Brief description of the communities threatened by coastal erosion and displacement

Ako Amadi

According to the World Bank, Africa is the fastest urbanizing continent, but arguably the least prepared for the transition. Lagos is characterized by a burgeoning population of high poverty percentage, many living in limited space on a coastline threatened by sea level rise and unpredictable weather events. This scenario of physical and social geography is exemplified by squatter settlements, traffic congestion, roadside markets, overstretched and inadequate infrastructure. It is of grave concern to the government and people of Lagos State.

Shanty towns are destroyed in Lagos by the authorities in one location but mushroom in another within months. The common solution of forceful evacuation by the state authorities constitutes a huge problem. One notable demolition of shoreline settlements in the past was at Maroko, Victoria Island in 1992. The most recent this year, 2012 has been at Makoko on Lagos Lagoon. Slum clearance and eviction of their citizens has never been the antidote to escalation of poverty.

A discussant at the recent FUTURE CITIES conference in Lagos in May 2012, Robert Neuwirth, remarked that the informal sector, closely related to the shanty town, must be understood as a normal and natural part of the wider urban economy, and that government should collaborate with informal operators to improve their performance rather than seek to eradicate them.

Demolition of Maroko 1992. Photo: Renate Albertsen-Marton

Records of storm surges, flash floods and rainfall of the last decades in Lagos have been higher than predicted, and their impacts devastating enough to focus attention on the future of the populations at risk – communities living in coastal properties. The majority are subsistence farmers, hunters and gatherers, artisanal fishermen and small-scale businessmen. Their capital investments are modulated by environmental changes and climatic impacts, which is to say that their future will depend on a capability to adapt to the variability faced.

Hunting and fishing in marshlands and creeks is the traditional occupation in the coastal communities of Lagos. With the forests and wetlands areas now drastically reduced, the inshore waters polluted from urban waste disposal, dredging, and shipping, the people of Lekki and Eti-Osa local government area are facing severe economic and ecologic challenges.

One glaring observation has been the difficulty, if not inability of the poorer members of society in these vulnerable areas, unlike their richer compatriots, to move away from the disasters they experience periodically. The poor usually have a smaller mobility radius, and are often reluctant to move from their homes, even in the face of existential threats. Worse still, despite discussions during the annual Lagos State Climate Change Summits, there are no current plans by the government to build the climate resilience of the poor on the beach front of Lagos.

During the late 1980s when the initial overflow of the Victoria Island shoreline occurred, and research had begun at the Nigeria Institute for Oceanography and Marine Research (NIOMR) into coastal erosion and possible sea level rise, the wealthier dwellers clustered on the choice beach properties simply abandoned their flooded homes for new ones in the dryer parts of Nigeria, in particular in the new Federal Capital Territory of Abuja. The poor residents of Apese, Iworokun, Badore and Lekki on the Atlantic coastline had nowhere to run. They have received little financial or material assistance to rebuild huts and businesses, even at a level that can be described in many cases as subsistence and informal.

The threats to the shoreline in Lagos, and their visible signs of erosion are not only on the Bar beach waterfront, which receives the bulk of publicity and the attention of both the Federal and Lagos State Governments. The concentration of beach replenishment activities on Victoria Island could be explained in terms of comparative real estate value. Eastward of Bar beach however, the shoreline of Lagos State had been a victim of severe erosion and land loss. These impacts of climate,

Destruction of Makoko 2012, photo Deji Arosho

oceanography, land degradation and subsidence have not gone unnoticed by the authorities, but land, forest and watershed management policies have not been translated into implementable frameworks for effective activities.
As a result of beach nourishment with sand dredged up from sediments at the Lagos Harbour entrance, in addition to a vision of the projected construction of Eko Atlantic City, home-owners and businesses are returning to Victoria Island. Precise scientific evidence is lacking, but the coincidence may not be entirely fortuitous: the temporary improvements in erosion on bar beach, the intensification of marine dredging and wetland drainage for infrastructural development and the construction of the new city within the Eti-Osa and Lekki Local Government areas are matched by intensified beach recession along the Lekki Peninsula.
The Eti-Osa Local Government is situated along the extended coastline of Lagos State. Most of its lush vegetation, a mixture of mangroves, swamp and humid rainforest, had been slashed, drained, and transformed into a huge residential district. Official demographics are unreliable, but in 2006 population figures for the local government were placed at slightly under a million. Published studies on the economy and social structure of this and other local governments in Lagos are either rare or outdated. At the same time Eti-Osa is home to a number of large, local and international businesses. Ocean surges as well as flooding during the rainy season are the major environmental challenges in both Eti-Osa and Lekki. Communities like Maroko, Okun Alfa at Alfa Beach and Langbasa have been traumatized by the inundation of their homes and businesses,and the rapid erosion of the beach in 2010 and 2011. Under a *Mobilising Local Governments for Climate Action* project in Lagos state, a Nigerian non-profit organisation "Community Conservation and Development Initiatives" (CCDI) carried out a 2011 survey to determine the level of preparedness of Yaba, Lekki and Eti-Osa Local Government communities to climate change related issues. Kofo Adeleke of CCDI writes that the purpose was to identify local priorities, opportunities and obstacles through community engagement, capacity building for local government officers and the empowerment of local communities in decision-making.
Despite positive development such as the institution of awareness and advocacy activities, participation at national climate events, as well as a willingness to make climate change a development priority, these local governments had never been subjected to a climate vulnerability assessment, and had no budget or designated staff or desk specifically for issues over adaptation to climate change impacts.
The key messages of a strategy to check the destruction of the Lagos coastal communities will have to be an integrated agenda centred on an acceleration of growth to reduce poverty, the management and reduction of risks of disasters.

Eko Lagos City - and the new Eko Atlantic City: A case study in development issues

Prof. David Aradeon

Lagos is a series of islands: Eko, Ikoyi, Victoria Island/Lekki and Iddo, each of which is linked and bound, separated as well as articulated by the lagoon. Between 1900 - when the British colonial system began structuring Lagos - to 1914 - when the Lagos breakwater east and west moles was opened to shipping trade - the basic structure of the city had been virtually laid and its primary role as a port city and market center for imported consumer goods assured. Between 1914 and 1960, Lagos functioned as a British colonial enclave and outpost and, to all intents and purposes, the city was more a part of the British economic and financial system. Within the Nigerian spatial system, Lagos functioned as a sluice gate for the outflow of our natural resources.

Because of the ecosystem of the Lagos region, the British developed engineering access of bridges to link the islands and causeways over swampy terrains: the Five Cowrie Creek Bridge between Eko and Victoria Island, McGregor Canal Bridge links Eko Island and Obalende-Ikoyi, and Carter Bridge on Iddo Island links Eko to the south and Mainland Lagos to the north.

In this minimalist structure of island-hopping bridge system, Iddo, the smallest but the most strategic island functions as a fulcrum island: from Iddo, Carter Bridge links north to the mainland and south to Eko island; from the Railway terminus on Iddo, the railroad runs north but parallel to Abeokuta motorway; and through Ebute Metta/Apapa road and Ijora Causeway the railroad links to Apapa wharf.

Between the railway terminus on Iddo Island and the end of the North-western line in Nguru, the railway used to run through the cash crop plantations to load cargoes of coconut, oil palm, etc. in the south and groundnuts, hides and skins from the north; and unload cargo of imported consumer goods from the factories in Britain. Since the last forty years when over 80% of our revenue is earned from the sales of crude oil and gas, Lagos has functioned as a market place for consumer goods imported from all over the world.

In fifty years since 1960, we have built more bridges and many more express ways to keep Lagos with its exploding population barely functioning. Access for the private motor cars continues to dominate our thinking; and our express ways continue to transform into distributor roads. Privately owned Volkswagen Bus units constitute the pool of public transportation system. Farmed out to private transporters, some of the Blue Line World Bank funded BRT buses have been grounded. Within a year, those buses bear the imprints of the Danfo culture.

With the expansion of the city to Lekki peninsular which begun in the 1980 decade, Lagos Megalopolis will, by the middle of the 21st century become the centre of a major human settlement's conurbation centered on the Lagos lagoon.

As projected by the current Governor of the State, Lagos megacity can accommodate a population of 40 million people. What are the plans to sustain a megalopolis of this size? Because of the intolerable cost of production and the deluge of imported consumer products flooding the markets, the factories of the 1960 decade are being shut down. Factory workers are continually being laid off. People are flocking into the prayer meetings of the Evangelical churches in the abandoned warehouses for their message of hope and faith in miracles, just as thousands are attracted to the promise of the lotteries.

As we continue to stumble on our way towards building the Lagos megacity of 40 million people, we keep falling back on the combination of the strategies employed and deployed with the ruthless efficiency by the colonial government 100 years ago. These include dispossessing the indigenous and poor people of their land for public good; drainage of swamps to create channels through the swamps for controlling mosquito breeding environment; using land fill and hydraulic sand fill to create buildable land and erecting stone walls in the sea/beach to protect ships through the Lagos harbor.

These days, we are sand filling the lagoon and the channels to build more houses and office buildings largely for rent. The wet lands and the grand and picturesque Opebi Gorge, which runs east-west and drains into the lagoon, are being filled with monstrous concrete block buildings. In the 1980 decade, the

Lagoon City was planned on a stretch of sand filled land between what was left of Ikoyi Park, which dates back to 1930, and Osborne road. Even though the cancellation of that project saved the historic colonial Ikoyi with the lagoon view, a new Osborne Estate cramped with its servants' quarters had risen on half of the site of the Lagoon City project.

The Public Private Partnership strategy for development has not only freed government of its social responsibilities to the citizens, but it has enabled the government to develop the spirit of grandeur in the search for projects, which ennoble the spirit of royalty. However, the cost of most PPP projects is never disclosed to those who will pay the debt negotiated in their name. The financial burden on the next generation is enormous.

The history of cities is replete with leaders whose vision and imagination have changed the direction of their city: Haussmann in Paris during the reign of Napoleon Bonaparte III; and Nero, the Roman Emperor who 'fiddled' while Rome burnt. Eko Atlantic City, unlike the Lagoon City project of the 1980 decade in Lagos, may very well turn out to be one magnificent visionary city as opulent and ostentatious as Dubai city! As proposed, Eko Atlantic City is a private and gated city firmly grounded on the exploitation and expropriation and use of our common wealth for private profit. With access from existing Ahmadu Bello Road on Victoria Island, it is grafted onto the existing west mole and built on hydraulic sand fill mined from the ocean.

The system of protective walls consisting of the East and West moles as well as the Training mole has to all intents and purposes, protected the harbor and the city from the Sea waves for almost one hundred years. But enormous tax payers Naira have been expended by the Federal government over the years to shore up and replenish the erosion caused by the sea waves. The sand being dredged for the project is from the Nigerian continental shelf, the resource is our common wealth. Any collateral damage to the eco system constitutes damage to our common wealth.

Considering that climate change and the strong possibility of the flooding of Victoria Island and Lekki Peninsular is extremely worrisome for the people who have built and those who are building their homes in those places, the environmental impact of this project must be fully explored and determinable on the ecosystem of Lagos and the people who live in the coastal zones in Lagos and the Ecowas region. With all these issues combined the promoters of this project, their bankers and insurers are liable for any and all collateral damage that the grafting of this project to the sea wall may cause to Lagos and its citizens, and all the people of the ECOWAS coastal region. In addition to full public disclosure of these reports to enable a full public debate, they must insure all concerned citizens who build, live and work in the areas whose lives are likely to be negatively impacted by the construction of this 21st century dream city.

Eko Atlantic Environmental Impact Assessment: Legal issues

Prof. Margaret Okorodudu-Fubara, Ph.D
Prof. 'Lanre Fagbohun, Ph.D

The Eko Atlantic City project is a mega project of overwhelming proportions. The project has far reaching consequences on the environment, surrounding communities and the international boundaries of Nigeria. This segment of the report will examine the Eko Atlantic City project from two broad perspectives namely, its implications on Nigeria's territorial waters; and the extent to which it has complied with the law relating to environmental impact assessment.

Legal status of coastal waters

The legal status of Nigeria's coastal waters is governed by the following laws and instruments:

1. The United Nations Convention of the Law of the Sea (UNCLOS): Nigeria is a signatory to the UN convention on the Law of the Sea and has ratified same into law. It defines territorial waters as a belt of coastal waters extending 12 nautical miles from the baseline or low water mark of a coastal state. The Eko Atlantic City will alter the coastline of Nigeria thus altering the outer limits of Nigeria's territorial waters.

2. The Constitution of the Federal Republic of Nigeria (1999): The Constitution provides for the procedure to be followed in the adjustment of the boundaries of a state under section 8 (2). It is to the effect that the adjustment of the boundary of a state can only be done by an Act of the National Assembly and the procedure for doing same is as provided under section 8 (2) of the Constitution.

3. The Territorial Waters Act CAP T5 LFN 2004: Section 1 of the Territorial Waters Act provides as follows – "The territorial waters of Nigeria shall for all purpose include every part of the open sea within twelve nautical miles of the coast of Nigeria (measured from the low water mark) or the seaward limit of inland waters". The construction of the Eko Atlantic City would alter the external limits of the territorial waters of Nigeria.

4. The Water Resources Act, 2004: Section 1 of this Act vests "The right to the use and control of all surface and groundwater and of any watercourse affecting more than one state ..." in the Federal Government of Nigeria. The Act also provides that the Minister shall during the discharge of his duties have regard to the need to make provision for the "the reclamation of land" and "ensuring that the possible consequences of particular development proposals on the environment are properly investigated and considered before each proposal is approved". With respect to the Eko Atlantic City project, the EIA was carried out after the commencement of dredging.

5. The Exclusive Economic Zone Act, 1978: section 2 of this Act, provides: "Without prejudice to the Territorial Waters Act, the Petroleum Act or the Sea Fisheries Act, sovereign and exclusive rights with respect to the exploration and exploitation of the natural resources of the sea bed, subsoil and adjacent waters of the Exclusive Zone shall vest in the Federal Republic of Nigeria and such rights shall be exercisable by the Federal Government or by such Minister or agency as the Government may from time to time designate in that behalf either generally or in any special case." This Act like the preceding Acts mentioned above, also provides that the authority for exploration and exploitation of the subsoil (land reclamation) vests in the Federal Government of Nigeria and not the state contiguous to it.

6. The Environmental Impact Assessment Act CAP E12 LFN, 2004: This Act likewise defines federal lands to mean: Section 62 - (ii) the territorial sea of Nigeria ...;
(iv) any exclusive economic zone that may be created by the Federal Government and
(v) the continental shelf, consisting of the sea bed and subsoil of the submarine areas ..."

7. The National Environment (Coastal and Marine Area Protection) Regulations, 2011: This regulation prohibits real Protection) Regulations, 2011: This regulation prohibits land reclamation for commercial purposes under Regulation 10 as follows: "Reclamation for commercial purposes such as shopping and housing complexes, hotels and entertainment activities shall not be permissible ..."

Further to the foregoing provisions of the law, the issue of who exercises jurisdiction over coastal waters was settled by the Supreme Court in the case of Attorney General of the Federation vs. Attorney General of the Abia State & 35 ors (2002) 11 NWLR 689. In this case, the Supreme Court held that the continental shelf is not part of the territory of a state contiguous to it.

In view of the provisions of the foregoing Acts and Regulations, it is clear that it is the Federal Government of Nigeria that has authority to exercise jurisdiction over the territorial waters of Nigeria including the continental shelf. The current status of the Eko Atlantic City is that it is fraught with illegality and constitutional breaches. LASG must also ensure that it complies with section 8 of the Constitution of the Federal Republic of Nigeria.

Eko Atlantic Environmental Impact Assessment – issues arising

An environmental impact assessment (EIA) is an assessment of the possible positive or negative impact a proposed project may have on the environment.[1] This assessment is expected to take into account the environmental, social and economic aspects of the project. In 1992, the Federal Government promulgated the Environmental Impact Assessment Decree No 86, now the Environmental Impact Assessment Act Cap E12, LFN 2004. Currently the Federal Ministry of Environment is responsible for ensuring compliance with the Act.

Minimum requirements for EIA

By virtue of the provisions of section 4 of the EIA Act, an EIA report must contain inter alia the following minimum contents. It must:

Put together relevant baseline information;
Provide requisite answers to concerns and questions of stakeholders;
Identify relevant socio-economic and environmental aspects of the Project;
Suggest measures and redesign alternatives
An identification and description of measures available to mitigate adverse environmental impact of proposed activity and an assessment of those measures

Analysis of the factual background

The Eko Atlantic City project has breached the fundamental provisions of the EIA Act and the following critical issues can be identified with respect to the EIA report prepared in respect thereof:

1. LASG commenced dredging activities in 2009, while the EIA report was completed in April 2011. This was in clear contravention of the EIA Act which provides that the EIA must be carried out before embarking on any developmental project.

2. The failure to carry out an EIA prior to the commencement of dredging activities has defeated the purpose for the EIA because there was no collection of credible baseline data against which to bench mark the findings of the EIA (see section 4 EIA Act).

3. The EIA report lacks information about the impact the project will have on the stability of the ecosystem. This is a serious omission in the EIA process and will likely have far reaching consequences for the environment including but not limited to loss of biodiversity and ocean surges.

4. The failure to carry out an EIA in respect of the Eko Atlantic City project prior to the commencement of dredging activities amounts to an illegality in itself as provided in section 60 of the EIA Act.

5. The EIA report has not taken due consideration of the relevant stakeholders and the effect that the project would have on the status, environmental health and way of life of the host communities in the proposed project area. It is important to note that apart from the host communities, neighbouring coastal and littoral states shall be affected by the Eko Atlantic City Project.

6. The EIA report indicates extremely serious omissions and shortcomings in the analysis of impacts.

7. The combined effect of the above is that the Eko Atlantic City project has not fulfilled the requirement of the law as a category 1 project requiring full and Mandatory EIA.

Recommended remedies

1. The Eko Atlantic City project must be suspended on the grounds that it is not lawful having contravened the provisions of the EIA Act.

2. The EIA must be conducted afresh in order to address the lingering issues such as a proper analysis of the impacts the project would have. Please note however, that the opportunity to collect proper baseline data may have been lost because of the land reclamation activities that have already commenced.

3. Ensure public participation (relevant stakeholders) in compliance with the EIA Act. This will serve to deter future transgressions.

4. Ensure adequate dissemination of accurate information to the relevant stakeholders and the general public at large.

[1] http://en.wikipedia.org/wiki/Environmental_impact_assessment

Eko Atlantic City - a sustainable development project for coastal States? Best practices from other countries

Ako Amadi

No two coastal cities are identical in respect of history, social structure, ecology and economy. Sometimes, a transfer of solutions from one context to the other may not necessarily be effective. Nevertheless, shared experiences exist - population congestion, pollution and ecosystems degradation, but also the aspirations for economic growth, expansion and job creation.

The rapid deterioration in the state of Nigeria's coastal areas elicits questions over critical choices to be made in the development process. Which activities will be economically viable, but at the same time environmentally sustainable? More and more people in Nigeria are moving into urban areas, in particular to the maritime cities of Lagos, Port Harcourt, Warri, and Calabar. What is a sustainable city, and where are the pro-poor responses to threats posed by over-population and over-stretched resources, global warming and environmental degradation? Why are poor people the most vulnerable to rapid changes in the environment? In respect of the proposed Eko Atlantic City, these questions are best answered at the concept and planning stages of physical alterations in the coastal areas of Lagos, not afterwards.

Annexation of a totally new city to an old one requires composite environmental assessments that combine the mutualisms of the two in respect of economic, social and environmental impacts. How will existing Lagos affect the intended new city, and what changes will Eko Atlantic bring to old Lagos? Urban poverty and unplanned settlements, the lack of basic infrastructure to cope with flooding, waste disposal, sanitation and transportation in Lagos, will certainly not vanish through the establishment of a state-of-the-art Eko Atlantic City. Land use and environmental conflicts will probably arise from privatization of open spaces and foreshores, followed by confrontations in attempts by task forces to control the influx of landless persons, hawkers, beggars, roadside mechanics and "vulcanizers," and street kitchen; the majority squatting as near as possible to convenient places where they make a living.

It is projected by the developers that around 150,000 commuters will be "on the move," in Eko Atlantic every day. The computed figures are not followed by explanations over the origins of such commuters. Many will be service providers to the new city from the rest of Lagos State, and not all residents of Eko Atlantic will find employment in it. Imagine the wahala of increased human traffic – more vehicles, more stress on the surroundings, more generation of waste products that end up in gutters and waterways, squares and gardens, not forgetting higher levels of emissions from combustion engines – cars, buses, trucks, motor bikes and electrical generating sets. Access to Eko Atlantic will be mainly by road. The majority of 250,000 projected inhabitants on the waterfront will have to use the network of dilapidated roads of present-day Lagos whenever they wish to come out of their enclave. Air and water transport from a proposed airport on Lekki Peninsula, and three marinas connecting to the inadequate Lagos water network via the lagoons and creeks will hardly be sufficient, both on a regular basis, or in times of any disasters that will necessitate a rapid retreat of people.

Compare this to the cities of Kuala Lumpur, Jakarta and Singapore where governments are currently calculating coastal risks and how to improve post-disaster recovery; widening access roads to the coast and dismantling obstructing facilities to cope with evacuation when tsunamis occur.

Best practice is spawned by an integrated approach to planning, and through foresight. It is now generally accepted scientific knowledge that ocean levels will rise faster than expected if global greenhouse gas emissions continue to rise. Projections are for a sea level rise of up to 1.4 metres by 2100, based on a proportional constant sea level rise of 3.4 mm per year per degree Celsius. Low-lying coastal cities like Lagos are placed in the delicate situation where government has to align economic growth targets with the real possibility of some areas of Lagos going under water. Admittedly, scientific projections are hypothetical even where evidence-based, but it is now common practice around the world to apply so-called precautionary principles, i.e. factor climate change into urban planning to avert the greater risk of doing little today with major consequences tomorrow. The Lagos State government has the responsibility to protect the people living in low-lying areas such as Victoria Island and the Lekki Peninsula from possible massive ocean surges in the coming decades, and such protection needs to be planned now. Why grow and develop low lying areas today when they are at substantial risk tomorrow?

In this context, Eduardo Jorge, municipal secretary of the environment in Sao Paulo, Brazil made the point that public education and access to information are key factors in managing

Orlando Wetlands Park, Florida at sunset. Photo: courtesy, Milton Heiberg

urban agglomerations. "When people have information, society advances," he said. Uninformed and uncounselled communities on the other hand, common features in Lagos, can neither be expected to participate equitably in environmental management nor respond effectively to eco-disasters.
Sustainable development should ideally be backed-up by sustainable innovations which can only be nurtured through what we generally describe in project jargon as "empowerment" – democratic governance, participation, sustenance of functional institutions, a sharing of information, transfer of knowledge, transparency. The local government practice in Lagos State as elsewhere in Nigeria does not permit adequate devolution of authority, equitable and efficient tax systems, secure land tenure, accountable public spending, and the development of infrastructure to cope with the risk of living in coastal cities vulnerable to sea level rise and erosion. Who has sat down with the communities in Maroko or Makoko to plan their future as part of megacity Lagos? Alas, this seems the current practice for much larger slum areas in cities like Sao Paolo, where evictions are illegal and participatory planning has become a continuous reality.

At the current planning stage the projected Eko Atlantic City offers a range of cutting edge assets, such as homes, wide avenues, gardens, shopping malls, business centres and waterfront promenades. All that is possible with high technology and high financial investments. Nevertheless, the risk element confronting critical coastal ecosystems all over the world – the responses to threats posed by global warming cannot be ignored. The possibility of a well-protected Eko Atlantic City facilitating more erosion in adjacent, unprotected coastline areas where poor communities live must neither be left to conjecture, nor to a lethal game of trial and error.

According to M.S.Swaminathan (UNESCO chair for eco-technology), on the coast of the southern Indian State of Tamil Nadu, villages adjoining thick mangrove forests were saved from the fury of the tsunami in December, 2004, because of the speed-breaker role played by the mangroves. In nearby villages, where mangroves had been destroyed either for fuel wood or aquaculture ponds, several hundred fishermen died. Local people in Tamil Nadu now refer to mangroves as "life-savers." The coastal mangroves of Lagos have been slashed to make way for infrastructure and housing development, leaving an unprotected coastal area to subsidence, storm surges, accelerated sea level rise and inundation from rainfall.

When the government of Tanzania established Saadani National Park in 2005, it enhanced protection of the coastal mangrove ecosystem from further degradation. A study by a team of University of Rhode Island researchers found that the new park caused a short-term negative effect on the livelihood of those who harvest mangrove trees for fuelwood but a long-term benefit to their local communities from increased fishing opportunities.

Artificial wetlands are created in many coastal locations around the globe. For instance, the concept of the Orlando Easterly Wetlands Reclamation Project in Florida, USA, was a large-scale, constructed treatment wetland, whose main objective had been the purification of wastewater, but would have the strong secondary objective of creating a wildlife habitat with specific habitat types. By contrast, Lagos is dredging up marine sediments and is draining valuable brackish wetlands for conversion into plots of land and housing estates for those wealthy enough to afford them. Alone the Eko Atlantic City project targets dredging approximately 90 million cubic hectares of sand from the marine shelf to cover 900 hectares of inshore waters.

Wetlands are not wastelands. Regrettably Lagos has to date destroyed a natural system that was once the breeding ground for fish and shellfish, and acted as a sponge to soak up excess rainfall, and spill-over from ocean floods. There's a bus station in Victoria Island that bears the name "Sandfill," a testimony to the progressive "reclamation" of marshlands on the island and in Lekki Peninsula from the period soon after Nigeria's Independence in 1960 to the present day. Ironically, Nigeria is a signatory to the RAMSAR Convention on Wetlands, an intergovernmental treaty adopted in 1971 on the wise use of wetlands. Many cities not so endowed with natural wetlands as Lagos have set up wetlands centres which attract large numbers of school classes and tourists. The loss of the wetlands in Lagos has a direct impact on shoreline protection, peri-urban farming, and supply of nutrients to the marine environment, and therefore to fish and shellfish production, and by implication to livelihoods and national food security.

The green coverage of cities like Accra, Mombasa or Cape Town, to cite maritime examples in Africa, improves stability of the micro-climate, decreases pollution, and creates a healthier environment in addition to absorbing carbon dioxide from the atmosphere. Jobs and incomes can be created through increasing and maintaining more green areas. Environmental greening is yet to happen in Nigeria, leaving the country lagging behind in world standards on healthy living.

Water hyacinth - an invasive aquatic species, native to Brazil - first occurred in Lagos lagoon in 1984. In view of its rapid growth, the plant has choked many waterways in Nigeria including what is left of the coastal wetlands of Lagos State. Hyacinths impact artisanal fishing by clogging nets, hooks, and traps; and leave little oxygen for fish and smaller water creatures. Beyond the practice in Lagos of mechanical removal using rakes and booms, and breeding of plant-eating weevils imported from Florida, a Kenyan initiative has plans to make economic use of the hyacinths. The Zero Emission Research Initiatives (ZERI) in Kenya is experimenting with growing mushrooms using harvested and decayed water hyacinth as substrate, and also to yield bio-gas and agro-fertilizers, as well as to farm earthworms. Water hyacinths are commonly used in water purification in India and Sri Lanka, and for making furniture in Thailand.

Sao Paulo Mayor Gilberto Kassab said that his city was able to reverse "decades of negligence on the environment" by implementing measures such as the protection of watersheds, the expansion of green areas and the first mandatory program in Brazil for the inspection of emissions from cars, buses and trucks, which has reduced pollution within the city. He also emphasized the political momentum in Rio de Janeiro behind the creation of bicycle lanes as an important transportation solution for the city. "If we achieved this in a complex city like Sao Paulo, it is possible to do it everywhere", he said.

Lagos has to find a new paradigm for complementarity between growth and the environment.

Bio - Notes

Professor David Aradeon was named a Nigerian National Order of Merit Laureate in 2006. An architect-educator, he is a 1966 graduate of Columbia University, New York City. He taught Architecture at the University of Lagos (1972-1998); was Chair of Architecture 1979-1998, and former Dean of the Faculty of Environmental Design. He is a recipient of the 1966 Paris Prize, National Institute of Architectural Education, U.S.A and Grants by The Ford and Farfield Foundations for travel and study of human settlements in North and West Africa (1968-1972), and of Bento Pedroso Construcoes SA Lisbon, Portugal for the study of the Antecedents of Afro Brazilian Spaces in Brazil, 1992. He is an architectural photographer and curator whose credit includes The Exhibition of African Architectural Technology, FESTAC 77. He is currently working on plans for a major Exhibition and International Workshop/Conference on the Future Perspectives for Eko, the Lagos City. He also had an Installation on The Transformation of Forms at the 2007 Documenta 12, Kassel, Germany. He is a Co-Founder and Chair of Build with Earth, an NGO and the Founder and Director of The Sankore Institute for African Environment. He runs an Architecture and Planning Practice in Lagos.

Professor Margaret Okorodudu-Fubara is a 1972 graduate of the University of Lagos with a distinguished record in environmental law consulting and university teaching. She was called to the Bar in 1973. She obtained the LL.M and SJD degrees in 1977 and 1980, respectively, from Harvard Law School, USA, after a first LL.M. degree from the University of London, UK in 1975. Professor Okorodudu-Fubara, a former Dean of the Faculty of Law, Obafemi Awolowo University, Ile-Ife, Nigeria (1995 – 2000), is widely published in reputable national and international journals and is the author of the first Nigerian text book on environmental law. Professor Okorodudu-Fubara was granted the Senior Fulbright Scholar Award, 1990/91 and the Robert S. McNamara (World Bank) Fellow,1990/91 to undertake overseas sabbatical as Visiting Scholar at the St. Mary's University School of Law, San Antonio, Texas, USA, 1990/91. She was appointed Visiting Professor at the School of Law, University of Oregon, Eugene, Oregon, USA, 2001/02 where she taught Comparative Environmental Law. She was appointed Consultant for the United Nations Environment Programme, Nairobi, Kenya, 2002/03 engaged as part of the team to prepare a Draft Manual on the UNEP Guidelines on Compliance with and Enforcement of Multilateral Environmental Agreements. Professor Okorodudu-Fubara is a member of the IUCN and Associate Member of the IUCN Academy of Environmental Law. She was appointed by the President, Commander-in-Chief of the Armed Forces of the Federal Republic of Nigeria Member of the National Universities Commission in 2009.

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