International Journal of Agricultural Sciences ISSN: 2167-0447 Vol. 3 (1), pp. 351-356, January, 2013. Available online at www.internationalscholarsjournals.org © International Scholars Journals

Full Length Research Paper

Back to tradition: taboos in bioconservation in Nigeria

Gbadebo Jonathan Osemeobo PhD

Department of Biological Sciences, Bells University of Technology, PMB 1015 Ota, Ogun State Nigeria.

Received 09 July, 2012; Accepted 03 January, 2013

Massive deforestation has eroded sustainable sites for *in situ* conservation in Nigeria. Sacred groves promised as alternative sources of high quality germplasm for conservation. This study examined the role of taboos as dependable instruments for conserving biodiversity in sacred groves in the country. Data in this study was collected through a cross sectional survey involving a face to face questionnaire interview of key stakeholders of sacred groves in southern Nigeria. Results of data analyses indicated that: (i) the establishment and management of sacred groves thrived under the traditional belief systems which were off shoots of the traditional religion; (ii) traditional belief systems created fears on the people not to violate regulations on groves because of negative repercussions; (iii) the groves were significant sources of income to the land holding communities; (iv) efficient management systems were put in place in terms of infrastructures, patrols, monitoring and sanctions) ; (v) taboos failed as instrument of conservation in community forests where the traditional belief system was not recognised by heterogeneous members of the community. It is recommended that the Ministries of Environment at State and Federal levels should carry out inventories and ecological surveys of sacred groves and support the groves to conserve rare keystone species.

Key words: Taboos, sacred groves, conservation, traditional belief systems.

INRODUCTION

Natural forests in Nigeria are being degraded due to unplanned land use practices in the face of policy summersaults and fiscal policies that undermine the use of natural forests solely for forest management (Osemeobo, 2001). Forest exploitation has been unduly accepted as a way of life among families that depend directly on the forests for sustenance (Osemeobo, 1993). Over-exploitation has resulted in harvesting trees in good forms for the markets thereby eroding the best genetic materials for future conservation of species in protected forests (Osemeobo, 1992). Protected forests are no longer sustainable sources of germplasm for extensive regeneration of forest species. High rate of extirpation of species in protected forests due conversion of forests for agriculture and inherent ecological behaviour of tropical trees in irregular flowering and fruiting within and Between species (Osemeobo, 1995) have mooted the search for sources of high quality germplasm for future regeneration of indigenous tree species of immediate value to forest users (Osemeobo, 1996).

Forests outside the protected system are managed by rural communities to meet their desires and needs. Traditional methods used to management the forests are traditional and fetish. They are based on the belief systems that are accomplished through the use of taboos. Taboos are social prohibitions regulating or restraining individuals, families and communities from using biotic resources. They are based on mutual agreements collectively made by members of land holding communities to aid conservation of biodiversity. Taboos regulate access to biodiversity in terms of species protection, harvest and utilization. They also involve protection of water surface: wetlands, rivers and lakes; and terrestrial habitats in specific areas or locations. Taboos apply to all spheres of people: young, old, males and females (Osemeobo, 1992). Taboos are

*Corresponding author. E-mail: osemeobo2001@yahoo.com

influenced by cultural beliefs, religion, social status and richness of biodiversity in terms of species availability, distribution, population, diversity and use intensity by members of the community. According to Khan *et al* (2008) taboos are used to establish most sacred groves. Each grove carries its specific myths, lore and legends which link owners with their spiritual guardians. It is therefore rare for two groves to be managed on exactly the same beliefs or linked with the society (Jeanrenand *et al,* 2001). The rules or regulations are often different and are often based on their historical past, a link between the present and the past; and the role they play for the immediate society from the view point of traditional ecological knowledge (Russel, 2010).

Taboos in Nigeria exist in different forms (Osemeobo, 1992; Osemeobo and Omeni, 2008): (i) taboos can be observed due to nature of birth. Twins in Yoruba (Nigeria) are made to observe some taboos prohibiting then from eating monkey and some plants. (ii) Pregnant mothers are made to observe some taboos for safe delivery and for the protection of the unborn from evil spirits. (iii) Taboos are imposed on people that patronize traditional African medicine when they are cured of illness or when they acquire some magical powers. (iv) Taboos are attached to various traditional offices such as priests, traditional rulers, traditional chiefs and palace workers. (v) Taboos are observed in family lines based on ancestral believes that were handed down from generations. (vi) Taboos are also observed by members of religious sets in which certain food items are forbidden to be eaten (Muslims do not eat monkeys and pig meat). (vii) There are community based taboos restraining members from eating some species of biodiversity and prohibiting them from gaining access to specific habitats to control harvest of biodiversity.

The Nigerian situation is similar to that of Turkey. For example Russell (2010) working in Turkey and other Asia countries reported that taboos involve prohibition from killing, touching, eating and using tabooed animals among categories of people under specific periods of time. Some specific animals are sacred because they hold specific powers (leopard and bears), inedible (wild cats) and distasteful (birds). However partial taboos were common in Turkey as they allowed some species of animals to be killed and eaten in small numbers (deer and boar). Sometimes total taboos are placed in carnivores based on exiting religion or myths (Russel, 2010). Taboos have been widely used to preserve species and habitats in Madagascar (Jones *et al*, 2008 and were used as sources of spiritual connections with nature and ancestral gods (Jeanrenand *et al,* 2001).

In Nigeria, the sacred groves are owned by communities with little or no control from government. These groves are centres of biodiversity conservation which is at the verge of decline in the country particularly in protected forests. Most protected forests only exist in papers because of high rate of de-reservation for alternative uses for agriculture and urbanization and deforestation, indiscriminate logging and other public infrastructures-electricity tension lines, dams, air ports, universities and exploration of minerals (petroleum, gas, coal, tin ore and gold) (Osemeobo, 1988). Anthropogenic factors have made biodiversity conservation in protected forests inadequate. The situation is worsening with declining land area devoted to *in situ* conservation in protected forests. The viable alternatives to protected forests are lands outside protected forests which in themselves operate under conflicting and contradicting land use practices (Osemeobo, 2001). It is within these limits that sacred groves have become hot spots for biodiversity conservation. The main limitation of the sacred groves is that their total areas are very small for full reliance in seed production for *ex situ* conservation at moment.

Sacred groves in Nigeria are rich in biodiversity because they are adequately protected and undisturbed. Their management is within the limits of ecological principles in terms of: combining ecological knowledge with science in habitat and biodiversity conservation, mutual agreement in the policy formulation and implementation for management of sacred forests and timely and adequate funding of silvicultural operations. However, the sizes of majority of sacred groves makes their management costs high compared to the land area in government owned protected forests. According to Sponsel and Casagrande (2008), sacred groves are also used for religious worships, cultural functions held in secrecy, economic functions (provision of non wood forest products for domestic uses and for the market). Communities use taboos for prohibiting access to these groves that also serve as watersheds, habitats for endemic species and seed source of rare species.

Taboos in sacred groves are highly respected in African countries. In Madagascar Jones *et al* (2008) found taboos as a practice used to effectively protect endangered species (*Propithecus edwardsi* and *Cryptoprocta ferox*) thereby reducing pressure on endangered species often harvested for income generation. Outside protected areas, enforcement of conservation rules through taboos are breaking down due to of lack of capacity. Ineffective monitoring and law enforcement on the part of government has made access to biodiversity uncontrollable in protected forests. It has been said that respect or adherence to taboos is primarily based of fear of *supernatural retribution* (Casagrande, 2008) if they fail to respect the taboos. This is why species and habitat have played significant role in biotic conservation but with positive implications.

Taboos appear to be reliable instruments for sustainable conservation of species and habitats in most developing countries like Nigeria. In many places, the infrastructures for conservation no longer exist. The protected areas are in decline due to: unplanned and uncontrolled harvesting of biodiversity, indiscriminate

bush fires, habitat loss to alternative uses as a result of illegal de-reservation (Osemeobo, 1988). Other reasons are little or no protection, non application of biotechnology for species improvement, high rate of poaching and lack or inadequate conservation practices to reduce the rate of species extirpation in various forest locations. Biodiversity conservation has been found unsustainable in areas of unplanned land use and areas of high land use intensity (Osemeobo, 1996). Denied access to protected forests by government has made landholding communities bitter and uncooperative to policies aimed at conserving the forests.

It is within the community based taboos that sacred groves are established to conserve and control access to biodiversity. Taboos have been responsible for traditional tenure regimes used to control biodiversity in community forests in terms of restricted access, closed access, open access and regulated access. Community based taboos are under siege in many parts of the country. According to Osemeobo (2009), taboos are at the verge of collapse in community forests in Nigeria due to primary factors arising from: (i) non recognition in courts; where cases of enforcing tenure regimes are often lost in customary and magistrate courts, (ii) the sizes of community forests where tenure regimes are exercised have diminished and application of community regulations has lost its credibility. (iii) Increasing exposure of rural communities to imported religions (Christianity and Islam) with different beliefs is crumbling the basis of African mythology on which taboos are based.

STUDY OBJECTIVES

The objective of the study is to examine why taboos have succeeded for conserving sacred groves in Nigeria. The specific objectives are to:

(i) Examine why local communities rely in taboos for conserving biodiversity in groves;

(ii) Analyse management infrastructures on which biodiversity conservation is based in groves; and

(iii) Determine why taboos are not efficient in managing other community forests for biodiversity conservation.

METHODOLOGY

Methods are weak or not explicitly detailed. The authors need to detail: 1) the methods used during field observations; 2) the roles of the key stakeholders need to be defined; 3) it is not clear whether the 30 respondents for a questionnaire interview are the key stakeholders; 4) One of the specific objective of the study is to determine why taboos are not efficient in managing other community forests for biodiversity conservation. The authors should have included other community forests in their samples for comparison; 5) The sampling size is very low. One cannot extrapolate the data of 3 sites to the whole Nigeria. The authors also used only 30 respondents for their questionnaire interview. The sampling size is very limited.

Across sectional survey was used to assess the role of sacred groves in biodiversity conservation on lands outside protected forests. Data was derived through a simple random sampling procedure to respectively select 3 sacred groves and 30 respondents for a questionnaire interview. Field observations and informal discussions with key stakeholders were combined with face to face interview to yield full data for the study between January and April 2011. Open ended questionnaire was used for data collection (appendix1) and ensured: (i) independent responses, (ii) freedom of expression without limitations, (iii) reduction or elimination of bias in responses and (iv) opening up issues for discussion. Chi-square (X^2) test for homogeneity of samples were run to analyse the survey data. The test was used to determine whether there were significant variations on responses of populations interviewed for the study. Tables were used to present percentage frequencies of respondent opinions on issues raised in the questionnaire.

RESULTS AND DISCUSSIONS

Is there any non-taboo factor that encourages people to protect the sacred groves? If yes, are they significant or negligible?

The result section is very poor, the authors need to add more information. Several statements are not supported by data (eg. Field observations revealed that all forms of biodiversity …; There was clear evidence from field observations in groves visited that the sacred groves were: (i) rich in biodiversity in terms of number of species of the same kind and the population of species in a unit area of land.).

The authors identified three types of sacred groves in the study area. It is not clear whether the three sacred groves involved in the study are representative of each of the three types of sacred groves. If not this should have been the case.

The authors need to present the data on field observations in term animal and plant species richness / abundance / density; ii) They need to present comparative data on species richness / abundance / density / management systems in the 3 sacred groves.

Sacred groves in the Nigeria context

Sacred groves were off shoots of traditional religion in Nigeria. The entire belief systems and structures were deeply anchored on the tradition of the people. They were mooted, approved and established by the traditional

Table 1: Reasons of relying on taboos to conserve sacred groves

Reasons why taboos are effective in conservation	% of respondents
Strong fear of not offending ancestral spirits	17
Common belief that taboos host ancestral guardian spirits	15
Efficient patrol mechanism in place	14
Enforceable sanctions for defaulters are in place	13
Sacred groves were created as centres of spiritual development	12
Groves generate benefits to the community as a unit	10
Source of income to some individual members of the community	10
Sites for regenerating rare or extirpated medicinal species	9
Calculated $X^2 = 4.32$ and tabulated X^2 0.05,7 =14.10. It means there is no difference between observed and expected frequencies	

councils of every land holding communities where they occurred. In many cases the sacred grooves were as old as the settlements and they existed before the advent of modern religions: Christianity and Islam. Sacred groves served as sites of field laboratories for the teaching and practices of traditional rites, ceremonies and festivals. They were instruments used to sustain the tradition and sites where traditional secretes of communities were passed from one generation to the other. Three types of sacred groves were identified in the study area. The first were groves set aside for the worship of deities for entire ancient communities that have emerged as large towns in modern days: Osun shrine in Osogbo. The second were evil forests (Okija-Anambra state, Nziko and Ogugwu-Imo states) set aside for: (i) burial of people that died through questionable reasons, (ii) burial of people whose lifestyles was at variance with the norms of the society, (iii) sites of idols that eliminated witches and evil people in the society and (iv) sites for practicing advanced trado-medicine which cannot be practised in homes and within living communities. The third were groves set aside for: (i) designs of masquerades which should not be seen by the third party-youths and women (Otuo-Edo state), (ii) idols that were worshipped in secrecy and (iii) secret meetings by cults in the communities. In all cases, the sacred groves were located in watersheds and were spots for intensive conservation of biodiversity.

Reliance on taboos for conservation

Table 1 presents some critical reasons why taboos have succeeded in biological conservation in sacred groves. Field observations revealed that all forms of biodiversity (plants, animals and habitats) were under strict protection. The data in Table 1 is explicit but the belief system among the communities indicated that: (i) there was a strong fear of ancestral spirits of good and bad that harm individuals who violate taboos for conserving grove sites. (ii) There were established facts that sacred groves were used as sites for religious worships which host ancestral guiding spirits within trees, water bodies and wild animals. Therefore it was mandatory for those who believed on the efficacy of guarding spirits to protect them by preserving the medium in which they habit (biodiversity) in the groves. (iii) Besides the religious benefits the grooves were seen as sources of income to the community and some individuals through ecotourism, hosting rare and expensive plants for traditional medicines and sale of rare seeds for regeneration under *ex situ* methods. (iv) There were enforceable sanctions and efficient patrol mechanisms in place.

Fear of ancestral spirits

There was a controversy whether those that believed on guardian spirits feared or respected these spirits with regards to bioconservation. There was a strong belief from discussions held with stakeholders in this study that all prohibitions against killing, touching, eating and selling tabooed biodiversity products were put in place to preserve bio-species serving as hosts of guardian spirits of individual or communities. It was also claimed that when guardian spirits lacked host media they wander about and become aggressive against those they were supposed to guard. The opinions of stakeholders are given in Table 2. The principal reasons for fearing ancestral spirits as in Table 2 were that: (i) people did not want to offend guardian spirits which were invisible members of families (the family was made up of living and non living members). (ii) The invisible members were believed to be spiritually powerful which can despoil when taboos were flouted and bless individuals in a family when not offended. (ii) Neglecting ancestral sprits could cause disasters to families (childlessness, pandemics, psychotic breaks and suicides). (iii) Strong traditional beliefs existed among groups of families living in harmony with culture, folk stories and myths surrounding ancestors and individuals. (iv)Traditional medicine practitioners (and trado medicine) were believed to lose their potency when regulations protecting

Table 2: Reasons why ancestral spirits create fears to observe taboos on groves

Reasons why ancestral spirits create fears on the people	(%) of respondents
Respect or fear not to offend the invisible members of families	28
Belief that invisible family members can spiritually reward people	24
Belief that neglecting ancestral sprits may cause retrogression to families	20
Groups of families live in harmony with cultural beliefs	16
For traditional medicine practitioners no to lose their potency	12
Calculated X^2 =8.00 and tabulated X^2 0.05,4 =9.49. It means there is no difference between observed and expected frequencies	

Table 3: Infrastructures for management in groves

Management infrastructures	% of respondents
Defined boundary lines	18
Efficient patrols	16
Reliable monitoring activities	15
Effective communication system	12
Controlled harvesting practices	12
Adequate regulations on access to biodiversity	10
Appropriate enforcement of regulations	9
Stable land use for ecosystem health and vitality	8
Calculated X^2 =7.04 and tabulated X^2 0.05,7 = 14.10. It means there is no difference between observed and expected frequencies	

ancestral sprits were flouted by individuals.

Grove management practices

There was clear evidence from field observations in groves visited that the sacred groves were: (i) rich in biodiversity in terms of number of species of the same kind and the population of species in a unit area of land; (ii) well managed as they received adequate attention perhaps because of small land areas involved or because of inherent commitment in conserving the sites; (iii) free from intensive use and pressure of biodiversity harvest and alternative land uses; and (iv) provided with adequate infrastructures that assisted in the management of the groves. The data in Table 3 also indicated that defined boundary lines on the ground, adequate patrols, monitoring and communication system contributed to the management system. Besides these were controlled harvesting practices (in terms of the time and period to harvest, quantity of products to be harvested and harvesting methods to be adopted). Adequate regulations, sanctions were in place. Violations of regulations were reported to families of defaulting members concerned and this was regarded as shameful attitudes to such families.

Challenges of taboos in community forests

The land types in the study area can be categorised into: (i) lands under strict government control- protected forests, (ii) community forest reserves, (iii) community forests and (iv) sacred groves. Community forests are multiple used lands for the benefits of land holding communities. These forests were used to meet requirements of the people for food and cash crop production, harvesting of non wood forest products and timber. The forests were under intensive land use practices with conflicting and contradictory interests among users. Over the years, the traditional methods of managing the forests through closed and open season options have broken down. Besides, the users of the forests were not structurally homogenous hence they had diverging values and views on wise use of the forests. Unfortunately, the lands uses were not planned, the land area of the forests were decreasing due to conversion to tree crops, urbanization and public infrastructures. These factors have mounted resistance to the application of taboos in biodiversity conservation.

Table 4 highlights major challenges why taboos have failed in the management of community forests in the study areas. These include: conflicting interests, high population of forest users, lack of management control, uncontrolled harvest of biodiversity and decreasing land area under effective forest cover. However taboos protecting individual species of biodiversity were still in vogue in pockets of community forests in the study areas. The demise factors causing failures in using taboos to conserve community forests are: (i) poverty among community members have led to severe free rider issues

Table 4: Challenges of using taboos in community forests

Challenges of using taboos outside sacred groves	% of respondents
Diverging and conflicting interests on forest land	20
High population of stakeholders sustained from the forests	19
Lack of administrative control of forests	18
Non recognition of taboos in courts of law	17
Commercialization of forest product harvest	14
Decreasing land area under forest cover	12
Calculated X^2 = 3.12 and tabulated X^2 0.05,5 =11.10. It means there is no difference between observed and expected frequencies	

in extreme hard times; (ii) changing socioeconomic and political institutions vis-a-vis changes in institutions responsible for property rights at community level; and (iii) agitations on freedom from traditional impositions through violence and vandalism in the absence of state laws was breaking down tenure regimes in community forests.

CONCLUSION

The importance of sacred groves in biodiversity conservation was grossed over for any years because of their roots in fetish activities. Loss of ecosystems and keystone species in protected forests craved alternative sources for conservation of rare species. The data on which this study was based have shown that first, sacred groves have survived serious land use transformations in the country. The groves may continue to exit as long as the traditional religion dictates the pace of traditional activities (worship, ceremonies, festivals and rites) in many indigenous communities in the country. Second, the sacred groves are stable in terms of land use conflict, maintenance of social harmony, absent of free rider issues and bioresource management. Third, the land areas covered by sacred groves are insignificant to supply the volume of high quality of seeds required to revive extirpated and rare species mainly found in these groves. Sacred groves thrive when the community acts as a unit to control access to biodiversity and are adequately educated on the values of conserving biodiversity.

In the face of challenges posed by loss of habitats and species throughout the country, it is recommended that the various Ministries of Environment at federal and state levels should urgently carry out: (i) comprehensive surveys of sacred groves in the country, (ii) the inventory of the groves to determine the types of species (plants and animals) occurring in the groves, the population and distribution of species and the ecology of rare species and (iii) determine suitable ways to conserve rare plant species through *ex situ* methods to boost their reintroduction to government reserves.

REFERENCES

Anoliefo GO, Isikhuemhen OS, Ochije NR (2003). Environmental implications of the erosion of cultural taboo practices in Awka-South local government area of Anambra State, Nigeria. J. Agric. Environ. Ethics 16:281-296.

Colding J, Folke C (2001). Social taboos: invisible systems of local resource management and biological conservation. Ecological Applications 11:584-600.

Gadgil M, Berkes F, Folke C (1993). Indigenous knowledge for biodiversity conservation. *Ambio* 22: 151-156.

Jeanrenand S, Oviedo G, Soutter, R (2001). An international initiative for the protection of sacred natural sites and other places of indigenous and traditional people with importance with biodiversity conservation: a concept paper (dfaft5) WWF International, 44pp.

Jones JPG, Andriahajaina FB, Hockley NJ, Balmford A, Ravoahangimalala OR (2005). A multidisciplinary approach to assessing the sustainability of freshwater crayfish harvesting in Madagascar. Conservation Biology 19:1863-1871.

Jones JPG, Andriamarovolona A, Hockley NJ (2008). Taboos, social norms and conservation in the eastern rainforests of Madagascar, School of the Environment and Natural Resources, University of Wales, Bangor, 16pp

Khan ML, Khumbongmayum, A, Tripathi RS (2008). The sacred groves and their significance in conserving biodiversity an overview, Int. J. Ecol. Environ. Sci. 34 (3): 277-291

Negi CS (2010). The institution of taboo and the local resource management and conservation surrounding sacred natural sites in Uttarakhand, Central Himalaya, Int. J. Biodiver. Conserv. 2(8), 186-195

Osemeobo GJ (1988). The Human Causes of Forest Depletion in Nigeria, Environmental Conservation 15 (1): 18-28

Osemeobo GJ (1992). Religious Practices and Biotic Conservation in Nigeria: Conflict or Compromise? Geojournal 27 (4): 331 – 338

Osemeobo GJ (1993). Impact of Land Use on Biodiversity Preservation in Nigerian Natural Ecosystems: A review, Nat. Res. J., 33 (4): 1015 - 1025.
Osemeobo GJ (1994). The role of folklore in environmental conservation: Evidence from Edo State, Nigeria. Int. J. Sustain. Dev. World Ecol., 1: 48-55.
Osemeobo GJ (1995). Land Tenure Impact on Biotic Conservation in Nigeria, *Splash*, 11 (1): 13-16.
Osemeobo GJ (1996). Policy Issues on Private Sector Participation in Protected Area Management in Nigeria, J. Rural Dev. Admin., XXVIII (1): 1-13.
Osemeobo GJ, Omeni FO (2008). Trade and Utilization of Wild animals in Traditional practices in Nigeria, *International* J. Econ. Dev. Issues:7 (2): 77-89
Osemeobo GJ (2001). Is Traditional Ecological Knowledge Relevant in Environmental Conservation in Nigeria? Int. J. Sustain. Dev. World Ecol. 8 (3): 203-210
Russel N (2010). Taboo topics: Exploring absences in the faunal remains from Çatalhöyük, Turkey; Paper presented at the meetings of the International Council for ArchaeoZoology, Paris, pp
Sponsel LE, Casagrande D (2008). Sacred places and biodiversity conservation. In: Encyclopedia of Earth. Eds. Cutler J. Cleveland (Washington, D.C.: Environmental Information Coalition, National Council for Science and the Environment). http://www.eoearth.org/article/Sacred_places_and_biodiversity_conservation.

Appendix 1: Questionnaire on taboos for biodiversity conservation

State: ----------
Local government----------
Town/settlement----------
Name of grove----------
Date of interview----------
Name of respondent (optional) ---------

1. Do you observe taboos in your community? ----------
2. What are the origins of these taboos? ----------
3. What are the benefits of observing these taboos? ----------
4. What happens to individuals that refused to observe taboos in groves? ----------
5. Who enforce these taboos? ----------
6. Have taboos any future in conserving biodiversity? ----------
7. Why are taboos used to conserve biodiversity in sacred groves? ----------
8. Why do people fear or respect ancestral spirits to observe taboos? --------
9. What are the infrastructures on which forest (grove) management are based? -----
10. Why are taboos not effective in managing other community forests in your area? ----