

ROLE OF TRADITIONAL AFRICAN SOCIETIES IN CONSERVATION OF AQUATIC BIODIVERSITY IN SOUTH-EASTERN NIGERIA.

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Abstract

The loss of Africa's biodiversity is occurring at an alarming rate, consequence of increasing population pressure, urbanization, political crises, neglect and erosion of the traditional practices and cultures that preserved it over generations. Wildlife has also been protected by these communities for various reasons. However, these practices are dying, and traditional knowledge being lost as the cultures that hold them is eroded.

The growing awareness of the potential value of indigenous knowledge and the culture of traditional societies in conservation of biodiversity as expressed in major environment related international documents elaborated in the past decades points to an urgent need to redress the situation. This work x-rays traditional societies in Eastern Nigeria, exposing their role in the conservation of aquatic biodiversity in the region, determine the causes of cultural erosion within the region and propose solutions.

Introduction

Globally, there is increasing acknowledgement of the relevance of indigenous knowledge as an invaluable and underused knowledge reservoir, which presents developing countries with a powerful asset in environmental conservation and natural disaster management (Kamara, 2005). This change in attitude towards traditional practices and knowledge is not unconnected with the growing literature that has highlighted the environmentally friendly cultures and practices of traditional people. Traditional Ecological Knowledge (TEK) is in many cases more complete and accurate than Western scientific knowledge of local environments. (Steven 1997; Van Leeuwen 1998.) Before now, indigenous knowledge, particularly in the African context, has long been ignored and maligned by outsiders (Warren 1989; Warren 1992; Slikkerveer, 1989) because it was believed their activities were anti-conservative of biodiversity and the environment.

In the traditional African societies, environmental resources (land, water, animals and plants) are not just production factors with economic significance but also have their place within the sanctity of nature (Miller, 2004). Values, taboos on food and hunting, folklore, and institutional or supernatural sanctions provided the instrument for prevention of excessive use or misuse of natural resources on which they depended on for their survival. (Ojating *et. al*,1997). These taboos remain the prime factor guiding their conduct towards

the exploitation of the natural resources (Rim-Rukeh *et. al.*, 2013)

Areas of highest biological diversity on the planet are inhabited by indigenous peoples of the tropical rainforest in the custody of farmers who follow age-old farming and land use practices (Warren 1992). These people are practically dependent on the natural resources for their survival, with arable farming, fishing, hunting, craft-making etc. being the major occupation. Awareness of this dependence on, and being part of the local ecosystem brought with it the need to regulate resource use and maintain an ecological balance, and thus develop sustainable resource management and use strategies - which may even include acting as biodiversity-enhancing 'creative disturbance agents' (Zent and Zent, 2000). Indigenous knowledge about how the local people have coped with previous past environmental extremes e.g. flood, drought, water stress has the potentials of providing important guide for addressing current and future environmental threats (Ayeni and Olorunfemi, 2014). Traditional societies have, through age long interaction with the environment, accumulated experience and knowledge that is invaluable to our modern society. Pretty (1995) believes that modernization has brought with it the steady erosion of cultural and biological diversity. Indigenous knowledge is being lost at an unprecedented rate, and its preservation preferably in data base form, must take place as quickly as possible. Nigerian aquatic ecosystems are characterized with diverse species of plants and animals (Reed *et al.*, 1966; Oribhabor, 2016). Like most African societies, the towns, periurban cities, and rural communities within South-Eastern Nigeria are undergoing rapid changes, moving from traditional patterns to more 'modern' lifestyle, with its attendant loss of traditional knowledge, values, institutions and practices.

Conservation in South-Eastern Nigeria: Before the advent of Western civilization, many traditional societies in South-Eastern Nigeria fostered strong belief systems as well as social norms which encouraged or even enforced limits to exploitation of biological resources. Economic changes, population explosion, and other factors such as war, communal conflicts, and urban/rural migration, continue to cause shifts in traditional values and patterns. The rapid entry of the rural communities in South-Eastern Nigeria into a global mono-culture based on a cash economy and socio-political changes has contributed immensely to changing values and led to short-sighted overexploitation of natural resources. Environmentally

friendly cultural practices that preserved aquatic biodiversity are now being rapidly depleted by the forces of change. The aquatic ecosystems is increasingly being destroyed or depleted by persistent threat of aquatic pollution resulting from intense human activities such as indiscriminate use of fertilizers and pesticides in agriculture; industrialization; urbanization; pressure due to rapid population growth; malutilization and mismanagement of natural aquatic resources; dam, road and bridge construction (Alum-Udensi *et al.*, 2016); irrigation; draining and filling of wetlands (Oribhabor, 2016), indiscriminate dumping of solid waste into rivers (Egesi *et al.*, 2016) dredging and watershed disruption (Alum-Udensi, 2016).

As traditional ways of life are eroded, traditional knowledge and practices (which are typically handed down by word of mouth) are lost – knowledge and practices which may represent our best hope for preserving much of earth’s endangered biodiversity while at the same time improving the lot of poor people (Lindin,1991). To guard against this, there is

the need for studies, in every region within different ecological zone, before permanent loss of genetic diversity of crops and animals occur

Materials and Method

The South-Eastern Nigeria lies within longitudes 7°E and 8.52°E, and latitudes 4.92°N and 7°N; and constitutes five states of Nigeria - Abia, Anambra, Ebonyi, Enugu, and Imo states. This area is predominantly occupied by the Igbos and has one of the highest population densities in Nigeria. Some of the major towns within the area include Enugu, Nsukka, Onitsha, Awka, Nnewi, Aba, Umuahia, Ohafia, Owerri, Mbaise, Okigwe, Abakiliki, and Afikpo. Fieldwork was spread over a period of two months and involved visit to communities and towns within the study area, participatory rural appraisal (PRA) and discussion forum. Questionnaire forms were administered to a representative sample generated using stratified sampling technique as described by De Vaus (2002).

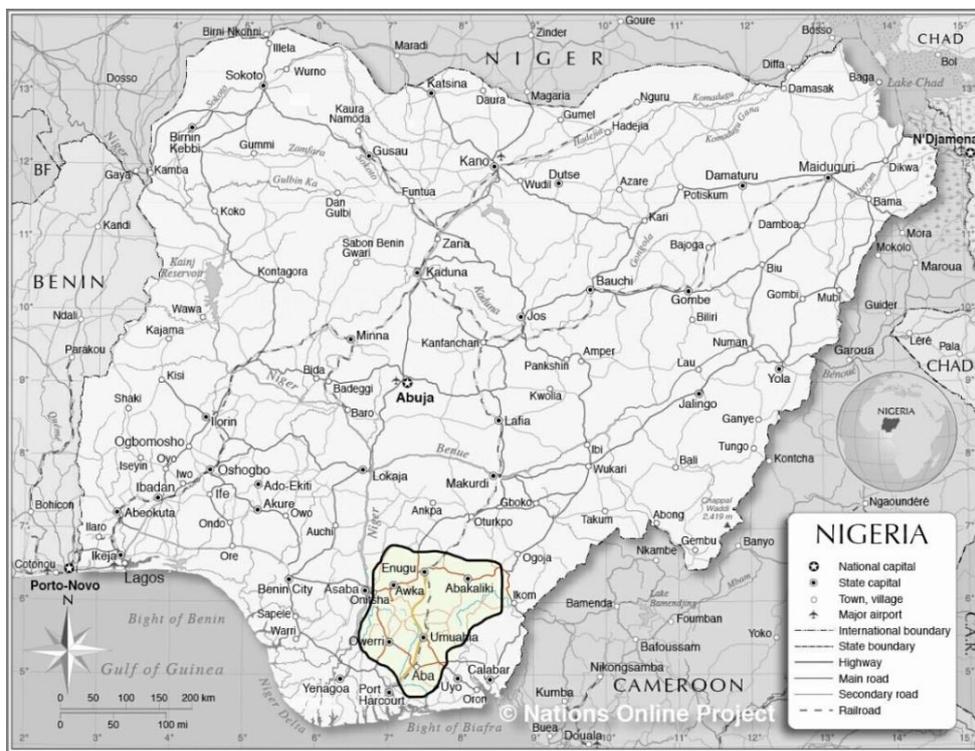


Figure 1: Map of Nigeria showing location of Eastern Nigeria (Modified from UN Cartographic Section)

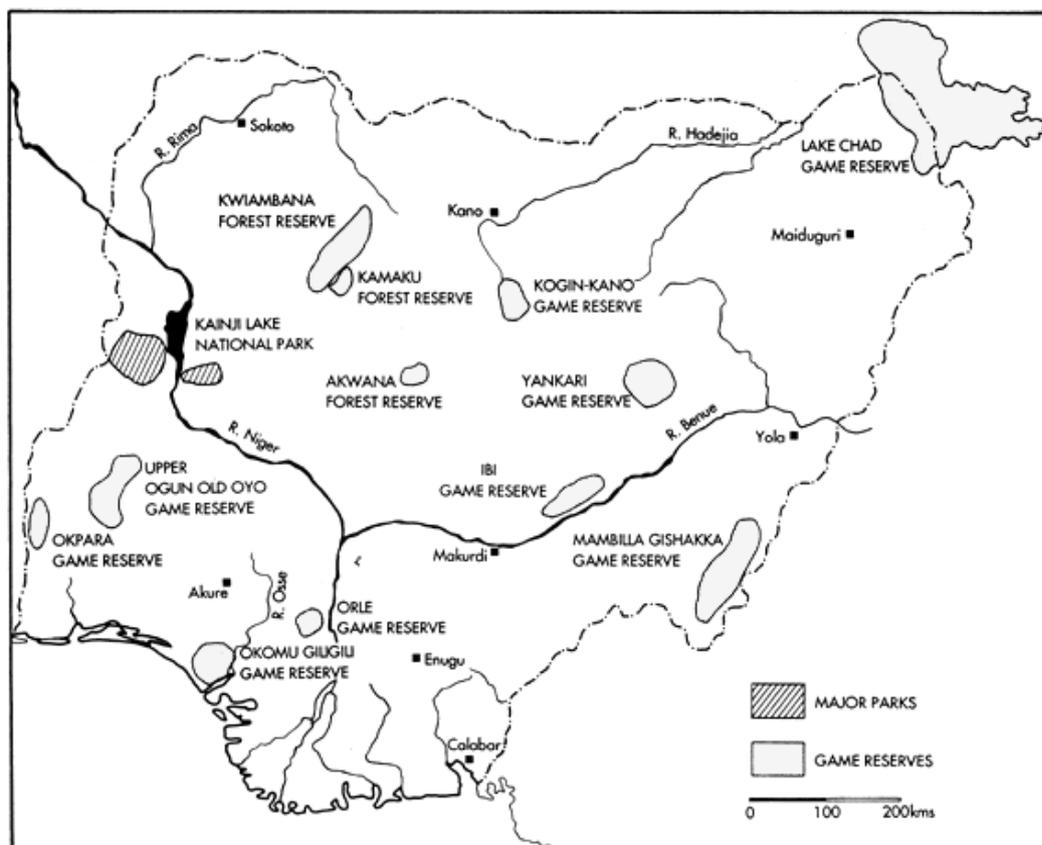


Figure 2: Map of Nigeria showing Major Parks (Notice the absence of park in the eastern Nigeria)

Interviews were conducted with Traditional Rulers Village Chiefs and Elders. Methods used include transect walk, direct observation, trend and change analysis was used to explore chronology of how customs and practices have changed over time and the causes of change.

The data from the questionnaire were analysed both quantitatively and qualitatively. Quantitative analysis was done using the SPSS computer statistical package. Frequencies, percentages and correlation coefficients were computed using the same package. The analysis was purely descriptive.

Results and Discussions

Popular cultural practices observed in the surveyed communities in the study area include, Shifting cultivation, Sacred Rivers, Sacred grooves, Protected river belt and watersheds and Sacred species. These practices were enforced by unwritten laws passed from generation to generation. All the respondents in the study agree that cultural practices in their communities contribute to biodiversity conservation within their environment, with 74.2% of them having very strong conviction about its positive impact on biodiversity.

Sacred Rivers Observed in most communities of South-Eastern Nigeria is sacred water-bodies and forms of regulatory taboos on fishing in streams and rivers. In this practice, portions of rivers, streams, ponds, and lakes are protected because of their

religious importance or other reasons. In some cases, the entire expanse of the water-body is protected from abuse; fishing is totally or partially prohibited at certain periods of the year or all year round. Considering that overfishing has been established among other factor, to play a major role in the decline of fish species abundance in Nigerian freshwater bodies (Yem *et. al.*, 2006), the practice of sacred rivers cannot be ignored in aquatic biodiversity conservation. Some water-bodies within the South Eastern Nigeria observed forms of cultural practices restricting fishing include Imo River (Umuokpara section), sections of *Oguta* lake, *Abadaba* lake (Obowo/ihite), *Eme* (Ahaba Imenyi); *Isi-iyi nta* (Ahaba); *Umu-ukwu emeke* river (Owerri); *Umu-iyi ogbo* river (Ahiazu Mbaise); *Okpuru* lakes and *Abashi* river (Ugboanyim Ezza), etc. Fish and other species in *Umu-ukwu emeke* river in Emekuku Owerri are completely protected by taboo. In Obodo Ahiara in Ahiazu Mbaise, fishing is not allowed in any of the rivers and streams within the town on *afor* days (one day in the Igbo four-day week). It is our believe that fish diversity in these water bodies with fishing prohibition/restriction has been protected and will continue to be so long as these practices stand. Although it was not possible to sample the water bodies, fish species of the region include *Tilapia*(*Tilapia spp.*), Freshwater eel (*Calamichthys calabaricus*), African catfish (*Clarias spp.*), Snakehead (*Chana obscura*), *Xenomystus nigri*, *Hemichromis fasciatus*, *Mormyrus rume*, *Petrocephalus bane*,

Pantodon buchholzi, *Hepsetus odoe* *Alestis spp.*, *Chrysichthys spp.*, *Heterobranchus spp.*, Electric fish (*Malapterurus electricus*), *Synodontis nigrita*, *Synodontis courteti*, *Parailia pellucida*, *Ctenopoma kingsleyae*, and *Polypterus senegalus*. Adaka *et al.* (2014) reported 25 fish species, 15 genera, 21 families and six orders from the region. If the tradition of protection of water-bodies and their aquatic live continue, the region can guarantee sustenance of its aquatic biodiversity through the protection of water bodies. The sacred water-bodies spread across the region contain populations of important fish species, and provide important refuge to biodiversity that has been driven out of surrounding areas. There is no doubt about the contribution of sacred rivers to the conservation of aquatic species within the region. In some of the communities it was observed that the protection of water bodies had no religious conservation of the species therein but aimed to directly prevent fishing activities which most of the time compromised the ability of streams, rivers, pools and lakes to provide reliable domestic water as most of the rural communities depended on them for their supply.

River belts and Watersheds Protection: were also observed to be a common practice within the region. In this practice, vegetation around watersheds and along streams and rivers were spared to protect the rivers and streams. Farming activities started about ten metres or more from stream and river. This belt of vegetation provided a refuge to wildlife disturbed by farming activities. In some communities, economic tree species like the raffia palm were planted in these belts and provided livelihood to some members of the community who exploit the species for wine production.

Shifting Cultivation: Shifting cultivation was observed to be a rapidly dying cultural practice with about 60% of the region not practicing it any more. Most of the affected towns and communities are densely populated or urbanised areas, such as Owerri, Mbaise, Okigwe, Enugu, Isiala Ngwa, Obosi, Onitsha, Awka, Isiala Ngwa, Obioma Ngwa and Ukwu. This suggests the influence of urbanisation and population explosion on the practice. As noted by Alum-Udendi (2016), the destruction of watershed vegetation cover for commercial agriculture cause permanent damage to streams leading to loss of biodiversity. During the period of fallow which in some communities may be up to seven (7) years, little or no activity goes on the land allowing watershed recovery and making for healthier rivers and aquatic flora and fauna.

Sacred groves:

The survey showed that Sacred groove was practiced in all the surveyed area but was highly diminished by forces of urbanization which has completely wiped them in some communities like Aba and left tiny remnants in others like Isuikwuato, Mbaise, Obowo, Okigwe, Umuahia. Large acres of sacred grooves dot

the landmark in Edda, Item, Arochuku, Nsukka, Nkporo, Ohaozara, and Orlu. This suggests the practice cuts across the region. A common feature of the sacred groves is their multi-species nature. It was observed that sacred groves have been reduced to very small sized lands in cities within the region, with one, or a few giant trees. Sacred groves maintained for various reasons were found in Ohafia, Isuikwuato, Bende, Okigwe, Umuahia, Isiala Ngwa, Owerri, Orlu, Ikeduru, Mbano, Okija, Abatete, Nkwere, Obosi, Nsukka, Udi, Ohaozara, Abakiliki, Orumba, Awka, Abagana, Abaomega, Mgbidi, Agwu, Aguleri, Ujali, Nnewi, Nsukka, Ideato, Obowu, Mbaise, Arochuku etc. Sacred grove is one cultural practice that cuts across the communities/towns in South-Eastern Nigeria. That this practice has been sustained over ages is a proof of positive relationship between humans and protected areas. This conforms with IUCN's new system of categories of protected areas (IUCN, 1994) which recognises that humans and protected areas can co-exist productively under some management regime. Asokan *et al.* (2015) highlighted some of the benefits of sacred grooves to include conservation of biodiversity, rain water harvesting and recharge of aquifers and soil conservation.

Sacred Species:

A host of plant and animal species have been traditionally protected by the cultural practice of sacred species. Although fish is not a popular sacred species among the people of South Eastern Nigeria, sacred plant and animal is a strong practice in communities and town (37.1%) in the region. With less than 30,000 hectares of Nigeria's 9.6million ha of land (over 10% of the county's land area) under forest reservation in South-Eastern Nigeria (NEST, 1991), and being rapidly de-reserved for other uses (Osembo, 1988) much of the conservation of bioresources of the region lie in the hands of the local communities and depend on cultural practices. Some of the communities which show strong adherence to sacred species protection include: Imerienwe Ngorkpoala, Umuerienwe Mbaise, Obodo Ahiara, Ahiaazu Mbaise (Columbus monkey – *Columbus spp.*); Nnewi, Njaaba, Umuohia, (African python – *Python reguis*); Isuikwuato (green mamba - *Dendroaspis spp.*) Nsukka (Crocodile). These species abound in these communities where they are protected.

Shift in cultural practice:

The study revealed an increasing decline in adherence to cultural practices within the region. 96.7% of the study population believe that cultural practices were a more valued practice in their community in the past. This is in agreement with findings during PRA and interview with some traditional rulers of the region. There is a general notion among elders and traditional rulers in the region that there has been a rapid loss of interest by the younger generation in traditional cultural practices. This agrees with (Kandiri *et al.* 2014) who reported signs of weakening and decrease of cultural, biological and ecological integrity of

sacred grooves in India. Government conservation programmes are very few within the region as indicated by plate 2.

Only 3.3% of respondents think cultural practices within their communities have remained the same over the ages. Much of the shift is attributed to the external influence on local people (Pretty, 1995). Very high percentage of respondents fear that the erosion of cultural practice poses a threat to the biodiversity of their community and would want government to incorporate cultural practices into programmes aimed at biodiversity conservation. In the view of the respondents, western religion (47.7%), urbanization (29.7%), and conflicts (17.7%) are the greatest causes of loss of cultural practices within their community

CONCLUSION

The fact that in many cases human activities have been heavily detrimental to the environment should not obscure the reality beneficial role of local people in conserving and fostering biodiversity. The ecological footprint of indigenous and traditional peoples on aquatic biodiversity has not only been light, but also includes *in situ* engineering of biodiversity conservation. There is little doubt that cultural practices have suffered much erosion in the last few decades in Eastern Nigeria and the sacred species, landscapes etc. representing such practices in communities and towns are only surviving fraction of their original size. They also provide a continued reminder that human cultures and biodiversity have evolved together, and that encouragement of such a link may be a key element in an ecologically and socially secure future.

Communities must be encouraged to improve or at least continue to maintain conservation-friendly cultural practices. How to best retain the best attributes of traditional societies under conditions of rapid modernization and urbanisation must be considered one of the most pressing issues for Eastern Nigeria. Governments and organisations involved in conservation project should get local communities more active in projects by incorporating local values and interest into projects and avoid ambiguous and unrealistic goals and objectives which do not benefit the local host communities. It is important to also recognise the complex history and traditions that have created and maintained these practices.

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