



## United Nations Development Programme

Country: Republic of the Gambia

### PROJECT DOCUMENT<sup>1</sup>

**Project Title:**

Enhancing Resilience of Vulnerable Coastal Areas and Communities to Climate Change

**UNDAF Outcome(s) (from Gambia UNDAF 2012-2016)**

Outcome 1. Capacities, institutions strengthened and policies in place for pro-poor and equitable distribution of economic growth, employment, planning and budgeting; incorporating functional donor coordination and National Statistical Systems for effective planning, monitoring, reporting and harmonisation of development

Outcome 3. Environmental Sustainability and Disaster Risk Reduction systems and services operationalised

**UNDP Strategic Plan Environment and Sustainable Development Primary Output:**

Output 3.2 - Environmental Sustainability and Disaster Risk Reduction systems and services operationalised

**UNDP Strategic Plan Outcome Indicator (taken from CPD 2012-2016):**

Environment and energy concerns mainstreamed in development policies and plans, DRR and CC adaptation programmes integrated, national development priorities aligned with MEAs (CBD, UNFCCC, UNCDD etc) and national capacities for natural resources management. strengthened

**Expected CP Outcome(s):**

**Expected CPAP Output (s) (taken from Gambia CPAP 2012-2016)**

Output 2.3: Sustainable use of environmental resources enhanced

**Executing Entity:** Office of the President (OP)

**Implementing Partner:** National Environment Agency (NEA)

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<sup>1</sup> For UNDP supported GEF funded projects as this includes GEF-specific requirements

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<b>Brief Description</b>	
<p>The risk of climate change induced damage to human and economic development in coastal areas of The Gambia is mounting. The combined effects of sea level rise and changes in upstream river discharge, erosion of coastal embankments and changes to natural sediment dynamics pose a serious threat to the natural resource base and livelihood opportunities of coastal communities. In addition to recurrent and rapid onset of extreme events (i.e.: flash flooding), The Gambia's coastal zone is being confronted with a range of "creeping" climate risks, such as increasing salinity level trends in coastal freshwater resources, growing drainage congestions, dynamic changes in coastal sediment dynamics and morphology and a decline in the functioning of protective ecosystems (e.g.: mangroves). Given the lack of institutional capacity to systematically identify and address climate driven changes in risk patterns, the Government of Gambia is proposing a project to reduce the vulnerability of coastal communities to climate change-induced risks in 5 districts (Kotu, Tanji, Bintang, Darsilami and Tendaba). The project is based on the following Components:</p> <p><b>Component 1 - Policy and institutional development for climate risk management in coastal zones;</b></p> <p><b>Component 2 – Physical Investments in coastal protection against climate change risks;</b></p> <p><b>Component 3 – Strengthening livelihood of coastal communities at risk from climate change.</b></p> <p>The proposed project will employ a feedback loop between these 3 components and enable successful community based adaptation approaches in coastal areas to be analysed and replicated in other vulnerable regions, both within and outside of The Gambia. The project is designed to reduce Gambia's vulnerability to sea-level rise and associated impacts of climate change by improving coastal defences and enhancing adaptive capacities of coastal communities. The project will primarily address The Gambia's NAPA priorities on coastal zones and fisheries which were originally costed within the NAPA at \$2.3 million and \$0.3 million respectively.</p>	

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# Acronyms

**BCC** Banjul City Council

**CMEU** Coastal and Marine Environment Unit

**CMEWG** Coastal and Marine Environment Working Group

**CO** Country Office

**COP** Conference of the Parties

CPD Country Programme Document

**CPAP** Country Programme Action Plan

**CSO** Civil Society Organisations

**DCD** Department of Community Development

**DPPH** Department of Physical Planning and Housing

**DPWM** Department of Parks and Wildlife Management

**DWR** Department of Water Resources

**GBA** Greater Banjul Area

**GEAP** Gambia Environmental Action Plan

**GEF** Global Environment Facility

**ICZM** Integrated Coastal Zone Management

**INC** Initial National Communication

**IWRM** Integrated Water Resources Management

**LCDF** Least Developed Country Fund

**LDCs** Least Developing Countries

**LEG** Least Developed Countries Expert Group

**MCA** Multi-Criteria Analysis

**MDGs** Millennium Development Goals

**MEAs** Multi-lateral Environmental Agreements

**MTP** Medium-Term Plan

**NADA** National Agricultural Development Agency

**NAP(coD)** National Action Programme (to combat Desertification)

**NAPA** National Adaptation Programme of Action

**NARI** National Agricultural Research Institute

**NBSAP** National Biodiversity Strategy and Action Plan

**NEA** National Environment Agency

**NGOs** Non-Governmental Organisations

**NRA** National Roads Authority,

**OP** Office of the President

**PMO** Personal Management Office

**PRSP** Poverty Reduction Strategy Paper

**PSC** Project Steering Committee

**SCCF** Special Climate Change Fund

**SLM** Sustainable Land Management

**UNCBD** United Nations Convention on Biodiversity

**UNCCD** United Nations Convention for Combating Desertification

**UNEP** United Nations Environment Programme

**UNFCCC** United Nations Framework Convention on Climate Change

**WMO** World Meteorological Organisation

# 1 PART I - SITUATIONAL ANALYSIS

## 1.1 Introduction

Although not a significant contributor to climate change, The Gambia is one of the country's most at risk from its projected impacts. Climatic events like flooding have in recent years become less predictable, and more severe in terms of impacts and frequent. Communities living in Gambia's low-lying coastal regions are especially at risk. Coastal areas, close to the capital, Banjul, have higher rates of poverty than the rest of the country, and people are heavily reliant on natural resources like fisheries for their livelihoods. Poverty and a direct dependence on the environment for survival makes it harder to adapt to the changing and volatile weather and to respond to and withstand climate induced threats. Compounding this challenge is the growing risk that The Gambia will lose significant areas of land to rising sea levels. Large percentages of the country's population may need to be displaced from their homes as land is rapidly being eroded. The 81km coastal zone therefore serves as a zone of economic importance but experiences high rates of erosion estimated at 200-300,000m<sup>3</sup> annually (Draft Country Programme Document for The Gambia 2012-2016), making it necessary to develop an Integrated Coastal Zone Management Strategy.

The threats are particularly acute for coastal communities living in the low-lying areas of Gambia. For such communities, a weak local economy heavily reliant on climate sensitive natural resources such as forests or fishery stocks as a source of livelihoods, and widespread poverty means a low adaptive capacity, reducing their ability to respond and withstand climate-induced threats. Multiple national assessments, including the Government's own National Adaptation Programme for Action (NAPA) have suggested that climate change impacts of particular relevance to Gambia will include the increased frequency and severity of climatic events, such as flooding, leading to increased mortality and loss of assets and livelihoods; the undermining of macro-economic growth; reductions in food security; and increasing migration pressures. In recent years, flash flooding has been occurring earlier than ever previously recorded threatening both the lives and livelihoods of the rice growing regions.

The risk of climate change induced damage to human and economic development in coastal areas of The Gambia is therefore mounting. The combined effects of sea level rise and changes in upstream river discharge, erosion of coastal embankments and changes to natural sediment dynamics pose a serious threat to the natural resource base and livelihood opportunities of coastal communities. In addition to recurrent and rapid onset of extreme events (i.e.: flash flooding), The Gambia's coastal zone is being confronted with a range of "creeping" climate risks, such as increasing salinity level trends in coastal freshwater resources, growing drainage congestions, dynamic changes in coastal sediment dynamics and morphology and a decline in the functioning of protective ecosystems (e.g.: mangroves). Given the lack of institutional capacity to systematically identify and address climate driven changes in risk patterns, the Government of Gambia is proposing this project to reduce the vulnerability of coastal communities to climate change-induced risks in 5 districts (Kotu, Tanji, Bintang, Darsilami and Tendaba).

## 1.2 Geographic and Socio-economic Context

### 1.2.1 Geographic Context

The Republic of The Gambia is located on the West Coast of Africa between 13.790 and 16.820 West and within latitude 130 North. The country is bordered in the North, East and South by Senegal and in the West by the Atlantic Ocean. It lies within the tropical sub-humid eco-climatic zone (Jaiteh and Sarr 2011). Similar climate characteristics prevail all over the country, partly due to its small size. The climate of the Gambia is typical Sudano-Sahelian with a short rainy season from mid-June to early October and a long dry season from October to early June (SOE, 2010) when the country is regularly affected by the Northerly Harmattan winds (Republic of The Gambia 2010). Average temperatures range from 180C to 300C during the dry season and from 230C to 330C during the rainy season. The relative humidity during the dry season is about 68% along the coast and 41% inland, while during the rainy season it is generally about 77% throughout the country.

Average annual rainfall is in the region of 1000 mm though it ranges from 850 mm to 1597 mm, depending on the agro-ecological zone (Republic of The Gambia 2010). Before the Sahelian drought in 1968, average annual rainfall for the 1951-1967 period was well over 1000 mm. The country's main drainage is the River Gambia which gets its source from the Fouta Jallon Highlands and runs through the entire length of the country. The country covers a land area of 11,300 km<sup>2</sup>, the smallest in mainland Africa.

## 1.2.2 Socio-economic Context

### 1.2.2.1 National Economic Situation

The Gambia has a population density of 96 inhabitants per square kilometre, the early 70's to the mid 90's were characterised by a tremendous increase in the population of the coastal regions and the Gambia as a whole. It was a time when considerable expansions were made in various sectors of the economy, attracting population masses from all levels of society into the urban cities along the coastal zone (Lamin-Wadda, 1999). The Gambia is a small, poor and heavily indebted West African country, ranking 155 out of 177 nations in 2004 compared to 149 out of 161 in 2001 (HDR, 2010). Its population of some 1.4 million people participate in an economy of US\$400 million, equating to a gross national income of US\$270 per person. There has been a marked increase in poverty levels through the years, currently being estimated on average at 61.2% (Mitchell and Faal 2007). The median age of a Gambian is 19.8 years (*The Economist*, 2006). Total external debt was US\$629 million in 2006, representing about 160% of national income.

The traditional productive mainstays of the economy are groundnuts and tourism. About three quarters of the labour force subsist in agriculture, and this sector represents about 30 per cent of GDP. The fisheries sector is also significant in the economy at about 8 per cent of national income. Manufacturing is undeveloped, at only about one tenth of the economy, with the import–export trade making a large contribution to the economy. Nonetheless, the country has experienced sustained economic growth; GDP growth rate averaged 6.03% between 2007 and 2009 and estimated at 5.5% in 2010. The key drivers of growth are Agriculture, Tourism, Telecommunications, Construction and Fisheries.

Over the last few years, The Gambia has experienced steady growth and macroeconomic stability. Real GDP is expected to be around 5.5% in 2010. Strong growth in agriculture, largely due to good rains and the successful expansion of rice farming, impacted positively on economic growth. Other key drivers of growth have been tourism, telecommunications and construction. However, the global economic downturn resulting from the financial crises in 2008 had an adverse impact on the Gambian economy leading to a decline of tourism, exports, remittances, manufacturing production, wholesale and retail trade, transportation and telecommunications output. The Government has adopted a series of economic, financial and structural reforms, including the launching of an Integrated Financial Management Information System in 2007 and plans to introduce Programme Based Budgeting and Medium Term Expenditure Framework by 2012. The Government is currently formulating the Programme for Accelerated Growth and Employment (PAGE) as the next national development plan for 2012-2015.

### 1.2.2.2 Poverty Alleviation

Poverty in The Gambia remains deep and endemic with an HDI rank in 2010 of 151 out of 169 countries. It has a population of 1.6 million inhabitants and a relatively annual growth rate of 2.8% (SOE, 2010). Recent Multidimensional Poverty Index analysis by the Oxford Poverty and Human Development Initiative of the University of Oxford for the UNDP 2010 Human Development Report shows that 34 per cent of the population is poor going by the \$1.25 a day poverty line and 57 per cent is poor according to the \$2 a day poverty line, most of them living in the rural areas. The Agriculture sector contributes 26% of GDP and consists of four sub-sectors namely, crops, livestock, forestry and fishing. The crops sub-sector is the largest with a 56 % share of the sector, most of the people in the rural areas work in the agriculture sector. **Livestock sub-sector** contributes about 8.6% to the GDP. Its production is carried out nationwide by almost all rural households. **Fisheries sub-sector** plays a very significant role in providing vital, cheap and quality animal protein supplement to the Gambian populace and also acting as a major source of raw fish material for the fish processing establishments operating in the country. It contributes about 3% to GDP. **Forest sub-sector** contributes about 1 % of GDP and is characterized by the predominance of the savannah woodland. Forest products include: timber, palm oil, wild fruits, honey, woodcarvings material and fuel-wood, the latter provides nearly 90 % of all household energy needs. The rate of unemployment in The Gambia is a major cause for concern especially for youths and women, with 40 per cent of the youth unemployed while 70 per cent of women engaged in low productivity subsistence agriculture. On the environment front, an analysis of environmental trends shows that The Gambia is characterized by land degradation, primarily deforestation, coastal degradation, loss of biodiversity coupled with habitat loss, improper disposal of solid wastes and, increasingly, the effects of climate change. Gambia is a signatory to the Climate Change Convention and has ratified the Kyoto Protocol.

### 1.2.2.3 Social Services

In terms of basic social services, the CCA has explained in detail the situation in the Health and Education sectors. It is important to mention the reduction in maternal mortality, as well as infant and under 5 mortality in the last years. However, the related MDG target will not be achieved for the health related outcomes. Access to HIV & AIDS prevention, treatment, care and support has been scaled up in the country with the support from the Global Fund and the prevalence remains low, at 1.4% in 2007. In the education sector increases in enrolment in primary education have been remarkable as well as the increase in the number of girls enrolled in lower primary education. However, the quality of the education as well as the retention of students throughout the school cycle up to secondary and tertiary,

and in particular of young girls, are still a concern. The Gambia ratified the United Nations Convention on the Rights of the Child (UNCRC) 20 years ago and translated its provisions into the national law through the enactment of the Children's Act 2005 which provides legal protection for children against abuse, neglect, violence and exploitation, while at the same time providing a legal basis for ensuring their welfare, dignity, normal growth and development.

#### 1.2.2.4 Tourism

The tourist industry is one of the fastest growing sectors of the economy, and provides significant foreign exchange earnings and employment, although the potential linkages between tourism, agriculture and natural resources sectors have not been fully exploited. It is estimated to have contributed 16 % of the Gross Domestic Product (GDP) and to have surpassed the export of groundnuts as the country's biggest foreign exchange earner in 2009. Performance forecast made for the industry by the World Travel and Tourism Council show an upward trend of contribution to employment from 67,000 jobs in 2010 to 91,000 jobs by 2020.

Growth and development of the nation is inextricably linked to the tourism industry which has impacted on the country in so many ways. Tourism shunted The Gambia from a traditional, laid back society with simple standards of living to an economic system that required goods and services that had to be provided immediately. The tourism industry is geographically concentrated along a 10 km strip along the Atlantic coast, constituting the Tourism Development Area (TDA). The degree of spatial concentration in one corner of the richest part of the country is striking and has implications for the pro-poor impact of tourism across the country. Almost 90% of the tourist accommodation is located in 20 large hotels, with over half the national bed stock found in the seven largest of these (mainly focused in Serrekunda District). With the exception of a few lodges in the interior (e.g. Sindola, Tendaba), the majority of the accommodation facilities are concentrated in the Banjul/Serrekunda area and operate with a strong focus on beach tourism.

According to latest statistics (2012 Travel & Tourism Economic Impact 2012 for Gambia), the direct contribution of Travel & Tourism to GDP was GMD1,407.8mn (4.4% of total GDP) in 2011, and is forecast to rise by 9.3% in 2012, and to rise by 4.5% pa, from 2012-2022, to GMD2,389.3mn in 2022 (in constant 2011 prices). The total contribution of Travel & Tourism to GDP was GMD4,033.1mn (12.6% of GDP) in 2011, and is forecast to rise by 7.8% in 2012, and to rise by 5.3% pa to GMD7,304.4mn in 2022. In 2011 Travel & Tourism directly supported 25,000 jobs (3.7% of total employment). This is expected to rise by 7.1% in 2012 and rise by 2.5% pa to 34,000 jobs (3.6% of total employment) in 2022. In 2011, the total contribution of Travel & Tourism to employment, including jobs indirectly supported by the industry, was 10.9% of total employment (73,500 jobs). This is expected to rise by 5.6% in 2012 to 77,500 jobs and rise by 3.3% pa to 107,000 jobs in 2022 (11.3% of total).

The concentration of tourism in the Greater Banjul Area has in some way contributed to the rural-urban drift. The Gambia's prime tourism assets however, are the beaches along the Atlantic coast of which the stretch from Bakau to Bijilo which is the most developed area. Significant beach erosion has been countered by rehabilitation programmes. Undeveloped beach areas of very good quality exist south of Brufut to the Senegalese border.

All-inclusive style hotels or beach clubs are generally acknowledged as a highly saleable product that could suit The Gambia well, although standards of service and hygiene would need to be improved. This form of tourism product was viewed as commercially attractive for tour operators and likely to attract a wider customer audience. Over 90 per cent of the Gambian package tourist market is dominated by seven Europe-based tour operators. As intermediaries for over 100 000 tourists and 7 000 hotel beds, these operators have significant economic power in the Gambian tourist market.

The seasonality of tourism demand in The Gambia has two very deleterious effects on the poor. One of these is that large numbers of tourist workers are made redundant during the low season. Employment figures fluctuate at +/- 13 per cent owing to seasonality, with low-skilled workers being the most affected by demand volatility. This means that filling the summer 'hole' would significantly improve the labour market and tourism's poverty impact as well as better livelihood security in the tourist sector (Mitchell and Faal 2007). Having a coastal "asset" that could encourage investment all year round would certainly help with improving community resilience to economic fluctuations that may arise in other sectors. The hotels and restaurants and bars established in the erosion zone provide direct employment to an estimated 3,300 persons, of which more than 2,900 are employed in the hotels. Haskoning (1999) concluded that 74% of total employment in hotels is male and 26% is female. For bars and restaurants comparable figures are 65% and 35%.

Finally, from the tourist point of view, beach erosion is one of the problems they have to face at present. It should be noted that tourists to The Gambia are principally attracted by sunny beaches. So, it may be expected that tourists will turn away from hotels affected by beach erosion if they would no longer have access to a reasonable beach.

#### 1.2.2.5 Agriculture and Fisheries



The Gambian economy has a productive base largely dependent on climate sensitive activities such as crop production, livestock, fisheries, energy and water resources. The Gambia has already identified in its initial National Communication to the UNFCCC in 2003, key climate change impacts in relation to the aforementioned activities. Artisanal fishing boats and industrial vessels operate in the zone and latest available figures show that fish capture steadily increased from 32,016 in 2001 to 42,645 MT in 2008<sup>21</sup> and that this sub-sector contributes approximately 12% to the Gross Domestic Product (GDP). Another sector of importance to the economy in this zone is the horticulture sub-sector which produces and exports vegetables and flowers.

The staple food of the country is rice. The country's consumption requirement of rice is 160,000 metric tonnes per year, of which only about 7,400 metric tonnes of clean rice is produced locally. This means that the country only produces 4.6% of its annual requirements. Evidence exists that over 70% of the imported food stuff in the country can be produced locally with better planning and support services (PAGE 2011). However, saline intrusion in the productive rice growing areas along The Gambia River and associated creeks, is presently reducing productivity or leading to retraction of cultivation from affected areas; this LDCF products targets this productive but threatened zone.

Along with agricultural workers, fisherfolk, make up the two sectors with the highest levels of poverty (PAGE, 2011). In terms of fishery potential, The Gambia enjoys a strategic location with its coastal waters located in an upwelling zone, precisely in the East Central Atlantic Zone; the sixth most productive fishing area in the world (Douglas et al, 1988). The artisanal sub-sector is characterised by low levels of investment and operations from many dispersed and often isolated landing sites. The artisanal sub-sector provides about 70 to 80% (1992-1998) of total fish catch. Total artisanal production volume of fish in 1998 was about 26,500 tons which has been increased to about 29,750 tons in 1999 (Haskoning 1999). A total of 11 fish landing sites for artisanal fishermen are established along the coast. The sites, in order of importance in terms of total tonnage of fishing and share of Bonga fish in total tonnage, are shown in Table 1.1 for the year 1995 and 1999.

Fish landing site	Total fishing in 1995 (in metric tonnes)	Share of Bonga fish in total fishing per landing site 1995 (in %)	Total fishing in 1999 (in metric tonnes)	Share of Bonga fish in total fishing per landing site 1999 (in %)
Gunjur	6,806	67.2	8,526	86.7
Tanji	4,573	99.6	7,371	100.0
Bakau	2,652	93.4	3,736	97.1
Brufut	2,011	4.5	4,233	1.1
Banjul	1,706	0.25	2,068	0
Jeshwan	1,612	100.0	2,731	100.0
Sanyang	477	52.8	365	0
Kartong	297	31.7	142	24.0
Tu/Bato	115	56.1	96	4.9
Kololi	100	3.0	83	0
Barra	4	0	397	79.9
Total	20,356	67.4	29,754	72.3

Table 1.1 Total fishing by landing site and share of Bonga fish in total fishing in 1995 and 1999 (from Haskoning 1999)

### 1.2.3 Coastal Environmental Context

The Gambia has an 81km open coastline dissected into the North and South Banks by the River Gambia, which has its source some 680 km upstream in the Fouta Djallon Highlands in Guinea (SOE, 2010). The coastal area of The Gambia comprises of marine, 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 Minimianiang bolong on the North bank to Mootah Point on the South bank (PIF document). This consists of the catchments of the Gambia,

Saloum and Allahen rivers. The natural drainage of The Gambia is centered mainly on the River Gambia and its tributaries, namely the Baobolon, Bintang, Sandougou and Sofaniama Bolongs.

The sheltered coast includes 15,000 hectares of tall mangroves (*Rhizophora*) and 51,900 hectares of short mangroves (*Avicenia* and *Laguncularia*) (Abidjan Convention 2000). Mangroves border the river up to Kaur about 150 km upriver. This is about as far as the river is influenced by sea water. Four major species of mangroves: *Avicinia africana*, *Laguncularia racemosa*, *Rhizophora racemosa* and *Rhizophora mangle* are found in the area (NEA 1997).

The coastline of The Gambia has several areas of high ecological importance. Nine such sites have been identified by UNEP. These range from Toll Point to Cape Creek in the North to Kartong Point in the South. These sites include the Tanbi and Baobolon Wetland areas designated as Ramsar sites. Some of the project interventions for this LCDF will be located in these project areas

### 1.2.3.1 Coastal degradation and vulnerability

An analysis of current environment trends show that The Gambia is characterized by land degradation, coastal degradation, loss of biodiversity linked to habitat loss, improper disposal of solid wastes and increasingly the effects of climate change. Environmental vulnerabilities range from the fragility of the land, high population densities coupled with adverse impacts of natural hazards such as climate change.

The coastal area is crucial from an economic, social and environmental perspective. The key drivers of existing livelihoods and future growth, concentrated in the zone include agriculture, fisheries and tourism. The fishing and tourism industries employ a significant percentage of the Gambian populace as well as making significant contributions to the GDP of the country. These activities are concentrated along the Gambian open coast; a coastal based Tourism Industry, the nine fish landing sites housing the fish processing facilities and Agricultural activities concentrated further inland from the open coast. All of these activities are affected by climate change and with specific focus on agricultural and livelihood adaptation there is a need 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.

Several assessments, country specific National Communications to the UNFCCC as well as GEF-funded projects have affirmed that rampant and widespread coastal erosion partly due to Climate Change, associated with rising sea levels is one of the main environmental issues affecting the aesthetic coastlines of the West African Region. Climate change scenarios for the West African Region depict an increase in mean surface temperatures of 0.5C per decade, increase in evapotranspiration, rainfall variability and intensity as well as accelerated sea level rise. The Gambia is ranked by UNEP as one of the top ten countries affected by sea level rise by UNEP.

### 1.2.3.2 Definition of the Coastal Zone

The adopted definition of The coastal zone for this LDCF takes a multiple definition approach, more flexible than other coastal definitions *"it adopts a precise definition of the core area – the coastal marine area, while making it clear that the area is a component of a much larger ecosystem, the coastal environment as a whole, it integrates to a favourable extent all sectoral interests"*(NEA/WB, 1995). The adopted definition of the coastal zone is defined as follows;

- i) The seaward boundary is the limit of the 12 nm territorial sea-fishing zone of the Gambia;
- ii) The landward boundary is;
  - the line 1000 metres from the high water mark along the Atlantic coastline between the River Allahein and a point 1000 m South of Cape Point, and between Essau and Jinak along the northern coastline and;
  - the line between the point 1000 metres south of Cape Point and a point 300 meters from the South bank of the River Gambia along Lamin Bolong and;
  - the line 300 meters from the banks of the River Gambia between Lamin Bolong and Mootah Point on the South bank of the River Gambia, and between Essau and Miniminium Bolong.

### 1.2.3.3 Coastal erosion and sediments

The all year wave rose for the sea waves indicates a dominance of waves of a northerly direction in the open sea. The northerly waves are generated mainly in the period October to May, while in the months July and August the sea waves come predominantly from westerly directions. This can be explained on the basis of the predominant wind directions in these periods. The wave characteristics are important in the sediment type and sediments movement underlying erosion patterns on the coast. Most of the beaches on the Atlantic coast consist of medium to fine quartz sand. Existing data on the sediment size is limited but data, mainly related to the channel areas, indicate rather coarse sand ( $D_{50}$  of 0.3 to 0.5 mm). An in-depth study was carried out on trends of the erosion and sedimentation along the entire coast of The Gambia (Haskoning, 1999). The sections of the coast with moderate to high erosion rates are indicated below.

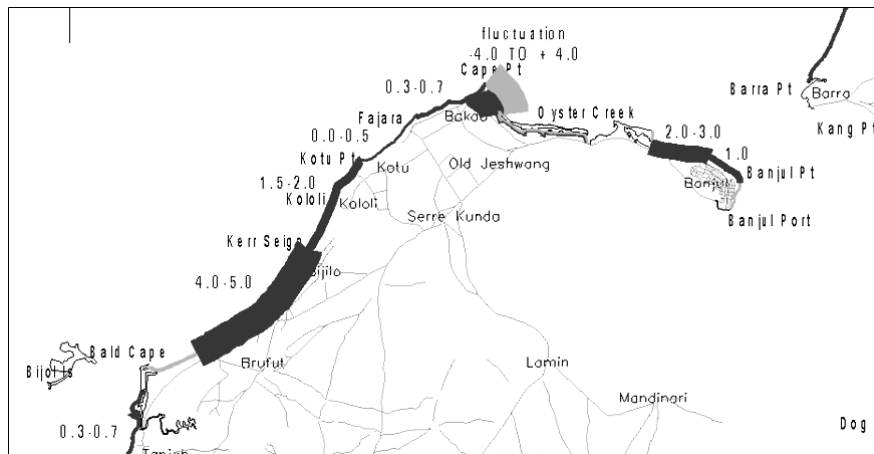


Figure 1.1 Erosion rates along the Gambian coast (Bald Cape to Banjul) since 1980 (as of 1999). (Notes: Dark shading = erosion; light shading is accretion; erosion rates are in m/yr).

It was concluded that the main causes of erosion were as follows:

- There is a natural trend of erosion along the coast of The Gambia, due to an annual net sand loss from the coast in a longshore direction and the effect of sea level rise. For the large erosive trends between Kololi Point and Bald Cape and along the Banjul-Serre-kunda highway east of Oyster Creek, other mechanisms dominate.
- Along the Atlantic coast, the longshore transports and the natural gradients hereof are small to moderate. The observed large erosive trends in the last decades are for a large part (more than 50%) due to sand mining from the beach.

Predictions have also been made for the erosion to be expected in the next 20 years, as indicated below.

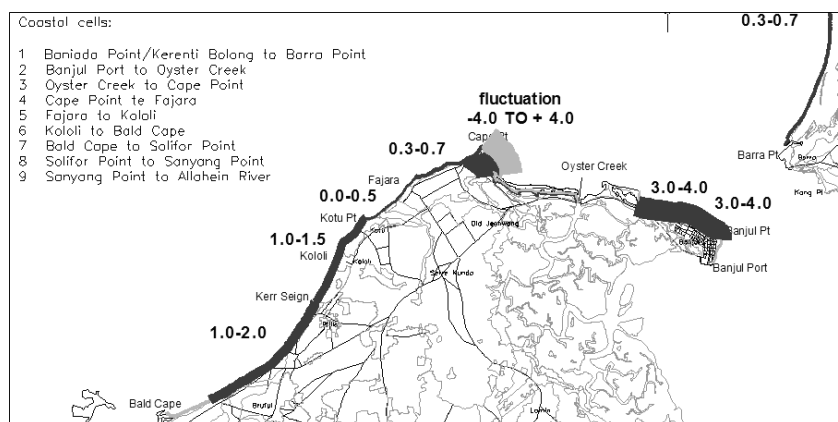


Figure 1.2 Predicted erosion rates up to 2020 (autonomous development) between Bald Cape and Banjul (Notes: Dark shading = erosion; light shading is accretion; erosion rates are in m/yr).

### 1.2.3.4 Sand mining

In the coastal areas of The Gambia sand is mined for construction activities. Until 1985, sand was mined at a quarry site near Kololi (UNEP 1998). From 1985 until 1995, sand mining took place at Bijilo (100,000 m<sup>3</sup> to 150,000 m<sup>3</sup> per year). In 1996, the Government transferred the activities to a site within the dune area near Kartung, after having investigated the suitability of sand mining at two sites (Sanyang and Kartung). According to figures available at the Geology Unit, sand mining at Kartung removed between 103,000 – 174,112 m<sup>3</sup> volumes in the period 1996-1999.

Sand mining from the beach is prohibited since 1996. However, illegal sand mining continues at several locations and is therefore a serious problem at the beaches of The Gambia. After closure of the site at Bijilo, illegal sand mining at this site has continued. Based on observations by the coastal morphologist in the project team, total sand loss from the coastal system due to sand mining is estimated to be 50,000 m<sup>3</sup>/yr. This sand is mined free of charge and is moreover a definite loss to the beach. Its opportunity costs are estimated to be in the region of 55 GMD per m<sup>3</sup>, which

are equal to the replenishment costs of the beach from off shore dredging activities. So, total economic losses due to illegal sand mining can be estimated at about 2.75 million GMD annually.

However, it should be noted that the scale of the industry has diminished (to about half or one third late 1990's) the sand is coming mainly from relict rear dunes and not the existing beach (coastline) system. Partially effective control by the government, coupled to displacement of the activity away from open beaches is likely to have significantly reduced the effect of sand mining on coastal erosion estimated by Haskoning at 50% in the late 1990. Sand mining in the present day is likely to be a minor and very localised cause of erosion, and cannot be invoked to explain the large scale and systematic erosion in many areas of the Gambian coastal present today.

## 1.3 Baseline Scenario

### 1.3.1 Climate Change and Projections

Since the mid-1960s, observed changes in the climate across The Gambia have been characterised by increasingly erratic rainfall patterns, higher-intensity storms, intra-seasonal drought and increasing average air temperatures accompanied by periodic cold spells and heat waves.

Over the past forty years the country has experienced a decline in mean total annual rainfall (Republic of The Gambia 2010). The area with average summer rainfall (cumulative July-August-September) of less than 800mm has increased from 36% in 1965 to 93% of the country (NAPA, 2007). The decline in rainfall is spatially variable across the country with greater changes in the western half of the country (NAPA, 2007). However, periods of intense rainfall have created increasingly numerous flooding events.

Air temperatures have tended to increase over the last 40 years. At two stations (Yundum and Basse) average minimum monthly temperatures have increased 0.67°C and 0.40°C per decade, respectively (NAPA, 2007).

The aforementioned climatic changes apply across the whole of the land mass of The Gambia. However, in the coastal areas these changes are further exacerbated by climate change and sea level rise. Predications indicate significant sea level rise for The Gambia. Brown et al. (2011) used the Dynamic Interactive Vulnerability Assessment (DIVA) model to project sea-level rise in The Gambia and projected a sea level rise (in comparison with 1995 levels) of 0.13 m in 2025, 0.35 m in 2050, 0.72 m in 2075 and 1.23 m in 2100.

Much of the coastal hinterland of Gambia is low lying so the potential for areas to flood are significant. Jallow et al. (1996) used the Aerial Videotape-assisted Vulnerability Analysis (AVVA) to predict that a 1 meter sea-level rise in The Gambia will lead to inundation of about 92 km<sup>2</sup> of coastal land area.

Shoreline retreat due to inundation is projected to vary depending on topography, between 6.8 m in cliff areas to about 880 m in flatter and sandier areas (Jallow et al. 1996). In the event of a 1 meter sea-level rise, without adequate protection measures, the city of Banjul is projected to be lost in the next 50-60 years because a large proportion of the city is below 1 meter (Jallow et al. 1996). Moreover, mangrove systems on St. Mary's Island in Kombo St. Mary (Kanifing Municipality) and those on the north Bank from Barra to Buniadu Point are also projected to be lost (Government of The Gambia 2007).

These predictions are based on passive inundation from sea level rise. Climate change suggests increasingly intense storms which may exasperate these inundation predications through higher-tides during intense low pressures, storm surges and higher wave heights; additionally creating short-term, high intensity hazards in the coastal zone.

### 1.3.2 Climate change impacts – environment

The adverse impacts of climate change on the environment are evident in The Gambia. Productivity of agricultural crops will be constrained, maybe up to 40% for the important groundnut (Cole et al, 2005, in NAPA 2007). Loss of swamps and salinisation of lowland areas will decrease rice production. Soil erosion from heavy periods of rainfall, coastal erosion from increased wave energy, soil acidification from periodic drought will also negatively impact the environment in particular localities.

Climate change poses a particularly serious threat to low-lying areas. Assessments of vulnerability to climate change have revealed that The Gambia is one of the most vulnerable countries to sea level rise (Balk et al. 2007, Jaiteh and Sarr 2011). The coastal areas of The Gambia are affected by climate change and variability mainly through coastal erosion due to increased wave activity and physical drowning of low-lying areas as sea level rises. These result in coastline recession and the physical loss of ecosystems and the services they provide. The problem is likely to be exacerbated by the frequency of storm surges.

The Southern and Northern coastal zone (Greater Banjul Area, North Bank, Kombo North, Kombo South, Kombo Central and Lower Niumi) consists of low lying coastal areas and significant infrastructural development, including

critical governmental assets. Coastal erosion has prevailed in the coastal areas of the country for the past four decades, however the rate and impact is on an upward trajectory. The Southern coastal region experiences alarming rates of recession estimated on average at 2m per year in some locations. Studies indicate that areas around the Bijilo Beach are receding at a rate of 4m per year (ICAM, 1998). The changing coastal sediment dynamics leading to the preponderance of erosive forces threatens many areas of the coastal hinterland.

A 1-meter sea level rise (expected by ~2090, Brown et al 2011) is projected to drown over 8.7% of the total land area of the country including the port and capital city, a host of critical facilities including 26km of paved roadway in greater Banjul and all the harbours and ferry landing sites along the Gambia River (Jaiteh and Sarr 2011). The expected impacts of sea level rise for various parts of the city of Banjul and the impacts of sea level rise on the city, its suburbs and main roads and nearby mangrove swamps (spawning grounds for fish and natural tubs) are shown below.

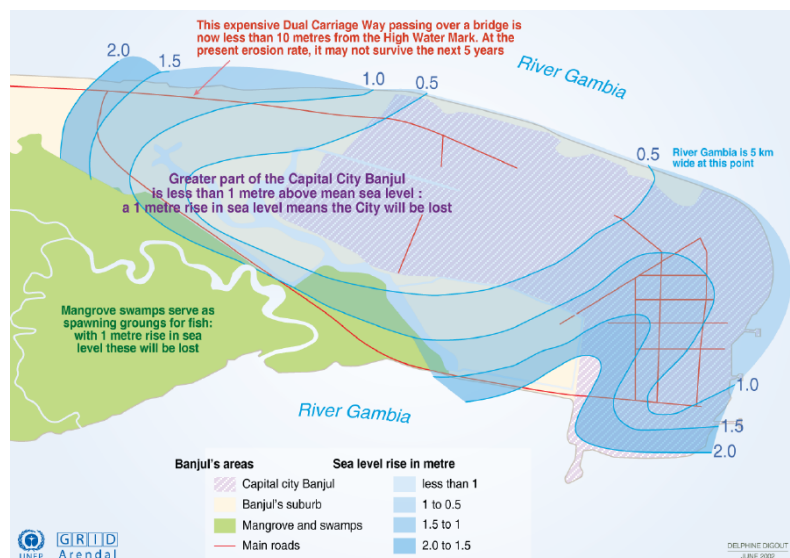


Figure 1.3 Impacts of sea level rise on Banjul. Source: Brown et al. (2011).

Sea level rise would also have a serious effect on lowland agricultural production. Saline water intrusion has degraded many farmlands making a large proportion of farming households poorer. The biggest threat of saline water intrusion into the River Gambia comes from sea level rise. Short-term rice production may be the most affected by saline water intrusion; 64% of all cropland that will be inundated by a 1 meter sea level rise (GOTG 2007). This could impede the achievement of The Gambia National Agricultural Investment Program (GNAIP). Moreover, the coastal and marine environment of The Gambia, which harbors globally significant species and habitats of high ecological importance, may be highly affected by climate change. A one meter sea level rise could inundate over 61% of the current mangrove area and over one-third of swampland (Jaiteh and Sarr 2011). These ecosystems are very important for the artisanal coastal fisheries industry, serving as spawning grounds for juvenile fish species.

### 1.3.3 Climate change impacts – socio-economic

For the coastal hinterland of The Gambia the socio-economic effects of climate change are likely to be relatively large. Coastal communities are economically vulnerable to climate change in the Gambia, as sectors such as tourism (loss of beach area), agriculture (poor crop production due to saline intrusion impacting on rice production etc) and fisheries (possible impact of beach erosion on landing facilities on the coast etc) all manifest themselves on the capacity and ability of existing livelihoods to perform to current level livelihood economic returns for families and businesses. The very fact that the Gambia is one of the top ten countries in the world with the highest share of population living within lower elevation coastal zone (Bakurin et al. 2010) compounds this issue further

Using the DIVA model, it was projected that an expected sea-level rise of 0.35m by 2050 would lead to flooding of 76,000 people per year and with a sea-level rise of 1.23 m in 2100, 137, 000 people will be flooded per year (Table 1) (Brown et al. 2011). It is also worth noting that this area includes the rather fragile socially- and economically-significant tourism sector.

The total cost of sea level rise for The Gambia combining costs of forced migration, land loss, salinisation, sea floods and river floods is projected to be US\$ 71.9 million per year for 2050 and US\$ 313.4 million per year for 2100 (Brown et al. 2011). Interventions (and complementary actions such as the work through GNAIP) are seeking 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.

	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 <sup>2</sup> /yr)	0.0	34.3	113.4	9.8
Net land loss (erosion) (km <sup>2</sup> /yr)	0.1	0.1	0.2	0.4
Sea flooding costs (\$ million/yr)	1.2	10.0	51.6	146.4

**Table 1.2 Gambia's sea level rise scenarios and their impacts.**

Besides the loss of productivity in the agricultural systems, especially on the staple rice-crop, and increasing erosive forces threatening tourism livelihoods, there are likely to be direct effects of climate change on health. Whilst accurate predictions cannot be made it is likely that incidence of malaria, dengue and yellow fever will increase, more frequent flooding will expose a larger population to *Bulinus* snails carrying Schistosomiasis as well as intestinal infections (NAPA, 2007).

Climate Change impacts could potentially be severe because they exasperate other factors which are believed to increase the vulnerabilities in the coastal zone. Other factors affecting vulnerability of the coastal area include (i) uncontrolled and unplanned urbanization (ii) haphazard planning of the coastal area, and (iii) unsustainable agricultural and oyster culture practices resulting in habitat degradation of coastal vegetation ecosystems such as the mangroves which are spawning grounds for the variety of fish species. All these effects compound the climate change effects on the poorest socio economic groups: agricultural and fisheries workers.

### 1.3.4 Policy and Institutional Context

The Gambia has signed the United Nations Framework Convention on Climate Change (UNFCCC) in 1992 and ratified it in 1994. The convention aims at stabilizing greenhouse gases (GHGs) in the atmosphere and parties are obliged to take measures to mitigate greenhouse gas emissions (Republic of The Gambia 2003a).

Since its ratification of the convention, at the national level, The Gambia has taken very important steps to mitigate the effects of climate change. Two documents namely, the Initial National Communication of the Republic of The Gambia (INC) to the UNFCCC and the National Adaptation Program of Action (NAPA) on Climate Change have been prepared. In addition to the two documents, a draft second National Communication (SNC) report has been prepared. The INC is a summary of the country situation with regards to Climate Change. It gives an overview of the national circumstances and an inventory of greenhouse gas emissions.

The NAPA consists of three broad sectors namely, the economic sector, the natural resources sector and the social sector. It critically re-examines the role of climate on societal and natural systems and is implemented through institutional arrangements at the central, regional and community levels (Republic of The Gambia 2007b). The NAPA is in line with other development frameworks such as the PRSP II and the Program for Accelerated Growth and Employment (PAGE), the CPD and the MDG's. The Gambia's main poverty alleviation strategy (PRSP II) provides a framework for medium to long term socioeconomic development. The long term goal of PRSP II is to eradicate poverty by significantly increasing national incomes through stable economic growth and reducing income and non-income inequalities through several poverty interventions. PRSP II feeds into the PAGE; Pillar 1 and 5 of the PAGE on Accelerating and Sustaining Economic growth and Reinforcing Social Cohesion respectively lays emphasis on addressing Climate Change and Disaster Reduction. The NAPA shares a common objective with the MDG's; to provide food security and enhance sustainable livelihoods of those engaged in Agriculture, Livestock and Fisheries sectors (NAPA, 2007).

The current UNDP Country Program (CPD) has the theme 'Promoting Inclusive Equitable Growth & Reducing Vulnerabilities' and dwells on environmental vulnerabilities, identifying Climate Change as a major environmental challenge for the Gambia; coastal vulnerabilities to Climate Change inclusive.

The National Environmental Management Act (NEMA) precedes all other Environmental legislation in The Gambia, enacted in 1994 it provides the legal framework for the control and management of the Environment. NEMA makes provisions for the overall management of the coastal zone and all other wetlands. Besides the NEMA, policies to manage the coastal area of the Gambia exist in a sectoral manner. Each institution has its own policies supported by

their respective legislation. The major ones related to coastal development are the natural resource and land use planning policies. These include the Forestry and Fisheries Acts. The policy objective of the Forestry sector is to maintain 30 % of the total land area of The Gambia under forest cover; this includes the mangrove vegetation around the coastal zone, which under the ill effects of Climate Change are affected by inundation and varying salinity levels. The Fisheries Acts lays emphasis on maximizing yields and protecting the Fish landing sites from flooding, identified as one of the adverse impacts of Climate Change.

No single institution is charged with the Management of the Coastal Zone in the Gambia, the NEMA stipulates that a Technical Advisory Committee (TAC) should be established as an advisory body to the National Environment Agency on Coastal Zone Matters, the TAC is now a Technical Working Group, the Coastal and Marine Environment Working Group consisting of various institutions all with a specific mandate in respect to the Coastal Zone. The NEA recently added Non-Governmental Organisations to the Working Group. Non-Governmental organizations usually elicit, encourage and promote local leadership better than their governmental counterpart institutions. This might be due to the non-biased nature of their operations as a result of non-political motives. Responses of governmental counterpart institutions could at times be affected by the existing political order. The meetings of the working Group creates a forum for the exchange of ideas on different aspects of Coastal Zone Management.

The UNDP supported Disaster Management Policy has brought Disaster Management Issues such as Climate Change and its impacts into the limelight and has introduced adaptive mechanisms at the community level. The Policy advocates for efficient response mechanisms to disaster management and developing an institutional framework and building capacities at the National, Regional and local levels to respond to disasters in a timely fashion.

The GOTG has now established a decentralization policy to strengthen capacities on a country wide basis. This would facilitate development in various sectors; pertinent to the development of the coastal zone shared by various stakeholders ranging from Policy makers to the Communities. Since 2002 the Government has embarked on a program of local government reform and decentralization with the objective of bringing decision-making closer to the local level and to enhance opportunities for local development. The process entails decentralization of central functions to divisional levels, and transfers to autonomous elected local governments the responsibility for devolved functions and associated authority, power and resources. An important component of the program is decentralized planning at the various levels of the local government area. The planning seeks to identify and capture the community needs and translate these into actionable plans.

The planning structures include the Village Development Committee (VDCs), which is responsible for identifying and preparing village development plans for implementation at the village level. The corresponding planning institution of VDC in the municipalities is the Sub-ward Development Committees. The VDC plans are forwarded to The Ward Development Committee (WDC) for the formulation of the ward development plan to be implemented at ward level. The ward development plans are forwarded to the Municipal/Local Area Council for the formulation of council's Development plan and which is also responsible for the allocation of funds for implementation.

The VDC is the entry point for all development activity in the community and it can provide an important community structure for the adaptation activities that may be required at community level whether it is planning for climate change resilience and adaptation or mobilizing local community in the construction and maintenance of simple flood resistant and anti-erosion structures. The village and ward development committees could be supported to mainstream climate change in their development plans.

Inadequate institutional capacities hinder the implementation process of the aforementioned policies in the Gambian coastal zone. With the emergence of Climate Change it became evident that institutions are ill equipped to address its adverse impacts; these national policies and frameworks largely ignore the new dimensions of threats that are associated with more consistent and gradual climate change effects, such as sea level rise, increasing inundation, dynamic changes in precipitation, and higher salinity. Gambia's development policies tend to address the sea and river ecosystems in a "static" state rather than taking climate change and its dynamic impacts on communities into consideration, which hinders the ability of individuals and communities to act, or make certain adaptation strategies unviable. Furthermore, the local governments and the Sub-ward Development Committees in the coastal zone do not have the capacities to mainstream climate changes concerns and adequate adaptation responses in the local development planning processes.

### **1.3.5 Current Donor Responses or relevance to addressing Climate Change Adaptation**

In response to Climate Change and other Coastal issues the GOTG has sought assistance from the International (Donor) Community. Several International Organisations/Donors are funding major projects/programs where synergies could be built upon. The UNDP supported National Disaster Management Program has made significant strides in Disaster Management in-country by establishing a Disaster Management Policy and developing a long term

Disaster Risk Reduction and Climate Change Adaptation Strategy (CCA 2009-2013) for the Gambia. The CCA highlights the need to focus on Climate Adaptation and to mainstream Disaster Reduction and Climate Change in the development agenda. The proposed LDCF will build upon the CCA to further accomplish defined goals and objectives for Climate Change Adaptation.

The European Union's Integrated Coastal Zone Management (ICZM) and Climate Change project takes an Integrated Coastal Zone Management Approach and would address Climate Change issues and other vulnerabilities. The EU project could fill the aforementioned gaps required to initiate the development of an ICZM process in-country. The linkages between the EU project and the proposed LDCF are complementary. The Climate risk management measures proposed for the LDCF will fit well into the ICZM process, enhancing resilience to Climate Change in coastal areas.

The UNDP and Spanish Fund supported public service reform and institutional capacity development project (PSRICD) focuses on Capacity Building Needs, institutional capacity development is a prerequisite for successful implementation of the LDCF and the PSRICD could complement efforts in the area of institutional development.

The Islamic Development Bank (IDB) supported Community-based Infrastructure and Livelihood Improvement Project (CILIP) and the IFAD supported Livestock and Horticulture Development Project (LHDP) and the AfDB Gambia artisanal fisheries development project (GAFDP) will build capacities at the Community level to enhance income generating measures for better food security. The LDCF will support Climate Change development plans in vulnerable coastal areas by addressing sea level rise and other coastal vulnerabilities which have direct impacts on the livelihoods of communities.

It is envisaged that the proposed pilot projects for this LDCF will demonstrate climate resilience mechanisms that could be replicated in other programs in-country. The Donor community has funded projects over the years that demonstrate climate resilient mechanisms, these include soft and hard engineering techniques; mangrove regeneration, beach nourishment and hard engineering options.

Over the years hard and soft engineering techniques have been used to minimise/halt alarming erosion rates at strategic locations of the Gambian coastline. Erosion was addressed on a piecemeal basis, a more holistic approach was taken with the Royal Haskoning works, feasibility studies were carried and proposed measures implemented at strategic locations of the Gambia Coastline;

- Groynes – Colonial Period

They are the oldest form of coastal protection measures used in the Gambia and are still evident along the coastline. These structures require maintenance at ten year intervals.

- Gabion Baskets - UNDP funded Coastal Protection Project

The UNDP under the Poverty Alleviation Strategy program funded the protection of coastal stretch of 160 m along the coastline adjacent to the Muslim Cemetery at a cost of \$400,000. A sea wall/revetment was built. The materials used were laterite and granite boulder stones.

- Beach Nourishment - Royal Haskoning Works

For the ADB funded Royal Haskoning Works, beach Nourishment was used around the Greater Banjul area to reclaim significant areas lost to erosion. 1,400,000 m<sup>3</sup> of offshore dredged sand was used along a stretch of app 3 km to protect the capital city, cemeteries and the main Highway linking the Capital city of Banjul to the rest of the country.

- The Beach Nourishment at Kololi (Senegambia and Kairaba Beach Hotels).

This was done with 1,000,000m<sup>3</sup> of offshore dredged sand. The nourished beach at this site decreases at a rate of 2m annually due to increased wave energy at this site

- "T" Groynes –Royal Haskoning

A T-groyne was constructed in Bakau to protect infrastructure and fishing activities located along the coast. Five groynes and a revetment were constructed at Cape Point to protect the hotel industry.

The Haskoning works were implemented in the first half of 2000's, but not followed up as a wider policy (such as a Sea and River Deference Policy) or maintained effectively. Nowadays, others donor approaches are supporting other areas to help form a robust approach for the coast and coastal dwellers, especially the forthcoming EU project. However, no initiative is directly developing the enabling conditions, policy and institutional strengthening, capacity building and demonstrative coastal protection planning, design and construction to permit coastal protection to be taken up as one dimension of building resilience on the coast.

### **1.3.6 Preferred Situation**

The long term solution to addressing the underlying causes of climate change vulnerability requires an improvement in the institutional arrangements and capability in the governmental sector, an increase in capacity to plan and deliver interventions across many sectors which provide resilience benefits to the threatened population of the Gambia as



well as the strengthening and diversification of livelihood activities of threatened populations to promote resilience at the community / ward level. The preferred situation, to be addressed through this project, is therefore to enhance resilience of vulnerable coastal areas and communities to climate change in the Republic of Gambia and to reduce Gambia's vulnerability to sea-level rise and associated impacts of climate change by improving coastal defences and enhancing adaptive capacities of coastal communities. This should consider key vulnerable areas for hard coastal protection infrastructure intervention measures to be designed, constructed with additional redundancy against sea level rise and climate induced erosion. In addition, efforts are required to mainstream low cost infrastructure to protect up to 1,500 ha of vulnerable rice growing areas in addition to the preparation of mangrove management plans to protect, restore and maintain up to 2500 ha of mangroves to better withstand climate-induced pressures.

During the preparatory phase for this project (2012), one of the most clearly identified and serious capacity problems, with regard to coastal engineering and shoreline management (planning for flood and coastal erosion) in Gambia is at the government level. Furthermore, the multiple tasks of Gambian environment focal points also pose a challenge for long term delivery. This is exacerbated by the fact that the volume of environmental and climate change portfolios (from various donor agencies) is increasing (see Section 1.5.3 and Section 2.5). To this end, a review and clear acceptance of the role of coastal "engineers", "planners" and "managers" in Gambia is needed. A preferred situation for the Gambia will therefore include an inbuilt capacity at the National and local levels to plan for and implement adaptation measures to establish and build climate resilient mechanisms for coastal management.

At the National Level, there is a dire need to build capacities of the top-level key Institutions in the development agenda, these institutions make up the Climate Change Working Group spearheaded by the Department of Water Resources and the Coastal Zone Management Working Group, under the auspices of the NEA. These institutions need strong institutional and regulatory frameworks to plan for and spearhead the implementation of National Climate Policies and Programs such as the one being proposed. Future initiatives need to work alongside various active development partners implementing other Climate Resilient projects for better program management and provide support to improve the mainstreaming of environmental concerns into the development agenda.

There is a need to strengthen the practical capacities and coordination of environmental management and disaster risk reduction by strengthening the institutional capacities of institutions, most importantly, the National Disaster Management Agency, the Dept. of Water Resources, National Environment Agency and the Ministry of Works.

At the local level, it is required to build adaptive climate resilience capacities of communities along the coastal zone of the Gambia. This would include several processes including physical construction and development of protection measures such as hard and soft engineering techniques to halt/minimize erosion, the introduction of improved agricultural and water management practices, ceasing environmentally damaging practices such as illegal sand mining, encouraging adaptation practices such as implementing soft engineering measures; the replanting of mangroves and finally increase environmentally and socially sustainable livelihood diversification activities.

Consultative processes are needed to raise awareness levels of the Communities in the coastal zone on Climate Change issues and give locals the opportunity to identify and prioritize coastal issues affecting their coastline and livelihoods. Women play a critical role in socioeconomic development in the Coastal Zone and are usually involved in coastal farming (gardening) and fish processing activities. Livelihood options for the vulnerable population should be protected by creating alternative livelihoods that are sustainable in the long term under conditions of climate change.

A comprehensive approach is needed to advance sustainable soft and hard coastal engineering measures at strategic locations of the coastal zone vulnerable to rising sea levels and coastal erosion. Soft engineering measures such as beach nourishment and mangrove planting are well recognized in The Gambia and deemed to have made positive impacts in the beach restoration system. These adaptive measures in addition to better agricultural and water management practices would help in stabilizing the coastal zone severely threatened by coastal erosion in the long term and target the most vulnerable communities.

Against this background and recognizing the impact of Climate Change on the socio economic development of the country, the Government of the Gambia (GOTG) with the support of UNDP seeks LDCF funding for a full sized project to implement a project identified in its NAPA, submitted to the UNFCCC in January 2008. Upon approval, the LDCF resources will be used to enhance the resilience of the Gambian populace to climate change impacts in the coastal regions of the Gambia; the major aim of this project is to reduce vulnerabilities to the adverse impacts of climate change, enhancing climate resilience of coastal areas, economic, natural and social systems by strengthening policies, institutions, communities and individuals to manage coastal areas in a sustainable manner.

## **1.4 Barrier Analysis - Weaknesses towards achieving the preferred situation**

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### 1.4.1 Governance Level (National)

Understanding of climate change and its coastal impacts amongst decision-makers remains limited. Although there is general perception of the links between weather, climate, climate change and coastal erosion, this limited understanding is a barrier to identifying, to planning and to initiating measures. As stated in Section 1.3.1, sea level rise predictions indicate significant impacts for The Gambia. Coastal flooding and erosion rates are predicted to increase as a consequence of climate change impacts in tandem with poor human use of sediment sources within the coastal zone (e.g.: sand mining and land use / tourism development in inappropriate areas). The need for appropriate sea and river defence measures (engineering intervention) including coastal protection is likely to be an inevitable action to help secure the livelihoods of certain coastal communities.

An important barrier is therefore the current sectoral approach to ICZM, whereby each agency thinks and acts independently. At present ICZM is at an initial stage of development in the Gambia. The Gambia has no inter-agency or inter-ministerial entity positioned jurisdictionally to ensure the development of an ICZM program. ICZM activities, like most environmental management activities, cuts across different sectors thus ICZM processes need to be cross sectoral to be efficient and adaptive to various coastal management activities and developments. At present, there are numerous user conflicts between different stakeholders which entail the management of coastal resources such as fisheries, mining of minerals (sand, ilmenite), forest products and firewood. Sea and river defence engineering currently is not budgeted for within The Gambia and the consequence of this is poorly designed engineering interventions, in inappropriate locations resulting in increased coastal erosion in downstream locations. Appendix A outlines the new approach for Sea and River Defence Management as a proposed approach to take forward ICZM.

Gambia remains a heavily indebted country, and the economy, although growing impressively recently, is not yet sustainable and public sector resources are very limited. 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. In the nineties the Government hardly spend any money on coastal protection measures and its maintenance, in contrast to the eighties. Only donor-funded projects were carried out, like:

- The IDA project of the World Bank in 1995 carried out by Gamworks concerning gabion baskets for the cemetery at the costs of GMD 2.9 million. It includes a 10% contribution of NEA.
- The UNDP funded revetment project in 1997 carried out by Port-Consult and Habib Jeng (at the costs of US\$ 400,000). The Government of The Gambia also contributed to the project.

A further barrier is the great shortage of information and data. At the National level, there is a lack of real time data on coastal processes and hydrodynamics of the Gambian coastline in order to keep decision makers aware of climate change issues. The lack of reliable information makes it very difficult for national agencies to set priorities and develop guidelines and standards. There is also a shortage of scientific and engineering capacity at the national level which also remains a further barrier. This includes limited knowledge of low and medium cost measures for coastal adaptation. 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. Likewise, the private sector does not have the capacity to construct even low-tech defence measures. Hence Gambia does not have the people to plan, design and implement coastal protection measures. The solution to import all technical expertise is beyond the budget of Gambia.

### 1.4.2 Governance Level (Local and Community)

The Regions within Gambia face all the same challenges as the national government, and in many cases the challenges are multiplied at the local level. At the local and community level, the following barriers are also important:

- Limited organisational capacity. Adapting to climate change requires communities to work together in concert with a high degree of trust within and between communities. Traditional consultative and decision-making mechanisms no longer function effectively. In particular, this tends to undermine the operation and maintenance of infrastructure;
- Limited availability of adequate amounts of human capacity to plan and to implement investments is a factor. It limits the ability of local people to participate in planning and implementation;

A key factor at the local level is the lack of belief in innovative solutions and accordingly the inability to take risks. Local people do not have faith in proposed untested coastal protection solutions, and so are unwilling to risk their own resources to a pilot project. This is closely limited to the financial barrier – local people and communities have few resources to risk investing in coastal protection.

### 1.4.3 Communication and Awareness of Climate Change Impacts

There is a need to relay accurate and reliable information to the decision making body in Government to give climate change issues the ‘political clout’ it deserves. At the community level, climate change often remains misunderstood. During the consultative process it was evident that Community Members (stakeholders) only attributed the recurrent changes in their coastal environment to issues such as coastal erosion, storm surges; all of these have negative impacts on their livelihoods bringing the nexus between livelihoods and environmental concerns closer to home than is currently recognized.

#### **1.4.4 Absence of an Effective Strategic Planning System on the coast**

A critical issue for The Gambia is the absence of a land-use plan and development control system that would put in place practical policies to ensure the protection of the coastal area of the Gambia in a sustainable manner. Furthermore, legislation for the coastal zone remains fragmented. These need to be harmonized in order for The Gambia to more effectively manage climate change impacts on coastal areas. There is also a need to address climate change within a much broader context and not just a phenomenon associated with coastal erosion. Without an integrated approach towards designing and implementing coastal protection and engineering, any initiative seeking to identify and plan for measures to address climate change in-country is expected to be less than effective. Responses would be better implemented within the context of a formally established Sea and River Defence Management Policy for The Gambia that supports the framework for a future ICZM approach for the country.

### **1.5 Proposed Response to these Barriers**

#### **1.5.1 Introduction to Project Interventions**

The project is designed to reduce Gambia’s vulnerability to sea-level rise and associated impacts of climate change by improving coastal defences and enhancing adaptive capacities of coastal communities. The project will primarily address The Gambia’s NAPA priorities on coastal zones and fisheries which have been costed for within the NAPA \$2.3 million and \$0.3 million respectively have been underestimated. The project is based on the following Components:

- **Component 1 - Policy and institutional development for climate risk management in coastal zones;**
- **Component 2 – Physical Investments in coastal protection against climate change risks;**
- **Component 3 – Strengthening livelihood of coastal communities at risk from climate change.**

The proposed project will employ a feedback loop between these 3 components and enable successful community based adaptation approaches in coastal areas to be analysed and replicated in other vulnerable regions, both within and outside of The Gambia. The anticipated time frame for project implementation is four years. The project is therefore focused on:

- Reviewing and revising national policies to increase community resilience to climate change impacts in coastal areas (Component 1 of the proposed project);
- Enhancing the capacity of authorities and sectoral planners to understand climate risk dynamics to incorporate risk reduction measures into coastal area management (Components 1 and 3 of the proposed project);
- Enhancing resilience of coastal communities and natural ecosystems through adaptation interventions (Components 2 and 3 of the proposed project);

The ultimate goal of the project is to create the necessary policy and institutional arrangements for climate resilience development in the Gambian coastal zone, moving towards “risk reduction” and “resilience”.

This is because there are more sea and river defences to be repaired and constructed in Gambia than there is money available through this or other donor interventions. Without adopting this approach, the amount of anticipated sea and river defence construction required in the coming years, could severely strain the capacity of local qualified engineering contractors in Gambia to deliver the intended outcome. The need to prioritise intervention therefore requires new decision making “tools” to address coastal adaptation to climate change. Therefore, in line with the goals of the project, a more cost effective and planned approach is to be promoted to help prioritize expenditures to make the sector more resilient for the future.

#### **1.5.2 Proposed Intervention – Sea and River Defence Risk Management (SRDRM) Programme**

The Sea and River Defence Risk Management Programme (SRDRMP) is proposed to be a new term, used to take forward strategic management of the Gambia coastal zone. The philosophy of the SRDRMP is to prepare a simple and concise national policy document that sets the scene for the management of infrastructure in Gambia’s coastal environment, including river defences that fall within the defined coastal zone. A cohesive approach is now needed to address the challenges faced in The Gambia, in an efficient and effective way. The SDRMP was presented to all Gambian stakeholders at the PPG Workshop on 18 December 2012 and full endorsement to the term and approach has been reached amongst key national stakeholders. Specific details on the SRDRMP are presented in Appendix A along with the stakeholder endorsement of the approach (taken from the Stakeholder Draft Prodoc Workshop Findings event in December 2012 (see Appendix O).

### 1.5.3 Relevant Baseline Projects

Table 1.3 below identifies the main projects or programs that are relevant from the perspective of the current GEF proposal. The table is designed to reflect those projects that address climate change impacts on the coastal zone of Gambia. In Section 2.5.1, the aspects of project additionally are specifically discussed and cross-compared to explain how the LDCF funding shall complement the funding given to these projects.

Baseline Projects	Timeline	Funding (\$)	Main outcome / outputs
<b>UNDP supported Establishment of a National Disaster Management Programme in the Gambia</b>	2007 - 2010	Circa 250,000	Developed the national policy and legal framework for Disaster Risk Reduction (DRR) in the Gambia; Strengthened the capacities of national, regional and local disaster management committee members; developed disaster management strategy and Avian Influenza preparedness and contingency plan for the Gambia; Institutionalized disaster management with the establishment of dedicated National Disaster Management Agency (NDMA); Building on the gains realized, a follow up project/programme on DRR and Climate Change adaptation (CCA) was formulated (2009-2013), the objectives of which is to: show the linkages between disasters and climate change; present the hazard and vulnerability profile of the Gambia; critically analyse DRR and CCA national capacities; review and operationalize institutional frameworks and strengthen coordination mechanisms to better address climate change related and other disasters; integrate DRR and CCA approaches into national planning processes and policies such as the Programme for Accelerated Growth and Employment creation (PAGE 2012-2016); raise awareness on DRR and CCA through advocacy, education and sensitization; consolidate and further strengthen existing early warning systems and elaborate a national rapid response and early warning mechanisms.
<b>EU supported Integrated Coastal Zone Management and Climate Change Project</b>	2012 - 2015	5,148,000	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 (protection, retreat, conditional retreat etc.), on the basis of an assessment of coastal vulnerability and cost-benefit analyses.
<b>UNDP and Spanish Fund supported public service reform and institutional capacity development project (PSRICD)</b>	2012 - 2015	1,800,000	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. A Civil Service Reform (CSR) programme will provide all the ministries and departments with technical assistance to update their strategic plans and organizational structures
<b>Islamic Development Bank supported Community-based Infrastructure and Livelihood Improvement Project</b>	2011 - 2015	10,000,000	The project will empower communities and improve their livelihood and welfare through financing demand- driven community infrastructure and livelihood activities. The project will include Community Infrastructure Facility, Livelihood Improvement Fund, Institutional Development.
<b>IFAD supported Livestock and Horticulture Development Project (LHDP)</b>	2010 - 2016	6,500,000	i) Increase the returns to village-level livestock and horticultural production; 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.
<b>AfDB supported Gambia artisanal fisheries development project (GAFDP)</b>	2009 - 2011	<i>Unknown at time of writing this Prodoc</i>	(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). The 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 to receive higher incomes and to contribute to the improvement of nutritional standards of the population.

<b>USAID supported Gambia-Senegal Sustainable Fisheries Project (Ba Nafaa)</b>	2009 - 2014	1,000,000	To ensure that artisanal fisheries and coastal ecosystems are managed more sustainably, incorporating significant participation of fisher folk in decision-making. The project is assisting key partners, namely the Department of Fisheries, and stakeholder groups (including community fisheries centers) in developing the capacity to implement, evaluate and improve specific fisheries management plans.
<b>Gambia National Agriculture &amp; Natural Resources Investment Programme (GNAIP)</b>	2010 - 2015	15,000,000	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 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.

Table 1.3 Baseline Projects / Programs of Relevance

## 1.6 Stakeholder Analysis

### 1.6.1 Overview

As part of the preparatory process a wide range of consultations were held with the different stakeholders in order to understand key issues important to them and to determine what role and responsibilities they can play in the implementation of the project. Two broad categories were identified-(i) State actors- Government ministries and agencies; and (ii) non state actors which include local communities, civil society organizations (NGOs and CBOs) and the private sector.

In the first category the consultations took the form of interviews followed by expanded meetings of all stakeholders involved in coastal zone management. These discussions reconfirmed some of the critical constraints in the management of the coastal zone as already identified in the PIF such as: (i) Limited understanding of the links between climate, climate change and its coastal impacts amongst the decision-makers and technical staff of institutions in charge of coastal management; (ii)The lack of reliable information; and (iii) Uncoordinated policy interventions.

The consultations with the non state actors were mainly with the local communities which were held in settlements mentioned in the PIF and others in ecologically sensitive areas such as the Nuimi National Park and the Bao Bolong. The consultations took the form of focused group discussions using selected “themes” to guide the discussions for the purpose of identifying challenges faced by the community in context of expected climate change and sea level rise; the likely impact of these challenges on the community especially women and youth and on their livelihoods; and recommended intervention Techniques/ measures to address these challenges taking account of traditional adaptation measures. These consultations also provided the opportunity investigate and identify areas and communities in the project area suitable for project intervention. The local community groups included farmers (both men and women), horticulturalist (mainly women),herdsmen, fishermen and fish processors. The settlements visited include: Bakau; Barra; Batokunku; Berending; Bintang; Darsilameh; Gunjur; Illiassa; Jinack Niji; Kachumeh; Sanyang; Tanji; and Tendaba .

In addition to the above, discussions were also held with socio-economic groups with a recognisable stake in the development of coastal resources. These included the Gambia Hotel Association, the Oyster Harvesters Association, Stay Green Foundation, a local NGO, Actionaid The Gambia, as well as representatives of various hotel owners in the Tourism Development Area.

At the local community level the major challenges identified were coastal erosion, salt water intrusion into rice fields and vegetable gardens, destruction of mangrove forest as a result of human activities, flooding and storm surges as well as sand mining in the southern part of the coastline.

The detail report on these consultations is provided in Appendix D

### 1.6.2 Roles and Responsibilities

For the implementation of this project various stakeholders have been identified which fall into two broad categories. There are the technical executing agencies and the local communities in the project areas. The technical executing agencies include two categories: public agencies and specialized NGOs. The public agencies will be required to play important roles in project implementation. For example, the Civil Service Reform Unit within the Personal Management Office (PMO) will provide an entry point for Component 1, specifically the proposed capacity development programme, and will therefore be a key counterpart to NEA for this Component.

The Ministry of Works (MoW) and the Department of Agriculture (GNAIP office) will eventually act as the responsible parties for providing the engineering support to deliver Components 2 and 3 with the technical collaboration of the GAMWORKS (Gambian Agency for the Management of Public Works). The Department of Fisheries shall be the main counterpart responsible for aquaculture related intervention measures (Component 2). Although these agencies will be required to provide services during project implementation they will also be beneficiaries of the project's capacity building programmes.

The second category includes local communities and their institutions in the project areas who are mainly beneficiary stakeholders as the project interventions will help improve their livelihoods. The communities in the Project areas will be required, within the framework of the village development committees to set up Community Flood Management Committees (CFMC) to help coordinate activities during flood events. The local institutions at the decentralised levels will also benefit from the institutional capacity building programmes of the project.

The role and potential benefits for each of these stakeholders who will be involved in the implementation of this project are described in Appendix K. Details of the stakeholder capacity assessment and HACT capacity are clearly set out in Appendix L.

## 2 PART II – STRATEGY

### SUMMARY OVERVIEW

The project uses a three pronged approach to reduce the vulnerability of communities to flooding, erosion and climate change risks in coastal areas. First, institutional capacity will be strengthened to incorporate climate risk reduction into coastal zone development and management at the national and regional levels. In addition, the policy framework regarding sea and river defence management (as a support to establishing integrated coastal zone management in the future) will be assessed and recommendations for climate resilient policies will be developed, particularly regarding land use in coastal areas (representing 9% of the proposed total project budget). Secondly, actual engineering intervention measures (combination of hard and soft measures) will be constructed as “pilot” measures for future replication and up-scaling. Intervention shall be focused on coastal communities that warrant intervention measures (as defined by project specific criteria – see Appendix B). The community based adaptation measures at the local level will assist the diversification of livelihoods, strengthen natural barriers against climate change induced inundation and erosion, improve community monitoring systems and “early warning” to protect livelihood assets and facilitate the flow of climate change information (representing 60% of the proposed total project budget). Thirdly, attention is focused on strengthening the livelihoods of coastal communities at risk from climate change. At the regional level, capacity building efforts and programmes will focus on the coastal districts of Kotu, Bintang, Tanji, Darsilami and Tendaba which shall support agricultural development in vulnerable saline areas, support fishing communities in wetland community areas and also introduce climate resilient alternative income generating activities (representing 27% of the proposed total project budget). The knowledge gained through the project will be shared through the UNDP Adaptation Learning Mechanism (ALM) with other areas and countries facing similar climate change threats in coastal communities. This strategy forms an additional component on top of existing and pipelined project activities under various ministries and departments.

## 2.1 Project Rationale and Policy Conformity

### 2.1.1 LDCF Conformity

The project conforms to the three principles of the LDCF in the following manner:

- a) The project falls within the framework of Vision 2020, and is aligned with the PRSP the GEAP and some other sectoral policies and strategies (DMP.) In addition, it is in line with the goals and needs of the NEA, the Ministry of Works, Department of Water Resources, as well as Local Government Authorities.
- b) The NAPA which was prepared in conformity with the guidelines prepared by the Least Developed Countries Groups of Experts (LEG), and adopted by the November 2001 Assembly of the Conference of Parties to the United Nations Framework Convention on Climate Change (Decision 8/COP7) identified 10 priority projects classified as urgent and immediate;
- c) The proposed project will pilot interventions that a country-driven process has deemed urgent and immediate, and in this respect, it meets the eligibility criteria of the Least Developed Country Fund (LDCF) as outlined in the LDCF guidance paper (GEF/C.28/18, 12 May 2006).

The project fits within the scope of an LDCF project, as it will address immediate and urgent needs, such as creating the institutional and policy environment for the effective implementation of sustainable sea and river defence management and engineering of measures to respond to coastal erosion and flooding, raising awareness and understanding of local communities and national policy makers about the necessity and benefits of preparedness for climate change and climate hazards, plus early warning “indicator setting” against climate related extreme events on the coast. The proposed project will be implemented in full coordination with the National Communication (NC) process. If successfully implemented, the benefits of the project will continue after project completion. The project has been designed on the basis of multi-stakeholder consultations and participation (see Appendix D). The project is also in line with the Government Strategy for Poverty Alleviation II and the successor programme- Programme for Accelerated Growth and Employment (2012-2015). It is also in line with the Country Strategy Paper (2012 -2016) and with the Gambia National Agriculture Investment Plan which is the GoTG's current effort in boosting national agricultural potential.

## 2.1.2 Overall GEF Conformity

The project is the first full size LDCF funded project that pilots and demonstrates measures to reduce vulnerability to climate change in the coastal zone of Gambia. The project has been designed to meet overall GEF requirements in terms of design and implementation. For example:

- **Sustainability:** The project has been designed to have a sustainable impact, at community, district and at national level. See Section 2.6 on Sustainability below for more details;
- **Monitoring and Evaluation (M&E):** The project is accompanied by an effective and resourced M&E framework (see Section 5), that will enable an on-going adaptive management of the project, ensuring that lessons are learned, management decisions are taken based on relevant and up-to-date information, and regular progress reports are available for concerned parties;
- **Replicability:** The pilot approaches to addressing sea and river defence risk management (Outcome 2) will generate approaches, tools and methods that can be addressed elsewhere in the Gambia and finally lead to the establishment of a fully functional national approach. See Section 2.6.
- **Stakeholder involvement:** The design of this project is participatory. Moreover, the design of the project ensures the appropriate involvement of stakeholders in project implementation.

The project is important to the GEF portfolio for several reasons. Firstly, it will provide lessons in designing and implementing a new way of considering sea and river defence risk management at a national and regional scale within West Africa that shall be relevant to all future GEF funded community based adaptation related activities. Secondly, the diversity of sea and river defence risk management activities that will emerge in Gambia will provide valuable lessons on the factors that must be taken into consideration in project design when attempting to improve adaptive capacity and/or reduce vulnerability to climate change drivers. At the end of the project, lessons learnt will permit a more systematic approach to integrating climate change risks into GEF focal areas such as biodiversity.

## 2.2 Country Ownership: Country Eligibility and Drivenness

### 2.2.1 National Level Consistency

National priorities with regard to climate change events and its multiple impacts are comprehensively taken into account in the NAPA (see Section 2.3), which itself was developed in a participatory manner and featured priorities and concerns of a variety of stakeholders including rural and urban communities, non-governmental and community based organizations, the private sector, the scientific community and various components of government. The project also contributes to the achievement of MDGs and in particular of MDG 1 (“Eradicate Extreme Poverty and Hunger”) and MDG 7 (“Ensuring Environmental Sustainability”) by reducing vulnerability to climate change through a strengthened sea and river defence risk management programme coupled with an improved information sharing mechanism for better informed decision making by government and affected populations which in turn is expected to improve coastal livelihoods in the face of a changing climate.

Overall, the project addresses priorities under UNDAF Result 4 “*Management of environment, natural resources and land is improved in a sustainable way*” and specific outputs under this UNDAF Results and Country Programme outputs. All of these outputs are jointly supported by UNEP and UNDP, amongst other agencies, and this project is another flagship case of achieving synergy effects by One UN. The project is in line with the Gambia UN Development Assistance Framework (UNDAF – 2012-2016), the UNDP Country Programme Document (CPD – 2007 to 2011), the Poverty Reduction Strategy (2007-2011), the Country Programme Action Plan (CPAP), specifically UNDAF Outcome 3 (*Environmental sustainability and disaster risk reduction systems and services operationalized – Output 3.1*).

At the national level there are a number of relevant national initiatives in tourism, conservation and environmental education (Appendix C). In addition, donor funded initiatives are taking place to help the strategic management of mangroves in the country, which is of direct complementarity with Output 2.3 of this LDCF/GEF project. The Mangrove Conservation Study, funded by the World Bank within the framework of The Gambia Biodiversity Management and Institutional Strengthening (GBMIS) Project, is being designed to complete baseline scenarios on mangrove species and coverage areas in the study areas (species, conservation status, coverage status, threats, etc) and also to design and put in place an appropriate monitoring of the species involved. What is still required is an improved understanding of mangrove “die-off” to better promote sustainable mangrove management (through policy setting).

## 2.3 Design Principles and Strategic Considerations

### 2.3.1 NAPA Priorities



The Gambia NAPA was submitted to the UNFCC Secretariat in 2007 and it identifies coastal erosion issues as the primary focal area to focus on. Following further deterioration of the coastline and the increased threat to coastal zone communities (fisherfolk, local communities and hotel industry), their livelihood and investments, the Government, in 2009, revised the NAPA priority listing and identified coastal zone management as the primary focal area to focus on (Priority 1). As result of this decision, this LDCF/GEF project proposal was formulated. The proposed project is the first community based adaptation project to be implemented by the Government of Gambia to deal with the adverse impacts of climate change with special focus on coastal erosion, flooding, salinity and community livelihoods (see Table 2.1).

PRIORITY LISTING	TITLE OF THE PROJECT	COVERAGE	COST ESTIMATES
1	Restoration/Protection of coastal environments	Banjul and Kanifing Municipalities	<b>2,300,000</b>
2	Rehabilitation of Early Warning Systems on Climate-Related Natural Hazards	All Regions	<b>450,000</b>
3	Improvement of Fresh Water Availability	All Regions	<b>910,000.00</b>
4	Diversification and Intensification of Agricultural Production, Processing, and Marketing	Nationwide	<b>2,710,000</b>
5	Expansion of Community Participation in the Management of Forests and Protected Areas	All Regions	<b>1,412,000</b>
6	Expansion and Intensification of Agro-forestry and Re-forestation Activities	All Regions	<b>2,753,000</b>
7	Briquetting and Carbonization of Groundnut Shells Briquetting and Carbonization of Groundnut Shells	Western Region, Banjul Municipality	<b>230,000</b>
8	Reduction of climate change related diseases	Kanifing Municipality, Central River and Upper River Regions	<b>1,217,000</b>
9	Improved livestock and rangeland management for food security and environmental sustainability	North Bank, Lower River, and Upper River Regions	<b>2,800,000</b>
10	Increasing fish production through aquaculture and conservation of post harvest fishery products	Coastal and inland zones	<b>300,000</b>
<b>TOTAL</b>			<b>15,082,000</b>

**Table 2.1- List of NAPA Priorities**

### 2.3.2 Links to National Policies and Planning

Sustainable development and climate resilience in Gambia have been supported through institutional capacity development at all levels and with a range of stakeholders from different government departments (for example the current UNEP funded Early Warning System project). Training support for the Ministry of Works on soft coastal protection design and construction (as an example) shall help towards the delivery of existing and newly proposed national policy processes that aim to shape Gambia’s approach on how to deal with future climatic hazards. The project objective is relevant to Gambia’s development priorities as the introduction of sustainable coastal protection measures, coupled with improved land use planning and community involvement on coastal resilience shall help towards sustaining key economic activities such as agriculture (e.g.: rice) which contributes 33% to the GDP and employs 73% of the population. The project is therefore consistent with the national Agriculture and Natural Resources policy that targets small scale farmers. The project is also consistent with Gambia's national priorities and plans, as it reflects activities identified in both the first national communication and the NAPA (see Section 2.3).

National priorities with regards to climate change events and its multiple impacts are comprehensively taken into account in the NAPA, which itself was developed in a participatory manner and featured priorities and concerns of a variety of stakeholders including rural and urban communities, non-governmental and community based organizations, the private sector, the scientific community and various components of government. Care was also taken to align the NAPA to the thrusts and priorities of a number of important national development plans such as the Poverty Reduction Strategy Programme (PRSP), the Disaster Management Plan (DMP), the National Action Plans on Desertification Control and Biological Diversity (NAPs) and the Gambia Environmental Action Plan (GEAP). All of these policy instruments pursue a common goal of ensuring sustainable development through a rational utilisation of a limited natural resource endowment. A goal that is also shared and reflected in the policies of several sectors and services such as: agriculture, fisheries and forestry; and coastal zone management.

### 2.3.3 Links to other Ongoing and Planned Projects

The project will ensure coordination with the LDCF funded “Early Warning Project” and the GCCA EU ICZM project, especially from a project and coastal monitoring perspective. The former focuses on enhancing the 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 latter project shall provide valuable coastal process related information and vulnerability analyses to help prioritise the precise locations for coastal protection intervention (Component 2). With regards to Components 2 and 3, the pilot intervention (Salt-Rice-Fish at Bao Bolong District) for this LDCF/GEF project shall align well with the “School Feeding Programme” which is part of the Gambia National Agricultural Investment Programme (GNAIP). The GoG has prepared a National Agriculture sectors contribution to the national economy, growth enhancing and poverty reduction. A specific objective of this programme is to promote increased food production, particularly rice.

The total project funding is estimated at EUR4.7million is now being developed and is expected to cover 140 communities in 26 districts in North Bank Region, Central and Upper River Regions. Some of the activities planned under the project include food crop production (rice, millet and maize) through improved water management, rehabilitation of irrigation canals and dykes, aquaculture and capacity development of farmer-based organisations. The Ministry of Agriculture fully supports this newly proposed LDCF project and will commit itself to the parallel co-financing of US\$21.5million under the GNAIP. This is because the Ministry of Agriculture see the project complementing the development of farmer capacity in both coastal and marine areas, creating greater awareness of climate change and supporting the development of their adaptive capacity by integrating climate change in their agricultural activities.

### 2.3.4 Socio-economic Benefits

The proposed project will benefit over 49,000 people (as taken from the 2003 Census dataset) (Jokadu 17,915; Kiang central 7,882; and Foni Bintang 15,136) –living within the districts with direct benefits accruing especially to affected households in the Dasilameh (pop.1,064), Tendaba (366), Tanji (pop is 8,210 – though the total population for the satellite villages is 8,599 (Salanding 182; Bunkiling 116; Madiyana 2,204; Banaikang 1,021; and Tujereng 4,689. and Bintang (588) Districts. It is anticipated that the livelihood benefits shall include the creation of over 450 employment opportunities across these communities on mangrove planting schemes, coastal protection engineering support and monitoring, community engagement/business diversity opportunities. Overall, the population will become less vulnerable to the effects of climate change shocks e.g. flooding and coastal erosion, and thus livelihood security is improved. By enhancing overall coastal resilience, coastal and river production systems will be more sustainable and will be supporting livelihoods into the future. Households will additionally find immediate protection against coastal erosion and flood risk through improved sea and river defence risk management.

### 2.3.5 Gender Issues

This project will mainstream gender concerns and efforts to advance gender considerations in all activities. Resources will be set aside to engage a senior, part-time gender advisor, based in the Project Coordination Unit, who will be responsible for training project staff on gender related issues and contribute to all training programmes, awareness raising programmes and other capacity development activities that take place with financing from the LDCF. The gender advisor shall also liaise closely with the GCCA EU ICZM project to assess strategic project linkages to better determine long term impacts of coastal erosion/sedimentation on the quality of lives of women and children and the poor in the Project Area. The project shall take on board the following basic assumptions and interpretations with regard to gender:

- Interventions shall be assessed based on an appreciation of the extent by which the livelihood of people working along the coastal strip is negatively affected by the coastal erosion/accretion within the stipulated time horizon of the study shall be ascertained.
- Mitigating measures are to be formulated and monitoring plans put in place only in those areas where people’s livelihood is presently threatened now or during the next 20 years.

For the purpose of the project the term “gender” will focus on women and children living in and deriving an income from the strip of land along the coastal zone (as defined by NEA).

### 2.3.6 UNDP Comparative Advantage

The new UNDP CO Country Programme Action Plan (CPAP) 2012-2016 focuses on mainstreaming environment and energy as well as DRR and CCA activities into national and local development policies and strategies by linking economic development to human welfare considerations. At the CO level, this objective is being supported by a dedicated Programme Analyst for environment and energy with long standing relevant experience in the area of the environment and development as well as a Programme Specialist and Associate with several years of experience in poverty, MDGs and the environment. Furthermore, the project is being and will continue to be supported by a team of UNDP/GEF regional and global climate change experts.

## 2.4 Project Goal, Objective, Outcomes, Outputs and Activities

### 2.4.1 Overall Project Goals and Objectives

The **Goal of the project** is to enhance resilience of vulnerable coastal areas and communities to climate change in the Republic of Gambia. The **Objective of the project** is to reduce Gambia’s vulnerability to sea-level rise and associated impacts of climate change by improving coastal defences and enhancing adaptive capacities of coastal communities. The project is innovative in the way that it aims to achieve this by drawing together climate change adaptation and economic development, through introducing a new national programme of “Sea and River Defence Risk Management – SRDRM) that address flood and erosion concerns and that will help manage the impact of climate change.

### 2.4.2 Project Outcomes, outputs and activities

The project outcomes are targeted to address relevant climate change related pressures on the defined Gambian coastal zone. The outcomes involve physical interventions (Component 2) along **over 10km (directly and indirectly)** of Gambia’s estuarine and coastal zone, which is particularly vulnerable to the impacts of climate change. The outcome of Component 2 will include two sites of intervention at Kololi Beach and Tanji Bridge where LDCF resources will be used by Government to establish **circa 1km (combined linear length)** of hard coastal engineering (protecting the tourism and fishing industries). It shall include **up to 1km** of soft foreshore “polder” enhancement work at Tendaba, and **over 50 ha** of mangrove plantations that shall be planted and managed by local administrations and communities in the Bintang area. Finally, LDCF resources will be used to include the protection and sustainable use of **up to 2500 ha** of managed wetlands (linking inland fisheries aquaculture, rice and salt production industries). At the 5 proposed pilot sites (mentioned above), the project shall be working with coastal communities themselves to increase livelihood options along the highly exposed coastlines which surround them. It shall also as support community adaptation and mitigation to climate change (See Appendix B for engineering details). The interventions in this project are divided along three Component titles, each with a specific Outcome as described below:

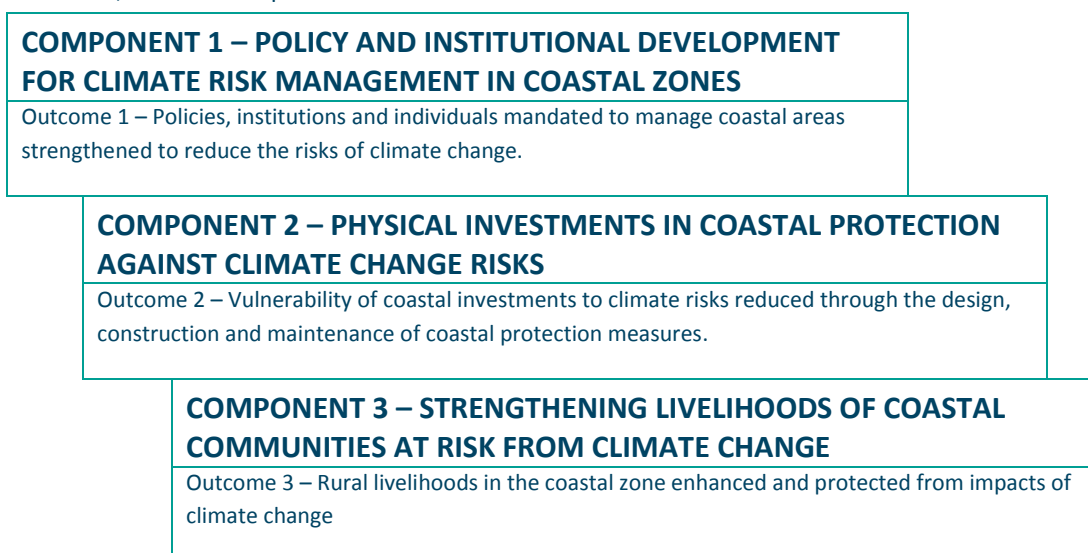


Figure 2.1 – Project Component Structure

The proposed project will employ a feedback loop between these 3 Components and from this, enable successful community based adaptation approaches in coastal areas to be analysed and replicated in other vulnerable regions, both within and outside of The Gambia. The expected project outcomes shall contribute towards delivering the following key results:

- Climate resilience within the tourism and fisheries sector through constructing up to 1km linear length of hard coastal defence structures (Kololi Beach and Tanji Bridge frontages).
- Increased climate resilience for 1,800 people (including 1500 women and 50 youth) through training in ecosystem based natural resource management techniques;
- Increased carbon sink capacity of over 244,000 tons of carbon over project's life);
- Increased stabilisation of foreshores and embankments (targeted sediment accretion) through foreshore enhancement schemes across up to 500m's of foreshore at Tendaba;
- Setting up "cash for work" programmes to conduct the process of mangrove and tree planting.

## 2.4.3 Project Outputs and Activities

### 2.4.3.1 Outcome 1: Policies, institutions and individuals mandated to manage coastal areas strengthened to reduce the risks of climate change.

#### Without LDCF Intervention

In the baseline scenario, there are fundamental weaknesses within the existing policy instruments, institutions and individuals in delivering resilience in response to climate change, especially on the threatened coast. For example, there is no national policy on sea and river defence management, ICZM or formal links between environmental regulations and natural hazard "zones". Within engaged individuals, there is a general awareness of climate change impacts and its likely effects on Gambian society however, this does not translate into improved land use planning and management of coastal resilience at the national and regional level. As such, policy development and institutional response will be consistently hindered by low individual capacity among involved actors with a mandate for the coast. Within the baseline scenario, there are initiatives in place to encourage inter-agency collaboration and joint-working practices of GoG (i.e.: the Coastal and Marine Working Group), however, to date, this has had little effect "on the ground" with regards to use legislation, regulations or the initiation of climate resilient "development or building control" measures. A largely sectoral focus can be expected to be maintained and independent decisions will continue to be made irrespective of complementarity with other sectoral investments. This will maintain the sectoral and uncoordinated response which will continue to accrue financial dis-benefits. Existing policy tools, such as National and Regional Development Plans, reflect this disjointed institutional architecture in Gambia. As such they fail to provide clear guidance on an effective way forward to meeting the engineering and planning challenges associated with addressing climate change adaptation on the coast. There is also a lack of GoG commitment towards coastal or flood engineering expertise in the country. The National Roads Authority (NRA), within the Ministry of Works, do not have the capacity, or mandate, to develop sea and river defence engineering skills in the country. Consequently, any engineering interventions to deal with climate induced changes are often carried out without the knowledge of adequate coastal hydrodynamic information, which often leads to a higher risk of engineering failure or secondary negative effects (i.e.: down-drift shoreline erosion). In the baseline scenario, adequate monitoring of coastal features on which to base decisions will not be apparent and thus undermine any physical coastal climate change intervention.

#### With LDCF Intervention (adaptation alternative)

The proposed intervention establishes climate change additionality gains built upon the weak and fragmented governmental governance which typifies "business as usual". current The public sector reform and capacity project (PSRICD) coupled with the disaster management institutional and policy enhancements are both seeking to provide capacity and institutional support towards developing national policy (e.g.: a legal framework for Disaster Risk Reduction (DRR) in the Gambia). The PSRID project is seeking to strengthen the capacities of national, regional and local management committee members and to provide a review to operationalize institutional frameworks and strengthen coordination mechanisms to better address climate change. There is, however, no direct support or assistance towards formalizing climate resilient coastal management in the Gambia.

The alternative, with LDCF financed interventions, will develop engineering and planning capacity with respect to coastal resilience to expected climate change risks. The alternative will enhance individual engineering and planning capacity among national and local institutions in order to improve decision making (under climate change conditions) for sea and river defence risk management in Gambia. Institutions will be strengthened through a review of functional roles, training and new policy setting (ie: a brand new Sea and River Defence Sector policy), but further gains will be made through more integrated and cross-sectoral working which will have been developed from a revision and update of existing and future development plans. Remits, responsibilities and co-ordinating roles between higher-level government bodies will be clearer with regards to planning decision making in natural hazard areas on the coast and estuary (ie: the introduction of new Sea and River Defence Investment Management Plans – SRDIMPs) and hence will

provide an improved route for effective decision making and engineering interventions. A national coastal monitoring programme will be implemented to build a platform for more informed decision-making (see Appendix F). Scheme selection will therefore be cost effective, evidence-based and lower risk due to the use and availability of improved coastal monitoring data for decision making purposes. With regard to the more technical training, a specific sea and river defence management training strategy shall be designed to introduce climatic changes and sea level rise principles and methodologies to managers, engineers, and others in charge of carrying out any action on the coast, whether they are involved in sea and river defence operations, coastal and marine resource management, and management or the coordination of multidisciplinary teams for coastal management.

**Output 1.1: Design and Implement a Climate risk management capacity development programme for coastal areas**

This output is designed to address the institutional and capacity development needed to help implement sea and river defence risk management (SRDRM) within Gambia. Once this output is delivered, it will target the following key national and local institutions and individuals: at least 50 technical staff drawn from national departments (including fisheries, agriculture and planning); at least 200 extension staff drawn from relevant regional agricultural, engineering, planning and fisheries directorates (e.g.: at Yundum, Kerawan, Jenoi), Ward and Village Development Councils Committees and community fisheries centres (eg: at Kartong, Brufut, Tanji, Sanyang, Gunjur, Bakau) and various planning departments. The introduction of a new approach to Sea and River Defence Risk management is important to help improve resilience to climate change in the Gambia. The Sea and River Defence Risk Management Programme (SRDRMP – see Appendix A) has been discussed with national Gambian stakeholders as is agreed as being the new approach that should be used to take forward strategic management of the Gambia coastal zone..

**Output 1.2: Review and Revision to National and Regional Development Plans.**

This output shall lead to the review and revision of existing national and regional development plans (such as the Gambia Tourism Masterplan, Banjul City Masterplan, North Bank, Western and Lower River Development Plans) and where appropriate, so that climate change considerations are taken into account. A practical “sea and river defence risk management” approach to decision making will be introduced. The Sea and River Defence Investment Plans (SRDIMPs) will also be linked to existing development plans to ensure that future investments take climate-considerations including integrated risk management planning into account. This output will support closer alignment of planned investments to coastal resilience in the future. Moreover, and appreciating the baseline barriers, SRDIMPs, for each District, are likely to set investment schedules for “new built” and “maintenance” budgets to help prioritise future investments for coastal resilience measures. Their existence is expected to act as a catalyst for creating Government budget lines for sea and river defence risk management within the Ministry of Works and the NEA.

SRDIMPs for each SRD District Region in Gambia shall be important Key Performance Indicators (KPI) which should be prepared as part of the GoG’s Sea and River Defence Risk Management Programme (SRDRMP). The SRDIMP is seen as one of the primary means of implementing the SRDRM Programme which is proposed to be formally approved by the GoG in 2016, as providing the strategic direction for the management of infrastructure (both public and private) within the coastal area.

**Output 1.3: High-level institutional coordination mechanism established to guide climate change resilient development planning of coastal zones.**

This Output shall set clear formal structures to communicate the responsibility to coordinate and provide policy direction on “climate proofing” of development initiatives and climate change adaptation measures. A review of defined remits within the government structure shall be carried out compared with the actual situation, areas for enhancement will be identified and consultations will secure these interfaces to permit collective working. Significant gaps will be addressed through institutional reform, which will be implemented within the lifetime of the project. Enhancing working and reforming to fill gaps will lead to improved coordination of future sea and river defence risk management and land use development, physical interventions and sea and river defence maintenance. This shall create an enabling environment to introduce and ensure compliance to engineering and planning design standards within low lying flood-plains and identified “vulnerable” areas within the coastal zone.

**Output 1.4: Coastal monitoring protocols and standards programme**

The Output is to develop a national coastal zone monitoring program that is functional to support planning, management and evidence-based decision-making. The monitoring program will be managed by the National Environmental Agency as befitting their institutional remit and also the strengthening of their institutional operational capacities. Clear roles of research institutions and the NEA shall be set out in order to monitor and advise on aspects such as coastal habitat change and project /engineering design performance etc. Guidance for monitoring support roles of the Village Development Committees (VDC) shall also be introduced at this time. This output shall be designed

to integrate with other donor funded initiatives, especially the EU 'GCCA support project to The Gambia for integrated coastal zone management and the mainstreaming of climate change' project and the UNEP-LDCF project "Strengthening of the Gambia's Climate Change Early Warning System", in order to ensure synergy and complementarity.

The four Outputs of Component 1, Activities and associated descriptions and breakdown of the \$ 895,900 total project budget are presented in Appendix G-1.

### **2.4.3.2 Outcome 2: Vulnerability of coastal investments to climate risks reduced**

#### **Without LDCF Intervention**

At present, an ad-hoc approach to sea and river defence risk management (through hard intervention measures) is adopted. Mangrove plantation and other "soft engineering" schemes have no formal guidance or engineering "protocol" from which to follow, which has often resulted in failure of schemes on the ground. The lack of monitored datasets of beach condition, sediment extraction (sand mining), sediment dynamics and coastal processes along the coast of Gambia has not helped the design of sustainable engineered schemes and the "blind" approach to scheme design would inevitably continue under this baseline situation.. The private sector (certain hotels on the Kotu Beach frontage eg: Senegambia Hotel) have separately carried out schemes to address erosion on an ad-hoc way by using beach nourishment and sand bagging techniques to protect their assets. Hotel Senegambia spent GMD 500,000 for sandbags in 1998 and their neighbour the Kairaba Hotel replenished their beach in 1999, including protection measures with geo-textile bags for the total amount of US\$ 400,000. Also Siva Sun Beach Hotel and Holiday Beach Hotel took some measures. The former paid GMD 250,000 for wave breakers and the latter invested GMD 35,000 in sandbags. Atlantic Hotel in Banjul lost its beach bar more than two years ago. To protect the hotel from the sea a revetment was made of basalt stones in 1997 at the cost of GMD 400,000 (Haskoning 1999).

Local community protection initiatives (like boulders and rhum palm plantations) have also been introduced specifically in Banjul around Radio Syd, and Banjul Point. However, these measures have largely failed to solve the problem. This can be attributed to a number of factors such as: (i) the lack of understanding of coastal dynamics and sediment budgets; (ii) poor defence construction techniques; (iii) the lack of regular defence maintenance because of the absence of required human and financial resources and; (iv) the poor quality of the construction materials used (ie: not igneous hard wearing rocks).

Setting appropriate design standards for "climate proofing" coastal investments is also of relevance to the fisheries sector. The African Development Bank (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 same baseline situation arises within the agriculture sector. The GNAIP project (as an example) 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 "wedge" much further upstream than originally envisaged under the GNAIP studies, thereby negatively affecting the productivity of the investment made in the low-land rice growing areas. All coastal infrastructure investments and activities need therefore to be strengthened to render them more resilient to climate change.

#### **With LDCF Intervention (adaptation alternative)**

While the EU ICZM baseline project (which promotes dialogue, vision and development of an evidence base for coastal management) and AfDB baseline support for artisanal fisheries (see Table 1.3), these initiatives do not in themselves build climate compatible infrastructure or capacities to promote resilience. The alternative, with LDCF intervention, will finance additional investments in hard and soft coastal protection measures to help maintain critical economic infrastructure on the coast (hotel industry and local support services, fishing community transportation networks, etc), as well as to develop key local livelihood economies (salt, rice, fish etc) activities, in the face of sea level rise and coastal erosion. Component 2 interventions focus on implementing intervention schemes (hard and soft) in at least five coastal communities in Gambia (Kololi, Tanji, Dasalami/Illiasa, Bintang and Tendeba. These pilot demonstrations will specifically address the immediate and long-term risks of coastal erosion and flooding.

**Output 2.1: Hard coastal protection infrastructure measures are designed, constructed with additional redundancy against sea level rise and climate induced erosion**

This output is designed to help towards the implementation of a climate-resilient shoreline management schemes along the Kololi Beach (Senegambia Tourist Development Area) to address the urgent adaptation needs from coastal erosion and sea and river defences to enable fishing communities to be sustained and transport communications networks to be protected at Tanji. These hard engineering schemes shall provide protection to the tourism and fisheries sectors, through hard defence interventions (to address coastal erosion) at Kololi Beach and Tanji Bridge.

Within the context of the EU supported GCCA feasibility work, Output 2.1 will support the rehabilitation of beach tourist and local support services by seeking to provide robust hard engineering protection to counter sea-level rise at key locations adjacent to the key TDA in Gambia which employs over 1000 locals (directly and indirectly) in support services. The Senegambia (Kololi Beach area) remains of pivotal importance to the national economy. It also remains a key employer to local populations in the Serrekunda District. The tourism industry is geographically concentrated along a 10 km strip along the Atlantic coast, constituting the Tourism Development Area (TDA). The degree of spatial concentration in one corner of the richest part of the country is striking and has implications for the pro-poor impact of tourism across the country. Almost 90 per cent of the tourist accommodation is located in 20 large hotels, with over half the national bed stock found in the seven largest of these (mainly focused in Serrekunda District). The need to improve the beach tourism product in the location will sustain seasonal tourism and also improve “out of season” local economic development in the area (maintenance of the supporting restaurant area, waterfront attractions etc). Between Kololi Point and Bald Cape no coastal protection works are present, except for local sandbag revetments in front of the hotels. Characteristic sites along this section are the Senegambia Hotel, the Kairaba Resort Hotel, the Holiday Beach Club Hotel and the Kololi Beach Club Hotel. The shoreline is retreating. In the hotel and bar area just south of Kololi Point an average retreat rate of 1 m/yr. is found. This trend seems to have increased from approximately 0.5 m/yr. in the period 1972-1983 to 1.5 m/yr. in the period 1983-1993 (Haskoning 1999).

With regard to the Tanji fishing sector, the LDCF/GEF project is designed to strategically help towards making communities and the sector more resilient to climate change (particular focus on providing engineering protection to road networks that are needed for national access to “markets”). Indeed, if previous donor interventions (such as the AfDB GAFDP) had contributed to render the fishing landing facilities at Tendaba more operational, they have not contributed towards reducing their vulnerability to sea-level rise and other climate-induced coastal area issues.

Without this LDCF support, the GAFDP could not achieve its goal of increasing fish production and revenues of up to 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.

Tanji Fishing community is well established, though is at risk from coastal erosion in a few locations, including the risk of communication (road) erosion close to Tanji Bridge. Failure to protect this area will have serious implications on local and national transportation “routes to market” for the community as climate change impacts become worse. Recent experience of what “doesn’t work” will help to ensure that these measures are designed and implemented effectively, and appropriate engineering intervention shall be pursued.

### **Output 2.2: Low cost infrastructure to protect up to 1,500 ha of vulnerable rice growing areas**

This output shall introduce smaller scale soft engineering interventions in at least three locations in interior Gambia (Dasalami/Illiasa, Bintang and Tendaba) to address cost effective ways to introduce long-term coastal adaptation needs (including studies to help prepare the science needed to implement a formal national mangrove management policy and plan). 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 Sea and River Defence Risk Management planning process shall be formulated to help engage beneficiaries from the outset with regards to sea and river defence siting, design, implementation 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. It is expected that a level of maintenance of these defence structures will be provided by beneficiary communities. To achieve this, a co-management approach will be necessary that will involve relevant government agencies, such as the Department for Water Management and the Ministry of Agriculture.

Appropriate techniques such as the use of local dredged maintenance within polder systems and also to fill geo-tubes are to be reviewed and assessed as possible measures (conceptual designs of the intervention approaches proposed have been presented in Appendix B). Innovative ways of combining improved aquaculture for inland fisheries, salt production and salt tolerant rice production (Salt-Rice-Fish concept) are also introduced for the Bao Bolong wetland region. Detailed design studies and bathymetric/geotechnical investigations will be carried out to help design schemes for technical robustness and cost effectiveness, taking into account climate risk criteria, such as likelihood and magnitude of storm surges, tidal events, inland flooding and drainage management. 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 sea and river defences and importantly, to

establish partnership arrangements to contribute towards their long term upkeep. Fiscal incentives introduced at a policy level (ref: Outcome 1) will support this approach. There is also a conscious attempt to put in place mechanisms for delivering and implementing adaptation measures (including soft engineering shoreline management techniques) that engage communities in their design, construction and monitoring to help sustain investments in these locations and introduce clear strategies to encourage replication of practices in other parts of Gambia.

**Output 2.3: Up to 2500 ha of mangroves forests restored and maintained through mangrove management plans and regeneration to withstand climate-induced pressures in coastal areas**

Output 2.3 will restore and maintain 2,500 ha of the mangroves forests close to the communities within Bintang Bolong through the creation of physical intervention (planting), a co-management approach and the creation of a brand new enforceable mangrove management policy (and plan) 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 within Bintang Bolong around these mangroves and oyster producers) will be trained in mangrove management measures including physical planting, monitoring of the health of the mangrove, developing and maintaining community based agreements on use of the resource. Communities at large will also be sensitized on the role of mangroves roles in promoting coastal resilience. With reference to Output 2.3, there is a critical need for studies to help support the requirements and future implementation of a national mangrove policy. This is needed to promote effective conservation and management of mangroves in the Gambia through harmonization of sectoral responsibilities. The policy will clearly spell out institutional arrangements with regard to mangrove management in the country.

The three Outputs of Component 2, Activities and associated descriptions and breakdown of the \$ 5,900,300 total project budget are presented in Appendix G-2.

**2.4.3.3 Outcome 3: Rural livelihoods in the coastal zone enhanced and protected from the impacts of climate change**

**Without LDCF Intervention**

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 20 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 productions assets and equipment.

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.

**With LDCF Intervention (adaptation alternative)**

With the background of a number of initiatives to enhance agricultural productivity in Gambia, the LDCF project will build additional and targeted agricultural and livelihood enhancements / diversifications which help promote resilience specifically in the challenged and highly threatened coastal agricultural 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. The reason for targeting of these agricultural and fisher communities is that they were identified in 2011 (PAGE, 2011) as the sectors with the highest poverty, and also the most vulnerable to the negative effects of climate change.

**Output 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.**

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. 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) shall be reviewed, along with the initiation of new techniques for salt mining, which shall be tested, introduced and disseminated to all project beneficiaries. Up to thirty households shall be invited to take part in a series “soil desalination” experiments in order to valid this approach for more extensive use. The experimental soil desalination process shall be implemented during the dry season. At this time, the soil shall be desalinated through collecting water in containers (through rainwater harvesting). This method of growing in pots enables people to cultivate without large amounts of water and has good potential as a horticultural adaptation approach.

It is the intention of the “Salt-Rice-Fish” innovative intervention (proposed for Bao Bolong wetland) to assist in this proposed outcome (see Component 2.2). “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.

It is proposed that a series of pilot community focused trial and demonstrative programmes shall be initiated based on a small-grant mechanism which appropriate access measures for community members. The small-grant pilot trials will be a combination of saline rice / halophytic regeneration and desalination approaches. In addition, the intention is to help produce over 700 kg of vegetables through the small grant programmes which may then be replicated to other salt intrusion risk areas in the Gambia. The trials will be established, with an NGO being the implementing node of the grant, while the NEA assumes the responsibilities of the oversight on the use of the fund and quality assurance. The Association of Non-Governmental Organizations in the Gambia (TANGO for example has experience with running the GEF small grant program and experience in assisting communities both in freshwater and shoreline management. An integral element of this component is targeted efforts to strengthen the capacity of Gambian communities and the VDC for mobilizing additional financing from other sources, using the LDCF resources as leverage.

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 (“Cash for Work” Programmes) will be provided to promote field based works as necessary, with a focus on the poorest and most vulnerable. These shall be introduced to help develop environmental and social benefits to help build resilience to climate change. These shall use existing good practice on how to administer and implement Cash for Work programmes, such as the “Guide to Cash for Work Programming” manual completed by Mercy Corps (2007). <http://www.mercycorps.org.uk/sites/default/files/file1179375619.pdf>

**Output 3.2: Climate resilient wetland and fisheries management and planning methods (resilient fisheries and wetland management plans, custom rules for wetland access and 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.**

Building on the GNAIP bio-salinity programme, the Gambia artisanal fisheries development and the Gambia-Senegal sustainable fisheries projects, the alternative, with LDCF intervention, will contribute towards enhancing the climate resilience of fishermen (including women producing oyster and shrimps) and agriculture communities’ livelihoods. This Output shall seek to introduce support measures to help improve fisheries management and planning methods (i.e. resilient fisheries and wetland management plans, custom rules for wetland access and exploitation, community monitoring of fisheries quotas) which shall be introduced and transferred to at least 25 vulnerable communities (wards) at risk from climate change in the Lower and Central Valley areas. Trial fishery activities shall be supported, organised and monitored over 1 year in at least 4 wards and the feasibility of the approaches assessed for livelihood benefits as possibilities for extension within the sustainable yield of the target areas. A community-based small grant mechanism shall be used to support more widely entry into the fishing market as a wider trial once feasibility has been confirmed – aspects to be included shall include fishery capture, fish processing and marketing.

**Output 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.**

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. This Output shall seek to introduce a “route map” towards the implementation of effective alternative business income streams for vulnerable coastal communities such as beekeeping, ecotourism, forest management, coastal defence installation and maintenance measures etc. The actions and strategies shall be introduced to at least 15 vulnerable communities (wards) at risk from climate change in the Lower and Central Valley areas.

Through literature review and extensive community consultation, information shall be collected to ascertain the effectiveness of alternatives in securing economic activity and sustaining livelihoods as well as cultural and gender aspects of these alternative income generation activities. Through project-supported trials, the robustness of at least 5 alternative livelihoods in 15 wards shall be assessed to ensure viability and that it is sustainable post-project. A “good practise guide” shall be produced (in English and local languages) which outlines possible alternative incomes which are relevant to the extensive areas in the saline areas of The Gambia. The supported trials will be used to illustrate the approach. The guide will provide a “route map” targeted at the community level which will detail approach to follow and the necessary protocols.

**Output 3.4: Dissemination of practical livelihood diversification approaches for The Gambia**

A focus will be made on the dissemination of practical and viable alternatives possible to enhance economic wellbeing. Two main themes will be disseminated (i) methods to enhance existing livelihoods through rice improvements / fish capture (ii) alternative or additional livelihoods which could replace or subsidise existing livelihoods. Community engagement and discussions will take place in at least 30 Wards including the distribution of information in local languages to rural dwellers with respect to locally-relevant aspects of coastal resilience, possible interventions to reduce vulnerability and participatory wetland management. Building on from this, possible additional or supplemental livelihood options will be identified and discussed. Livelihood options will involve lessons identified from pilot trails in rice and desalination, fisheries and other alternative livelihoods – these will be disseminated to rural dwellers in at least 30 wards. For each of the 30 wards a “Climate Resilient Village Network” will be formed to oversee supplemental or alternative livelihoods and help tailor them to the very local situations. Additionally, through the decentralised institutions associated with the local layer of government and the ward level, the lessons on practical enhanced or alternative livelihoods will be disseminated in at least 10 workshops. Community Flood Management Committee’s (CFMC’s) will be developed at the regional level which promote cooperation, engagement and ownership on flood management issues and provides a go-between national (e.g. NEA) and local (i.e. Climate Resilient Village Network”) organisations and to champion resource mobilisation. At the national level the approaches will also be disseminated through at least 5 workshops and livelihood briefing notes to other relevant organisation, including governmental (e.g. Ministry of Agriculture) and NGO’s.

The four Outputs of Component 3, Activities and associated descriptions and breakdown of the US\$ 2,703,800 total project budget are presented in Appendix G-3.

## 2.5 Key Indicators, Risks and Assumptions

### 2.5.1 Indicators

Specific indicators have been developed to assess the performance of the project and the status of coastal dynamics and related socio-economic activities impacted. The indicators follow the SMART approach to monitor and to evaluate the performance of the several objectives and actions planned. The SMART approach means that the indicators should be: 1) Specific; 2) Measurable; 3) Achievable and Attributable; 4) Relevant and Realistic; and 5. Time-bound, Timely, Trackable, and Targeted. From that perspective, and according to the three main Outcomes, the main indicators proposed are:

- Number of vulnerable people and communities with enhanced living conditions and sustainable livelihoods;
- Climate risk management, sea and river risk management and technical capacity in relevant national and regional institutions;
- Coastal monitoring procedure undertaken, collated in database and accessible to support decision-making;

- Number of Sea and River Defence Investment Plans actually financed;
- Number of hard and soft coastal protection schemes implemented to reduce erosion risks;
- Number of families benefiting from LDCF resources used for design and build structures;
- Rice and fish production to produce sustainable income for local community;
- Number of farmers that will receive agricultural extension services and alternative livelihoods.

The precise project indicators are outlined in detail in the Project Results Framework (Section 3 – Table 3.1).

## 2.5.2 Risks and Assumptions

The main risks for the implementation of the project are:

- (a) Conflict between stakeholder groups/land owners with different political agendas results in an inability of sectors and/or regions (districts) to cooperate at the level needed to achieve results.;
- (b) Pressing domestic economic and social issues such as poverty and human health issues imply that regional climate change and sea level rise impacts on coastal communities receive sub-optimal attention and investment;
- (c) There is sufficient numbers of regionally based experts (especially coastal engineers) to fulfil implementation needs of the project including building individual capacities in the region;
- (d) Participating communities in Gambia will not be able to agree on the mechanisms necessary to achieve sustainability; and
- (e) Important local level stakeholders (communities, coastal managers and engineers, urban planners, tourism industry stakeholders) will see ecosystem based management efforts as being detrimental or unaffordable given their interests.

A separate Appendix on Risks is presented in Appendix H and specific pilot project intervention risks are included in Appendix B.

## 2.5.3 Putting Lessons Learnt into Project Design

A number of key lessons from recent donor funded projects in the Gambia (and on coastal protection projects undertaken in West Africa in Senegal and Liberia) have been taken into consideration in the design of this Project Document. Firstly, the implementation of this project is designed to include a solid foundation for the take-off of the Project. Project staffs are carefully identified and it is proposed that the MoU (see Appendix I) that has been set up shall create the correct working environment from which to promote appropriate training during the formal technical launch of the project. In addition, the Procurement system identified at appraisal is to be designed to suit the national capacity requirements without compromising efficiency and economy. This allows for structured adherence to the Procurement Plans, which can thereafter be implemented to the letter.

Secondly, sustainability mechanisms are integrated within the project design to ensure that beneficiaries maintain infrastructure are "instituted" within the project; This shall be encouraged by working through existing community institutions such as existing District Disaster Management Committees and Village Development Committees to help establish new District Disaster Community Flood Management Committees (CFMC) as part of the VDCs (see Section 4.4). The design of the Component 2 (outcome 2) activities is flexible to allow adaptation in the early course of implementation. This is important as during the Inception Phase, it may be necessary to change the design of any of the engineering "pilots" to use labour to carry out land preparation activities to the acquisition of necessary equipment. Thirdly, a key lesson learned from similar projects in Gambia is that while using the relevant agencies to support project activities are good and in line with Paris Declaration, in some instances during the implementation of projects the identified agencies lacked capacities and necessary resources to provide the support required of them. In this regard, the NEA has been proactive towards addressing this matter through the procurement of a "Sea and River Defence Engineer" that will help in project start up activities (see Appendix I). Finally, a mechanism to assist with the coordination of efforts in order to and avoid overlaps and duplication with on-going projects with potentials for synergies and mutual learning will be set up under the LDCF project through the establishment of a "project manager's coordination group". This approach is being adopted in the UNEP "LDCF Early Warning" Project and membership of that group shall be extended to include the Project Coordinator of this project along with existing membership (coordinators) from other ongoing projects. The group will be chaired by the Project Director of this LDCF project. A two-way communication and interaction strategy between the project and the various stakeholder groups will be developed and nurtured throughout the project lifespan.

The key lessons from coastal protection projects in Senegal and Liberia have also helped to instil a clear risk mitigation strategy as part of this Project. This includes:

- taking into account existing and future local contracting requirements in the elaboration of the annual work plan and future sea and river defence engineering needs;
- how to engage with local authorities to communicate the objectives of the project in the interests of the local coastal populations;
- the design of a workable stakeholder engagement plan to ensure project visibility at national and international levels;
- the overlapping of the project with other projects (e.g.: the European Union GCCA project, etc).
- efficient and robust procurement systems to ensure that tender invitations constituted for most of the major projects are clear and workable.

## 2.6 Project Sustainability and Replicability

### 2.6.1 Additionality

Additionality is the concept that the project is “in addition” to the baseline reality, including other previous projects and interventions that would occur. The additional project should go above and beyond what is already planned, bringing added value and fostering new synergies. Within Decision 3 of the Eleventh Conference of the Parties (COP 11), the UNFCCC defines the additional costs of climate change as the costs imposed on vulnerable countries to meet their immediate adaptation needs. Currently, operationalized adaptation funds such as those of the UNFCCC’s LDCF and SCCF, both managed by the GEF, provide resources to meet the ‘additional costs’ of adapting to climate change. The UNFCCC’s newly emerging Adaptation Fund also adopts this principle (AFB/B.7/4, August 31, 2009) and defines an adaptation initiative as including: “a set of activities aimed at addressing the adverse impacts of and risks posed by climate change”. The ‘additional costs’ of managing climate change risks/opportunities, ‘additionality of climate change adaptation,’ ‘additional cost reasoning,’ or ‘adaptation alternatives’ effectively refer to the fundamental idea that is reflected in Decision 3, COP 11.

The articulation of ‘additionality’ involves a two-step process. In the first step, a baseline scenario is established. This is defined as ‘business as- usual’ development with no consideration of the likely implications of long-term climate change. In the second step, an alternative scenario is defined. The alternative scenario describes those key results/outcomes that are to be achieved by a set of interventions (activities) that explicitly address climate change concerns. This includes, as the operational guidelines of the UNFCCC’s AF outlines, an “altered plan to build adaptive capacity/increase resilience.”

This LDCF/GEF project proposal demonstrates additionality in light of the definitions and descriptions raised above. The project correlates well with the eight baseline projects presented on Section 1.5.3 and these are further described on the following Table 2.2, to which the LDCF contributes to in terms of funding will allow an additional increment in different lines of action (see right hand column). The GEF project will therefore bring additionality to those eight baseline projects, having different impacts according to the three levels of outcome planned (see Table 2.3).

BASELINE PROJECTS (8)	GEF PROJECT POTENTIAL ADDITIONALITY AT THE THREE COMPONENT / OUTCOME LEVELS		
	+++ Very significant   ++ Moderate significant; + Less significant; o No relevant		
	Policy and institutional development for climate risk management in coastal zones	Physical investments in coastal protection against climate change risks	Strengthening livelihoods of coastal communities at risk from climate change
UNDP supported Establishment of a National Disaster Management Programme in the Gambia	++	o	+
EU supported Integrated Coastal Zone Management and Climate Change Project	++	+++	+
UNDP and Spanish Fund supported public service reform and institutional capacity development project (PSRICD)	++	o	o
Islamic Development Bank (IDB) supported Community-based Infrastructure and Livelihood Improvement Project	o	++	+++
IFAD supported Livestock and Horticulture Development Project (LHDP)	+	o	++
AfDB supported Gambia artisanal fisheries development project (GAFDP)	o	+	++
USAID supported Gambia-Senegal Sustainable Fisheries Project (Ba Nafaa)	+	o	++
Gambia National Agriculture & Natural Resources Investment Programme (GNAIP)	+	o	++

**Table 2.2 Analysis of the additionality contribution per outcome level**

The following Table outlines the additionality associated with each baseline project. With regards to the EU Integrated Coastal Zone Management project, detailed and close collaboration has been undertaken to ensure close co-operation and effective additionality in the respective project-level approaches. Of particular note are the activities including the EU “Feasibility Study” action and selection of sites for potential coastal defence intervention (EU project – Component 1, Result 1.2, Activities 1.2.1 and 1.2.2) which feed directly into the initial pilot site investigations (outlined for this LDCF project – see Appendix B) to strengthen the rationale and design stages of the intervention to be undertaken in this project under Component 2. In addition, the high-level mainstreaming of climate change, the focus of component 2 of the EU project, should help strengthen the enabling conditions for flood and coastal defence policy and management targeted by Component 1 of this LDCF project. With the other baseline projects, a similar correlation and a potential level of articulation exist in order to achieve sustained additionality (see Appendices C and E).

Baseline projects	Main outcome / outputs	Additionality / LDCF Contribution
<p><b>1. UNDP supported Establishment of a National Disaster Management Programme in the Gambia</b> 2007-2010</p>	<p>Developed the national policy and legal framework for Disaster Risk Reduction (DRR) in the Gambia; Strengthened the capacities of national, regional and local disaster management committee members; developed disaster management strategy and Avian Influenza preparedness and contingency plan for the Gambia; Institutionalized disaster management with the establishment of dedicated National Disaster Management Agency (NDMA); Building on the gains realized, a follow up project/programme on DRR and Climate Change adaptation (CCA) was formulated (2009-2013), the objectives of which is to: show the linkages between disasters and climate change; present the hazard and vulnerability profile of the Gambia; critically analyse DRR and CCA national capacities; review and operationalize institutional frameworks and strengthen coordination mechanisms to better address climate change related and other disasters; integrate DRR and CCA approaches into national planning processes and policies such as the Programme for Accelerated Growth and Employment creation (PAGE 2012-2016); raise awareness on DRR and CCA through advocacy, education and sensitization; consolidate and further strengthen existing early warning systems and elaborate a national rapid response and early warning mechanisms.</p>	<p>The LDCF project will contribute to build safe and resilient communities by enhancing their capacities and livelihoods also in the perspective of access to knowledge and information about disaster prevention and management.</p>
<p><b>2. EU supported Integrated Coastal Zone Management and Climate Change Project</b> 2012-2015 / \$ 5,148,000</p>	<p>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.</p>	<p>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.</p>
<p><b>3. UNDP and Spanish Fund supported public service reform and institutional capacity development project (PSRICD)</b> 2012-2015 / \$ 1,800,000</p>	<p>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. A Civil Service Reform (CSR) programme will provide all the ministries and departments with technical assistance to update their strategic plans and organizational structures</p>	<p>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.</p>
<p><b>4. Islamic Development Bank supported Community-based Infrastructure and Livelihood Improvement Project</b> 2011-2015 / \$ 10,000,000</p>	<p>The project will empower communities and improve their livelihood and welfare through financing demand-driven community infrastructure and livelihood activities. The project will include Community Infrastructure Facility, Livelihood Improvement Fund, Institutional Development.</p>	<p>The 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.</p>
<p><b>5. IFAD supported Livestock and Horticulture Development Project (LHDP)</b> 2010-2016 / \$ 6,500,000</p>	<p>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.</p>	<p>The 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</p>
<p><b>6. AfDB supported Gambia artisanal fisheries development project (GAFDP)</b> 2009-2011</p>	<p>(i) re-habilitate 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). The 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 to receive higher incomes and to contribute to the improvement of nutritional standards of the population.</p>	<p>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 the infrastructures to make them resilient to sea level rise and coastal erosion and build local capacities for the maintenance of investments.</p>

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<p><b>7.USAID supported Gambia-Senegal Sustainable Fisheries Project (Ba Nafaa)</b> 2009-2014 / \$ 1,000,000</p>	<p>The project is assisting key partners, namely the Department of Fisheries, and stakeholder groups (including community fisheries centers) in developing the capacity to implement, evaluate and improve specific fisheries management plans.</p>	<p>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.</p>
<p><b>8.Gambia National Agriculture &amp; Natural Resources Investment Programme (GNAIP)</b> 2010-2015 / \$15,000,000</p>	<p>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 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.</p>	<p>LDCF resources will be used to support farmers training on technologies to reduce salinity effects on rice production and the use of salt tolerant rice variety and promote the bio-saline agriculture. It will also finance the building of climate proofed flood protection and flow control installation to protect low-land rice growing areas against sea-level rise and flooding.</p>

**Table 2.3 Baseline projects with additionality to LDCF proposal**

## 2.6.2 Sustainability

### 2.6.2.1 Generic Sustainability

Sustainability is an integrated part of the project design, although it is not intended that the project, in and by itself will establish a sustainable sea and river defence risk management framework. Regarding political and institutional sustainability, the project has strong government support at the central, district and local levels. Various stakeholders from the government and civil society were involved in the NAPA process and through the PIF and PPG phase (see Appendix D), and several of those agencies are keen in carrying forward the implementation of the top identified priorities (i.e.: coastal erosion). With regards to the EU Integrated Coastal Zone Management project (GCCA), details and close collaboration has been undertaken with the EU Delegation in Banjul to ensure close co-operation and effective additionality in the respective project-level approaches. Of particular note are the Feasibility Study and selection of sites for potential coastal defence intervention (EU project – Component 1, Result 1.2, Activities 1.2.1 and 1.2.2). Provisions to facilitate the sustainability of such a framework will be engendered during the implementation phase through the adoption of womens' groups and incorporating the role of existing Community Village Networks.

The long-term viability and sustainability of the project will also depend greatly on the extent to which national institutional capacities can be built through the implementation of the engineering pilot activities (Component 2). This will be achieved through capacity building at all levels (see Component 3 (Activity 3.4) and climate resilient development rather than viewing the project as a short term activity. Institutional linkages will be strengthened (Component 1 Activity 1.3) and community based adaptation measures will include innovative mechanisms for sustainable livelihoods, which in turn will enhance the sustainability of project outcomes. The capacity building components of the project will empower stakeholders at all levels, from community members to regional/district authorities to national policymakers, all with a greater understanding of climate change risks, adaptation options and enhanced adaptive capacity. A number of measures are planned, to set the grounds for ensuring long-term institutional, political and financial sustainability. A phased approach will enable interventions to be scheduled within the absorptive capacities of existing institutions.

A key strategy of the project in engendering institutional sustainability is to create partnerships at regional (local) levels (Component 3 Activity 3.4) and between national institutions (research) (Component 1 Activity 1.4d). National institutions responsible for continuing the activities that will be started under the project will be identified, as will regional and international centres of expertise, which will provide the locus for capacity building services. The strategy is expected to greatly enhance prospects for assuring institutional sustainability, building on existing regional competencies. Training at the community level will be supplemented through participation in workshops, information exchange between communities and institutions, to be facilitated by the project management unit. The cultural sustainability of the project activities will also be ensured through community participation in the design and implementation of wetland management, coastal defence structures using local materials and other livelihood activities. During consultations with local Gambian coastal communities, community members expressed strong interest in climate resilient livelihoods and measures to reduce vulnerability from increasingly frequent extreme climate events.

The proposed project is receiving a co-financing value of US\$41,388,000. This co-financing would strengthen the proposed initiative through policy reform and enhancing institutional capacity to mainstreaming climate change adaptation and coastal erosion mitigation including support to innovative initiatives. This contribution demonstrated the willingness of the Government of Gambia and UNDP to support community based coastal adaptation and climate resilient livelihoods.

### 2.6.2.2 Institutional Sustainability

This is important at both local and national levels. At local levels, the main measures in the project design to achieve this are: training for local people; supporting existing agencies and experts; empowering communities and county decision-makers; developing capacity to undertake income revenue activities, and; strengthening existing consultation and decision-making structures. LDCF resources will build on existing organisations (local governments) and processes (e.g. Gambia CPAP and NAPA).

At the national level, although the stakeholders and issues are different, the approach to assure institutional sustainability is the same. Awareness raising initiatives to secure political commitment, and the direct involvement of several Ministries can help ensure that commitment as will the dedication of the NEA. The



involvement of the Ministry of Environment and its line agencies, since the inception of the project, gives it the political robustness it deserves for successful implementation. The Ministry of Environment is an active member of the National Environment Management Council (NEMC), the highest decision making body on Environmental Affairs in the Gambia and it recognises Climate Change as a key focal area for support and implementation. The NEMC is chaired by the Head of State and the NEA is the secretariat. As a result, all project activities will be designed/approved through the use of existing consultation and decision-making structures, and all activities will be an integral part of existing (approved) development and sectoral plans.

### **2.6.2.3 Financial/Economic Sustainability**

This is a particular challenge. Although many coastal protection measures are low cost or no-cost, many others are high to medium cost. Moreover, many coastal protection measures require ongoing maintenance, which can only be achieved if there is sufficient local organisational capacity.

The project takes many steps to achieve financial and economic sustainability. First, the measures to be demonstrated are to be achieved at costs which are largely affordable in the Gambia (and use local materials where possible e.g.: dredge material from Port of Banjul). This supply of material is likely to be available throughout the life span of the project and beyond.

By building capacity to undertake all steps in constructing these measures locally, this will further lower the cost of these measures – all capacity will be available locally. Further, the project will build local organisational capacity to demonstrate that, in the complex Gambian context, communities can maintain the physical constructions.

Another step taken by the project is to build capacity in the Gambia to mobilise financial resources to coastal protection. Elements of this include (i) strengthening data and information management capacity, so that future designs can be improved and better targeted; and (ii) developing capacity to prepare proposals and designs, notably economic analysis capacity. The proposed new sea and river defence research programme (Activity 1.4d) is a purposely designed activity to help with long term sustainability of interventions and also to engage academic and professional institutions in The Gambia to pursue research in this technical area.

It is important to note that the ‘demonstration’ aspect of the project has implications for sustainability. In part, the project aims to demonstrate innovation, and to capture lessons learnt. Both of these are processes which require financing. Once something has been ‘demonstrated’, it does not require demonstrating again, so the costs associated with demonstration can be one-off (and do not need to be recovered).

### **2.6.3 Replicability**

Replicability will be one of the criteria used in the selection of pilot project sites (Outcome 2), and it is intended that the selected projects will demonstrate that adaptation planning and assessment can have practical results/impacts that provide tangible benefits (such as the appropriate design of a soft engineering scheme to benefit coastal communities and introduce potential alternative livelihoods – such as the “Salt-Rice-Fish” concept), that can be fully integrated into wider national policy and sustainable development planning for sea and river defence management in Gambia. The outputs and outcomes of all project components will have important demonstrative value with significant potential for replication at national and regional levels, and in particular in those countries where the improvement of coastal area management is recognized as an urgent need but which face similar constraints.

Replicability will be achieved at the global level (e.g., through the provision of key lessons for integrating), the national (e.g., through the development of national capacity to support adaptation activities) and the local level (e.g., where new know-how among communities, local NGOs and VDCs can encourage a scaling up of adaptation to climate change activities). To lay the foundation for the replication of the approach and transfer of lessons from the project, a programme-wide capacity development effort will be initiated at the global, the country and the local level (e.g.: Activity 3.4b - Education and awareness training programmes on coastal resilience, intervention options (e.g. polder design) and participatory wetland management programmes approaches. This will be linked to UNDP-GEF’s Adaptation Learning Mechanism (ALM).

Over time, the new adaptive capacity in project sites and in institutions will be used in coastal development planning processes for the entire coastal zone of Gambia. The project will establish an evaluation and learning process, which will feed directly into the development of climate resilient national strategies for sea and river

defence risk management strategies, such as plans to implement dynamic coastal land use zoning (i.e: Sea and River Defence Infrastructure Management Plans – see Output 1.2), The close involvement of government agencies and other organisations demonstrated the potential for future incorporation of the projects approaches, such as community based wetland management combined with the facilitation of climate resilient livelihoods, and promoting feedback loops between communities and national policy making processes, into their ongoing plans and programmes, Careful monitoring of performance, efficiency, cost-effectiveness and robustness will prove useful in developing similar systems for the future.

Finally, though it is beyond the scope of the project, replication of adaptation activities will ideally occur over the long term through the implementation of new and emerging Adaptation Funds (AFs).

## 2.7 Cost Effectiveness

### 2.7.1 Cost Effectiveness

In line with the GEF Council’s guidance on assessing project cost-effectiveness, the project team developed a scenario planning approach to assess and compare different future alternatives. Four scenarios emerged under different conditions in terms of planning capacities (high or low) and funding (lack or availability). The current LDCF proposal aims for a trajectory of coastal resilience based on a cost effectiveness scenario, linking a higher planning capacity with an adequate availability of funding to support the proposed actions. Nevertheless, without the project approved, three other scenarios could emerge, with a baseline situation (business as usual) leading to a potential vision of coastal collapse (worst case scenario) and also two other less negative scenarios, according to different conditions of effectiveness. The Figure below presents four alternative scenarios and related strategic visions for the future of Gambia coastal areas. Each of the following scenarios are described below to help the reflection on how the project design indeed looks to achieve a strong cost effectiveness.

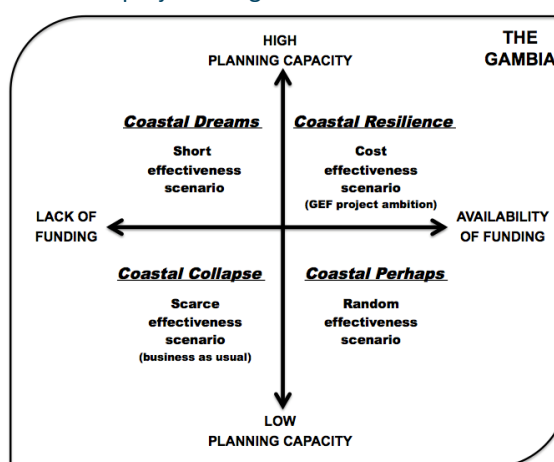


Fig 2.2 Alternative effectiveness scenarios and related strategic visions for coastal Gambia

#### 2.7.1.1 The scarce effectiveness scenario (“coastal collapse”)

If the current trends and problems that are affecting the Gambian coastal areas (including local communities and economic sectors) would continue into the future, in result of low planning capacities associated with the lack of funding to support adaptive strategies and interventions, the strategic vision of “Coastal collapse” emerges very strongly. This is the “Scarce effectiveness scenario”, representing the “business as usual reality”, in a country demonstrating a low adaptive capacity to support the impacts associated with climate change. This scenario represents the extension of the baseline situation without GEF funding under the current project proposal. The baseline scenario is a representation of what would reasonably be expected to have occurred in the project’s absence. In previous sections of the document, the climatic, biophysical and socio-economic expression of the baseline scenario was described.

#### 2.7.1.2 The short effectiveness scenario (“coastal dreams”)

If the country achieves a higher planning capacity as a result of other ongoing baseline projects, even if not directly targeting the problems related to coastal management associated with climate change, there might be some conditions to plan and to adapt better to the specific problems, at least in theory. Nevertheless, if that higher planning capacity is not associated to support the actions planned, the strategic vision will not happen and it might be seen as an unachievable “coastal dream”. Without the LDCF resources it is not possible to implement adaptive strategies over the coastal areas to protect communities, livelihoods and activities. This scenario represents an evolution from the baseline situation, assuming that other projects might enhance some adaptive capacities and strategies, without LDCF funding under the current project proposal.

#### **2.7.1.3 The random effectiveness scenario (“coastal perhaps”)**

If the country stands on a situation of low planning capacity, even with a higher availability of funding provided by international donors, the current trends associated with climate change over the coastal areas might not be properly addressed. Availability of funding is not always a synonym of solution and there are many situations where money is not properly spent. The enhancement of planning capacities is crucial to deal with the uncertainty associated to climate change on socio-ecological systems, and especially in coastal areas where so many interlinked factors are related. When low planning capacities are supported by the availability of funding, we have a “random effectiveness scenario” where a strategic vision of coastal areas that “perhaps” adapts positively or “perhaps not”. In The Gambia there are some examples of coastal physical interventions that were done over the last decade, with funding from international donors or from the private sector (tourism) that failed to solve the erosion problems and that not contributed to enhance the adaptive capacities of the country to deal with climate change and sea level rise. Nevertheless, this scenario also represents an evolution from the baseline situation, assuming that other projects will generate alternative funding, even if not supported by adequate planning, but without LDCF funding under the current project proposal.

#### **2.7.1.4 The cost effectiveness scenario (“coastal resilience”)**

The current LDCF project proposal has the ambition to be the most cost effective of the scenarios, in order to promote a trajectory leading to a stronger coastal resilience. The project assumes a high planning capacity as crucial to address the several problems discussed and to implement the actions defined, making an effective and adequate use of the funding solicited to LDCF. The project has three outcomes that mutually reinforce each other, raising the planning capacities from an integrated perspective. The investment in policy and institutional development (Outcome 1) supports the planning of the physical interventions in coastal protection for reducing key vulnerabilities (Outcome 2), also strengthening the livelihoods of coastal communities and their socio-economic activities (Outcome 3). It is also relevant to highlight that the additionality of the project brings the possibility to articulate several other projects (and funding) from a strategic perspective, maximizing the use of the financial resources, promoting cost effectiveness. The project design took into consideration the need to reinforce several dimensions related to planning (e.g. monitoring systems, feasibility studies to be done previously to physical interventions, capacity building actions at several institutional levels, joint actions between departments and ministries, engagement of local communities in site selection, etc.). The funding of the project under LDCF will effectively contribute to coastal resilience of The Gambia, otherwise looming alternative scenarios may emerged.

## **2.8 Expected National and Local Adaptation Benefits**

The primary objective of the project is to reduce the vulnerability of coastal communities to the impact of climate change-induced risks, and to strengthen institutional mechanisms to support these communities to adapt to climate change impacts. 1,500 families will benefit directly from protection measures proposed. The project is the first Gambia specific LDCF adaptation project, innovative in the way that it draws together climate change adaptation and economic development, through introducing a new national programme of “Sea and River Defence Risk Management – SRDRM) that address flood and erosion concerns and that will help manage the impact of climate change. The expected investment level benefit is for the project to reach an additional USD \$15m of sea and river defences (up to 3 newly constructed schemes) that are allied to risk reduction approaches.

The approach taken for the development of this project has also sought to build on linkages with and incorporate climate change considerations into national policies and strategies, which is expected to generate multiple benefits nationally. Each of the outcomes is expected to build on the activities, outputs and outcomes

of the others: for example, the revision of the national policies and strategies (Outcome 1) will be supported by both, the strengthening of the capacity to deliver effective sea and river defence risk management within Gambia through NEA and Ministry of Works and the efficient and effective targeted implementation of sea and river defence engineering works (hard or soft options) (Outcome 2) and to livelihood resilience measures in Outcome 3. By linking the outcomes in this way, the project presents the least costly means of achieving rapid benefits. Furthermore, Outcome 1 will ensure that climate change and adaptation considerations are integrated into relevant national and development plans and policies and are therefore replicated and sustained through the implementation of those policies, which will also contribute to cost-effectiveness of the project.

The project also makes an important contribution by ensuring that climate change concerns are better integrated with activities that support the management and use of globally significant coastal biodiversity resources. If adaptive measures to climate change impacts, including sea level rise, are not supported, then the coastal wetlands and natural habitats making up the Gambian coastal zone are unlikely to realize, in the long term, the full benefits of measures implemented to promote and manage globally important biodiversity resources. In particular, significant (and potentially irreversible) losses are likely to result in sensitive ecosystems. The maintenance of ecosystem stability in light of climate change is therefore a necessary condition for the management of biodiversity in the production landscape, namely fisheries which is one of the main economic sectors for the Gambia.

In promoting measures that set aside ecologically sensitive resources such as mangroves (for example, through the introduction and enforcement of zoning regulations), facilitating improved integrated management of coastal areas (including resources in wetlands) and promoting replication based on the experiences and lessons learned, the project will contribute to the improved management and sustainable use of biological diversity of coastal and marine resources in several pilot sites in the Gambia. The project will generate global environmental benefits by increasing the capacity of Gambia to design and implement sustainable strategies in the biodiversity focal area in the face of changing climatic conditions.

One of the most important impacts of the project will derive from actions that address the vulnerability of groups such as indigenous coastal communities, who are frequently overlooked in many policy interventions. For example, (mention the Oyster Womens' Groups and the TRY project). These types of benefits will be amplified through the project, which focuses on similar issues but in the context of sea and river defence risk management in the Gambia. Getting local communities involved in the maintenance, monitoring and construction of some of the sea and river defence schemes is also pioneering for Gambia. VDCs shall be encouraged to engage community members in such activity as the project progresses. In general, the project seeks to engage 250 Technicians to be trained (50 technical staff drawn from national departments; 200 extension staff drawn from relevant regional agricultural, engineering, planning and fisheries directorates). In addition, through the initiation of 5 demonstrative examples of alternative income generation activities shall be started, with over 1,500 women rice growers and 300 horticulture producers (250 women and 50 youth) planned to benefit from the project.

## **3 Part III - Project Results Framework and Total Budget Work Plan**

## 3.1 Project Results Framework

<p><b>This project will contribute to achieving the following Country Programme Outcome as defined in CPAP or CPD: (from Gambia CPAP 2012-2016)</b></p> <ul style="list-style-type: none"> <li>• Outcome 1. Capacities, institutions strengthened and policies in place for pro-poor and equitable distribution of economic growth, employment, planning and budgeting; incorporating functional donor coordination and National Statistical Systems for effective planning, monitoring, reporting and harmonisation of development.</li> <li>• Outcome 3. Environmental Sustainability and Disaster Risk Reduction systems and services operationalized.</li> </ul>					
<p><b>Country Programme Outcome Indicators: (from CPAP 2012-2016)</b></p> <p>Environment and energy concerns mainstreamed in development policies and plans, DRR and CC adaptation programmes integrated, national development priorities aligned with MEAs (CBD, UNFCCC, UNCDD etc) and national capacities for natural resources management strengthened</p>					
<p><b>Primary applicable Key Environment and Sustainable Development Key Result Area (taken from CPAP 2012-2016):</b></p> <p>3. Promote climate change adaptation (Output 3.2 - Environmental Sustainability and Disaster Risk Reduction systems and services operationalized)</p>					
<p><b>Applicable GEF Strategic Objective and Program:</b> Climate Change - LDCF/SCCF focal area Objective 1 — Reduce vulnerability to the adverse impacts of climate change, including variability, at local, national, regional and global level.</p>					
<p><b>Applicable GEF Expected Outcomes:</b> CCA-1 1.1 and 1.2; CCA-2 2.2, CCA-3 3.1.</p>					
<p><b>Applicable GEF Outcome Indicators:</b></p>					
	Indicator	Baseline	Targets End of Project	Source of verification	Risks and Assumptions
<p><b>Project Objective<sup>2</sup></b></p> <p>To reduce Gambia’s vulnerability to sea-level rise and associated impacts of climate change by improving coastal defences and enhancing adaptive capacities of coastal communities</p>	<p>Number of vulnerable people / communities with enhanced living conditions and sustainable livelihoods.</p>	<p>Zero within government sector, minimal and sporadic in tourist sector.</p> <p>Zero – existing communities affected by negative climate impacts (socio-economic and / or environmental)</p>	<p>Investment level reaches an additional USD \$15m for sea and river defences allied to risk reduction approach.</p> <p>All target communities / wards experience positive improvements and sustainable livelihoods.</p>	<p>Donor and governmental budget reports produced during lifetime of the project.</p> <p>Project documentation (NEA) such as Annual PIRs</p>	<p>Assume that political and country status remains suitable for donor investment.</p> <p>Assume that donor community maintains / increases funding in climate change adaptation.</p> <p>Assume that the government maintains commitment to involved institutions and relevant policy to support coastal resilience at national and local (ward / village) level.</p>

<sup>2</sup> Objective (Atlas output) monitored quarterly ERBM and annually in APR/PIR

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<p><b>Outcome 1<sup>3</sup></b> Policies, institutions and individuals mandated to manage coastal areas strengthened to reduce the risk of climate change.</p>	<p>Climate risk management, sea and river risk management and technical capacity in relevant national and regional institutions.</p> <p>Coastal monitoring procedure undertaken, collated in database and accessible to support decision-making.</p> <p>Number of Sea and River Defence Investment Plans actually financed</p>	<p>Negligible except in NEA and DWR.</p> <p>Very limited monitoring database.</p> <p>None</p>	<p>Capacity to implement climate risk management in national institutions and target regional entities. 250 Technicians trained in total (50 technical staff drawn from national departments; 200 extension staff drawn from relevant regional agricultural, engineering, planning and fisheries directorates)</p> <p>Monitoring data collected and stored in structured and accessible database.</p> <p>Sea and River Defence policy and investment management plans (SRDIMPs); Code of Practice for Sea and River Defence Structures &amp; Coastal Development developed. SRDIMP developed - 1 per each coastal district</p>	<p>Reporting to NEA of risk reduction initiatives.</p> <p>NEA centralised database and monitoring strategy protocol.</p> <p>NEA documents and SRDIMPs plus associated SRD Policy.</p>	<p>Adequate resourcing outside project for risk reduction implementation</p> <p>Limited proven capacity in NEA to collect and effectively store centralised monitoring data.</p> <p>Agreement between national bodies can be found to develop consistent SRD policy.</p>
<p><b>Outcome 2</b> Vulnerability of coastal investments to climate risks reduced through the design, construction and maintenance of coastal protection measures.</p>	<p>Number of hard and soft coastal protection schemes implemented to reduce erosion risks</p> <p>Number of families benefiting from LDCF resources used for design and build structures</p>	<p>No functioning hard or soft protection (or redundant legacy structures) at target sites.</p> <p>Vulnerable communities to climate change in coastal and estuarine areas are becoming in higher risk without</p>	<p>2 Hard and 3 soft protection schemes planned and implemented</p> <p>1,500 families will benefit directly from protection measures</p>	<p>Planning documents (NEA), construction contracts (MoW), post-construction monitoring reports (NEA), visits / consultations at project sites</p> <p><i>(Common sources of verification to the several indicators and interventions)</i></p>	<p>Coastal protection constructor contracting by MoW is clearly defined and robust.</p> <p>Community maintain engagement with protection measures and livelihood interventions.</p>

<sup>3</sup> All outcomes monitored annually in the APR/PIR. It is highly recommended not to have more than 4 outcomes.

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		adaptation measures			
<p><b>Outcome 3</b> 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</p>	<p>Rice and fish production to produce sustainable income for local community.</p> <p>Number of farmers that will receive agricultural extension services and alternative livelihoods</p>	<p>Uneconomic / degraded rice production and no fish ranching production in target communities.</p> <p>No / negligible knowledge on farmers that will receive agricultural extension.</p>	<p>Rice and fish production represent economic sustainable livelihood activity for community members in. 20 wards in the Lower and Central Valleys 1,500 rice growers and 300 horticulture producers diversity income.</p>	<p>Project reports (NEA)</p> <p>Visit to project sites</p> <p>Institutional consultation</p> <p>Community consultation</p> <p><i>(Common sources of verification to the several indicators and interventions)</i></p>	<p>Community maintain traditional agricultural base in rice growing. Fish production can be technically and culturally taken-up by community. Lack of community engagement. Lack of sustainability of activity beyond funding cycle. Delays in implementation</p> <p>Inadequate desire for alternative generating activities by community. Lack of sustainability of activity beyond funding cycle. Aggravation by climate extreme phenomena (e.g. drought, floods) with severe impacts.</p>

Table 3.1 – Project Results Framework



## 3.2 Project Work Plan - Outputs and Activities

OUTCOME 1: POLICIES, INSTITUTIONS AND INDIVIDUALS MANDATED TO MANAGE COASTAL AREAS STRENGTHENED TO REDUCE THE RISKS OF CLIMATE CHANGE.	
Outputs	Activities
1.1 Climate risk management capacity development programme for coastal areas.	1.1a Improve roles, responsibilities, visibility and voice of key sectoral agencies (NEA, MoW and Coastal and Marine Environment Working Group (CMEWG)), in matters of Sea and River Defence Risk Management (SRDRM); 1.1b Improve data sharing and collaboration between local agencies; 1.1c Review of MoWs Organisational Structure and improve technical expertise to assist in the implementation of SRDRM.
1.2 Review and Revision to National and Regional Development Plans.	1.2a Design workable planning “tools” to help deliver sustainable coastal resilience practices in Gambia; 1.2b Preparation of Sea and River Defence Investment Management Plans (SRDIMPs) for specific coastal Districts in Gambia with each defining sets of maintenance targets (aka “Infrastructure Investment Plans”) and to integrate recurrent and capital expenditures 1.2c Prepare “Coastal Development and Environmental Policy Guidelines” to help NEA to deliver SRDRMP as part of existing environmental regulatory frameworks.
1.3 High-level institutional mechanism to guide climate change resilient development of coastal zones.	1.3a Preparation of a “Sea and River Defence” Policy for Gambia to formalise law and regulatory enforcement; 1.3b Institutional reform to improve District and regional coordination for future sea and river defence construction and maintenance 1.3c Integration of SRDRM and the GCCA ICZM Project activities (i.e. data management and research tasks) to help develop SRDIMPs. 1.3d Prepare a Draft Code of Practice for Sea and River Defence Structures & Coastal Development.
1.4 Coastal monitoring protocols and standards programme	1.4a Improving the knowledge database for delivering SRDRM; 1.4b Establish a new Gambia SRDRMP Research and Development Programme; 1.4c Establish standards and protocols for the accurate and meaningful presentation of sea and river defence data; 1.4d Establish SRDRM “performance measure” procedures for projects and engineering interventions.
OUTCOME 2: VULNERABILITY OF COASTAL INVESTMENTS TO CLIMATE RISKS REDUCED	
Outputs	Activities
2.1 Hard coastal protection infrastructure measures are designed, constructed with additional redundancy against sea level rise and climate induced erosion	2.1a Production of “hard engineering” Overview Acceptance Project Sites Report in coordination and cooperation with Competent Authorities. 2.1b Detailed Engineering Report – Tanji Bridge. Clear document to better understand the amount, type, cost of placing material on the foreshore etc); 2.1c Detailed Engineering Report – Kololi Beach. Clear document to better understand the amount, type, cost of placing material to counter coastal erosion (fronting the tourist assets at Kololi Beach). 2.1d Geotechnical, bathymetric and topographical investigation work for each pilot project area (for both Kololi and Tanji Bridge interventions); 2.1e Prepare detailed engineering specifications for each pilot project area (for both Kololi and Tanji Bridge interventions); 2.1f Initiate EIAs and other permitting applications for each pilot project area (for both Kololi and Tanji Bridge interventions).
Output 2.2 Low cost infrastructure to protect up to 1,500 ha of vulnerable rice	2.2a Production of “soft engineering” Overview Acceptance Project Sites Reports in coordination and cooperation with Competent Authorities; 2.2b Detailed Engineering Report – Dasalami wetland management (Salt/fish/rice) scheme. Clear document to better understand the amount, type, cost of

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growing areas	<p>implementation and construction;</p> <p>2.2c Detailed Engineering Report – Tendaba foreshore enhancement (polders). Clear document to better understand the amount, type, cost of placing dredged material within a “polder system” in front of Tendaba village material to counter coastal erosion (fronting eco-resort and the fishing village);</p> <p>2.2d Geotechnical and topographical investigation work at proposed pilot study sites;</p> <p>2.2e Prepare detailed engineering specifications of proposed pilot projects.</p> <p>2.2f Initiate EIAs and other permitting applications for each pilot project area.</p> <p>2.2g Create community involvement plans to aid in local engagement.</p>
2.3 Up to 2500 ha of mangroves forests restored and maintained through mangrove management plans and regeneration to withstand climate-induced pressures in coastal areas	<p>2.3a Study to assess mangrove “die-back”</p> <p>2.3b Strategic implementation plan for mangrove planting at Bintang, Kamaloo and Fajikunda (monitoring and implementation plan based on findings of Activity 2.3a);</p> <p>2.3c Planting of mangrove seedlings,</p> <p>2.3d Monitoring of project performance.</p> <p>2.3e Preparation of National Mangrove Management Plan.</p>
<b>OUTCOME 3: RURAL LIVELIHOODS IN THE COASTAL ZONE ENHANCED AND PROTECTED FROM THE IMPACTS OF CLIMATE CHANGE</b>	
<b>Outputs</b>	<b>Activities</b>
3.1 Supporting agricultural development in vulnerable saline areas	<p>3.1a Pilot saline agriculture and desalination pilot plots will be trailed in 5 wards and effectiveness assessed;</p> <p>3.1b Small grants mechanism established to replicate community-based measures in vulnerable saline areas;</p> <p>3.1c Review small-grants community approaches and identify key lessons with wide applicability to fringing rice growing communities;</p>
3.2 Supporting fishing communities in wetland community areas	<p>3.2a Feasibility study on environmental sustainability and potential for income generation of wetland fishing activities;</p> <p>3.2b Directed small grants mechanism established to replicate fishing community-based measures in wetland areas;</p> <p>3.2c Sustainable community-based fisheries protocol produced as protein / income supplemental community activity;</p>
3.3 Alternative livelihood implementation and feasibility assessment	<p>3.3a Literature and project review of alternative livelihood options and community engagement to screen possibilities;</p> <p>3.3b Alternative livelihoods of at least 5 different types (e.g. bee keeping, tree nursery) developed and trialed and assessed for viability and appropriateness in at least 15 wards;</p> <p>3.3c A “good practise guide” produced (in English and local languages) of approaches which realise a secure income and post-project sustainability.</p>
3.4 Dissemination of practical livelihood diversification approaches for The Gambia.	<p>3.4a Community engagement and resilience programmes for each coastal / estuary District;</p> <p>3.4b Education and awareness training programmes on coastal resilience, intervention options (e.g. polder design) and participatory wetland management programmes approaches;</p> <p>3.4c Sustainable halophytic rice techniques, community fisheries protocol and good practise alternative livelihoods used to support “Climate Resilient Village Networks” in at least 30 wards from all coastal Districts;</p> <p>3.4d Establish a Community Flood Management Committee’s – CFMC’s (to mirror the existing District Disaster Management Committees) at the regional level that promotes cooperation, engagement and ownership on flood management issues and provides a go-between national and local organisations.</p> <p>3.4e Cost benefit analysis of the adaptation options supported under the Outcomes 2 and 3 to inform future policy revision and decision making processes.</p>

**Table 3.2 – Proposed Project Outputs and Activities**

### 3.3 Project Total Budget Work Plan

Award ID / Project ID	4724
Business Unit:	
Project Title:	Enhancing Resilience of Vulnerable Coastal areas and Communities to Climate Change
PIMS no.	
Implementing Partner (Executing Entity)	Implementing Partner = National Environment Agency; Executing Agency = Office of the President

GEF Outcome/ Atlas Activity	Implementing Modality	Source of Funds	ERP/ ATLAS	Budget Description	TOTAL	Amount Year 1 (USD)	Amount Year 2 (USD)	Amount Year 3 (USD)	Amount Year 4 (USD)
Outcome 1 – Policies, institutions and individuals mandated to manage coastal areas strengthened to reduce the risks of climate change.	UNDP/NIM	LDCF 62160	71300	Local Consultants (a)	92,400	9,240	23,100	32,340	27,720
	UNDP/NIM		71650	Local Travel (b )	80,000	8,000	20,000	28,000	24,000
	UNDP/NIM		71200	Int. Consultants (c)	289,600	28,960	72,400	101,360	86,880
	UNDP/NIM		71600	Inter. Travel (d)	10,000	1,000	2,500	3,500	3,000
	UNDP/NIM		72100	Contract. Servs (e )	332,400	33,240	83,100	116,340	99,720
	UNDP/NIM		72500	Office Supplies (f)	10,000	1,000	2,500	3,500	3,000
	UNDP/NIM		72200	Project Equipment (g)	60,000	6,000	15,000	21,000	18,000
	UNDP/NIM		74500	Miscellaneous / contingency (h)	21,500	2,150	5,375	7,525	6,450
<b>LDCF Subtotal</b>					<b>895,900</b>	<b>89,590</b>	<b>223,975</b>	<b>313,565</b>	<b>268,770</b>
	UNDP/NIM	UNDP 0400	71300	Local Consultants (a)	60,000	20,000	10,000	20,000	10,000
	UNDP/NIM		71600	Int. Travel (d)	40,000	10,000	10,000	10,000	10,000
			72200	Project Equipment (g)	50,000	30,000	10,000	10,000	
<b>UNDP Subtotal</b>					<b>150,000</b>	<b>60,000</b>	<b>30,000</b>	<b>40,000</b>	<b>20,000</b>
<b>GRAND TOTAL</b>					<b>1,045,900*</b>	<b>149,590</b>	<b>253,975</b>	<b>353,565</b>	<b>288,770</b>

GEF Outcome/ Atlas Activity	Implementing Modality	Source of Funds	ERP/ ATLAS	Budget Description	TOTAL	Amount Year 1 (USD)	Amount Year 2 (USD)	Amount Year 3 (USD)	Amount Year 4 (USD)
Outcome 2 – Vulnerability of coastal investments to climate risks reduced through the design, construction and maintenance of coastal protection measures.	UNDP/NIM	LDCF 62160	71300	Local Consultants (a)	87,200	8,720	17,440	43,600	17,440
	UNDP/NIM		71650	Local Travel (b )	50,000	5,000	10,000	25,000	10,000
	UNDP/NIM		71200	Int. Consultants (c)	296,800	29,680	59,360	148,400	59,360

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	UNDP/NIM		71600	Inter. Travel (d)	5,000	500	1,000	2,500	1,000
	UNDP/NIM		72100	Contract. Servs (e )	4,916,900	491,690	983,380	2,458,450	983,380
	UNDP/NIM		72500	Office Supplies (f)	25,000	2,500	5,000	12,500	5,000
	UNDP/NIM		72200	Project Equipment (g)	27,710	2,771	5,542	13,855	5,542
	UNDP/NIM		74500	Miscellaneous / contingency (h)	491,690	49,169	98,338	245,845	98,338
	<b>Subtotal LDCF</b>				<b>5,900,300</b>	<b>590,030</b>	<b>1,180,060</b>	<b>2,950,150</b>	<b>1,180,060</b>
		UNDP	72200	Project Equipment (g)	40,000	10,000	10,000	10,000	10,000
		0400	71650	Local travel (b)	50,000	10,000	20,000	10,000	10,000
			72100	Contract. Servs (e )	30,000		15,000	15,000	
			71300	Local consults (a)	30,000	15,000		15,000	
	<b>Subtotal UNDP</b>				<b>150,000</b>	<b>35,000</b>	<b>45,000</b>	<b>50,000</b>	<b>20,000</b>
	<b>GRAND TOTAL</b>				<b>6,150,300*</b>	<b>625,030</b>	<b>1,225,060</b>	<b>3,000,150</b>	<b>1,200,060</b>

GEF Outcome/ Atlas Activity	Implementing Modality	Source of Funds	ERP/ ATLAS	Budget Description	TOTAL	Amount Year 1 (USD)	Amount Year 2 (USD)	Amount Year 3 (USD)	Amount Year 4 (USD)
<b>Outcome 3</b> - 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	UNDP/NIM	LDCF 62160	71300	Local Consultants (a)	624,400	62,440	156,100	218,540	187,320
	UNDP/NIM		71650	Local Travel (b )	300,000	30,000	75,000	105,000	90,000
	UNDP/NIM		71200	Int. Consultants (c)	163,600	16,360	40,900	57,260	49,080
	UNDP/NIM		71600	Inter. Travel (d)	80,000	8,000	20,000	28,000	24,000
	UNDP/NIM		72100	Contract. Servs (e )	1,192,400	119,240	298,100	417,340	357,720
	UNDP/NIM		72500	Office Supplies (f)	12,000	1,200	3,000	4,200	3,600
	UNDP/NIM		72200	Project Equipment (g)	270,000	27,000	67,500	94,500	81,000
	UNDP/NIM		74500	Miscellaneous / contingency (h)	61,400	6,140	15,350	21,490	18,420
	<b>Sub Total LDCF</b>				<b>2,703,800</b>	<b>270,380</b>	<b>675,950</b>	<b>946,330</b>	<b>811,140</b>
		UNDP		Contract. Servs (e )	250,000	50,000	50,000	70,000	80,000
		0400		Office Supplies (f)	20,000	5,000	5,000	5,000	5,000
				Miscellaneous/ Contingency (h)	30,000	5,000	5,000	10,000	10,000
	<b>Sub Total UNDP</b>				<b>300,000</b>	<b>60,000</b>	<b>60,000</b>	<b>85,000</b>	<b>95,000</b>
	<b>GRAND TOTAL</b>				<b>3,003,800*</b>	<b>330,380</b>	<b>735,950</b>	<b>1,031,330</b>	<b>906,140</b>

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GEF Outcome/ Atlas Activity	Responsible Party	Source of Funds	ERP/ ATLAS	Budget Description	TOTAL	Amount Year 1 (USD)	Amount Year 2 (USD)	Amount Year 3 (USD)	Amount Year 4 (USD)	
Project Management	UNDP/NIM	LDCF 62160	71405	Local Consultants (a)	249000	24900	54800	109600	59800	
	UNDP/NIM		71650	Local Travel (b )	35000	3500	7700	15400	8400	
	UNDP/NIM		71600	Int. Consultants (c)	25000	2500	5500	11000	6000	
	UNDP/NIM		72100	Inter. Travel (d)	60000	6000	13200	26400	14400	
	UNDP/NIM		72500	Contract. Servs (e )	15000	1500	3300	6600	3600	
	UNDP/NIM		72200	Office Supplies (f)	2000	200	640	280	880	
	UNDP/NIM		74500	Project Equipment (g)	14000	2,900	3,360	4,220	3,420	
	<b>Sub Total LDCF</b>					400,000	40,000	Miscellaneous / contingency (h)	176,000	96,000
	UNDP /NIM	UNDP 0400	71405	Contract. Indivi (a and c)	300,000	75,000	75,000	75,000	75,000	
	UNDP /NIM		72200	Project Equipment (g)	90,000	25,000	25,000	20,000	20,000	
UNDP /NIM			DPS (Direct Project Services) (i)	10,000	2,500	2,500	2,500	2,500		
<b>Sub Total UNDP</b>					400,000	102,500	102,500	97,500	97,500	
<b>Grand Total</b>					800,000	142,500	190,500	273,500	193,500	
<b>GRAND TOTAL LDCF Project (ProDoc) (*)</b>					8,900,000 (j)	890,000	1,967,985	3,886,045	2,155,970	
<b>GRAND TOTAL UNDP (**)</b>					1,000,000 (k)	257,500	237,500	272,500	232,500	
<b>GRAND TOTAL TOTAL (* + **)</b>					9,900,000	990,000	2,189,107	4,322,679	2,398,214	

Table 3.3 – Proposed Project WorkPlan and Budget - (note: budget breakdown for each Output and Activity is provided in Appendix G and the table below (where possible)).

Budget Note	Supporting Notes
a	Local Consultants - (see breakdown in Section 3.4 below for monthly rates and calculated inputs per local expert for each Outcome)
b	Local Travel estimated based on fuel/car/transport costs for local and international staff within The Gambia (estimates per outcome using current local transport costs (2013)).

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c	Int. Consultants - (see breakdown in Section 3.4 below for monthly rates and calculated inputs per international expert for each Outcome)
d	Inter. Travel estimated based on airline transport costs for local and international staff to travel wither to Gambia or from Gambia on project business (economy class fares only) based on 2013 airfare rates (average USD1000/air fare).
e	Contract. Services as clearly defined and outlines in Appendices B and G (survey/engineering design and construction etc). Including services for staff training on engineering monitoring and design (etc) equipment; Expert studies to advisory support group and Expert studies on mangrove die back etc
f	Office Supplies - estimate for office equipment as required (Banjul and in local offices).
g	Project Equipment - Printing of awareness raising and training tools, Project Vehicles (eg: USD5000/motorcycle)
h	Miscellaneous / contingency - (1) Contingency is higher than other Outcomes as this represents international best practice with respect to engineering bill of quantity estimations. Full time Secretary at USD10,000/year if required. Vehicle for Project Manager, maintenance of vehicles + fuel; production of communication material etc
i	DPS - \$ 10,000 - Direct Project Services (such as procurement of goods and services, permanent project staff and consultants' recruitment and other human resources management services) based on UNDP's Universal Price List.
j	the discrepancies compared to the LDCF funding as identified in the PIF are 15% or less by Outcome. The small budget deviations compared to the PIF were discussed and a consensus agreed at the final stakeholder consultation (December 2012) – further details of this minor re-profiling of budget discussion can be found in Appendix O.
k	the detailed dispersion of the UNDP co-financing amount across Activities within the three Outcomes is provided in Appendix G “.Component Outcomes, Activities and budget”

### 3.4 Consultancy Services

The following Table demonstrates the division between Local (Gambian) and International Consultant technical support services that are costed for in Section 3.3 above.

<b>INTERNATIONAL CONSULTANTS</b>	<b>MONTHLY RATE (US\$)</b>	<b>PROPOSED BUDGET (US\$)</b>	<b>OUTCOME 1</b>	<b>OUTCOME 2)</b>	<b>OUTCOME 3</b>
<i>Climate change Adaptation Expert (18mm)</i>	13,000	234,000	93,600 (40%)	46,800 (20%)	93,600 (40%)
<i>Sea and River Defence Expert (12mm)</i>	15,000	180,000	18,000 (10%)	162,000 (90%)	0
<i>Coastal Zone Planner/land Use Zoning Expert (18mm);</i>	15,000	180,000	126,000 (70%)	36,000 (20%)	18,000 (10%)
<i>Monitoring and Evaluation Expert (12mm);</i>	13,000	156,000	52,000 (33.3%)	52,000 (33.3%)	52,000 (33.3%)
<b>TOTALS</b>		<b>750,000</b>	<b>289,600</b>	<b>296,800</b>	<b>163,600</b>

<b>LOCAL CONSULTANTS</b>	<b>MONTHLY RATE (US\$)</b>	<b>PROPOSED BUDGET</b>	<b>OUTCOME 1</b>	<b>OUTCOME 2)</b>	<b>OUTCOME 3</b>
<i>Climate Resilient Livelihood Expert (12mm)</i>	6500	78000	15,600 (20%)	31,200 (40%)	31,200 (40%)
<i>Agriculture/Aquaculture Advisor (8mm)</i>	6500	52000	5,200 (10%)	20,800 (40%)	26,000 (50%)
<i>Policy and Institutional Expert (8mm)</i>	6500	52,000	36,400 (70%)	0	15,600 (30%)
<i>Communication &amp; Gender Specialist (8mm)</i>	6500	52,000	5,200 (10%)	5,200 (10%)	41,600 (80%)
<i>National Community Liaison Advisors (Gambian nationals) – 18 months</i>	5000	90,000	30,000 (33.3%)	30,000 (33.3%)	30,000 (33.3%)
<i>Regional Community Liaison Advisors (x4; Kotu&amp; Tanji; Bintang; Dar Salami; Tendaba) 24 months each.</i>	5000	480,000	0	0	480,000 (100%)
<b>TOTALS</b>		<b>804,000</b>	<b>92,400</b>	<b>87,200</b>	<b>624,400</b>

**Table 3.4 – Proposed Consultant Inputs (international and local)**

## 4 PART IV – Management Arrangements

### 4.1 Overview

Implementation, execution and coordination of the Project will be carried out as described below. In brief, several activities are envisaged including the establishment of a National Project Steering Committee (similar in structure and composition to the existing Gambia Coastal and Marine Environment Unit), chaired by the NEA. This is to be supplemented with the establishment of a smaller Project Coordination Unit (which includes the appointment of a Project Coordinator, procurement of additional equipment and other requirements. TORs for personnel needed to support these arrangements (to be recruited) are presented in Appendix J.

### 4.2 Implementing Partner

The Project will be implemented by the National Environmental Agency (NEA). The NEA through the implementation of several national executed projects has adequate capacity to manage this LDCF project, the NEA has successfully utilised the Harmonised Cash Transfer (HACT) system in previous projects. The NEA will provide overall leadership for the project in close collaboration with the Department of Water Resources (DWR), the Ministry of Works (MoW), the Department of Agriculture and the Department of Fisheries. The Project Management Unit (PMU) will be located within the NEA (see Figure 4.1).

Confirmation of the ability for NEA to undertake this role is clearly advocated in Appendix L. An independent audit firm commissioned by the UNDP to carry out an assessment for the period 2006 -2011 has confirmed the Agency's capacity to operate the HACT system. According to the study the overall rating of the Agency's financial management systems was categorised as **Low Risk** which means that the financial management systems and procedures of the Agency adequately satisfy UN- HACT Requirements on Financial Management Capacity of Implementing Partners.

Currently in Gambia, co-ordination of the management of the coast and marine environment resides within the NEA (the responsibility of the Coastal and Marine Environment Working Group (CMEWG) which is within the Directorate of Inter-Sectoral Services Network provided for by the National Environment Management Act 1994). The CMEWG has a membership drawn from all the key stakeholders operating in the coastal and marine zone. Current levels of expertise and manpower within the CMEWG will need to be augmented to meet the new challenges. To this end, the NEA are taking proactive steps to address this situation and are in the process of recruiting a coastal engineer which should significantly boost the expertise in engineering and other sea defence activities (see Appendix I). This CMEWG is also proposed to be staffed by two professionals (a Senior Programme Officer (SPO) and a Programme Officer (PO)); and a technical support staff of two. The NEA is also an appropriate Implementing Partner for this project as it is also lead agency for the EU support project to The Gambia on "Integrated Coastal Zone Management and the Mainstreaming of Climate Change" which provides an important entry point for the LDCF/GEF Project, specifically on building capacities, strengthening policies, institutions, etc and implementing proposed intervention measures (which may include additional baseline modelling studies to help inform the engineering design process/details for the intervention measures proposed in Component 2).

Finally, on the financial management capacity, an independent assessment of the NEA (commissioned by UNDP Office in 2012) was undertaken entitled "Micro-assessment Report on Implementing Partners – April 2012 - by Augustus Prom Chartered Certified Accountants and Management Consultants). The report has found the management systems in place to be adequate for the HACT Requirements on Financial Management Capacity of Implementing Partners. Details on the HACT are presented in Appendix L.

### 4.3 Executing Arrangements

The Project implementing agency NEA will have full responsibility under the NIM arrangements to ensure accountability, transparency, timely implementation, management and achievement of results. It will be assisted in this role by the UNDP. The Agency will work closely with the other government agencies – such as the Ministry of Works, Departments of Agriculture, Fisheries etc during implementation of the project. A Project board shall be established to provide guidance and support for the smooth implementation of the project with membership drawn from the key stakeholder institutions namely NEA, Ministries of Forestry



and Environment, Agriculture, Water Resources and Works, Gambia Tourism Board, private sector representatives and UNDP. The role and responsibilities of the Board are spelt out below.

The Executive Director of NEA will serve as the Project Director (PD). The PD will ensure a continued cohesion between the project and the mandate of the NEA and provide additional linkages and interactions with high level policy components within the Government. In this way, the NEA – the lead agency will be in a good position to assume responsibility, on behalf of the GOTG and follow up on, supervise and coordinate the contributions of the GOTG.

The day- to- day management of the project shall be entrusted to the Project Management Unit which will be accountable to the Board for the performance of the project. The Unit will be manned by a fulltime staff complement comprising a Project Manager, Finance Manager, Database Manager, Office Executive and Office Assistant.

The Project Management Unit will be supported by the Project Implementation Support Team (PIST) comprising experts (both national and international) who will be contracted to perform specific tasks as required by the project. The details of the personnel required as well as the terms of reference for such personnel are set out in Appendix J.

Overall responsibility for Project Implementation will rest with the PMU whilst individual site intervention will be supported by the relevant government technical agencies such as MoW in the case of coastal engineering and Ministry of Agriculture in the case rice production and the Department of Fisheries in the case of aquaculture development. The representatives of these technical agencies shall form the Project Support Team (PST) in order to provide technical advice and guidance to the PMU. The PST shall also include traditional rulers as representatives of local communities.

Locally established project “delivery” groups (possibly smaller representations of the existing Village Development Committees– VDCs or possibly linked to divisional disaster management offices that are already established) shall be considered for establishment in the North Bank Division, Western Division and Lower-River Division. The VDCs shall be required to set up Community Flood Management Committees (CFMC) to help coordinate activities during flood events.

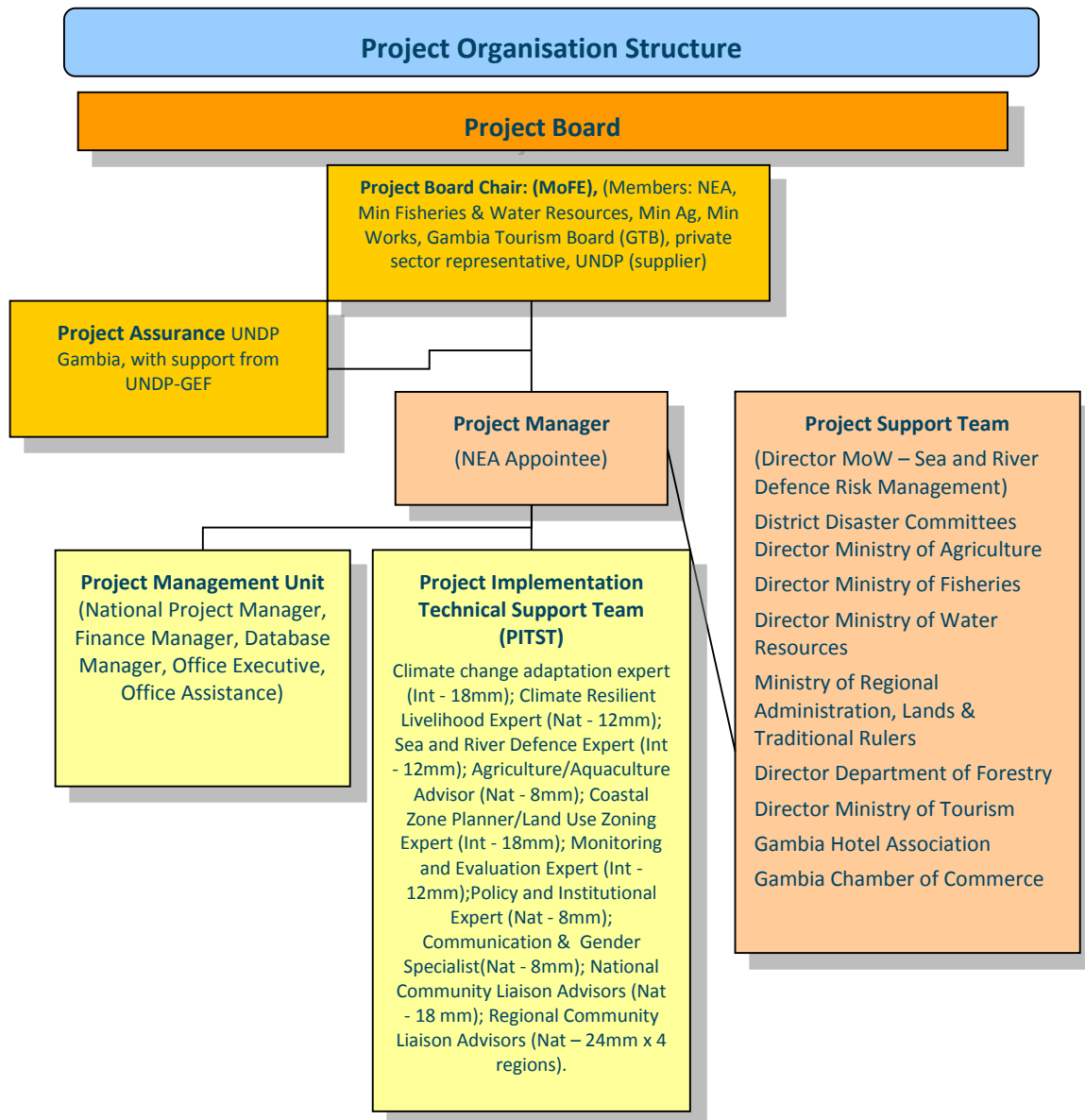


Figure 4.1 Stakeholder Roles (see Section 3.4 for detailed breakdown of team members)

## 4.4 Project Board

**NB:** In the Gambia the term currently in use is “steering committee” which is already in use with the UNEP Early Warning Project. In order to differentiate from the two projects, the term “Project Board” is now used, though membership may prove to be similar between the two projects (to be determined by the Implementing Partner).

### 4.4.1 Role of the Project Board

The Project Board is the group responsible for making by consensus management decisions for a project when guidance is required by the Project Manager, including recommendation for UNDP/Implementing Partner approval of project plans and revisions. In order to ensure UNDP’s ultimate accountability, Project Board decisions should be made in accordance to standards that shall ensure best value to money, fairness, integrity transparency and effective international competition. In case a consensus cannot be reached, final decision shall rest with the UNDP Programme Manager (Country Director). Project reviews by this group are made at designated decision points during the running of a project, or as necessary when raised by the Project Manager. This group is consulted by the Project Manager for decisions when project management tolerances (normally in terms of time and budget) have been exceeded.

The Project Board approves project annual work plan (AWP), and authorizes any major deviation from the agreed work plan. It ensures that required resources are committed and arbitrates on any conflicts within the project or

negotiates a solution to any problems between the project and external bodies. In addition, it approves the appointment and responsibilities of the Project Manager and any delegation of its Project Assurance responsibilities.

#### **Specific Roles**

1. The Board shall set strategic direction, reinforce government leadership of the program and coordinates all interventions
2. Provide guidance and agree on possible countermeasures/management actions to address specific risks;
3. Agree on Project Manager's tolerances in the Annual Work Plan and quarterly plans when required;
4. Conduct regular meetings to review the Project Progress and provide direction and recommendations to ensure that the agreed deliverables are produced satisfactorily according to the approved Annual Work Plan;
5. Provide ad-hoc direction and advice for exception situations when project manager's tolerances are exceeded;
6. Review and approve all activities that are supported by the program based on the program objectives, work plan and availability of funding
7. Provide technical advice to create synergy and uniformity between program supported activities and policy
8. Guide and support program delivery at sectoral level
9. Provide support in resource mobilization to support program funding gaps
10. Monitoring and evaluation of program activities through periodic meetings and occasional site visits
11. Receive reports on all activities supported by the program to serve as an additional basis to assess and monitor the program performance and delivery

Details of the Project Boards composition and its membership are included within Appendix J.

#### **4.4.2 Terms of Reference for Key Project Staff**

Specific Terms of Reference for the National Project Director, the Project Manager, Project Support are clearly set out in Appendix J.

## **4.5 Project Support Team**

### **4.5.1 District Disaster Committees (Community Flood Risk Committees)**

The Village Disaster Committees shall be used during the project to consider community flood risk issues. Details of the establishment of the Regional Disaster Management Committees (which identify membership and names of Village Disaster Coordinators) are clearly set up already within the National Disaster Management Act (2008). That legislation shall apply to the creation of supporting "Community Flood Risk Committees".

### **4.5.2 Contractors**

The implementation of the components of the project will be supported by contractors, selected according to UNDP procurement rules. The Government Implementing Partner may contract other entities, defined as Responsible Parties, to undertake specific project tasks through a process of competitive bidding. However, if the Responsible Party is another government institution, Inter Governmental Organisation or a United Nations agency, competitive bidding will not be necessary and direct contracting will be applied. Confirmation of direct contracting will need to comply with criteria, such as comparative advantage, timing, budgeting and quality. If direct contracting criteria cannot be met the activity will be open to competitive bidding.

## **4.6 Audit Arrangements**

Audits will be conducted in accordance with the UNDP NIM Audit policies and procedures, and based on UN Harmonized Approach to Cash Transfer (HACT) policy framework. Annual audit of the financial statements relating to the status of UNDP (including GEF) funds will be undertaken according to the established procedures set out in the Programming and Finance manuals. The Audit will be conducted by a special and certified audit firm. UNDP will be responsible for making audit arrangements for the project in communication with the Project Implementing Partner. UNDP and the project Implementing Partner will provide audit management responses and the Project Manager and project support team (PSU) will address audit recommendations. As a part of its oversight function, UNDP will conduct audit spot checks at least two times a year.

## 4.7 Intellectual Property Rights

These will be retained by the employing organization of the personnel who develops intellectual products, either Government or UN/UNDP in accordance with respectively national and UN/UNDP policies and procedures.

## 4.8 Communications and Visibility Requirements

The Project shall comply fully with UNDP's Branding Guidelines as well as GEF's Communication and Visibility Guidelines (the "GEF Guidelines") which are accessible at the relevant websites. Where other agencies and project partners have provided support through co-financing, their branding policies and requirements shall similarly apply.

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

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

[http://www.thegef.org/gef/sites/thegef.org/files/documents/C.40.08\\_Branding\\_the\\_GEF%20final\\_0.pdf](http://www.thegef.org/gef/sites/thegef.org/files/documents/C.40.08_Branding_the_GEF%20final_0.pdf). Amongst other things, the GEF Guidelines describe when and how the GEF logo needs to be used in project publications, vehicles, supplies and other project equipment. The GEF Guidelines also describe other GEF promotional requirements regarding press releases, press conferences, press visits, visits by Government officials, productions and other promotional items.

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

# 5 Part V – Monitoring and Evaluation Framework

## 5.1 Project Inception (Project Start)

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

- Assist all partners to fully understand and take ownership of the project. Detail the roles, support services and complementary responsibilities of UNDP staff vis à vis the project team. Discuss the roles, functions, and responsibilities within the project's decision-making structures, including reporting and communication lines, and conflict resolution mechanisms. The Terms of Reference for project staff will be discussed again as needed (see Appendix J).
- Finalize the first annual work plan based on the project results framework and the Tracking Tool if appropriate (see Appendix M). Review and agree on the indicators, targets and their means of verification, and recheck assumptions and risks.
- Provide a detailed overview of reporting, monitoring and evaluation (M&E) requirements. The Monitoring and Evaluation work plan and budget should be agreed and scheduled.
- Discuss financial reporting procedures and obligations, and arrangements for annual audit.
- Establish an agreed Project Communication Strategy.
- Plan and schedule Project Board meetings. Roles and responsibilities of all project organisation structures should be clarified and meetings planned. The first Project Board meeting should be held within the first 12 months following the inception workshop.

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

## 5.2 Quarterly

Progress made shall be monitored in the UNDP Enhanced Results Based Management Platform. Based on the initial risk analysis submitted, the risk log shall be regularly updated in ATLAS for UNDP and similar systems for UN. Risks become critical when the impact and probability are high. Note that for UNDP GEF projects, all financial risks associated with financial instruments such as revolving funds, microfinance schemes, or capitalization of ESCOs are automatically classified as critical on the basis of their innovative nature (high impact and uncertainty due to no previous experience justifies classification as critical). Based on the information recorded in ATLAS, Project Progress Reports (PPR) can be generated in the Executive Snapshot. Other ATLAS logs can be used to monitor issues, lessons learned etc. The use of these functions is a key indicator in the UNDP Executive Balanced Scorecard.

## 5.3 Annually

The Annual Project Review/Project Implementation Reports (APR/PIR) is prepared to monitor progress made since project start and in particular for the previous reporting period. UNDP will lead on the PIR. The APR/PIR includes, but is not limited to, reporting on the following:

- Progress made toward project objective and project outcomes - each with indicators, baseline data and end-of-project targets (cumulative);
- Project outputs delivered per project outcome (annual);
- Lesson learned/good practice;
- AWP and other expenditure reports;

- Risk and adaptive management;
- ATLAS QPR;
- Portfolio level indicators (i.e. GEF focal area tracking tools) are used by most focal areas on an annual basis as well.

The CCA-Project Tracking Tool (AMAT) is presented in Appendix M.

## 5.4 Periodic Monitoring through site visits

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

## 5.5 Mid-term of Project Cycle

The project will undergo an independent Mid-Term Evaluation at the mid-point of project implementation. The Mid-Term Evaluation will determine progress being made toward the achievement of outcomes and will identify course correction if needed. It will focus on the effectiveness, efficiency and timeliness of project implementation; will highlight issues requiring decisions and actions; and will present initial lessons learned about project design, implementation and management. Findings of this review will be incorporated as recommendations for enhanced implementation during the final half of the project's term. The organization, terms of reference and timing of the mid-term evaluation will be decided after consultation between the parties to the project document. The Terms of Reference for this Mid-term evaluation will be prepared by UNDP. The management response and the evaluation will be uploaded to UNDP corporate systems, in particular the UNDP Evaluation Office Evaluation Resource Center (ERC). The relevant SOF (GEF) Focal Area Tracking Tools will also be completed during the mid-term evaluation cycle.

## 5.6 End of Project

An independent Final Evaluation will take place three months prior to the final Project Board meeting and will be undertaken in accordance with UNDP-GEF guidance. The final evaluation will focus on the delivery of the project's results as initially planned (and as corrected after the mid-term evaluation, if any such correction took place). The final evaluation will look at impact and sustainability of results, including the contribution to capacity development and the achievement of global environmental benefits/goals. The Terms of Reference for this evaluation will be prepared by UNDP based on guidance from the Regional Coordinating Unit and UNDP-EEG.

The Terminal Evaluation should also provide recommendations for follow-up activities and requires a management response, which should be uploaded to PIMS and to the UNDP Evaluation Office Evaluation Resource Center (ERC). The relevant Tracking Tools will also be completed during the final evaluation.

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

## 5.7 Learning and knowledge sharing

Results from the project will be disseminated within and beyond the project intervention (pilot) locations through existing information sharing networks and forums. The project will use the pilot projects to demonstrate better sea and river defence risk management and livelihood security measures within the identified wetlands and open coast systems at the selected sites in Gambia by altering/adapting the agricultural / land use practices with a view to possible replication elsewhere in the country as well as informing national development plans and policies. This will include generating evidence on the cost-effectiveness of adaptation options to make the case for policy and budgetary adjustment. The project is designed to complement other ongoing and planned projects and programmes without duplicating them.

The project will identify and participate, as relevant and appropriate, in scientific, policy-based and/or any other networks, which may be of benefit to project implementation though lessons learned. The project will identify,

analyze, and share lessons learned that might be beneficial in the design and implementation of similar future projects. Finally, there will be a two-way flow of information between this project and other projects of a similar focus (e.g.: current on-going Adaptation Fund (AF) project in Senegal and LDCF project in Liberia).

## 5.8 M&E Work Plan and Budget

Type of M&E	Responsible Parties	Budget US\$ <i>Excluding project team staff time</i>	Time frame activity
Inception Workshop and Report	Project Manager UNDP, UNDP CO	Indicative cost: 50,000	Within first two months of project start up – report within 1 month of the Workshop
Measurement of Means of Verification of project results.	UNDP RTA/Project Manager will oversee the hiring of specific studies and institutions, and delegate responsibilities to relevant team members.	To be finalized in Inception Phase and Workshop.	Start, mid and end of project (during evaluation cycle) and annually when required.
ARR/PIR	Project manager and team UNEP UNDP (UNDP CO, RTA, EEG)	None	Annually
Periodic status/ progress reports	Project manager and team	5,000	Quarterly
Mid-term Evaluation	Project manager and team UNDP External Consultants (i.e. evaluation team)	Indicative cost: 25,000	At the mid-point of project implementation.
Final Evaluation	Project manager and team UNDP External Consultants (i.e. evaluation team)	Indicative cost: 30,000	At least three months before the end of project implementation
Project Terminal Report	Project manager and team UNDP	None	At least three months before the end of the project
Audit	UNDP (UNDPO CO) Project manager and team	Indicative cost per year: 4,000	Yearly
Visits to field sites	UNDP and GoG representatives	UNDP to agree operational budgets with co-partners within GoG.	Yearly
<b>TOTAL indicative COST</b> Excluding project team staff time and UNDP staff and travel expenses		US\$114,000	

## 6 Part VI – Legal Context

This Project Document shall be the instrument referred to as such in Article I of the Standard Basic Assistance Agreement between the Government of Gambia and the United Nations Development Programme, signed by the parties on February 2nd, 1977. The host country implementing agency shall, for the purpose of the Standard Basic Assistance Agreement, refer to the government co-operating agency described in that Agreement.

UNDP Gambia is playing a key role on overall donor – government coordination through its Aid Harmonization Coordination Unit and its lead role in the Development Partners Coordination Group (DPCG). At the national scale, UNDP draws its interventions from the UNDAF (UN Development Assistance Framework) and the UNDP Common Cooperation Framework (CCF). Both documents support and feed into the EDPRS, which is the guiding development strategy at country level. The CCF specifically includes environment as a cross-cutting issue.

The UNDP Gambia Country Director is authorized to effect in writing the following types of revision to this Project Document, and is assured that the other signatories to the Project Document have no objection to the proposed changes:

- Revision of, or addition to, any of the annexes to the Project Document;
- Revisions which do not involve significant changes in the immediate objectives, outputs or activities of the project, but are caused by the rearrangement of the inputs already agreed to or by cost increases due to inflation;
- Mandatory annual revisions which re-phase the delivery of agreed project inputs or increased expert or other costs due to inflation or take into account agency expenditure flexibility; and
- Inclusion of additional annexes and attachments only as set out here in this Project Document.

The Implementing Partner (NEA) shall:

- put in place an appropriate security plan and maintain the security plan, taking into account the security situation in the country where the project is being carried;
- assume all risks and liabilities related to the implementing partner's security, and the full implementation of the security plan.

UNDP reserves the right to verify whether such a plan is in place, and to suggest modifications to the plan when necessary. Failure to maintain and implement an appropriate security plan as required hereunder shall be deemed a breach of this agreement.

The Implementing Partner (NEA) agrees to undertake all reasonable efforts to ensure that none of the UNDP funds received pursuant to the Project Document are used to provide support to individuals or entities associated with terrorism and that the recipients of any amounts provided by UNDP hereunder do not appear on the list maintained by the Security Council Committee established pursuant to resolution 1267 (1999). The list can be accessed via <http://www.un.org/Docs/sc/committees/1267/1267ListEng.htm>. This provision must be included in all sub-contracts or sub-agreements entered into under this Project Document.

Any Special Clauses associated with this Project are identified in Appendix N.



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The following references are either cited within the body of this Prodoc, the supporting appendices or have been used to gather background knowledge or supplementary references that have been used.

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**SIGNATURE PAGE**

**Country:** \_\_\_\_\_

**UNDAF Outcome (s)/Indicator (s):** *Link to UNDAF Outcome. If no UNDAF leave blank.*

**CPAP Outcome (s)/Indicator (s):**

**CPAP Output (s)/Indicator (s):**

Executing Entity/Implementing Partner  
Implementing entity/Responsible Partner

Programme Period: _____	Total resources required _____
Atlas Award ID: _____	Total allocated resources: _____
Project ID: _____	• Regular _____
PIMS # _____	• Other: _____
Start date: _____	○ GEF _____
End Date _____	○ Government _____
Management Arrangements _____	○ In-kind _____
PAC Meeting Date _____	○ Other _____
	In-kind contributions _____

**Agreed by (Government):**

\_\_\_\_\_  
NAME SIGNATURE Date/Month/Year

**Agreed by (Executing Entity/Implementing Partner):**

\_\_\_\_\_  
NAME SIGNATURE Date/Month/Year

**Agreed by (UNDP):**

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NAME SIGNATURE Date/Month/Year