



PROJECT IDENTIFICATION FORM (PIF)

PROJECT TYPE: Full-sized Project

TYPE OF TRUST FUND:LDCF

PART I: PROJECT IDENTIFICATION

Project Title:	Enhancing Resilience of Vulnerable Coastal Areas and Communities to Climate Change in the Republic of Gambia		
Country(ies):	Republic of the Gambia	GEF Project ID:	
GEF Agency(ies):	UNDP (select) (select)	GEF Agency Project ID:	4782
Other Executing Partner(s):	National Environment Agency, Department of Agriculture, Department of Fisheries	Submission Date:	November 23 & December 20, 2011
GEF Focal Area (s):	Climate Change	Project Duration(Months)	48
Name of parent programme (if applicable):	n/a	Agency Fee (\$):	890,000

A. FOCAL AREA STRATEGY FRAMEWORK

Focal Area Objectives	Expected FA Outcomes	Expected FA Outputs	Trust Fund	Indicative grant amount (\$)	Indicative co-financing (\$)
CCA-1	<u>Outcome 1.1</u> Mainstreamed adaptation in broader development frameworks at country level and in targeted vulnerable areas.	<u>Output 1.1.1</u> Adaptive measures and necessary budgetary allocations included in relevant frameworks	LDCF	800,000	4,175,000
	<u>Outcome 1.2</u> Reduce vulnerability in development sectors	<u>Output 1.2.1</u> Vulnerable physical, natural and social assets strengthened in response to climate change impacts, including variability	LDCF	3,600,000	14,880,000
CCA-2	<u>Outcome 2.2</u> Strengthened adaptive capacity to reduce risks to climate-induced economic losses	<u>Output 2.2.1</u> Adaptive capacity of national and regional centers and networks strengthened to rapidly respond to extreme weather events	LDCF	600,000	5,393,000
CCA-3	<u>Outcome 3.1</u> Successful demonstration, deployment, and transfer of relevant adaptation technology in targeted areas	<u>Output 3.1.1</u> Relevant adaptation technology transferred to targeted groups	LDCF	3,500,000	15,000,000
Sub-total				8,500,000	39,448,000
Project management cost				400,000	1,940,000
Total project cost				8,900,000	41,388,000

A. PROJECT FRAMEWORK

Project Objective: To reduce Gambia's vulnerability to sea-level rise and associated impacts of climate change by improving coastal defenses and enhancing adaptive capacities of coastal communities.

Project Component	Grant Type (TA/I NV)	Expected Outcomes	Expected Outputs	Indicative Financing from relevant TF (GEF/LDC F/SCCF) (\$)	Indicative Cofinancing (\$)
<p>Policy and institutional development for climate risk management in coastal zones.</p>	<p>TA</p>	<p>Policies, institutions and individuals mandated to manage coastal areas strengthened to reduce the risks of climate change</p>	<p>1.1 Climate risk management capacity development programme for coastal areas designed and delivered for key national and local institutions and individuals to include: at least 50 technical staff drawn from national departments of fisheries, agriculture and planning; at least 200 fisheries and agricultural extension staff drawn from relevant regional agricultural directorates (Yundum, Kerawan, Jenoi), community fisheries centres (Kartong, Brufut, Tanji, Sanyang, Gunjur, Bakau) and planning departments.</p> <p>1.2 National and regional development plans (such as the Gambia Tourism Masterplan, Banjul City Masterplan, North Bank, Western and Lower River Development Plans) reviewed and revised to introduce a climate risk management approach, including use of fiscal measures to support investments in coastal resilience measures.</p> <p>1.3 High level institutional mechanism for climate change oversight in the coastal zones established and operational, with the responsibility to coordinate and make final decisions on the climate appropriateness of development initiatives and climate change adaptation measures in coastal areas.</p> <p>1.4 Coastal change monitoring programme designed and integrated into existing research institution, such as the NEA or Gambian Navy, in order to monitor and advise on: climate-induced dynamics such as beach width and slope, lagoon sediment and coral reef change dynamics, tidal and sea level rise dynamics, wind and wave height/strength dynamics,</p>	<p>1,400,000</p>	<p>9,568,000</p>

Project Objective: To reduce Gambia’s vulnerability to sea-level rise and associated impacts of climate change by improving coastal defenses and enhancing adaptive capacities of coastal communities.

Project Component	Grant Type (TA/INV)	Expected Outcomes	Expected Outputs	Indicative Financing from relevant TF (GEF/LDC F/SCCF) (\$)	Indicative Cofinancing (\$)
<p>Physical investments in coastal protection against climate change risks</p>	<p>INV</p>	<p>Vulnerability of coastal investments to climate risks reduced through the design, construction and maintenance of coastal protection measures.</p>	<p>groundwater quality change.</p> <p>2.1 Hard coastal protection infrastructure measures (beach stabilization, groynes, breakwater systems, revetment systems and seawalls) are designed, constructed with additional redundancy against sea level rise and climate induced erosion, to protect fish landing facilities of Kartong, Brufut, Tanji, Sanyang, Gunjur, Bakau, Albreda, Bintang, Kemoto and Tendaba.</p> <p>2.2 Low cost infrastructure to protect up to 1,500 ha of vulnerable rice growing areas, particularly Central and Lower Valley areas, from the effects of sea-level rise and salt water intrusion including construction of coastal defense measures (groynes, seawalls) as well as inland protection measures (dykes, spillways, contour and diversion bunds, irish crossings, gully plugs, road ramps).</p> <p>2.3 Up to 2500 ha of mangroves forests of Tanbi Wetlands, the North Bank, Western and lower river regions restored and maintained through mangrove management plans and regeneration to withstand climate-induced pressures in coastal areas</p>	<p>3,600,000</p>	<p>14,880,000</p>
<p>Strengthening livelihoods of coastal communities at risk from climate change</p>	<p>INV & TA</p>	<p>Rural livelihoods in the coastal zone enhanced and protected from the impacts of climate change through the demonstration and the transfer of successful coastal</p>	<p>3.1 Salinity resilient rice growing and horticulture technologies (desalinization, salt resistant seeds, techniques to reduce impacts of salt soils on crops, techniques to reclaim highly salted soils) are tested, introduced and disseminated to 1,500 rice growers and 300 horticulture producers at risk from climate change.</p> <p>3.2 Climate resilient wetland and fisheries management and planning methods (resilient fisheries and wetland management plans, custom rules for wetland access and</p>	<p>3,500,000</p>	<p>15,000,000</p>

Project Objective: To reduce Gambia's vulnerability to sea-level rise and associated impacts of climate change by improving coastal defenses and enhancing adaptive capacities of coastal communities.

Project Component	Grant Type (TA/IN)	Expected Outcomes	Expected Outputs	Indicative Financing from relevant TF (GEF/LDC F/SCCF) (\$)	Indicative Cofinancing (\$)
		adaptation technologies and the introduction of economic diversification	exploitation, community monitoring of fisheries quotas) introduced and transferred to at least 25 vulnerable communities (wards) at risk from climate change in the Lower and Central Valley areas. 3.3 Climate resilient alternative income generating activities (such as beekeeping, ecotourism, forest management, coastal defense installation and maintenance) are introduced to at least 15 vulnerable communities (wards) at risk from climate change in the Lower and Central Valley areas.		
Project management Cost ¹				400,000	1,940,000
Total project costs				8,900,000	41,388,000

B. INDICATIVE CO-FINANCING FOR THE PROJECT BY SOURCE AND BY NAME IF AVAILABLE, (\$)

Sources of Cofinancing for baseline project	Name of Cofinancier	Type of Cofinancing	Amount (\$)
National Government	The Government of the Gambia	Grant	15,000,000
National Government	The Government Of Gambia	In-kind	400,000
GEF Agency	UNDP	Grant	1,800,000
GEF Agency	UNDP	Cash	1,000,000
GEF Agency	UNDP	In Kind	540,000
Bilateral Aid Agency (ies)	USAID	Grant	1,000,000
Bilateral Aid Agency (ies)	IFAD	Grant	6,500,000
Other Multilateral Agency (ies)	European Union	Grant	5,148,000
Other Multilateral Agency (ies)	Islamic Development Bank	Soft Loan (88%) and Grant (12%)	10,000,000
Total Cofinancing			41,388,000

GEF/LDCF/SCCF RESOURCES REQUESTED BY AGENCY, FOCAL AREA AND COUNTRY

GEF Agency	Type of Trust Fund	Focal area	Country name/Global	Project amount (a)	Agency Fee (b)	Total c=a+b
UNDP	LDCF	Climate Change	Gambia	8,900,000	890,000	9,790,000
(select)	(select)	(select)				0
Total Grant Resources				8,900,000	890,000	9,790,000

PART II: PROJECT JUSTIFICATION

A. DESCRIPTION OF THE CONSISTENCY OF THE PROJECT WITH:

A.1.1 the GEF focal area/LDCF/SCCF strategies:

This project is fully in line with LDCF/SCCF focal area objective 1 “Reduce vulnerability to the adverse impacts of climate change, including variability, at local, national, regional and global level”. Related expected outcome includes reduced vulnerability to climate change in development sectors.

A.1.2. FOR PROJECTS FUNDED FROM LDCF/SCCF: THE LDCF/SCCF ELIGIBILITY CRITERIA AND PRIORITIES:

Country ownership: The Gambia has signed and ratified the United Nations Framework Convention on Climate Change (UNFCCC). Consistent with LDCF GEF/C.28/18, May 12, 2006, the Government of the Gambia seeks LDCF funding for a Full-Sized Project to implement a priority project identified in its National Adaptation Programme of Action (NAPA, submitted to UNFCCC January 2008). Specifically, LDCF resources will be used to enhance the resilience of the population to climate change impacts in coastal regions. As part of their commitments to the Convention, the Government of Gambia has also complied with the preparation of the First National Communication submitted to the UNFCCC Secretariat in October 2003.

Compliance with programme and LDC Fund policies: This PIF was formulated in compliance with LDCF guidelines and aligned with the updated Results-Based Management Framework for the LDCF and SCCF (GEF/LDCF.SCCF.9/Inf.4 from October 20, 2010). Consistent with the Conference of Parties (COP-9), the project will implement priority interventions from the Gambia’s NAPA (corresponding specifically to priorities 2, 3, 9 and 10 outlined in NAPA). Along these lines, this project satisfies criteria outlined in UNFCCC Decision 7/CP.7 and GEF/C.28/18. The project is aligned with Objective CCA-2 in the LDCF framework (Increasing adaptive capacity to respond to the impacts of climate change, including variability, at local, national, regional and global level). Country led-implementation of the project will enhance local institutional capacity and build country specific experience in accessing and managing finance. It will furthermore address urgent and priority needs. The process of designing and implementing this project, with the assistance of a variety of national and international partners, is likely to develop the required confidence, legitimacy and credibility of local stakeholders in managing the uncertainties of climate change.

A.2. NATIONAL STRATEGIES AND PLANS OR REPORTS AND ASSESSMENTS UNDER RELEVANT CONVENTIONS, I.E. NAPAS, NAPS, NBSAPS, NATIONAL COMMUNICATIONS, TNAS, NIPS, PRSPs, NPFE, ETC.:

The link between this project strategy and the NAPA is centered on a common goal of achieving sustainable development through improved environmental management.

Gambia completed its NAPA in 2007. The NAPA has identified and ranked 9 priority sectors, with coastal/ marines ecosystems and fisheries sectors ranked 8 and 9 respectively, as well as agriculture and forest ecosystems ranked 3rd and 4th respectively. The ranking exercise was carried out by a national level multi-disciplinary team based on the working group structure established to support the overall process. This proposed project is fully in line with the NAPA priorities and is specifically linked to those related to coastal zones, fisheries, agriculture and forest ecosystems sectors as follows:

- Coastal zones: the project will contribute to enhance climate resilience of coastal areas economic, natural and social systems by strengthening policies, institutions and individuals mandated to manage coastal areas. Furthermore, it will support the construction and maintaining of coastal protection measures and the demonstration and transfer of sustainable coastal adaptation technologies.
- Fisheries sector: to protect fisheries against climate changes and increase fisheries productivity, the project will support the design and implementation of climate resilient fisheries management and planning methods, custom rules for fisheries access and community monitoring of quotas introduced and transferred to at least 25 vulnerable communities.
- Agriculture: the project will help to enhance food security, nutrition and socioeconomic livelihoods in coastal and low-land agricultural areas through the protection of vulnerable rice growing areas, particularly Central River and Lower River Valley areas from the effects of sea-level rise and salt water intrusion and the demonstration and transfer of salinity resilient rice growing technologies.
- Forests ecosystems: the project will support the expansion of community participation in the restoration, the maintenance and the management of 2,500 ha of mangrove forests through the development of and the implementation of
- mangrove forests co- management plans and regeneration

The project will primarily address The Gambia's NAPA priorities on coastal zones and fisheries which have been costed in the NAPA \$2.3 million and \$0.3 million respectively. Besides the fact that this project will also contribute to the NAPA priorities of the Agriculture and Forest ecosystems sector, the Government's endorsement of this project is a re-adjustment of the original NAPA priorities which had underestimated the costs of the coastal zones and fisheries sectors priorities. Additionally, while the project includes provision to address coastal communities, ecosystems and economic vulnerability to sea-level rise foreseen in the long term, it primarily targets to address immediate adaptation needs related to coastal erosions, flooding and sea intrusion currently faced by the coastal systems which are forecasted to be worse in the very short term..

Besides, priority adaptation options and measures proposed by the Gambia NAPA take into account the PAN/LCD strategies, particularly those related to livelihood productions in coastal areas including the ones related to the protection of natural resources and the environment. Moreover, adaptation options are chosen in perfect synergy with the Convention to Combat Desertification (UNCCD) and the Convention on Biological Diversity (CBD) related objectives in the country. The Gambia has implemented a National Strategy and Action Plan on Biological Diversity and the National Action Plan to Combat Desertification (PAN/LCD) for the conservation and sustainable use of biodiversity and incorporates these measures into national plans, and sectoral and cross-sectoral policies related to coastal areas management.

The Gambia published its Initial National Communication to the UNFCCC in 2003, which identifies key climate change impacts in relation to crop production, biodiversity and wildlife, coastal resources and fisheries. Some important response strategies are proposed in the INC including hard measures such as rehabilitation of groyne systems, construction of breakwaters, revetments and seawalls, together with soft measures such as wetland management and coastal zone planning. The Gambia has not yet submitted its Second National Communication.

The Gambia's Programme for Accelerated Growth and Employment (2012-2015) provides the country's overarching development priorities and strategy. These include enhancing human capital, improving government and promoting social cohesion, modernising infrastructure and accelerating economic growth. The environment, disaster risk reduction and climate change are recognised as important cross cutting issues with the potential to undermine economic and human development gains if unaddressed. The National Strategic Plan for the Fisheries Sector (2009-2013) underlines the economic importance of the sector as well as the large number of artisanal fishers depending on this way of life as a principal source of livelihood. However no mention is made in the strategy of climate change related risks, such as sea level rise and coastal erosion. The Gambia's Tourism Development Master Plan (2006) demonstrates the economic importance of the sector rising from around 13% of GDP in 2004 to a likely 18-20% by 2020. However the plan does not elaborate any specific risks or measures associated with climate change.

B. PROJECT OVERVIEW

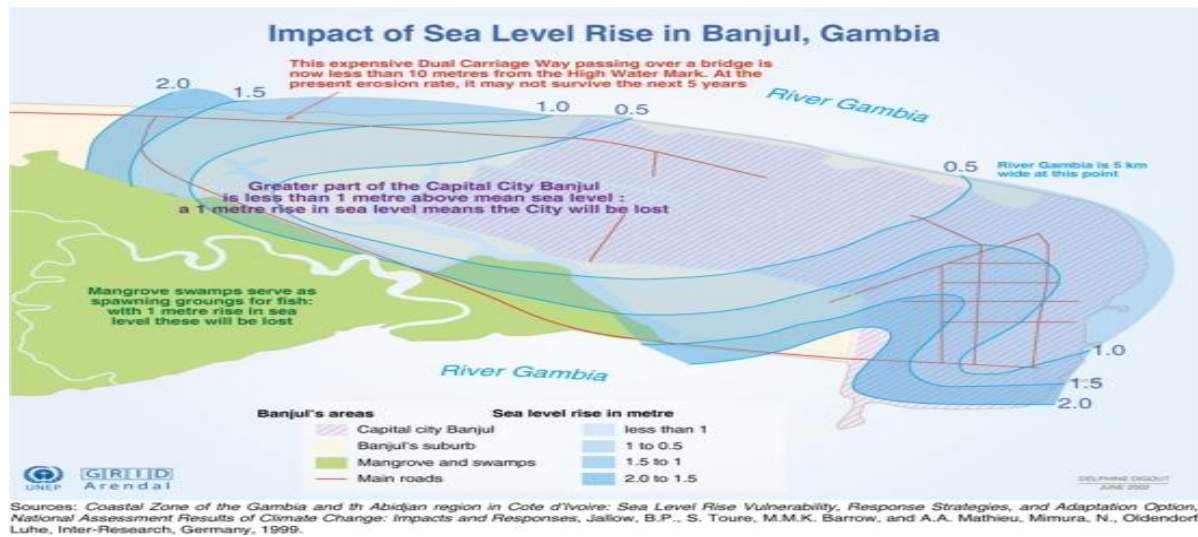
B.1. DESCRIBE THE BASELINE PROJECT AND THE PROBLEM THAT IT SEEKS TO ADDRESS:

Context and issues

The Republic of "the Gambia is located between 13 and 14°N and between 13.7 and 17°W. It occupies a land area of 10,690 sq. km making it the smallest country in mainland Africa. It is a sliver of land that varies between 15 km (inland) to 80 km (coastal) in width, extending more than 400 km (length) from the Atlantic Ocean. The country is dissected into northern and southern areas by the River Gambia which runs from East to West and debouches into the Atlantic Ocean. With nearly 50 per cent of its total land area under 20 metres above mean sea level, one-third at or below 10 metres above sea level, and 10 to 20 per cent seasonally or diurnally flooded, The Gambia has little pronounced topographic features to boast of. The low relief of The Gambia's coast makes it susceptible to sea level rise and the accelerated coastal erosion associated with it.

Gambia's coastal areas consist of estuarine, inter-tidal and oceanic ecosystems that border the Atlantic Ocean and extend to the brackish water environment that borders the Gambia River up to 200 km from its mouth – to the Miniminiang bolong on the north bank and the Mootah Point on the south bank. This comprises the catchments of the Gambia, Saloum and Allahein rivers. Gambia's coastal areas are severely affected by climate change and variability in two major ways namely coastal erosion owing to increased wave activity and physical drowning of low-lying areas as sea level rises. In each case the result is coastline recession and the physical loss of ecosystems

and the services they provide. It is a consensus that the problem is likely to be exacerbated, specifically by the increase in sea levels and frequency of storm surges.



The Gambia is ranked among top ten countries in the world with highest share of population living with lower elevation coastal zone (LECZ). A 1-meter sea level rise will drown over 8.7% of the total land area including the port and capital city of Banjul, and a host of critical facilities including 25.5km of paved roadway in greater Banjul and the all harbours and ferry landing sites along the Gambia River. ² The figure above shows the expected sea level rise in meters for various parts of the city of Banjul, and the impacts of sea level rise on the city, its suburbs and main roads and its nearby mangrove swamps, which serve as spawning grounds for fish and natural tubs, storing flood waters that over-flow riverbanks and buffer zone against flood.

A recent study (Sally Brown and all, 2011) using the DIVA (Dynamic Interactive Vulnerability Assessment) model, has projected sea-level rises (in comparison of 1995 level) of 0.13 m, 0.35 m, 0.72 m and 1.23 m for respectively 2025, 2050, 2075 and 2100. With a large and growing population in the coastal zone and a low adaptive capacity due to low national wealth and other development indicators, Gambia appears to be highly vulnerable to sea-level rise. Without adaptation, the physical, human and financial impacts will be significant. With a sea-level rise of 0.35 m in 2050, 76,000 people will be flooded per year and with a sea-level rise of 1.23 m in 2100, 137,000 persons will be flooded per year (see table 2 below). The total cost of sea-level rises for Gambia combining costs of forced migration, land loss, salinisation, sea floods and river floods are of US\$71.9 million per year for 2050 and of 313.4 US\$ millions per year for 2100.

Table 1: Gambia's sea level rise scenarios and their impacts

	2025	2050	2075	2100
Relative Sea-level rise (since 1995) (m)	0.13	0.35	0.72	1.23
Total cost of residual damage (\$ million/yr)	1.2	71.9	113.4	313.4
Population flooded (thousand/yr)	4.0	76.0	126.5	137
Land loss (submergence) (km ² /yr)	0.0	34.3	113.4	9.8
Net land loss (erosion) (km ² /yr)	0.1	0.1	0.2	0.4
Sea flood costs (\$ million/yr)	1.2	10.0	51.6	146.4

Sources: Sea-Level Rise and Impacts in Africa, 2000 to 2100. Sally Brown, Abiy S. Kebede and Robert J. Nicholls. School of Civil Engineering and the Environment, University of Southampton. April 2011

Also, according to Jallow et al., (1996), a one meter sea-level rise in the Gambia will lead to a loss of 92 km² of land by inundation. Shoreline retreat is projected also to vary between 6.8 m in cliff areas to about 880 m for flatter and sandier areas. If a 1-m sea-level rise were to occur as envisaged, without protective measures the whole capital city of Banjul would be lost in the next 50-60 years because a majority of the city is below 1 metre. Preliminary analysis of data from the Gambian Department of Lands on the value of land and sample properties between Banjul and the Kololi Beach Hotel suggests that about 1,950 billion Dalasis (US\$217 million) of property will be lost (Jallow et al.,

² Jaiteh M. S. and Sarr B. (2011): Climate change and development in the Gambia. February

1996). Twenty four modern hotels have been built along the coast. A number of these hotels face serious beach erosion problems, and in most cases the beaches in front of the hotels have been reduced by at least half. In some cases, like the Palm Grove and Tropical Gardens hotels, the beach has already disappeared. A part from physical damages for certain hotels like falling fence, destruction of beach bars, sea water entering the facilities during spring tide, it may be expected that tourists to The Gambia, attracted by sunny beaches, will turn away from these hotels if they no longer have access to an appropriate beach. Six fish landing and processing facilities have been constructed in Brufut, Tanji, Bato Kunku/Tujereng, Sanyang, Gunjur and Kartong. Total investments at the six landing sites are estimated at US\$ 0.64 million. It has been estimated that about one third of these facilities are threatened by coastal erosion. If the housing of the fishermen (1500 families) is added, the value of threatened infrastructure can be estimated at about an additional US \$ 1.0 million. The Banjul Port and other national industrial facilities built within 200 m of the shore along sandy beach can be included in the infrastructures threatened by the sea level rise and coastline areas degradation. Thus, all of the structures located on land between Sarro and Banjul cemeteries and the whole of Banjul will be lost and numerous economic activities will collapse increasing the unemployment problem in the country. According to Jallow et al. (1996), the entire population of Banjul (42,000 inhabitants) and people living in the eastern parts of Bakau and Cape St. Mary-as well as the swampy parts of Old Jeshwang, Kanifing Industrial Estate, Eboe Town, Talinding Kunjang, Fagikunda, and Abuko-will be displaced.

Moreover, a sea level rise would have a serious impact on agricultural production in coastal low-land agriculture production since its resilience depends heavily on strategic approaches to water management capable of addressing climate change impacts on future renewals rates of ground water resources, flow and salinity of the river Gambia. Salt water intrusion has already destroyed many farmlands making a large number of farming households poorer. The biggest threat of saline intrusion into the Gambia River comes from projected sea level rise. The estuary basin of the Gambia River is virtually a tidal inlet with salt water intrusion ranging from 180 kilometres in the rainy season to 250 kilometres in the dry season. The short-term rice production may be the most affected making up 64% of all cropland area that will be drowned by the 1-meter sea level rise. This could lead to a decrease of the rice production and impede the achievement of GNAIP (Gambia National Agriculture Investment Programme) objective to attain an annual production of 70,000 metric tons of paddy. In the North Bank region, gradual sea level rise is likely to inundate wetlands and agricultural lands of lowland communities. The James Island, Juffureh and Albreda all located in this region are threatened by high wave erosion and inundation (GOTG, 2007). In the, West Bank, sea levels rising will lead to the flooding of approximately 10% of the area covered with mangrove forest. These are likely to affect oyster culture and rice fields which are important income-generating activities for the poorest women in Gambia (GOTG- NAPA, 2007). Other major threats from the projected sea level rise include the risk of saline intrusion into the coastal aquifers (Njie, 2002); the latter being the main source of drinking water supply.

In addition to drowning populated areas and critical facilities, 1-meter rise in sea level will inundate over 60% of current mangrove forests, 33% of swamp areas and 20% of rice growing area. While inundation of mangrove and swamp areas may, over the long-term be compensated by the creation of new mangrove and swamp areas, loss of ecosystem goods and services in the short-term, could be substantial.

Table 2. Area of current land cover that will be inundated by 100 cm (1-meter) rise in sea level.

Land cover	Total Area (m ²)	Area inundated with a 100 cm rise (m ²)
Rice field	22,726	4,091.68
Cultivation	295,101	405.60
Palms	4,023	302.72
Plantation	6,761	41.60
Forest	131,754	560.80
Woods	303,844	5,524.80
Mangrove	65,475	40,991.04
Grass land / Low Growth	82,902	1,421.28
Swamp	90,576	31,133.92
Plain Ground	9,344	44.96
Populated Built-up Areas	26,715	168.69
Total	1,039,221	84,687.09

Used sources: Gambia's NAPA and INC

Additionally, the coastal and marine ecosystems of the country, which host globally significant animal and vegetal species and habitat, will probably be highly affected by the climate change. These ecosystems are vital to the well-being of the coastal fisheries not only as harvest site but also as nurseries. They are also essential for the resilience of coastal zones and economic activities against sea level rise and coastline areas degradation impact like inundations.

Underlying causes

The Coastal Zone of Gambia is the most heavily populated part of the country. It also has many ecologically sensitive areas, but it also accommodates the more economically important activities and infrastructures such as seaside tourism, fishing and related activities, low-land rice growing. Thus, the Coastal squeeze due to sea level rise is expected to have substantial negative impacts on ecosystems and economic activities in this area. Apart from the pressures related to climate changes, the major root-causes for the growing vulnerability of Gambian coastal areas include: (i) uncontrolled and unplanned urbanization along the coast aggravated by domestic migrations resulting from the poverty in the hinterland; (ii) unsustainable agricultural and oyster culture practices leading to clearing of mangroves and degradation of coastal vegetation ecosystems that could play a buffer role against coastal erosion, floods and land losses; and (iii) non sustainable sand mining: all construction works in The Gambia require sand, and the sand used is mainly mined from the beaches. According to records from the Ministry of Trade about 100,000 to 150,000 m³/year is mined from the Bijilo, the main sand mining site. Other root causes include the lack of coordination of planning mechanism and institutions dealing with coastal zone management, the lack of appropriate legislation to protect the coastal and marine ecosystems, and the lack of capacities within the country for coastal areas management.

The Preferred Solution and Barrier Analysis

The preferred situation is for Gambia to have the capacity at national and local levels to plan and implement the coastal protection measures that increase resilience of coastal communities' livelihoods and economic activities to climate change. This would be done within the framework of an integrated coastal management programme integrated into multi-sectoral coastal socio-economic development. Furthermore, this would be based on up-to-date and accurate data and a coordination of the donor contributions to climate change coastal erosion issues.

At a national level, the NEA and the other concerned governmental agencies would take a leading role in a coherent manner, within a strong legislative and policy framework including the ratification of the international agreements related to coastal management. The national government would be allocating human and financial resources to coastal protection, and the resources would be used in a most effective manner. National administrative and technical agencies would be providing timely, accurate technical support to Gambian local governments and communities. All would be based on an adequate understanding of climate change and its implications, and a prioritisation process.

At the local level, local communities would identify and plan priority measures. They would contribute to the construction of affordable protection measures. In addition to physical construction, local communities would take many other adaptation measures, including: the relocation of households and business activities; development of natural protection measures such as mangroves; stopping of environmentally damaging activities such as unsustainable sand-mining; and increased resilience through diversified and increased livelihood revenue. Local communities, with support of national and international partners, would take the lead in coastal protection. They would also maintain any past measures taken. As a result, the economic value of climate change caused damage and the number of lives lost would be greatly reduced.

The barriers for the preferred solutions to take effect are the following:

The barriers at national level :

Understanding of climate change and its coastal impacts amongst decision-makers and technical staffs of institutions in charge of coastal management remains limited. Although there is general perception of the links between climate, climate change and coastal erosion, this limited understanding is a barrier to identifying, planning and initiating measures. Indeed, understanding of coastal dynamics is a prerequisite to the effectiveness of climate change adapted coastal erosion combating measures. Many of the erosion combating measures in The Gambia have been taken without an understanding of the coastal processes and how such measures will alter the coastal dynamics and the effects on the down drift side. Experience from various parts of the world where coastline stabilisation measures have been applied, without adequate understanding of the coastal sedimentary processes, frequently show poor performance and/or early failure. In some cases, even the mitigation measures served to aggravate the very problems

they were designed to solve. Along the Gambian coast, visible testimonies to the failure of stabilisation schemes (such as groynes detached from the coast) can be found, which have been applied without due regard to the coastal processes and coastal engineering background.

Another important barrier is the current sectoral approach to coastal management, whereby each agency thinks and acts independently. This leads to inefficiencies, incoherence and missed opportunities. There is, for example, little joint planning of activities across sectors. Agencies' efforts to combine resources and find synergies have been limited.

Limited financial resources are also, clearly, a constraining factor. Gambia remains a heavily indebted country, and although its economy has shown impressive growth recently, public sector resources are very limited. As a result, Gambia's national budget is very reliable on international support. International standards for coastal protection are very expensive, and the national budget is not large enough to cover the anticipated costs. This precludes many of the measures that are taken to protect coasts in other countries. At present, there is limited knowledge of cost measures to adapt to climate change in coastal areas.

A further barrier is the great shortage of information and data, particularly with regards to coastal processes, forecast sea level rise, meteorological conditions and forecast climate change. There has been no systematic approach to data collection for almost three decades. The only equipped weather station – at the international airport – is currently not functioning. The lack of reliable information makes it very difficult for national agencies to set priorities and develop guidelines and standards.

At national level, the great shortage of scientific and engineering capacity is a further barrier. Such capacity is needed to identify, plan, design and implement coastal defence measures. It is needed to measure and understand basic coastal and ocean processes.

The barriers at Divisions and community levels are the following:

The Division governments face all the same challenges as the national government. In many cases the challenges are multiplied at the division level. Despite the ongoing decentralisation process, the Division governments, as of yet, have no autonomous budget. They are also generally lacking in expertise and information.

At the local and community level, the following barriers are also important:

- Limited organisational capacity. Adapting to climate change requires that communities be well organized and work together in concert with a high degree of trust within and between them. The lack of organization within communities means the traditional consultative and decision-making mechanisms no longer function effectively. In particular, this tends to undermine the operation and maintenance of investments;
- Limited human capacity is also an important factor. While a high total enrolment at primary schools (79 % in 2002 -2003), the secondary enrolment is still low (33% in 2002-2003). The human capacities in the country are limited and this reduces the ability to plan and to implement investments at the local level. It also limits the ability of local people to participate in planning and implementation.

Baseline Project(s) that the project will build on:

The following projects represent the indicative co-financing provided and leveraged by UNDP towards the proposed LDCF project.

Title: UNDP supported Establishment of a National Disaster Management Programme in the Gambia Co-financing: USD 0

In response to the coastal erosion, sea level rise issues and the other climate change and variability risks in Gambia, UNDP has implemented a project titled: “establishment of a national disaster management programme in the Gambia” from 2007 to 2010. The objectives of this project were: (i) to develop the national policy and legal framework for disaster risk reduction in Gambia; (ii) to strengthen the capacities of members of disaster management committees at both the national and decentralized levels to effectively and efficiently manage disasters; and (iii) to establish the disaster management office at the national level. Through this project one national and six regional disasters management institutions were established and trained in disaster preparedness and response. A national disaster management policy, strategic plan and bill were developed and approved leading to the creation of the National Disaster Management Agency in 2009 and the development of a long term Disaster Risk Reduction (DRR) and Climate Change Adaptation (CCA) programme for the Gambia (2009 – 2013). This work has helped to

highlight the need for additional support with a specific focus on climate change adaptation also, and to integrate both DRR and CCA into national development plans and programmes. The proposed LDCF project is therefore a natural extension of this previous policy work.

Title: EU supported Integrated Coastal Zone Management and Climate Change Project

Co-financing: USD 5,148,000

The EU and Government of The Gambia are in process of designing this programme which will be implemented from 2012 to 2015. The government has indicated that it will not finance any physical investments in coastal protection or securing the livelihoods of communities living in areas exposed to sea level rise, saline intrusion and coastal erosion. The main focus is likely to be on establishment of a participatory and self sustainable Integrated Coastal Zones Management (ICZM) process. This will include: (i) a multi-sector dialogue and a wider consultative coastal forum; and (ii) development of agreed vision and objectives for the coast (coastal protection, retreat and conditional retreat etc.), on the basis of an assessment of coastal vulnerability and cost-benefit analyses. This process will lead to the formulation of recommendations to the GOTG for (i) harmonisation of sector policies in respect to ICZM; (ii) concrete coastal protection measures. Proposals for revision of land use plans and of legal and institutional framework for ICZM will also be provided.

A further component will support the establishment of the national architecture for integrating climate change issues into the development process. This is to be done through: (i) the establishment of a Technical Working Group (TWG) for a multi-sector dialogue on implications of climate change for development planning; (ii) definition of guiding principles and roadmap to develop an overarching policy document on mainstreaming climate change into key development strategies; (iii) definition of a national climate change policy and facilitation of its validation; (iv) institutional analysis and development of recommendations for institutional arrangements.

While the linkages between this project and the proposed LDCF funding are close, they are entirely complementary. The EU project will work across all sectors, including ICZM, providing an enabling environment for dialogue and political reform. The proposed LDCF initiative will focus specifically on building climate risk management measures into the ICZM process and providing physical investment and know to implement follow measures on the ground. The complementarities and synergies of this project with this LDCF will be further elaborated on during the project preparation phase.

Title: UNDP and Spanish Fund supported public service reform and institutional capacity development project (PSRICD). Co-financing: USD 1,800,000 (2012-2015)

With support from the Spanish DGTTF and UNDP, the Public Service Reform & Institutional Capacity Development (PSRICD) project continues to contribute towards laying foundation for development, financing and implementation of a long-term strategy for public/civil service reform and institutional capacity development under strengthened government leadership, while at the same time addressing short-term capacity needs in key government institutions. Following the Poverty Reduction Strategy Programme II (PRSP II), the Government of The Gambia has put in place The Programme for Accelerated Growth and Employment (PAGE) outlining the country's vision, priorities and strategies for sustained economic growth, poverty reduction and realization of the MDGs (2012-2015). A major theme is strengthening government institutions, to enhance the effectiveness and efficiency in public service delivery and also implicitly enhancing the capacity of the civil service to develop, implement, monitor and evaluate the policies required for the successful execution of the PAGE. A Civil Service Reform (CSR) programme will provide all the ministries and departments with technical assistance to update their strategic plans and organizational structures, support the development of an optimal staffing pattern together with job descriptions and specifications. The CSR will furthermore support the development and implementation of a civil service wide training plan, in areas such as: (i) policy development, planning, performance budgeting, monitoring and evaluation, project management for senior and middle level staff. The CSR will therefore contribute to create in The Gambia an efficient and effective public service capable of meeting the country's development challenges. The proposed LDCF project includes an important capacity development element for both national and province level officials and will benefit from more fundamental capacities being provided to these individuals through the CSR programme. CSR training programmes will provide a key entry point for designing in additional awareness raising and skills development on climate change to promote compliance with climate-resilient planning, design, and location guidelines in all government interventions in the coastal zone.

Title : Islamic Development Bank (IDB) supported Community-based Infrastructure and Livelihood Improvement Project (cofinancing: US\$ 10 million)

The Government of the Republic of The Gambia has received financing in the amount of a Loan of US\$15.86 million and a Technical Assistance Grant of US\$400,000 equivalent from the Islamic Development Bank (IDB) towards the cost of the Community-Based Infrastructure and Livelihood Improvement Project (CILIP). This 4-year project (2011-2015) is jointly financed by the Government of The Gambia, Local Councils and Sub-project Beneficiaries, to give a total Project Cost of US\$18.02 million. The goal of the Community-based Infrastructure and Livelihood Improvement Project is to support Government's strategy to alleviate poverty and its consequences in the rural and peri-urban areas by increasing social and economic opportunities of the beneficiaries. This will be effected by improved access to basic social and economic infrastructure with a strong focus in the agricultural sector. The project will empower beneficiary communities and improve their livelihood and welfare through financing demand-driven community infrastructure and livelihood activities. The project will include the following components:

- **Community Infrastructure Facility:** this component will finance the Cross-Community Infrastructure (infrastructure that cuts across communities and local council boundaries like roads, district markets, health centers) and the Community-Owned Infrastructure (demand-driven infrastructure according to the priorities of the beneficiary communities).
- **Livelihood Improvement Fund:** the objective of this component is to improve the livelihood of the communities, by providing matching grants for the purchase of agriculture and other activities production assets and equipment. A small microfinance fund will be created under this component.
- **Institutional Development:** the project will provide capacity building and technical assistance to Local Councils, beneficiary communities, the Ministry of Local Government and Lands, beneficiary communities on the guidelines and procedures for designing and implementing community development plans, community-based development activities.

The project is implemented throughout The Gambia including the coastal areas of the municipality of Banjul and the Western, North Bank, Lower River regions. The CILIP is an important baseline project through which the Government of The Gambia aims at sustainably improving livelihoods in peri-urban and rural areas. However, it does not include provisions to identify and address sea-level rise and other climate-induced coastal degradation risks that could impede the achievement of its objective in vulnerable coastal areas. This LDCF financed project will support the CILIP's objective of sustainably improving community livelihoods by financing the integration of climate change concerns into the design and building of the relevant community infrastructure. Moreover, it will introduce capacity building activities for the local governments and councils to address climate change risks on community demand-driven support services that the CILIP will finance in the coastal zones.

Title: IFAD supported Livestock and Horticulture Development Project (LHDP). (Cofinancing : US\$ 6.5 million)

The overall goal of this 6-year project (2010-2016) funded to the amount of US\$15.5 million is to reduce national rural poverty by raising the incomes of horticulture and livestock producers. The project's specific objectives are to: i) increase the returns to village-level livestock and horticultural production and; ii) build up capacities at the grassroots level in the rural areas. The anticipated outputs are reduced national dependence on imported foods, strengthened farmers' productive capacity and improved household food security through higher incomes. The project covers rural communities across the five regions (Central River, Lower River, North Bank, Upper River and Western Regions) and peri-urban communities in two clusters: one in the western part of the country (Greater Banjul Area, Western Region and North Bank Region), the other in the centre (Central River and Lower River). The project, inter alia, is supporting the rehabilitation/upgrading of 35 existing horticulture gardens with an average of 2.0 ha, currently occupied by an average of 3,500 women, as well as the establishment of 5 pilot gardens for around 500 youths interested in undertaking horticulture as their livelihood. Each garden will have an appropriate farm shed with an area for sorting/washing/packing of produce, a storage facility for storing inputs separate from produce, a well and a hand pump. To alleviate water carrying burden, the latter will be connected by buried pipes or hoses to secondary reservoirs and to dedicated areas for human consumption and watering of animals. Furthermore, the project will provide incremental resources for extension services capacity-building and delivery, village-level training of *kafo* members in good agricultural practices (GAP) with a strong focus on protecting the environment and natural resources. However, as highlighted above, the Western, North Bank and Lower River regions of The Gambia are prone to sea-level rise flooding (damaging crops, livestock and property), seawater intrusions and aquifer contamination which could endanger the LHDP objectives of raising income of horticulture producers. The LHDP is a relevant baseline through which this LDCF will promote the increasing of the climate resilience of horticulture activities and horticulture producers in areas vulnerable to sea-level rise and other climate induced coastal areas degradation. This will be done by including climate changes risks assessment and adaptation

technologies (including climate resilient seeds) in the capacity building and raising awareness activities planned by the LDHP and supporting also the emergence and development of climate resilient alternatives income generating activities in the areas targeted by the LHDP.

Title: AfDB supported Gambia artisanal fisheries development project (GAFDP) (June 2009- June 2011) Co-financing: USD 0

Fishing is an important source of protein in The Gambia and one of the main sources of income among coastal communities. Yet, the fisheries sector has considerable economic development potential. Its current contributions to the economic development of The Gambia are far from the potential that it possesses. For example one of the potentials is to serve as foreign exchange earner taking its product to countries in the West African sub region. However, the lack of appropriate onshore facilities and absence of fisheries port constitutes a major constraint to the development of the sector. . Moreover coastal erosion has considerably reduced the landing spaces for artisanal fishing canoes. In order to address the above constraints the GOTG, has undertaken to: (i) rehabilitate the Banjul fisheries Jetty and the three fish landing sites of Albreda, Bintang, and Tendaba including access road and associated facilities; (ii) to construct fish central market in Bakoteh (Serekunda) through the AfDB supported-project “Gambia Artisanal Fisheries Development Project (GAFDP)” . These infrastructures are intended to allow for an increase in the quantity of fish landed, to contribute to reduced fish spoilage, to stabilize fish prices and increase opportunities for fishmongers (men and women) to receive higher incomes and to contribute to the improvement of nutritional standards of the population. The Banjul site constructions (fisheries jetty and associated facilities) have been designed to be climate-resilient. Current expectations are that the highest sea level rise projected by the International Panel on Climate Change should not have any negative impacts on the Banjul facility when constructed. For example, the design of the jetty includes the construction of floating pontoons, which makes it particularly appropriate to adjust to sea level increase. However, this is not the case in the other equally important fish landing sites at Bintang, Tendaba and Albreda, of which the rehabilitation works have not improved their resilience to sea-level rise and other climate-induced coastline degradation impacts. Thus, there is a serious concern that the project will not be able to achieve its development objectives fully given that the functionality and the sustainability of these infrastructures could be hindered by the sea-level rise and other climate-induced coastline degradation impacts. The LDCF will support the strengthening of the climate resilience of these infrastructures by financing the assessment of the climate risks, the identification, costing and design of the adaptation options to manage the identified risks, the implementation of the required investments to upgrade these infrastructures to make them more resilient to sea level rise and coastal erosion and build local capacities for the maintenance of these investments. As this AfDB baseline supported initiative is nearly completed, the value of the services it has provided is not counted as co-financing. However, it is an important baseline that needs to be recognized as the LDCF project will be building on its success to contribute to improve sustainably the capacities of the fishermen (men and women) and all the related activities to cope against the impacts of the climate changes in the artisanal fishing sector .

**Title: USAID supported Gambia-Senegal Sustainable Fisheries Project (Ba Nafaa)
Co-financing: USD 1,000,000**

The Gambia-Senegal Sustainable Fisheries Project, known locally as "*Ba Nafaa*" is a five-year regional initiative (October, 2009 to September, 2014) supported by financing of US\$2 million by the U.S. Agency for International Development West Africa Regional Mission and implemented by the University of Rhode Island and The World Wildlife Fund West Africa Marine EcoRegional Programme. The Gambia component funded to the tune of US\$ 2 million is carried out in partnership with The Gambia Department of Fisheries and other fisheries stakeholders in The Gambia. The goal of the project is to ensure that artisanal fisheries and coastal ecosystems in The Gambia (and selected stocks shared with Senegal) are managed more sustainably, incorporating significant participation of fisherfolk in decision-making, and attaining improved economic benefits for both men and women involved in the market value chain.. Most field activities take place in The Gambia with an emphasis on sole, sardinella, shrimp and oyster fisheries. The project is assisting key partners, namely the Department of Fisheries, and related private sector stakeholder groups (including management committees at the community fisheries centers) in developing the capacity to implement, evaluate and improve specific fisheries management plans (sole, sardinella, shrimp, oysters) using a co-management and ecosystems-based approach. It is also addressing critical factors for sustaining and enhancing social and economic benefits, increasing competitiveness, employment, the economic return to artisanal fisheries, and women empowerment. It is additionally supporting the protection of key habitats important in the life stages of commercial fish and protected species like the spawning zones in coastal areas. It is widely recognized that climate change would have impacts on fisheries in two ways: (i) firstly, through shifts in the distribution of fish biomass and changes in productivity; (ii) secondly, through other mechanisms such as acidification of the ocean from higher CO₂ levels and through climate change-included loss of critical habitats. The latter includes degradation of coral reefs through coral bleaching. These two impact types are interrelated. Ocean acidification, for example,

may lead to changes in fish habitats and therefore cause shifts in biomass. Gambian fisheries productivity is likely therefore to decrease due to the CO₂ enrichment of the ocean. According to the NAPA, sea level rise may initially favour, in the estuarine zone of the River Gambia, the mobilization and export of nutrients from the wetland sediments, but the same process could equally release pollutants into the aquatic system and decrease the productivity of fisheries. The loss of estuarine mangroves as a result of sea-level rise is likely to have a serious negative impact on the fisheries as they provide important refuges, spawning and feeding areas for crustaceans, shell fish, oceanic nekton and marine mammals. Continued stress therefore is likely to precipitate the collapse of the pelagic fisheries, threaten the food security of a significant proportion of the population and undermine the livelihood and the traditional way of life of the fisher-folk in the country. There is a necessity, therefore, to promote climate resilient fisheries co-management plans that will contribute to adapt fishing to the declining opportunities and support fishing communities to engage in other non-fishing livelihood activities. This project is a relevant baseline through which the LDCF will develop and implement climate resilient fisheries management plans and strengthen the climate-resilience of fishermen communities.

Title: Gambia National Agriculture & Natural Resources Investment Programme (GNAIP)

Co-financing: USD 15,000,000

In collaboration with ECOWAS, The Gambia has prepared a National Agriculture & Natural Resources Investment Programme (GNAIP: 2010 -2015) with a strong focus on: promotion of agricultural chains and markets, water management improvement, prevention & management of food crises & other natural disasters, improved management of other shared (natural) resources, sustainable farm management and institutional capacity building for the implementation of the investment programme. The overall objective of the GNAIP is to increase the agriculture sector's contribution to the national economy, growth enhancing and poverty reduction. One of the specific objectives of this programme is to promote lowland development for rice production. The programme targets 24,000 ha of land under the various lowland ecologies with the aim of expanding rice production to attain an annual production of 70,000 metric tons of paddy, and facilitate pond aquaculture production to optimize yields per year. In this perspective, the GNAIP is aiming to facilitate the exploitation of tidally irrigable areas suitable for rice production, improve access and promote rice production in seasonally saline tidal swamps. Along the Gambia River targeted by this programme, three major sections may be distinguished:

- The Upper Valley (UV), where floods occur occasionally and water is always fresh.
- The Central Valley (CV), where tidal influence exists but water is also fresh. In the lower CV water is fresh only during the rainy season while in the dry season, when the salt tongue moves as far as 250 km upstream, it becomes brackish. Thus, in the dry season, about 220 km of freshwater are left in the Central and Upper River Divisions.
- The Lower Valley (LV), where water is perennially saline because of permanent tidal influence.

To promote agriculture development in the Central Valley and Lower Valley, the GNAIP will finance the provision of water retention, anti-saline and flood protection dykes, installation of tidal gates and other flow control structures, pumping machines and accessories and introduction of bio-saline agriculture. It will additionally support capacity building for farmers on agricultural technologies, training of operators and mechanics for the maintenance of the machine and installations.

However the sea-level rise combined with excessive and continuous extraction of water from the river could contribute to move the saline front further upstream and could negatively affect the achievement of the GNAIP objective to attain an annual production of 70,000 metric tons of paddy. Indeed, it was recognized that excessive and continuous extraction of water from the river moves the saline front on average 24 km per month upstream. To increase coastal and tidal agriculture zones' resilience to climate changes risks, proposed LDCF resources will be used to support the GNAIP firstly by integrating the issues related to sea-level rise and other climate change induced coastal areas degradation in the design of the water flow control and management facilities in order to reduce the potential impacts of saline tongue moving upstream to the river on tidal areas agriculture. It will furthermore support farmers training on technologies to reduce salinity effects on rice production and the use of salt tolerant rice variety and promote the biosaline agriculture. It will also finance the building of climate proofed flood protection and other flow control installation to protect low-land rice growing areas against sea-level rise and flooding.

B. 2. INCREMENTAL /ADDITIONAL COST REASONING: DESCRIBE THE ADDITIONAL (LDCF/SCCF) ACTIVITIES REQUESTED FOR GEF/LDCF/SCCF FINANCING AND THE ASSOCIATED ADAPTATION BENEFITS (LDCF/SCCF) TO BE DELIVERED BY THE PROJECT:

The proposed LDCF project will remove urgent and immediate policy, institutional, individual, financial and knowledge related barriers to effective climate risk management in the coastal zone of The Gambia. The project will strengthen resilience to climate change induced coastline degradation through additional measures that will protect critical economic assets and livelihoods (physical infrastructure, rice paddy) from erosion, salinisation and flooding. The Government of The Gambia is already well aware of the risks and is in the process of putting in place policy and institutional measures to address the risks. The outcomes of the project are focused on building on and complementing these efforts, by integrating climate risk management into key planning instruments, by strengthening human resource and institutional capacities, and by investing in climate resilient physical measures and livelihood strategies. The Government faces coordination challenges in ensuring that these efforts are complementary and well aligned. LDCF resources will help to achieve this under Outcome 1, principally through the establishment of an enabling political, institutional and administrative environment for advancing climate risk management in the coastal zone backed by strengthened research and monitoring capabilities. While many past investments aimed at protecting critical economic assets from coastal erosion have largely been unsuccessful, Outcome 2 will learn from these past failures and put in place cost effective and technically sound infrastructure protecting both coastal installations and inland rice paddy from sea level rise related risks, and complement these with mangrove protection measures bringing triple-win benefits to include physical protection, an improved asset base for local communities, as well as a source of longer term carbon sequestration. Community benefits and support will be extended under Outcome 3 through the provision of more tolerant varieties and methods in both paddy cultivation and artisanal fisheries, backed by the promotion of alternative livelihoods so as to reduce dependence on vulnerable traditional livelihood systems.

Outcome 1: Policies, institutions and individuals mandated to manage coastal areas strengthened to address climate related risks in coastal areas

Baseline: There is a serious concern within policy circles that human and institutional capacities to formulate policies design and implement programmes and deliver quality services to meet the country's development priorities and challenges are limited. The gap is more acute in certain fields/professional categories such as coastline management and engineering where, among other issues, awareness about climate related risks is limited. To address these developmental challenges, the Government of Gambia with the support of UNDP and the Spanish DGTTF, has developed a Civil Service Reform programme (PSRICD) whose goal is to achieve a competent, professional and results oriented civil service in all 18 national ministries, with the capacity to deliver quality services to the people in a cost effective and efficient manner. Consequently the PSRICD will support the development and implementation of a civil service wide training plan covering: policy development, planning, performance budgeting, monitoring and evaluation, project design, implementation and management, both for senior and mid-level staff. The PSRICD aims thus to build the capacities of Ministries and Departments to deliver on their mandates especially with respect to PAGE objectives such as: increased capacity and output of the productive sectors of agriculture, fisheries, industry, trade and tourism; improved health, education and social services delivery system; enhanced local governance and decentralization. Additionally, the Islamic Development Bank funded "Gambia Community-Based Infrastructures and Livelihood Improvement Project (CILIP)" is supporting capacity-building activities on designing and implementing community development plans, community-based development activities for local councils, local government, Ministry of Local Development and Lands, community beneficiaries in order to allow them to better respond to community demands-driven support services. However, the CSR as well as the CILIP have not integrated actions to strengthen the adaptive capacities of these Ministries, Departments and local governments to respond efficiently to the impacts of climate change induced coastal areas issues that could undermine the achievement of these PAGE development objectives.

The vulnerability of coastal areas to climate risks is increased by the absence of a coherent policy, regulatory and institutional framework for development. Many government institutions operate in the coastal zone. Following their respective mandates, they have different priorities and literally work in more or less the same geographical space with a different focus. There is an urgent need to put in place effective co-ordinating mechanisms to support multi-sectoral policy and planning. In this regard, the GOTG has instructed the NEA to establish a *Coastal Zone Management Unit (CZMU)* to coordinate the activities of sectoral agencies (ministries and their departments in charge of forestry, fisheries, wildlife, water pollution, land-use planning, agriculture, tourism, disaster management). In 1998, the GOTG, in the framework of the project UNEP/FAO/PAP, produced an Integrated Coastal and Marine Areas Management document and strategy providing: (i) land classification as a basis of future coastal land use planning (including the designation of the ecologically and historically sensitive areas that deserve some form of protection as well as open space, buffer zones); (ii) regulatory system reforms (permits, prohibited activities, setbacks, environmental impacts etc); and (iii) delineation of the management boundaries and jurisdictions for

different sectoral policies. In 2009, the GOTG, in the framework of the UNDP/GEF ACCC project, undertook to develop a new framework for the ICAM with a detailed action plan because the 1998 ICMAM document presented major deficiencies for an ICAM plan. Socioeconomic data needed to be updated, and further developments occurred during the timeframe since the adoption of the document had to be acknowledged and included in the planning. Besides, the study failed to highlight aspects of management conflicts inherent to the overlapping mandate of various government institutions. The objectives of the 2009 ICAM were to: (i) provide a knowledge base on the major social, economic and cultural activities within the coastal area, in addition to institutional arrangements for management of the area; (ii) identify major environmental problems of the coastal area including climate risks and; (iii) define priority areas for action in view of the defined major problems.

The EU project “Support to The Gambia for Integrated Coastal Zone Management and the mainstreaming of Climate Change” will support the implementation of the ICAM by facilitating multi-stakeholder consultation to identify gaps in the policy and regulatory framework needed to be filled in order to address the climate-related coastal areas problems. This process will serve as a platform for the formulation of recommendations to the GOTG for the improvement of the policy, regulatory and administrative framework to prevent and reduce the adverse impacts of climate risks on coastal areas economic, social and natural systems. The proposed LDCF project will support the implementation of the recommendations from the ICAM consultation process through specific sectoral policy reforms, capacity development, institution building and specific investments in coastal protection and livelihoods diversification. It will also build on a UNDP supported national disaster management project which has helped to develop a national policy and legal framework as well as national and regional institutions, in the form of disaster management offices and committees. These structures provide part of the necessary capacity to respond to increasing climate risks in the coastal zone and will be fully integrated into the proposed capacity development programme to be implemented under the proposed LDCF project.

Additionality: Building on the “Civil Service Reform” programme, ICAM, GNAIP, IDB CILIP, EU ICZM and other key sectoral policies and plans, this outcome will contribute to strengthen the adaptive capacity of institutions and individuals mandated to manage coastal areas in order to reduce the risks of climate change impacts, strengthen coordination for climate risk management and integrate climate risk management into key national and regional policies and plans. Under Output 1.1 a capacity development programme will be designed and implemented by the NEA, to support the following objectives: (i) the design, implementation and monitoring of coastal adaptation measures and strategies including those outlined in outcomes 2 and 3 below as well as future initiatives and (ii) the mainstreaming of climate changes concerns and adaptation options into current key development policies and plans affecting the coastal zone. The LDCF financed capacity development components in this project will, for this purpose, integrate into the PSRICD, CILIP and UE ICZM capacity-building activities, relevant climate change modules that will provide, concerned policy-makers and national- and local-government officials, with the necessary training and knowledge on climate change risks. Furthermore, it will integrate adaptation strategies that they can implement to address climate risks in The Gambia’s coastal areas. This knowledge combined with the skills provided by the aforementioned capacity building projects, will capacitate them to design and implement climate resilient policy, national and local development plans and environmentally sound coastal adaptation measures. The LDCF financed components will target: (i) 100 policy makers drawn from national Ministries for the mainstreaming of climate changes in relevant development policies and plans; (ii) at least 100 mid-level officials drawn from the Ministries of Public Works, the Department of Fisheries and the Gambia Port Authority (GPA) for the design, the building and the maintenance of the protection works of the fishing facilities and the low-land rice growing areas against sea-level rise and coastal degradation, (iii) 25 key mid-level officials from the Environment, Forestry, and Parks and Wildlife Department for the rehabilitation and conservation of mangrove forest activities; (iii) at least 200 senior and technical level officials from the Department of Fisheries and Department of Agriculture, including extension staff for the climate resilient rice growing technologies ; at least 25 representatives of the community fishery centers; NGOs; and local contractors; at least 50 local authorities of the council areas of North Bank, Western and Lower River regions for the inclusion of sea-level rise and other climate change concerns in community development plans. In addition to the capacity that will be developed to support Gambia in the long-term, there will be immediate benefits in terms of other outputs that the LDCF project will realize in Components 2 (for the management and support of small scale community orientated climate resilient infrastructure) and component 3 (on climate resilient livelihood development). The capacities produced by this outcome will support the mainstreaming of climate changes in key development policies and plans, the design and the building of the coastal adaptation infrastructures and strategies. This exercise will be documented and the experience drawn from these activities will be codified and disseminated to the relevant stakeholders. This will be done: (i) under the form of a didactical handbook for the technical staff of the key ministries, the NGOs and the Private sector they could use after the end of the project for the same activities and, (ii) under the form of a training module that will be proposed

to the University of The Gambia for future training or inclusion in its curricula. This will allow to promote the sustainability and the updating of these climate change capacities within The Gambia. Further details of these linkages will be elaborated in the project document submitted for CEO endorsement.

Under Output 1.2 measures to improve the policy, regulatory and administrative environment for climate risk management in the coastal zone will be financed by the LDCF. Building mainly on ICAM and the recommendations from the ICZM consultation process, it will support the integration of a climate risk management approach into key national and regional development plans and policies including: Gambia Tourism Areas master plan, Banjul City master plan, National Coastal Areas Zoning Regulations, North Bank, Western and Lower River Divisions regional development plans. This will entail completing a climate change risk assessment of each of these plans with a specific focus on their investment plans, identifying additional investments necessary to address likely climate change risks, and identifying the most appropriate financing sources to cover the additional costs, including both public and private sector sources. The use of fiscal instruments (such as taxation and duty waivers) will be assessed for their potential to support policy implementation, change in public behavior which currently contributes to increasing the vulnerability of coastal areas and to curtail unsustainable practices like uncontrolled sand mining, settlements in climate sensitive areas, mangrove deforestation, and to promote private sector participation in the construction and the maintenance of the coastal protection measures identified in the framework of the components 2 and 3 as well as other risk reduction measures. In order to achieve this, a high level institutional coordination mechanism will be established under Output 1.3 for climate change oversight in the coastal zones. Currently, this type of coordination system does not exist. However, in light of the pressures of climate change, and the many different initiatives that are underway which directly and indirectly have a bearing on adaptation, the need for an oversight and coordination mechanism has become critical. LDCF funds will, therefore, be used to bear the additional cost of setting up and institutionalizing a system for such a coordination mechanism to play an effective role in guiding adaptation in The Gambia, starting with initiatives in coastal areas. This process will engage representatives of all the key departments responsible for the implementation of coastal zone policy. In time the mechanism may be operationalized through the introduction of a coastal zone policy and investment review committee meeting on an annual basis, supported by a secretariat and technical support potentially to be located within the NEA.

In order to ensure that the policy and planning process remains flexible to ongoing change occurring within the coastal zone, Output 1.4 will develop and integrate a coastal zone monitoring programme, to be hosted by a pre-existing institution, such as the NEA, Water Department or Gambian Navy. The programme will provide up to date advice and information on marine meteorological and related oceanographic climate-induced dynamics affecting beach width and slopes, coastal line evolution, lagoon sediments, coral reefs, winds, wave's height and strength, tide levels, river flows, river water quality, ground water quality. Coastal monitoring will provide decision-makers, technical staff, local communities, and the private sector (such as the hotel industry) with critical information on the ongoing effects of sea level rise to allow more flexible, adaptable and responsive decision making in the coastal zone. The programme will include: (i) installation of data capturing devices for beach surveillance and reef observation during weather events (like storms) and "normal" events under a defined periodicity, (ii) data analyzing to assess the impacts of climate change and variability in coastal areas, (iii) communication of climate changes impacts on coastal areas and (iv) proposition of information and recommendations to minimize the impacts of the climate changes and secure the sustainability of coastal protection initiatives undertaken in the framework of the component 2 and 3 of the project. A capacity assessment of existing institutions to host the programme will be carried out during the detailed design phase, including long term sustainability issues. This output will be coordinated with the UNEP-LDCF project "Strengthening of the Gambia's Climate Change Early Warning System"—which focuses on enhancing capacity of the networks of synoptic meteorological and hydrological stations within the country to identify climate-related natural hazards (mainly drought, flooding, wind storms leading to wind erosion) and forecast their potential impacts on vulnerable communities as well as delivering climate information including early warning to enhance adaptive capacity and reduce vulnerability of The Gambia's population to climate change. The project preparation phase will further elaborate on the linkages between these 2 projects, including the possibility for the use of the synoptic and hydrology stations in the coastal areas, to collect the marine meteorological and related oceanographic information required by the coastal monitoring system, and the feasibility of dedicating the activities of this output to the UNEP/EWS project coordination unit.

Outcome 2: Climate change vulnerability of development activities and investments in coastal areas reduced through the design and construction of coastal protection measures,

Baseline The government has carried out coastal protection works for a number of years (notably from July 2003 to April 2004 with UNDP and AfDB collaboration) aiming to halt coastal erosion through soft and hard engineering interventions (beach nourishment, construction of groynes, revetments). Certain hotels like the Sunwing and the Senegambia hotels have also used beach nourishment and sand bagging to protect their grounds from erosion and flooding. Local protection measures like boulders and rhum palm plantations have also been introduced in other areas along the coastline, specifically in Banjul around Radio Syd, and Banjul Point. However, these measures have largely failed to solve the problem. This can be attributed to: (i) the lack of understanding of coastal dynamics; (ii) the lack of regular maintenance because of the absence of required human and financial resources and; (iii) the poor quality of the construction materials used. More recently, in the fisheries sector, the AfDB has been providing support for rehabilitating fish landing sites of Bintang, Tendaba and Albreda to improve the productivity and revenues generated from the artisanal fishing. However, the rehabilitation works have not contributed to strengthening the resilience of these fishing landing facilities to sea-level rise and other climate induced coastal areas degradation. According to the Gambia's Fisheries Department, these locations have not been designed and built to support even a 0,5 m sea-level rise and need to be upgraded to make them more resilient. Furthermore, the Tanji fishery centre funded by the government of Japan is seriously threatened by the sea-level rise. The Tanji center comprises an ice plant with capacity to produce 10 tons of flake ice per day, a chill room with 10 tons loading capacity, refrigerated trucks, five fibre glass canoes with nets, and landing facilities. It is the busiest artisanal fish centre in the country benefitting local communities involved in artisanal fishing, fish processing (smoking and drying), fish marketing and other related activities.. The GNAIP project is aiming to improve low-land rice growing by supporting the construction of water retention, anti-saline and flood protection dykes, installation of tidal gates and other flow control structures. However sea-level rise is likely to move the saline front further upstream than originally envisaged under the GNAIP, thereby negatively affecting the productivity of the investment made in the low-land rice growing areas. All these infrastructures and activities need to be strengthened to render them more resilient to climate change.

Two additional baseline initiatives are attempting to put in place a planned response to climate change. The EU ICZM project will support, in its first year, a feasibility study for concrete coastal protection measures looking at needs and options for the entire Atlantic coast (updating previous studies) and focusing on areas at risk from sea level rise and coastal flooding. The study will provide an overall strategy and perspective for cost effective shoreline management and coastal protection, which LDCF resources will be used to build on. In addition, the USAID supported Banafaa programme is helping the Department of Fisheries to introduce ecosystem based measures to protect the fishery, such as habitat protection measures to protect key spawning grounds, as well as fisheries co-management measures to increase the participation and ownership of artisanal fishing communities. This approach is helping to build resilience to climate risks in an indirect manner, but additional specific measures, such as mangrove planting and protection could significantly increase resilience in the face of climate risks.

Additionality: This outcome will finance additional investments in hard and soft coastal protection measures to help maintain critical economic infrastructure, as well as key livelihood activities, in the face of sea level rise and coastal degradation. Recent experience of what 'doesn't work' will help to ensure that these measures are designed and implemented effectively, and will be taken. Within the context of the EU supported ICZM feasibility work, Output 2.1 will support the rehabilitation and the protection against sea-level rise and coastal degradation of fish landing sites at Brufut, Tanji, Batokunku/Tujereng, Sanyang, Gunjur and Kartong. Indeed, if the AfDB GAFDP has contributed to render these fishing landing facilities more operational, it did not contribute to reduce their vulnerability to sea-level rise and other climate-induced coastal areas issues. This raises the concern of the capacity of these infrastructures to provide the services for which they have been built and rehabilitated by the GAFDP sustainably and efficiently in a context of climate change and variability. Then, without this LDCF support, the GAFDP could not achieve its goal of increasing fish production and revenues of the 200,000 fisher folks (men and women) including foreign exchange earnings and to contribute to the improvement of nutritional standards of the Gambian population. Appropriate techniques such as gabions, groynes, revetments, beach nourishment and recharge will be reviewed and assessed as possible measures. Detailed design studies will be carried out for technical feasibility and cost effectiveness, taking into account climate risk criteria, such as likelihood and magnitude of storm surges, tidal events, inland flooding and management of run-off. A construction programme will be initiated in priority areas from year 2 onwards. These investments will also be show-cased to private sector operators to stimulate their engagement both in continuing to strengthen coastal defenses and contributing towards their long term upkeep. Fiscal incentives introduced at a policy level (Outcome 1) will support this approach. Under Output 2.2, up to 1,500 ha of low-land rice growing areas in the Lower and Central Valleys will also be protected through the installation and maintenance of protection dykes, tidal gates and other flow control structures and machines in targeted areas. This will involve a participatory planning process designed to engage beneficiaries from the outset in

siting, design, implementation of works and long term management and maintenance. LDCF resources will be used to design and build structures that will directly benefit at least 1,500 families in these areas. It is expected that a level of maintenance of these facilities will be provided by beneficiary communities. However a co-management approach will most likely be necessary involving relevant government agencies, such as the Department for Water Management and the Ministry of Agriculture. **Output 2.3** will restore and maintain 2,500 ha of the mangroves forests of Tanbi Wetlands (of which 177,285 Gambian depends directly or indirectly on their economic activities, its buffer zones, sewage sinks and coastal stabilization roles), the North Bank, Western and lower river regions through a co-management approach to act as an additional buffer against climate-induced pressures in coastal areas. These mangroves will directly complement hard physical measures designed to protect lowland rice growing and will be planned and implemented alongside these hard measures through participatory planning. Selected communities members (populations around these mangroves and oyster producers) will be trained in mangrove management measures including physical regeneration, monitoring of the health of the mangrove, developing and maintaining community based agreements on use of the resource. Communities at large will be sensitized on the role of mangroves roles in promoting coastal resilience. The technical specifications of the coastal protection measures proposed in this component will be made clear during the project preparation and their cost-effectiveness vis-à-vis to alternative approaches will be demonstrated.

Outcome 3: Rural livelihoods in the coastal zone enhanced and protected from the impacts of climate change through the demonstration and the transfer of successful coastal adaptation technologies and the introduction of economic diversification

Baseline: Significant areas of low-lying coastal land along the shore-line of the Gambia River (Central and Lower valleys) are prone to salt water intrusion rendering them less and less suitable for cropping. To promote rice development in these areas, the GNAIP not only supports investments in physical infrastructure measures (as outlined under outcome 2), but equally the introduction of new varieties and methods of rice cultivation for all affected communities. However this commitment is largely unfunded by the government while the relevant government agencies lack the experience and technical knowledge to effectively launch this kind of support. The AfDB funded Gambia Artisanal Fisheries Development Project (GAFDP) aims to increase fish production and the incomes of fisherfolk, while contributing to overall nutrition in the population. The USAID supported Banafaa project is promoting increased competitiveness within the sector, greater added value and economic benefits and increased employment. It also supports the improvement of women oyster producers' livelihoods and fisheries practices through the training in construction and management of supporting lattice, strings and trays, how to determine the best method, location and time of year to collect spat; to determine the best method and area for grow-out and the development of management techniques. Likewise, the AfDB/IFAD project Livestock and Horticulture Development Project (LHDP) aims at reducing poverty and improving horticulture households' food security in rural coastal areas through the rehabilitation/upgrading of existing gardens, the provision of horticulture inputs, the delivering of extension services and training to horticulture producers. Additionally, the Islamic Development Bank project Community-based Infrastructure and Livelihood Improvement Project (CILIP) is intended to improve livelihoods and welfare of the beneficiaries through enhanced access to basic social and economic infrastructure and provision of matching grants for the acquisition of production assets and equipment. Both of these initiatives are helping to reduce overall vulnerability of coastal communities, yet without specifically addressing climate risks from sea level rise. Consequently there is a risk that development gains of these programmes will be significantly undermined and that existing management approaches could increase the overall vulnerability of local communities. LDCF resources will be used to introduce and transfer to communities successful climate resilient agriculture technologies and wetland and fisheries management strategies. Moreover it will also support the introduction and development of climate resilient income generating activities in the coastal communities vulnerable to the sea-level rise and coastal degradation.

Additionality: Building on the GNAIP bio-salinity programme, the Gambia artisanal fisheries development and the Gambia-Senegal sustainable fisheries projects, this outcome area will contribute to enhancing the climate resilience of fishermen (including women producing oyster and shrimps) and agriculture communities' livelihoods. Under **Output 3.1** at least 1,500 women rice growers and 300 horticulture producers (250 women and 50 youth) will receive agricultural extension services, introduced crop varieties, land management methods and access to credit to promote more resilient rice production in the Lower and Central Valley areas. Learning by doing agricultural training on techniques to minimize saltwater and soil effects on rice production (such as improved irrigation regimes and methods to reclaim highly saline soils) will be provided; salt tolerant rice varieties will be introduced, tested and disseminated; climate resilient wetland management methods will be introduced. A particular focus on gender disparities and effects will be introduced taking account of special needs faced by women farmers in climate risk

conditions. Financial incentives will be provided to promote field based works as necessary, with a focus on the poorest and most vulnerable. Under Output 3.2 climate resilient wetland and fisheries management strategies (such as resilient fisheries and wetland management plans, custom rules for wetland access and exploitation, community monitoring of fisheries quotas,) will be introduced and transferred to vulnerable communities in at least 20 wards in the Lower and Central valleys. These activities will be led by extension staff within the Department of Fisheries working closely with the existing community based fisheries centres and management committees used by the Banafaa project. This work will be carried out in the vicinity of the mangrove restoration work to be implemented under Outcome 2. Financial support will be provided to the most vulnerable to implement the new management measures. Under Output 3.3 complementary measures to diversify rural livelihood strategies in at least 20 wards in the Lower and Central Valleys with a specific focus on communities currently depending on unsustainable practices and vulnerable activities such as oyster production, shrimp production, sand mining and horticulture in locations that are highly exposed to climate related risks. The current initiatives supporting coastal community livelihoods like the GNAIP, the Ba Naafa, the GAFDP, the IFAD-LHDP and the IDB-CILIP rely on climate vulnerable income generating activities like agriculture, fishing related activities, horticulture. This LDCF financed project aims at strengthening the climate resilience of these aforementioned projects, as well as developing alternative livelihood strategies for coastal communities vulnerable to climate change. This project will support the introduction and the development of a range of alternative income generating activities including: beekeeping, ecotourism, forest management, and jobs in coastal defense installation and maintenance. Through a process of community consultation closely linked to Outputs 3.1 and 3.2, specific vocational training and support programmes will be developed, market access studies and analysis provided, and start up financing supported linked to the local banking system, notably the Village Savings and Credit Association (VISACA) created by the terminated IFAD Rural Finance and Community Initiatives Project and the Livelihood Improvement Fund of the IDB supported Community-based Infrastructure and Livelihood Improvement Project.

B.3. 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 ADAPTATION BENEFITS (LDCF/SCCF).

As a result of the outcome 1 of the project, 500 targeted stakeholders (Coastal communities, community based organizations, staff from line ministers, local authorities, policy makers) will have developed skills and capacity on how to mainstream climate changes concerns and adaptation options in the key development policies and plans affecting the coastal zone and to design, implement and monitor coastal adaptation measures and strategies. This will allow them to support and facilitate coastal adaptation measures that will contribute to strengthen the resilience of economic activities and social assets in the most vulnerable Gambia's coastal areas. The project will also demonstrate how the management of coastal areas of The Gambia can be adapted to climate change within a prevailing situation of considerable climatic variability. To ensure the sustainability of these capacities, the project will support the documentation and the codification of the knowledge and lessons drawn from the mainstreaming of climate changes and the implementation of coastal protection measures. These knowledge materials will be shared among the line ministries technical staff, the NGOs dealing with coastal areas management and the University of The Gambia and will benefit to future initiatives and training related to the mainstreaming of climate change in coastal areas management. The adaptation benefits of outcome 1 of this project include the long-term protection of the main coastal fishing facilities and of 1,500 ha of low-land growing areas in the Lower and Central Valleys, the increasing of the adaptive capacities to sea-level rise and coastal degradation of 2,500 ha of mangrove forests, wetlands including the Tanbi wetlands and fisheries. This will directly benefit 1,500 women rice growers families, 250 women and 50 youth horticulture producers, around 2,000 fishermen including oyster women producers and their families and a big share of the 200,000 fish buyers, fish processors, boat builders, fuel wood collectors and other fish related activities actors operating in The Gambia's coastal areas and their dependants. The restoration and conservation of the Tanbi Wetland complex, particularly, that will be undertaken in the framework of the outcome 2 will benefit 177,285 Gambians (according to the 2003 Census) that depend directly or indirectly on the wetland complex through their economic activities (rice growing, horticulture, oyster and shrimp production, fish product processing, touristic activities), and its buffer zone, sewage sinks and coastal stabilization roles. These benefits also concern the prevention or reduction of the lost tax revenues that could be incurred if measures to prevent the reduction of the quantity of fish landed, will not be undertaken. Another major benefit is related to the place of fish products (one of the main source of protein) and rice in Gambian population diet. Indeed, by protecting the capacity of the fishing sector and low-land rice growing to adapt to climate risks, this LDCF will contribute to strengthen food security of the Gambian population.

The outcome 3 will result in 3,800 people (among which at least 2,000 women) and their families in Coastal communities being better prepared to becoming more 'resilient' to the emerging long-term risks of climate change.

Local communities will be better equipped to manage their environment and make it more resilient to climate change. They will correspondingly be able to apply improved practices with respect to coastal zone management: practices that will be particularly useful in the context of a changing climate. These activities combined with the coastal protection measures that will be supported by outcome 2 will benefit actors beyond those targeted for capacity building activities notably a big share of the 24,000 Gambian low-land rice growers (which are predominantly women), horticulture producers and the 200,000 fisher folks (including women oyster producers, women fish products processors and women fishmongers). This project will therefore mainstream gender concerns within the context of climate change. Women are predominant in coastal areas activities such as fish processing, fish selling to consumers, oyster harvesting and low-land rice growing. The risk and vulnerability assessment that will be done during the project preparation will put a special emphasis on gender disparities and related vulnerability and the special needs in term of financial and technical capacities, support and organization faced by women active in the artisanal fishery and the rice growing will be introduced in the design and the implementation of the coastal adaptation measures and the diversification of rural livelihoods strategies. Thus, during preparatory phase, the project work plans will be formulated to be sensitive to gender and social vulnerability, particularly with regards to Outcome 2 on design and implementation of activities in the rural areas relating to climate change. Information about climate change and adaptation measures will therefore be designed and disseminated in gender-sensitive ways and be combined with explicit efforts to ensure that women and girls – especially those who are poor or have been denied the right to formal education – can easily have access to and absorb the necessary information. The project will ensure that the capacities and skills gained by the women through these activities will be sustained by developing strategies to include them in the informal alphabetisation programmes in coastal areas. In consultation with the project proponents and stakeholders who will lead the operational design of this project, indicators will be integrated into the logical framework to ensure that gender dimensions are adequately addressed throughout the implementation phase.

The project preparation phase will allow a more detailed assessment of these adaptation and socioeconomic benefits of the LDCF and will be outlined in the project document submitted for CEO endorsement.

B.4 INDICATE RISKS AND MEASURES THAT ADDRESS THESE RISKS TO BE FURTHER DEVELOPED DURING THE PROJECT DESIGN:

Identified risks	Mitigation measures
Major flood or natural event of national level occurring during project implementation	The Gambia has suffered during the 2010 and 2011 raining season from floods. The NAPA study reviews various studies to suggest that major natural disaster related events are unlikely to increase in frequency of the coming years, although intensity may increase. The government has established a disaster risk management agency from national to community level, but significant additional support is necessary in order to make it effective. The weaknesses in the current system are well recognised and were picked in the NAPA process also. UNDP is supporting the government in this specific area including shifting the emphasis more towards prevention, not only recovery measures. Notwithstanding these measures, although the probability of such an event remains low, the impact on the country and on the project itself would be significant for several months.
Climate science and risk information is either unavailable or too coarse to be used for effective local planning	While The Gambia has completed its NAPA and is in process of developing its 2nd national communication, the amount of climate risk information available to support planning decisions remains very limited, especially at coastal areas and local levels. One important element of component 1 of the project will be to develop and integrate a coastal zone monitoring programme that will provide up to date advice and information on climate induced dynamics affecting beach width and slopes, lagoon sediments, coral reefs, winds, wave's height and strength, tide levels, river flows, river water quality, ground water quality .provide training and support on how to compile and integrate available climate risk information and use this through the medium of vulnerability assessment in the context of local planning. This will provide decision-makers, technical staff, local communities, and the private sector (such as the hotel industry) with critical information on the ongoing effects of sea level rise to allow more flexible, adaptable and responsive decision making in the coastal zone.

<p>Too many different/divergent stakeholder interests, initiatives and process in the coastal areas may prevent efficient consensual decision-making</p>	<p>They are currently many policies, strategies and projects currently implemented in the coastal areas. A lack of coordination of these initiatives with this project could negatively affect the efficiency of the project activities and impede the achievement of the project expected results. The project will elaborate during its preparation phase for the establishment of a body to coordinate all the coastal areas adaptation activities and future donor initiatives including the potential for Prime Minister's Office to play this coordination role</p>
<p>Technical capacity on risk management systems and strategies including on financing systems</p>	<p>Support from international expertise and also from UNDP</p>
<p>Political context mitigates against effective coordination across key development sectors.</p>	<p>The Gambia's national election planned for the 24 November 2011 will have a significant impact on the current institutional organization. The principal risk for the proposed LDCF project would be the change of the agenda and the lack of coordination between the key Ministries. The project will promote the installation of an institutional coordination mechanism for climate change oversight in the coastal zones, that will foster the coordination of the intervention of the key ministries. Also the capacity building on climate change mainstreaming will contribute to raise the awareness of the high-level policy-makers officer on the necessity to include the climate induced coastal areas issues in the development process.</p>
<p>Lack of community involvement in some project sites</p>	<p>The assessment of available community workforce and cash-for work-modalities in target sites prior to project inception combined with raising awareness on project benefits for communities' livelihoods (during the project presentation) could contribute to raise their interest to participate in the project activities.</p>
<p>Inadequate maintenance and unsustainable management of the coastal protection measures proposed</p>	<p>There is a risk related to an inadequate maintenance and unsustainable management of coastal protection measures that could affect the sustainability of these measures. However, the project will address this risk by :</p> <ul style="list-style-type: none"> i) creating, at national and community level, the capacities to ensure good maintenance of the protection measures; ii) strengthening the emphasis on an approach to community- driven participatory development and community ownership of measures that take advantage of the strengths identified with regard to local social capital to empower local stakeholders (village leaderships and opinion leaders) for the maintenance and sustainable management of these protection measures., iii) building strong partnerships with other projects and organizations, including several UNDP regional grants that can provide expertise and/or backstopping (M&E, capacity building, etc.). iv) conducting relevant dialogues with the Government for the commitment and allocation of government budgetary resources for the maintenance of coastal protection measures.

The non-adoption of alternative income-generating activities.	The risk of non-adoption of alternative income generating activities (IGA) could be related to the lack of interest for these activities, capacities and knowledge to implement these activities, financial support, incentives mechanisms like the existence of a market and marketing supports. However, this risk is low given that the project is responding to a demand driven request for development of alternative income generating activities. Moreover, demand driven alternative income generating activities will be developed in full consultation with communities including raising awareness of targeted communities about options for strengthening livelihood resilience. This will allow targeted communities to identify and select the alternative IGA (based on climate risk assessment information). Furthermore, the project will support the development and the implementation of a market development strategy for the selected IGA. Linkages will be made with the Village Savings and Credit Association (VISACA) created by the IFAD Rural Finance and Community Initiatives Project. Additionally, the (IDB) supported Community-based Infrastructure and Livelihood Improvement Project will be approached to leverage additional financing for developing the targeted alternatives IGAs.
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B5. IDENTIFY KEY STAKEHOLDERS INVOLVED IN THE PROJECT INCLUDING THE PRIVATE SECTOR, CIVIL SOCIETY ORGANIZATIONS, LOCAL AND INDIGENOUS COMMUNITIES, AND THEIR RESPECTIVE ROLES, AS APPLICABLE:

<u>Key stakeholders</u>	<u>Expected roles</u>
National Government	
Ministry of Forestry and Environment	The Ministry of Forestry and Environment through the National Environment Agency (NEA) will coordinate the overall project preparation and implementation. The NEA will host the Project Management Unit (PMU). It will participate in the design and the development of the capacity building activities. The Department of forestry will be responsible of the mangrove protection and regeneration activities. Both the NEA and the Department of Forestry will benefit directly from the project’s institutional and human resources capacity building activities in climate change;
Ministry of Fisheries and Water Resources	The Ministry of Fisheries and Water Resources will contribute in the overall project leadership and will be the responsible for the mainstreaming of climate change in the fisheries management and policies, the design and implementation of the climate resilient fisheries and wetlands management plans and the activities for the rehabilitation and the protection against sea-level rise and coastal degradation of fish landing sites. The Ministry staff will also benefit from the project capacity building activities
Ministry of Agriculture	The Ministry of Agriculture will be responsible for the mainstreaming of climate change in the agriculture policy through the GNAIP office will be responsible party for the Components 2 and 3 on “implementation of coastal areas protection measures” and “climate resilient rural livelihoods”.
Ministry of Economy, Planning and Cooperation	It will assist in the mainstreaming of climate change risks and adaptation into the policy, local development planning and related budgets
University of The Gambia	The University of the Gambia will benefit from the capacity building activity and will also support the design of the training material, the codification of the experiences learnt from the project implementation and the capacity building activities
Ministry of Works	It will participate in the feasibility assessment and social and environmental screening (SES) of the coastal protection infrastructure during the project preparation. It will coordinate the supervision of coastal protection infrastructures design, building maintenance and ensure that they integrate the recommendation from the SES exercise. It will also participate in the monitoring and evaluation of the project activities
Regional/Local Government	
Local Governments of North Bank, Western and Lower-River regions	Contribution to the implementation of the project’s activities in the pilot sites and the mainstreaming of climate changes in the regional development plans. They will also benefit directly from the project’s capacity building activities
NGOs Project beneficiaries	

Key stakeholders	Expected roles
Fishermen (including women) and farmers organizations	They will benefit from the capacity building activities and will participate in the design and the implementation of adaptation options and the maintenance of adaptations infrastructures
NGOs	Selected NGOs will benefit from the project capacity building activities and will be contracted to support communities in the implementation of community training activities and the other project activities pertaining to increase the climate resilience of the coastal communities livelihood (promotion of climate resilient rice growing, climate resilient wetland and fisheries management strategies, rural livelihoods diversification).

B.6. OUTLINE THE COORDINATION WITH OTHER RELATED INITIATIVES:

Coordination and management arrangements will be addressed during the detailed design phase. Based on initial discussions with the Government the National Environmental Agency (NEA) will provide overall leadership for the project as national implementing partner, in close collaboration with the Department of Water Resources (DWR) and Department of Agriculture. The NEA hosts the Coastal Zones Management Unit (CZMU) which has been mandated by the Government to coordinate the coastal areas management activities in Gambia. The PMU will be located within NEA, potentially within the CZMU.

The NEA is lead agency for the EU “support project to The Gambia for Integrated Coastal Zone Management and the mainstreaming of Climate Change”, which provides the baseline and main entry point for the Component 1 on “strengthening of the policies, institutions and individuals”. The Civil Service reform Unit within the Prime Minister Office (CSRU/PMO) will provide a further entry point for Component, specifically the proposed capacity development programme, and will therefore be a key counterpart to NEA for Component 1.

The Department of Agriculture (GNAIP office) will likely act as the responsible party for the Components 2 and 3 on “implementation of coastal areas protection measures” and “climate resilient rural livelihoods”, with the technical collaboration of the GAMWORK (Gambian Agency for the Management of Public Works), Department of Forestry, Department of Fisheries and the Department of Parks and Wildlife. The Department of Fisheries is the main counterpart for the AfDB supported Gambia Artisanal Fisheries Development Project, one of the baseline projects for which LDCF resources will be used to address additional risks associated with sea level rise.

A steering committee comprising Coastal Zone Management Working Group and the National Climate Committee (NCC) members will oversee the overall implementation of the project. As the NEA has the mandate to coordinate development and implementation of environment and natural resources policies in The Gambia, including coastal areas management activities, it will likely convene and chair this Committee. The role of this body will be more fully elaborated during the detailed design phase, including the potential for to be played by the Prime Minister's office (Permanent Secretary-PMO).

The possibility and relevance of establishing local project management units in the North Bank Division, Western Division and Lower-River Division will be discussed during the project preparation consultations, in collaboration with the ministry of local government and lands.

Additionally, the preparation and the implementation of the project will be coordinated with the following initiatives in The Gambia:

Initiatives	Interventions

Initiatives	Interventions
Adaptation to Climate Change-Responding to Coastline Change in its human dimensions in West Africa through Integrated Coastal Area Management (ACCC) (UNDP/GEF)	This UNDP/GEF pilot project is implemented in Mauritania, Senegal, The Gambia, Guinea Bissau, and Cape Verde. The objective of the project is: to develop and pilot a range of effective coping mechanisms for reducing the impact of climate change induced coastal erosion in vulnerable regions in five countries in West Africa. The project aims to: (i) demonstrate pilot activities to increase the adaptive capacity and resilience of coastline ecosystems in regions vulnerable to climate changes; (ii) integrate climate change adaptation and coastal area management policies and programs; and (iii) enhance capacity for monitoring coastal erosion and capacity building in coastal management and planning. This project is testing some pilot coastal areas strategies and the experience and knowledge generated from these tests will be used in the identification and the design of coastal areas resilience strategies as well during the project preparation and implementation phases.
Strengthening of the Gambia's Climate Change Early Warning Systems (UNEP/GEF/LDCF)	The project's objective is to enhance adaptive capacity and reduce vulnerability to climate-related natural hazards (mainly drought, flooding, wind storms leading to wind erosion) through a strengthened early warning and information sharing mechanism for a better informed- decision-making by government and affected population. This objective will be achieved through the realization of the following outcomes: (i) Enhanced capacity of hydro-meteorological services and networks for predicting climate change events and risk factor; (ii) More effective, efficient and targeted delivery of climate information including early warnings; (iii) Improved and timely preparedness and responses of various stakeholders to forecast climate linked risks and vulnerabilities. This proposed LDCF will establish an improved system to monitor, collect, store, analyze and diffuse information on marine meteorological and related oceanographic climate-induced dynamics affecting beach width and slopes, coastal line evolution, lagoon sediments, coral reefs, winds, wave's height and strength, tide levels, river flows, river water quality, ground water quality to support coastal areas management. The project preparation phase will further elaborate on the linkages between these 2 projects, including the possibility for the use of the synoptic and hydrology stations in the coastal areas, to collect the marine meteorological and related oceanographic information required by the coastal monitoring system, and the feasibility of dedicating the activities of this output to the UNEP/EWS project coordination unit.
PRCM (West Africa Regional Marine and Coastal Conservation Programme) (IUCN/ FIBA/ WWF/WI)	The PRCM aims at improving the environmental governance and management modes of West Africa coastal and marine areas through a regional partnership and strengthening of synergies. The PRCM-II (2008-2012) is supporting an Integrated Coastal area and marine Biodiversity management project in Gambia. This project supports initiatives to restore the mangrove through reforestation actions in Gambia and income-generating activities alternate to oyster culture, thereby, increasing the incomes of local communities. The proposed LDCF will use the results of these demonstration activities during the project preparation phase to identify the most suitable strategies for mangrove reforestation and the best income generating activities alternatives that could valuably replace the oyster production.
Integrated Coastal and Marine Biodiversity Management Project (ICAM) (WB/ WWF/GEF)	The objective of the phase 2 jointly funded by GEF/World Bank and WWF is to consolidate and expand the strengthened coastal and marine protected area system and in-situ conservation of globally significant species and habitats in The Gambia, achieved under the ICAM I. The ICAM will promote sustainable income-generating activities such as modern beekeeping, improved oyster production, ecotourism, credit and saving system for women. Community development actions such erosion and flood control, better accessibility to water; sustainable utilization of marine and coastal resources like the development of mangrove management plan and mangrove regeneration activities, the establishment of new marine protected areas and the strengthening of existing ones; foster institutional collaboration between government institutions, NGOs, CBOs and Stakeholders to coordinate sectoral policies integration; and build capacities at sectoral and local levels for sustainable conservation and utilization of coastal and marine biodiversity. The results and experience generated from these activities will be used during the project preparation phase for the design of the alternatives income generating activities and the mangroves and coastal and marine ecosystems conservation strategies the LDCF will support.

C. DESCRIBE THE GEF AGENCY'S COMPARATIVE ADVANTAGE TO IMPLEMENT THIS PROJECT: UNDP CO

UNDP's comparative advantage in implementing this project is underpinned by its Country Programme Document for the current cycle (2007-2011), specifically Outcome 1.2 which aims to mainstream environment and disaster prevention measures into national and local development policies, strategies and plans, and Outcome 2.1 which focuses on improving the capacity of local government to implement priority legislation and policies, including support for civil service reform and institutional capacity development.

Public service reform and institution building is one of UNDP's flagship programming areas. A key concern is that public service capacities are not only weak, but eroding over time. UNDP has put in place a number of important measures to address this risk, including a Cabinet level board to coordinate all capacity development initiatives nationally, co-chaired by the UNDP Resident Representative. The proposed capacity development programme indicated under Component 1 of the LDCF project will benefit from UNDP's overarching and strategic role in this area, helping to ensure that related outcomes are sustainable in the long-term.

Since 2007, UNDP has been helping to finance the development of Gambia's national disaster management framework, leading to the development of policy and legal structure, as well as a national implementation framework based on regional and local disaster management bodies. On the basis of this work a long term Disaster Risk Reduction (DRR) and Climate Change Adaptation (CCA) programme for The Gambia (2009 – 2013) has been elaborated, providing a starting point for the proposed integration of climate risk management principles into national and regional planning, to be carried out under Component 1 of the LDCF project.

UNDP has specific experience of climate change risks in coastal areas through its GEF-SPA financed regional programme on Responding to Coastline Change in West Africa through Integrated Coastal Area Management (ACCC). The programme is piloting a series of strategies for promoting coastal resilience to climate change across 5 countries in West Africa, including techniques for the rehabilitation of degraded mangroves, and training for women in diversifying livelihoods. Through this project, the UNDP has, also, supported four coastal communities to construct a community owned eco-tourism camp as a means of sustainable livelihood. This experience will support the implementation of the Component 3 of the proposed LDCF project. The programme is also providing guidance on the monitoring of coastal erosion, as a basis for introducing national initiatives in the participating countries, providing useful basis for the proposed coastal change monitoring to be developed under Component 1.

UNDP also has considerable in-country experience in the organization and management of public works programme, particularly using labour intensive approaches. In 2003/2004, UNDP has collaborated with AfDB and Gambia Government to implement the beach nourishment project by constructing groins and placement of boulders to slow down wave velocity. This action restored much of the critically eroded coastal beaches. In 2007-2009, UNDP has provided funding support to drill one bore hole and seven concrete lined wells fitted with hand pumps in remote areas of the Gambia to improve access to potable water for people and livestock. Additionally, through the Gambia Priority Employment Programme, UNDP is helping to mobilise and train large numbers of young men and women, providing with the necessary skills to broaden their opportunities and livelihoods strategies. This experience will directly support Component 2 of the proposed project, which envisages physical works in strengthening coastal defenses as well as water management and canalization to protect inland rice paddy areas.

Moreover, UNDP's energy and environment programme is helping to strengthen both national and decentralized capacities for environmental management through ongoing support to the Ministry of Forests and Environment. One element of this support relates to how climate change is impacting on the national economy more broadly and how to develop both adaptation and mitigation strategies that take into account both risks and opportunities. This is an important area of dialogue with the national government that positions UNDP well with regard to key strategic bodies, such as the National Climate Change Commission (NCCC), helping to ensure that LDCF resources are programmed and implemented in line with key opinion leaders.

The programme will engage the Poverty, Environment and Energy practice area and the Democratic Governance practice area as well as the Deputy Resident Representative for programming. The CO Poverty, Environment and Energy practice has currently a Programme Specialist (with a strong community/rural development background), Programme Analyst (with a strong environment and rural development background) and a Programme Associate who work as a team to coordinate and support poverty-environment initiatives including infrastructural development. The Democratic Governance practice area has three Programme Specialists and one Programme Associate with a strong experience in policy mainstreaming, institutional capacity building and gender equality. Additionally, the CO has built strong partnerships with the National climate Committee (NCC), the NEA's Coastal

Zone Management Unit, the hotel industry, and coastal fishing communities as the main stakeholders on the coast. The existing partnership has facilitated the implementation of activities on the coast.

Finally, a number of other UNDP-GEF financed projects in the region (including LDCF financed ones) Guinea, Liberia, and Mozambique, as well as in other regions of the world are advancing similar initiatives. This means that there is substantial in-house technical expertise within UNDP that can be brought to bear to support the Government with the project as outlined above. UNDP country office operations are supported by regional advisory capacity based in the UNDP Regional Centre in Pretoria. UNDP has dedicated Regional Technical Advisers focusing on supporting adaptation programming and implementation in a range of technical areas relevant to this project including capacity development, coastal zone management, disaster management, infrastructure development, and ecosystem based adaptation. Our network of global Senior Technical Advisers provide additional technical oversight and leadership helping to ensure that programmes on the ground achieve maximum policy impact.

C.1 INDICATE THE CO-FINANCING AMOUNT THE GEF AGENCY IS BRINGING TO THE PROJECT:

UNDP’s related co-financing will mainly be associated with the project “Public service reform and institutional capacity development project”. The total co-financing to be provided under this project is US\$1,800,000. In addition UNDP will provide US\$1,000,000 from its own resources and an in-kind contribution of US\$540,000. Therefore the total UNDP contribution by way of co-financing is US\$3,340,000.

C.2 HOW DOES THE PROJECT FIT INTO THE GEF AGENCY’S PROGRAMME AND STAFF CAPACITY IN THE COUNTRY TO FOLLOW UP PROJECT IMPLEMENTATION:

This current project responds to Priority 2 of the United Nations Development Assistance Framework in Gambia (UNDAF) over the period of 2007-2011: support to recovery process as well as the fight against poverty. UNDP’s support to Gambia is well articulated the Country Programme Strategy in following area of intervention:

- i. Democratic Governance programme: UNDP aimed to improve the democratic process through mechanisms and institutions which are more credible, a permanent dialogue between government, opposition and civil society and active participation of the population. Activities also concern the support of decentralization process. Under Outcome 1, UNDP will promote stakeholders participation, support capacity building (database, training, awareness) and ensure that the need of poor communities and vulnerable groups (e.g. women, youth) are fully taken in account.
- ii. Environment protection: UNDP activities are oriented toward the formulation of an adequate policy framework. Under the project, UNDP will support the policy reform (updating SDEA developed through UNDP support) and providing technical expertise through sharing knowledge/experiences from past and ongoing water governance programme;
- iii. Improvement of Human Capital: UNDP core activity concerns the improvement of the living environment and makes more adequate supply of basic social services for poor vulnerable and poor communities. Under component 2, UNDP will continue supporting the development of communities’ livelihood resources through the assessment of viable and low cost water technologies and promoting community water management initiative.


PART III: ENDORSEMENT BY GEF OPERATIONAL FOCAL POINT AND GEF AGENCY

A. RECORD OF ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT ON BEHALF OF THE GOVERNMENT:

NAME	POSITION	MINISTRY	DATE (MM/dd/yyyy)
Momodou B. Sarr	Executive Director of the National Environmental Agency (NEA)	MINISTRY OF FORESTRY AND ENVIRONMENT	11/22/2011

B. GEF AGENCY(IES) CERTIFICATION

This request has been prepared in accordance with GEF/LDCF/SCCF policies and procedures and meets the GEF/LDCF/SCCF criteria for project identification and preparation.					
Agency Coordinator, Agency name	Signature	DATE (MM/dd/yy)	Project Contact Person	Telephone	Email Address

Yannick Glemarec Executive Coordinator, UNDP/GEF		December 20, 2011	Henry Rene Diouf UNDP/GEF Regional Technical Advisor (LECRDS)	+27 83 442 9989	henry.rene.diouf@undp.org
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