

Factors and Processes of Coastal Zone Development in Nigeria: A Review

P.C. Mmom and G.O. Chukwu-Okeah

Department of Geography and Environmental Management, University of Port Harcourt,
Rivers State, Nigeria

Abstract: Over the years the issue of coastal zone development has been of great concern especially in the face of global climate change. This has been motivated by the polluted state of the coastal zones which have given rise to high mortality of aquatic animals, Contaminations of human lathered, impairment of human health, Loss of biodiversity in breeding grounds, Vegetation destruction and other ecological hazards, Loss of portable and industrial water resources, Reduction in fishing activities, Poverty, rural underdevelopment and bitterness within the coastal communities. The coastal zone, which is land-sea interface is one of the most complex areas of management being the home to an increasing number of activities, rights and interests, its unplanned and uncontrolled development has the real potential to damage the social, economic and environmental interests of the residents within this area, each state and territory and each region or unit of local government. The paper identified three factors and processes that needs to be considered in the development of coastal zones. The findings of this review explains that in Nigeria, no policy is in place with relation to coastal zone development and management as a sector rather coastal zone issues are imbedded in the national policy on environment arising from this, there are no specific outline on the development of the coastal zone, the policy does not specify issues and concepts that houses the coastal zone, it does not capture the need for protecting the lives of the inhabitants of the coastal communities noting the nature of the terrain, it also does not take into cognizance the problems associated with the area and it is wide open without any particular organization saddled with the responsibility of coastal zone development. It also identified that due to the limitations in the policy of Nigeria on environment which did not capture specific items that relates to coastal zone development as well as management, this zone that is uniquely sensitive and vulnerable have been left without any form of coordination allowing for excessive use of coastal resources at the expense of the environment.

Key words: Coastal zone, development, environment, factors and processes, policies, sustainable development

INTRODUCTION

The Nigerian coastal region is endowed with a lot of resources. However, the environmental problems in the Nigerian coastal region are becoming serious issues of concern, which calls for immediate attention. The Nigerian coast is characterized by a low-lying topography with average height of not more than 3.5m above sea level in most areas. The country's coastal boundary with the Atlantic Ocean is about 835km. The coastal zone is classified into four broad regions due to morphological, vegetational and beach type differences. The regions are the barrier lagoon coast, the Transgressive mud coast, the Niger delta (most popular) and the strand coast.

The land-sea interface is one of the most complex areas of management being the home to an increasing number of activities, rights and interests. The coastal zone is a gateway to the oceans resources, a livelihood for local communities, a reserve for special flora and fauna, and an

attractive area for leisure and tourism. Approximately 70% of the Earth is covered by water of which 97% is saltwater, predominantly seas and oceans. The Earth's total coastline measures approximately 860,000 Km. However, agreement about what constitutes the extent of a coastal zone either landward or seaward varies among jurisdictions.

The coastal zone itself is an area considered in some European countries to extend seawards to territorial limits, while others regard the edge of the continental shelf at around the 200 m depth contour as the limit.

Broadly speaking a coastal zone is understood to be a defined spatial extent encompassing land (including submerged land), sea, and the land-sea interface, where each entity within the defined spatial extent exerts strong influence upon the others in terms of ecology and uses.

Over 50% of the earth's population live within 100 km of coasts, and this population is expected to increase by 35% by the year 2025. Approximately 634 million

people live in coastal zones (defined as areas that are less than 10 m above sea level). These huge numbers of people are at risk from rising sea levels and extreme weather attributed to climate change.

The coastal zone of Nigeria could be described based on geomorphology, vegetation, natural resources and socio-economic activities (Ifeyinwa, 2000). Geomorphologically, the barrier-lagoon coast extends eastward about 250 km from the Nigerian-Benin border to Ajuno village, consisting of narrow beach ridges aligned parallel with the coast and backed up by the Badagry, Lagos, and Lekki lagoons with beach sediments of medium to coarse grained sand and moderately well sorted. (IBE, 1998).

The transgressive mud coast extends about 75 km east of the barrier lagoon terminating at Benin river estuary in northwestern part of the Niger delta. This region is low lying and muddy in nature; however, it is backed by fresh water swamps with medium, coarse and poor sorted silt sediments. The Nigerian coastal zone sprawls a total of nine states, out of the thirty-six states of the federation, namely: Akwa-Ibom, Bayelsa, Cross River, Delta, Edo, Lagos, Ogun, Ondo and Rivers. The coastal states are estimated to account for 25% of the national population. The coastal areas stretch inland for a distance of about 15 km in Lagos in the West to about 150 km in the Niger Delta and about 25 km East of the Niger Delta. The coastline stretches for about 853 km comprising inshore waters, coastal lagoons, estuaries and mangrove especially in the Niger Delta.

The Nigerian coastal zone sprawls a total of nine states, out of the thirty-six states of the federation, namely: Akwa-Ibom, Bayelsa, Cross River, Delta, Edo, Lagos, Ogun, Ondo and Rivers. The coastal states are estimated to account for 25% of the national population. The coastal areas stretch inland for a distance of about 15 km in Lagos in the West to about 150 km in the Niger Delta and about 25 km East of the Niger Delta. The coastline stretches for about 853 km comprising inshore waters, coastal lagoons, estuaries and mangrove especially in the Niger Delta.

Economic activities in the coastal zone include Oil and Gas exploration and exploitation, fishing industries, shipping, agriculture and tourism. The zone experiences a tropical climate consisting of a rainy season (April-October) and a dry season (November- March) with diurnal temperature as high as 34 to 35°C and high relative humidity rarely below 60%.

The biological activity of the coastal zone ensures stable pH, a notable feature of the marine environment, whereby conditions are remarkably constant over certain areas and marine plants and animals have correspondingly wide distributions. The marine life has therefore evolve in great diversity.

Mangrove swamps are mostly predominant and flourishing in the Niger Delta. The red mangroves-*Rhizophora racemosa* makes up about 90% of the vegetation of the mangrove ecosystem. Other species are *R. harrisonii*, *R. mangle* and the white mangrove *Avaicennia nitidae*.

Wetlands are major habitats in the Niger Delta and support vegetation which is adapted to continuous water logging. The wetlands in the Niger Delta include meshes, sloughs and estuaries. The estimates total area of wetlands in the Niger Delta is about 1,794,000ha of freshwater swampland (NEST, 1991). Nigeria is free of earthquakes, the major causes of sediments within the Nigerian drainage basin are rainfall, wind and human activities.

Marine animals like Sea turtles, manatees, shoreline birds and other threatened marine species have been identified in relative population within the coastal zone in Nigeria. Manatee in particular has been of socio-economic importance in the life of coastal communities. A survey carried out by Nigerian Conservation Foundation identified presence of sizeable number of manatees in the Benue Basin (middle belt of Nigeria). Sea turtle and Shoreline birds have also been found in the Niger Delta area of Nigeria. The interest of this study is to identify the factors and processes that could bring about the development of coastal zones as well as the factors responsible for the underdevelopment of the coastal zones in Nigeria over the years.

Factors in Coastal Zone development: Coastal zone development has historically taken three types of factor into account: ecological, social and economic factors (ICZM strategies part 2). Modern practice is characterised by an effort to synthesis these factors. Thus to resolve the environmental problems that arise as a result of the use of natural resources, it is necessary to take into account ecological factors. Social factors are key in resolving conflicts between different stakeholders (users of natural resources in the coastal zone) Finally, economic factors need to be taken into account when planning the development of the coastal zone.

The concept of coastal zone planning is different in different countries; so current approaches and methods of coastal zone planning throughout the world present a varied picture. In the USA for example every state that has an outlet to the ocean has its own plan for coastal zone development that reflects local legislation. Industrially advanced European countries (Great Britain, France, The Netherlands) established the legal base for coastal zone planning on the basis of *Roman law* and wide experience of land management and engineering. However, these same countries followed a policy of uncontrolled plundering of natural resources of the coastal zone in their colonies. Relics of this attitude are still

present in many countries that have long since become independent (Indonesia, India) Finally, countries with a command economy (Cuba) have accumulated a wealth of experience in planning - but only on the basis of a centralized command system. Brunei, Singapore, Ecuador and Columbia are trying to develop their own coastal zone planning policy. In some instances different regions of the same country apply differing approaches and methods of coastal zone planning (China, Trinidad and Tobago) It is clear that current coastal zone planning is based on ideas and concepts from a variety of schools and positions that are not always mutually compatible. However, there are some widespread trends in coastal zone planning:

- Abandoning the sectoral (bureaucratic) approach in favour of a comprehensive (inter-sectoral) one; development of integration and cooperation
- Transfer from anthropocentric vision to an egocentric one, recognition of the ecological uniqueness and particular value of the coastal zone
- Transfer to adaptive management
- Dynamic planning: transfer from the plan as a document to planning as a process; using Global Information Systems (GIS) as a management tool
- Broad involvement of local people in decision-making
- Raising the level of environmental awareness of all people involved in the decision-making process
- Development of a preventive approach to natural and anthropogenic disasters
- Recognition of the concept of *sustainable development* as the basic paradigm of coastal zone planning and management

The ecological, social and economic systems of coastal areas can sustain over a long time-span if the following basic “coastal zone rules” are observed:

- Each coastal ecosystem is unique and requires a specific management strategy. Using standard approaches (state standards, rules and norms) does not necessarily help to solve existing problems – on the contrary, it can lead to environmental disaster.
- Protection of the coastal zone includes not only the protection of the coastal vegetation and animal communities, but also comprehensive protection of biotopes (dunes, beaches and wetlands) that constitute the “body” (foundation) of the ecological, social and economic system. Any (even the smallest) changes in biotopes can affect the stability of the system as a whole.
- The physical, biological and social processes in the coastal area can only be understood properly if its ecological, social and economic systems are considered as a whole. Any deviation from a systematic approach may lead to reductionism.

- For each coastal area there is a particular set of natural and anthropogenic risks that threaten its ecological, social and economic system; the common threat is the rise of World Ocean levels.
- Coastal zone development plans should take into account ecological potential. Productivity and sustainability of coastal ecosystems depends on certain objective factors and cannot exceed the levels determined by the laws of nature.

Development issues of Coastal Zones: Unplanned and uncontrolled development of the coast has the real potential to damage the social, economic and environmental interests of the residents within this area, each State and Territory and each region or unit of local government. (Barker, 2002).

Coastal zones are uniquely sensitive and vulnerable areas. There are a number of key conflict areas some of which are shown below. Ensuring a balance between the natural environment and the human interventions is a great challenge because of the inherent ‘vulnerabilities’ associated with coastal areas.

Environmental Vulnerability: Coasts are often areas of outstanding natural beauty where development would bring the area into conflict. Conservation orders can protect the pristine coastal areas and preserve vulnerable flora and fauna. More generally, coastal protection lines can be applied to enable targeted control of the potential conflict between economic development and the protection of natural environment.

Increasing human intervention in these areas is challenging natural and diverse habitats, but also the communities that have been residing there for some time. Coastal zones are dynamic environments which are naturally susceptible to changes such as:

- Tidal erosion and the deposit of material
- Changes in water quality the results of which can be positive or negative
- Increase in commercial activity
- Increase in recreational activity
- Global warming resulting in algal blooms; rise in sea level; increased storm frequency and severity; erosion and increased sedimentation

The negative consequences of some of these changes to ocean and coastal characteristics, as well as to coastal communities, include:

- Coastal erosion and flooding and damage to coastal habitats
- Increased water pollution, that adversely affect freshwater resources
- Devastation to marine life

- Loss of unprotected dry land and wetlands
- Loss of exclusive economic rights over extensive areas
- Destruction of existing economic infrastructures and commercial activities

Multiple use conflicts in the Coastal Zone: Stakeholders from diverse economic and social groups share and compete for space in coastal zones worldwide. Affluent commercial and economically wealthy stakeholders have the potential to severely limit access to resources for poor communities.

Coastal zones have many uses and serve many functions. These areas provide natural, social and economic facilities that contribute to increased quality of life, and the oceans are instrumental in determining climate. A great variety of social and economic activity takes place in coastal zones including:

- Tourism
- Commercial and recreational fishing
- Oil and gas development
- Habitats for endangered species, species breeding and resting areas
- Groundwater recharge
- Water treatment; and
- Flood attenuation

Coastal zones are also sources of community wealth, providing:

- Sources of food from animals, plants and fish
- Means of transportation
- Means of communication (e.g., cables)
- Areas for implanting fixed navigational installations (e.g., lighthouses and piers)
- Areas for the dumping of waste materials; and
- Areas for scientific research on Earth's basic physical and biological processes

In this context good governance is characterized by an acceptable balance of stakeholder access to resources, ensuring that competing needs and agendas can be met with as little conflict as possible. Managing this, is difficult in an area that is dynamic, constrained by space, and is particularly at risk to global changes whether these are driven by climate or economics.

Human conflict in the Coastal Zone: Increasing urbanisation in the coastal zones can bring into conflict the balance between economic development, the livelihood of local communities, and protection of the natural environment.

Such conflicts may occur in a more extreme form where the natural livelihood of the indigenous population

and their access to the coastal resources is taken over by economic interests. These include tourism and leisure development that will not necessarily benefit the low-income people and the local community. In this extreme form indigenous people are displaced from their original spaces and places and may need to relocate in informal settlements with limited basic services, unacceptable environmental conditions and few or no work opportunities.

Many coastal communities live in, or are at risk from socio-economic poverty. This can have a negative environmental effect upon coastal zones with poverty driving resource overuse and ultimately, environmental degradation. Coastal management policies should ensure equity in terms of access to coastal spaces and other coastal resources and be underpinned by pro-poor policy change and national poverty reduction strategies.

More generally, the disassociation of social systems from ecological systems can also cause conflict. This has made it more difficult to understand complex human-environmental interactions that occur when external pressures such as increased tourism alter the existing balance.

It is believed that a multiple use management in coastal areas should be based on a principle of "social justice" where a balance is found between the various interests of economic development, community livelihoods, and environmental protection.

Processes involved in Coastal Zone development:

Coastal zone development/management programmes of any form according to Osanwuta and Nwilo(2003) should normally include the following common steps:

- An identification of the problems to be addressed
- An identification of the priorities among these problems
- An analysis of specific processes that cause these problems
- An identification of specific management techniques designed to mitigate these problems
- Set of organizational arrangements and administrative processes for implementing development/ management programme
- The designation of a geographic area within which the development will occur (Lowry, 1988)

There is also a need for a legal framework under which the coastal management policy will operate

In order to implement an effective coastal development and management process, planners need to understand the way the natural environment and human activities are interconnected to form a system. Key aspects of the system include information on the following processes:

- **Biological:** Type and extent of ecosystems, primary productivity, species diversity and abundance, nursery grounds and life cycles
- **Physical:** Geology, temperature, salinity, nutrients, tides, sea level and currents, meteorology, sediment types and distribution, flooding and erosion/accretion
- **Socio-economic:** Human population distribution and growth, economic activities and land use
- **Legal and institutional:** Land tenure system, resource use rights, relevant laws and regulations, responsible agencies and availability of financial and human resources (Borrego, 1994)

Each of these activities is greatly influenced by activities within and beyond the coastal zone. It is for this reason that the resolution of conflicts in the use of coastal resources requires a broad perspective on the environmental processes and interactions among human activities. The definition of a narrow and rigid coastal zone boundary is therefore inappropriate.

The need for Coastal Zone development: The coastal area of any nation is a very important part of the nation's territorial boundary. The coast is important for agriculture, fisheries, navigation, communication, military, commerce, tourism and mining. Crude oil exploration and exploitation, which contribute very significantly to the economies of developing countries in particular, are undertaken mainly along the coast. (Osanwuta and Nwilo, 2003). These activities have attracted in most cases large populations. It is estimated that the coastal areas house about two thirds of the world's population (Hanson and Lindh, 1993) and it is estimated that by the year 2020, this number will increase to 75% (Osanwuta and Nwilo, 2003).

The activities on the coast have led to the growth of many cities. Many important cities of the world such as London, Rotterdam, Tokyo, Venice, Shanghai, Cairo, Lisbon, and Lagos are located within the coast. Borrego (1994) stated that two thirds of the world's cities with over 2.5 million people are located within 60 km from the coast.

As a result of the numerous activities and the location of big cities, most governments have invested a lot on infrastructure such as roads, airports, and seaports and rail networks. These activities, investments and population concentrations have placed enormous pressure on the coast. The role of the coastal environment to humanity has made it imperative that special attention should be paid to it.

In Nigeria, the coastal states are estimated to be composed of about 25% of the national population. Oil and gas is the main back bone of the Nigerian Economy as it provides 95% of foreign exchange earnings and about 65% of budgetary revenues.

Fishing is a major activity especially in the coastal areas. Ports include the Lagos port, Calabar, Port-Harcourt, Warri, Sapele, Koko and Onne ports. The coastal area is dotted by large metropolitan centres including Lagos (the former capital of Nigeria) with a population estimated at about 15 million. Other big mega cities include Port Harcourt, Calabar, Warri, Benin City and Uyo. Rural population is sprawled over the entire coastal area.

The resources in the Nigeria coastal and marine environment have high implications for Nigeria's economy. Oil and gas predominantly form the coastal zone is the main backbone of Nigeria economy. Some of the renewable resources in the Nigerian coastal and marine environment include plants, mangroves, fish and shellfish, marine mammals and reptiles. The non-renewable resources include oil and gas, solid and heavy minerals, salts, sand and gravel and clay.

Economic activities include oil and gas exploration and exploitation, fishing industries, shipping, agriculture and tourism.

To effectively develop and manage the coastal zone, accurate definitions of the concepts, boundary limitations, management goals and objectives, as well as factors that cause imbalances in the dynamic equilibrium of the coast must be understood and applied.

Government policies in Nigeria on Coastal Zone development: In Nigeria, many Ministries, Extra-ministerial departments, Agencies of the Federal Government, State and Local councils, Research Institutes, Universities, Private organizations and NGOs have been actively involved in different activities aimed at the sustainable development of the coastal zone. In recognition of a need for co-ordination, there is also a joint Ministerial committee set up by the Federal Government to hold regular consultations on matters of mutual interest for the protection and development of the coastal and marine environment.

In recognition of the need to address issues associated with various environmental problems in the country, several bodies and institutions have been established. In addition, Nigeria has many existing national, state and local government legislations and edicts that are designed to ensure the sustainable management of the coastal and marine areas. All national legislation have national jurisdiction. In other to remove duplication and conflicts, states or any other local legislation are meant to reinforce the national legislation. At the national level, the Federal Ministry of Environment has a national jurisdiction for all environmental issues.

Nigeria has a national policy on the protection, management and development of the marine and coastal environment. The major thrust of which is encapsulated in the overall objective of the National Policy on Environment, which are stated as follows:

- Securing for all Nigerians a quality of environment adequate for their healthy and well being.
- Conserving and using the natural resources for the benefit of the present and future generations:
- Restoring, maintaining and enhancing the ecosystems and ecological processes essential for the preservation of biological diversity,
- Raising public awareness and promoting understanding of the essential linkages between environment and development;
- Cooperation with other countries and international organizations and agencies to achieve (1-5) above and prevent trans-boundary environmental pollution

Legislation affecting the conservation, development and management of Nigeria Coastal Zones are embedded in legislations classified under: Forestry, Wildlife, Fisheries, Crude Oil exploration and exploitation and Exclusive Economic Zone and Natural resources conservation. In all, there are about 20(nos.) legislations already for this purpose. There are also, various institutions that deal with protection, management and development of the marine environment in Nigeria. These include but not limited to the following:

- Federal Ministry of Environment, Housing and Urban Development (Lead Institution)
- Federal Ministry of Aviation (Dept. of Meteorology)
- Federal Ministry of Defence (Navy)
- Federal Ministry of Transport (National Maritime Authority)
- Federal Ministry of Foreign Affairs (International Negotiations and Agreements)
- Federal Ministry of Solid Minerals (Regulations Mining in the Coastal Zone)
- Federal Ministry of Petroleum Resources (Dept. of Petroleum Resources)
- Federal Ministry of Justice (Adjudication and Drafting of Ecological laws and policies)
- Federal Ministry of Water Resources
- Federal Ministry of Lands
- All the thirty six states and all the Local Governments in the country
- Nigerian Institute for Oceanography and marine Research (NIOMR)
- Some Nigerian Universities
- Petroleum Training Institute
- NGOs- Many NGOs including the Nigerian Environmental Society (NES), Nigerian Environmental Watch (NEW), Nigerian Study Action Team (NEST) etc.

Public adherence to the policies: In Nigeria, it is sad to say that most policies are mere policies as there are not enforced, implemented and offender punished. This to a large extent affects the state of development of the coastal

zones which arises from excessive use of coastal resources, pollution of the areas and as well in appropriate mitigation measure al leading to the following problems:

- High mortality of aquatic animals
- Contaminations of human lathered
- Impairment of human health
- Loss of biodiversity in breeding grounds
- Vegetation destruction and other ecological hazards
- Loss of portable and industrial water resources
- Reduction in fishing activation
- Poverty, rural underdevelopment and bitterness nothing the coastal communities

which at present puts the coastal communities and its inhabitants at risk. Citing the case of Dredging as cited by Weli *et al.* (2009) the NIWA Act of 2001, states that only 100,000 m³ of sand should be dredged at any particular point, secondly, Noting that it takes 10 to 20 years for the river to recover what it looses, dredging should only be limited to 2 years in any area at intervals of 3 months. But from the study conducted by Weli *et al.* (2009) it was revealed that this standard arising from the National policy on environment is not adhered, rather dredged operators carry out their duties at will at the detriment of the environment. Furthermore this states that the level of adherence to policies in Nigeria is relatively low.

Limitations Of Policies: It is imperative here to say that due to the delicate nature of the coastal zone and its relevance to the development of the country in term of its contribution of about 95% of foreign exchange earnings and about 65% of budgetary revenues, it is wrong to place policies relating to this area to the National policy on Environment. This because:

- It has no specific outline on the development of the coastal zone.
- The policy does not specify issues and concepts that houses the coastal zone.
- It does not capture the need for protecting the lives of the inhabitants of the coastal communities noting the nature of the terrain.
- It does not take into cognizance the problems associated with the area.
- It is wide open without any particular organization saddled with the responsibility of coastal zone development.

CONCLUSION

Rapid increases in industrialization, related economic and developmental activities in developing countries have been without adequate regard for an environmentally sustainable use of the coastal zone. (Osanwuta, 2003). These activities have created environmental degradation problems, resource use conflicts and are particularly

"more serious in coastal development nations beset with hunger, unemployment, poverty and rapid population growth. The impacts of human activities on the coastal zone include, as stated earlier, erosion, deforestation, destruction of coastal infrastructure, flooding, inundation, salinity intrusion and destruction of breeding ground for fishes. The cumulative effects of such activities might cause the collapse of parts of the natural resources ecosystem (Van-Der- Weide, 1993)

The exact nature of the activities and the resultant impacts have led to the concept of integrated coastal zone management. Coastal zone management was defined by Knecht and Archer (1993) as "a dynamic process by which decisions are taken for the use, development, and protection of coastal areas and resources to achieve goals established in cooperation with user groups and national, regional and local authorities". Arising from this, three factors have been identified as the factors considered in coastal zone development, which are the ecological factors, economic and cultural factors. The importance of this is to ensure that the ecosystem as the umbrella of the earths biodiversity within the coastal zone has a role to play, so in course of any development project has to be considered as a major resource base in the coast.

Secondly, the economic factor emphasizes determining the location and significant extent of infrastructure will be impacted by coastal hazards now and into the future. It also consider if there has been any historical changes in land use due to coastal hazards.

Lastly, the cultural heritage factor, the essence of this is to identify sites and items of cultural heritage significance which may be influenced by present and future coastal processes. The processes identified in developing coastal zones includes, which are; identification of the priorities among these problems, analysis of specific processes that cause these problems, identification of specific management techniques designed to mitigate these problems, set of organisational arrangements and administrative processes for implementing a development/management programme and the designation of a geographic area within which the development will occur. In Nigerian policies on coastal development are not well spelt out as there are put as part of the Nations policy on environment, this does not give coastal zone a right place and therefore allows unnecessary use of resources at the detriment of the environment. More importantly, the adherence to policies in Nigeria even if the National policy on environment does not capture so much on coastal development, is extremely low this is because the policies even when implemented are not enforced.

Based on the above, the following recommendations are put forth:

- There should be a policy on coastal zone development, which will capture all the issues

relating to the ecological, economic and culturally heritage factors and integrate both the multiple use and human use conflict in coastal zones.

- An agency with the responsibility of developing the coastal zone should be set up, the essence of this, is that it has the legal right and authority of the Federal Government in carrying out its responsibility while other related agencies assist where necessary.
- An approach to coastal development and management should be adopted to ensure the protection of all spheres of the coastal zone.
- There is also the need to involve coastal communities in all stages of coastal development projects.
- Finally, there is need for the nation to get involve in the global integrated coastal zone management, as way of improving the state of the coastal zones, this is because The objectives of integrated coastal zone management are to:
 - Facilitate, through the rational planning of activities, the sustainable development of coastal zones by ensuring that the environment and landscapes are taken into account in harmony with economic, social and cultural development
 - Preserve coastal zones for the benefit of current and future generations
 - Ensure the sustainable use of natural resources, particularly with regard to water use
 - Ensure preservation of the integrity of coastal ecosystems, landscapes and geomorphology
 - Prevent and/or reduce the effects of natural hazards and in particular of climate change, which can be induced by natural or human activities
 - Achieve coherence between public and private initiatives and between all decisions by the public authorities, at the national, regional and local levels, which affect the use of the coastal zone.

REFERENCES

- Barker, M., 2002. Coastal Planning and Development Control: Proposals for Reform. Coasta Rica Declaration, Pro-Poor Coastal Zone Management. (Prepared by the International Federation of Surveyors, 2008).
- Borrego, C., 1994. Sustainable Development of Coastal Environment: Why is it Important? In: De-Cavellio, S. and V. Gomes, (Eds.), Littoral 94, Chapman and Hall Ltd., New York, USA., pp: 11-23.
- Hanson, H. and G. Lindh, 1993. Coastal erosion an escalating environmental threat. *Ambio*, 22(1): 189-195.
- IBE, C.A., 1998. Perspectives in Integrated coastal Areas Management in the Gulf of Guinea. Cotonou, CEDA (Center for Environmental and Development in Africa).

- Ifeyinwa, C.O., 2000. Coastal Challenges and the Challenges of Coastal Education in Nigeria. Integrated Coastal Management Planning Strategies Part 2 General Principles of Coastal Zone Development Planning.
- Knecht, R. W. and J. Archer, 1993. "Integration" in the US coastal zone management program. *Ocean Coastal Zone Manag.*, 21: 183-199.
- Lowry, K., 1988. Issues in Designing a Coastal Management Programme. Policy Workshop on Coastal Management in S.E. Asia, held at Johore Bahru, Malaysia, pp: 191-204.
- NEST, 1991. Nigerians Threatened Environment. A National Profile. Nigerian Environmental Study Action Team, Ibadan, pp: 288.
- Osanwuta, D.A. and PC. Nwilo, 2003. Capacity Building for Integrate Coastal Areas Management (ICZM) in Nigeria.
- Van-Der-Weide, J. 1993. A systems view of integrated coastal management. *Ocean Coastal Manag.*, 21: 129-148.
- Weli, V.E., C.H. Wizer and G.O. Chukwu-Okeah, 2009. The impact of dredging on river morphology of catchment areas of the new Calabar river. *J. Nigerian Environ. Soci.*, 5(2): 49-65.