to the project start date, the project area must meet the following conditions: a) The area is free of any land use that could be displaced outside the project area, as demonstrated by at least one of the following, where relevant: • The project area has been abandoned for two or more years prior to the project start date; or • Use of the project area for commercial purposes (i.e., trade) is not profitable because of salinity intrusion, market forces, or other factors. In addition, timber harvesting in the baseline scenario within the project area does not occur; or • Degradation of additional wetlands for new agricultural/aquacultural sites within the country will not occur or is prohibited by enforced law. OR b) The area is under a land use that could be displaced outside the project area, although in such case, baseline emissions from this land use must not be accounted for, and where degradation of additional wetlands for new agricultural/aquacultural sites within the country will not occur or is prohibited by enforced law. OR	Section to be completed in the PD submitted for validation.
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	c) The area is under a land use that will continue at a similar or greater level of service or production during the project crediting period (e.g., reed or hay harvesting, collection of fuelwood, subsistence harvesting, commercial fishing). The project proponent must demonstrate (a), (b) or (c) above, based on verifiable information such as laws and bylaws, management plans, annual reports, annual accounts, market studies, government studies or land use planning reports and documents.	
...	Tidal Wetland Restoration Project activities restoring tidal wetlands may include any of the following, or combinations of the following: • Creating, restoring and/or managing hydrological conditions (e.g., removing tidal barriers, improving hydrological connectivity, restoring tidal flow to wetlands or lowering water levels on impounded wetlands) • Altering sediment supply (e.g., beneficial use of dredge material or diverting river sediments to sediment-starved areas) • Changing salinity characteristics (e.g., restoring tidal flow to tidally-restricted areas) • Improving water quality (e.g., reducing nutrient loads leading to improved water clarity)	The restoration project activities include: - Restoration of hydrological conditions of abandoned rice paddies. - Re-introducing native plant communities. Restoration activities in abandoned rice paddy areas will only occur in areas that are no longer productive due to erosion and saltwater intrusion. This section will be completed in the PD submitted for validation.

	to expand seagrass meadows, recovering tidal and other hydrologic flushing and exchange or reducing nutrient residence time) • (Re-)introducing native plant communities (e.g., reseeded or replanting) • Improving management practice(s) (e.g., removing invasive species, reduced grazing) • In RWE-ARR project activities, the prescribed burning of herbaceous and shrub aboveground biomass (cover burns) may occur	
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Table 10: Applicability conditions for CIW project activities.

Reference ID/Title	Applicability condition	Justification of conformance
VM0007	Project activities conserving tidal wetlands may include: • Protecting at-risk wetlands (e.g., establishing conservation easements, establishing community supported management agreements, establishing protective government regulations, and preventing disruption of water and/ or sediment supply to wetland areas)	Project conservation activities include: - Protecting at-risk mangrove forest This section will be completed in the PD submitted for validation.

	- Improving water management on drained wetlands - Maintaining or improving water quality for seagrass meadows - Recharging sediment to avoid drowning of coastal wetlands - Creating accommodation space for wetlands migrating with sea-level rise	
...	Avoiding Unplanned Wetland Degradation (AUWD) Avoiding unplanned wetland degradation activities are eligible under the following condition: Baseline agents of wetland degradation (i) cause an alteration in the hydrology of the project area (involving drainage, interrupted sediment supply, or both) and/or a loss of soil organic carbon; (ii) have no documented and uncontested legal right to degrade the wetland; and (iii) are either residents in the reference region for wetland degradation or immigrants. Under any other condition, this methodology must not be used.	Section to be completed in the PD submitted for validation.

3.3 Project Boundary

Source	Gas	Included?	Justification/explanation
Baseline Above-ground	CO2	Yes	Aboveground biomass in the baseline scenario is considered only in the tree-covered stratum and it is not

Source		Gas	Included?	Justification/explanation
	tree biomass			<i>expected to change due to the rare natural revegetation and the maturity of the stratum.</i>
	Above-ground non-tree biomass	CO ₂	No	<i>Non-tree aboveground biomass is not included in the ER calculations for the baseline</i>
	Below-ground biomass	CO ₂	Yes	<i>Belowground biomass in the baseline scenario is considered in the tree-covered strata, and it is not expected to change.</i>
	Dead wood and litter	CO ₂	Yes	<i>Deadwood and litter in the baseline scenario are considered and are not expected to change.</i>
	Soil organic carbon (SOC)	CO ₂	Yes	<i>SOC in the baseline scenario is considered and it is not expected to change.</i>
	Burning of woody biomass	CO ₂	No	<i>No Biomass burning is anticipated to take place in the baseline scenario.</i>
		CH ₄	No	<i>Burning of woody biomass for the purpose of site preparation, or as part of forest management, is allowed under this methodology. The project does not include the burning of biomass for soil preparation</i>
		N ₂ O	No	<i>Burning of woody biomass for the purpose of site preparation, or as part of forest management, is allowed under this methodology. The project does not include the burning of biomass for soil preparation</i>
	Above-ground tree biomass	CO ₂	Yes	<i>Aboveground biomass in the project scenario is considered and it is expected to increase.</i>
Project	Above-ground non-tree biomass	CO ₂	No	<i>Aboveground non-tree biomass is not included in the emission reduction calculations.</i>

Source		Gas	Included?	Justification/explanation
	Below-ground biomass	CO ₂	Yes	<i>Belowground biomass in the project scenario is considered and expected to increase.</i>
	Dead wood and litter	CO ₂	Yes	<i>Deadwood and litter in the project scenario are considered and are expected to increase.</i>
	Soil organic carbon (SOC)	CO ₂	Yes	<i>SOC in the project scenario is and is expected to increase.</i>
	Burning of woody biomass	CO ₂	No	<i>No Biomass burning is anticipated to take place in the project scenario.</i>
		CH ₄	No	<i>Burning of woody biomass for the purpose of site preparation, or as part of forest management, is allowed under this methodology. The project does not include the burning of biomass for soil preparation</i>
		N ₂ O	No	<i>Burning of woody biomass for the purpose of site preparation, or as part of forest management, is allowed under this methodology. The project does not include the burning of biomass for soil preparation</i>

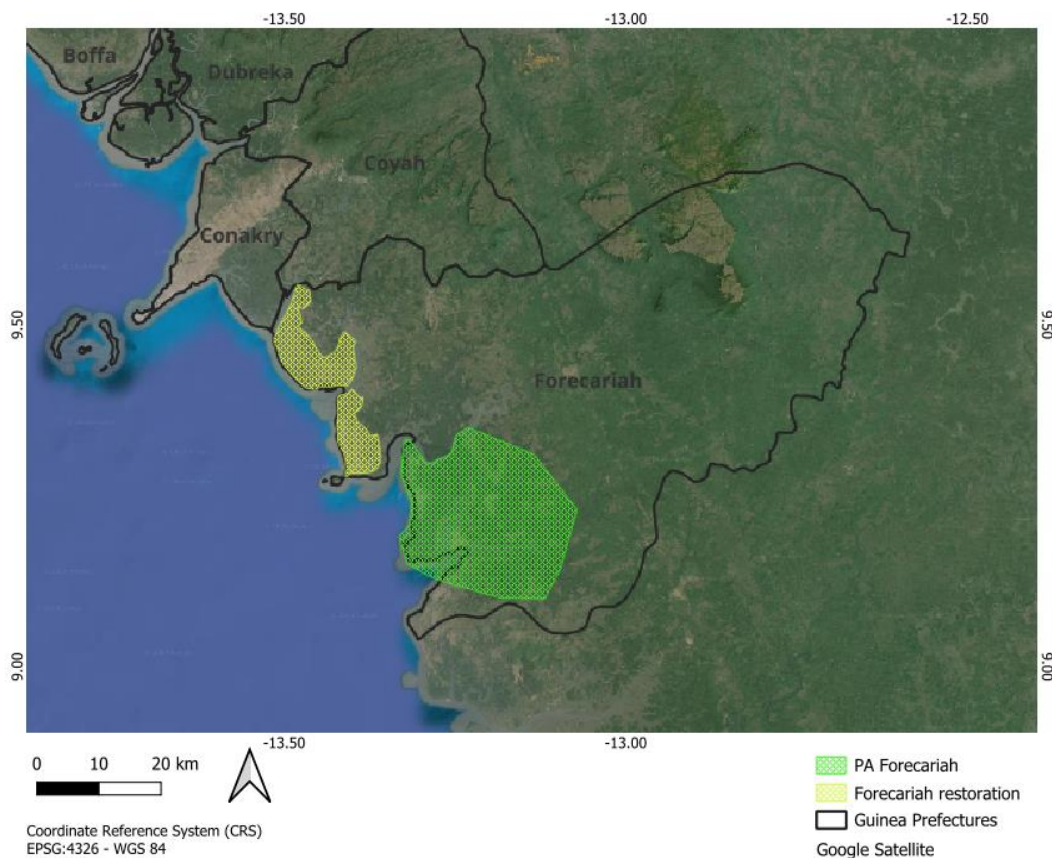


Figure 13: Project boundaries of the first instance showing restoration areas (in yellow) and conservation area (in green).

The Jurisdictional boundary examined in this project is the sum of all coastal prefectures of Guinea, which is a total of stable mangroves of 193,684 ha.

Conservation polygons containing stable mangroves located in the coast of Guinea have been identified in Forécariah with a 1st Project Activity Instance (PIA) total surface area of 22,593 ha.

Restoration project areas under consideration in Forécariah represent a total of 4,732 ha.

3.4 Baseline Scenario

Section to be completed in the PD submitted for validation.

3.5 Additionality

VM0033 and VM0007 methodologies uses an activity method for the demonstration of additionality of tidal wetlands conservation and restoration project activities. For such project activities, VCS recommends module VMD0052 Demonstration of Additionality of Tidal Wetland Restoration and Conservation Project Activities.

According to the module, a project is considered additional if:

- The project demonstrates a regulatory surplus. Regulatory surplus means that project activities shall not be mandated by any law, statute, or other regulatory framework, or for UNFCCC non-Annex I countries, any systematically enforced law, statute, or other regulatory framework.
- The project meets all the applicability conditions of this module which represent the positive list.

3.5.1 Regulatory Surplus

Is the project located in an UNFCCC Annex 1 or Non-Annex 1 country?

- ☐ Annex 1 country ☒ Non-Annex 1 country

Are the project activities mandated by any law, statute, or other regulatory framework?

- ☐ Yes ☒ No

If the project is located inside a Non-Annex 1 country and the project activities are mandated by a law, statute, or other regulatory framework, are such laws, statutes, or regulatory frameworks systematically enforced?

- ☒ N/A

There are no legislations crafted for mangrove forests particularly, although mangrove's importance for climate, biodiversity and society is recognized by state actors and policy frameworks are being designed both at national and regional levels for this habitat.

The Ministry of Environment, Water and Forestry is in charge of:

- The Master Plan for the Development of Mangroves.
- The realization of consultations with communities at mangrove areas affected by a high rate of deforestation;
- Proposing solutions for mangrove degradation such as updating the aforementioned master plan, increasing protected areas etc.

However, Guinea has not yet established formally protected areas in its coastal zone, and mangrove areas are only partially included in the existing protected areas. Issues hindering the effectiveness of protected areas include:

- Lack of capacity from governmental institutions, limited training, lack of enforcement, lack of resources.
- Laws governing protected areas are often ambiguous. For example, the Ministry of Environment is legally responsible for managing classified forests, yet in practice the préfet is also allowed to grant extraction rights to individuals, although not for mangrove extraction.
- Protected areas are poorly defined; they include classified forests, national parks, etc. but not everyone agrees with this definition.

For this project, some areas fall within a Ramsar Site (i.e. Konkouré). However, activities negatively impacting the mangroves are still conducted (wood-cutting, clearing for subsistence rice cultivation, pollution from the bauxite factory at Fria) and in the past, the area has only relied on funded projects to enhance its sustainability.

The proposed project activities are not specifically mandated by any regulatory framework and the more generalist conservation frameworks are not currently being enforced in the coastal areas, which demonstrates the regulatory surplus of the project activities.

3.5.2 Additionality Methods

The methodology applies an activity method for the demonstration of additionality. All project activities described above meet VMD0052 applicability conditions and thus are included in the positive list.

Therefore, and as per the information available today, the project is considered additional.

3.6 Methodology Deviations

Section to be completed in the PD submitted for validation.

4 QUANTIFICATION OF ESTIMATED GHG EMISSION REDUCTIONS AND REMOVALS

4.1 Baseline Emissions

Section to be completed in the PD submitted for validation.

4.2 Project Emissions

Section to be completed in the PD submitted for validation.

4.3 Leakage Emissions

Section to be completed in the PD submitted for validation.

4.4 Estimated GHG Emission Reductions and Carbon Dioxide Removals

Section to be completed in the PD submitted for validation.

5 MONITORING

5.1 Data and Parameters Available at Validation

Section to be completed in the PD submitted for validation.

5.2 Data and Parameters Monitored

Section to be completed in the PD submitted for validation.

5.3 Monitoring Plan

Section to be completed in the PD submitted for validation.