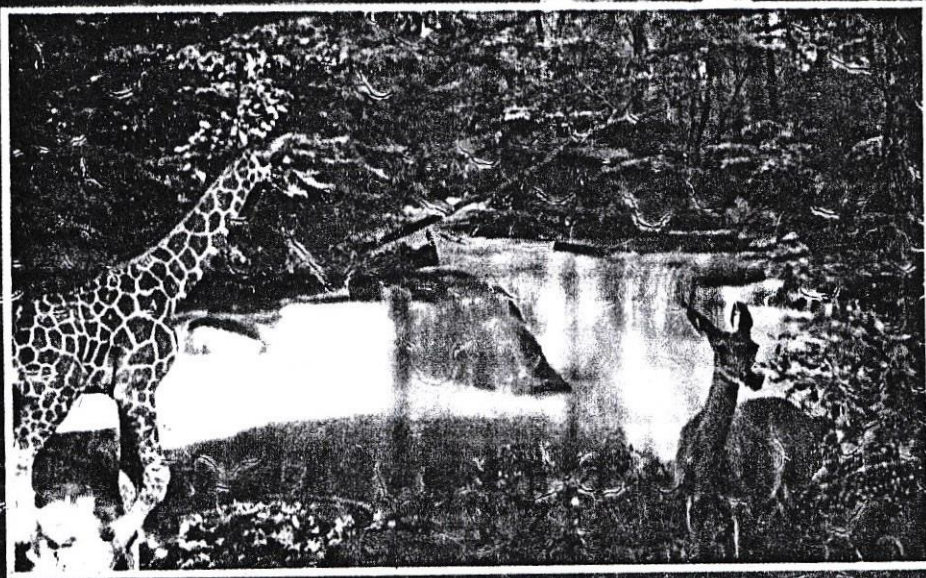


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CHALLENGES OF BUFFER ZONE MANAGEMENT IN CROSS-RIVER NATIONAL PARK, SOUTH EASTERN NIGERIA

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ABSTRACT

Ecological buffer zones are very crucial in minimizing the impact of land use practices close to protected areas, though there is no consensus surrounding their objectives, location, area and the level of their permitted use. This study therefore assessed the challenges of buffer zone management in some (adjacent) support zone communities in Oban Division of Cross River National Park, Nigeria. Data were obtained through questionnaire interviews and reconnaissance survey and subjected to descriptive and inferential statistical analysis. Results showed that a high percentage (68.68%) of the respondents in the division were not aware of the existence of the buffer zone and the policies governing it. 74.42% believed that the Park has left them poorer. Only 11.21% accepted that they have enjoyed tremendous benefits as a result of the establishment of Park and its buffer zone. A chi square analysis showed that the people were not aware of the existence, creation and policy governing buffer zone management and were therefore not in favour of its operations. These developments might be adduced to the low level of awareness of Park laws and buffer zone management policies by these communities. It is therefore recommended that public enlightenment campaigns should be stepped up to educate the populace on the need to abide by the laws and policies governing the Park and its buffer zone. Social amenities including classroom blocks, health centers, roads, water and electricity should be provided by the management of the park including training in a number of livelihood options like beekeeping and non timber forest product farming. This is expected to reduce the pressure by the local communities on the resources of the park and its buffer zone.

Key words: Buffer zone, Protected Areas, Cross River National Park, Land use practices, Non-Timber Forest Products

INTRODUCTION

Deforestation and unsustainable land use patterns are causing significant degradation of the world's natural resource base at an ever increasing rate. A greater percentage of this destruction is centered on the forest ecosystems found in tropical Africa, Asia and America (FAO, 1991).

Nigeria currently has a network of protected areas which include a biosphere reserve, seven (7) National Parks and twelve (12) Strict Nature Reserves (Ogogo, 2004).

In spite of their intuitive appeal, buffer zones have not been adequately defined and existing working models on their operations are few. MacKinnon *et. al.* (1986) defined buffer

zones as areas adjacent to protected areas on which land use is particularly restricted to give an added layer of protection to the protected area itself while providing valued benefits to neighboring rural communities. Wind *et. al.* (1989) recently defined Park buffer zones simply as areas outside parks that are designed to protect the parks. These approaches give emphasis to protection as priority in the development of buffer zones while relegating the supply of economic benefits to local people as secondary. Buffer zones tend to be conceived as relatively narrow strips of land on park boundaries within which the sustainable use of natural resources are permitted. Activities that are commonly allowed in buffer zones include;

hunting or fishing using traditional methods, collection of fallen timber, harvesting of fruits, seasonal grazing of domestic stock, and harvesting of specified Non Timber Forest Products (NTFP) like rattan or grasses. Activities that are excluded in buffer zones generally include burning of vegetation, cutting of live trees, construction of buildings and establishment of plantations. One of the benefits that local people derived from this type of land use is the provision of a measure of protection from wildlife degradation. Others are the establishment of physical barriers to human encroachment into the strictly protected core zones. Buffer zones also promote the sustainable use of wild plant and animal species by local communities and provide mechanisms by which local people can genuinely benefit from the existence of a protected area. They protect the natural environment and help keep nearby ecological niches stable and functioning. Buffer zones from the conservation view point represent a crucial methodology for preserving biological and species diversity in reserves under threat from the surrounding human populations (Van Orsdol, 1988).

One of the most serious problems in buffer zone management is the assumption that limited benefits that flow to local people can change their behaviours, reduced pressure on the plants and animals by the protected areas and thereby enhance the conservation of biological diversity. However, only few buffer zone management programmes have succeeded in establishing stable and compatible land use systems around protected areas in a way that local people are genuinely reconciled to the conservation function of the area (Oldfield, 1988).

This work assessed the level of awareness and attitude of the people in the surrounding communities of Oban Division towards the Cross River National Park buffer zone. It also investigated the level of impact of the Park's Management programmes on the economic status of the local inhabitants suggesting ways of improving the management of the park's buffer zone.

METHODOLOGY

Study Area

The Cross National Park (CRNP) is one of the seven National Parks in Nigeria. It is surrounded by moist tropical rainforest around the northern and western parts and mangrove swamps in the coastal fringes (Ezealor 2002). The Park lies in the extreme south eastern part of Nigeria and extends along the Republic of Cameroon border covering 4,000km². It lies between latitude 5° 05' and 6° 29' North and Longitudes 8° 15' and 9° 31' East. The Park is segmented into two non contiguous divisions, the Oban Division in the Southern part covering 3000km² and the Okwango Division in the Northern part covering 1000km².

Cross River National Park is characterized by two distinct tropical moist climatic seasons the rainy and dry seasons. The rainy season begins from April to November with a double peak regime in June to July and September to October. Annual rainfall decreases from North to South across the Park. Average daily temperature ranges from 14°c to 25°c. The dry season starts from November to March or early April and experiences harmattan weather from December to February.

Sampling Method

A reconnaissance survey of the study area was

conducted followed by the administration of structured questionnaire on 12 randomly selected communities at the parks periphery in Oban Division of Cross River National Park. The communities were Orem, Akor, New Ndebiji, Osomba, Aking, Oban Nege, Owai, Ifumkpa, Mangor and Ekong. 348 questionnaires were administered on the respondents in the study area. The respondents included farmers, timber dealers and gatherers of Non-Timber Forest Products (NTFPs).

Data Analysis

Data was analyzed using Chi-Square,

frequency distribution, percentages and descriptive statistics. The Chi-Square analysis was used to test for independence in contingency tables. Variables used included knowledge of buffer zone existence, reasons for buffer zone creation, opinion on buffer zone project, enhancement of economic status, support of buffer zone management and involvement in the management of buffer zone.

RESULTS AND DISCUSSIONS

The socio-demographic characteristics of the respondents are presented in table 1:

Table 1: Socio-demographic characteristics of support zones communities

| Variable | Frequency | Percentage(%) |
|--------------------------|------------|---------------|
| Gender | | |
| Male | 222 | 63.79 |
| Female | 126 | 36.21 |
| Total | 348 | 100 |
| Religion | | |
| Moslem | 1 | 0.29 |
| Christianity | 344 | 98.85 |
| Traditional | 3 | 0.86 |
| Total | 348 | 100 |
| Age distribution | | |
| Less than 25 years | 50 | 14.37 |
| 26-40 years | 181 | 52.01 |
| 41-50 years | 81 | 23.28 |
| Greater than 51 Years | 51 | 23.28 |
| Total | 348 | 100 |
| Marital Status | | |
| Monogamous | 273 | 78.41 |
| Polygamous | 8 | 2.30 |
| Widow/Widower | 7 | 2.01 |
| Divorced | 4 | 1.15 |
| Unmarried | 51 | 14.65 |

| | | |
|----------------------|------------|------------|
| No response | 5 | 1.47 |
| Total | 348 | 100 |
| Education | | |
| Primary | 173 | 49.71 |
| Secondary | 127 | 36.49 |
| Tertiary | 27 | 7.76 |
| Non Formal Education | 21 | 6.04 |
| Total | 348 | 100 |
| Occupation | | |
| Farming | 287 | 82.47 |
| Others | 61 | 17.53 |
| Total | 348 | 100 |

From the table, 63.79% of the respondents were males while 36.21% were females with the highest proportion (52.01%) falling between 26-40 years old. Majority of the respondents were monogamous (78.41%) followed by unmarried (14.65%), polygamous (2.30%), widow/widower (2.01%) and divorced (1.15%). The highest percentage (49.71%) had primary education, while (36.49%) had secondary education with 7.76% and 6.04% in the tertiary and non formal categories respectively. The low level of education in the study area will pose serious problems in terms of awareness of park conservation programmes and those of buffer zones. 81.47% of the respondents were farmers while 17.53% represented people with other forms of sustenance. This is an indication that farming is the main source of

income in this communities and agriculture is the major cause of deforestation in Nigeria (Kio, 2000). There is therefore need for serious level of sensitization to ensure that farmers are encouraged to carry out sustainable farming practices.

The level of awareness of respondents on the existence of the buffer zone including reasons for buffer zone creation and the laws governing its operations are presented in table 2. A high percentage of the respondents (60.08%) claimed that they were unaware of the existence of the buffer zone while only 25.45% conceded to its existence. This situation predisposes the buffer zone to abuse as many local inhabitants would engage in activities that are prohibited in the buffer zone under the cover of ignorance.

Table 2: Existence, creation and law governing buffer zone

| Variable | Aware | Not Aware | No. Respond | Total |
|---|-------------|-------------|-------------|-------|
| Knowledge of buffer zone existence | 99(28.45%) | 239(68.68%) | 10(2.87%) | 348 |
| Reasons for Buffer zone creation | 77(22.13%) | 252(72.41%) | 10(2.87%) | 348 |
| Knowledge of policies governing Buffer Zone management | 86(24.71%) | 249(71.55%) | 13(3.74%) | 348 |
| Total | 262(25.10%) | 740(70.88%) | 33(3.16%) | 1044 |

Results on the purpose of creating the buffer zone indicated that 72.41% of the respondents claimed that they did not understand the purpose of its creation while

22.13% indicated they had knowledge of the buffer zone management model. Before the establishment of the park and its buffer zone, the inhabitants of the area had free access and rights to the utilization of the resources therein. The law establishing the park and its buffer zone had imposed restrictions on the utilization of resources in the park and its buffer zone (National Park Service Decree No 49 of 1999). The demarcation of the boundaries of the park and its buffer zone automatically leads to the people forfeiting their traditional rights to the use of the resources inside the park as corroborated by Eze et al (2008) and Eze et al (2008). Ministry of Environment Conservation (2008).

On the policy governing buffer zone management 71.55% of the respondents were not aware of these policies, while 24.71%

admitted having knowledge of the policies. The people's knowledge on the purpose of buffer zone management was relatively low; a situation that has been corroborated by Fadare (1989). The inability of the people to appreciate the purpose for creating buffer zones and their operational policies is an issue that requires special attention by the management of Cross River National Park if the local people are to support the project. Majority of the people consider the establishment of the park as stopping them from having access to their natural heritage and feel more aggrieved that this situation has been extended through the establishment of buffer zones. It is implied that while these communities might want to appreciate conservation activities around them, the proper support and mobilization by the park is lacking. Consequently, the local people should be fully involved in the management of the park at all levels. This has been successfully tested in many regions using different approaches in the implementation of

Integrated Conservation Development projects (McNeely, 1994, Wells *et al.* 1992)

Table 3 shows the opinion of the people on the Buffer zone project including their level of support, enhancement of their economic status and their involvement in the overall management of the project. Results on the perception of the buffer zone project indicated

that a very high percentage of the respondents (75.29%) viewed it as a bad project while only 22.41% registered a positive opinion. This is unfortunate as many of those who view it in negative terms are likely to scuttle the laws establishing it. This exposes the buffer zone to abuse in terms of resource utilization.

Table 3: Perception of Buffer Zone Programme

| Variable | In-favour | Against | In difference | Total |
|---------------------------------------|-------------|--------------|---------------|-------|
| Opinion on Buffer Zone Project | 78(22.4%) | 262(75.29%) | 8(2.30%) | 348 |
| Support of Buffer Zone Management | 74(21.26%) | 268(77.01%) | 6(1.72%) | 348 |
| Enhancement of Economic Status | 39(11.21%) | 259(79.43%) | 50(14.37%) | 348 |
| Involvement of Buffer Zone management | 81(23.28%) | 257(73.85%) | 10(2.87%) | 348 |
| Total | 272(19.54%) | 1046(75.14%) | 74(5.32%) | 1392 |

The impact of Cross River National Park on respondents' economic status showed that 74.42% of the respondents were of the opinion that the park has made them poorer while only 11.21% felt that the park has improved their economic fortunes. The people feel they have been made poorer through the prohibition of hunting within the park and its buffer zone as well as restriction of access to collect Non-Timber-Forest Products (NTFPs). Consequently illegal activities both in the buffer zone and the park have been on the increase Ebin (2001)

Results on involvement in the management of the buffer zone indicated that 73.81% of the respondents claimed not to be involved in the management of the zone while 23.29% indicated they were involved in its management and that of the National Park. The survival of the buffer zone and therefore the National Park and its resources greatly depend on partnering with the local communities in the management of these resources.

A chi-square analysis showed that the tabulated frequency was greater than the calculated frequency at 0.05 level of

significance. The null hypothesis was therefore rejected. This showed that the people were not aware of the existence, creation and policy governing buffer zone management and were therefore not in favour of its operations.

Conclusions

A large percentage of the members of the surrounding communities claimed ignorance of the existence of the buffer zone and the laws establishing it. The project was also perceived as bad because a few of them participated in its management and that of the National Park. Consequently, illegal activities including farming, poaching, and gathering of NTFPs are on the increase and will continue unabated in the National Park and its Buffer Zone if necessary steps are not taken by the park to evolve a participatory approach in its management strategies.

Recommendations

It was recommended that social amenities like classroom blocks, health centers, road, water and electricity be provided by the Park's management for the people. Benefits to individuals such as employment, skills acquisition and financial empowerment should be given priority by the park in the implementation of its support zone development projects. There should be an aggressive public enlightenment campaign programme to fully educate the people on the park's conservation projects.

REFERENCES

- Agbor, C. O. (2007). Stakeholders' Involvement and expectations gorilla based tourism at Afi mountain wildlife sanctuary. Afi Mountain Wildlife Sanctuary News Letter Vol. no. 10
- Ebin, C. O. (2001). Biodiversity Conservation and Community Participation. In Media relations and public enlightenment Strategies: Proceedings of the National Workshop on Media relations and Public enlightenment strategies organized by National Park Service, Yankari National Park.
- Eleazor, A. U. (Ed) (2002). Critical Sites for Biodiversity Conservation in Nigeria. Nigerian Conservation Foundation, Lagos, Nigeria. pp 14
- E. A. O. (1991) United Nations Food and Agricultural Organization. Trees for Life. United Nations World Food Day, 16th October 1991, pp12-14.
- Fadare, A. O., 1989. Poaching and Illegal Grazing Activities in Old Oyo National Park. Unpublished B.Sc. Dissertation, University of Ibadan, Ibadan. pp. 120
- Kio P.R.O. (2000). Forestry and sustainable agriculture development. National Workshop on Agricultural and Rural development in Nigeria: pp. 34-38
- Mackinnon, J., K. MacKinnon, G. Child, and J. Thorsell. (1986). *Managing protected areas in the tropics*. Gland, Switzerland: International Union for Conservation of Nature and Natural Resources (IUCN); pp.370.
- McNeely, J.A., and K.R. Miller, eds. 1994. *National parks, conservation, and development. The role of protected areas in sustaining society*

- Washington, D.C.: Smithsonian Institution Press. pp.420
- Ogogo, A. U. (2004). *Wildlife Management in Nigeria: Objectives, Principles and Procedures*. Median Communications, Calabar, Nigeria. 202p.
- Oldfield, S. (1988). *Buffer zone management in tropical moist forests: Case studies and guidelines*. Gland, Switzerland: International Union for Conservation of Nature and Natural Resources (IUCN) pp.49
- Van Orsdol, K.G. 1988. *Buffer zone agroforestry in tropical forest regions*. Washington, D.C.: USDA Forest Service, Forest Support Programme.
- Wells, M. P., & Brandon, K. (1992). *People and protected areas: Linking protected area management with local communities*. Washington, DC: World Bank. pp.2-15
- Wind, J., and H.H.T. Prins. (1989). "Buffer zone and research management for Indonesian national parks: Inception report." World Bank National Park Development Project. DHV/RIN Consultancies, Bogor, Indonesia. pp.242
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