

Concept Note

Enhancing the Resilience of Guinea's Coastal Rural Communities to Coastal Erosion Due to Climate Change

Guinea | UNDP

16 May 2019



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Concept Note

Project / Programme Title:	Enhancing the Resilience of Guinea's Coastal Rural Communities to Coastal Erosion Due to Climate Change
Country(ies):	Guinea
National Designated Authority(ies) (NDA):	National Directorate of the Environment (NDE)
Accredited Entity(ies) (AE):	United Nations Development Programme
Date of first submission/ version number:	<u>2019-05-14 [V.1]</u>
Date of current submission/ version number	<u>2019-05-14 [V.1]</u>



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Notes

- The maximum number of pages should **not exceed 12 pages**, excluding annexes. Proposals exceeding the prescribed length will not be assessed within the indicative service standard time of 30 days.
- As per the Information Disclosure Policy, the concept note, and additional documents provided to the Secretariat can be disclosed unless marked by the Accredited Entity(ies) (or NDAs) as confidential.
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A. Project/Programme Summary (max. 1 page)			
A.1. Project or programme	<input checked="" type="checkbox"/> Project <input type="checkbox"/> Programme	A.2. Public or private sector	<input checked="" type="checkbox"/> Public sector <input type="checkbox"/> Private sector
A.3. Is the CN submitted in response to an RFP?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, specify the RFP: _____	A.4. Confidentiality¹	<input type="checkbox"/> Confidential <input checked="" type="checkbox"/> Not confidential
A.5. Indicate the result areas for the project/programme	<p>Mitigation: Reduced emissions from:</p> <input type="checkbox"/> Energy access and power generation <input type="checkbox"/> Low emission transport <input type="checkbox"/> Buildings, cities and industries and appliances <input checked="" type="checkbox"/> Forestry and land use <p>Adaptation: Increased resilience of:</p> <input checked="" type="checkbox"/> Most vulnerable people and communities <input checked="" type="checkbox"/> Health and well-being, and food and water security <input checked="" type="checkbox"/> Infrastructure and built environment <input checked="" type="checkbox"/> Ecosystem and ecosystem services		
A.6. Estimated mitigation impact (tCO₂eq over lifespan)	Not applicable	A.7. Estimated adaptation impact (number of direct beneficiaries and % of population)	Up to 292,500 (approx. 2.2% of Guinea population)
A.8. Indicative total project cost (GCF + co-finance)	Amount: USD 72.6 million	A.9. Indicative GCF funding requested	Amount: USD 25.5 million
A.10. Mark the type of financial instrument requested for the GCF funding	<input checked="" type="checkbox"/> Grant <input type="checkbox"/> Reimbursable grant <input type="checkbox"/> Guarantees <input type="checkbox"/> Equity <input type="checkbox"/> Subordinated loan <input type="checkbox"/> Senior Loan <input type="checkbox"/> Other: specify _____		
A.11. Estimated duration of project/ programme:	a) disbursement period: 7 years	A.12. Estimated project/ Programme lifespan	20 years
A.13. Is funding from the Project Preparation Facility requested?²	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Other support received <input type="checkbox"/> If so, by who: _____	A.14. ESS category³	<input type="checkbox"/> A or I-1 <input checked="" type="checkbox"/> B or I-2 <input type="checkbox"/> C or I-3
A.15. Is the CN aligned with your accreditation standard?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	A.16. Has the CN been shared with the NDA?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
A.17. AMA signed (if submitted by AE)	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If no, specify the status of AMA negotiations and expected date of signing: _____	A.18. Is the CN included in the Entity Work Programme?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
A.19. Project/Programme rationale, objectives and approach of programme/project (max 100 words)	<p>Climate change, manifested in sea level rise and lower precipitations, will contribute to increasing erosion of Guinea's coastal zone. This will have severe consequences, including loss of agricultural area and productivity, salinization of freshwater sources and other socioeconomic, health and environmental effects. The project's paradigm-shifting solution will include: (i) the design and implementation of an integrated coastal zone management plan; (ii) a tailored combination of ecosystem-based adaptation and, to a lesser extent, infrastructure to protect the coast; and (iii) the promotion of climate-resilient livelihoods among rural communities. The project is expected to generate significant co-finance from the government, development finance institutions and the private sector (mining industry in particular).</p>		

¹ Concept notes (or sections of) not marked as confidential may be published in accordance with the Information Disclosure Policy ([Decision B.12/35](#)) and the Review of the Initial Proposal Approval Process ([Decision B.17/18](#)).

² See [here](#) for access to project preparation support request template and guidelines.

³ Refer to the Fund's environmental and social safeguards ([Decision B.07/02](#)).

B. Project/Programme Information (max. 8 pages)

B.1. Context and baseline (max. 2 pages)

Context

The coastal zone of Guinea belongs to the Lower Guinea region, one of four eco-climatic regions of the country. Guinea has a tropical climate with a rainy season lasting 5-7 months (April to October) and a dry season for the rest of the year. The coast is approximately 300km long and its primary ecosystem is mangrove forests, which extend up to 49km inland in the proximity of large river estuaries. See Annex 1 for project maps.

Lower Guinea, excluding the capital city and greater region, is home to 20.4% of the Guinean population, or over 2 million people.⁴ Of these, 47% live in the coastal zone.⁵ Subsistence agriculture is the predominant economic activity on the coastal region. The poverty rate in rural areas in the country as a whole exceeds 65%, according to World Bank's estimates⁶. Women represent a high percentage of Guinea's population (51.1%).⁷

The most important agricultural sector is rice farming on the coastal plains adjacent to mangrove forests. Mangrove rice is a flood-fed crop requiring two flooding cycles, one with freshwater and one with saltwater. The latter is necessary to eliminate weeds, regulate soil pH and deposit organic matter and nutrients. Freshwater is necessary for soil desalination prior to cultivation and maintenance of the water table throughout the cycle. In ideal conditions, mangrove rice farming produces higher yields than other rice farming techniques in the interior. It is, however, highly sensitive to weather and climate change effects. The double-flooding cycle needs to be carefully balanced. If the soil becomes excessively saline because of saltwater intrusion or inundation, the harvest is compromised. A similar result occurs when freshwater is scarce at the beginning of the season or a drought occurs.

Most mangrove rice producers belong to the Federation of Farmers' Organizations of Lower Guinea, which in 2016 counted 31,123 members, the majority of whom are women.⁸ Most farms are small family plots using most of the production for subsistence. Overall, more than 860,000 people are estimated to directly rely on farming for their livelihoods in the coastal region.⁹

Rice is essential for food security in lower Guinea and the country as a whole. Guineans are among the largest consumers of rice globally. In lower Guinea, per capital annual consumption of rice is 110-130kg, representing 40% of the average calorie intake of a family. All rice produced in Guinea is sold and consumed domestically. The country relies on imports for 35% of its rice needs. Annual mangrove rice production is approx. 376,000 tonnes and represents 16% of rice farmland in the country and 23% of national production.¹⁰

Farmers and local communities also rely on other subsistence activities including salt production and fish-smoking. These activities under traditional methods require burning large quantities of fuelwood, which locals extract from mangrove forests. The same consideration applies to the widespread use of inefficient traditional cookstoves. Mangrove depletion due to fuelwood extraction contributes to the effects of climate change, as discussed below.

Climate vulnerability and impacts

Lower Guinea and, more specifically, its coastal zone are vulnerable to three climate change effects: (i) sea level rise, (ii) decrease in precipitations and (iii) temperature increase.

Guinea's Second National Communication (July 2018) reports that sea level will rise in Guinea by 1.035 cm by 2025, 1.801cm by 2050 and 3.252 cm by 2100, under the 2.5°C scenario. In West Africa, sea level rise will result in increasing erosion of sandy systems, increasing frequency of storm surges and saltwater intrusion, and increasing frequency and duration of marine floods, particularly related to extreme marine weather events. Temperature in the northwest and southwest regions (encompassing the coast) are projected to increase by 1.3-1.5 degrees Celsius by 2025, 1.5-1.6 degrees by 2050 and 1.6-1.7 degrees by 2100; in 2010, temperature had already increased by 0.5-0.6 degrees (all increases are measured against the 1961-1990 average temperature). In the same regions, precipitations are projected to decrease by 6.5-7.1% by 2025, 10.1-13.4% by 2050 and 15.5-15.7% by 2100 (vs. 1961-1990 average); in 2010, precipitations were already 1.2-2.1% lower than the 1961-1990 average.¹¹

⁴ Republic of Guinea (July 2018). *Second National Communication to UNFCCC*. French version. Throughout the concept note, this source will be abbreviated as "NC2".

⁵ Source RGPH3 2014.

⁶ World Bank (10 May 2018). *Country Partnership Framework for the Republic of Guinea for the Period FY2018-23*.

⁷ NC2, p. 9.

⁸ Agence Française de Développement (September 2016). *Project d'Appui aux Systèmes d'Activités Rizicoles en Territoires de Mangrove*, p. 6.

⁹ 80% of Guineans rely on farming for their livelihood (*Rapport général de l'enquête agricole, Campagne agricole 2014-2015*). The same percentage is assumed to apply to the coastal region (approx. 1.1 million inhabitants).

¹⁰ Agence Française de Développement (September 2016). *Project d'Appui aux Systèmes d'Activités Rizicoles en Territoires de Mangrove*, p. 9.

¹¹ NC2, pp. 59-60.

In Guinea, sea level rise (SLR), coupled with lower precipitations and higher temperatures, will have severe physical effects including: (i) inundation of coastal plains, (ii) saline intrusion, (iii) destruction of some mangrove areas and (iv) damage to infrastructure (in particular dikes) resulting from more intense sea movement and changes in sedimentation. In this concept note these phenomena will be collectively referred to as “climate-induced coastal erosion”. Between 28,900 ha and 46,800 ha¹² of low-lying lands along the coast are highly exposed to SLR, with a population between 180,625 and 292,500 people directly threatened.¹³

The vulnerability of the Guinean coast to the adverse impacts of sea level rise is mainly due to the fact that the West African coast has a strong sensitivity to erosion and coastal aggression caused by: (i) the nature of the materials (mobile sandy sediment or highly altered and fractured rocks); (ii) sediment flows that remain limited due to their capture at the river mouths level, or their dispersal that can be observed on the coasts that are more predominantly structured in cape and creeks. This strong sensitivity to erosion is reinforced by climate-induced and human-driven mangrove forest degradation on the shoreline area (e.g. construction of port infrastructure by the mining industry). Coastal Guinea currently has 250,000 hectares of mangrove forests, down from 400,000 ha in 1957.¹⁴ In addition to mangrove cutting to support subsistence rural livelihoods, sea level rise and other climatic phenomena also contribute strongly to mangrove degradation, through the loss of coastal and intertidal habitats. Indeed, sea level rise has been associated with the loss of coastal and intertidal habitats, including the change in geomorphological processes, and increased vulnerability of woody formations (Mossman et al. 2015). Also, studies^{15 16} reveal that sea level rise is a major potential threat to mangrove ecosystems due to their sensitivity to the duration and frequency of flooding, and salinity levels that may exceed the physiological threshold of mangrove-specific tolerance. Additionally, failure to maintain dikes built in previous decades, and the lack of planning and integration of climate risks in construction activities on the coast have contributed to the coastal zone’s vulnerability to erosion.

The climate change impacts have severe social, economic, health and environmental consequences for the rural coastal communities, including:

1. Loss of agricultural land and/or decrease in productivity due to salinization. 78,000 ha of coastal plains are estimated to be devoted to rice farming. Under a 2.5C global warming scenario, 17% of this area could be lost by 2050 and 37% by 2100. Losses increase to 30% (2050) and 60% (2100) in a 4.5C global warming scenario.¹⁷ In addition, a significant decrease in productivity results from salinization of rice paddies. In many cases, when the loss of productivity due to salinization is too severe, farmers convert fields into shallow ponds for shrimp breeding or salt production, cut more mangroves to create new rice fields;
2. Loss of drinking water due to salinization of wells, or long commutes to procure water from inland wells (with the burden falling primarily on women);
3. Higher risk of diseases (in particular vector-borne and other diseases associated with stagnant water). Malaria and diarrhoea are particularly widespread in inundation-prone areas, and affect primarily children, seniors and pregnant women;
4. Loss of vegetable species or migration of animal species. Mangroves are estimated to provide the habitat for the development of 70% of fish caught in tropical and sub-tropical areas.¹⁸ Mangrove reduction, therefore, also affects the livelihoods of local fisherfolks;
5. Abandonment of traditional farming and fishing livelihoods;
6. In the worst case, housing losses and migration to the interior or urban areas. Up to 30% of the coastal population (estimated at 1 million) could be affected;¹⁹
7. Social conflicts resulting from the previous phenomena.

Long-term adaptation solution

An effective and sustainable solution to coastal erosion in Guinea requires an integrated coastal zone management approach with three core elements:

1. Physical interventions to protect the coast from further erosion. Interventions fall in two categories: (i) construction or restoration of infrastructure to protect the shore from sea level rise (e.g. dikes) and (ii) ecosystem-based adaptation (EBA), in particular the protection of existing mangroves or mangrove reforestation/restoration. The choice of interventions is site-specific and requires detailed mapping and understanding of local sea and precipitation dynamics, in addition to socioeconomic and environmental factors. Site-specific analyses will be included in the feasibility study.

¹² Guinea NAPA, 2007

¹³ According to the TCP/GUI/2906 (I) (NEPAD Ref. 05/26 F), the average of cultivated surface in Coastal Guinea is 0.16ha/person

¹⁴ NC2, p. 8.

¹⁵ Friess, Daniel & Phelps, Jacob & Leong, Rick & Lee, Wei Kit & Wee, Alison & Oh, R.R.Y. & Webb, Edward. (2012). *Mandai mangrove, Singapore: Lessons for the conservation of Southeast Asia's mangroves*. The Raffles bulletin of zoology.

¹⁶ Ball, M.C. Trees (1988) 2: 129. <https://doi.org/10.1007/BF00196018>

¹⁷ NAP, p. 16.

¹⁸ NAP, p. 28.

¹⁹ NC2, p. 82.

2. A clear governance framework to prevent the indiscriminate use of coastal lands and cutting of mangrove forests. This entails mapping existing land use by local stakeholders, establishing clear and concerted procedures (such as a permit system), identifying and staffing central and local government bodies to oversee the system, in order to ensure effective enforcement.
3. Widespread adoption of climate-resilient livelihoods with the double objective to (i) provide an economic incentive to coastal communities to preserve mangrove forests (existing and newly restored) and (ii) prevent a decrease in income for local farming communities as a result of further coastal erosion. The choice of interventions reflects site-specific socioeconomic considerations.
 - a. Climate-resilient livelihoods fulfilling the first objective are, in particular, those that reduce the need for mangrove cutting, such as: (i) the production and widespread adoption of efficient cookstoves (reducing fuel wood consumption); (ii) solar salt production (saltwater collection in shallow ponds where the sun evaporates most of the water); (iii) improved fish smoking techniques (modifying existing kilns and processes to reduce fuel wood and charcoal use);²⁰ (iv) transition from fish smoking to sun drying; and (v) oyster cultivation in mangrove areas.
 - b. Climate-resilient livelihoods fulfilling the second objective include: (i) the adoption of improved mangrove rice farming techniques allowing for better control of saltwater and freshwater flows to the rice field through small canals and embankments and resulting in an increase in yields; and (ii) the adoption of climate-resilient rice varieties better suited to a more saline environment.

The adoption of some climate-resilient livelihoods will also have direct health benefits for local communities. In particular, efficient cookstoves, solar salt, improved fish smoking and sun drying imply reduce air pollution from wood and charcoal burning and associated diseases. The majority of the livelihood related interventions will be funded from co-financing. The source and amount of co-financing for these interventions will be clarified during the development of the funding proposal.

Barriers to the adoption of the adaptation solution

Several barriers prevent the implementation of the integrated coastal zone management described above.

1. Information barrier: lack of equipment, software and capacity to collect, analyse and model hydro-meteorological data and information on sea dynamics (tides, currents, shifts in sedimentation). Only 10 tide gauges are installed across the entire coastal zone. Staff-wise, the National Directorate of Meteorology has 13 people in charge of forecasts and the Oceanography Department of CERESCOR,²¹ out of a total staff of 30, only has 3 PhD's and 7 graduate degree holders. Absent this information and capacity, the National Directorate of Environment (NDE), National Directorate of Meteorology and national research centers are unable to model climate change scenarios and their impact on coastal erosion, such as frequency and extent of inundations and salinization of coastal plains.
2. Governance barrier: lack of effective governance of mangrove forests. At neither central or local government level is there a system in place for monitoring and regulating the exploitation of mangroves. A Mangrove Development Master Plan (French acronym dev) was produced in 1990 but has not been updated since.²² In the absence of any rules and enforcement procedures, coastal communities make an undisciplined use of mangroves to fulfil their subsistence needs – e.g. to obtain fuel wood for cooking, salt production via saltwater boiling, or fish drying.
3. Institutional capacity barrier: central and local government authorities lack the skills and personnel to comprehensively map the coastal erosion problem in rural lower Guinea, and devise and implement an effective action plan that incorporates infrastructure, EBA and livelihood interventions. Various ministerial departments are responsible for mangrove protection, namely the Center for the Protection of the Marine Environment and Coastal Zone, the Guinean Office of Parks and Reserves, the National Directorate of Water and Forests, some research centers and the Maritime Prefecture. These entities, however, are inadequately equipped and their staff lacks the necessary skills. Rural coastal communities are largely informal and do not have the technical capacity to design, implement and preserve infrastructure and EBA solutions, such as building/restoring dikes and preserving/restoring mangroves.
4. Awareness barrier: limited awareness of climate change (in particular SLR) impact on coastal zones and related livelihoods. Poorly educated and with limited access to modern communications, rural coastal communities have little awareness of (i) the current and future impact of climate change on coastal erosion, (ii) how indiscriminate exploitation of mangroves exacerbates the problem and (iii) the resulting deterioration in local livelihoods. Stakeholder consultations and site visits confirmed that awareness is limited to anecdotal observation of increasing frequency and magnitude of inundations.

²⁰ Such as the FTT-Thiaroye technique piloted and promoted by FAO. See FAO (2015), *Guide for Developing and Using the FAO-Thiaroye Processing Technique*, link: <http://www.fao.org/3/a-i4174e.pdf>.

²¹ Center for Scientific Research Conakry Rogbane'

²² Direction Nationale des Eaux et Forêts (1990). *Etude et Elaboration du Schéma Directeur d'Aménagement de la Mangrove de Guinée (SDAM)*.

5. Limited capacity and means of rural coastal inhabitants to transition to climate-resilient livelihoods. Coastal communities have very limited knowledge of climate-resilient livelihoods – such as the use of efficient cookstoves, solar salt production and improved mangrove rice farming – as well as very limited financial means to make any investment required. Capacity building has been limited to pilots led by NGOs (such as Charente-Maritime Cooperation, in solar salt production) and two donor-funded projects (SARITEM and UNDP/GEF – see detail in subsection below). The agricultural extension system (Agence Nationale de la Promotion Rurale et du Conseil Agricole, ANPROCA) lacks the capacity and training to support coastal rural communities in the transition to resilient agricultural practices (in particular, improved mangrove rice farming techniques) and develop the related value chains.

Alignment with national priorities

In its recent Second National Communication to the UNFCCC (NC2, July 2018), the government identified climate change adaptation in coastal areas as a national priority. It listed four action areas: (i) integrating climate risks in coastal zone management, (ii) building capacity to fight coastal erosion (through diagnostic systems, sensitivity maps and sharing of data and best practices), (iii) designing and implementing legislation and regulation in line with international best practices, and (iv) building awareness of climate change across different geographical areas and economic sectors.²³

Similar emphasis was expressed in the INDC (September 2015), where the government committed to protect, conserve and manage the ecosystems, revive the economic activities and boost the resilience of communities in coastal Guinea. Proposed actions include: (i) updating SDAM, (ii) addressing the causes of mangrove degradation, (iii) including adaptation in local development plans and spatial planning tools, (iv) enhancing scientific understanding of coastal dynamics, (v) supporting improved rice farming and (vi) extending pilot activities, in particular RAZC (see below), to all municipalities on the coast.

In its National Adaptation Plan (NAP, July 2007), produced with the support of UNDP, the government analysed several adaptation options with regards to coastal erosion, including: (i) the restoration of depleted mangroves and creation of green belts to fight erosion; (ii) production of efficient cookstoves and capacity building to reduce usage of fuel wood; (iii) promotion of solar salt production; (iv) promotion of technologies to purify surface water; (v) introduction of climate-resilient crop varieties; (vi) promotion of revenue-generating activities and value chains; (vii) information, awareness and educational activities; and (viii) protection of fish spawning grounds in mangrove areas.

The government has also engaged with donors in select projects and pilots that partially address some of the barriers identified in this concept note.

In particular, SARITEM (Systèmes d'Activités Rizicoles en Territoires de Mangrove), a EUR 18 mln project financed and implemented by the Agence Française de Développement (AFD) over the 2016-2020 period, aims to develop sustainable mangrove rice farming systems in lower Guinea, with the double goal to increase farm productivity and preserve mangroves. SARITEM focuses on the northern coastal prefectures (Boffa, Boke, Dubreka) and, to a lesser extent, the southern sub-prefectures (Kakossa, Kaback and Benty). The project will support the rehabilitation and expansion of 45 rice farm perimeters (total area of 10,170 ha) by restoring and building embankments and drainage canals. It will also promote a governance system for the new and restored infrastructure based on user associations, the adoption of agricultural best practices, the development of the mangrove rice value chain, and the development of solar salt production and its value chain. EUR 1.7 mln will be devoted to studying the vulnerability of the mangrove ecosystem in the target sites and small reforestation efforts (250 ha).²⁴

The Global Environment Facility funded the USD 3 mln project “Increasing Resilience and Adaptation to Adverse Impacts of Climate Change in Vulnerable Coastal Zones in Guinea” (French acronym RAZC), implemented by UNDP in 2011-2014. RAZC aimed to increase the awareness of climate change risks, information and capacity to adapt at both institutional and rural community level.²⁵ The development plans of 38 rural communities were revised. RAZC also restored/replanted 290ha of mangroves in Kaback, Kakossa, Koba and Kito, restored and protected against sea level rise induced salinization of 12,150 ha of rice paddy and distributed 7,500 efficient cookstoves resulting in a reduction of 2,538 tons of mangrove fuel wood consumed.²⁶

While these projects are a step in the right direction, they offer only a partial solution. In particular, SARITEM and RAZC have focused on improving water management capacity in rice farming plots, for instance by restoring existing collective dams. They have not built new infrastructure (dikes) to protect rice plains from marine flooding or upgraded existing dikes to reflect future sea level rise. Their geographic scope is also limited to a fraction of the mangrove rice farm area and, as far as mangrove restoration is concerned, to small pilot sizes.

²³ NC2, pp. xxvi-xxvii.

²⁴ AFD (September 2016). *Project d'Appui aux Systèmes d'Activités Rizicoles en Territoires de Mangrove*.

²⁵ UNDP Project Brief (November 2011). *Increasing Resilience and Adaptation to Adverse Impacts of Climate Change in Vulnerable Coastal Zones in Guinea*.

²⁶ NC2, p. 110.

Other coastal adaptation projects in the past included: (i) three projects completed between 1988 and 2003 focused on the restoration and expansion of 10,000 hectares of rice plains (EUR 30 million budget);²⁷ (ii) the Lower Guinea Rice project (RizBG), focused on the development of 6,349 ha of new rice farms (EUR 17.6 million, implemented in 2007-2016); and (iii) the Rural Development Project (RDP) funded by the Islamic Development Bank, which rehabilitated the Kaback dam and allowed 2,300 ha. of rice plains to be protected. These projects suffered from technical flaws and poor implementation, which rendered some of the infrastructure and other interventions ineffective after a period of time.

B.2. Project/Programme description (max. 3 pages)

Output 1. Enhance information, governance and capacity for coastal zone protection and restoration

Activity 1.1. Information: install equipment and adopt management information systems to monitor and model the hydrodynamic and morpho-sedimentary processes involved in erosion, inundation and salinization of coastal lands are established (GCF grant)

This activity will be implemented in the prefectures of Boké, Boffa, Dubréka and Forécariah by the Ministry of the Environment, Water and Forests (MEWF). The monitoring mechanism will ensure accurate observation, measurement and analysis of morpho-sedimentary shoreline changes from field data acquisition (sedimentary deposits, erosion cycles and increase of sensitive coastline area). Risk modeling will include bathymetry, tidal and wave dynamics, coastal erosion (or accretion), saline intrusion levels in aquifers, flood depths and intensities, as well as the effects of these variables on socio-economic conditions.

In concrete, this activity will entail: (i) strengthening the existing national meteorological and marine observation network (currently 10 tide gauges) to 30 tide stations, 20 buoy stations, 10 acoustic wave weather stations and current profilers; (ii) purchasing software and other tools to process and model data; (iii) rationalizing the coastal monitoring institutions (currently four governmental or parastatal institutions: Center for Environmental Observation, Monitoring and Information (COSIE), Center for Scientific Research Conakry Rogbané (CERESCOR), National Observatory of the Republic of Guinea (ONRG) and National Directorate of Waters and Forests (DNEEF); (iv) building their capacity to operate and maintain the enhanced observation network; and (iv) strengthening the dissemination of climate information and developing protocols for community participation in the monitoring and early warning process. The Government will undertake to finance the operation and maintenance costs (O&M) of the equipment after the GCF project.

Activity 1.2. Governance and capacity: develop and enforce an Integrated Coastal Zone Management plan (ICZM) that incorporates climate change risks and information (GCF grant + UNDP co-financing)

This activity will update the Mangrove Development Master Plan (SDAM) of 1990, based on data collected during the feasibility study phase of the proposed project, and data and models subsequently developed under Activity 1.1. The revised SDAM will incorporate climate change forecasts as well as the socioeconomic features of specific coastal areas and will be based on the findings of the feasibility study to be produced for this project.

In parallel, other legislation and regulation, such as land use plans, will be revised to avoid actions that could contribute to climate change-driven coastal erosion and nullify the impact of the proposed project's interventions. The feasibility study will analyse all legislation and regulation that could affect the ICZM and identify pitfalls and solutions.

The ICZM plan will include provisions to ensure the ongoing maintenance of the EBA and infrastructure interventions implemented under Output 2 of this project, to ensure the long-term sustainability of the proposed project. ICZM will also include awareness activities meant to alert coastal populations of the health risks associated with inundations as well as air-polluting practices such as cooking on traditional stoves or fish-smoking with inefficient kilns. Best prevention practices will be promoted by the ICZM plan.

Finally, effective procedures and capacities will be established to make sure the provisions of the ICZM plan are enforced, especially with regards to coastal land use and treatment of mangrove areas. This activity will establish a multi-sectoral institutional platform, under the Direction of MEWF, to implement the ICZM plan, in consultation with stakeholders including local authorities and coastal rural communities. This activity will also build the capacity of central and local government stakeholders in charge of the ICZM implementation. Community-based management will be a central feature of the ICZM and, coupled with the development of climate-resilient livelihoods under Output 3, will ensure that beneficiaries are empowered and incentivized to contribute to the success of the plan.

Output 2: Ecosystem based adaptation (EBA) and infrastructure solutions are implemented to protect coastal zones from further, climate change-driven erosion

This output will implement, based on the findings of the feasibility study and in accordance with the provision of SDAM and the ICZM plan, a series of EBA interventions (primarily mangrove restoration) and, to a lesser extent, infrastructure interventions to protect rural coastal areas from erosion.

²⁷ PAAV (1988), PDRK (1992) and PDRIGM (2003).

Activity 2.1. EBA: mangrove restoration/reforestation, dune ridge reforestation and improved sediment capture (GCF grant)

Based on detailed analysis during the feasibility study, this activity will reforest or restore up to 50,000 ha of mangroves, as protection from further coastal erosion resulting from climate-change. In areas where the mangrove is completely or almost completely destroyed, reforestation may be necessary. Mangrove restoration/reforestation will follow best practices, for instance with regards with species selection, to ensure sustainable effects and minimize environmental side effects. The management of restored/reforested mangrove will be disciplined by the updated SDAM.

Other EBA interventions, depending on site-specific considerations, will include reforestation of dune ridges and strengthening of natural sedimentation. The former will apply to up to 5,000 ha of land along coastal streams, where halophilic and hydrophilic vegetation can create a natural barrier against erosion. The latter will take the form of natural sediment capture through the use of small permeable snouts (constructed from local materials such as bushes and twigs) placed on intertidal areas, followed by excavation of drainage pits, or the direct placement of sediments, particularly in areas where sediments have been largely removed or tides are insufficient to transport sediments. Local communities will be trained in best practices for the long-term preservation of EBA interventions.

Activity 2.2. Infrastructure: construction or rehabilitation of dikes and mangrove rice bunds (GCF grant + co-financing)

Based on detailed analysis during the prefeasibility study, this activity will construct or rehabilitate up to 6 km of dikes (mechanical wave-breaking barriers) and 400 km of mangrove rice protection bunds, primarily in the coastal rural municipalities of Boké, Boffa, Dubréka, Forécariah, Kakossa, Kaback, Benty, Kalia, Douprou, Koba, Tounnifily and Kanfarandé. New construction will address climate change additionality. Infrastructure interventions will be in compliance with environmental and social safeguards, to be analysed in detail for the feasibility study. Local communities will be trained in best practices for the long-term preservation of infrastructure interventions.

New and rehabilitated infrastructure will result in (i) a decrease in the kinetic energy and destructive force of ocean waves; (ii) protection against coastline erosion; (iii) protection of socio-economic infrastructure against destruction by water torrents; (iv) protection of agricultural and residential areas from floods. In total, the plan is to reinforce and/or rehabilitate dikes, as well as fix protection spikes (stone or concrete) over 2 km in Kaback, 1 km in Kakossa and 500m in Benty, Kalia, Douprou, Koba, Tounnifily and Kafanrande, for a total of 6 km of protection.

Output 3: Promote the transition to climate-resilient livelihoods by rural communities of coastal Guinea

Activity 3.1: Promoting the adoption of improved mangrove rice farming techniques (“IMR”) and related value chain development (GCF grant + co-financing)

The goal of this activity is to mitigate yield losses incurred by rice farms due to saline intrusions – currently and even more so in the future as a result of climate change. The project will support, through training, advisory, demonstration plots and financial support, the adoption of IMR techniques by local farmers, including: (i) improved soil preparation practices; (ii) adoption of a climate-resilient rice variety; (iii) soil fertility management; (iv) crop irrigation techniques (optimization of fresh and saltwater flows, rehabilitation of bunks and irrigation and drainage canals within the paddy fields); (v) restoration of degraded paddies; and (vi) post-harvest technologies. As an example, SARITEM expects IMR to result in an increase in cultivated area within rice farms affected by salinization (from 50% to 90% of farm area), followed at a later stage by an increase in yields from 1.9 ton/ha to 2.3 ton/ha. In addition to supporting farmers directly, the project will train the extension system so that it can continue supporting farmers in IMR after the project expiry. Financial support may facilitate the purchase of equipment required for IMR; procedures for the efficient allocation of such support will be defined in the funding proposal.

To create an avenue for farmers to capture this additional revenue opportunity, the project will support, through capacity building and advisory services, the development of a mangrove rice value chain in Guinea. As previously noted, Guinea is a net importer of rice and therefore demand for additional domestic rice exists, if price and quality match those of imported rice. Attempts have already been made to develop a national mangrove rice brand and value chain, based on a farm cooperative system.²⁸ The project will capitalize on lessons learnt from these pilots.

Subject to further analysis in the feasibility study, IMR will be promoted in 7,500 ha of rice paddies, allocated as follows: 4,000 ha in Forécariah, 2,000 ha in Boffa, 1,200 ha in Boké and 300 ha in Coyah,

Activity 3.2: Promoting the adoption of mangrove-friendly livelihoods (co-financing)

The goal of this activity is to reduce cutting of existing mangroves and preserve newly-restored mangroves (under Activity 2.1). Mangrove-friendly livelihoods to be promoted include: (i) production and adoption of efficient cookstoves; (ii) solar salt production; (iii) improved fish-smoking techniques; (iv) sun drying in lieu of fish smoking; and (v) oyster cultivation in mangrove areas. This activity will also include an awareness program focused on the health benefits (through reduced air pollution linked to fuelwood burning) of the proposed livelihoods. Women, who are often in charge of domestic and other non-farming activities, will be important beneficiaries of this activity.

²⁸ For example the Bora Maale’ brand and network of mangrove rice farm producers.

Because of the wide range of livelihoods to be promoted and different applicability (based on the environmental and socioeconomic features of each site), the project will select 3-5 NGOs with expertise in these fields, in Guinea or other African countries presenting similar issues and livelihood opportunities. The NGOs, under the supervision of UNDP, will conduct all necessary capacity building and advisory work. In addition to capacity building and support for limited purchases of equipment, the activity will also focus on developing value chains to ensure long-term sustainability of the interventions.

Theory of change

The outcome of the project is the enhanced resilience of Guinea's rural coastline communities to coastal erosion due to climate change. The first line of defence against coastal erosion, which results from sea level rise and lower precipitations, is to improve existing infrastructure and ecosystem defences and create new ones where feasible. This is addressed by Output 2, which addresses technical and financial barriers to the implementation of such infrastructure and EBA interventions. The effectiveness and long-term sustainability of Output 2, however, would be impaired without a rigorous system of governance, planning and information, on one hand, and livelihood incentives for the benefiting farmers and communities. Output 1 addresses the first concern, creating a solid institutional, regulatory and community framework for project implementation, monitoring and enforcement. Output 3 addresses the second concern, equipping local communities with the awareness, knowledge and tools to maintain or improve their rice farming livelihood in the face of increasing climate risk, as well as adopt new livelihoods with minimal side effects on the mangrove stock.

Alignment with national regulatory and legal framework

Activities in the proposal are consistent with the national regulatory and legal framework. The Nationally Determined Contribution (NDC), the first and second national communication as well as the National Adaptation Programme of Action (NAPA), highlight the importance of addressing climate induced coastal erosion and its impacts. The National Disaster Risks Management Framework²⁹ has identified the coastal erosion impacts risks among the priority disaster risks to manage. Furthermore, the third Strategy Paper on the reduction of poverty (PRSP-3) adopted in 2013 call for accelerating reforms for the management of the natural resources and the productive sectors (including agriculture). In addition, the national plan for agricultural investment and food security (PNIASA 2013-2017) has prioritized the implementation of strategic investments to strengthen the productivity of the rice value chain including the coastal rice development. A revision of the agriculture policy has been initiated in 2015 and in connection with the second generation of the National Plan for Agriculture Investment (PNIA) launched by the ECOWAS³⁰ in 2016, this revision aims at improving the mainstreaming of climate change in the agricultural sector. Also the national implementation plan of the Strategic Action Program (SAP)³¹ of the Guinea Current Large Marine Ecosystem (GCLME) recommends the implementation of large scale action to protect vulnerable species and critical habitats (including mangrove forests and coastal wetlands), coastal productive landscapes and communities against sea level rise impacts and the development of early warning system for climate induced ecosystem change.

Rationale for UNDP as Accredited Entity

UNDP supported Guinea in the production of the NAPA in 2007 and the development of a GCF-funded NAP project. It also implemented the above-mentioned, USD 3 million GEF-funded RAZC project ("Increasing Resilience and Adaptation to Adverse Impacts of Climate Change in Vulnerable Coastal Zones in Guinea") in 2011-2015. Furthermore, UNDP has led environmental protection and climate change responses, especially in facilitating formulation of policies, strategies, laws, coordination and information sharing and has built strong relationships with decision-makers and proven its strengths as an impartial provider of technical advice and support at the country, regional and global levels. UNDP possesses a qualified team of experts including international and national experts, helping UNDP to deliver a comprehensive approach in the specific coastal adaptation topic and the global climate change area. Over the last five years UNDP has supported coastal adaptation projects in the West African countries of Gambia, Guinea and Liberia, and in other countries in the region and globally. UNDP is recognized as an experienced agency in institutional development and capacity building, bringing a long-term and institutional and people-centered focus to climate resilient development.

Implementation arrangements

²⁹ République de Guinée (2016): Évaluation des Capacités nationales en matière de réduction des risques et de gestion des catastrophes en Guinée (Mai)

³⁰ The Economic Commission for West Africa States (ECOWAS) has endorsed a regional agricultural policy for the west Africa countries guiding the national agricultural policies.

³¹ The primary goal of the Strategic Action Programme (SAP) is to mitigate or ameliorate the current rate of environmental degradation and restore eventually the health of the GCLME and its natural resources. The SAP contains priority actions that need to be undertaken at both national and regional levels by a variety of stakeholders

The project will be implemented following UNDP's National Implementation Modality (NIM), according to the Standard Basic Assistance Agreement between UNDP and the Government of Guinea and the policies and procedures outlined in the UNDP POPP.³²

The Ministry of Environment, Water and Forests (MEWF) will be the Implementing Partner/Executing Entity for this project and will be accountable to UNDP for managing it, including the monitoring and evaluation of project interventions, achievement of project outcomes, reporting and effective use of UNDP resources.

UNDP will provide a 3-tier oversight and quality assurance role through the Country Office in Guinea, the UNDP Global Environmental Finance Unit in Addis Abeba and HQ, in line with the requirements outlined in the AMA. This includes management of funds, program quality assurance, fiduciary risk management, timely delivery of financial and programme reports to GCF and other requirements. In addition, the Government of Guinea may request UNDP to provide direct project services for this project (support to NIM).

A Project Board, composed of representatives of: UNDP, MEWF, will be responsible for taking management decisions to ensure development results, best value for money, fairness, integrity, transparency and effective international competition. Other project bodies will include: a national project director, and international chief technical advisor, a project manager hired by UNDP and in charge of day-to-day operations, as well as technical, environmental and gender advisors (national and international). Further details will be outlined in the Funding Proposal.

Key financial and operational risks

The risks below were identified at the concept phase. A detailed risk analysis and mitigation plan will be outlined in the funding proposal.

1. **Risk:** beneficiary farmers and communities express reluctance to adopt IMR and mangrove-friendly livelihoods, due to lack of familiarity with these new techniques and preference for known approaches. **Mitigating factor:** awareness-building and community engagement will be core elements of the project. Demonstration plots will be used to highlight the concrete benefits of the proposed interventions, such as the increase in mangrove rice yields. In addition, communities in coastal Guinea have already suffered significantly from the effects of coastal erosion and therefore are expected to be open to potential solutions.
2. **Risk:** poor enforcement of the ICZM and SDAM (National Strategy for Development and the Management of the Mangrove), causing renewed pressure on mangrove areas. **Mitigating factor:** the project will focus not only on the design of a climate-resilient ICZM, but also on the implementation, monitoring and enforcement mechanisms. Revisions and enforcement of relevant legislation (e.g. integration of climate risks in the SDAM, land use plans, exploitation of mangrove wood) will be core elements of the project. The government has highlighted fighting coastal erosion as a national priority and is prepared to take the steps necessary to minimize anthropogenic impact on the coast. In addition, the activities in Output 3 will provide a concrete economic incentive to local communities to preserve the mangrove.
3. **Risk:** failure to maintain the equipment installed under Output 1 and infrastructure interventions under Output 2 due to lack of funding and impossibility to recover infrastructure costs from user tariffs (due to public-good and poverty reasons). **Mitigating factor:** the funding proposal will contain an explicit commitment from the government to fund operations and maintenance of infrastructure, identifying the funding sources that the government plans to devote to such tasks.

B.3. Expected project results aligned with the GCF investment criteria (max. 3 pages)

Impact potential

The project will benefit directly a large portion of the 180,625 to 292,500 people directly threatened by the coastal erosion in Guinea, through the EBA and infrastructure interventions in defence of the coastline. This represents up to 2.2% of the Guinean population.³³

Paradigm shift

The project offers the first comprehensive and integrated solution to coastal erosion in Guinea. The paradigm-shifting features of the project include:

1. Creating an overall institutional framework for coastal adaptation through the ICZM plan, the update of SDAM and the revision of legislation and regulation (such as that concerning land use planning) that is essential to addressing coastal erosion. This is an improvement from previous projects, such as RAZC, that targeted specific geographic areas without overall coordination with or impact on the broader policy framework.
2. Integrating and prioritizing climate change at all project levels, from governance and institutional arrangements in Output 1, to selection of physical interventions in Output 2 and community-level livelihood activities in Output 3.

³² See <https://info.undp.org/global/popp/ppm/Pages/Defining-a-Project.aspx>.

³³ Based on a 2018 population of 13.1 million, as estimated by the UN Population Division (<https://population.un.org/wpp/DataQuery/>).

Because of this, the project promotes a long-term solution that not only takes stock of the current level of coastal erosion but also of the additional deterioration resulting from climate change and its profound socioeconomic and environmental consequences.

3. Implementing EBA or infrastructure interventions based on site-specific considerations, rather than focusing *a priori* on either the two. The diversity of morphologic, environmental and socio-economic conditions in different areas calls for a tailored and flexible approach, based on in-depth site-specific analysis that will be conducted prior to the funding proposal.
4. Prioritizing project engagement with and ownership by the direct beneficiaries at community level. Complex coastal adaptation projects, with their significant socioeconomic impacts, cannot rely solely on solutions imposed “from above” by government institutions. It is essential to empower the direct beneficiaries and create a livelihood incentive for the preservation and restoration of ecosystem defences against erosion. The project achieves this through Output 3, which will involve comprehensive awareness campaigns, capacity building and support at local community level.
5. Engagement of a broad range of co-financiers, including the mining industry, whose infrastructure building along the coast contributed to the current state of erosion, in particular in the northern coast. By contributing to co-finance, the mining industry will help offset some of the negative externalities generated in the past by its activities in Guinea.

Sustainable development

In addition to strengthening the resilience of Guinea’s coastal communities to climate change, the project will have significant social, economic, health and environmental benefits, including:

1. Additional subsistence income for coastal farmers, the large majority of whom live in poverty, from IMR production and salt and smoked fish production;
2. Contribution to Guinea’s food security through higher domestic rice production and lower reliance on rice imports;
3. Reduced pollution (especially indoor) from production and distribution of more efficient cookstoves, benefiting in particular women that are in charge of cooking and other domestic activities;
4. Greater availability of drinkable freshwater in coastal well, with reduced need to long trips in the interior to access well more remote from the coast, freeing up time in particular for women;
5. Lower risk of diseases associated with inundation, water stagnation, malnutrition and poor freshwater quality, in particular malaria and diarrhoea. Also, reduced fuelwood usage and adoption of more efficient equipment (cookstoves, fish-smoking kilns) will lower air pollution and associated health effects;
6. Protection or restoration of the mangrove ecosystem and related animal and vegetable species;
7. Potential increase in fish harvest as spawning grounds in mangrove forests are protected or restored;
8. Reduced social tensions as a result of more resilient livelihoods and better health standards, benefiting in particular vulnerable groups such as women, children and elderly people;
9. In the long-term, reduced incentives to migrate from rural coastal areas to the interior or the cities.

The climate resilience of the coastal zone is a critical element in Guinea’s path towards the Sustainable Development Goals (SDGs). The project is expected to contribute, among others, to: SDG 1 (No Poverty), SDG 2 (Zero Hunger), SDG 3 (Good Health and Well-being), SDG 5 (Gender Equality), SDG 6 (Clean Water and Sanitation), SDG 13 (Climate Action) and SDG 15 (Life on Land, which includes the development of the agricultural sector).³⁴

Needs of the recipient

Guinea is a fragile, least-developed country with persisting social and political instability, weak institutional capacity and high and rising poverty rate (estimated at 60% in 2016). Guinea’s economy is highly reliant on mineral production and exports, especially bauxite and gold. Despite large potential in this sector, Guinea remains one of the poorest countries in the world, ranking no. 172 by GDP per capita (USD 749 in 2017),³⁵ no. 175 in the 2017 Human Development Index³⁶ and no. 152 in the World Bank’s 2018 Doing Business survey.

While GDP growth has been positive in recent years, it is highly exposed to swing in the commodities sector, and so are Guinea’s tax revenues. The country is on a fiscal consolidation path, in compliance with the terms of an extended credit facility granted by the IMF in December 2017. Overall budget deficit was projected at 2.2% for 2018 (3.5% excluding grants received). Total government debt to GDP was projected at 40.3% in 2018. Guinea is highly dependent on external financing, with a current account deficit expected to have reached 21% in 2018. Two thirds of government debt are from foreign creditors, including the IMF.

The banking sector is characterized by a high non-performing loan ratio (10.7% in 2017), with some banks failing to comply with capital adequacy ratios. Banks lend primarily to the government. Growth in private sector lending has been

³⁴ UNDP’s Sustainable Development Goals (SDGs). Available at: <http://www.undp.org/content/undp/en/home/sustainable-development-goals.html>

³⁵ IMF (October 2018). *World Economic Outlook Database*. Accessed January 2019.

³⁶ UNDP. *Human Development Reports Database*. Accessed January 2019.

flat to mildly negative in recent years.³⁷ Rural communities in coastal Guinea rely mostly on informal credit relationships and have no access to banks. A 2014 survey in three districts of Koba sub-prefecture found that only 13% of interviewees had access to formal credit.³⁸ Even when they have access to banks, farmers lack the collateral to receive credit at affordable terms. In addition, due to widespread poverty, villagers are unable to save any amount beyond those required to fulfil mere subsistence needs. As a result, the ability of coastal communities to contribute financially to infrastructure or EBA solutions, or self-fund any climate-resilient livelihood transition, is virtually none.

Country ownership

The proposed project is fully country-driven and was developed based on extensive consultations between UNDP and the project stakeholders. Climate change adaptation, and particularly coastal adaptation, is a national priority in for the Guinean government, as discussed in the INDC and NC2.

Efficiency and effectiveness

While the project has important socioeconomic impacts on rural coastal communities, it can hardly be characterized as a private sector project in a conventional sense. The economy of the target areas is essentially a subsistence one, based on small-size family farms or fishing operations. Farmers and fisherfolks produce mostly for domestic consumption. Any excess production is merely sufficient to cover essential household expenses, with almost nothing left to savings. There are virtually no large commercial operations in the agriculture and fishing sector in coastal Guinea.

As a result, even if the proposed activities (in particular Output 3) result in an increase of production and revenues for the project's beneficiaries, such reflows are negligible and certainly far from a financial windfall. For this reason, a grant is deemed as the most efficient GCF funding tool for this project, in compliance with the minimum concessionality principle. In addition, as discussed more in detail in Section C.2, a large portion of the project activities are of public good nature, and the project is expected to mobilize large co-finance, including in the form of concessional loans from development institutions.

B.4. Engagement among the NDA, AE, and/or other relevant stakeholders in the country (max ½ page)

The identification and formulation of this concept note was conducted involving a wide range of stakeholders at the national, provincial and local level, including an initial consultation in the project areas. The key ministries consulted include: Environment, Water and Forests; Agriculture; Livestock; Fishing; Finance; Land Management; Planning; Transport; Energy and Hydraulics; and Social Development. Other stakeholders consulted include the Technical Office for Rural Infrastructures (BTGR), the Guinean Institute of Agronomic Research, the Center for Environmental Study and Research (CERE), CERESCOR, bilateral and multilateral partners (EIB, JICA, AFD, FAO, UNOPS and Islamic and African Development Banks), mining industry associations (Guinea Chamber of Mines, through its initiative Bauxite Environment Network), and civil society. These consultations were done from 2016 to 2018 through participatory brainstorming, site visits, formal meetings and email communication and wider national consultation workshop took place at the onset of the process to agree on the project scope and the end of the CN formulation process to validate the approach and territorial ownership.

For the detailed proposal development, a consultation process will be undertaken with local, provincial and national actors and groups. The consultations will aim to: i) understand and identify their perceptions of climate change and its impacts on their communities, ii) integrate their views and suggestions on the project activities to the project design; iii) confirm/identify their roles in the implementation of the project, and iv) identify other barriers and mostly opportunities. The consultation process will include an information phase aimed at disseminating information and providing early capacity building that will allow them to manage, sustain and replicate the transformation proposed by the project. These activities will be based on a comprehensive stakeholders' map and a stakeholder jurisdictional map. A comprehensive stakeholder consultation plan will be developed to describe the consultation process, including its phases, methodology and targeted audience. It is important to note that the project design considers implementing best practices and activities in collaboration of local actors, accompanying implementation with training and capacity building.

C. Indicative Financing/Cost Information (max. 3 pages)

C.1. Financing by components (max ½ page)

Output	Indicative cost (USD)	GCF financing		Co-financing		
		Amount (USD)	Financial Instrument	Amount (USD)	Financial Instrument	Name of Institutions

³⁷ All figures from IMF (July 2018), *First Review of the Arrangement under the Three-Year Extended Credit Facility*, IMF country report no. 18/234.

³⁸ B. Balde et al (15 July 2014). *An Analysis of Technical Efficiency of Mangrove Rice Production in the Guinean Coastal Area*. Journal of Agriculture Science, Vol. 6, No. 8, 2014.

1. Information, governance & capacity	7,000,000	2,500,000	Grant	1,300,000 700,000 <u>2,500,000</u> 4,500,000	Grant Grant Grant	Government UNDP Other donors
2. EBA & infrastructure	54,200,000	20,000,000	Grant	3,500,000 700,000 <u>30,000,000</u> 34,200,000	Grant Grant	Government UNDP Other donors
3. Climate-resilient livelihoods	11,400,000	3,000,000	Grant	700,000 700,000 <u>7,000,000</u> 8,400,000	Grant Grant	Government UNDP Other donors
Indicative total cost (USD)	72,600,000	25,500,000		5,500,000 2,100,000 <u>39,500,000</u> 47,100,000	Grant Grant	Government UNDP Other donors

The project will attract significant co-finance. Virtually all project activities will address climate change additionality as well as baseline issues. The GCF grant is meant to fund the former, while co-finance will primarily address the latter, as well as activities focused on livelihood improvement. The Figures in the table above will be refined in the funding proposal, but a reasonable expectation is that the co-finance ratio will be at least 1:1.

The government and UNDP will both provide grants. Note that not accounted in the table above are the maintenance costs of the infrastructure built or restored under Activity 2.2, of which the government will take full charge. An estimate of such costs will be provided in the funding proposal.

In addition to government and UNDP, several parties have expressed an interest to participate as co-financiers, offering concessional loans or grants. In particular:

- The European Investment Bank (EIB) could provide concessional loans in an amount equivalent to the GCF grant;
- The African Development Bank (AfDB) and bilateral development agencies such as RVO (Netherlands Enterprise Agency) have also expressed an interest;
- Mining companies, individually or through industry associations, are interested in providing co-finance as part of their corporate social responsibility (CSR) strategy. Their focus is primarily on EBA and livelihood activities in the northern coast, where mining ports are concentrated and with the objective to offset the environmental impact of such infrastructure. The mining industry in Guinea is represented by the Guinea Chamber of Mines (CMG) and has launched the Bauxite Environment Network (REB) to devote part of the CSR budget to environmental activities. REB has indicated a potential commitment of USD 11 million as co-finance;
- JICA has expressed an interest to participate through one of its existing grant programs for NGOs (USD 200,000 grant per NGO, for a maximum of 5 NGOs). This financial contribution would be focused on Activity 3.2, which requires the involvement of NGOs for climate-resilient livelihood promotion.

Co-finance from beneficiary farmers will also be explored, although the feasibility and amount may be limited due to subsistence and poverty considerations.

C.2. Justification of GCF funding request (max. 1 page)

The project addresses a climate change adaptation problem of national importance for Guinea. Donors to previous projects were focused primarily on socioeconomic development. This is the case for instance for SARITEM, where climate change – while contemplated by the project – is of secondary importance vs. fighting poverty and contributing to food security.³⁹

The proposed project's primary focus on climate change adaptation makes it ideally suited to GCF funding. Addressing coastal adaptation – with all its complexities and variety of stakeholders involved – necessarily requires tackling some baseline issues. The project's financial structure, in recognition of this, will include significant co-finance, as discussed in Section C.1.

A grant is deemed as the most appropriate level of concessionality for GCF funding, for 4 reasons:

1. Outputs 1 and 2 are of public good nature and not amenable to the generation of financial reflows. While in principle one could conceive recovering some of the investment and maintenance costs of the Output 2 interventions through service charges or licenses (e.g. for regulated mangrove cutting), in practice this approach is unrealistic, because of

³⁹ AFD (September 2016). *Project d'Appui aux Systèmes d'Activités Rizicoles en Territoires de Mangrove*. See in particular Section II.2.1, "Finalite", p. 11.

the socioeconomic conditions described above and lack of a suitable legal framework.

2. Some of the livelihood activities promoted by Output 3 will result in an increase in income for beneficiaries. In particular, improved mangrove rice farming should lead to higher yields. Such increase, however, is meant to offset future drops in productivity resulting from increasing salinization linked to coastal erosion and sea level rise. Given the subsistence nature of farming activities in coastal Guinea, any productivity increase will merely protect beneficiaries from a deeper plunge into poverty. In simple words, the project will not generate a financial windfall for any of its beneficiaries.
3. The project benefits poor rural communities. Beneficiaries do not have the means to contribute to project funding. They also lack access to any formal credit system, as discussed in Section B.1 (barriers). The vast majority of farmers and fishermen in coastal Guinea run informal, subsistence operations. The target areas lack any meaningful commercial beneficiaries, such as large industrial farms, that could contribute financially to the project or benefit from significant financial reflows.
4. As discussed in Section B.3 (Needs of the recipient), Guinea's macroeconomic situation is unstable. The government will make a meaningful co-finance contribution to the project, directly through grants and by assuming concessional loans from the likes of the EIB. The capacity of the government to contribute further to project funding is severely limited.

C.3. Sustainability and replicability of the project (exit strategy) (max. 1 page)

The proposed project will achieve long-term sustainability in several ways:

1. Financial sustainability of livelihood activities. Livelihood activities, in particular IMR, will result in an increase in production and income for farmers. Efficient kilns for fish-smoking are also deemed to reduce fish losses during the smoking process, resulting in a small financial benefit. Solar salt could provide an additional source of income for rice farmers in the dry season. Oyster farming in mangrove forests could also become a complementary source of income (or at least proteins for domestic consumption). While any income increase would be from a very low level (given the widespread poverty in the target zones), it will nevertheless provide a tangible incentive for project beneficiaries to continue to pursue the livelihood activities promoted by the project.
2. Financial sustainability of EBA and infrastructure. As discussed above, it is premature, given the state of development of Guinea and poverty of target beneficiaries, to conceive cost-recovery mechanisms such as tariffs or licenses. The government will commit to funding ongoing operations and maintenance costs, from own budget sources or donor finance. As socio-economic conditions in rural coastal Guinea improve, partly as a development side effect of this project, cost recovery mechanisms from the direct beneficiaries of EBA and infrastructure interventions can also be explored.
3. Awareness and stakeholder engagement. The EBA, infrastructure and livelihood activities will be designed and implemented after extensive consultations with local communities. Climate change risks and the benefits of the proposed interventions will be explained to beneficiaries so that they are not perceived as imposed by the government or donors and that they feel communities have full "ownership" of the project.
4. Solid governance framework. The ICZM plan will represent a long-lasting framework for the implementation, monitoring and future update of the interventions promoted by the project. ICZM will also include clear provisions for the enforcement of legislation and regulation, such as land use plans, essential to protect natural coastal defences such as mangrove from future deterioration due to anthropogenic factors.
5. Capacity building of institutional stakeholders. Personnel of all main government units involved in the project – in particular, Ministries of Environment, Agriculture, Fishing, Public Works, Land Management and Decentralisation, and BTGR – will be trained during the project implementation phase on all technical, regulatory and environmental aspects. The objective is to enable them to take full ownership and control once the GCF project has run its course.
6. Capacity building of direct project beneficiaries. The promotion of livelihood activities will involve an essential element of capacity building at local community level. This is crucial to ensure the continued implementation of climate-resilient livelihoods, the adoption of best practices with regards to land use and treatment of mangrove forests and compliance with the regulatory framework implemented under the ICZM plan.

D. Supporting documents submitted (OPTIONAL)

- Map indicating the location of the project/programme
- Diagram of the theory of change
- Economic and financial model with key assumptions and potential stressed scenarios
- Pre-feasibility study
- Evaluation report of previous project

Results of environmental and social risk screening

Self-awareness check boxes

Are you aware that the full Funding Proposal and Annexes will require these documents? Yes No

- Feasibility Study
- Environmental and social impact assessment or environmental and social management framework
- Stakeholder consultations at national and project level implementation including with indigenous people if relevant
- Gender assessment and action plan
- Operations and maintenance plan if relevant
- Loan or grant operation manual as appropriate
- Co-financing commitment letters

Are you aware that a funding proposal from an accredited entity without a signed AMA will be reviewed but not sent to the Board for consideration? Yes No

Annex 1: Maps

Figure 1: Map of Lower Guinea climatic zone

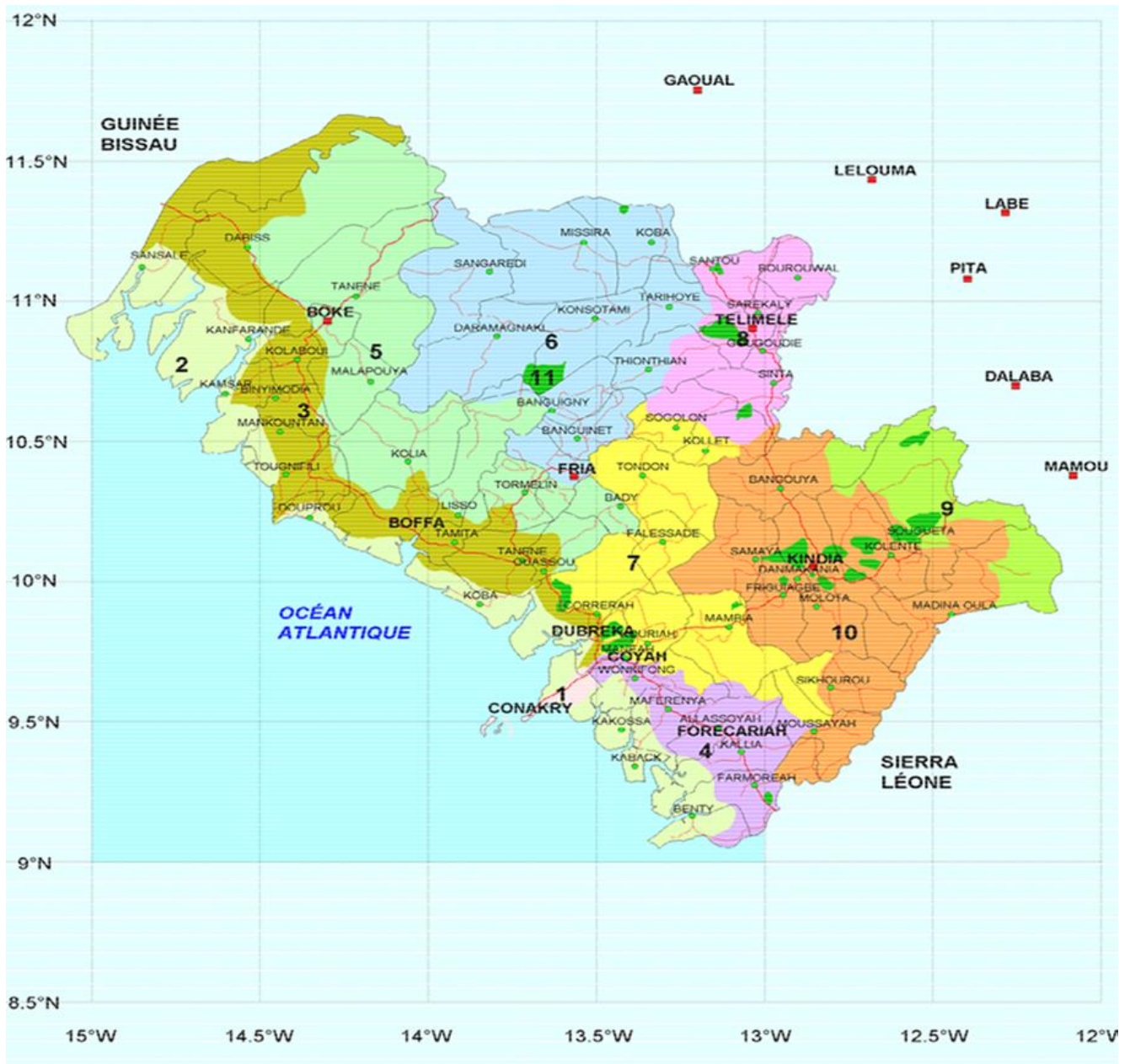


Figure 2: Example of coastline evolution in Kaback between 1984 and 2016



Annex 2: Theory of Change

