

Social Networking and Eco-Vigilance for Effective Environmental Management in Nigeria

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Abstract

This paper highlights Federal Government's efforts to tackle environmental and ecological problems in Nigeria, including the establishment of the Federal Environment Protection Agency (FEPA), the policy of monthly environmental sanitation day, and the setting aside of two percent of the federation account (ecological funds) for the amelioration of ecological problems, including soil erosion and flood control. The paper also identified factors occasioning environmental degradation in various land resource zones of the country: semi arid, dry sub-humid, sub-humid, humid, very humid, swamp/flood, plateau and montane. The very humid zone (85.71%) was found to be the most vulnerable to environmental degradation and climate change, followed by the humid (71.43%) and sub-humid (64.29%) zones. The paper emphasizes that measures for protecting and preserving the environment must be hinged on environmental education, ecological vigilance and social networking.

Keywords: Ecosystem, Ecological vigilance, Environmental degradation, Conservation farming, Networking, Biodiversity.

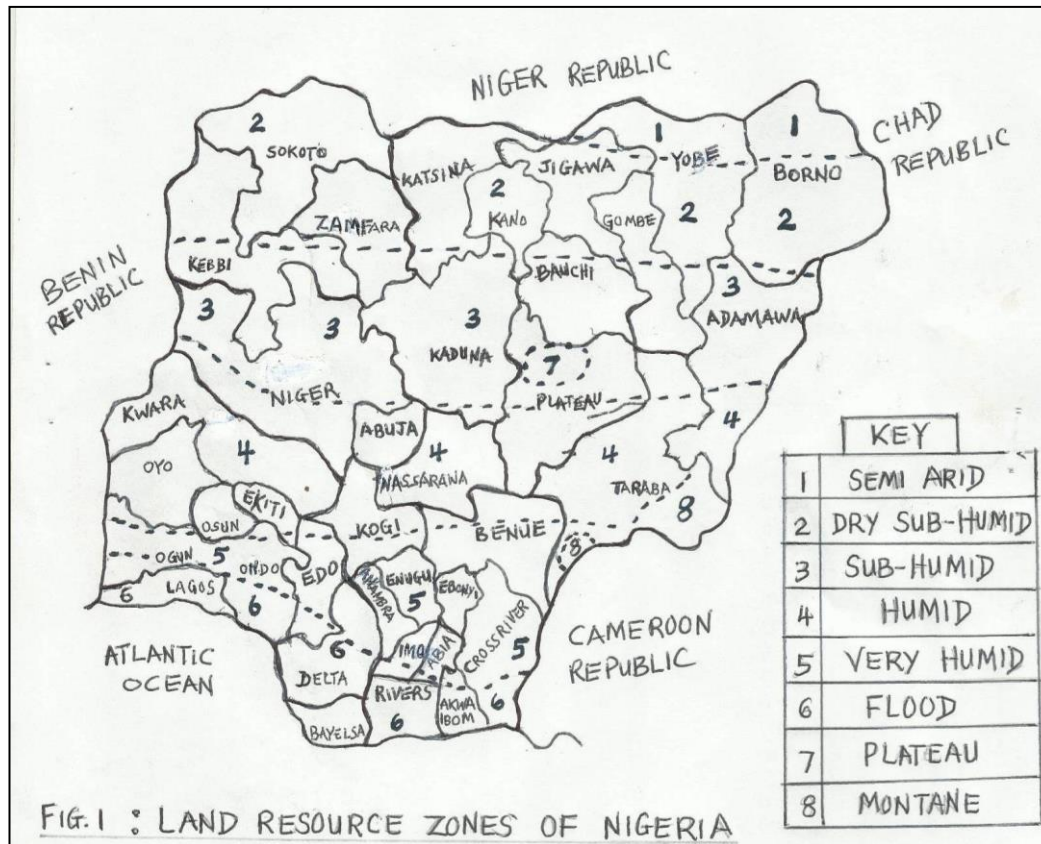
Introduction

Nigeria is richly endowed with natural resources, judicious utilization of which will not only enhance food security but will raise the quality of rural life and promote industrial and economic development in the country. Some of these natural resources are renewable, while others are not.

Using climate and vegetation as criteria, the country which covers a total land area of 923,770km² (water area: 13,000km²) is divided into 36 states and eight land resource zones (fig 1). Six of these zones (semi arid, dry sub-humid, sub-humid, humid, very humid and flood/swamp) represent latitudinal divisions of the low relief land surface in accordance with gradual climatic and vegetation changes, and two (plateau and montane) separating areas of great elevation, rising to over 1000m above sea level. (ODA/ODNRI, 1989).

The names of these zones are derived from the characteristics of the entity or the environment. Environment is a collective term comprising of the natural habitats of man, animals and plants

(land, air and water); and the conditions in which these organisms live such as temperature, light and humidity.



The land resource zones of Nigeria vary not only in soil types but in hydrological and topographical conditions. Adeleye (2002) classified the typology of Nigerian soils into seven groups, namely, (i) ferrasols (latosol), (ii) ferruginous, (iii) lithosols, (iv) vertisols, (v) Semi arid brown and reddish, (vi) alluvial, (vii) saline and hydromorphic.

The Problem

The diverse ecologies of Nigeria has had considerable implications for the economic activities, land use patterns and agricultural potentials of the country. It is, therefore, difficult to conceive of a universally appropriate solution to agricultural problems, or make blanket recommendations for improving agricultural practice in the entire country.

Although Nigeria currently has a number of environmental institutions that perform oversight and management functions (Federal Environmental Protection Agency (1988), Federal Ministry of Environment (1999); and environmental legislations (National Policy on the Environment (1989), Harmful Wastes Act (1990), Environmental Impact Assessment Decree 86 of 1992), there are still challenges to healthy environment and food security in the country. They include erosion, rapid population growth, unwholesome farming practices, infrastructural

development, and quarrying/mining activities. Others are ecosystem disruption, loss of biodiversity, soil and water pollution (Kausik and Kausik, 2008; and Fayiga and Adedoyin, 2011). On the off-site erosion has impacted negatively on the environment. It pollutes natural water, impairs air quality, damages infrastructures and degrades land. It also reduces biotic life, as well as the quality and productivity of the ecosystem.

Rapid population growth has impacted negatively on land use for residential, agricultural and other socio-economic activities. It has also led to deforestation or accelerated destruction of vegetative cover, shorter fallow periods and increased construction activities (road, houses, bridges) which ultimately reduce land surface through which water infiltrates. (Omofonmwan and Osa-Edoh, 2008).

Rapid development efforts, especially in urban areas, have equally contributed immensely to environmental degradation. Lameed and Abimbola (2003) observed that sometimes, development projects are embarked upon to satisfy the social and economic needs of the people and nation without consideration of the possible impact on the environment.

The diffused individual family or communal land ownership pattern which vests on individuals only the right of usage (usufruct), and the prevailing inheritance system in most parts of Nigeria encourages fragmentation of lands due to the fact that all the sons have the right to inherit a man's land. With this, and other temporary methods of land occupation (rent, lease, pledge), the tendency is for such temporary occupiers to exploit the land to the fullest and to show *laissez faire* attitude, if not utmost disregard, to soil and water conservation ethics or regulations.

There is also the problem of unwholesome farming practices in different parts of the country. The millennium Development Goal, number 7, recognizes that agricultural practices can be both direct causes of, and important solutions to environmental degradation. Practices such as mechanical cultivation of land, bush burning, and excessive deforestation create opportunities for destruction of soil structure, thus permitting erosion to commence and expand to a point where it creates adverse economic and environmental impacts.

Problems also arise from quarrying and mining activities. The exploitation of minerals leaves some remarkable impact on the soil especially when mining and excavation rules and regulations are ignored. Apart from environmental pollution, mining activities change the physical landscape of the area, with work sites degenerating into gullies.

Cognizant of the fact that the environment is an important heritage of humanity, concern for preservation of the ecological stability of Nigerian environment, and the growing institutional awareness for environmental statistics in Nigeria (Adeyinka *et al*, 2005) prompted this trend study, which looked at the present situation and made recommendations for the future.

Study objectives

The paper (1) delineated and characterized states in Nigeria on the basis of vulnerability to agricultural ecological problems.

- ii. Discussed developing trends in environmental matters in Nigeria.
- iii. Recommended measures for solving environmental and agro-ecological problems in the nation.

Methodology

Data for this study were collected from secondary sources. First, the entire country was categorized into eight (8) land resource zones. Fourteen (14) factors that occasion environmental degradation were identified through literature review. Consideration was given to change in statistical distribution of weather events, a phenomenon described in literature as climate change.

Furthermore, the extent of occurrence of these degrading factors across the zones were identified and highlighted through marking and counting of a check list. The interpretation of the results of the item analysis yielded a quantitative score (percentage) which indicated the degree of vulnerability of the zones to environmental degradation.

Result and Discussion

Table 1 shows the relative position of the land resource zones regarding environmental degrading factors.

Table 1: Vulnerability of land resource zones of Nigeria to environmental degradation

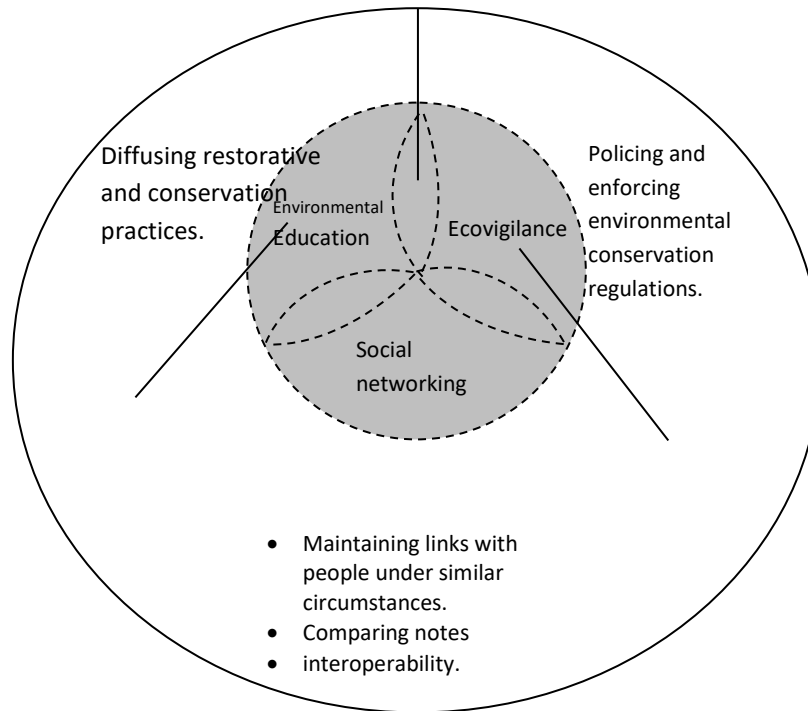
Nigeria: Resources ----- Environmental degradation factors	Semi-arid	Dry sub-humid	Sub-humid	Humid	Very humid	Swamp/flood	Plateau	Montane
Oil and gas exploitation	-	-	-	-	√	√	-	-
Bush burning (rangeland and game reserves)	√	√	√	√	√	-	-	-
Deforestation or logging	-	-	-	√	√	-	-	-
Drought/desertification	√	√		-	-	-	-	-
Nomadism and overgrazing	√	√	√	-	-	-	-	-

Soil erosion and flooding	-	-	-	√	√	√	-	-
Quarrying and mining activities	-	-	√	√	√	-	-	-
Industrial effluents discharge .	√	√	√	√	√	√	√	
Ecosystem/Biodiversity disruption	√	√	√	√	√	√	√	√
Water Pollution	-	-	√	√	√	√	-	-
Overpopulation	√	√	√	√	√	√	-	-
Greenhouse gas emission	.	√	√	√	√	√	√	-
Climate change	√	√	√	√	√	√	√	√
Sea level rise.	-	-	-	-	√	√	-	-
Total (%)	50	57.14	64.29	71.43	85.71	57.14	28.57	14.29

Data in the Table shows the very humid zone (85.71%) as the most vulnerable to environmental degradation and climate change effects, followed by the humid (71.43%) and sub-humid (64.29%) zones. The montane zone (14.29%) is the least affected. The implication of the foregoing is that there is greater need for policies and action that mitigate environmental problems in the humid and very humid zones of the country.

Preserving the environment in Nigeria needs to be seen as a collective social responsibility that should be pursued from different perspectives, including environmental sociology. Environmental sociology emphasizes reciprocal interactions between the physical environment, social organization and social behavior (Sndenstricker-Neto, 1997). The United Nations Millennium Development Goals (MDGs) endorsed most of the international development targets set in 1996 to improve the economic well-being, social and human development and to ensure environmental sustainability and regeneration (NPC, 2004).

Three major options available are environmental conservation education, social networking and eco-vigilance (fig. 2). This micro-level participatory approach to environment preservation should be part of the culture of Nigerians, especially the farming communities.



Environmental and Conservation Education

There is need for people to have a good knowledge of their environment, as well as the important agricultural and conservation practices that are suitable for their environment. Foskett and Foskett (2004) affirmed that both the Tbilisi agreement and the Belgarde Charter encouraged education about the environment, to develop knowledge of environmental matters; education in and through the environment, to develop active experience of the environment; and education for the environment, to develop a sense of responsibility and a wish to take action for conservation.

Environmental education may entail adopting some indigenous coping strategies. In this regard, inhabitants of a particular area are required to bring their indigenous, local or home-grown knowledge to bear upon their farming practices and techniques and, in this way, surmount environmental obstacles and challenges to higher productivity (Warren and Cashman, 1988; Igodan and Adekunle, 1993; Alteri, 1998) Adopting biological and other indigenous conservation techniques simultaneously will to a large extent address the problem of erosion control, organic matter maintenance, moisture conservation, nutrient recycling and soil structure improvement. Furthermore, the multiple cropping systems adopted gives additional benefit of increasing erosion protection, and ultimately increasing output and economic returns from the farms. Onasanya (2007) lamented that only 68.0% of farmers in Ogun State of Nigeria were low users of environmentally-sustainable agricultural practices.

The land resource zones of the country containing environmental and land degrading factors are shown on Table 1. This should serve as a guide or frame of reference for assessing not only the potential cultivable land, development options and constraints, but also the environmental

vulnerability or proneness of the various parts of the country. This will, in the long run, help identify or develop location-specific panacea for environmental problems for training purposes. Furthermore, soil conservation education should be intensified in school and at all levels. The purpose of this is to create conservation awareness early enough, and to ensure proper management of the environment (Bolorunduro and Kwari, 2003).

Farmer cooperatives, women organizations, conservation and Young Farmers Clubs in schools are viable networks for conveying conservation messages to the grassroots. Agbogidi and Ofuoku (2007) argued that women, being the first teachers of our children, have the capacity to influence others like husbands, house helps and neighbors, and their closeness to the environment supports the need for environmental education right from home for environmental consciousness. The extension agency should, therefore, package some technical messages on such restorative and agronomic and soil management practices as agro-forestry, zero or conservation tillage and alley cropping for farmers and other stakeholders. They should, in addition, highlight the dangers inherent in adopting bad soil management practices or neglecting soil conservation regulations.

Social Networking

Researchers have expressed concern over the rapid rate of environmental degradation in Nigeria. Bolorunduro and Kwari (2003) identified two major factors responsible for this phenomenon: natural and anthropogenic factors. Anthropogenic factors include effect of socio-cultural practice, agricultural activities and industrialization. A viable means of reducing this is by maintaining social networking service at various levels in Nigeria.

A network is a functionally specialized social organization that links together numerous associations, groups and other types on inter-related organizations which deal with a common set of activities (Sodiya, 2011). Networking entails building social relations which endure for some time.

The need for people with similar ecological background, interests and livelihood activities (Table 1) to communicate regularly to share ideas and compare notes within, and across geographical borders, cannot be over-emphasized. Climate change is real, but the trend will remain same in areas with similar climatic history or environmental circumstances.

Social networking is a process of maintaining links or contacts with people in the same field or business or under similar circumstances through online, platforms or sites (Boyd and Ellison, 2007). The low lying fields in the hydromorphic alluvial plains of the country, including Cross River basin, Ogoja, Niger and Benue Rivers and Abakaliki experience annual flooding which saturate the fields and submerge the crops for the greater part of the year.

Strategies to avert total crop failure such as large mounds that prevent drowning of crops, and arduous task of stacking are a common feature in these areas. Social networking service would provide an opportunity for farmers and stakeholders in these states to share ideas and

information, ask questions, voice concerns about such environmental issues. Such communication can be instant as is prevalent to this digital era or gradual or delayed as in discussion forums.

The onus lies on relevant organizations such as the agricultural extension, agency environmental protection or health agencies to organize and maintain such fore to create awareness about such services at the grassroots level. These organizations should, in addition, utilize individual and group profiles for purposes of disseminating innovations and recommending curative and proactive measures for preventing environmental crisis. Encouraging interoperability among groups with similar interests should also be part of their duties.

Ecological Vigilance

An important aspect of micro-level approach to environmental conservation is to promptly discourage human activities that predispose our environment to degradation. Communities should constitute eco-vigilante committees to police and enforce soil conservation and erosion control regulations, including checking of indiscriminate and unauthorized mining, quarrying, deforestation and grazing. Environmental surveillance for purposes of regulating the behavior of people and securing the environment has become imperative because there are bound to be people who will disobey environmental laws of the country, or whose action will directly or indirectly undermine the environmental stability of the country who should be prosecuted.

Nigeria should draw a lesson from other countries where micro-level participatory approach or involvement of the rural people precipitated a remarkable positive action on erosion. The severe erosion problems in Lesotho, South Africa were successfully tackled through existing village institutions, one of which was known as the Pitso (Turner, 1982). Similarly, the social forestry extension program in Turkana District of Northern Kenya combined the administrative organization within the district with existing traditional institutions to design and execute her soil conservation practices (Barrow, 1991).

Conclusion

Both national and man-made problems have been identified as being responsible for the erosion problems of the country. Erosion problems develop gradually, and farmers contribute to the high magnitude of the problem. As people exploit the land to get their basic needs, they have a responsibility to protect it for posterity. Emergency ad-hoc measures are no panacea for the hardly irreversible erosion problems as they only bring temporary succor to individuals and communities affected.

A more sustainable and cost effective approach lies in increasing conservation awareness and consciousness among the rural farming population. Landlords should consider increasing the tenure of landholders because farmers are more likely to rehabilitate degrading family land which provide for several generations of family members. Conversely, incessant change in

ownership and use of farmland has serious repercussions for soil conservation decisions and investments.

Finally, communities should constitute local awareness and vigilante committees whose function shall include educating the people on the dangers, especially for neighbors within contiguous plots, inherent in people not adopting recommended conservation practices. Those who transmit conservation messages need to be firm and patient for as observed by Turner (1982), conservation is one of the hardest messages for the extension agency to convey. This is because the effect of conservation takes almost the span of human memory to become tangible.

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