

Building Resilience for Climate in Coastal Settlements in the Gambia: A Project Proposal for Problem-Solving

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Abstract

This project essay discusses the climate problems of the Gambia, the smiling coast of Africa and the various damages these are causing the ecological environments, especially in the coastal settlement areas. Such damages have resulted in the worsening degradations that have brought untold hardships that have unleashed hunger and starvation on the people, including farm and fishing sites that have been washed ashore, leaving the rural people to be more vulnerable in the future, should steps not be taken to curtail the surge. The essay looks critically into necessary modalities for these steps and what the government can/ought to do to fight the menace and increase food production for food security, since, the greater percentage of the rural population that is more affected are into farming; the mainstay of the nation's economy. The paper sees the need for cooperation between the nation's government and existing governance institutions resident in the country like the European Union for a project development that can be put up as resilience for climate in coastal settlements of the Gambia towards realization of a sustainable socio-economic, ecological and political growth and development. This compels the authors to put this into project perspective and costing that can become a reality within the range of twenty million euro, through mutual cooperation and synergy between the Gambian government and the European Union office in the Gambia. Through this project, a memorandum of understanding is agreed upon by the parties to undertake interventionist program as corrective measures against the odds and consequences of climate change in the coastal and marine zones of the country for project implementation/execution. Available literature and fact-finding information from both the government institutions concerned, the EU office and other concerned partners (public and private) as well as archives and scholarly journals and texts are consulted for data gathering and analysis, using descriptive and prescriptive methods for interpretational analyses that are value-free. The essay crops suggestive measures for broad project implementation and realization as well as overarching problem-solving institutional approach project, presumed acceptable to both parties in practical situations.

Keywords: Project, Resilience, Climate Change, Coastal and marine Settlements and Budget

1. Introduction: The Gambia in Perspective

The Gambia is a Least Developed Country (LDC) ranked at 173 out of 188 countries, by the United Nations Development Programme (UNDP)'s 2016 Human Development Index (United Nations, 2015). The country is poor: it has a population of around 1.9 million and a gross domestic product (GDP) per capita of approximately 400 USD. Already in 2010, The Gambia's national Integrated Household Survey (HIS) confirmed that half the population was living below the poverty line, and the per capita GDP has been falling ever since (Duraiappah, 1998, Jalal, 1993). Traditionally, The Gambia's economy has been based on subsistence agriculture, with additional household income coming from cash crops and surpluses in productive years, which is being threatened daily by worsening climate problem (Omotosho, 2014). However, the domestic economy has been undergoing a transformation, as urban coastal areas have grown in size and economic importance. Rural to urban migration, accelerating because of rural poverty exacerbated by climate change, amongst other factors, is quickly placing stress on fragile infrastructures and resources (Duraiappah, 1998, Jalal, 1993).

According to the University of Notre Dame Global Adaptation Index (ND-GAIN), The Gambia, is the 10th most vulnerable country to Climate Change. The Gambia has a GCCA+ vulnerability rating of 0.4357 which ranks the country among the top 44 most vulnerable LDCs. Given this vulnerability and poor state of economic development, the country is in urgent need of support in the form of investments and innovations in climate change-related measures to build resilience and adaptation capacity. This need for supports has been this paper motivating factor and the attracting instrument in this project work in order to see the Gambia overcome her perennial climatic worsening conditions resolved for a sustainable socio-economic growth and political stability under the new administration of Adama Barrow for a "New Gambia". Gambia's poor state of economy and her vulnerability to climate threats and dangers have made her to lag behind in her quest to galvanize resources in affecting her foreign policy orientation and objective effectively for a vibrantly pursuit of national interest in the international environment that is home-seeking (Notre Dame, 2013, Rozelle, Huang, & Zhang, 1997, Jalal, 1993).

The newly elected government in the country has made 'building climate resilience in the coastal zone' her

nation's agenda priority, given the fact that such policy-decision and instrument would be of value in evading the looming crisis of degradations and economic stagnations. The Gambia's coastal zone, where the majority of the population now lives, consists of 80 km of open coast from Buniadu point, in north bank of the river Gambia, to Karenti Bolong in south bank whereas there is also 200km of sheltered coast along both banks of the river Gambia, suggesting the need for investment plans and improved secured environments for farming in order to guarantee food security and poverty level reduction as well as job creations and appealing environments for the citizens, through mechanised agriculture and fishing for sustainable economic growth and political stability of the country (GOTG, 2016, INDC, 2017, Jalal, 1993 Omotosho, 2014, 2016).

2. Public Policy Assessment & Donor Policy (In this case the European Union EU in focus as financier): Rationale for Project Financing/Investment Support

Following the worsening deterioration of the coastline and an increased threat to coastal and marine zone community livelihoods and investments (local rural and urban communities, fisher folk and the hotel industry), the National Adaptation Programme of Action (NAPA) has identified integrated coastal zone management (ICZM) as the primary focal area for The Gambia (Priority 1) (The Gambia, 2016, GNCCP, 2016, Tyagi, Garg, & Paudel, 2014).

The project is also in line with the Government's development strategy Programme for Accelerated Growth and Employment (PAGE I 2012-2016). The Gambian Government (GOTG) is currently formulating a new National Development Plan (NDP) to follow the PAGE. The NDP will consolidate the gains of PAGE implementation and address challenges within the context of Vision 2020, whilst at the same time mainstreaming the Sustainable Development Goals (SDGs) established in 2015. It is also in line with Gambia National Agriculture Investment Plan which is the GOTG's current effort in boosting national agricultural potential (The Gambia, 2016, GNCCP, 2016, Tyagi, Garg, & Paudel, 2014).

This Action is aligned with the national Disaster Management Plan (DMP), the National Action Plans (NAPs) on Desertification Control and Biological Diversity and the Gambia Environmental Action Plan (GEAP). The project is also in line with the goals and needs of the National Environment Agency, the Ministry of Works, the Ministry of Agriculture Department of Water Resources, as well as Government Local Authorities and will contribute to the Gambia's National Determined Contribution (NDC) prepared under the UN Climate Change Convention (UNFCCC) framework ((The Gambia, 2016, GNCCP, 2016, Tyagi, Garg, & Paudel, 2014).

Furthermore, the action plan of the Gambia Tourism Development Master Plan (2006) has identified the need for construction of storm water drainage and control of runoff from developments adjacent to the beach to a standard that safeguards the beach from erosion and the bathing water from contamination. Indeed, the Gambia's economy heavily relies on the tourism sector dominated in Gambia by the coastal tourism (The Gambia, 2016, GNCCP, 2016, Tyagi, Garg, & Paudel, 2014). This informs government's strong desire for the sector reform agenda and project-making and management.

3. Partners

The National Environmental Agency (NEA) operates under the Ministry of Forestry, Environment, Climate Change and Natural Resources (MoFECCNR), and is responsible for overseeing the effective management, conservation, protection and improvement of the environment. The NEA drafted an integrated coastal zone management (ICZM) Action Plan in 2015 and is establishing a ICZM unit, involved mainly in the promotion of awareness. As a relatively new national Agency with a rapidly growing portfolio of work and responsibilities, the NEA is in special need of capacity building support. Where necessary, this support should be extended to the other line Ministries involved in mainstreaming climate change issues. For example, the Ministry of Environment (MoFECCNR), The Ministry of Agriculture, The Ministry of Public Works and the Ministry of Tourism (GEAP, 2013, IPCC, 2003, GNPPC, 2016, GOTG, 2016).

In addition to national ministries and bodies, key stakeholders for GCCA+ at the local level include local actors such as local governments, local communities, community-based organizations, women's civil society organizations and women's farmer groups, village women's committees among others. Given the very basic level of development in the country, local stakeholders are very poorly prepared to adapt to climate change. This is a big challenge to efforts to solutions. Capacity building and support at all levels is required, including support to activities for combating the climate change quagmires through resilience building. It has also been a challenge unless resolved by necessary interventionist policy framework that is long lasting and overarching (GEAP, 2013, IPCC, 2003, GNPPC, 2016, GOTG, 2016).

4. Project Problem Analysis

The Gambia is particularly vulnerable to climate change impacts ranging from changing precipitation patterns to intense weather events. These may lead to loss or impairment of productive habitats and rural and coastal livelihoods, drainage and flooding issues, the destruction of human-made infrastructure, saltwater intrusion into

fresh water aquifers, beach and cliff erosion, and pollution from land-based storm runoff, to name but a few likely impacts. The Gambia's low-lying coastal areas are particularly vulnerable to climate change impacts (e.g. sea level rise). In some areas, the beach has been retreating at a rate of 1-2 meters per year, threatening tourism infrastructure and associated livelihoods. This Action is therefore designed to help coast communities build resilience (GEAP, 2013, IPCC, 2003, GNPPC, 2016, GOTG, 2016).

In The Gambia, climate change's negative impact on agriculture is being realized in the form of increasing rainfall variability, farm soil erosion, uncontrollable and undesirable floods in lowland agricultural and horticultural gardens. In addition, there is a problem with acid sulphate soils which can require expensive removal of top soils. Furthermore, heavy rainfall depletes the top soil from high lying areas to low-lying areas with heavy siltation or sedimentation. De-sedimentation is expensive and unaffordable by poor farming communities. Change of rainfall patterns e.g. heavy rainfall impacts negatively on harvested ground nuts in the form of aflatoxin and black moulding formation. Heavy rainfall in lowlands is presently uncontrollable. Raised earth or mud rainwater retainers are frequently washed away. Permanent or sustainable water retaining structures which may last 20 – 25 years are expensive. The Gambia River and the Bolongs have already suffered from saltwater intrusion which is threatening agricultural productivity and the thousands of people relying on these watersheds for their income may be in danger of shortages. Salt intrusion into low-lying rice fields is problematic and presently uncontrollable (GEAP, 2013, IPCC, 2003, GNPPC, 2016, GOTG, 2016). Hence, this is the need for resilience building through project design and execution by the government as a salvaging effort.

An additional climate change impact in The Gambia is coastal erosion, littoral drift and sedimentation. Sedimentation is being continually experienced in the Banjul harbour area. The location of the harbour in the river mouth is also problematic as the access channel of 20 nautical miles is being confronted with sand sedimentation. The present draft is 8.5 meters and required minimum draft is 10 to 20 meters. As a consequence of these significant, physical climate change impacts, significant socio-economic impacts are being recorded in The Gambia. In particular, young men migrating from the rural areas to the Greater Banjul area (basically the fishing communities like Brufut, Tanji and Sanyang or the tourist resort areas) leave the elderly and women behind in very deplorable conditions. Migration and failing agriculture is placing larger demands on fishing which is having an impact on stocks. According to government records, fish catches/ stocks are not increasing. During strong winds and cold weather catches may go down. Fishing is performed by men but fish processing in the form of selling fresh fish, fish smoking and drying is still done by women. Primarily, fish is smoked using mangrove branches as fire wood. Yet, coastal ecosystem assets such as coastal mangrove forests, while providing a vital buffer against storms, sea surges and salt water intrusion are being depleted.

Another significant socio-economic impact, forced by climate change, relates to decreased nutritional safety for women. In the Gambia, women have a lower nutritional status at household level when compared to men, despite the fact that they are the main food producers and responsible for its processing. Cultural practices militate against women control of cash income thereby contributing to household food insecurity. These practices also force women to deny themselves food in the right quantity and quality in favour of male adults and children. In most cases this seriously compromises their nutritional status and renders women particularly vulnerable to climate change shocks (GEAP, 2013, IPCC, 2003, GNPPC, 2016, GOTG, 2016).

Table 1. Issues for project considerations.

Assumptions
<ol style="list-style-type: none"> 1. Political and security situation permits access to undertake field activities. 2. Empirical links can be detected in the data collected. 3. National institutions are willing to engage to identify policy response options. 4. Necessary vulnerability/socio-economic data exists for Gambia at correct spatial scale. 5. Partners like UN GEF can work in Gambia at local levels through direct interventions and partners. 6. Policymakers and stakeholders are willing to engage in capacity building.
Risks
<ol style="list-style-type: none"> 1. Limited involvement of key target groups (local communities, local authorities) 2. Project input from key stakeholders/govt. departments proposals are limited and of poor quality 3. Limited capacity development by local authorities to manage the project 4. The adaptation experience at the eco-village level is not communicated more widely at a local, regional or national level

5. Overall Objective of the Project

The Overall Objective of this project is to build climate resilience to the coastal and marine zones of The Gambia, through sustainable integrated strategies that protect vulnerable communities. This arduous effort would stabilise the anticipated or already impacted problem of environment degradation and economic downturns (Duraiappah, 1998, Jalal, 1993). It will serve as a framework for government interventions through partnerships that are sustainable in sense and very pragmatic in approach.

6. Main Activities of the Project

The expected outcome of this Project is climate resilience built in the coastal and marine zones of The Gambia, through a sustainable approach, that protects vulnerable coastal communities' livelihoods. This objective will be achieved through three inter-related components:

- 1) Institutionalization of sustainable approach and climate change adaptation (in selected governorates);
- 2) Knowledge management through data collection and localizing climate change modeling; and
- 3) Integration of climate change adaptation actions into resilience actions.

This project will work directly with communities in order to promote climate proof livelihoods thereby increasing the probability of their resilience to climatic impacts in selected sites (Duraiappah, 1998, Jalal, 1993).

7. Intervention logic

Climate Change in The Gambia has so far manifested itself through noticeable environmental changes, including climate variability and extreme events. The Gambia's climate is of Sahelian nature characterized by high variability in the amount and distribution of annual precipitation and clear increase in temperature values; these combined interactions lead to recurrent drought episodes and dust storms and also in flooding events. Additionally, the impacts of climate change through sea level rise have been exacerbated by anthropogenic drivers that reduce the resilience of coastal ecological and geomorphologic systems. The low-lying topography, combined with the high dependence on subsistence rain-fed agriculture, and inadequate drainage and storm water management system in a context of rapidly expanding un-regulated urban expansion has placed the Gambia among those countries most vulnerable to climate change, dragging her behind in competitive global economic race and political influences at the heights of global decision-making; size of the country, not of importance, but of importance is the resource endowment base and worths (GEAP, 2013, IPCC, 2003, GNPPC, 2016, GOTG, 2016).

8. Implementation & Organizational set-up

The indicative operational implementation period of this action is as stated, during which the activities described in the main activities section by the National Environment Agency together with Ministry of Forestry, Environment, Climate Change and Natural Resources are harmonised for action and execution (MoFECCNR):

Table 2. Proposed Estimated Budget (EUR 20,000,000)

Indicative budget	EU Funds
Information, Communciation & Education on Climate change	12,000,000
Training on Resilience Building at community level	6,000,000
Integreation & Sustainable livelihoods Skills Enhancements	1,000,000
Evaluations & Audits	200,000
Contingencies	800,000
Grand Total	20,000,000

9. Monitoring & Evaluation

The day-to-day technical and financial monitoring of the implementation of this action will be a continuous process and part of the implementing partner's responsibilities. To this aim, the implementing partner shall establish a permanent internal, technical and financial monitoring system for the action and elaborate regular progress reports (not less than annual) and final reports. Every report shall provide an accurate account of implementation of the action, difficulties encountered, changes introduced, as well as the degree of achievement of its results (outputs and direct outcomes) as measured by corresponding indicators, using as reference the log frame matrix (for project modality) or the list of result indicators (for budget support). Having regard to the importance of the action, a mid-term and a final evaluation will be carried out for this action or its components via independent consultants contracted by the donor, which is the European Union (EU) in the Gambia (GEAP, 2013, IPCC, 2003, GNPPC, 2016, GOTG, 2016).

10. Conclusion

The Gambia has been confronted with climate problems that have resulted in her shortage of revenue generation for investments and re-investments for a sustainable growth. This warranted the search for amelioration of the situation to avert exacerbation problem to curtail the surge of rural-urban migration, clandestine migration, unemployment index/ration as well as food shortage and inflation. This project was conceived to initiate an action plan that can resolve the looming crisis and induce hope for future resilience that will counter disasters and total economic logjam, as the Gambia is a purely agrarian country. Hence, the problem was identified, presented and analyzed for theoretical and empirically-analogical explanations that are solution-seeking and solving. A donor was indentified and secured through partnership agreement, that is the European Union and budget financing was presented for consideration, disbursement and implementation for a solution-seeking

program, through government initiated-project (Courtesy of EU office in the Gambia).

Climate change was identified as a perennial logjam presently affecting many rural areas and even extending to the cities. As a result, the coastal areas of the Gambia are being adversely affected, drifting resources and washing off the soils that can protect flooding effects and gullies. Various affected zones were identified for attention and the government examined and promised problem- solving mechanism that resulted in EU-Gambia partnership for mechanized farming to save arable lands. The project is over-arching and ground-breaking. It is a gateway for further project sponsorships in the near future. It will also bolster the Gambia's economy into a performing one that is employment-generating and economically viable, possibly, taking it to a global competitive level as an economic power in the ECOWAS sub-region and beyond.

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