

## **CONTRIBUTIONS OF OBA HILL FOREST RESERVE TO THE LIVELIHOOD OF ADJOINING COMMUNITIES IN OSUN STATE, NIGERIA**

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**Abstract:** Forest reserves have multiple positive socio-economic impacts that strongly depend on the context in which they are managed. This study evaluated the contribution of Oba Hill Forest Reserve to the livelihoods of adjoining communities in Osun State. A multi-stage sampling technique was adopted, involving purposive selection of the study site (Oba Hills Forest Reserve), followed by purposive selection of communities that shared proximity with the forest reserve. Subsequently, random sampling was used to select respondents for interviews. Data were obtained using a well-structured questionnaire administered to twenty (20) randomly selected villagers from each of the selected communities. Descriptive statistical tools were used for data analysis. The study revealed the respondents' opinions on the contributions of the forest reserve to their livelihoods in terms of job creation, income generation, provision of non-timber products such as snails, mushrooms, medicinal herbs and wild animals, contribution to the aesthetic value of the environment and infrastructural development of the area. The study further shows that 45.0 % of the respondents strongly agreed that the forest reserve made access to land for agricultural purposes a bit difficult, while 36.7 % of the respondents said the reserve poses a security threat as it serves as a hideout for armed bandits and kidnappers. This study recommends that the government, through the taungya system, should allocate land to villagers for farming purposes. This will enhance forest production activities, thereby reducing security challenges and ensuring food security.

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**Keywords:** Oba Hill, Forest Reserve, Livelihood, Adjoining Communities, Osun State.

### **1.0 INTRODUCTION**

Forests are an important natural resource on Earth. They absorb carbon dioxide and release oxygen, thereby maintaining balance in the gaseous atmosphere and completing the hydrological cycle to cause rainfall (Garg *et al.*, 2006). Governments, most importantly in semi-arid regions of the world, designated forests as forest reserves to stimulate rainfall, reduce wind erosion, stem the tide of desertification, and discontinue the encroachment of deserts.

Forest resource assessment conducted in 2015 by FAO showed that the extent of world forests continues to decline as the human population continues to grow and the demand for food and land increases. Forested areas have decreased, and the rate of net forest loss has been reduced by 50 % (FAO, 2015). Forest reserves are defined as areas of land that are protected and managed to preserve both the flora and fauna of a particular habitat, which are often considered rare or endangered.

Forest reserves provide products and environmental services such as timber, fibre, energy, medicine and food; carbon, land restoration and reclamation; hydrological regulation and biodiversity and genetic resources conservation. While there is renewed interest from investors, governments and enterprises in the potential of reserved forests in Africa, communities, environmental and social NGOs and other commentators have expressed doubts about this interest, which has multiple positive and negative sustainability impacts on forestry development. (Gerber, 2011; German *et al.*, 2014). Based on the importance of forests, the United Nations mandated that 25 % of the land area of every country be conserved under permanent forest cover as the minimum ecological requirement for the country's socio-economic survival. This complies with the preceding mandate that forest reserves be found in different countries of the world. However, in Nigeria today, particularly in the northern part, forests and forest reserves have become hideouts for insurgents and armed robbers to launch attacks on travelers/tourists and local people (Suleiman, 2011).

Many predicted impacts of forest reserves in the tropical area, such as ecological and rural livelihood benefits, have not yet materialized. However, they have not been evenly distributed locally, particularly to the disadvantage of poorer and customary land users (German *et al.*, 2010). Historically, forests have played a major role in influencing economic development patterns, supporting livelihoods, helping structure economic change, and promoting sustainable growth before the Industrial Revolution. Forests, woodland, and trees were sources of land for cultivation and settlement, construction materials, fuel and energy, and food and nutrition. To this extent, it is necessary to continuously document the impact of forest reserves to increase their positive impact while mitigating the effects of their negative outcome.

Many of the predicted impacts of forest reserves in the tropics, such as ecological and rural livelihood benefits, have not materialized, and when they do, they have been unevenly distributed locally, particularly to the disadvantage of poor and customary land users (German *et al.*, 2010). Few studies have quantified the impact of reserved forests in Nigeria, making it difficult to have access to empirical information on the impacts of forest reserves in the nation. Forests and forest reserves alike have multiple positive and negative sustainability (environmental, social, and economic) impacts, which are strongly dependent on the context in which they are conserved and how they are managed (Evans, 2009). The development of communities around the forest reserve can be directly or indirectly affected by the forest reserve. For these reasons, this research was carried out to determine whether Oba Hill Forest Reserve has fulfilled the potential of the forest reserve impact or has the tendency to fulfil it and document the result from there to scale up their positive impacts while mitigating the effects of their negative outcomes.

## **2.0 MATERIALS AND METHODS**

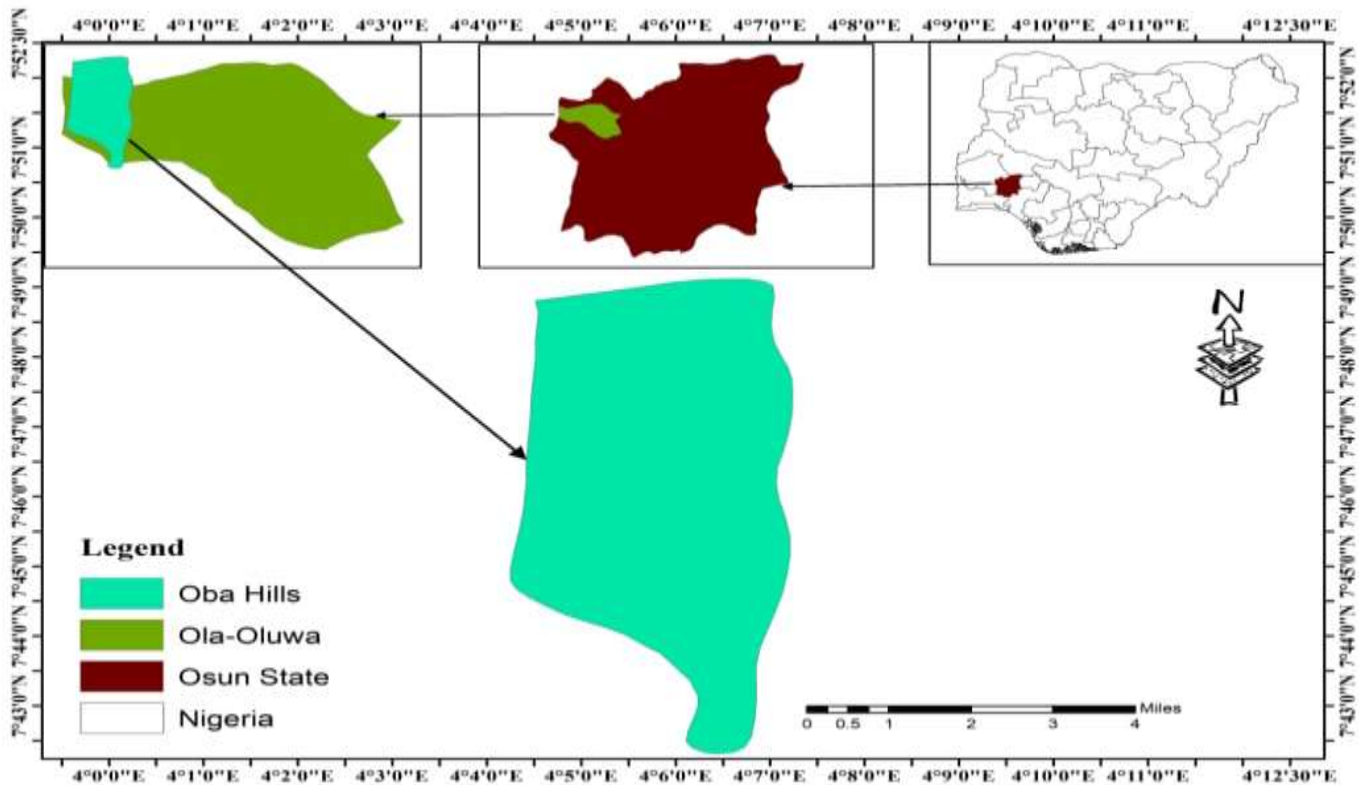
### **2.1 Study area**

The study site was Oba Hill Forest Reserve, located in Ola-Oluwa, a local government area in Osun State. The reserve has a landmass of about 54km<sup>2</sup> of hilly terrain with deep gorges situated between latitudes 07<sup>o</sup> 43' 0'' and 07<sup>o</sup> 46' 59'' N and longitudes 04<sup>o</sup> 04' 0'' and 04<sup>o</sup> 7' 0'' E. Osun is bounded in the north by Kwara State, in the

south by Ogun and Ondo State, in the west by Oyo State, and in the east by Ekiti State. Osun State lies in the tropical rain forest with some patches of the Guinea Savannah zone, with annual rainfall ranging between 926.33 mm and 1995.17mm.

**2.2 Sampling Procedure, Data Collection, and Analysis**

A multistage sampling technique was adopted for the study. Six communities were selected based on proximity to the reserve. Twenty respondents were randomly selected and interviewed in each adjoining community, giving 120 respondents (Table 1). A pre-tested, semi-structured questionnaire was administered to twenty (20) randomly selected villagers in each of the selected communities, who usually visit the reserve to collect various non-timber



forest products. The collected data were analyzed using descriptive statistics, including frequency tables and percentage distribution.

**Figure 1:** Map of Osun State showing the study area.

**Table 1:** Distribution of respondents in the study area.

Villages	No of respondents
Olori	20
Ikonifin	20
Ifeodan	20
Obamoro	20
Afiku	20
Bode-osi	20
<b>Total 6</b>	<b>120</b>

### 3.0 RESULTS

#### 3.1 Demographic characteristics of the respondents

Table 2 presents the results on sex, age, educational background, and household size of the respondents in the study area. The results show that 60 % of the respondents are female, whereas 40 % are male. The results on age distribution revealed that 42.5 % of the respondents were between the ages of 31 and 50 years. The study also revealed that 50.8 % were married and 35.8 % were single. In addition, 52.5 % of the respondents had at least secondary education, while 56.7 % were self-employed. The respondents' family size revealed that 54.2 % have 6-10 members.

**Table 2:** Demographic Characteristics of Respondents

<b>Variables</b>	<b>Frequency</b>	<b>Percentage (%)</b>
<b>Age in Years</b>		
< 20	15	12.5
20-30	35	29.2
31-40	18	15.0
41-50	33	27.5
> 51	19	15.8
<b>Gender</b>		
Male	48	40.0
Female	72	60.0
<b>Marital Status</b>		
Single	43	35.8
Married	61	50.8
Divorced	16	13.3
<b>Educational Level</b>		
No formal education	32	26.7
Primary	41	34.2
Secondary	22	18.3
Tertiary	25	20.8
<b>Occupation</b>		
Student	27	22.5
Self-employed	68	56.7
Civil servant	25	20.8
<b>Household size</b>		
1-5	22	18.3
6-10	65	54.2
11-15	26	21.7
Above 15	7	5.8
<b>Total</b>	<b>120</b>	<b>100</b>

**3.2 Contribution of the Oba Hill Forest Reserve to people’s livelihood**

Results in Table 3 show that 22.5 % of the respondents strongly agreed that the forest reserve contributes significantly to job creation, while 34.2 % agreed that the forest reserve affects their lives positively in terms of income generation. Results on products and other activities showed that 39.2 % of the respondents strongly agreed that the reserves provide an array of non-timber products, while 37.5 % disagreed that the forest reserve supports other activities like farming and beekeeping.

**Table 3: Contribution of the Oba Hill Forest Reserve to people’s livelihood**

Variables	SA	A (%)	N (%)	SD (%)	D (%)	Mean	Standard Deviation
The reserve contributes to job creation.	27 (22.5%)	20 (16.7%)	25 (20.8%)	24 (20.0%)	24 (20.0%)	3.01	1.44
The reserve also supports other activities such as farming, beekeeping, and animal grazing.	3 (2.5%)	22 (18.3)	24 (20.0%)	26 (21.7%)	45 (37.5%)	3.71	1.23
The reserve increases the income of the people	23 (19.2%)	41 (34.2%)	35 (29.2%)	12 (10.0%)	9 (7.5%)	3.47	1.13
The reserve contains an array of non-timber products such as firewood, snails, and wild animals.	47 (39.2%)	26 (21.7%)	31 (25.8%)	7 (5.8%)	9 (7.5%)	3.79	1.23

**Note:** SA= strongly agree, A = Agree, N- Neutral, D = Disagree, SD = Strongly Disagree

**3.3 Contributions of the Oba Hill Forest Reserve to environmental and infrastructural development**

Results in Table 4 show that 45.0 % of the respondents strongly agreed that the forest reserve contributes significantly to the aesthetic value of the environment, while 38.1 % strongly agreed that the forest reserve enhances the education of the inhabitants of the adjoining communities. The result also shows that 36.7 % of the respondents strongly agreed that the reserve has contributed to the infrastructural development of the area, while 35.0 % agreed that it has the potential to contribute more in the future.

**Table 4: Contribution of the forest reserve to environmental and infrastructural development in the study area**

Variables	SA	A (%)	N (%)	SD (%)	D (%)	Mean	Standard Deviation
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The forest reserve improves the aesthetic values of the environment.	54 (45.0%)	28 (23.3%)	19 (15.8%)	5 (4.2%)	14 (11.7%)	3.93	1.21
The forest reserve has enhanced the level of education and other related services in the area.	46 (38.3%)	20 (16.7%)	9 (7.5%)	22 (18.3%)	23 (19.2%)	3.37	1.58
The forest reserve helps the infrastructural development of surrounding communities	44 (36.7%)	41 (34.2%)	27 (22.5%)	0 (0.0%)	8 (6.7%)	4.00	.93
The forest reserve will bring more benefits to the surrounding communities in the future.	20 (16.7%)	42 (35.0%)	37 (30.8%)	12 (10.0%)	9 (7.5%)	3.43	1.11

**Note:** SA- Strongly agree, A = Agree, N- Neutral, D = Disagree, SD = Strongly Disagree

**3.4: Negative effects of forest reserve on the respondent’s livelihood.**

Results in Table 5 show that only 16.7 % of the respondents agreed that the forest reserve has led to the loss of cultural heritage, while 45.0 % of the respondents strongly agreed that the forest reserve has made access to land for agricultural purposes a bit difficult. The result also shows that 34.2 % of the respondents agreed that the presence of the reserve increases criminal activities, while 43.3 % of the respondents strongly agreed that they do not have free access to non-timber forest products in the forest reserve. Results on pollution show that 28.3 % of the respondents agreed that logging during the dry season causes environmental pollution. While 36.7 % said the forest poses a security threat because it serves as a hideout for armed bandits and kidnappers.

**Table 5: Negative effects of forest reserve on the respondent’s livelihood.**

Variables	SA	A	N	SD	D	Mean	Standard Deviation
The reserve has led to the loss of local cultural heritage.	17 (14.2%)	20 (16.7%)	9 (7.5%)	45 (37.5%)	29 (24.2%)	3.34	1.14
The forest reserve has made access to land a bit difficult	54 (45.0%)	35 (29.2%)	19 (15.8%)	3 (2.5%)	9 (7.5%)	3.48	1.13
The forest reserve has experienced increased criminal activities, such as the planting of Indian helm	30 (25.0%)	41 (34.2%)	28 (23.3%)	12 (10.0%)	9 (7.5%)	3.59	1.18
The forest reserve has denied people access to non-timber forest products.	52 (43.3%)	47 (39.2%)	15 (12.5%)	0 (0.0%)	6 (5.0%)	4.15	.99

Forest reserves cause environmental pollution through logging.	30 (25.0%)	34 (28.3%)	30 (25.0%)	17 (14.2%)	9 (7.5%)	4.01	1.18
The forest reserve poses a serious security risk as a hideout for miscreants and armed bandits.	22 (18.3%)	44 (36.7%)	33 (27.5%)	12 (10.0%)	9 (7.5%)	3.33	1.16

Note: SA- Strongly agree, A = Agree, N- Neutral, D = Disagree, SD = Strongly Disagree

**4. DISCUSSION**

Observations from this study have revealed that most respondents in the study area believe that the plantation has contributed significantly to their livelihood by creating job opportunities for the people in the adjoining communities. This assertion agrees with the submission of Schoneveld *et al.* (2011) and Makindara (2013), who separately reported that forest reserves and plantation forests create a diversity of employment for the people in the communities in which they are established. The result of this study also agrees with the study of Bhimappa *et al.* (2024) and Onja *et al.* (2021) that, in terms of job and income generation, forest reserves, plantation forests, and agroforestry provide skilled workers with stable jobs and improved salaries. The implication of the above observation is increased income, security, and a sustained food supply for households.

In addition to the good roads currently enjoyed by the people in the study area and the establishment of sawmills for wood conversion and timber processing, respondents strongly agreed that the forest reserve would bring more infrastructural development, such as schools, in the future. This submission was similarly reported by Khanani *et al.* (2021) and Okpa (2022). Most people in the adjoining communities agreed that the forest reserve beautifies the environment during the rainy season, thereby creating a more stable and aesthetic environment. This observation aligns with the submission of Middleton *et al.*, 2020. Observations from the study revealed that the forest reserve provides education and other related services through excursion visits by students from different tertiary institutions to the forest reserve for one academic purpose or another.

The majority of the people in the surrounding communities opined that the forest reserve has strongly contributed to their livelihood by improving subsistence farming practices through the tungya system. The study also revealed that the forest reserve provides an array of non-timber forest products, such as snails, bush meat, locust bean seeds, and medicinal herbs, for the people. This observation is in agreement with that of Riggs *et al.* (2020). However, due to logging and farming activities being carried out in the forest, an influx of people into the forest has led to increased criminal activities, such as the planting of Indian hemp and other illicit crops. In recent times, the forest has posed a serious security threat, as it now serves as a hideout for criminal elements such as armed bandits and kidnappers. This observation corroborates the findings of Aires *et al.*, (2021) and Thapa (2016) that forest reserves can lead to an increase in criminal activities, thereby affecting the living conditions of the people negatively, as they pose a serious security threat.

**5.0 CONCLUSION AND RECOMMENDATIONS**

This study evaluates the contributions of the Oba Hill Forest Reserve to the livelihoods of adjoining communities in Osun State. The study revealed that the majority of respondents admitted that the forest reserve significantly contributes to people's livelihood in terms of job creation and income generation, improving the aesthetic values

of the environment and infrastructural development of the surrounding communities. The study also revealed that the Oba Hill Forest Reserve provides an array of non-timber forest products and supports other activities such as farming, beekeeping, and animal grazing.

The study further revealed that the presence of the reserve enhanced the educational status of the people and that they believe that the reserve will bring more positive changes to the environment and the surrounding community in the near future. The study, however, revealed that the forest reserve has some negative influence on the livelihoods of the people in the study area, including the planting of illicit crops, a hideout for bandits and kidnappers, difficulty for farmers' access to land for agricultural purposes, among others. Based on the above findings, it is recommended that

1. Forest reserve managers should allocate the logged area to indigenes to perform their farming activities through the taungya system. This will reduce farmers' land hunger and enhance reforestation without cost to the government.
2. The government should provide adequate security to combat crime perpetrated by bandits who use forests as hideouts.

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