

UN HABITAT FOR BETTER URBAN FUTURE

Best Practices Compendium on Banjul and Climate Change

Coastal Management by the City Council of Banjul

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Introduction

The Gambia is one of the smallest countries in Africa. The population in April 2003 was 1,360,681. The population is heavily concentrated along the coast where the largest cities, Banjul, Kanifing municipality and Brikama are located. About 27% of the population live in the Greater Banjul Area ,the metropolitan area comprising of the city of Banjul and Kanifing municipality, a combined area of 88 sq km(0.8% of the total land area).Over 52% of the population live within 20km of the Atlantic Ocean and area less than 10% of the total land area.

The population comprise of 689,840 females and 670,841 males, the fourth highest population density in Africa(210 people per sq. kilometer and a growth rate of 2.7 percent), imposing extreme pressure on productive land and the provision of social services(NDMA 2011 citing GBOS, 2006).

Like other sub-saharan African countries,The Gambia is also faced with a rapid increase in urban population due mainly to the influx of migrants from rural areas and the sub-region. Until the mid-1970s rural-urban migration in The Gambia was of a seasonal nature with rural dwellers migrating to urban areas in search of work during the dry season only to return to the rural areas as the rainy season approaches. However, consecutive years of drought in the late 1970s and the resultant effects on reduced agricultural output triggered a new migratory trend. Since this period many rural migrants decided to stay in their urban destinations. Another dimension to the rural-urban migration is the influence of education. With most institutions of higher learning located in the Greater Banjul area, a large number of young persons move to this area in pursuit of higher education and eventually stayed in the area to work. According to the 2003 Population and Housing Census 51% of the Gambia's, population live in the urban areas compared to 37% in 1993. Fifty-three percent of urban dwellers live in Banjul and Kanifing Municipalities(GBOS, Housing and Population Census, Volume 5, 2006).

Banjul, formally called Bathurst is the capital of The Gambia. It was during the colonial period around the 18th century that a chartered company engaged in trade relinquished its ownership of the state after making profits of the country. It was in 1816 when Captain Alexandra Grant was sent to the region to re-establish a base from which the British navy could continue with the slave trade he purchased Banjul St.Mary) from the King of Kombo. He built barracks, laid out a town and set up an artillery battery to control access to the river. This town Bathurst

(now Banjul) started to grow there on,
(<http://www.britannica.com/EBchecked/topic/51889/Banjul-Island>)

Banjul continued to serve as the administrative city of the country and seat of government. It is one of the smallest cities in Africa strategically visible on an island called St. Mary's Island which is on the mouth of the River Gambia. This small port city highly vibrant during the day receives imported goods mainly from Europe and Asia, sold at bargained price at the Albert market and few warehouses. Most of these goods normally attracting high prices in Europe are normally sold at half the prices with good bargaining skills.

Some of the colonial reminisce worth noting in Banjul are the War cemetery, King George Vth Square, Leman Street clinic (de-worming center) ,Mosdolly shop, National library (now the National museum), churches (Catholic, St. Mary's, and Wesley), schools (Boys High School now called Gambia High School, St. Augustine High School, Muhammedan Primary School and Crab Island) and King Fahad mosque to mention but a few.

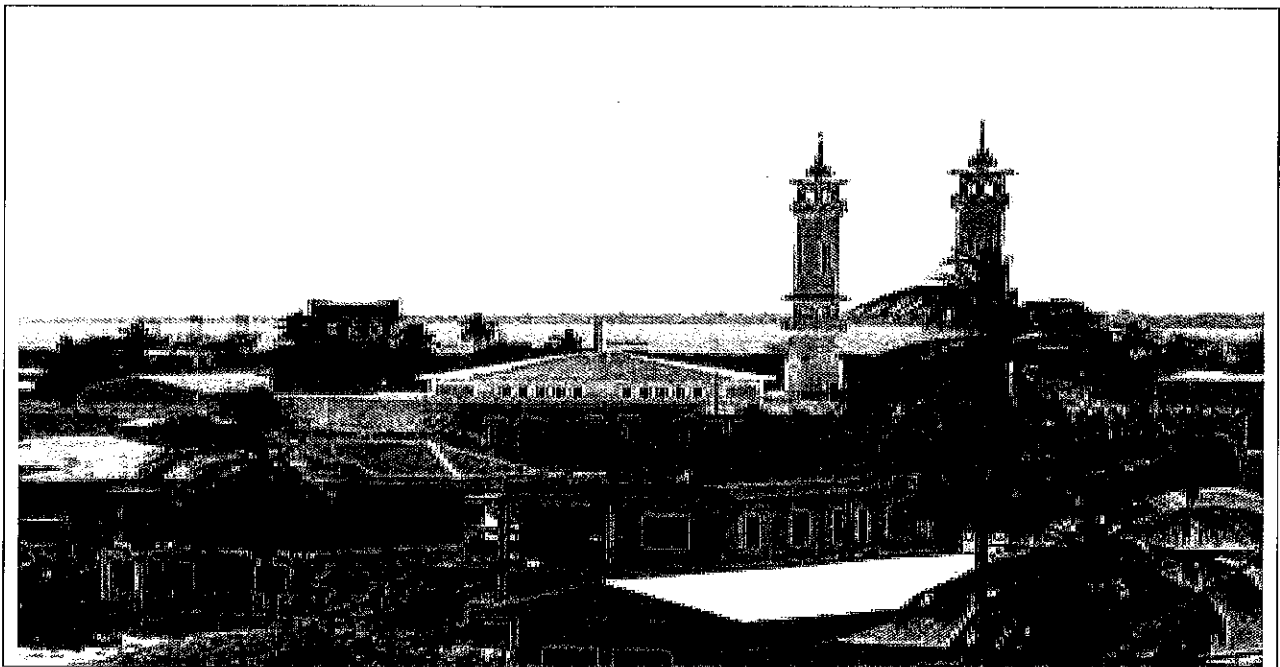


Fig. 1: King Fahad mosque, Banjul (Courtesy Internet)

Geographical Location

The city of Banjul is located on the geographical coordinates of 13⁰27N and 16⁰33W. The city lies on a flood plain with its highest point not more than 50 centimeter above sea level. The city lies on the coast line and is an exclusive fishing zone and oyster collection. The coast line over the years has experienced continuous coastal erosion with more than 2.5 – 3m depending on site situation on the Coast line. For the Battery Flat to the ferry terminal and within the Lagoon

with a dynamic character of being eroded and refilled (Radio Syd to Mile 2 area), rate of erosion recorded is between 1.5 -2 m and 3-5m per year respectively (NEA, report 2010).

Climate and vegetation

The climate of Banjul is predominantly a Sahelian type characterized by a very long dry season (November to May) and a short rainy season (June to October). The normal rainfall of the Gambia is 816 mm with average rainfall of the Banjul city being above normal at 867.70 mm (Kinteh S. L., 2008) and this is highly influence by the coastal winds. The average minimum temperature of the city is around 7^oC while the maximum is 41^oC. The lowest and highest rainfall recorded is 0 mm and 500 mm as shown in Table 1 below.

Table 1: Climate Data for Banjul

Month	Jan	Feb	Mar	April	May	Jun	July	Aug	Sep	Oct	Nov	Dec
Av. Temp Record High (0C)	37	39	40	41	41	38	34	33	34	37	36	36
Av. Record low (0C)	7	10	12	12	14	18	21	34	17	16	12	9
Precipitation (mm)	3	3	0	0	10	58	282	500	310	109	18	3

Source: Internet BBC Weather (6) 2010

Population and Ethnicity

The population of Banjul city proper is 34,828 with Greater Banjul which includes the Kombo St Mary Region of 357,238 people (2003 census report)

Table 2: Local Government Areas

Name	Administrative capital	Area (KM2)	15.04. 1983	15.04 1993	15.04 2003
Banjul	Banjul	12	44,188	42,326	35,061
Basse	Basse Santa-Su	2,070	111,388	155,059	182,586
Brikama	Brikama	1,764	137,245	234,917	389,594
Jangjangbure	Janjangbure	1,428	68,410	88,247	107,212
Kanifing	Kanifing	76	101,504	228,214	322,735
Kerewan	Kerewan	2,255	112,225	156,462	172,835
Kuntaur	Kuntaur	1,467	57,594	67,774	78,491
Mansakonko	Mansakonko	1,681	55,263	65,146	72,167
Total		10,690	687,817	1,038,145	1,360,681

Source: (1983) (1993) Central Statistics Department of The Gambia (web).
(2003) Gambia Bureau of Statistics: The Gambia Atlas of 2003 Population
and Housing Census, 2006

The city of Banjul is inhabited by all ethnic groups of the country ranging from Mandinka, Wollof, Jola, Sarahuli, Fula and so on. The languages predominantly spoken in the city are Wollof followed by Mandinka. These different ethnic groups interact freely and inter marry without reservations from parties.

Socio-economic and Livelihoods

The socio-economics of the people of Banjul is purely a mixture of rural and urban mixed livelihoods. These livelihoods depend on barter between the poor, vulnerable and the rich and retail of goods and services done by all where most of the people serve as middle persons. The people trade on fish and fish products, second hand cloths, new fabrics ,textiles cola nuts, shoes, rice, groundnuts and so on.

From morning to dusk, Banjul remains a cosmopolitan city(receiving almost one third of the population of the country on daily basis).It is full of life as the retailers and transport drivers shout to advertise their goods and services. This life dies down as the sun sets allowing most of the commuters return to the neighboring towns and villages in the Greater Banjul Area (Serekunda, Bakau, Sukuta, Brikama, Bara, Kerewan and so on.). This allows the Banjulians (people of Banjul) time to socialize with loved ones in a city once full in the day time. The people live mainly on rice cooked from a main pot called Benachin (One meal consisting of all ingredients), Cherreh (coos) with stew. When food becomes ready to serve, no one is excluded in the eating for The Gambian generosity prevails to allow all to benefit from what is available to an individual.

Banjul City Council and Governance

Banjul City is the seventh administrative region of The Gambia covering only the island of Banjul. The area is administered by a Mayor who is elected by universal adult suffrage. The Mayor is the political head and supported by the Chief Executive Officer(CEO) who is selected as the administrative head of the council. The city has three elected National Assembly members and nine elected Ward Councilors. The elected Ward Councilors and three nominated councilors(representing youth, women and commerce) constitute the Banjul City Council (BCC). The Council is responsible for policy planning, whilst the CEO and other employees are responsible for implementation under the supervision of The Mayor.

Banjul and its Challenges on Climate Change

Banjul City is surrounded by the Tanbi Wetland Complex, which is classified as a Ramsar Site. The Gambia being a party to the Ramsar convention is obligated to implement the commitments and obligations of protecting wetlands of international importance.

The Convention on Wetlands of International Importance, called the Ramsar Convention, is an intergovernmental treaty that provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources.

Negotiated in the 1960s by countries and non-governmental organizations that were concerned with the increasing loss and degradation of wetland habitats for migratory water birds, the treaty was adopted in the Iranian city of Ramsar in 1971 and came into force in 1975. It is the only global environmental treaty that deals with a particular ecosystem, and the Convention's member countries cover all geographic regions of the planet.

The convention's mission is "the conservation and wise use of all wetlands through local and national actions and international cooperation, as a contribution towards achieving sustainable development throughout the world".

The convention's uses a broad definition of the types of wetlands covered in its mission, including lakes and rivers, swamps and marshes, wet grasslands and peatlands, oases, estuaries, deltas and tidal flats, near-shore marine areas, mangroves and coral reefs, and human-made sites such as fish ponds, rice paddies, reservoirs, and salt pans.

At the center of the Ramsar philosophy is the "wise use" concept. The wise use of wetlands is defined as "the maintenance of their ecological character, achieved through the implementation of ecosystem approaches, within the context of sustainable development". "Wise use" therefore has at its heart the conservation and sustainable use of wetlands and their resources, for the benefit of humankind.

The island of Banjul is among the most vulnerable areas to Climate Change in The Gambia. A one meter sea level rise is expected to lead to the submergence of most of the capital city of Banjul (Jallow et al 1996). Changes in seasonal rainfall patterns combined with sea level rise and global warming could also alter mangrove ecosystems significantly. Considering that 85 percent of the organic carbon input to the River estuary originates from the mangrove ecosystem (NAPA 2007); almost all fish species captured in The Gambia (by both commercial/industrial and artisanal fisheries) depend on the mangrove ecosystem for habitat, refuge from predators and food during part of their life cycle. Therefore impairment of the mangrove ecosystem productivity could lead to substantial net loss in population of species associated with mangroves including rare/endangered species such as the West African Manatee, the African Clawless Otter and Pel's fishing Owl.

Challenges

The city of Banjul with all its openness to sedentary and localized migration from all parts of Africa particularly in the West coast of Africa has some challenges worth mentioning;

- Continuous influx of refugees from neighboring countries
- In-migration of rural communities for trade and employment
- Unemployment and under employment
- Accommodation for the most vulnerable becoming problematic
- Pressure on utilities such as toilets, water and high electricity
- Illegal dumping of waste
- Oil spills from the transport mechanic workshops into the river and marine waters
- Beach erosion increasing and
- Difficult prediction of weather conditions due to the changing climate, (see Table 1 below)

Table 3: National Comparative Consolidated Disaster Risks Assessment of Floods 2010

Administrative Region affected	Cause	No. of households	Stock lost	No. of people affected	No. affected by gender female	No. affected by children
Banjul	Floods	11	Rice	88	56	27
Kanifing Municipality (KMC)	Floods	465	Rice, millet, groundnuts, cooking oil	3720	1925	1501
Western	Flood and wind storm	477	Rice, coos, and millet	3816	2130	1110
Central River	Floods and wind storm	376	Rice, coos, maize cooking oil	3008	1978	1895
Lower River	Floods and wind storms	327	Groundnuts, coos, rice	2617	1271	1071
Upper River	Floods	147	Rice, coos, oil, millet, maize Shelter, cloth, sanitary	1176	673	468
North Bank	Floods and wind storms	489	Rice, groundnuts, maize, millet	200 +	2112	1423

Source: The Gambia Draft National Contingency Plan March 2011-March 2013

How vulnerable groups, in particular the urban poor are affected by climate change in Banjul

In the city of Banjul, almost everyone is vulnerable to climate change. However, the most affected by the changing climate are the women and children. Since Banjul is susceptible to annual rain storms and floods, over 80% of the city becomes flooded. Most of the houses dwelled by the poor, women and children are made of laminated bamboo or lattices that do not hold water. As a result, life and property becomes submerged and food security threatened (Table 3 above). This group of the urban poor often have fewer informal safety nets, such as kinship and community networks. They depend mainly on purchased food, which may account for as much as 70% of their incomes. This dependence is compounded by their lack of access to natural resources, principally land and water, which would allow them to grow food.

A global rise in temperature by 2⁰C may mean a rise of 4-5⁰ C rise in Africa (Climate Change information, Cancun, 2010). As a result of this information it is expected that the entire city of Banjul and its surroundings (Greater Banjul Area) will be submerged with sea level rise of one meter.

Summarily, Banjul is very vulnerable to Climate Change as it is an Island and its geographical conditions makes it even more vulnerable. With a minimum 0.8 meter of sea level rise, the whole of Banjul will be under water for the highest point of the bay is only 1.5 meter above sea level.

Furthermore, Banjul is a fishing point magnetizing and accommodating a huge number of fish mongers who purchase fish for retail. In addition, Banjul having two entry points; Denton Bridge on the South Banjul-Barra ferry on the North Bank makes the city a unique exit and entry points. The sea port continues to be very important for the city of Banjul but specifically for the government of the Gambia to accrue vital foreign exchange. As a result of the above characteristics of the city, Climate Change impact will affect the entire economy of The Gambia particularly the vulnerable 'Banjulians' with limited resources to protect themselves.

How the government, local authorities and communities are working together to address climate change

Climate change is one of the greatest challenges of this century affecting the developing world and poses the greatest risks to the progress towards achieving the MDGs. Literatures have revealed that over 2.5 billion economic losses and over 500,000 lives have been lost through disaster in the past two decades and the situation is still in the increase. Inter alia 168 UN member countries met at Kobe, Hyogo, Japan that discussed and strategized the way forward to build community resilience to mitigate the impact of disasters on the affected communities and encouraged nations to build resilience to disasters. During this conference which came after the devastating Indian Ocean Tsunami, The International Community adopted the Hyogo Framework For Action for the period 2005-2015, with five key priority pillars namely:-

1. Ensure that disaster risk reduction (DRR) is a national and local priority with a strong institutional basis for implementation;
2. Identify, assess and monitor disaster risk and enhance early warning;

3. Use knowledge, innovation and education to build a culture of safety and resilience at all levels;
4. Reduce the underlying risk factors;
5. Strengthen disaster preparedness for effective response at all levels.

These priority areas are the guiding pillars of disaster management at the international, regional, sub-regional and national level. The implementation of these pillars are on track in The Gambia , particularly the governance dimension of the HFA which is priority one. The Gambia is also on course on the other priority areas. This situation could not have been possible without the government taking the lead role and firmly in the driver's seat with the establishment of an institutional framework for Disaster Management in the country with the setting up of The National Disaster Governing Council and The National Disaster Management Agency with its decentralized structures. The concern is to ensure that our impressive development gains are not eroded by natural and human induced calamities.

During the 2009 and 2010 devastating floods, The Government of The Gambia provided leadership, response material and logistic support for all the operations with technical support from NDMA. H.E. The President gave a personal donation of a pumping machine to the NDMA to support disaster response at community level.

Through the National Climate Change Committee (NCC) in which BCC, KMC and Local Government are represented collaborate and support all stakeholders in addressing Climate Change issues. They work together by forming responsible committees (representatives come from government, local authorities and communities) for actions. They have a participatory planning and implementation of programmes and projects. The committee ensures that ownership of the projects and programmes are clearly spelt out and benefit sharing is equitable.

One of the major catalysts of working together is the recognition of using opinion leaders (Imams or priests referred to as religious leaders) in communities to support community plans and actions. This does not mean that the poor and the vulnerable are voiceless in the selection of the committees. Each member of the committee has equal weight in decision making and taking action. Each major decision has to be approved by the ward committees before it is adapted at Council prior to work implementation.

What policies are in place to protect the urban poor against climate related problems

The city of Banjul has over the decades protected its citizens particularly the poor against climate related problems by the following policies:

Local Government Act 2002 emphasizing on good governance and decentralization. The implementation of the Act has allowed the emergence of clearly defined grass root institutional structures empowered with responsibility for self governance at local level.

This administrative approach has allowed the emergence of cluster of compounds called wards whose sole responsibility is to plan, develop and implement works of common concern for public good are encouraged by the Municipality. The 2002 Act is supported by the National Environment Management **Act (NEMA 1994)**. The NEMA has paved the way for an all inclusive public participation on an Environment Cleaning on a monthly basis since 2004 called Operation Clean the Nation (OCN); cleaning of drainage structures off obstructive materials for easy water flow, weeding and intermittent garbage collection helping the control of mosquitoes and their breeding grounds with a responsible disposal waste at designated sites done at ward and council level. This unique practice was initiated by the Visionary leader of the Republic, His Excellency Sheikh, Professor, Dr. Alhagi Yahya A. J.J. Jammeh.

As a result of this monthly exercise, the council has been able to save over 60% of its revenue on more important programmes that support the poor and vulnerable members of the city by providing scholarships to their children, improve the sewage articulation system, access to affordable electricity and water facilities in a sustainable manner instead of spending these vital funds on curing people affected by health related diseases contracted from poor environment sanitation.

In addition, the Local Government Act 2002 supported by the Physical Planning Regulation was enhanced and it stopped the construction of illegal buildings and structures in the city of Banjul that block or hinder the free movement and security of the entire populace. The Rent Tribunal 2010 Act of the Municipality has allowed the poor and vulnerable access to affordable housing and comfort without restriction on their livelihood.

How the protection of marine and coastal biodiversity is included in policies and strategies for climate change adaptation in the city

The Banjul City Council, a member of the NCC and its management have ensured that the conventions on Climate Change and biodiversity are fully mainstreamed in its projects and programmes both at council and community level in Banjul. This action has helped to protect and enforce the Banjul Declaration in the protection and sustainable utilization of the flora and fauna, since 1977

Furthermore, the Forest Policy 1995-2005 supported by the Forest Act and Regulation 1998 including the Biodiversity Policy, 2003 and Act have enhanced the protection of the marine and coastal biodiversity of Banjul and its closed sister cities such as Serekunda and Barra.

Neem, Cordiaspp, Mangoes, Coconut, Baobab, particularly mangroves are the major plant species that are found in Banjul and its suburb (Tanbi Wetland). These plant species help in protection of the coastal and marine environment of the city for both mitigation and adaptation measures. The species are protected by the Forest Act, 1998 and they help in the stabilization of the soils, protection of coastal erosion and control of floods. This important function of the vegetation is recognized by the Council and the entire communities of Banjul at all times. Hence, the City Council have established an environment protection unit whose sole responsibility is on tree protection and planting within and around the city. Special teams of employees have been engaged by the Council in urban forestry emphasizing on avenue planting with assorted plant species including marine and coastal planting of coconut plants. In addition, Council collaborates with schools to ensure that animal rights and their protection are enforced as part of the school curriculum (particularly bird study and watching as enshrined in the Biodiversity Act, 2003).

Strategies for climate change adaption in Banjul and its citizenry is premised on the following guiding principles;

- Early warning on environment information and risks provided by the Ministry of water Resources, fisheries and National Assembly matters housed in the city of Banjul
- Use The Gambia National contingency Plan on climate change , sea level rise and coastal protection
- Identification of climate hot spots (most vulnerable sites such as the Banjul Cemetery , Tobacco Road area, Banjul port area and half die) within and around the city and their timely mitigation and adaptation actions
- Controls the population dynamics and management of the population in response to the carrying capacity of the city
- Provide a data base to guide planning and implementation of projects ideal for the city
- Ensure that all projects undergo an Environment Impact Assessment (EIA) before implementation by the National Environment Agency
- Participatory project and programme planning for Banjul with all stakeholders before work implementation
- Provide immediate live saving assistance using the ward Disaster Management committees with collaboration of the Community-based Organization, service institutions and volunteer organization (Youth groups)

- Mobilize resources for immediate short-term support and recovery with support from other stakeholders like Government, private and Non-Government Organizations
- Ensure a large scale introduction of Liquefied Petroleum Gas (LPG) including use of improved cooking stoves to reduce fuel wood consumption and emissions of 2°C concentration in the atmosphere
- Encourage the use of renewable source of energy particularly use of photo-voltiac cells (solar energy) for domestic energy and household electricity
- Support in capacity building for staff on climate issues and provide the necessary infrastructure for climate adaptation
- Engage the youths on self-employed projects to reduce un-employment, banditry, prostitution, drug abuse and dependence
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- Construction of environment friendly buildings and structures by involving the private sector including NGOs
- Construction of first class roads with drainage, sewage systems for development to allow easy flow of water and waste out of the city (Fig. 2 City of Banjul). These actions are geared towards having the city resilient to climate change

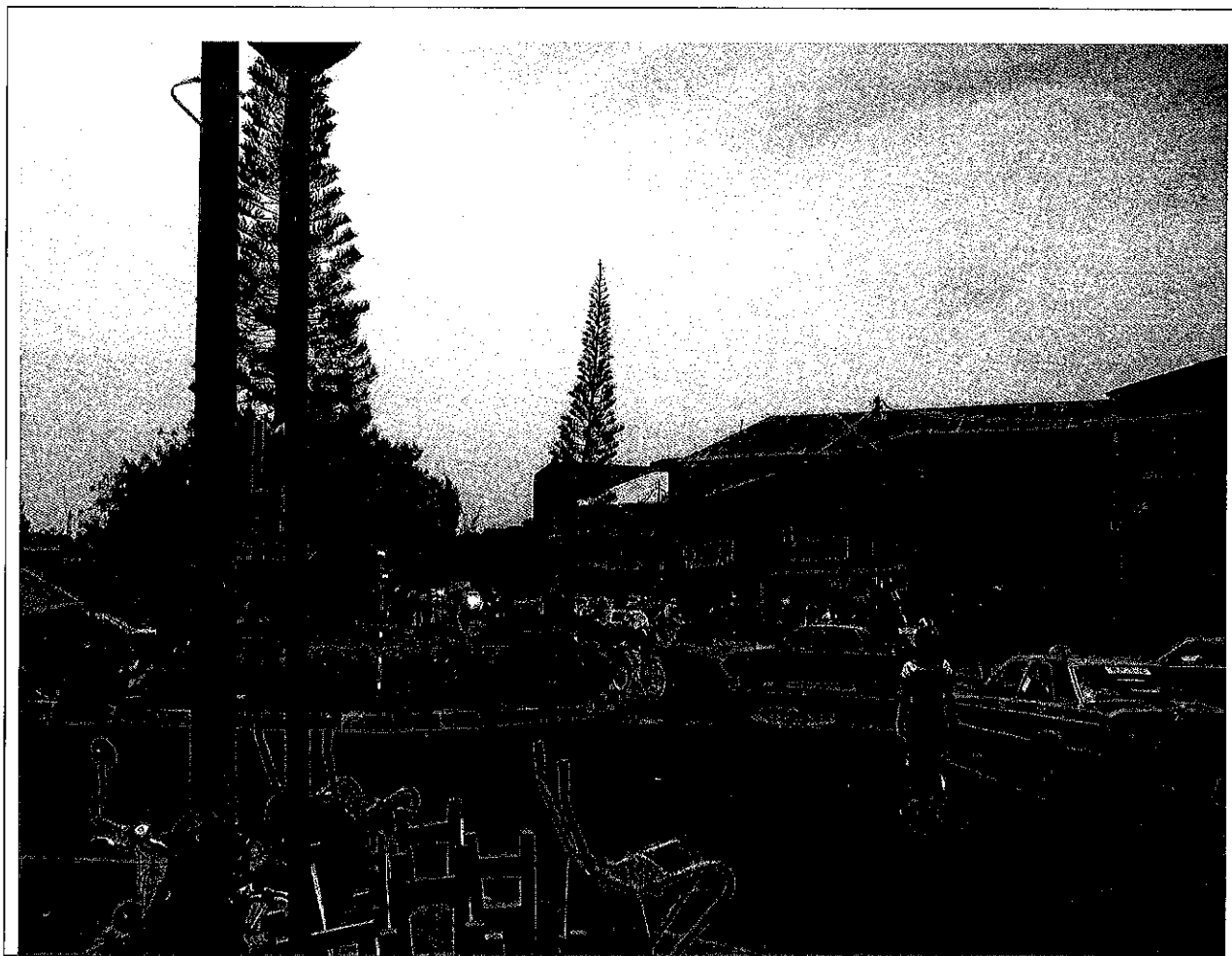


Fig. 2 waste management and coastal adaptation in Banjul (Source: Courtesy, Internet)

How the same approach to climate change adaptation has been replicated in other coastal cities

The example of climate Change mitigation and adaptation measures have over the years been replicated in some of the coastal cities of Serekunda, Bakau, Bijilo, Brufut, Sanyang, Gunjur and Kartong in the West and Barra, Farafenni, Basse in the West of the country. Planting of coconuts, capacity building for the coastal fishing villagers for the sustainable use of the coastal beaches, environment cleaning and rational waste disposal at designated sites have been internalized and adapted.

Finally, the beach nourishment project done for Banjul even though not being very successful has finally attracted implementation in other areas that are being threatened by coastal sea erosion in the country such as Sene-Gambia, Fajara, and Bungalow Beach hotel areas in Bijilo, Fajara and Kotu respectively using sand bags to allow safe settlements in the area as a means of working towards adaptation to Climate Change.