

Timber and Fuel Wood Consumption and Replenishment in Ile-Ife: Implications for Conservation and Sustainability

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Abstract

The present alarming rate at which natural resources are being exploited, especially in developing countries like Nigeria, calls for conservation efforts. We evaluated timber and fuelwood consumption and replenishment in Ile-Ife to estimate the amount of wood consumed and restored from January to December 2015 as part of a proactive conservation approach. Data were collected using 766 structured questionnaires from six categories of respondents (saw millers, tree fellers, food sellers, bread bakers, farmers, and fuelwood dealers) within the Ile-Ife metropolis. Some of the data gathered included the names of trees commonly felled or used, potential buyers, frequency of tree felling per week, quantity of trees removed from the forest, amount of wood consumed, and the respondents' perceptions of the effects of their occupations on climate change. The results indicated that the majority of respondents were male (67%), had no formal education, and had no knowledge of environmental laws. Twenty-nine tree species were the most commonly felled, with timber and fuelwood accounting for 18 and 8 species, respectively. A total of 858,728 metric tons of wood was removed from forests, primarily by farmers and tree fellers, while the estimated amounts of wood removed, consumed, and harvested were all significantly higher than the amount restored ($p < 0.005$). The findings revealed that there is no conservation strategy in the area. However, for the sustainable use of natural resources, the government should take the initiative to implement tree conservation measures to reduce the rate of deforestation from wood removal and consumption and to enhance or promote forest conservation.

1. Introduction

Conservation of natural resources refers to the preservation, particularly of the natural environment, against undesirable changes. Nigeria, like many other developing countries, is experiencing increased socioeconomic activities alongside the alarming removal of vegetation, including forests, without adequate replacement. This neglect of plant resource conservation has progressed to the point where untouched vegetation likely no longer exists in the country [1]. Factors such as indiscriminate bush burning and tree felling have severely impacted sustainable conservation efforts. As a result, desert encroachment, soil erosion, declining soil productivity, flooding, and siltation of water bodies are ongoing issues.

Of all forest products, trees—the primary structural components of forested areas—are the most heavily exploited. On a daily basis, timber species are converted into logs and boards of various grades for infrastructural development, while rough timber or offcuts from timber production are used for paper or fuelwood [2]. According to the National Bureau of Statistics, wood fuel remains a significant source of energy in Nigeria. This heavy reliance on wood fuel has led to widespread deforestation and environmental degradation [3]. The use of firewood for domestic cooking is common in Nigeria and is also a widespread practice in many developing countries [4]. Currently, fuelwood remains the primary cooking fuel, particularly in rural and less developed areas, despite its well-documented environmental and socioeconomic consequences [2].

In terms of human and natural resources, Nigeria is an affluent country though its social and economic development is quite slow due to high level of poverty, inadequate infrastructure and unarguably high level of corruption [5]. For instance, according to UNDP [6], about 65% of the country's population (160 million people) are living below less than US\$1.25 a day. And for so many decades now, there has been continuous exploitation of natural resources in the country with a supported increase in Nigerian population. Hence, the ever-increasing demand for these finite resources poses a significant challenge.

Fuel wood or firewood involves any unrefined woody biomass used as source of fuel to make fire, mostly used for cooking or heat against cold weather conditions in the developing world. Firewood mostly arises from dead woody material and small trees while charcoal is a wood fuel gotten from burning wood in an environment with low-oxygen. In comparison with wood, charcoal is the dense black substance mostly of carbon and yields more temperature and energy per kilogram [7].

Forests besides from helping to manage the ecosystem by serving as source and sink of carbon, it could play a role in a green economy. In terms of the goal of United nation Sustainable Development Goal of 2030, there is no alternative to conserving the remaining forest in order to ensure a sustainable world [7]. If the global economy is to be sustained, the principles, policies and practices of land-use known as sustainable forest management need to be adhered to all over the world. Sadly enough, the net carbon dioxide in the atmosphere will decline as long as afforestation is embraced [8].

The reliance on fuel wood in Nigeria as compared to other energy sources is largely attributed to its general accessibility and affordability. Ogunkunle and Oladele [4] observed that the consumption of fuel wood exceeds its sustainable production. This was further expressed in the findings of Naibbi and Healey [9], where Nigeria shown an affinity towards excessive total fuel wood consumption which, according to Sambo [10] is due to some factors. Some of these factors include population growth, low technical efficiency of the traditional cooking style and the lack of adoption of other sustainable cooking methodologies. While Sambo's [10] claims cannot be denied, one key factor that was missing is the unreliability in the supply of alternatives to fuel wood.

The practice of effective conservation calls for the maintenance of biological diversity despite the constraints of sustained resource utilization [11]. Government at all levels have been warning against indiscriminate cutting of trees most especially with the climate change disasters but this has yielded no result thus hampering conservation efforts mostly in Southern Nigeria. It is on this note that this work seeks to estimate in quantitative terms the annual wood consumption and restoration (by reforestation) within the area under investigation. The specific objectives of this study are to estimate in quantitative terms amount of wood consumed and restored in Ile-Ife from January to December, 2015 and determine the various forest conservation efforts made over the years.

2. Methodology

2.1 Study Location

This study was conducted across four Local Government Areas in Osun State, Nigeria, with a population of 355,341 [12] (Figure 1). The major towns within this area are Modakeke-Ife and Ile-Ife, where the university is located, serving as the headquarters of the Ife Central Local Government Area and Ife East Area Office [13]. Other towns and villages in the study area include Ipetumodu, Akinlalu, Eiyetanle, Rogborogbo, Olode, Iyanforogi, and Onikan, among others.

Omogbai [14] described the climate of the study area as a humid sub-equatorial type, characterized by high humidity and substantial rainfall, with annual rainfall ranging from 1200 mm to 1450 mm. On average, the annual temperature is approximately 27°C, and the relative humidity remains high throughout the year due to the dominant influence of the tropical maritime air mass.

The randomly selected respondents/participants included bread bakers, food sellers, saw millers, farmers, tree fellers, and fuelwood sellers. These groups were chosen because they possess greater knowledge of wood use and trade due to their occupations, which include bread baking, farming, and fuelwood trade. These activities consume large quantities of wood daily, making this area a suitable location for investigating tree conservation.

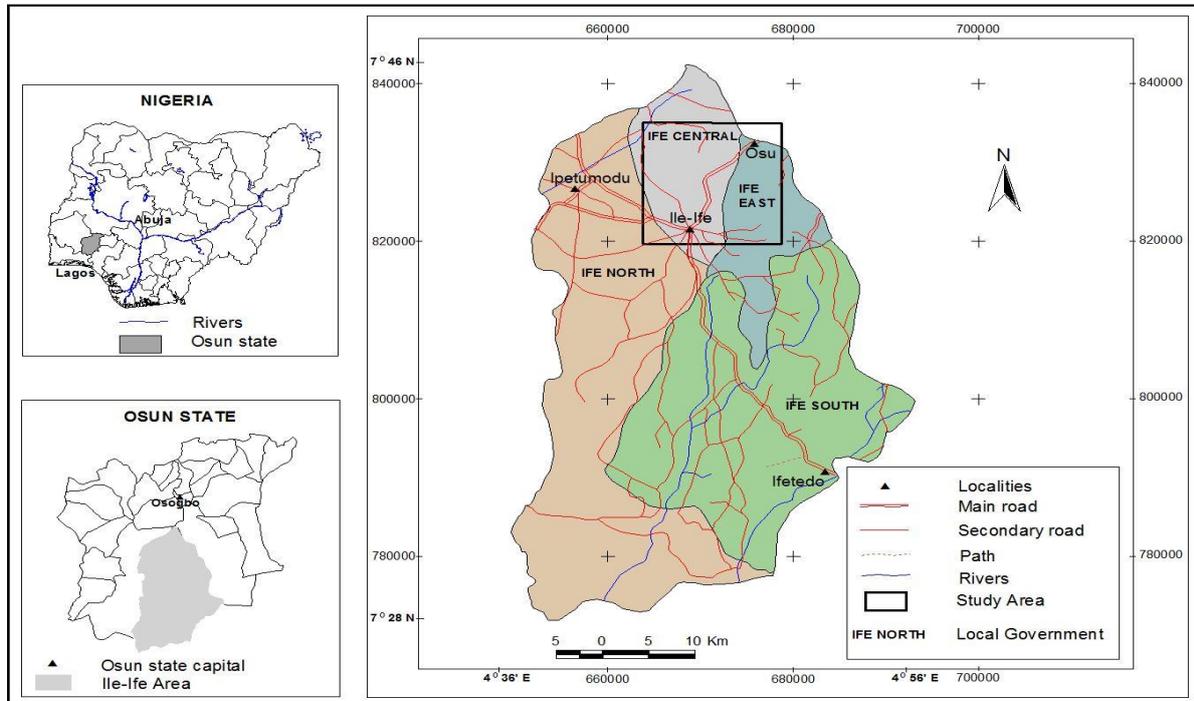


Fig. 1 Map of Nigeria, Osun State and Ile-Ife

2.2 Collection of Data

A well-structured questionnaire was used to collect information from six categories of respondents (saw millers, tree fellers, food sellers, bread bakers, farmers, and fuelwood dealers) within the Ile-Ife metropolis (Ife North, Ife South, Ife East, and Ife Central). These categories of respondents were purposively sampled, assuming that, by virtue of their trades, they would have greater knowledge about the relevance of trees and tree planting and could provide an accurate picture of wood consumption and replenishment in the area. The sawmills located in Ife East and Ife Central are shown in Figure 2.

The tree fellers were asked to provide information about the names of trees they typically fell, their potential buyers, the frequency of tree felling per week, and the quantity of trees removed from forests or bushes. Data on whether these timber species were locally available or imported were also collected. The local names of the various tree species were recorded, and taxonomists from the Botany Department of Obafemi Awolowo University were consulted to confirm their scientific names.

A total of 766 questionnaires were randomly administered across the four local government areas in Ile-Ife. The average amount of wood consumed annually and the quantity of wood removed from forests or farms were assessed in metric tons. Additionally, the perceptions of all respondent categories regarding the effects of their occupations on climate change were gathered.

The average amount of wood consumed for various purposes in a year and the quantity of wood removed from the forest / farms in the study area were first estimated in local units and then converted to metric tons in the following way:

- The average carrying capacity of a Bedford timber truck is about 15 logs, each log weighs about 1.5 metric tons. From the numbers of logs converted into various timber purposes in the sawmill and logs removed from the forest by tree feller in a week of wood in metric tons yr⁻¹ was obtained by multiplying with the appropriate factor (No of logs per week × 52).
- The quantity of wood used by food sellers / hotels and domestic uses were estimated from the numbers standard head load of dried wood (weighing about 0.02 metric tons). The number of such head loads of wood sold or used in a week by the respondents were obtained and converted to annual consumption level (standard head load weight × 52).
- The capacity of a Datsun pick-up van is about 2 metric tons. The quantity of dried wood used by bread bakers and some food sellers were estimated from the number of full loads of the van they used in a week. This was then multiplied by the appropriate factors to obtain the estimate for one year (Badshah *et al.*, 2014).

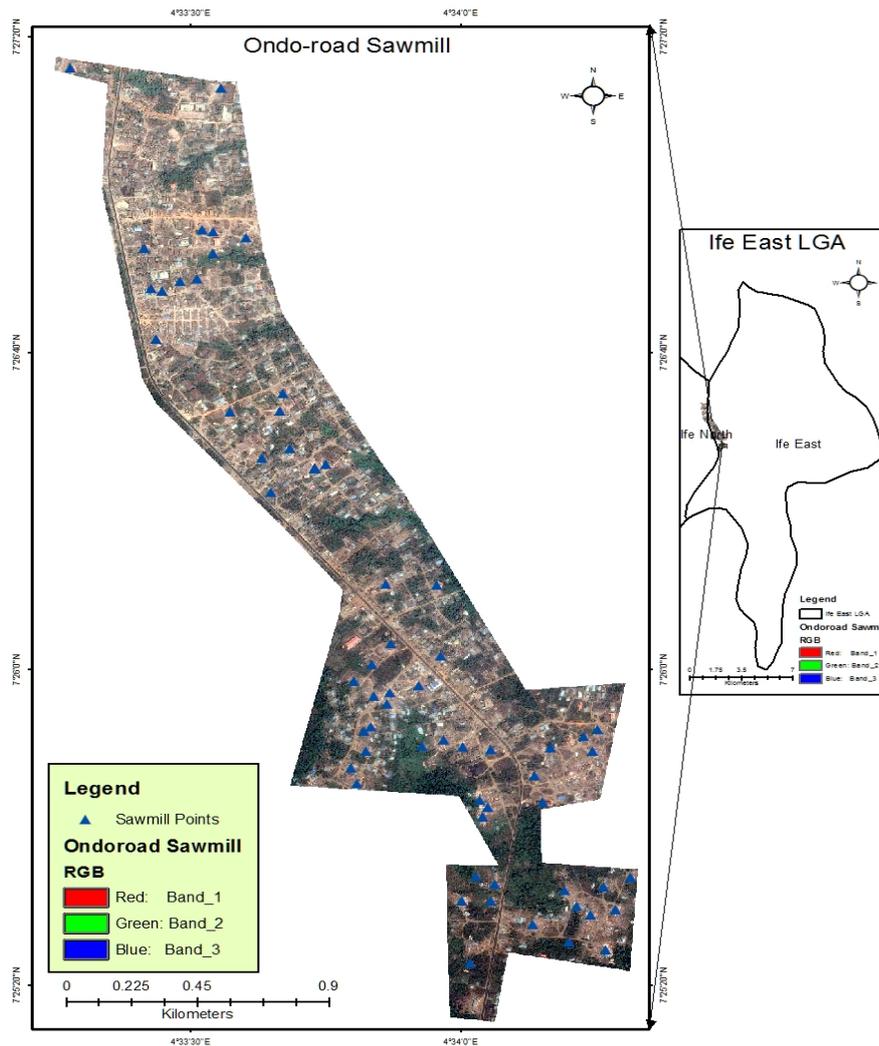


Fig. 2 Sawmills located in Ife East and Ife central Local Government Areas

2.3 Statistical Analysis

The data collected were analyzed using appropriate descriptive and inferential statistics with the SPSS software program. One-way Analysis of Variance (ANOVA) was used to check for significant difference in the mean values of the variables.

3. Results

The respondents' information regarding wood consumption in the study area is presented in Table 1 (Appendix). Of the respondents, 512 were male (67%), while 254 were female (33%). Most respondents were aged between 30 and 50 years, and some had lived in the study area for more than 10 years. The majority had no formal education, with the highest qualification being a university first degree held by only three respondents (0.39%). Most respondents were unaware of environmental laws, with many claiming there was nothing wrong with bush burning and indiscriminate tree felling. This may be attributed to the fact that existing environmental protection laws in Nigeria are neither designated specifically as environmental laws nor consolidated into a single statute book.

The total number of tree species identified in the study area is shown in Table 1. Of the 29 species recorded, 18 were used for timber, 8 for fuelwood, and 3 for both timber and fuelwood. The table includes the local names of the tree species, their scientific names, families, and wood types. Table 2 shows the total quantity of wood removed from forests, bushes, and farms by farmers, tree fellers, and fuelwood dealers across the four local government areas. The total wood removed is estimated at 858,728 metric tons. Farmers and tree fellers in Ife East removed more wood than those in the other three local government areas, while fuelwood dealers in Ife South recorded the highest quantity of wood removed.

Table 2 Names of Tree Species and their use-based type. F: Fuel wood, T: Timber wood, B: Both fuel wood and timber wood

S/N	Botanical name	Family	Local name	Wood Type
1	<i>Alstonia boonei</i> De Wild.	Apocynaceae	Ahun	T
2	<i>Funtumia africana</i> (Benth).Stapf.	Apocynaceae	Ire	T
3	<i>Mangifera indica</i> L.	Anacardiaceae	Mangoro	F
4	<i>Vernonia guineensis</i> Benth.	Asteraceae	Olopa kan	T
5	<i>Echinops longifolius</i> A. Rich	Asteraceae	Omo	T
6	<i>Cordia milleni</i> Bak.	Bignoniaceae	Agbee	B
7	<i>Ceiba pentandra</i> (L). Gaertn	Bombacaceae	Araba	T
8	<i>Anogeisus leiocarpus</i> (DC) Guill and Perr.	Combretaceae	Orin odan	B
9	<i>Terminalia superba</i> Engl.and Diels.	Combretaceae	Afara	T
10	<i>Ricinodendron heudelotti</i> (Baill). Heckell	Euphorbiaceae	Putu	T
11	<i>Senna occidentalis</i> L.	Fabaceae	Rere	T
12	<i>Albizia zygia</i> (DC) J.F. Machor.	Fabaceae	Ayunre	T
13	<i>Irvingia grandifolia</i> (Engl). Engl.	Irvingiaceae	Karakoro	T
14	<i>Tectona grandis</i> L.F	Lamiaceae	Igi oba	T
15	<i>Antiaris toxicana</i> A. Chev	Moraceae	Ooro	B
16	<i>Ficus thonningi</i> Blume.	Moraceae	Odan	F
17	<i>Milicia excelsa</i> (Welw) C.C. Berg.	Moraceae	Iroko	T
18	<i>Bambusa vulgaris</i> Schrad. ex.J.C.Wendll	Poaceae	Oparun	F
19	<i>Hallea stipulosa</i> (DC.) Leroy	Rubiaceae	Opepe	T
20	<i>Clausena anisata</i> (Wild) J.H.K. ex. Benth	Rutaceae	Oboku	F
21	<i>Blighia sapida</i> Konig.	Sapindaceae	Isin	F
22	<i>Chrysophyllum albidum</i> G.Don	Sapotaceae	Agbalumo	F
23	<i>Cola laurifolia</i> Mast.	Sterculiaceae	Obi edun	F
24	<i>Cola nitida</i> Vent.	Sterculiaceae	Obi gbanja	F
25	<i>Mansonia altissima</i> (A. Chev)	Sterculiaceae	Otutu	T
26	<i>Sterculia tragantha</i> Lindl.	Sterculiaceae	Owun	T
27	<i>Triplochiton scleroxylon</i> K.Schum	Sterculiaceae	Arere	T
28	<i>Celtis integrifolia</i> Lam.	Ulmaceae	Iita	T
29	<i>Vitex grandifolia</i> Gurke	Verbanaceae	Oriri	T

Table 3 Estimated quantity of wood removed from the forests/bush and farms (metric tons yr⁻¹) by tree fellers, farmers and fuel wood dealers in the four Local Government Areas. Number of respondents are shown in parentheses

	Ife North	Ife South	Ife East	Ife Central	Total
Farmers	123084(74)	101764(59)	146068(72)	121004(63)	491920(268)
Tree Fellers	65624(24)	72800(18)	73892(28)	50960(26)	263276(102)
Fuel wood dealers	23920(25)	30680(34)	20904(25)	28028(31)	103532(115)
Total	212628(123)	205244(117)	240864(125)	199992(120)	858728(485)

The total wood consumption in metric tons by sawmillers, food sellers, and bread bakers is shown in Table 4. Ife Central recorded the highest wood consumption by sawmillers, while no sawmill industries were recorded in Ife North. Among food sellers, Ife South had the highest wood consumption, while Ife East had the lowest. Bread bakers in Ife Central consumed more wood than their counterparts in the other local government areas.

Table 4 Total wood consumption (metric tons yr⁻¹) in saw milling, food selling and bread baking. Number of respondents are shown in parentheses

	Ife North	Ife South	Ife East	Ife Central	Total
Saw Millers	0(0)	9412(3)	14560(5)	84552(32)	108524(40)
Food Sellers	15964(35)	20384(36)	14664(30)	17732(39)	68744(140)
Bread Bakers	11492(30)	13208(24)	8736(21)	16692(32)	50128(107)
Total	27456(65)	43004(63)	37960(56)	118976(103)	227396(287)

Table 5 presents the total wood restored in metric tons by fuelwood dealers, tree fellers, farmers, food sellers, and bread bakers across the four local government areas. Fuelwood dealers in Ife Central recorded the highest wood restoration, while Ife East recorded the lowest. Tree fellers in Ife East also restored more wood than those in the other areas, while tree fellers in Ife South and Ife Central restored the same amount. Farmers in Ife South practiced more tree planting than their counterparts in the other areas. Food sellers in Ife South had no record of tree planting, while those in Ife North and Ife East restored the same quantity of wood despite differences in the number of respondents. Bread bakers in Ife East restored the highest quantity of wood, while those in Ife North restored the least.

Table 5 Total wood restored (metric tons yr⁻¹) by fuel wood dealers, tree fellers, farmers, food sellers and bread bakers in the 4 Local Government Areas. Number of respondents are shown in parentheses

Variables	Ife North	Ife South	Ife East	Ife Central	Total
Fuel Wood Dealers	3120(25)	2600(34)	1560(25)	5460(31)	12740(115)
Tree Fellers	3640(24)	2600(18)	5200(28)	2600(26)	14040(96)
Farmers	14560(74)	16640(59)	6240(72)	9360(63)	46800(268)
Food Sellers	1040(35)	0(36)	1040(30)	520(39)	2600(140)
Bread Bakers	1300(30)	3120(24)	5460(21)	2080(32)	11960(107)
Total	23660(188)	24960(171)	19500(176)	20020(191)	88140(726)

The mean estimated quantity of wood removed, consumed, and restored is presented in Table 6. The total quantity of wood removed was significantly higher than the quantity consumed, and the quantity restored was far less than both removed and consumed in all four local government areas. The test showed no significant difference ($p > 0.05$) in the quantities of wood removed, consumed, and restored among the areas in Ile-Ife.

Table 6 Estimated quantity of wood removed, wood consumed and wood restored (by reforestation) in metric tons yr⁻¹ in Ile-Ife

	Ife North	Ife South	Ife East	Ife Central	F value	P value
Wood Removed	1729	1754	1927	1667	0.044	0.987
Wood Consumed	422	683	678	1155	1.444	0.300
Wood Restored	126	146	111	105	2.341	0.112

Table 7 shows the mean estimated quantities of wood removed and consumed in metric tons in Ile-Ife. The quantity of wood removed was significantly higher than that consumed, with a significant difference ($p < 0.05$) between the two.

Table 7 Mean of estimated quantity of wood harvested (i.e wood removed and consumed) and wood restored (by reforestation) in metric tons yr⁻¹ in Ile-Ife

Variables	Wood Consumed	Wood Removed	Wood Removed	Wood Restored	Wood Restored	Wood Consumed
Quantity	56,849	214,682	214,682	22,035	22,035	56,849
t	6.907		20.934		1.658	
p	0.002		0.000		0.195	

4. Discussion

Male respondents consumed more wood than female respondents in the study area, largely because sawmillers, tree fellers, and bread bakers were predominantly male. Additionally, most farmers were also male. This can be attributed to the predominance of male-headed households in rural areas of Ile-Ife and the nature of farming operations, which often require more physical strength. This finding aligns with Aigbhokhan [15], who reported that 86.5% of households in rural Nigeria were male-headed. Most respondents were aged between 31 and 40 years, indicating that middle-aged individuals dominated the study area. These findings are consistent with Chrisand [16], whose study showed a mean respondent age of 32 years.

The highest level of education attained by very few respondents in the study area was a university first degree. Due to the low level of education, most respondents were unaware of environmental laws and lacked knowledge of climate change. As a result, they continued indiscriminate tree felling. Ogunkunle and Oladele [4] reported a similar trend in their study in Ogbomoso. More than half of the respondents agreed that the intensity of the sun had increased over the last five years. This aligns with Odjugo [17], who documented an increasing temperature trend in Nigeria since 1901, with a gradual rise until the late 1960s, followed by a sharp increase from the early 1970s onward.

The respondents demonstrated in-depth knowledge of the tree species they commonly used. Tree species utilized for timber are often chosen for their durability, straightness, ease of planking, and utility in furniture-making. This aligns with Pasicznik et al. [18], who reported similar uses for timber species in the United Kingdom.

In this study, members of the family Sterculiaceae were more frequently exploited than other families. Typical examples include *Triplochiton scleroxylon* (locally called Arere) and *Sterculia tringantha* (locally called Owun), both used for timber. *Mansonia altissima*, another popular timber species in the study area, is also a member of the Sterculiaceae family. Other members of this family, such as the Cola species, were commonly used as fuelwood. Another frequently exploited tree family was Moraceae, with *Milicia excelsa* (locally called Iroko) being a prominent timber species. Other species in this family, such as *Antiaris* and *Ficus*, were used for both fuelwood and timber.

Fuelwood is preferred for its high heat value, abundant growth, ease of collection, and light transportability as headloads. Proper preparation of fuelwood, including sufficient drying and splitting of larger pieces, can help avoid unnecessary energy losses [19]. Traditional cooking methods, such as open fires using three stones or a metal ring, are highly inefficient and lead to substantial energy loss. Replacing open fires with stoves could reduce fuelwood consumption by one-third, easing the pressure on natural vegetation and avoiding high afforestation costs [19]. While dry wood is generally used as fuel, green trees are sometimes cut when dry wood is unavailable. Since fuelwood import and export for domestic use are minimal, almost all demand is met within the study area.

In terms of wood removal, farmers in Ife East accounted for the largest quantities compared to other local government areas, likely due to the higher rural population in Ife East [20]. Family size, income, and burning hours significantly influence the amount of fuelwood used per household annually [21].

Ife Central reported the highest wood consumption due to its large number of sawmills and higher population, infrastructure, and social class of residents [4]. If there is a need to educate and orient people about conserving natural resources, efforts should focus on Ife Central, given its higher consumption rates compared to the other local government areas.

The total wood consumed in the study area far exceeded the wood restored. This pattern of deforestation is consistent with Mattern [7], who attributed it to poverty, which drives people to migrate to forest frontiers where they engage in slash-and-burn subsistence practices. The consequences of deforestation include soil erosion, nutrient leaching, drying up of water resources, destruction of flora and fauna, and air pollution [22]. Recent studies, such as those by Sharma et al. [23], underscore the significant ecological and economic value of soil resources. Loss of topsoil through erosion in regions like the Himalayas has severe repercussions for both Nepal and its downstream neighbors, India and Bangladesh.

The mean estimated quantities of wood removed and consumed far outstrip the quantity of wood restored. This can be attributed to the large number of farmers who continuously clear land for seasonal planting and the reliance on wood as the primary fuel source in the area, given the lack of alternatives. A student t-test showed no significant difference ($p > 0.05$) in the quantities of wood removed, consumed, and restored among the four local

government areas. A balance of 631,332 metric tons was sourced from neighboring forest locations. These findings align with Bensel [24] and Badshah et al. [25], who reported similar results in the Philippines and Pakistan, respectively.

5. Conclusion

The ethnobotanical data from this study have proven to be valuable in identifying the most suitable timber and fuelwood species in the study area. Currently, there is no conservation strategy in place, making it imperative for the government to take proactive measures toward tree conservation. We therefore recommend that the government subsidize alternative energy sources and implement a robust tree-planting campaign. Additionally, the formulation of future forest policies should involve public engagement at various levels to ensure such policies effectively address the interests and needs of the majority.

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Conflict of Interest

Authors declare that there is no conflict of interests regarding the publication of the paper.

Author Contribution

The authors confirm contribution to the paper as follows: **study conception and design:** Oludare Oladipo Agboola, Jonathan Femi Adedeji, Abayomi Ayodeji Folorunsho, Adelanwa Esther Bosede; **data collection:** Oludare Oladipo Agboola, Jonathan Femi Adedeji, Abayomi Ayodeji Folorunsho, Adelanwa Esther Bosede; **analysis and interpretation of results:** Oludare Oladipo Agboola, Jonathan Femi Adedeji, Abayomi Ayodeji Folorunsho, Adelanwa Esther Bosede; **draft manuscript preparation:** Oludare Oladipo Agboola, Jonathan Femi Adedeji, Abayomi Ayodeji Folorunsho, Adelanwa Esther Bosede. All authors reviewed the results and approved the final version of the manuscript.

Appendix A

Table 1 Respondents' Information about Wood Consumption in the Study

Variables	Levels	Farmers	Foodsellors	Fuel wood dealers	Sawmillers	Tree fellers	Bread bakers	Total
LGA	Ife north	74(39.36%)	35(18.61%)	25(13.29%)	0(0%)	24(12.76%)	30(15.95%)	188(24.54%)
	Ife South	59(33.90%)	36(20.68%)	34(19.54%)	3(1.59%)	18(10.34%)	24(13.79%)	174(22.72%)
	Ife East	72(39.77%)	30(16.57%)	25(13.81%)	5(2.76%)	28(15.46%)	21(11.60%)	181(23.63%)
	Ife Central	63(28.25%)	39(17.49%)	31(13.90%)	32(14.34%)	26(11.65%)	32(14.34%)	223(29.11%)
Sex	Male	225(43.94%)	11(2.14%)	33(6.44%)	40(7.81%)	96(18.75%)	107(20.89%)	512(66.84%)
	Female	43(16.92%)	129(50.78%)	82(32.28%)	0(0%)	0(0%)	0(0%)	254(33.16%)
Age	age10-20	0(0%)	1(7.69%)	1(7.69%)	9(69.23%)	2(15.38%)	0(0%)	13(1.697%)
	21-30	15(14.42%)	20(19.23%)	30(28.84%)	17(16.34%)	20(19.23%)	2(1.92%)	104(13.577%)
	31-40	72(25.44%)	79(27.90%)	52(18.37%)	11(3.88%)	45(15.90%)	24(8.48%)	283(36.945%)
	41-50	115(46.00%)	35(14.00%)	29(11.60%)	0(0%)	25(10.00%)	46(18.40%)	250(32.637%)
	>50	66(56.89%)	5(4.31%)	3(2.58%)	3(2.58%)	4(3.44%)	35(30.17%)	116(15.144)
Years of Experience	Less than 5	18(11.32%)	30(18.80%)	45(28.30%)	18(11.32%)	26(16.35%)	22(13.83%)	159(20.76%)
	Less than 10	67(21.96%)	62(20.32%)	61(20.00%)	18(5.90%)	47(15.40%)	50(16.39%)	305(39.82%)
	Less than 20	107(49.08%)	42(19.26%)	9(4.12%)	4(1.83%)	23(10.55%)	33(15.13%)	218(28.46%)
	Less than 40	67(89.33%)	6(8.00%)	0(0%)	0(0%)	0(0%)	2(2.66%)	75(9.79%)
	> 40	9(100%)	0(0%)	0(0%)	0(0%)	0(0%)	0(0%)	9(1.17%)
Educational Background	Pry School	34(22.07%)	28(18.18%)	29(18.83%)	21(13.63%)	21(13.63%)	21(13.63%)	154(20.10%)
	JSSCE	68(26.25%)	56(21.62%)	47(18.14%)	16(6.17%)	38(14.67%)	34(13.12%)	259(33.81%)
	SSCE	149(47.30%)	55(17.46%)	39(12.38%)	0(0%)	36(11.42%)	36(11.42%)	315(41.12%)
	NCE	0(0%)	0(0%)	0(0%)	0(0%)	0(0%)	6(100%)	6(0.78%)

ND	0(0%)	0(0%)	0(0%)	3(100%)	0(0%)	0(0%)	3(0.39%)
HND	17(65.38%)	1(3.84%)	0(0%)	0(0%)	1(3.84%)	7(26.90%)	26(3.39%)
BSc	0(0%)	0(0%)	0(0%)	0(0%)	0(0%)	3(100%)	3(0.39%)

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