ECOLOGICAL MANAGEMENT AND SUSTAINABLE DEVELOPMENT IN NIGERIA

J. Myroshnychenko, Peter Idowu Odeleye
Sumy State University

An increased level of consciousness is observable with regard to the complex relationship that exists between development and the quality of the environment in Nigeria. However, there remains much to be done by way of actually developing the mechanism and legislative backing for reconciling environmental imperatives with developmental goals. Nevertheless, Nigeria, like many other developing countries, is beset with such environmental problems as desertification, deterioration of urban physical quality, land degradation, deforestation, soil erosion, and flooding, soil degradation, rapid loss of forest area, expansion of desert areas, water pollution, air and soil due to oil spills, high rate of urbanization (fig.1, fig. 2). The rapid growth of urbanisation in addition to industrialisation has brought astronomical increase in anthropogenic activities with their attendant huge generation of wastes, thus the need for a systematic management of an ever-increasing trend of municipal solid waste generation complicated by complex waste characteristics has become an urban challenge.

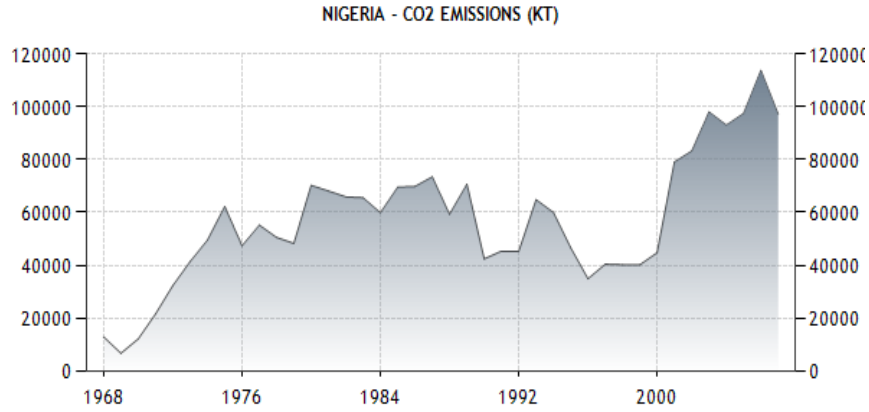

Fig. 1 CO2 emissions (kt) in Nigeria [1]

A number of social problems such as squalor, pollution, filths, and deprivation have arisen in the oil producing areas of Nigeria, resulting from environmental degradation. A clear grasp and understanding of the magnitude of these problems must be understood in order to be able to provide practicable solutions to them.

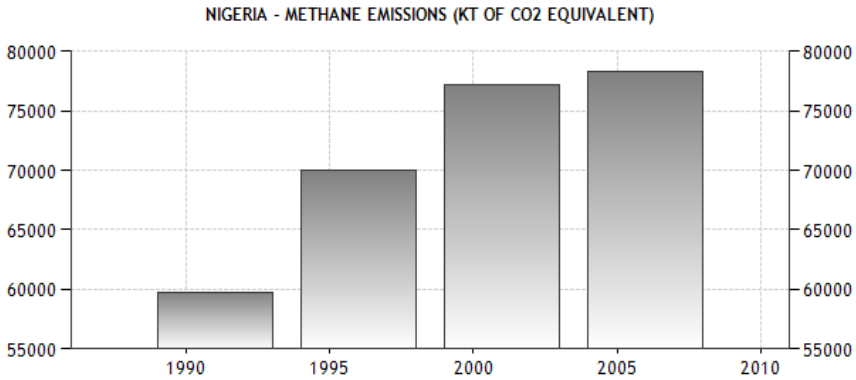

Fig. 2 Methane emissions (kt of CO2 equivalent) in Nigeria [1]

All these problems underscore the requirement of development approaches to improve environmental management in Nigeria.

Ecological management is one of the neglected areas of management in many parts of the world, Nigeria inclusive. Ecological management is the key to successful stewardship and can be sub- divided into five general categories: conservation planning, restoration, prescribed management, research and monitoring.

Conservation planning is the analysis of the ecological, economic and social features of land which provides the scientific foundation for conservation of natural areas. Conservation planning starts well before a natural area is acquired and established. Planning boundaries are set which delineate ecologically sensitive areas where land-use activities should be carefully managed with strict rules and regulations to ensure that they are compatible with conservation goals for natural heritage resources. Well designed natural area preserves encompass those ecological features necessary for the survival of native flora and fauna, and are planned to permit the best possible management by DCR stewards [2].

Restoration activities are implemented in an attempt to return disturbed and degraded land or vegetation to its original natural condition. Fundamental environmental processes critical to ecosystem functioning include water and nutrient cycling, erosion, herbivore, and natural disturbances such as floods and fire. Restoration techniques reinstate or replicate environmental processes to aid the return of an ecosystem to its original state.

Habitat restoration involves the return of specific habitat features to the environment, and the introduction of specific plants and animals to ensure habitation of the area by native species. Habitat restoration may also involve the removal of invasive or non-native species from the natural area.

Hydrologic restoration allows for the natural flow of water through a wetland or along a waterway. Maintaining or restoring the movement and chemistry of water encourages certain plants and animals to inhabit an area. Hydrologic restoration may involve the removal of obstructions to water flow, plugging of ditches, or remedial work to improve water quality.

Prescribed management maintains or enhances environmental conditions of an area. Through management activities such as prescribed burning and invasive species control, natural area stewards protect and rejuvenate natural vegetation. This enhances habitat conditions for many rare species and preserves the integrity of rare communities.

Prescribed burning is the carefully planned and controlled use of fire to accomplish a management goal. Many natural areas in the world such as longleaf pine - turkey oak sand - hills and grassy savannahs contain plants that are dependent on or benefit from regular fires to enhance seed germination and make space and nutrients available for new growth.

Invasive species represent a serious threat to natural areas. Often these species have no natural enemies or controls to curb their growth and dispersal. They can easily outcompete native species for needed resources such as space, sunlight, and food. Once established in disturbed areas, they advance steadily into natural areas and can be difficult to remove. A variety of control methods, such as mechanical removal and the use of environmentally safe herbicides are used by natural area stewards to control invasive species.

Research is important to the long-term preservation of a natural area for identifying the environmental conditions necessary to support a particular community or species of interest. Information to guide management of rare species or communities is often lacking. Research aimed at understanding the natural history, biology, and population dynamics of a rare species or how an ecosystem functions is essential for planning effective management.

Monitoring is a multi-faceted tool used by natural area stewards to assess the ecological condition of an area. It is used to document the trends of natural communities and rare species. It can also help determine if the natural processes essential to their continued existence are occurring. Monitoring is not limited to assessing only the condition of plant and animal species. Air, water, land, and pollution are other components of the environment that must be monitored for effective resource management. Monitoring activities also inform natural area stewards if management activities have been successful in fulfilling their goals. Information obtained through monitoring can be used to further refine and enhance current management practices.

Conclusively, these ecological management techniques/procedures can only be effective with remarkable impact if it is integrated from the grass-root, i.e. it must be cultured, home – grown and the frame work should be “Bottom – up” and not “up – Bottom” in the sense that it must be a program for the masses. It should be community based and it should be organized at the villages, towns, or a simply community level that is locally. A number of community should be grouped together (politically) ward level. From ward level to local government level and so on. There must be well trained Ecological management agent, someone that is picked among the community population, so that he can be able to relate with people in that community. Agent should be empowered to punish anyone that violates the guiding rules and regulations including the agent. Ecological awareness education should be included in the primary, secondary and post secondary school curricula and should specifically be more than binded pages of white and black, instead it should be implemented appropriately.

Finally, from the scope of this thesis perspective it is generally suggested that further interest in this research topic should be carefully but extensively grounded in the outcome of the above conclusion, why? Because nobody can save the world but everybody can save his/her family if the required resources are available and accessible.

LITERATURE

1. http://www.tradingeconomics.com/
2. http://www.dcr.virginia.gov