E3 Journal of Environmental Research and Management Vol. 5(5). pp. 081-086, May, 2014
Available online http://www.e3journals.org
ISSN 2141-7466 © E3 Journals 2014

*Full Length Research Paper*

# Assessment of socio-economic activities and sustainable rural development in Oba hill forest reserve, Osun State, Nigeria.

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Accepted 30 April, 2014

**Structured questionnaire was administered in five (5) sample communities around the boundary buffer zone of the Oba Hill Forest Reserve. The villages were chosen at random due to their proximities to the reserve. The questionnaire was designed to collect information on the effective pattern of managing a protected area and sustainable rural development. A total of one hundred (100) respondents were randomly selected and interviewed. The assessment observed that the inhabitants of the communities depend heavily on the reserve for a variety of natural resources 60% while their village livestock compete intensively for grazing (45%). The study revealed that the inhabitants of the villages or surrounding the reserve land engaged in serious farming 60% while the inhabitant of some villages utilized the park for hunting. The study revealed that serious human degradation is directly affecting the management and conservation strategies employed by the state towards preservation of the biodiversity in the protected site. In summary, effective protection measures should be employed towards sustainable conservation management of the biodiversity resources in this protected reserve by the State of Osun ministry of environment.**

**KEY WORDS: -***Assessment; Socio-economic activities; Sustainable Rural Development; Oba Hill Forest Reserve*; *Protected Area*

## INTRODUCTION

Protected area management (forest reserve) is gradually going through a rapid stage of evolution in response to mounting problems and pressures especially in our developing countries due to rapidly growing population and drastic economic meltdown. Pressure on population growth could take the form of a predictable linear increase in the demands which people seek for land and resources so as to meet their legitimate increased material aspirations.

In Nigeria, protected areas are mostly located in the savannah ecosystem as those in other tropical regions of the world. These conserved forest protected areas (reserves) are set aside for the protection, preservation and propagation of wild vegetation and wild animals, and for the preservation of objects, aesthetic geological prehistoric, archeological artifacts and other scientific interest for the benefits, advantages and enjoyment of mankind (Wahab et al 2009). These forest protected reserve enclave are biologically productive and function as research laboratories, but human population growth increases the cases of intrusion to the protected area and preservation of the land. A typical example is the intrusion of conserved area by the Fulani herders in West Africa. However, the wildlife resources become threatened and regarded as a wasteful project through extinction initiated by human activities. In Africa, the sub-sahara wildlife resources are influenced by human population trends and related ecological factors. The

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main causes of deforestation is clearing for agriculture, but uncontrolled logging, gathering for fuel wood, fire and overgrazing is also taking their toll(Asibey and Child 1990).

The socio-economic activities like fishing, hunting, agriculture, tourism and human settlement are prone to have some degree of ecological effect on wildlife resources and these have been subject to intensive studies over years (Afolayan, 1973; Ayodele, 1989; Wahab, 1995). Oba Hill Forest Reserve is among the protected areas where wildlife resources are geared towards optimum utilization and effective conservation of its resources, so as to change the indifferent attitudes of the rural people to the protection management of wildlife for sustainable development. Oba Hill Forest Reserve is a mixture of rain forest and derived savanna vegetation; however the vegetation is now classified into eight vegetation zones according to vegetation ecological zone (Keay, 1953; and Child, 1974).

The development of Oba Hill Forest Reserve which is of great diverse in natural/cultural values had promoted the ecological tourism potential of Iwo land. The reserve is blessed with varieties of tourist attractions which provide a meeting point for those in love of nature tourism. Other attractions includes game viewing, visit to monumental site in the reserve through which the tourist could perceived the beauty of the natural environment. The Nigeria forest protected areas were gazette in each zone of the six geo-political zones within the country so as to attained wildlife active position for their own acceptance value in our national heritage.

There is dearth of information on the socio-economic activities on wildlife resources management in the literature of Oba hill Forest Reserve. Also, very little knowledge is known about its influence and degree of effects on wild resources. Among the Forest Reserve which have been documented due to their socio-economic and nature tourism importance is Oba Hill Forest reserve. Its nature and cultural value (tangible features) are found on the hilly and rangeland of Iwo sector of the reserve.

The protected areas are established to promote the national heritage and aesthetic /archeological, biological /physical features for its universal outstanding values from the point of view history, science or art. Little or no study has been documented on the socio-economic activities, traditional/cultural background and assesses the possible forest management regulations that will provide information for the preparation of management plan and comprehensive standard master plan for the reserve.

## MATERIALS AND METHOD

### Sampling Techniques

The study was conducted in the Oba Hill Forest Reserve located in Iwo local Government Council of Osun state in Nigeria on latitude $7^{o}$ 39′N and longitude $4^{o}$ 9′E.

Community's areas namely Olori, Ikonifin, Ifeodan, Obamoro, and Afiku were randomly selected in the Oba Hill Forest Reserve environment. Questionnaires were administered in those selected area. The total number of respondent chosen was one hundred which were randomly selected so as to allow equal opportunity for every person being chosen to react independently. Prior to the administration of the questionnaires, the surrounding communities (buffer zones) in the five (5) areas were visited for a formal introduction and interaction with the heads of the communities (Village Head) who serve as link person.

During the visit, a rough estimate number of households in each selected communities was made to determine the number of questionnaire to be administered in each of the villages. The tools used in the analysis were descriptive statistics such as means, frequency and percentages.

The flora and fauna species associated with the forest reserve were identified by researcher according to the Ayodele (1989). The relative frequency of the various species was calculated according to Kent and Coker (1992)

$$\text{Relative frequency} = \frac{\text{frequency of a species}}{\text{Frequency of all species}} \times 100$$

The required date for this study were collected by means of structured questionnaire .The questions in the questionnaire were translated into the local language of the people found in the survey area .(Yoruba $ foreigners) by the interviewers and further notes were taken alongside the structured questions .The necessary information's were collected on socio-economic characteristics like (age, sex, education status traditional uses of protected resources ,merit and demerit of the protected area resources to the communities and livelihood of the respondents).The questionnaire was also designed to elicit information on the ecological and its socio-economic implications on the wild resources.

## RESULTS

The assessment revealed that most of the respondents are male (75%). Majority (86%) of the respondents are between the ages ranges of 21-50 years. Seventy (70%) percent are married while only (30%) thirty percentage are single (Table 1) The study identified different ethnic groups The majorities of (89%) of the respondents are Yoruba, 4% Hausa/ Fulani, (5%) are the foreigners (non Nigerian) (Table 2). All the respondents utilized the forest reserve resources on various socio-economic activities, (10%) utilized the reserve land for collection of Shea butter and medicinal plant material, (15%) utilized the

**Table1:** Demographic characteristics of the respondents in the surrounding buffer zones of the park.

| Variables | Categories | Frequency | Percentage |
|---|---|---|---|
| Age | 21-30 | 33 | 33 |
| | 31-40 | 28 | 28 |
| | 41-50 | 25 | 25 |
| | Above 50 | 14 | 14 |
| Gender | Male | 75 | 75 |
| | Female | 25 | 25 |
| Education status | Formal education | 08 | 08 |
| | Informal education | 80 | 80 |
| | No education | 12 | 12 |
| Occupation | Hunting | 42 | 42 |
| | Fishing | 15 | 15 |
| | Grazing | 23 | 23 |
| | Farming | 10 | 10 |
| | Civil service | 12 | 12 |
| Marital status | Married | 70 | 70 |
| | Single | 30 | 30 |

**Table 2:** Distribution of the respondent's by tribal identification.

| Tribe | Frequency | Percentage |
|---|---|---|
| Yoruba | 89 | 89 |
| Hausa/Fulani | 04 | 04 |
| Foreigners | 07 | 07 |

Source: Field Survey 2011.

**Table 3:** Percentage distribution of respondents on various economic activities

| SOCIO-ECONOMIC ACTIVITIES | FREQUENCY | PERCENTAGE |
|---|---|---|
| Collection of Shea butter/medicinal plant material | 08 | 08 |
| Logging | 12 | 12 |
| Fishing | 06 | 06 |
| Hunting | 36 | 36 |
| Grazing | 12 | 12 |
| Farming | 16 | 16 |
| Total | 100 | 100 |

Source: field survey 2011

reserve water bodies for fishing, (42%) utilized the reserve land for hunting, (23%) utilized the forest reserve land for grazing of their livestock and (10%) utilized the forest land for farming (Table 3).

It was observed in the survey that the most prevalent species commonly found along the riverine areas of river Omi and Oba. Within the reserve water bodies are western hartebeest, water buck, *Kobus deffasa* and others (Table 4). The study revealed the most prevalent flora species commonly found in the reserve to include *Afzelia africana, Anogeissus leocarpus, Vitallaria paradoxum, Terminalia microptera, Khaya senegalensis, Detarium microcarpus (*Table 5). It was shown in the survey that the most prevalent grazing activities are found in the forest reserve communities such as Gaa Adamu and Gaa Musa are between (21-27%), the moderately grazing communities are Isero and Aba Ayo (20%) and the least prevalent grazing community is Olaalaa (18%) (figure1).It was also revealed in the study that the most prevalent species found in the reserve water bodies (River Omi, Ori oke) are *Heterolis niloticus, Malapterurus eletricus* (13-15%) the moderately prevalent fish species are *Clarias angularis, Citherinus citharus, Hepsetus odoe* (10-12%), and the least prevalent

**Table 4:** List of wild Animals in Oba Hill Forest Reserve (OHFR)

| COMMON NAMES | SCIENTIFIC NAME AND AUTHOR | |
|---|---|---|
| Aardvark | Orycterepus afer | Pallas |
| Pangolin | Manis (Uromanis) tetradactyla | Linneaus |
| Warthog | Phacochoerus aethiopicus | Alexandr pospech |
| Cane Rat | Thryonomys swinderianus | Temminck |
| Water Buck | Kobus (kobus) deffasa | Ogilby |
| Roan Antelope | Hippotragus equines | Desmaest |
| Bush Buck | Tragelaphus scriptus | Pallas |
| Oribi | Ourebia ourebi | Zimmerman |
| Red Flanked Duicker | Cephalophus rufilatus | Gray |
| Red Duicker | Cephalophus c.natalensis | A.smith |
| Hartebeest | Alcelaphus buselaphus | Pallas |
| Buffalo | Syncerus caffer | Sparrman |
| Hare | Lepus capensis | Linnaeus |
| Hunting dog | Lycaon pictus | Temminck |
| Lion | Panthera leo | Linnaeus |
| Fox | Vulpes pallida | Cretzschmar |
| Porcupine | Hystrix cristata | Niki Foster |
| Africa Wild cat | Felis silvestris | Schreber |
| Ground squirrel | Euxerus erythropus | F.Geoffroy |
| Rock hyrax | Procavia capensis | Pallas |
| Crown duicker | Syvicapra grimmia | Linnaeus |
| Kob | Kobus (adetona) kob | Erxleben |
| Baboons | Papio anubis | Leesons |
| Crocodile | Crocodilus niloticus | Guy Mcharen |
| Bat | Eidolon helvun | Chris Taylor |
| Green monkey | Cercopithecus aethiops | Linnaeus |
| Reed buck | Redunca redunca | Boddaert |
| Red River hog | Potamochoerus porcus | Linnaeus |
| Sported hyaena | Crocuta crocuta | Erxleben |
| Patas monkey | Erythrocebus patas | Schreber |
| Colobus monkey | Colobus polykomos | Zimmerman |
| Civet | Viverra civetta | Schreber |

**Source:** field survey 2011

**Table 5*:*** List of some Medicinal Plants in Oba Hill Forest Reserve (OHFR)

| COMMON NAMES | SCIENTIFIC NAMES AND AUTHOR | |
|---|---|---|
| Biggnoniacease | Kigelia Africana | Lam Benth |
| Mimosoideae | Parkia biglobosa | Jacq |
| Sapotacease | Vitellaria paradoxa | C.F.Gaerth |
| Caesalpiniancease | Afzelia Africana | S.M expers |
| Caesalphiniodeae | Daniellia oliveri | Rolfe Hutch and Dalz |
| Combretacease | Anogeissus leiocarpus | D C Guill |
| Meliaceane | Khaya senegalensis | Desr. A. juss |
| Anacardiaceae | Mangifera indica | Linnaeus |
| Caesalpinioideae | Piliostigma thonningii | Schumach,Milne-Redh |
| Compositae | Vernonia amygdalina | Linnaeus |
| Conbretaceae | Terminalia Mycraptera | Linnaeus |

**Source:** field survey 2011

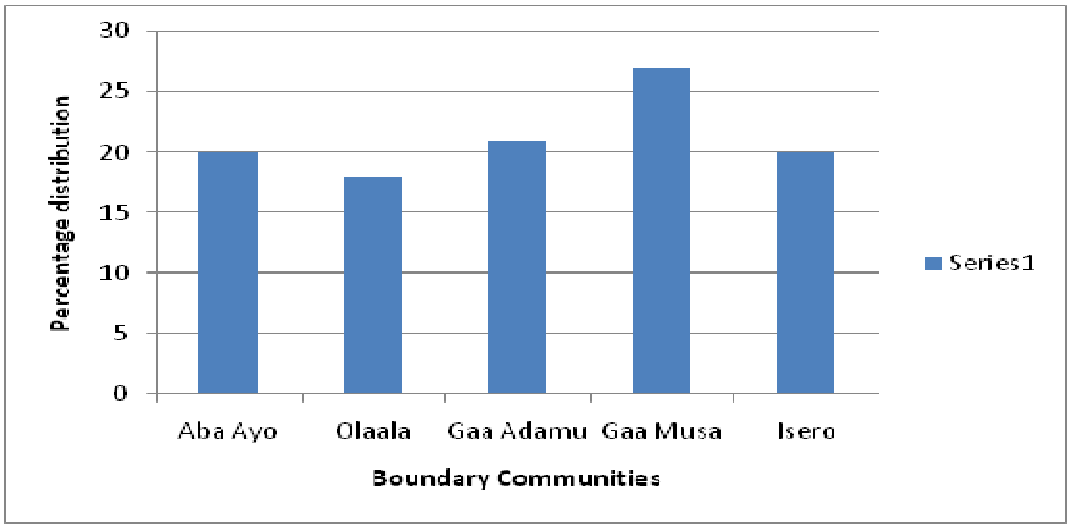


**Figure1:** Percentage distribution of the grazing Activities in the boundary Communities.

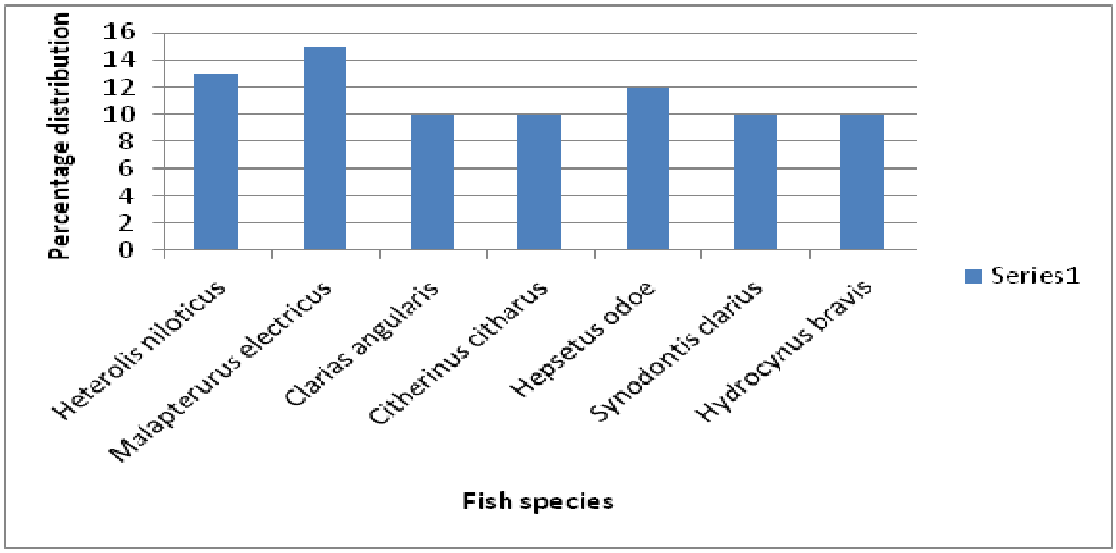


**Figure 2:** Percentage distribution of fish species commonly found in Oba Hill Forest Reserve Water body.

species are *Synodontis clarius and Hydrocynus bravis (*10%) (Figure 2).

## CONCLUSION

Most of the respondents were male while majority of them were within the age range of 21-50years. Majorities of the respondents were married (75%) while some (25%) of them are single. Different ethnic groups were found in the study area Viz.Yoruba 89% Hausa/Fulani 04%, and foreigners 07%.

The study revealed that the forest resources were seriously utilized by all the respondents; 8% utilized the forest land for collection of Shea butter and medicinal plant material, 06% utilized the forest water bodies for fishing, 36% utilized the park land for hunting, 12% utilized the forest land for grazing of their livestock and 16% utilized the forest land for farming activity.

The forest is naturally endowed in terms of flora, fauna and traditional/cultural diversities which promote the ecotourism development of the protected area for it sustenance. The demographic representation of the park depicted the effect of Socio-Economic activities and its

sustenance on the rural development along the protected area. Conservation for sustainable development in protected area should focus more on conservation education campaign for better management of park resources. Hence, management should be observed as a serious business in developing countries for better enhancement of protected natural resources and sound development of various national economies. In summary, effective protection measures should be employed towards sustainable conservation management of the biodiversity resources in this protected reserve by the State of Osun ministry of environment.

## ACKNOWLEDGEMENTS

This goes directly to State ministry of environment the sole authority of the Forest reserve and that allowed the educational research findings of the place.

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