



REQUEST FOR CEO ENDORSEMENT REQUEST

PROJECT TYPE: FULL SIZE PROJECT

TYPE OF TRUST FUND: LDCF

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PART I: PROJECT INFORMATION

Project Title: Resilience of Muanda's communities from coastal erosion, Democratic Republic of Congo			
Country(ies):	Democratic Republic of Congo	GEF Project ID: ¹	5280
GEF Agency(ies):	UNDP	GEF Agency Project ID:	4965
Other Executing Partner(s):	Direction de Développement Durable / Ministère de l'Environnement Conservation de la Nature et Tourism (MECN-T)	Submission Date:	December 12, 2014
		Resubmission Date:	May 13, 2015
GEF Focal Area (s):	Climate Change Adaptation	Project Duration (Months)	60
Integrated Approach Pilot	IAP-Cities <input type="checkbox"/> IAP-Commodities <input type="checkbox"/> IAP-Food Security <input type="checkbox"/>	Corporate Program: SGP <input type="checkbox"/>	
Name of Parent Program	n/a	Agency Fee:	\$508,725

A. FOCAL AREA STRATEGY FRAMEWORK AND OTHER PROGRAM STRATEGIES²

Focal Area Objectives/Programs	Focal Area Outcomes	Trust Fund	(in \$)	
			GEF Project Financing	Co-financing
CCA-1	Outcome 1.2: Livelihoods and sources of income of vulnerable populations diversified	LDCF	700,000	3,000,000
CCA-1	Outcome 1.3: Climate-resilient technologies and practices adopted and scaled up	LDCF	2,200,000	2,000,000
CCA-2	Outcome 2.1: Increased awareness of climate change impacts, vulnerability and adaptation	LDCF	500,000	1,600,000
CCA-2	Outcome 2.3: Access to improved climate information and early-warning systems enhanced at regional, national, sub-national and local levels	LDCF	500,000	2,000,000
CCA-3	Outcome 3.2: Policies, plans and associated processes developed and strengthened to identify, prioritize and integrate adaptation strategies and measures	LDCF	1,200,000	2,000,000
	Project management	LDCF	255,000	900,000
	Total project costs		5,355,000	11,500,000

¹ Project ID number remains the same as the assigned PIF number.

² When completing Table A, refer to the GEF Website, [Focal Area Results Framework](#) which is an Excerpt from [GEF 6 Programming Directions](#).

B. PROJECT DESCRIPTION SUMMARY

Project Objective: Enhance climate resilience of Muanda communities (Bas Congo Province) through the establishment of relevant climate risk information for planning and budgeting, and the piloting of coastal protection measures, Democratic Republic of Congo							
Project Components/ Programs	Financing Type ³	Project Outcomes	Project Outputs	Trust Fund	(in \$)		
					GEF Project Financing	Confirmed Co-financing	
1. Integration of climate risks information into relevant planning policies	TA	Climate change risk management capacity strengthened (<i>for provincial, municipal officials and parliamentarians, private sector representatives, and coastal communities</i>) to integrate climate information in policy and investment planning	<p>1.1. Coastal erosion risk profiles prepared for multiple coastal segment and economic analysis of coastal defence /adaptation options assessed for the most sensitive areas to facilitate budgeting and future land use planning in Muanda Region.</p> <p>1.2. Improve understanding of climate change risks in the coastal zone and facilitate the mobilization of different actors (local chief, coastal landowners, private sector and communities) in supporting to policy planning process;</p> <p>1.3. Relevant tools and skills provided to staffs from the Province and Muanda Commune to adjust development plan & budgets appropriately and support effective adaptation in the coastal zone</p>	LDCF	1,764,940	2,600,000	
2. Investment in coastal defence and monitoring	INV	Urgent and immediate adaptation measures implemented in the most vulnerable coastal communities of Muanda to reduce the concurrent impacts of multiple climate risks, while building functional weather and climate monitoring capacity	<p>2.1. Establish a Community based Early Warning system to increase preparedness, risk prevention and response capacities;</p> <p>2.2. Pilot adaptation measures to stabilize the cliffs at Muanda and secure fisherman docking and landing operations at Nsiamfumu;</p> <p>2.3. Create alternative climate-resilient livelihoods for women & youth organizations to reduce pressure on coastal resources and to uplift the economic status of the coastal communities</p>	LDCF	3,335,060	8,000,000	
Subtotal						5,100,000	10,600,000
Project Management Cost (PMC) ⁴				LDCF	255,000	900,000	
Total project costs						5,355,000	11,500,000

³ Financing type can be either investment or technical assistance.

⁴ For GEF Project Financing up to \$2 million, PMC could be up to 10% of the subtotal; above \$2 million, PMC could be up to 5% of the subtotal. PMC should be charged proportionately to focal areas based on focal area project financing amount in Table D below.

C. CONFIRMED SOURCES OF CO-FINANCING FOR THE PROJECT BY NAME AND BY TYPE

Please include confirmed co-financing letters for the project with this form.

Sources of Co-financing	Name of Co-financier	Type of Cofinancing	Amount (\$)
Recipient Government	Ministere de l'Environnement, Conservation de la Nature et du Tourisme	Inkind	2,000,000
Recipient Government	METTELSAT: National Agency of Meteorology and Teledetection by Satellite	Grant	1,000,000
Recipient Government	CVM: Congolese maritime ways	Grant	6,000,000
GEF Agency	UNDP	Grant	2,500,000
Total Co-financing			11,500,000

D. TRUST FUND RESOURCES REQUESTED BY AGENCY(IES), COUNTRY(IES) AND THE PROGRAMMING OF FUNDS

GEF Agency	Trust Fund	Country Name/Global	Focal Area	Programming of Funds	(in \$)		
					GEF Project Financing (a)	Agency Fee ^{a)} (b) ²	Total (c)=a+b
UNDP	LDCF	Democratic Republic of Congo	CCA	N/A	5,355,000	508,725	5,863,725
Total Grant Resources					5,355,000	508,725	5,863,725

a) Refer to the [Fee Policy for GEF Partner Agencies](#)

E. PROJECT'S TARGET CONTRIBUTIONS TO GLOBAL ENVIRONMENTAL BENEFITS⁵

Provide the expected project targets as appropriate. N/A

Corporate Results	Replenishment Targets	Project Targets
1. Maintain globally significant biodiversity and the ecosystem goods and services that it provides to society	Improved management of landscapes and seascapes covering 300 million hectares	<i>(Enter number of hectares)</i>
2. Sustainable land management in production systems (agriculture, rangelands, and forest landscapes)	120 million hectares under sustainable land management	<i>(Enter number of hectares)</i>
3. Promotion of collective management of transboundary water systems and implementation of the full range of policy, legal, and institutional reforms and investments contributing to sustainable use and maintenance of ecosystem services	Water-food-ecosystems security and conjunctive management of surface and groundwater in at least 10 freshwater basins;	<i>(Enter number of freshwater basins)</i>
	20% of globally over-exploited fisheries (by volume) moved to more sustainable levels	<i>(Enter percent of fisheries, by volume)</i>
4. Support to transformational shifts towards a low-emission and resilient development path	750 million tons of CO _{2e} mitigated (include both direct and indirect)	<i>(Enter number of tons)</i>
5. Increase in phase-out, disposal and reduction of releases of POPs, ODS, mercury and other chemicals of global concern	Disposal of 80,000 tons of POPs (PCB, obsolete pesticides)	<i>(Enter number of tons)</i>
	Reduction of 1000 tons of Mercury	<i>(Enter number of tons)</i>
	Phase-out of 303.44 tons of ODP (HCFC)	<i>(Enter number of tons)</i>
6. Enhance capacity of countries to implement MEAs (multilateral environmental agreements) and mainstream into national and sub-national policy, planning financial and legal frameworks	Development and sectoral planning frameworks integrate measurable targets drawn from the MEAs in at least 10 countries	<i>(Enter number of countries)</i>
	Functional environmental information systems are established to support decision-making in at least 10 countries	<i>(Enter number of countries)</i>

F. DOES THE PROJECT INCLUDE A “NON-GRANT” INSTRUMENT? NO

(If non-grant instruments are used, provide an indicative calendar of expected reflows to your Agency and to the GEF/LDCF/SCCF Trust Fund) in Annex D.

⁵ Update the applicable indicators provided at PIF stage. Progress in programming against these targets for the projects per the Corporate Results Framework in the [GEF-6 Programming Directions](#), will be aggregated and reported during mid-term and at the conclusion of the replenishment period.

PART II: PROJECT JUSTIFICATION

A. DESCRIBE ANY CHANGES IN ALIGNMENT WITH THE PROJECT DESIGN OF THE ORIGINAL PIF⁶

A.1 Is the project consistent with the National strategies and plans or reports and assessments under relevant conventions, if a /no). If yes, which ones and how: NAPAs, NAPs, NBSAPs, ASGM NAPs, MIAs, NCs, TNAs, NCSA, NIPs, PR, BUR, etc. **N/A**

The co-finance letter from the oil company Perenco has not been secured and therefore removed from the co-financing tables and narrative. Although the letter was not provided to UNDP because senior management of the company changed, the activities in the target areas will continue to be implemented by Perenco. The development, restoration and conservation activities that Perenco is implementing on the ground are now being considered baseline. The impact on the project results will be negligible because Perenco's conservation and development activities are still being implemented in the project area and this initiative will coordinate closely with Perenco to ensure maximum complementarity and convergence. The viability of the project will not be affected because, the outcomes and outputs of the project were not dependent on Perenco's co-financing, and also because, although Perenco were not willing to put a figure in the co-finance letter (which disqualified it) the intention of cooperation and collaboration is still present. Therefore project activities will be able to climate proof and add to ongoing restoration and conservation efforts, thereby not affecting the viability of this LDCF funded initiative.

A.2. GEF focal area⁷ and/or fund(s) strategies, eligibility criteria and priorities. **N/A**

A.3 The GEF Agency's comparative advantage: **N/A**

A.4. The baseline and any associated baseline projects:

Climate change and its impacts in DRC's coastal zone



The coastal area of the DRC is between the tip of Banana and the Angolan enclave of Cabinda (FIG.1). It stretches over 40 km long and covers an area of approximately 4,265 square kilometers. The front of the DRC coastal zone is composed of three cliffs interrupted by two coastal estuaries and a barrier. This facade is predominantly of sandstone and limestone and accommodates three main towns: Muanda, Banana and the fishing village of Nsiamfumu.

FIG 1: Localisation DRC Coastal zone

The rural population practices including agriculture, artisanal fishing, small livestock and logging, services and small business: carpentry, hotel, sewing, catering, sales beverage clinics, etc. The local territorial administration represents the state. Cropland represented 24.9% of the land area of Muanda with a total production of 379, 561.58 tons for 24,135 households. The main crops are cassava, maize, rice, plantain, beans, cowpea and various vegetables. To these are added the coffee and palm oil as perennial crops (UNDP / UNOPS, 1998 MECN in EF, 2001). The number of farmers is estimated at more than 5,000.

The economic sector of the coastal area is very different from other parts of the country in terms of industrial production. Indeed, this is the only area where the oil industry has developed in the country. In 2009, oil production reached 9.382 million barrels⁸. The coastal area of the DRC also has an exceptional marine and

⁶ For questions A.1 –A.7 in Part II, if there are no changes since PIF , no need to respond, please enter “NA” after the respective question.

⁷ For biodiversity projects, please describe which Aichi Target(s) the project will directly contribute to and what indicators will be used to track progress towards achieving these specific Aichi target(s).

⁸ BCC – Rapport annuel 2002-2003, P.39

terrestrial biodiversity rich in wildlife such as marine turtles, a species of manatee, some species of whales becoming rare, a unique wildlife species of brackish fish, many species of oysters and mangrove forest; this area is of vital importance for the DR Congo.

DRC's coastal zone is severely affected by coastal erosion that is one manifestation of climate change. These phenomena are caused by sea level rise, a consequence of the rise in temperature, the dynamics of the Atlantic Ocean, and human activities due to the increase in population. Coastal erosion is accentuated in the coastal region of the DRC by topography, gritty nature of the rock and a significant hydrodynamic action on the coast (sea level rise).

The various reports on vulnerability to coastal climate change (NAPA, SNC and program on coastal erosion) clearly indicate that the land, biodiversity, socio-economic infrastructures and livelihoods of local communities will be seriously affected by coastal erosion. Thus, based on some historical land marks (Mangrove Hotel, Spotlight Nsiamfumu, home of the late first President of the DRC, Joseph Kasavubu) and testimonies, the ocean has already claimed some twenty meters on the continent on the Banana- Muanda segment.

The Banana road located in an area of submergence which erosion has cut a great road section (Figure 2) is of vital strategic and economic interest. Floods are sometimes reaching 80 cm high. This route serves the town of Muanda toward the tip of Banana where are located the base of the navy, maritime ports of CVM, and the base of the oil company Perenco. It is the main road for all traffic with the Province of Cabinda and Soyo of the People's Republic of Angola. In some populated areas, saltwater intrusion affects groundwater and soil, induce the loss of biodiversity in the mangrove marine park and cause property loss and agricultural production, sand deposits etc.



Figure 2. The effects of erosion on the Banana-Muanda road

Coastal erosion will be exacerbated by deforestation, which is settled in mangroves. Thus efforts to develop and protect mangrove ecosystem could fail due to consecutive floods linked to high tides. Flooding of mangrove areas made up with low land and swamp (with a average rate of salinity of 30%) by ocean waters will cause loss of habitat and rich biodiversity (marine turtles, fishes, macro-invertebrates, manatees etc.) and an important tourism site

In the future, the analysis of the climate regime, based on scenarios of MAGICC-SCENGEN model predicts an increase in precipitation in the DRC causing heavy flooding of the river and hence flooding with considerable socio-economic impacts, also applicable in much of the District of Lower River. Thus, considering the current intensity of the decline in the coastline and the likely amplification of climate change in the region, it is necessary to consider that by 2050, nearly two thirds of the area of the city of Vista and the village of Nsiamfumu will be lost. It will be the same for infrastructure located along the road section Muanda - Banana. With the retreat of the coast, which is likely, it is expected that the road between Banana and Muanda will be completely lost between 2050 and 2100; the proportion of land lost due to this erosion will double (200m and 100m around Nsiamfumu between city of Muanda and Banana). DRC can expect to see its coastal reach lost 50 to 100 m at the coastal zone. Moreover, this proportion could be even higher if the rate of mangrove deforestation continues unabated. The combined impact of marine pollution, flooding and coastal erosion associated with growing demographic pressure in the area, definitely lead to population migrations in the near back of the coastal zone. These movements will cause problems random and arbitrary occupation of land belonging to other communities.

Baseline for Component 1

The UNDP "Strategic Planning for Development" Project is the main baseline associated with the co-financing. With an investment of US\$2,100,000, this baseline is contributing to improve planning system at provincial level.

In the Province of Bas Congo, the project facilitated the establishment of consultation processes to enable all segments of the population (including youth, women) to take part in the management of public affairs through consultation frameworks in place. Through this process, a budget management system is also set up with tools adapted to this scale for sound and transparent management of resources mobilized. The public finance reform is underway in the Province and about 100 provincial technical staff and parliamentary have been trained in the Bas-Congo to better understand the process of preparation of the capital budget. This allowed the analysis and strengthening the public investment planning system in the province of Bas-Congo and the establishment of mechanisms for local consultation on public investment procedures. Provincial officials now have key elements in order to better exploit the provincial investment Budget. However, the additional capacity is needed to help identify the instruments of public funding to attract financial flows to urgently address the threats posed by climate change, particularly the high adaptation costs to protect socio-economic infrastructure.

The Direction of sustainable development (DDD) is also communicating about coastal erosion within the broader context of awareness raising. With an investment estimated to be US\$500,000 USD, the DDD is undertaking a large diffusion of messages, during Environment day, related to the protection of sensitive areas (see reporting on Environment Day 2014, <http://radiokapi.net/actualite/2014/06/05/journee-de-lenvironnement-la-rdc-emploi-la-protection-des-ecosystemes-fragiles/>). However, the DDD does not have much scientific and technical information to provide to the public to give guidance and direction on dealing with coastal erosion.

Baseline for Component 2

The LDCF project will take advantage of existing capacity of the Congolese maritime ways (CVM) and the National Agency of Meteorology and Teledetection by Satellite (METTELSAT) to collect, analyze and disseminate basic hydrodynamic and weather forecasting data.

- The CVM is currently undertaking daily monitoring of coastal bathymetry gauge to support the safe navigation of surface or subsurface. Two additional engine boats monitoring river are also equipped with GPS and automatic processing bathymetric system (measurement of the depth of the seabed). CVM has already established a database of more than 10 years on the depth measurements and the corresponding maps. The CVM is also equipped with a floating dock and two dredges to ensure the airworthiness of the maritime area between Matadi and Banana. This equipment would contribute to transport the necessary gabion for coastal protection (Output 2.2). The expected co-financing from CVM is US\$6 millions. However, consistent temporal and spatial coverage of high-resolution topography and bathymetry data are still lacking to support shoreline changes analysis.
- With a co-financing of US\$1 million, METTELSAT is daily collecting meteorological data from Muanda station and providing forecasts. However, the system of meteorological data collection and diffusion is currently not appropriate (incomplete data collection, weak analysis and diffusion). The network for observing meteorological conditions needs to be strengthened to give more accurate local information on sea level rise, climate data and models that are (1) high resolution and (2) diverse, rainfall climatology based on radar and ground measures that focus on the impact of the sea breeze on coastal rainfall, wave and climate data that could be included in bluff retreat models, etc. overall, there is no efficient EWS where the information is disseminated to provincial agencies, emergency services, public and other sectors, including land owners, tourism and oil industries, in preparation for appropriate response to an impending hazard event.
- In term of coastal monitoring, existing expertise on coastal and marine science will contribute to the planned EWS. In 2005, the Ministry of Environment established the National Commission in charge of the coastal and marine environment that already working with CVM on the control of pollution in the coastal zone and with local NGOs on the protection of the mangrove ecosystem. A network of national expertise is established (soil science engineers, specialists in urban development, geotechnical, environmental, etc.) to support the work of the Commission. Dialogues are initiated with the universities (e.g. Regional African School for Integrated Management of Tropical Forests (ERAIFT), the Faculties of Science and Law at the University of Kinshasa (UNIKIN), Regional Centre for Nuclear Studies Kinshasa (CREN - K), etc.) to lead the way on oceanographic studies. Contribution of the Commission in term of mobilizing expertise for the monitoring of the coastal zone is US\$1 million (see Letter from the Ministry of Environment). Despite the strong partnership and expertise set up, the commission does not have enough financial means to establish an efficient monitoring system.

- **With a baseline estimated at US\$5 millions**, the oil Ministry of Hydrocarbure in Bas Congo Province get support from the Oil company PERINCO to protect their infrastructures from coastal erosion through the **improvement and regular maintenance of national roads, particularly those in the city of Muanda and Boma**, and roads linking Tshiende and Nsiamfumu. In November 2013, PERINCO committed a private bureau to develop concept and preliminary designs for the coastal protection at following locations: the road Banana-Muanda, tank farm, and the Well. Furthermore, PERINCO established Social Responsibility Programme to support the development of the local community by targeting five major issues: infrastructure, access to drinking water, access to electricity, health and employment (<http://www.perenco-drc.com/corporate-social-responsibility/helping-in-five-issues.html>). The company launched a micro-credit program to foster individual initiatives in agriculture, craft industry, breeding and fishing. Repair of Muanda airport road is underway. PERENCO carries a reforestation program through the territory of Muanda. Over 10 years, about 30,000 acacia trees were planted with bamboo and other species in order to minimize the adverse effects of soil erosion (<http://www.perenco-drc.com/corporate-Social-responsibility/environment/forestry.html>). Unfortunately, these interventions are highly localized and few initiatives are taken to protect livelihoods (fishing), biodiversity areas (mangrove) or properties against coastal erosion. The implementation of identified adaptation options often requires considerable financial resources and expertise. Based on results from the preliminary design, it is estimated that \$10 millions is need to protect PERINCO priority sites. The Provincial budget is inadequate to meet adaptation costs including protection, maintaining and upgrading infrastructure and funding additional services provided to their communities on behalf of other levels of government.

Additional co-financing provided in cash and in-kind

- The Direction of Sustainable Development (DDD-Implementation partner) will provide an in-kind contribution estimated at USD 500,000 to the project. This in-kind contribution includes human resources, etc. (see Letter of Co-financing from Ministry of Environment, Natural resources and Tourism).
- UNDP Country Office will co-finance in cash this initiative for an amount estimated at USD 400,000. The UNDP TRAC contribution includes coverage of: i) support to project management (e.g. training on UNDP procedures, monitoring & evaluation, etc.); ii) Transportation equipment; iii) Recruitment of four UNVs or focal points, in each target Province; and iv) Computers and additional ITs equipment.

Complementary initiatives (non associated to the co-financing) are following:

- At institutional level, the government of DRC established on June 2014 the Inter-ministerial Committee on DRC coastal zone (after the debriefing with the Primer Minister on the PPG fields mission). The attribution to this commission is to (i) update on the status of the coastal area; (ii) support the implementation of emergent operation for the protection of infrastructure, the preservation of the marine environment and the monitoring of the coastline's evolution; (iii) ensure the reasoned and thoughtful planning of the occupation of spaces in anticipation of future economic challenges of the coastal zone; (iv) to propose a sustainable institutional organization responsible for protection of the Congolese coast; and to monitor and evaluate the implementation of activities. This Inter-ministerial committee will contribute to mobilise the attention of the government on key priority actions and investments and support coordination of actions among ministries (transport, infrastructures, mining, environment, water resources).
- The LDCF funded project builds on the efforts led by the government on coordinating and planning development at provincial level. The Bas Congo Province has developed its development Plan for 2011-2015, supported by five pillars: (i) good governance and peace-building, (ii) macroeconomic stability and accelerating growth, (iii) improving access to basic social services and reducing vulnerability; (iv) combat HIV, and (v) support for community dynamics. This policy baseline provide a good basis from which to plan for climate change at the local level and will contribute to strengthening the overall capacity of local decision makers to understand climate change risks and their impacts, and to allocate necessary budget for the protection of coastal infrastructures and communities. However, the development plan pays little attention to the impacts of coastal erosion and no investment is expected to support the protection of communities against climate impacts. Institutional capacity at the provincial level is low and needs to be strengthened to include climate change in provincial and municipal policies and strategies (e.g. the Provincial Development Plan, the urban plan, etc.).

Long-term solution and key barriers

In the context of climate change, it is important for the Muanda region to develop new coastal management systems that can accommodate these uncertainties and help to minimize the impact of these events on community livelihoods. The preferred solution is an effective and efficient protection of the coastal zone to minimise loss of life, economic damage, habitat destruction and loss of cultural heritage due to low frequency and high-impact hydro-meteorological events. Some of the barriers to overcome have been identified, among which:

First, there are significant *information gaps* in the country, particularly with regards to climate risks in the coastal area such as: forecasting sea level rise, identification of areas at risk from climatic events, meteorological conditions and forecasting climate change over medium and long-term. The requisite infrastructure for the production of relevant information is not available. The region is equipped with only one weather station – at the Provincial airport – and even this is currently not functioning appropriately. The absence of reliable and relevant information makes it very difficult for Provincial and National agencies to assess suitable adaptation options, design coastal defence infrastructure and to develop and institutionalize appropriate guidelines and standards for planning purposes. Another obstacle is significant information gaps in the country, especially with regard to climate risks in the coastal zone such as i) the prediction of rising sea level; (ii) identifying and mapping areas at risk to climate events; (iii) weather and predicting climate change in the medium and long term. The infrastructure necessary for the production of relevant information is not available. The coastal area is equipped with only one weather station and which moreover is not working properly. In the absence of reliable and relevant information, it is difficult for the provincial and national agencies to evaluate appropriate adaptation options, design of coastal protection infrastructure and develop and institutionalize appropriate guidelines and standards for planning purposes.

There is a *limited institutional and policy capacity* to effectively support communities to identify, plan, design and implement adaptation options and coastal defence measures. Provincial staffs have limited knowledge and technical know-how about climate risk management in relation to the coastlines. In the DRC, the current institutional framework is characterized by duplication and lack of clarity in terms of mission or mandate for most state institutions to deal with the planning and implementation of sovereign activities. This situation is exacerbated by a lack of institutional coordination between ministries, between the line ministries and major autonomous bodies involved in the management of the coastal zone, environmental protection, management of natural resources and management of coastal hazards. This is a key obstacle to effective management planning of coastal risk in the DRC

Furthermore, the current environmental policies of the DRC consider environmental management, but do not put any special emphasis on climate change in coastal areas; in the case of the Strategic Document for Growth and Poverty Reduction (SDGPR) and the Environment National Plan (ENP). Existing policies of the DRC for the development and planning in coastal areas at both national and provincial levels are ineffective. This is aggravated by the fact that: (i) the authorities are not sufficiently sensitized; (ii) the very limited technical capacities of decentralized technical services to effectively support communities to identify, plan, design and implement adaptation options and measures for effective coastal protection.

In terms of *funding capacity*, coastal communities need also strong financial support to address urgent threats posed by climate change, and to meet the high adaptation costs to protect infrastructure, household property and businesses. Despite its rich endowments in natural resources and the dynamism and entrepreneurship of its population, the Democratic Republic of Congo (DRC) has been affected by a series of economic and political crises since its independence. The physical and social devastation caused by decades of mismanagement and conflict is extreme, and today, DRC is one of the poorest countries in the world. This situation explains mainly the prevalence of poverty, which affects 69% of the inhabitants. In addition, the Provincial PRSP paid little attention to coastal erosion impacts and no investment is planned to support communities' protection from climate impacts. The Provincial PRSP does not factor in the projected intensification of weather events associated with changing climate and increasing climate-induced problems

Finally, there is a general *absence of awareness among coastal communities of the possible impacts of climate change*, of the adaptation options available to manage anticipated risks and hazards including the importance of coastal defence ecosystem and infrastructures. This has led to unsustainable exploitation of mangroves (in order to meet urban expansion needs and fuel for household and smoking fish). Faced with unemployment, young people are

more and more engaged in marine sand exploitation. Unsustainable sand extraction practices can undermine the resilience of coastal communities

A. 5. Incremental /Additional cost reasoning: describe the incremental (GEF Trust Fund) or additional (LDCF/SCCF) activities requested for GEF/LDCF/SCCF financing and the associated global environmental benefits (GEF Trust Fund) or associated adaptation benefits (LDCF/SCCF) to be delivered by the project:

Considering the significant economic importance of coastal areas, a comprehensive and effective response that integrates adaptation to climate change is required. The resources of the LDC Fund will help strengthen the local response to the risk of erosion and flooding through the use and promotion of technologies for adaptation in coastal areas to ensure the socio-economic resilience and well being of vulnerable communities. Disaster risks posed by climate change should be taken into account in the assessment of capacity and vulnerability and a new model of development is needed now, not only in terms of emergency activities that save lives, but also for the process to stimulate development. New partnerships will be forged not only with governments, NGOs and UN partners, but also with local decision makers and vulnerable communities, especially when it comes to the Early Warning System (EWS).

The transformative impact of long-term improves climate resilience of Muanda communities (Bas-Congo Province) by the creation/establishment of the relevant information for planning and budgeting climate risks, and management measures to protect the coastline of the Democratic Republic of Congo. This will be achieved by obtaining in medium term, the following results:

- The management capacity for climate risk strengthened for provincial officials and parliamentarians, the private sector and coastal communities to integrate climate information into policy and investment planning
- The urgent and immediate adaptation measures implemented in the most vulnerable Muanda coastal communities to reduce simultaneous impacts of several climate risks, while enhancing the ability of weather and climate monitoring functional

Component 1: Integration of information on climate risks in the relevant planning policies

The resources of the LDCF will be used to strengthen capacity on climate change risk management (*for provincial, municipal officials and parliamentarians, private sector representatives, and coastal communities*) in support to integrate climate information into policy and investment planning.

Without LDCF intervention the overall capacity of provincial institutions is restricted by the weak ability to quantify the problem of erosion, understand the key processes in the coastal dynamics and identify options and relevant costs to address coastal erosion. Without more specific guidance, provincial authorities appear to be reluctant to take action on climate change. There is rarely sufficient localised detail to incorporate coastal risks into specific plans (or to develop new plans) or to quantify the impacts on assets. With LDCF support, the government of DRC will assess specific risks related to coastal erosion and adaptation options/costs to allow provincial deciders to address them at the planning stage.

Even when climate change information and guidance material are available to provincial authorities, they may not have the professional or technical expertise to determine how these should best be used. Decision makers have varying capacity to acquire the data they need to understand risks under different climate change scenarios, and usually lack the know-how to integrate that information into planning and investment decisions. With LDCF resources, long-term capacity for planning adaptation will be enhanced through the integration of climate change adaptation into provincial planning and the designing of an effective financing, monitoring and evaluation system. Relevant information skills and tools will be provided to decision makers to facilitate the integration of risks and opportunities associated with long-term climate change and the planning necessary budget. This will support to advance the National Adaptation Process in DRC, specifically in the Province of Bas Congo.

Without LDCF intervention, most of coastal communities (land/hotel owners, households, fisherman, farmers, oil companies, etc.) are also lacking information on the adaptation options available to manage anticipated risks and

hazards. Many people are unaware of the role that erosion plays in building and maintaining beaches and other coastal features, so there is rarely any consideration of the consequences of extensive shoreline hardening. Several schools and NGO engaged in mangrove protection exist in the area but most do not have education material about erosion or the coast that they regularly distribute or direct people towards. Given the popularity of coastal living, it will be extremely difficult to maintain and restore natural shorelines, and stop the proliferation of settlements. A fundamental shift in attitude and practices will be necessary to convince any coastal community to reconsider how they deal with erosion. With LDCF support, a detailed communication strategy will be implemented to improve the understanding of climate change risks in the coastal zone and the access to relevant and usable information about how to deal with coastal erosion, and begin to use this material to guide their decisions about erosion management. This will facilitate the ownership and mobilization of different actors (local chief, coastal landowners, private sector and communities) in supporting the development of climate resilient plan.

Outputs and activities for component 1

Three main outputs will contribute to achieving this outcome. They include:

Output 1.1. Coastal erosion risk profiles prepared for multiple coastal segment and economic analysis of coastal defence /adaptation options assessed for the most sensitive areas to facilitate budgeting and future land use planning in Muanda Region.

Understanding the key processes of coastal dynamics and how coasts developed in the past and present, as well as over the short and long term, is very important for managing coastal erosion problems because coastal erosion may occur without cause for concern. Climate risks and economic assessment can predict coastline evolution and interaction with the source of the problem and possible options to be implemented in the short and long term. This will contribute to countermeasure planning and design as well as coastal erosion management. Following activities will be undertaken:

Activity 1.1.1: Conduct community-based climate risk mapping exercise to integrate local knowledge and engage vulnerable communities in the formulation of adaptation plans.

In each segment, at least 25 community members (including women and young associations, schools teachers, land owners, technician from provincial ministries, CVM, etc.) will be trained on (i) community vulnerability mapping using preconfigured global positioning system (GPS) equipment, (ii) participatory mapping, (iii) vulnerability and risk assessment, map interpretation, etc. Project-trained community facilitators will conduct community mapping. Using handheld GPS units, they will work with the communities to establish control points, determine and collect data points, and take photographs for a visual baseline. Other survey will be under taken such as: (i) household surveys to evaluate and map household-level vulnerabilities and (ii) beach profile surveys that help better predict climate change impacts on shoreline change. The coastal risks mapping will also include a gender-based analysis and gender impact assessments to ensure the recognition of gender issues in this area. Short community profiles will developed for targeted coastal segment based on the community mapping and household survey results. These profiles set the context for the community-based adaptation planning. Finally, fieldwork will be organised to validate the results of the participatory mapping exercises.

Activity 1.1.2: Assess scenarios for SLR and induced coastal erosion on the basis of local expertise (CVM, METTELSAT, CCG and others), regional and global Climate Change models, downscaling and extending results work into the three specific sites (Banana at Km5, Muanda and Nsiamfumu). It will be undertaken modelling exercises for 100-year return period and other ancillary data such as (i) bathymetric and topographic information; (ii) long-term erosion trends; (iii) data from any previous erosion studies in the area; (iv) anecdotal evidence of past erosion events including community questionnaires; (v) wave data and local surveys.

Activity 1.1.3: Develop dynamic GIS that will integrate (i) GPS data from community vulnerability assessment converted into GIS layers, (ii) government base maps providing data on elevation, infrastructure, land use and land cover, and geology; (iii) community data layers on sociocultural data, primarily of significant cultural sites. Other relevant data layers will be also incorporated, including remote sensing imagery; downscaled global climate models; and available GIS layers on the hydrology, physical features, and biotic communities of the project sites.

Activity 1.1.4: Develop coastal risk profiles based on community-level data and using GIS techniques and integrated modelling exercises for 100-year return period and other ancillary data. The risk profiles will be

developed through a multi-stakeholder decision-making process involving local communities, users (for example, oil companies, tourism providers, etc.), common which together determine the terms of use / development of shoreline on the basis of a plan for urban development and climate change scenarios. The profiles will be presented in the form of a coastal risks atlas showing (i) the area of land affected by erosion or storm-tide inundation up to a specific level of risks; (ii) sea-level rise areas based on three sea-level rise scenarios to the year 2100; (iii) the vulnerability of the communities to flooding, drought, intense heat events, cyclone-force winds, and sea-level rise and storm surge; and the vulnerability of specific ecosystems, such as the mangroves. The maps will enable the communities to see their position in the official geography and how the sites that are important to them may be impacted by climate change. Printed copies of these maps will be simplified for the identification of priority risks during adaptation planning. Poster versions of the maps will be displayed in public places, increasing the population's awareness of climate change and engendering support for the implementation of the community adaptation plans. The maps will be made available to local authorities and other users.

Activity 1.1.5: identification of adaptation options and economic valuation

Based on coastal risks profiles, it will be assessed the predicted impacts on the various economic activities (agriculture, fisheries, tourism, oil extraction), on people's behaviour (consumptions, health), on environmental conditions (water availability, mangrove forests), and on physical capital (infrastructure). Adaptation actions will be selected to off set the predicted impacts and to restore welfare in each of the major economic sectors analysed. The cost effectiveness and sustainable erosion adaptation strategies will be determined to maintain natural coastal processes and resources, and consider community needs in both the short and long term. The final output will be the realisation of the shoreline erosion management plan that provides a framework for the sustainable use, development and management of land vulnerable to erosion by considering the environmental, social and economic values of the land, adaptation costs and the physical coastal processes acting on the foreshore.

Output 1.2: Improve understanding of climate change risks in the coastal zone and facilitate the mobilization of different actors (local chief, coastal landowners, private sector and communities) in supporting to policy planning process

Communicating about coastal adaptation will encourage preparation and action. It will be undertaken within the broader context of education and awareness raising about coastal management and climate change adaptation. Following activities will be undertaken.

Activity 1.2.1: Design and roll out an efficient knowledge dissemination and communication strategy targeting various stakeholders (local leaders, coastal properties, private sector and communities).

The strategy will have both a grassroots community-driven component, as well as a more traditional government communication element. NGOs or government can assist these efforts by supporting the development of appropriate resources for community groups to start this process. The strategy will be articulated into following axis:

- Advocacy targeting the political and administrative authorities, territorial, provincial and national levels to influence them in adopting relevant laws, regulatory measures, budgeting for coastal protection and providing technical support to on-going or planned programs and projects on coastal management;
- Social mobilization targeting non-governmental organizations, local churches, local companies, social and public organisations, radio channels and local territorial administration to stimulate the construction of alliances for the promotion of mutual consultation framework and sustainable partnership.
- Social and behaviour changes targeting individuals, target groups, households, children and communities to avoid bad practices and actions in the management of the coastal zone management;
- Better use of new technology of information and communication (using sms, social network, web where possible) to increase the visibility, promote exchange of information and sharing experiences and best practices

Activity 1.2.2: Organise at least 10 information & awareness campaigns to increase their understanding of climate change impacts, natural coastal processes and associated uncertainties, and the costs, benefits and consequences of various erosion control options and the potential impacts of climate change. The Ministry of Environment will develop clear, consistent messages for provincial government, municipalities, households, coastal property owners and private sector on. It is expected that the coastal property owners and private sector will have the willingness, confidence, information and support to shift to alternative methods to slow coastal erosion, including “softer” erosion management approaches.

Activity 1.2.3: Establish a community exchange platform using existing media network as channel to disseminate access relevant and usable information about how to deal with coastal erosion, and begin to use this material to guide their decisions about erosion management. Information flows to coastal communities will be improved through the development of new tailored products to serve the information requirements of users in different sectors. These products will be developed through consultations with the intended users of the information and appropriate research organizations. Information and data from the monitoring infrastructure (weather and hydrological stations, radar, and satellite monitoring) will be combined to produce new user-relevant information.

Activity 1.2.4: Educational Programme on coastal protection will be designed and roll out to contribute to Education for Sustainable Development. In partnership with UNESCO, a Sandwatch programme will be establish for at least 10 schools near the beach and the High institute on fisheries and navigation in Muanda for scientific observation, measurement and analysis of changes in the coastal environment using an inter-disciplinary approach. Furthermore, the management of coastal risk will be promoted into the school curricula. In partnership with PERINCO Social Programme, at least 5000 educational booklets on coastal risk and climate changes, including modules and manuals for teachers and children, will be developed and disseminated to facilitate the process of integrating CC issues into curricula. The inspectors and pedagogical advisors and the directors of primary schools will be trained on using the booklet and sensitized to better understand the risks and opportunities related to coastal risk, climate change and adaptation.

Activity 1.2.5: Finally, regularly exchanging information and experience will be established to ensure that lessons learnt from the project are shared to replicate demonstration activities and catalyse investments. Communication tools (such as reports, DVDs, films and documentaries, radio shows and brochures) will be developed. The information packet will be translated into the appropriate formats and languages to allow dissemination through the community radios or television channels in the national languages. Furthermore, it will be organize provincial forum each year to communicate the technologies promoted, share lessons learned and experiences from the project. Finally, the website/social media (twitter, Facebook) of the project will be developed and links with the UNDP/GEF’s ALM (*Adaptation Learning Mechanism* and Wikiadapt.) to ensure that the lessons learned from this project affect a broader audience, including the international agencies, financial backers and GEF Secretariat.

Output 1.3. Relevant tools and skills provided to staffs from the Province and Muanda Commune to adjust development plan & budgets appropriately and support effective adaptation in the coastal zone.

The project will strengthen the capacity of provincial decision-makers and planners to understand how to integrate data and information on the expected impacts of climate change, SLR and coastal erosion on communities and ecosystems. Following activities are planned:

Activity 1.3.2: Organise training for staffs from the Province (Provincial Ministries of Land, Agriculture, Planning, staffs from Muanda Municipality, etc.) to use science-based guidelines.

- Training needs analysis will be carried out in each of the target groups
- A toolkit will be developed to outline the methodologies used to assess climate change risks (i.e. co-production of scientific data and local knowledge), adaptation planning, cost effectiveness analysis. Furthermore, adaptation modules will be developed addressing all key aspects of climate change adaptation issues in general, and in particular SLR and coastal erosion impacts on community livelihoods, ecosystems health and land planning, within the framework of the forthcoming CC scenarios.

- At least 4 training will be delivered at appropriate levels of technical sophistication and at provincial and municipal level on the proper use of probabilistic modelling concepts, weather forecasts and predictions, climate change projections and relevant environmental and socio-economic data to adjust. Consultants with expertise in local planning and climate change will be recruited to facilitate the development of tools and to organize training workshops. They will help develop monitoring and evaluation tools in partnership with local agents in charge of planning within Bas Congo Province and Muanda City.

Activity 1.3.2: Review of Bas Congo Development Plan to incorporate the coastal erosion risk profiles, adaptation options and costs.

- An assessment of the development plan will be realising to identify gaps and shortfalls.
- Meetings with provincial authorities and staffs will be convened to discuss how the results of the climate risk and vulnerability profiles and cost effectiveness should be used to adjust regulations and policies governing the coastal zone.
- Develop and implement a roadmap for adjusting policy and budget to include adaptation. The roadmap (akin to a sub-national level adaptation plan) will be a technical document guiding processes to achieve the transformational initiatives of Bas Congo, policy instruments to secure investment and financial flows from governmental and nongovernmental actors and agencies for the implementation of priority integrated climate and sustainable development activities. The roadmap will include short-/medium-/and long-term priorities, associated public policies and financing strategies, institutional and operational framework for implementation, and monitoring and evaluation processes. This step involves also bringing together potential public and private partners, supported by relevant technical and financial experts, to jointly assess and develop the roadmap.
- Consideration will be given to examining the regulatory tools available to local governments to raise finance in an economical and equitable way. For example, it may be appropriate to consider how developer contribution schemes are formulated and implemented and how government expenditure in coastal (and flooding) protection works can be recovered from the beneficiaries of any public works. Based on that a financial model and tool will be developed to guide decision makers about the financial implications of climate change impacts on asset management and investment.

Component 2: Investment in coastal defence and monitoring

The government of DRC is requesting support from LDCF to implement urgent and appropriate measures to reduce the simultaneous impacts of several climate risks while enhancing the operational meteorological center and the ability to monitor climate in the Muanda coastal area.

Without LDCF intervention, responses to coastal hazard events are likely to be inadequate with very little operational capacity, included equipment, communication infrastructure and know-how for the key stakeholders in terms of preparedness, risk prevention and response. The CVM and METTELSAT weather and coastal bathymetry monitoring systems have limited data availability and difficulties connecting local disaster impact assessments with national monitoring systems. During the PPG, it is reported that coastal communities are not receiving timely and understandable warnings of impending hazards and they also highly lack of communication systems and arrangements for ensuring that early warnings are acted on successfully. The capacity to produce reliable loss and impact information remains a great challenge. With LDCF resources, coastal communities will have a well decentralize, reliable and functioning organizational system for managing climate risk and disaster and coordinate response. A people centred Early Warning System will be establish to help reinforce the data collection in the target areas, while also involving and sensitizing population to disaster risks factors.

Without intervention, high-level shoreline recession will continue with the ocean winning a score of meters on DRC continent. With the rate of shoreline retreat, it is expected that the road Banana-Muanda will be completely lost by 2050 and the proportions of lost lands will double around Nsiamfumu and between Muanda city and Banana). DRC will see its territory reduced from 50 to 100 m on its coastal area. Many coastal communities also face socio-economic challenges that may affect their vulnerability to climate change and their ability to respond to gradual changes and specific severe events such as increased average speed of the breaking waves and the height of

the swells. Local communities are powerless to damage caused by coastal erosion such as destruction of properties (mangrove hotel, houses in Vista city, etc.), agriculture land, basic infrastructure (road Banana-Muanda), disappearance of fishing beach and land dock, mangrove habitats losses, etc. With LDCF resources, a menu of “soft” and “hard” adaptation measures will be piloted to stabilize cliffs in Muanda city and minimise losses. Furthermore, attention will be also paid to restore Nsiamfumu fishermen landing site to secure the operations of docking and unloading of fishing through the construction / rehabilitation of wharves’ landing areas to protect them from the impacts of coastal erosion. Finally, alternative climate resilient livelihood opportunities will be developed to increase economic capacity of vulnerable households and support young associations on entrepreneurship.

Outputs and Activities for component 2

Output 2.1. Establish a Community based Early Warning system to increase preparedness, risk prevention and response capacities

The system will be established for the 5 coastal communities: Muanda City and villages of Muanda, Nsiamfumu, KM 5 and Kitona. The community-based early warning system will provide the best available information on potential hazards in a timely manner so that communities can respond appropriately and also support effective implementation of evacuation plans. Following activities will be undertaken.

Activity 2.1.1: Establishment of the organizational structure

- Preliminary assessment will be done to (i) identify existing capacities in the community on which the early warning system and existing coping (warning) mechanism can be built; (ii) analyse the institution and stakeholder analysis where target communities will identify the organizations and institutions which can support for and be a part of early warning systems; and (iii) analyse the organizational, technical, and financial sustainability of the system to set up in place.
- Under the support of the civil protection provincial service, the organizational structure will be established with appointment, equipment and training of focal point team in each village (3 to 5 peoples, gender balance ensured). Members of the team will facilitate collective identification and alert on emerging risk. They will be equipped at least with mobile phones with credit for phone calls and text messages (SMS) and solar powered radio (or at least powered by rechargeable batteries).
- Training will be organised and include understanding key indicators and functioning of the EWS, its information transmission systems (including SMS updates bottom up and top down) and understanding Standard Operating Procedures (SOP) and learning to use it.

Activity 2.1.2: Develop the functional database to produce newsletters and alerts on coastal climate risks

- Upgrading the Coastal Early Warning System equipment with the acquisition and installation of meteorological buoy, coastal weather stations, a server and 2 computers. Mechanisms for sustainable replacement and maintenance of equipment will be analysed and established in collaboration with METTELSAT and CVM;
- Providing specialised training in marine meteorology and the preparation and dissemination of weather reports through multi-media channels to METTELSAT and CVM;
- Development of the generic structure for an Early Warning System (EWS) of coastal hazards, including five core modules:
 - An observation module, where the necessary measures for numerical modelling (weather, waves, and a profile of initial range) will be collected. Possibility to use PERINCO off shore platform related information will be also analysed;
 - A forecast module for forecasting numerical models of the climate, wave, rising and morphology;
 - A module for decision support, containing tools (impact indicators of the storm and hazard maps) to assist in decision-making;
 - An alert module where warnings will be issued according to different specific thresholds site

- A display module for displaying information online to help end users

Activity 2.1.3: Establishment of a participatory system, gender-sensitive, transfer and dissemination of information and alerts on coastal climate risks.


- Development of a Standard Operating Procedures (SOP) that include a set of indicators easy to monitor but also capable to inform on the factors influencing different risks. The preparation of SOPs will be participative, involving Focal Points, the coordination framework of Muanda, the provincial Authorities, representatives from women & young associations, Civil protection and the humanitarian and development agencies operating in target sites UNDP, FAO, NGOs, etc.);
- Establish the dissemination and alerts mechanism: different communication and dissemination systems will be applied to communicate information from coastal equipment to focal points and to disseminate the information to all the members of the community. Based on the participatory assessment (Activity 1.1.1), the mechanism and means for communication and dissemination based on the information and level of risk will be established.

Output 2.2. Pilot adaptation measures to stabilize the cliffs at Muanda and secure fisherman docking and landing operations at Nsiamfumu

The LDCF funding is not expected to address all of DRC's coastal infrastructure needs, it will help in covering the costs of rehabilitating and protecting areas at high risks identified by communities during the PPG.

Activity 2.2.1. Rehabilitation and protection of the fish-landing site in Nsiamfumu

About 512 fishermen in Nsiamfumu village are constantly suffering from coastal erosion with the decline in their anchor fishing spot. There is an urgent need to rehabilitate and protect the fish-landing site.

	<p>Planned activities will be following:</p> <ul style="list-style-type: none"> • Conduct relevant assessments to determine feasibility cost-effectiveness and due-diligence with respect to environmental and other standards; • Undertake rehabilitation works including the construction of a quay and relevant facilities such as: a fuel facility, water supply, an auction or market facility, an office /laboratory for quality control, a fishers meeting room, and WC and washroom;
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- Establish boulders and rocks in front of landing site to break seawater and protect the infrastructures from heavy waves;
- Training fisherman associations on maintenance of infrastructures;
- Establish an infrastructure maintenance funds from fisheries activities.

Activity 2.2.2. Stabilization and protection of cliffs at risks in the segment Nsiamfumu-Muanda

This segment is experiencing acceleration of approximately 3-4 m per year and consists of a soft cliff exposed to both waves and landslides as a result of runoff from rainfall. The Mangrove Hotel and several homes are exposed to collapse at any time due to the dynamics of the ocean and rainwater. The CVM lighthouse' guiding ships on the high seas is about to be taken away. An integrated approach to cliff management will be established involving a combination of structural and non-structural solutions, as appropriate. Following activities will be undertaken.

- In order to effectively manage coastal cliffs, a detailed hazard and risk assessment for both the cliff face and the talus slope will be undertaken to allow Muanda city planners to access to accurate and reliable information on the character of the cliffs, past and future cliff recession patterns and trends and the level of risk to coastal communities, together with the range of management strategies and erosion control techniques that might be suitable in different cliff environments.
- To limit the impacts of the rainfall runoff, cliff-dewatering measures will be undertaken by creating horizontal or vertical drains that reduce the effect of water runoff.



- Cliff stabilization measures will also be undertaken by growing vegetation cover in the form of shrubbery that can hold the soil together. Following tasks are planned (i) conduct a more detailed survey of previously re-vegetated areas to determine success levels; (ii) identify the range of plants most suitable for re-vegetation efforts on the cliffs in site specific areas with a preference for indigenous plant; (iii) production of plant nurseries with the support of women & young organisations; (iv) realization of vegetalisation works; (v) organization of at least 2 workshops per year to sensitize communities on the maintenance of plantations established.

- Addition rocks material at the base of the cliff will be established to reduce incident wave energy by means of dissipation and diffraction;
- Finally, participatory maintenance plan will be established and funding mechanisms developed with Muanda and Nsiamfumu decisions makers.

Output 2.3. Create alternative climate-resilient livelihoods for women & youth organizations to reduce pressure on coastal resources and to uplift the economic status of the coastal communities

With LDCF resources, at least 15 communities associations will explore ways of adapting their livelihoods to climate change together by undertaking the income generating activities that may provide a more stable income given increasing uncertainties about weather and availability of natural resources. The targeted vulnerable group includes climate-induced disaster-affected poor families (with special emphasis on women-headed families and young) living in the exposed and vulnerable hotspots of coastal zones that have very little capacity to cope with extreme weather events and the communities whose livelihoods are solely dependent on harvesting natural resources (fisheries and mangrove exploitation). Following activities will be undertaken.

Activity 2.3.1: Resilient fish farming & fish products processing developed for fish production associations. An area for drying and processing fishery products will be realised for the women fish production association established in Muanda village. In addition, fish farming will be developed in Banana Km5. Participative mapping of the potential fish farming will be completed along with a market survey prior to implementation to understand how to ensure optimal economic returns for the poor households. Training will be also organized for the maintenance of infrastructures.

Activity 2.3.2: Promoting improved cooking stove to reduce mangrove deforestation. Women's groups will also be supported to promote the use of improved cooking stove (at least 200) to reduce consumption and pressure on mangrove wood homes. In addition, they will carry out activities in mangrove replanting to restore the ecosystem, and protection against flooding and coastal / erosion and increase the goods and ecosystem services.

Activity 2.3.3: Alternative activities developed for young associations

The youth associations engaged into gravel mining /coastal stone exploitation will be supported to develop alternative activities. Since the expansion of Banana Muanda Nsiamfumu cities caused the use of gravel from the ocean, it is necessary to find an alternative solution in the production of sandstone between Boma and Muanda to

cover the need for building materials and even the need to develop structures for coastal protection. With LDCF resources, feasibility study on exploitation of quarries stone will be undertaken to evaluate costs benefits, market based, entrepreneurial capacity of young associations and comprehensive environmental and social impacts. Dialogues will be organised with the private sector engaged in stone exploitation, landowners and provincial authorities to support the establishment of small enterprise on stone exploitation and selling for young associations. The procurement of basic material (such as mobile crusher, drilling system, etc.) will also be facilitated. Finally, management system will be developed to minimise impact on social, economic, ecological and biological systems.

Activity 2.3.4: The capacity of beneficiaries on entrepreneurship, marketing of products, managing value chains, and accessing financing and credit will be strengthened. Facilitate access to commercialization and business credit. Project beneficiaries will be trained & supported to develop and submit applications for credit. Partnership will be established with micro-finance suppliers to lead groups through the application process from beginning to end. To manage risks related to climate impacts, the beneficiaries will be trained to better understand and manage climate risks, whether through adjustments to their existing operations and they will share this knowledge with their peer via a knowledge network. Participants will be selected based on their interest, capacity to learn, and ability to influence others in the community.

A.6 Risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved, and measures that address these risks:

The proposed project indicator framework follows the GEF-6 Adaptation Monitoring and Assessment Tool (AMAT) and is aligned with the UNDP M&E Framework for Adaptation. Objective level indicators and outcome level indicators are specified according to the UNDP nomenclature of Results Based Management (RBM). The project design further foresees the development of more specific M&E tools, especially at the local implementation level. Participatory local level M&E can be a powerful management and communication tool, especially for tracking and demonstrating project results in demonstration sites. It is foreseen that a more detailed M&E project framework will be developed during the project inception phase for national management purposes.

An overall project M&E plan has been devised and is included in the respective section of the project document below. It foresees regular progress reports, as well as audits, a mid-term evaluation and an end-of-project evaluation.

Assumptions underlying the project design include that:

- Existence of scientific and technical capacities to support the development of risks management measures;
- Involvement of communities in assessing vulnerability, developing and implementing relevant adaptation options
- Availability of relevant information to support information & awareness process
- Existence of national scientific and technical capacities to support the development of risks management measures

A complete Risk Log is included in UNDP Prodoc Annex 1 of the project document. It includes risks identified in the project identification form (PIF) (see below) as well as newly identified risks. Additional barriers are included in the Barrier section above and are generally represented by the risks specified below. Most risks are organizational or strategic in nature, and mainly relate to relatively low current institutional and individual capacities of the public service structure in terms of adaptation. In summary, the following key risks were identified (risks identified in the PIF or the Project Preparation Grant phases are identified accordingly):

- Political instability and conflict resurgence (PIF)
- Inadequate and unsustainable management and maintenance of coastal defences (PIF)
- Limited capacity of PMU particularly to handle more complex forms of procurement (PPG)
- Financial resources are limited for undertaking coastal infrastructures (PPG);

- Gaps on relevant physical and socio-economic data allowing the establishment of coastal profiles and cost effectiveness adaptation options (PPG);
- Low mobilisation and lack of interest of target groups (specifically private sector and land owners) (PPG);
- Low capacity of national institutions to manage the information system (PPG)
- Low capacity and involvement of national institutions to support communities in their resilient and alternative livelihoods (PPG)

A.7. Outline the coordination with other relevant GEF-financed and other initiatives: **N/A**

A.8. Are gender considerations taken into account? YES

As highlighted in the baseline, artisanal fishing is an important activity for coastal communities engaging both men and women. It is estimated during the PPG process that at least 5 women association and 7 men association are exclusively engaged in the fishing sector. The fishing sector is still mainly regarded as a male business, although women play a crucial role in post-harvest activities like marketing and processing fish and in reproductive tasks like maintaining nets. Because they are often responsible for supplying firewood for their families, women are also especially aware of the need to protect coastal ecosystems and biodiversity. Gender sensitive analysis will be an important approach for the project with a need to integrate gender considerations throughout these activities – during design, assessment, demonstration, and especially with regards exposure and training programmes toward maintenance and upscaling.

Gender considerations were part of the process of project formulation. During the preparatory phase, efforts were made to involve women's association and youth, as well as civil society and institutional leaders in the group discussions (see PPG report 2). Key issues were identified during the process including the need to have data on gender and coastal risks and to develop climate resilient activities aiming at reducing women vulnerability to the impacts of coastal erosion.

Under the component 1, the coastal risks assessment will include a gender-based analysis and gender impact assessments to ensure the recognition of gender issues in this area. It will be designed and conducted a community awareness campaign on climate change risks using culturally appropriate tools and aimed at all genders, including information packs that comprise examples of community-based adaptation measures in the coastal area. The awareness campaigns will be tailored to the specific needs and concerns of women and men. They will be evaluated at least once per year to determine if women are effectively involved in the process. Key lessons learnt from the various project activities will be distilled and integrate them into the agenda of the dialogues, as relevant for the target groups. Decisions making process on coastal adaptation option will be conducted on gender sensitive approach involving women and young on planned consultation workshops.

Under component 2, community-based small-scale activities will be implemented with youth associations and women from Muanda, focused on the development of alternative livelihoods resilient activities to climate change in order to remove / reduce pressure on coastal resources. It is expected that at least 30% of investments under this component will be directed to income generating activities. Women's contributions to natural resource management and conservation efforts like mangrove rehabilitation promoted.

B. ADDITIONAL INFORMATION NOT ADDRESSED AT PIF STAGE:

B.1 Will project design include the participation of relevant stakeholders from civil society and indigenous people?

(yes /no). If yes, identify key stakeholders and briefly describe how they will be engaged in project design/preparation:.

The success of project intervention requires the active involvement and participation of the different stakeholders. Key stakeholders for the project include (i) national institutions involved in coastal monitoring and climate information (e.g. CVM, METTELSAT); (ii) Provincial authorities and staffs from the Bas Congo Province, Muanda City and villages leaders; (iii) Private sector including, oil companies, hotel owners, etc.; (iv) community based organisations (women and young associations) that are living in the targeted rural areas, including the participation of potentially vulnerable groups such as women; . The present Plan was designed based on the series of meetings organised with stakeholders during the project inception, for agreeing on project content and operationalization (situation analysis, priority sites for intervention, priority criteria, management arrangements).

Outputs	Responsible institution and role	Stakeholder and role
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<p>Output 1.1. Coastal erosion risk profiles prepared for multiple coastal segment and economic analysis of coastal defence /adaptation options assessed for the most sensitive areas to facilitate budgeting and future land use planning in Muanda Region.</p>	<p>Congolese des Voies Maritimes (CVM) Contribute to the design and mapping of vulnerable sites to erosion Evaluate the costs and benefits of options for coastal protection</p>	<p>The Sustainable Development Directorate (DDD) of MECNT: ensures coordinate of activities</p> <p>Provincial authorities: to facilitate the planning process and the choice of adaptation options</p> <p>National Directorate of Guinea Current Commission (GCC): contribute to the design and implementation of adaptation options</p> <p>Communities of Muanda: help assess defenses or adaptation options</p>
<p>Output 1.2. Improve understanding of climate change risks in the coastal zone and facilitate the mobilization of different actors (local chief, coastal landowners, private sector and communities) in supporting to policy planning process</p>	<p>Design of the communication strategy and dissemination of information on climate risks and support the planning process</p>	<p>Provincial Government of Bas-Congo: Integrating project activities and problems of the coastal zone in the provincial planning to ensure sustainability</p> <p>DDD of MECNT: coordination</p> <p>Local radio: Contribute to the dissemination of knowledge and information on the activities and results of the project</p> <p>Local Communities: contribute to the design and implementation of advocacy and monitoring activities</p>
<p>Output 1.3. Relevant tools and skills provided to staffs from the Province and Muanda Commune to adjust development plan & budgets appropriately and support effective adaptation in the coastal zone.</p>	<p><i>MECNT:</i> The Sustainable Development Directorate (DDD ensures coordinate of activities</p>	<p>Provincial authorities: to facilitate the inclusion of climate fund in the development plan of Muanda</p> <p>Local Communities: support the process of participation</p> <p>Relevant ministries : Contribute to the design of adaptation activities and support the process of participation</p>
<p>Output 2.1. Establish a Community based Early Warning system to increase preparedness, risk prevention and response capacities</p>	<p><i>METTELSAT:</i> Contribute to the design of the Early Warning System (EWS), identify needs for climate information</p>	<p><i>DDD du MECNT:</i> Contribute to the design and establishment of an Early Warning System (EWS).</p>

<p>Output 2.2. Pilot adaptation measures to stabilize the cliffs at Muanda and secure fisherman docking and landing operations at Nsiamfumu</p>	<p>Congolese des Voies Maritimes (CVM): Contribute to the design and implementation of protective structures in the three pilot demonstration sites; Assess protection technologies to implement</p>	<p>Local communities and Provincial Services: Bring their local experience in the design and implementation of protective structures and contribute to the monitoring and maintenance of protective structures installed</p> <p>DDD of MECNT: coordination of activities</p> <p>PERENCO Company: contribute to the design of adaptation activities</p>
<p>Output 2.3. Create alternative climate-resilient livelihoods for women & youth organizations to reduce pressure on coastal resources and to uplift the economic status of the coastal communities</p>	<p>Contribuer à la conception et à la mise en œuvre des activités d'adaptation à base communautaire et génératrices de revenus Contribute to the design and implementation of community based adaptation activities generating income</p>	<p>DDD of MECNT: coordination Provincial authorities: monitoring and assess of income generating activities put in place Departments of agriculture, fishing and aquaculture, Forestry: Contributing to the training of women and youth in generating alternatives resilient livelihood activities Civil society: NGOs, village cooperatives, women's groups or youth directly benefit local communities: Contribute to the design of activities and support the process of participation, bring their knowledge / traditional relevant knowledge to climate change adaptation. Are responsible for daily management of project sites PERENCO Company: Contributes to the design of adaptation activities.</p>

B.2 Describe the socioeconomic benefits to be delivered by the Project at the national and local levels, including consideration of gender dimensions, and how these will support the achievement of global environment benefits (GEF Trust Fund or adaptation benefits (LDCCF/SCCF):

<p>Socio-economic and environmental benefits</p>	<ul style="list-style-type: none"> – The anticipated benefits of the proposed project are lives and livelihoods protected with the establishment of a reliable EWS and investment in coastal defence infrastructures. In addition, the project will support job creation in Muanda through adaptation works engaging women and youth (estimated to be 100); – The proposed adaptation investments (beach revetments) will reduce the severity of the erosion impact on communities; – Coastal infrastructure will increase the resilience of DRC mangrove ecosystem, contribute to better conservation of marine resources, and help preserve the carbon sequestration value of these ecosystems
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Sustainability	<ul style="list-style-type: none"> – Training for relevant stakeholders involved into Policy process (Provincial Ministries of Land, Agriculture, Planning, staffs from Muanda Municipality, etc.) to use science-based guidelines for planning and budgeting purpose will build a cadre of skills and experience at sub-national level that will be able to support on-going adaptation beyond the project period; – Financial sustainability for climate-resilient infrastructure development will be promoted by identifying the optimum mix of policy and public financing instruments required to attract financial flows and guiding the formulation of projects and policy instruments to secure investment and financial flows; – Involving community based organisations on the identification of coastal protection options and their maintenance will ensure sustainable maintenance of infrastructure.
Replicability	Climate risks mapping and information provided to local deciders will lead to replicate the project approach in the other adaptation initiatives;
Innovativeness	The transformational initiatives of Bas Congo policies instruments to secure investment and financial flows from governmental and nongovernmental actors and agencies for the implementation of priority integrated climate and sustainable development activities

B.3. Explain how cost-effectiveness is reflected in the project design:

The DRC is facing recurrent flooding in its coastal zone that resulted in extensive damage to infrastructure and economic losses. In Muanda more than 67,000 people are at risk of erosion and flooding. The project financed by the LDCs Fund and proposed by the Government of the Democratic Republic of Congo aims to overcome the main barriers identified as the main issues that have contributed to climate risks. Among these are: information gaps, limited institutional, policy and financial capacities. With a total budget of 21,855,000 \$USD (24,5% from GEF, 41% from recipient government and 34,5% from other sources including private sector and GEF Agency), the intervention of this project funded by the LDC Fund, will not only strengthen the human and institutional technical capacity, but also aid in enhancing compliance and the implementation of various government initiatives that deal with the climate risk reduction and disaster risk management in the coastal zone of the DRC. These include: (i) national strategy and plan for the prevention and reduction of disaster risks; (ii) National Action Plan for Adaptation (NAPA) under the United Nations Framework Convention on Climate Change (UNFCCC).

The project has other potential direct and indirect benefits, which are briefly summarized below:

- Involving people in the analysis, design and operation make the structurally relevant and more efficient by providing relevant and timely information in emergencies for those who are most vulnerable;
- Based at the community level, the system can generate gradually highly relevant useful information in real time to alert all persons involved in an event and enable a targeted response;
- The development taking into account the type to develop and design more relevant interventions aimed at building resilience can bridge the gender gap in vulnerability;
- The development and operation of the system require an investment on the mobilization of the community who will pay in terms of increased awareness on good management practices and land use vis-à-vis climate change;
- Community involvement and planning in climate monitoring can build the commitment of the people living in the coastal zone for the protection of habitat and resources, including a more informed use of mangrove forests and other natural resources;
- The increase in "public managers" and the understanding of the population dynamics involved in climate change, including deforestation, changes in land and water management, flooding, may increase good governance (better information for decision making while achieving increased levels of responsibility (a better informed public can better control of public decision on coastal risk management).

The likely impact of the project on capacity building is as follows:

- i. The project interventions will strengthen the capacity of provincial technical departments of Bas-Congo and Muanda in particular, to generate real-time information on the prevention of vulnerable areas to climate risks. Technical experts involved with expertise on climate risks concept, provide analysis and use for the purpose of planning and integration into policies and development plans and provincial investment. The staff and local elected officials, political representatives of relevant institutions (ministries, parastatal structures etc.), as well as local Muanda technical services will receive information on the maintenance and management structures of coastal protection against erosion and flooding in vulnerable or sensitive coastal hazard zones.
- ii. The communities involved in the implementation will be used to improve the response mechanism through the awareness campaign and community based early warning system established;
- iii. The advantages of this approach are many, including: (i) a high level of knowledge of all categories of staff and the local population allows a common understanding of the problems caused by climate change and adaptation options that meet changing to local needs; and (ii) community participation in various activities enable the sustainability of actions and access to a wider audience of measures promoted.

The project will have a positive impact on the economy of the coastal zone due to a number of project interventions. About 15 women's associations and youth of Muanda will be supported in achieving climate resilient businesses and risks generating income to improve their livelihoods. About 25 km of coastline will be protected against floods and landslides (common on cliffs) through the erosion control at sites at Banana Km5, fishing zone of Nsiamfumu and downtown Muanda.

The effectiveness of project cost is demonstrated using examples of the impact of project investments in infrastructure protection and local livelihoods against climate impacts. The project will help mitigate the impact of future climate risks and increase the resilience of the entire coastal zone. If investments in projects to protect against flooding and coastal erosion and the early warning system (Component 2) are made, as proposed, and well maintained over a period of 25 years, the project will have a significant economic impact in preventing damage and losses due to future flooding and erosion.

Project interventions will not only improve the capacity, but also protect coastal infrastructure through the stabilization of the coastline in order to improve the effective delivery of regional public services. As the population of Muanda is likely to increase at least 30% by 2050, protection of coastal installations / essential public services is absolutely essential. This will have a major impact on improving the quality of life of communities Muanda. This will also reduce downtime utility because of all future risks, such as flooding.

Finally, the project will result in temporary employment among young people and women in the work of control and protection and income generating activities. This situation will lead to an improvement of socio-economic indicators of Muanda and a significant reduction in the incidence of poverty. The income-generating activities such as fish products processing, promoting of resilient cooking stove contribute to economic growth, and especially for the welfare of women, youth and children. This revenue increase will relieve the poorest people in the project area that will be able to bear some expenses on food, health and education.

The **overall sustainability** of the project depends on the full commitment of the Government of the DRC in coordinating and providing guidance on climate change and risk management of erosion and flooding in the coastal zone. The proposed LDCF funded project will integrate climate risk /climate change in relevant planning mechanisms, such as plans and budgets for local development, thus ensuring the sustainability of the intervention.

Critical factors for institutional sustainability of the project will also be addressed through a comprehensive collaboration with institutions at national and local level and adequate Monitoring and Evaluation procedures conducted by government agencies. The project will provide support to entities involved in the project to build capacity in terms of their role in the project. The coordination committee of the project will include the services of the local government, municipalities and local communities and a number of provincial officials will be identified, equipped and trained to work with the project team and monitor activities project in pilot demonstration sites. In order to ensure the sustainability of the project, a strategy to replicate interventions at the site will be developed.

Project viability and long term sustainability will largely depend on its ownership and its institutionalization and capacity established by the project. All activities of capacity planned in the project were planned to have a lasting impact, both at the local and institutional level, for example, training will be planned based on needs assessments. At the local level, the project will partner with local NGOs and community organizations and the private sector whose capacity will be strengthened, thereby ensuring long-term sustainability. It will empower all stakeholders at the local level, including the dissemination of information on climate and weather risks in good time, and information on community control techniques against erosion, through a series of capacity building activities tailored to their specific needs. It will also define and implement an effective knowledge management and sharing system to effectively capitalize on lessons learned, which will also contribute to institutional sustainability.

Recipients will participate directly in Early Warning System (EWS) and the implementation of control activities against coastal erosion and flooding. The participation of the people and their role in the implementation of project activities is likely to ensure the sustainability of actions, strengthen their capacity to prevent and manage climate risks and additional resources. Training in population and provincial officials will build capacity and create conditions for sustainable resilience and local development, promoting the emergence of community groups able to act appropriately and timely to reduce the possibility of damage or loss. Developments to be conducted at the request of the recipient will use simple techniques that are appropriate and easily assimilated by the local populations.

Finally, the project is designed to raise the level of efficiency and effectiveness of adaptation and community-based practices. It is designed to ensure broad adoption and diffusion of these practices. This type of approach will ensure sustainability and replicability of results. In addition, by organizing exchange visits between stakeholders demonstration sites and other communities, it is expected that these communities will replicate community-based adaptation initiatives; training initiatives are well developed in the project, including:

- In terms of raising the political level, there will be facilitating the integration of adaptation to climate change on the political agenda at the provincial level and at the level of the municipality of Muanda and target engagement of local government;
- Document on best practices and technologies for adaptation is a precondition and a starting point for the process of upgrading the stakeholders to the research project; through the Output 1.3. lessons learned from the project will be generated, shared, captured and disseminated among current stakeholders and also among future stakeholders who want to promote and implement on a large scale adaptation practices and an effective climate resilience. The lessons learned from the implementation of this project will be compiled and disseminated to a wide range of stakeholders, using a framework system and the project will make use of ALM (Adaptation Learning Mechanism) system to ensure that the lessons learned from the project contribute to benefit from adaptation to climate change experiences across the portfolio of the LDC Fund.

C. DESCRIBE THE BUDGETED M & E PLAN: The project will be monitored through the following M& E activities. The M& E budget is provided in the table below.

Project start:

A Project Inception Workshop will be held within the first 2 months of project start with those with assigned roles in the project organization structure, UNDP country office and where appropriate/feasible regional technical policy and programme advisors as well as other stakeholders. The Inception Workshop is crucial to building ownership for the project results and to plan the first year annual work plan. The Inception Workshop should address a number of key issues including:

- Assist all partners to fully understand and take ownership of the project. Detail the roles; support services and complementary responsibilities of UNDP CO and RCU staff vis à vis the project team. Discuss the roles, functions, and responsibilities within the project's decision-making structures, including reporting and communication lines, and conflict resolution mechanisms. The Terms of Reference for project staff will be discussed again as needed.
- Based on the project results framework and the relevant SOF (e.g. GEF) Tracking Tool if appropriate, finalize the first annual work plan. Review and agree on the indicators, targets and their means of verification, and recheck assumptions and risks.

- Provide a detailed overview of reporting, monitoring and evaluation (M&E) requirements. The Monitoring and Evaluation work plan and budget should be agreed and scheduled.
- Discuss financial reporting procedures and obligations, and arrangements for annual audit.
- Plan and schedule Project Board meetings. Roles and responsibilities of all project organisation structures should be clarified and meetings planned. The first Project Board meeting should be held within the first 12 months following the inception workshop.

An Inception Workshop report is a key reference document and must be prepared and shared with participants to formalize various agreements and plans decided during the meeting.

Quarterly:

Progress made shall be monitored in the UNDP Enhanced Results Based Management Platform.

Based on the initial risk analysis submitted, the risk log shall be regularly updated in ATLAS. Risks become critical when the impact and probability are high. Note that for UNDP GEF projects, all financial risks associated with financial instruments such as revolving funds, microfinance schemes, or capitalization of ESCOs are automatically classified as critical on the basis of their innovative nature (high impact and uncertainty due to no previous experience justifies classification as critical).

Based on the information recorded in Atlas, a Project Progress Reports (PPR) can be generated in the Executive Snapshot.

Other ATLAS logs can be used to monitor issues, lessons learned etc. The use of these functions is a key indicator in the UNDP Executive Balanced Scorecard.

Annually:

Annual Project Review/Project Implementation Reports (APR/PIR): This key report is prepared to monitor progress made since project start and in particular for the previous reporting period (30 June to 1 July). The APR/PIR combines both UNDP and SOF (e.g. GEF) reporting requirements.

The APR/PIR includes, but is not limited to, reporting on the following:

- Progress made toward project objective and project outcomes - each with indicators, baseline data and end-of-project targets (cumulative)
- Project outputs delivered per project outcome (annual).
- Lesson learned/good practice.
- AWP and other expenditure reports
- Risk and adaptive management
- ATLAS QPR
- Portfolio level indicators (i.e. GEF focal area tracking tools) are used by most focal areas on an annual basis as well.
- Describe M&E framework for specific outputs that are based on RCT principles, including who is to be involved, budget, survey instrument etc.

Periodic Monitoring through site visits:

UNDP CO and the UNDP RCU will conduct visits to project sites based on the agreed schedule in the project's Inception Report/Annual Work Plan to assess first hand project progress. Other members of the Project Board may also join these visits. A Field Visit Report/BTOR will be prepared by the CO and UNDP RCU and will be circulated no less than one month after the visit to the project team and Project Board members.

Mid-term of project cycle:

The project will undergo an independent Mid-Term Evaluation at the mid-point of project implementation (insert date). The Mid-Term Evaluation will determine progress being made toward the achievement of outcomes and will identify course correction if needed. It will focus on the effectiveness, efficiency and timeliness of project implementation; will highlight issues requiring decisions and actions; and will present initial lessons learned about project design, implementation and management. Findings of this review will be incorporated as recommendations for enhanced implementation during the final half of the project's term. The organization, terms of reference and timing of the mid-

term evaluation will be decided after consultation between the parties to the project document. The Terms of Reference for this Mid-term evaluation will be prepared by the UNDP CO based on guidance from the Regional Coordinating Unit and UNDP-EEG. The management response and the evaluation will be uploaded to UNDP corporate systems, in particular the [UNDP Evaluation Office Evaluation Resource Center \(ERC\)](#). The relevant SOF (GEF) Focal Area Tracking Tools will also be completed during the mid-term evaluation cycle.

End of Project:

An independent [Final Terminal Evaluation](#) will take place three months prior to the final Project Board meeting and will be undertaken in accordance with UNDP and SOF (e.g. GEF) guidance. The final evaluation will focus on the delivery of the project's results as initially planned (and as corrected after the mid-term evaluation, if any such correction took place). The final evaluation will look at impact and sustainability of results, including the contribution to capacity development and the achievement of global environmental benefits/goals. The Terms of Reference for this evaluation will be prepared by the UNDP CO based on guidance from the Regional Coordinating Unit and UNDP-EEG. The Final Terminal Evaluation should also provide recommendations for follow-up activities and requires a management response which should be uploaded to PIMS and to the [UNDP Evaluation Office Evaluation Resource Center \(ERC\)](#). The relevant SOF (e.g. GEF) Focal Area Tracking Tools will also be completed during the final evaluation.

During the last three months, the project team will prepare the [Project Terminal Report](#). This comprehensive report will summarize the results achieved (objectives, outcomes, outputs), lessons learned, problems met and areas where results may not have been achieved. It will also lay out recommendations for any further steps that may need to be taken to ensure sustainability and replicability of the project's results.

Learning and knowledge sharing:

Results from the project will be disseminated within and beyond the project intervention zone through existing information sharing networks and forums.

The project will identify and participate, as relevant and appropriate, in scientific, policy-based and/or any other networks, which may be of benefit to project implementation though lessons learned. The project will identify, analyse, and share lessons learned that might be beneficial in the design and implementation of similar future projects. Finally, there will be a two-way flow of information between this project and other projects of a similar focus.

Communications and visibility requirements:

Full compliance is required with UNDP's Branding Guidelines. These can be accessed at <http://intra.undp.org/coa/branding.shtml>, and specific guidelines on UNDP logo use can be accessed at: <http://intra.undp.org/branding/useOfLogo.html>. Amongst other things, these guidelines describe when and how the UNDP logo needs to be used, as well as how the logos of donors to UNDP projects need to be used. For the avoidance of any doubt, when logo use is required, the UNDP logo needs to be used alongside the GEF logo. The [GEF logo](#) can be accessed at: http://www.thegef.org/gef/GEF_logo. The [UNDP logo](#) can be accessed at <http://intra.undp.org/coa/branding.shtml>.

Full compliance is also required with the GEF's Communication and Visibility Guidelines (the "GEF Guidelines"). The GEF Guidelines can be accessed at:

http://www.thegef.org/gef/sites/thegef.org/files/documents/C.40.08_Branding_the_GEF%20final_0.pdf. Amongst other things, the GEF Guidelines describe when and how the GEF logo needs to be used in project publications, vehicles, supplies and other project equipment. The GEF Guidelines also describe other GEF promotional requirements regarding press releases, press conferences, press visits, visits by Government officials, productions and other promotional items.

Where other agencies and project partners have provided support through co-financing, their branding policies and requirements should be similarly applied.


Table 3: M& E work plan and budget

Type of M&E activity	Responsible Parties	Budget US\$ <i>Excluding project team staff time</i>	Time frame
Inception Workshop and Report	Project Manager UNDP CO, UNDP CCA	Indicative cost: 10,000	Within first two months of project start up
Measurement of Means of Verification of project results.	UNDP CCA RTA/Project Manager will oversee the hiring of specific studies and institutions, and delegate responsibilities to relevant team members.	50,000	Start, mid and end of project (during evaluation cycle) and annually when required.
Measurement of Means of Verification for Project Progress on <i>output and implementation</i>	Oversight by Project Manager Project team	100,000	Annually prior to ARR/PIR and to the definition of annual work plans
ARR/PIR	Project manager and team UNDP CO UNDP RTA UNDP EEG	None	Annually
Periodic status/ progress reports	Project manager and team	None	Quarterly
Mid-term Evaluation	Project manager and team UNDP CO UNDP RCU External Consultants (i.e. evaluation team)	Indicative cost: 40,000	At the mid-point of project implementation.
Final Evaluation	Project manager and team, UNDP CO UNDP RCU External Consultants (i.e. evaluation team)	Indicative cost : 40,000	At least three months before the end of project implementation
Project Terminal Report	Project manager and team UNDP CO Local consultant	0	At least three months before the end of the project
Audit	UNDP CO Project manager and team	Indicative cost per year: 3,000	Yearly
Visits to field sites	UNDP CO UNDP RCU (as appropriate) Government representatives	For GEF supported projects, paid from IA fees and operational budget	Yearly
TOTAL indicative COST Excluding project team staff time and UNDP staff and travel expenses		US\$ 255,000 (+/- 5% of total budget)	

PART III: CERTIFICATION BY GEF PARTNER AGENCY(IES)

A. GEF Agency(ies) certification

This request has been prepared in accordance with GEF policies⁹ and procedures and meets the GEF criteria for CEO endorsement under GEF-6.

Agency Coordinator, Agency Name	Signature	Date (Month, day, year)	Project Contact Person	Telephone	Email Address
Adriana Dinu, Executive Coordinator, UNDP/GEF		May 13, 2015	Ms. Mame Dagou DIOP	+221 77 635 9185	mame.diop@undp.org

B. Additional GEF Project Agency Certification (*Applicable Only to newly accredited GEF Project Agencies*)

For newly accredited GEF Project Agencies, please download and fill up the required **GEF Project Agency Certification of Ceiling Information Template** to be attached as an annex to the PIF.

⁹ GEF policies encompass all managed trust funds, namely: GEFTF, LDCF, and SCCF

ANNEX A: PROJECT RESULTS FRAMEWORK (either copy and paste here the framework from the Agency document, or provide reference to the page in the project document where the framework could be found).

	Indicator	Baseline	Target for End of Project	Means of Verification	Risks and Hypotheses
<p>Project Objective Enhance climate resilience of Muanda communities (Bas Congo Province) through the establishment of relevant climate risk information for planning and budgeting, and the piloting of coastal protection measures, Democratic Republic of Congo</p>	<p>Indicator 1: Number of people affected by the impacts of coastal erosion that adopted climate resilient technologies/practices (disaggregated by gender) (AMAT indicator 4)</p>	<p>At least 67,000 people in Muanda territory are severely affected by coastal erosion with the ocean winning around twenty meters on the continent on Banana-Muanda segment, recurrent flooding and saltwater intrusion affects groundwater and soil, loss of biodiversity in the mangrove marine park and loss of property and agricultural production, sand deposits etc. Considering the current intensity of the decline in the coastline and the likely amplification of climate change in the region, it is necessary to consider that by 2050, nearly two thirds of the area of the city of Vista and the village of Nsiamfumu will be lost</p>	<p>At least 15% of the population in target sites (Muanda city, Banana, and Nsiamfumu) covered by risks management measures such as early warning system, coastal infrastructures, alternative livelihoods, and long term adaptation planning & budgeting system</p>	<p>Survey and M&E Reports</p>	<p><u>Assumption</u></p> <ul style="list-style-type: none"> ➤ Existence of scientific and technical capacities to support the development of risks management measures; ➤ Participation and commitment of target communities <p><u>Risks</u></p> <ul style="list-style-type: none"> ➤ Financial resources are limited for undertaking coastal infrastructures; ➤ Political instability and conflict resurgence; ➤ Inadequate and unsustainable management and maintenance of coastal defences ➤ Low capacity and involvement of national institutions to support communities in their adaptation activities

	Indicator	Baseline	Target for End of Project	Means of Verification	Risks and Hypotheses
<p>Outcome 1: Climate change risk management capacity strengthened (<i>for provincial, municipal officials and parliamentarians, private sector representatives, and coastal communities</i>) to integrate climate information in policy and investment planning</p>	<p>Indicator 2: Number of provincial plans strengthened to identify, prioritize and integrate adaptation strategies and measures (<i>AMAT indicator 13</i>)</p>	<p>The Bas Congo Province has developed its development Plan for 2011-2015, supported by five pillars: (i) good governance and peace-building, (ii) macroeconomic stability and accelerating growth, (iii) improving access to basic social services and reducing vulnerability; (iv) combat HIV, and (v) support for community dynamics. However, little attention to the impacts of coastal erosion and no investment are expected to support the protection of communities against climate impacts. Institutional capacity at the provincial level is low and needs to be strengthened to include climate change in provincial and municipal policies and strategies</p>	<p>Bas Congo Development Plan will include sustainable erosion adaptation strategies to maintain natural coastal processes and resources, and consider community needs in both the short and long term A shoreline erosion management plan will be developed to provide a framework for the sustainable use, development and management of land vulnerable to erosion by considering the environmental, social and economic values of the land, adaptation costs and the physical coastal processes acting on the foreshore.</p>	<p>Activity and M&E Reports Survey</p>	<p><u>Assumption</u></p> <ul style="list-style-type: none"> ➤ Involvement of communities in assessing vulnerability & establishing relevant adaptation options ➤ Existence of relevant physical and socio-economic data allowing the establishment of coastal profiles and cost effectiveness adaptation options; ➤ <p><u>Risks</u></p> <ul style="list-style-type: none"> ➤ Political instability and conflict resurgence

	Indicator	Baseline	Target for End of Project	Means of Verification	Risks and Hypotheses
	<p><u>Indicator 3:</u> Type and number of people with increased awareness of climate change impacts, vulnerabilities and adaptation (gender disaggregated) (<i>AMAT indicator 5</i>)</p>	<p>The Direction of sustainable development (DDD) is communicating about coastal erosion within the broader context of awareness raising during Environment Day. Several schools and NGO engaged in mangrove protection exist in the area most do not have education material about erosion or the coast that they regularly distribute or direct people towards.</p> <p>However, coastal communities (land/hotel owners, households, fisherman, farmers, oil companies, etc.) are lacking information on the adaptation options available to manage anticipated risks and hazards. Many people are unaware of the role that erosion plays in building and maintaining beaches and other coastal features, so there is rarely any consideration of the</p>	<p>At least 10,000 people (among them 30% women) including land/hotel owners, households, fisherman, farmers, oil companies, etc. increase their understanding of climate change impacts, natural coastal processes and associated uncertainties, and the costs, benefits and consequences of various erosion control options and the potential impacts of climate change</p>	<p>Activity and M&E Reports Survey</p>	<p><u>Assumption</u></p> <ul style="list-style-type: none"> ➤ Availability of relevant information to support information & awareness process <p><u>Risks</u></p> <ul style="list-style-type: none"> ➤ Low mobilisation and lack of interest of target groups (specifically private sector and land owners)

	Indicator	Baseline	Target for End of Project	Means of Verification	Risks and Hypotheses
		consequences of extensive shoreline hardening. In addition, the DDD does not have much scientific and technical information to provide to the public to give guidance and direction on dealing with coastal erosion.			
Outcome 2. Urgent and immediate adaptation measures implemented in the most vulnerable coastal communities of Muanda to reduce the concurrent impacts of multiple climate risks, while building functional weather and climate monitoring capacity	Indicator 4: number of people with the access to improved, climate related early-warning information (AMAT indicator 8)	Responses to coastal hazard events are likely to be inadequate with very little operational capacity, included equipment, communication infrastructure and know-how for the key stakeholders in terms of preparedness, risk prevention and response. The CVM and METTELSAT weather and coastal bathymetry monitoring systems have limited data availability and difficulties connecting local disaster impact assessments with national monitoring systems. During the PPG, it is	At least 1 Community based Early Warning system will be in place for the 5 coastal communities: Muanda City and villages of Muanda, Nsiamfumu, KM 5 and Kitona so that communities can respond appropriately and also support effective implementation of evacuation plans	Activity and M&E Reports Survey	<u>Assumptions</u> <ul style="list-style-type: none"> ➤ Existence of scientific and technical capacities to support the development of risks management measures ➤ Involvement of communities <u>Risks</u> <ul style="list-style-type: none"> ➤ Low capacity and involvement of national institutions to support communities in their adaptation activities

	Indicator	Baseline	Target for End of Project	Means of Verification	Risks and Hypotheses
		reported that coastal communities are not receiving timely and understandable warnings of impending hazards and they also highly lack of communication systems and arrangements for ensuring that early warnings are acted on successfully. The capacity to produce reliable loss and impact information remains a great challenge.			
	<u>Indicator 5:</u> Number of people affected by the impacts of coastal erosion that adopted climate resilient technologies/practices (disaggregated by gender) (AMAT indicator 4)	The oil company PERINCO is engaged for some years now to protect their infrastructures from coastal erosion through the improvement and regular maintenance of national roads, particularly those in the city of Muanda and Boma, and roads linking Tshiende and Nsiamfumu. Unfortunately, these interventions are highly localized and few initiatives are taken to protect livelihoods	Cliff stabilization measures: <ul style="list-style-type: none"> ➤ Cliff-dewatering measures by creating horizontal or vertical drains that reduce the effect of water runoff; ➤ Growing vegetation cover in the form of shrubbery that can hold the soil together; ➤ Establishment of additional rocks material at the base of the cliff to reduce incident wave energy. 	Activity and M&E Reports Survey	<u>Assumption</u> <ul style="list-style-type: none"> ➤ Existence of scientific and technical capacities to support the development of risks management measures; ➤ Participation and commitment of target communities <u>Risks</u> <ul style="list-style-type: none"> ➤ Limited capacity of PMU particularly to handle more complex forms of procurement; ➤ Financial resources are limited for undertaking

	Indicator	Baseline	Target for End of Project	Means of Verification	Risks and Hypotheses
		(fishing), biodiversity areas (mangrove) or properties against coastal erosion. The implementation of identified adaptation options often requires considerable financial resources and expertise. The Provincial budget is inadequate to meet adaptation costs including protection, maintaining and upgrading infrastructure and funding additional services provided to their communities on behalf of other levels of government.	Fish-landing site rehabilitation measures <ul style="list-style-type: none"> ➤ Rehabilitation works including the construction of a quay and relevant facilities; ➤ Establishment of boulders and rocks in front of landing site to break seawater and protect the infrastructures from heavy waves 		coastal infrastructures; <ul style="list-style-type: none"> ➤ Inadequate and unsustainable management and maintenance of coastal defences
	Indicator 6 Number of targeted household and young benefiting from the adoption of diversified, climate resilient options (disaggregated by gender) (<i>AMAT Indicator 3</i>)	PERINCO established Social Responsibility Programme to support the development of the local community by targeting five major issues: infrastructure, access to drinking water, access to electricity, health and employment. PERENCO	At least 250 households and young engaged on resilient fish farming & fish products processing, promoting improved cooking stove and on exploitation of quarries stone.	Activity and M&E Reports Survey	<u>Assumption</u> <ul style="list-style-type: none"> ➤ Involvement of communities <u>Risks</u> <ul style="list-style-type: none"> ➤ Low capacity and involvement of national institutions to support communities in their adaptation activities

	Indicator	Baseline	Target for End of Project	Means of Verification	Risks and Hypotheses
		<p>is running a reforestation programme across the Muanda Territory. However the target province has been affected by a series of economic and political crises since its independence. This situation explains mainly the prevalence of poverty, which affects 69% of the inhabitants. This has led to unsustainable exploitation of mangroves (in order to meet urban expansion needs and fuel for household and smoking fish). Faced with unemployment, young people are more and more engaged in marine sand exploitation. Unsustainable sand extraction practices can undermine the resilience of coastal communities.</p>			

ANNEX B: RESPONSES TO PROJECT REVIEWS (from GEF Secretariat and GEF Agencies, and Responses to Comments from Council at work program inclusion and the Convention Secretariat and STAP at PIF).

Responses to US Comments

Comments	Response
<p>Clarify how users will be involved both in the design of the EWS and in deciding what information is produced from the EWS as well as how information will be disseminated. Better results can be achieved by ensuring that climate information and early warning system products are user-driven and communicated to users through various innovative channels</p>	<p>An organizational structure of the EWS will be established with appointment, equipment and training of CB-EWS focal point team in each target village (3 to 5 peoples, gender balance ensured). Members of the team will facilitate collective identification and alert on emerging risk. Training will be organised and include understanding key indicators and functioning of the EWS, its information transmission systems (including SMS updates bottom up and top down) and understanding Standard Operating Procedures (SOP) and learning to use it.</p> <p>A participatory system, gender-sensitive, transfer and dissemination of information and alerts on coastal climate risks will be established with the participatove development of a Standard Operating Procedures (SOP) involving CB-EWS Focal Points, the coordination framework of Muanda, the provincial Authorities, representatives from women & young associations, Civil protection and the humanitarian and development agencies operating in target sites.</p> <p>Different communication and dissemination systems will be applied to communicate information from coastal equipment to focal points and to disseminate the information to all the members of the community.</p>
<p>Provide more information on the proposed activities to develop alternative climate resilient livelihood opportunities</p>	<p>With LDCF resources, at least 15 communities associations will explore ways of adapting their livelihoods to climate change together by undertaking the income generating activities that may provide a more stable income given increasing uncertainties about weather and availability of natural resources. Following activities are planned:</p> <p>Resilient fish farming & fish products processing developed for fish production associations.</p> <p>Women's groups will also be supported to promote the use of improved cooking stove (at least 200) to reduce consumption and pressure on mangrove wood homes.</p> <p>The youth associations engaged into gravel mining /coastal stone exploitation will be supported to develop an alternative solution in the production of sandstone between Boma and Muanda to cover the need for building materials and even the need to develop structures for coastal protection.</p> <p>Additional training will be devekoped on entrepreneurship, marketing of products, managing value chains, and accessing financing and credit.</p>
<p>Ensure that LDCF-funded activities provide a clear adaptation benefit. The PIF includes an activity with women’s associations on the “use of</p>	<p>The project will help mitigate the impact of future climate risks and increase the resilience of the entire coastal zone. If investments in projects to protect against flooding and coastal erosion and the early warning system (Component 2) are made,</p>

<p>fuel-efficient stoves to reduce wood consumption and pressure on mangroves,” and we would appreciate further clarity on how this activity is the best use of funds to provide protection from flooding in coastal zones</p>	<p>as proposed, and well maintained over a period of 25 years, the project will have a significant economic impact in preventing damage and losses due to future flooding and erosion. As mangroves constitute natural barrier to coastal flooding, their protection is an additional benefit. This will be done with women specifically involved in mangrove exploitation. The promotion of resilient cooking stove will reduce mangrove wood consumption.</p>
<p>Provide more information on the benefits of beach revetments relative to other coastal erosion protective measures and the process leading up to the selection of this type of infrastructure.</p> <p>Will complementary policy and enforcement measures aimed at reducing gravel- and sand-mining practices be promoted in order to increase the sustainability of erosion infrastructure</p>	<p>The project will pilot investment on cliffs stabilization. Beach revetment is not the option selected due to the high costs, difficulties to find necessary sand, and also potential impacts in the coastal hydrodynamism.</p> <p>Necessary policy measures for sand mining will be analysed under the component 1 aiming at establishing relevant policy for coastal protection. In addition, young associations engaged in sand mining will be supported to develop alternative.</p>
<p>Clarify how it will communicate results, lessons learned and best practices identified throughout the project to the various stakeholders both during and after the project</p>	<p>Regularly exchanging information and experience will be established to ensure that lessons learnt from the project are shared to replicate demonstration activities and catalyse investments. Communication tools (such as reports, DVDs, films and documentaries, radio shows and brochures) will be developed. The information packet will be translated into the appropriate formats and languages to allow dissemination through the community radios or television channels in the national languages. Furthermore, it will be organized provincial forum each year to communicate the technologies promoted, share lessons learned and experiences from the project.</p>
<p>Expand on how it will ensure the sustainability of climate change adaptation education for the various stakeholders mentioned on page 9 under Output 1.3, including provincial government, municipalities, coastal property owners and private sector.</p>	<p>Educational Programme on coastal protection will be designed and roll out to contribute to Education for Sustainable Development. In partnership with UNESCO, a Sandwatch programme will be established for at least 10 schools near the beach and the High Institute on Fisheries and Navigation in Muanda for scientific observation, measurement and analysis of changes in the coastal environment using an interdisciplinary approach.</p> <p>It will also design an efficient knowledge dissemination and communication strategy targeting various stakeholders (local leaders, coastal properties, private sector and communities). The outcome is to increase their understanding of climate change impacts, natural coastal processes and associated uncertainties, and the costs, benefits and consequences of various erosion control options and the potential impacts of climate change. This will lead to social and behaviour changes targeting individuals, target groups, households, children and communities to avoid bad practices and actions in the management of the coastal zone management.</p>

ANNEX C: STATUS OF IMPLEMENTATION OF PROJECT PREPARATION ACTIVITIES AND THE USE OF FUNDS¹⁰

A. Provide detailed funding amount of the PPG activities financing status in the table below:

PPG Grant Approved at PIF: 100 000			
<i>Project Preparation Activities Implemented</i>	<i>GEF/LDCF/SCCF Amount (\$)</i>		
	<i>Budgeted Amount</i>	<i>Amount Spent To date</i>	<i>Amount Committed</i>
Activity 1: Needs assessment and technical feasibility of adaptation options and measures	45 000	44 262.60	737.40
Activity 2: Project Development	10 000	10 000	0
Activity 3: Stakeholders Consultation	35 000	35 000	0
Activity 4: Develop a financial plan and co-funding scheme	10 000	9 894.80	105.20
Total	100 000	99 157.40	842.60

¹⁰ If at CEO Endorsement, the PPG activities have not been completed and there is a balance of unspent fund, Agencies can continue to undertake the activities up to one year of project start. No later than one year from start of project implementation, Agencies should report this table to the GEF Secretariat on the completion of PPG activities and the amount spent for the activities. Agencies should also report closing of PPG to Trustee in its Quarterly Report.

ANNEX D: CALENDAR OF EXPECTED REFLOWS (if non-grant instrument is used)

Provide a calendar of expected reflows to the GEF/LDCF/SCCF Trust Funds or to your Agency (and/or revolving fund that will be set up)