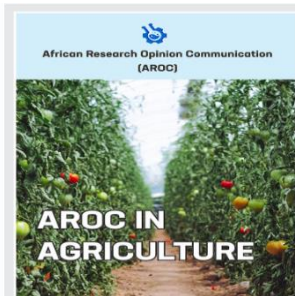




RESEARCH ARTICLE

Marketing of non-timber forest products as a means of income generation in Oja-oba market, Iseyin local government area, Oyo State

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ABSTRACT

Background: This study examined marketing of non-timber forest products as a means of income generation in Oja-Oba Market, Iseyin Local Government of Oyo State. Non-timber forest products (NTFPs) have been located to play an important position in family financial system and food security. **Methods:** In the present study, a simple random sampling was used to choose ninety-four respondents (25 % sampling depth) from 376 marketers that were identified. A total of seventy-eight responses were retrieved from the 94 questionnaires distributed. Data were analyzed using descriptive information and budgetary evaluation. **Results:** Most of the of respondents (51.4%) were the ages of 31 and 40 years old, female (51.3%), married (73.1%), had adult schooling (34.6%), have been farmers (60.3 %), had 11-20yrs experience (44.9%), and had been indigenous (69.2%). Many of the marketed NTFPs had been bush meat (73.1%), honey and bee wax (71.8%), fuel wood (60.3%), and Shea butter (60.3 %). The charges of NTFPs numerous at diverse tiers, for example, bush meat that sells for #2500.00 on the farm level is in the end offered at #6000.00 to very last purchasers. This also carried out to different NTFPs advertised in the place, indicating that NTFP marketing turned into a profitable enterprise in the study area. Profitability of the very best marketed NTFPs (bush meat) revealed an average gross margin of #34,040.00 and a net profit of #28,040.00, whilst the benefit cost Ratio was 2.53, indicating that for each # 2.00 invested in the business, there was a go back of 53kobo. Poor transportation (35.9%), a lack of storage facilities (23.1%), deforestation (12.8%), and price fluctuation are the various fundamental issues encountered (11.5%). Marketing NTFPs is a rewarding commercial enterprise which could assist improve rural livelihoods. **Conclusion:** Based on the findings of this study, it was determined that the area was highly enriched with various varieties of NTFPs that serve the needs of the residents. It was recommended that Sustainable forest management of non-timber forest products should be implemented as a development strategy in the study area to ensure the continuous availability of non-timber forest products in the study area.

Keywords: Non-Timber Forest; Rural Livelihood; Income; Food Security; Sustainable Forest Management;

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1.0 Introduction

Non-timber forest products (NTFPs), along with bamboo, seeds, leaves, rattan, raffia, and other fibres, contribute significantly to the subsistence and welfare of people all over the world, particularly in developing-world rural economies [1,2]. It was claimed that millions of people, primarily those living in rural areas of developing countries, gather

these products on a daily basis, and that many see promoting NTFPs as a way to make a living [3] "Eighty percent of the developing world relies on non-timber forest products for nutritional and health needs" [4]. Forests have long been valued for the numerous products and benefits they provide (for example, food, fodder, medicine, fuel wood, timber, and so on), as well as as a source of income from

harvesting, processing, and buying and selling in these items [5]. Millions of households in developing countries, primarily Nigeria, rely on non-timber forest products (NTFPs), which have always been an important part of the forest economy [6]. Non-timber forest products have been used for as long as humans have existed [7]. The role and contributions of NTFPs in the daily lives and welfare of people all over the world are essential in subsistence and rural economies because of their variety, as resources of meals which include fruits, nuts, honey, insects, animals, etc. fodder, fibre, fertilisers, medicinal extracts, construction materials, cosmetic and cultural products, natural dyes, tannin, gums, resins, latex and other exudates, essential oils, spices, edible oils, and decorative.

NTFPs have a wide range of applications in Nigerian rural communities. Among these uses were fruits, nuts, honey, insects, and animals. NTFPs are also used as fodders, fibres, fertilisers, medicinal extracts, construction materials, cosmetics and cultural products, natural dyes, tannin, gums, and other exudates. Other benefits include essential oils, spices, edible oils, decorative articles, horns, tusks, bones, pelts, plumes, hides and skins, on-wood ligno-cellulosic products (brown coal with a woody texture), phytochemicals, and aroma chemicals. These products are derived from a variety of sources, including plants (palms, grasses, herbs, shrubs, and trees), animals (insects, birds, reptiles, and large animals), and other non-living ecosystem components. In Nigeria, the supply (production), marketing, and processing of timber were prioritised, with little or no consideration given to non-timber forest products. An enabling framework for NTFP processing includes common market and value chain characteristics. Market Characteristics Easy access to markets, both spatially and temporally, contributes to business success. This can be aided by the presence of NGOs and development projects; however, such initiatives will only be viable if there is sufficient demand for the product.[9] High demand is required for the establishment of NTFP businesses, as evidenced by the high demand for charcoal, brooms, amarula products, and agar oil. Demand is frequently created through intensive marketing efforts, particularly for new products entering international markets [9], funds for which are not always readily available. Nonetheless, studies have shown that the demand potential for NTFP products is substantial, with quality and environmental friendliness being the most important attributes [10]. Projects focusing on NTFP business development without considering demand may fail because the increased

supply of products cannot be absorbed, resulting in low product prices. Further constraints persist as a result of frequently fluctuating NTFP markets and price oscillations, boom-bust cycles, or the presence of only one or a few buyers. Under such conditions, it may be too risky for small-scale producers to professionalize their NTFP businesses and forego other income-generating opportunities [5]. However, in recent years, attention has shifted to non-timber forest products due to the enormous benefits they provide for human advancement. The study concentrated on the marketing of non-timber forest products in the Oja-Oba market of the Iseyin Local Government Area. Oyo State The intended respondents are non-timber forest product sellers in the Oja-Oba market.

2.0 Materials and Method

2.1 Area of Research

Iseyin local government area is one of the local Governments that make up Oyo State Oke-Ogun location. The local authorities is located at 7° 58' 0" N and 3° 36' 0" E. Iseyin townships are about a hundred kilometers north of Ibadan. The neighborhood government is bounded within the west with the aid of Ibarapa North and Kajola local government regions, within the east by Oyo Nest nearby government vicinity, in the north via Itesiwaju local authorities region of the country, and inside the south via Ibarapa East nearby government vicinity of Oyo state. The neighborhood government has a tropical weather. There is less rainfall inside the dry season than inside the wet season. The Koppen Geiger Climatic category considers this climate to be. The common annual temperature is 26.10C. The yearly average rainfall is 1171 mm. January has the fewest rainfalls. This month's average rainfall totals 7mm. The maximum precipitation falls in September, with an average of 195 mm. In March, the common temperature is around 28.20 ranges Celsius. The common temperature in August is 24.00 tiers Celsius. it is the coldest common temperature of the 12 months. The distinction in precipitation among the driest and wettest months is 188 mm. Temperatures vary by 4.20 degree Celsius on common at some stage in the year. Rivers consisting of the Ogun, Owu, Amaka, and Oowe drain the local Government Area. The vegetation type is guinea Savanna, that's outstanding through tall and luxuriant grasses and timber which includes acacia, locust bean trees, Shea butter trees, and so on. Figure 1 below showed the study area and the local government area(Iseyin Local Government) where the study area was located.

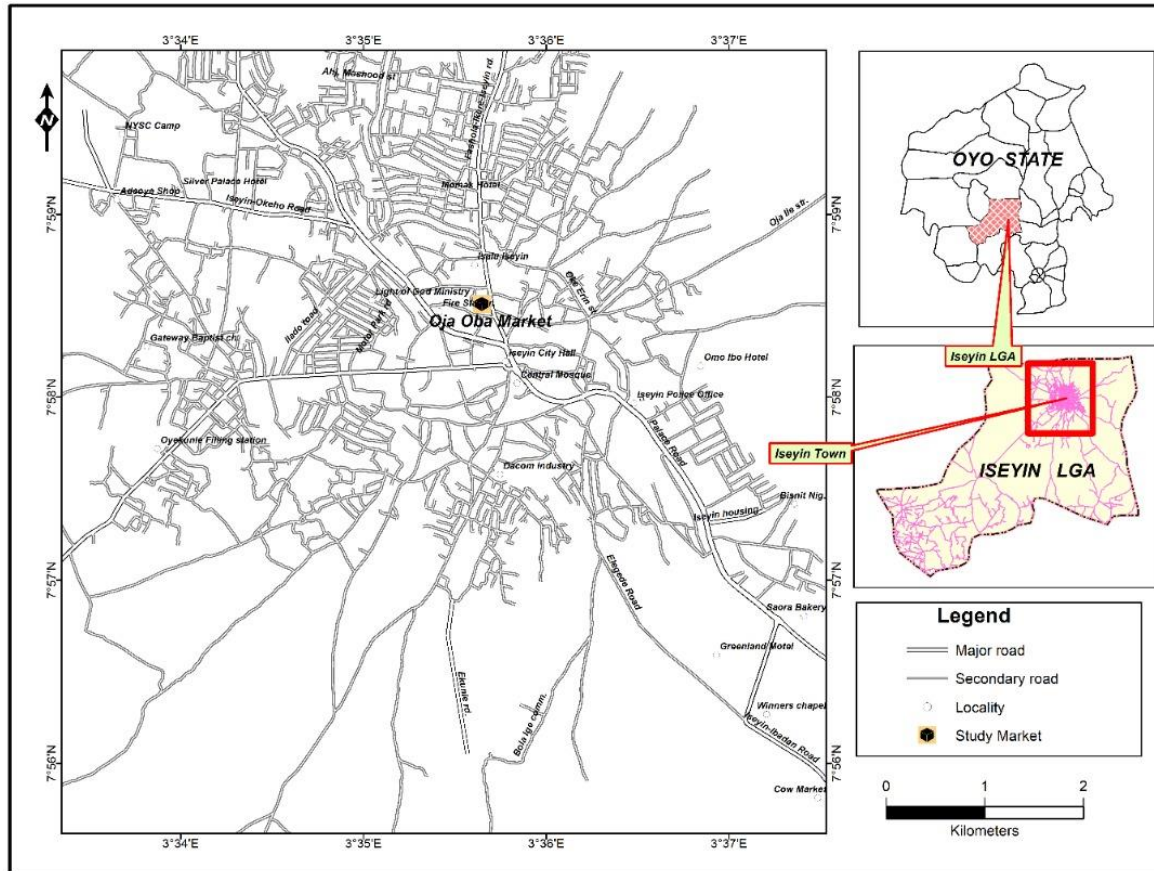


Figure 1: Map of the study area

2.2 Data source

For this study primary data were used. Well-structured questionnaires were used to collect primary data. The data collected covered Statistics for socioeconomic characteristics of individuals involved within the accumulating, processing, and advertising and marketing of NTFPs, which includes age, gender, instructional degree, household size, marital status, income degree, off farm activities, expenses, and so on

2.3 Sampling procedure and sample size

The samples were drawn from the market's total population of sellers. The average number of marketers in the study area was 376. However, 94 respondents were chosen (about 25 percent sampling intensity). In other words, 94 structured questionnaires were distributed, and 78 (83.0 percent) of them were returned.

2.4 Statistical method

Statistics tools such as frequencies, mean, modes and percentages were used to analyze the variables

of interest such as age, gender, family size, education, income, religion, Budgetary analysis was used to analyze profitability.

3.0 Results and Discussion

In the study, 78 (83.0%) of the 94 questionnaires administered had been retrieved and analyzed Table 1 shows the descriptive analysis of the respondents' socioeconomic traits. According to the table, the majority of respondents (51.4%) were between the ages of 31-40 years, while the least (5.1%) had been between the ages of 51 and above years. This became consistent with the findings of [13], who said that the enormously productive age group involved in forestry activities is 31-50 years. It was found out that 51.3% of respondents were female, even as 48.7% have been male. Indicating that extra women were involved in the marketing of non-timber forest products (NTFPs). The table additionally found out that 73.1% of respondents were married, while 2.6% have been widowed. This supported the findings of [11], who said that a massive percentage of the rural populace is married. The effects additionally discovered that the general public of respondents (34.6%) had adult training, followed by people with no formal schooling (24.4%) and those

with tertiary schooling (6.4%). This finding commonly indicated that majority of respondents had a low instructional reputation. This supported the findings of [11], who said that formal education is not a chief criterion required for dependent groups to preserve their livelihood. The table also found out that farmers made up most people of respondents (60.3%), at the same time as civil

servants made up the least (11.6%). Years of experience within the NTFPs enterprise revealed that respondents with 11-20 years' experience had the highest rate of forty 44.9%, even as only a few (1.3%) had more than 21 years' experience. Majority of respondents (69.2%) had been indigenous to the vicinity, while 30.8% had not been.

Table 1: Socio-economic characteristics of the respondents

Socio-economic characteristics	Frequency	Percentage
Age		
20-30	7	9.0
31-40	40	51.3
41-50	27	34.6
50 Above	4	5.1
Total	78	100
Sex		
Male	38	48.7
Female	40	51.3
Total	78	100
Marital status		
Single	9	11.5
Married	57	73.1
Divorce	10	12.8
Widow	2	2.6
Total	78	100
Educational status		
No Formal	19	24.4
Adult	27	34.6
Primary	9	11.5
Secondary	18	23.1
Tertiary	5	6.4
Total	78	100
Occupation		
Trader	22	28.2
Farmer	47	60.3
Civil Servant	9	11.6
Total	78	100
Years of experience		
0-5	8	10.3
6-10	32	41.0
11-20	35	44.9
16-20	2	2.6
21 Above	1	1.3
Total	78	100
Nativity		
Indigene	54	69.2
Non- Indigene	24	30.8
Total	78	100

Source: Field survey, 2021

The NTFPs marketed in the location have been proven in table 2. It became located that numerous NTFPs in the observe location include honey and bees wax, fit to be eaten plant products including black pepper, gums and resin exuding, bush meat, canes for making baskets, wrapping leaves, fuel wood, and charcoal, among others. Moreover, bush meat (73.1%) honey and bee wax (71.8%). fuel Wood and charcoal (60.3%), shea butter (60.3%),

sponge (57.7%), palm wine (56.4%), and canes (56.4%) were the most plentiful NTFPs inside the study area. According to the observe, the area is relatively enriched with numerous sorts of NTFPs that serve the desires of the inhabitants. This was consistent with the findings of [11], who said that NTFPs are any biological assets collected from the wild via rural human beings for direct intake and profits generation.

Table 2: NTFPs in the study area

S/No	Available NTFPs	Yes (Fq)	Yes (%)	No (Fq)	No (%)
1	Honey and bees wax	56	71.8	22	28.2
2	Edible plant products	34	43.6	44	56.5
3	Gums and resin exuding	44	56.4	34	43.6
4	Bamboo	34	43.6	44	56.4
5	Fuel wood and charcoal	47	60.3	31	39.7
6	Fodder and forage	39	50.0	39	50.0
7	Mushroom	42	53.8	36	46.2
8	Calabash	43	55.1	35	44.9
9	Sponge	45	57.7	33	42.3
10	Broom	43	55.1	35	44.9
11	Bush meat	57	73.1	21	26.9
12	Nuts	26	33.3	52	66.7
13	Shea butter	47	60.3	31	39.7
14	Wrapping leaves	43	55.1	35	44.9
15	Palm wine	44	56.4	34	43.6
16	Ropes	38	48.7	40	51.3
17	Medicinal plants	44	56.4	34	43.6
18	Shells and bone	36	46.2	42	53.8
19	Canes for making basket	44	56.4	34	43.6
20	Hides, skins and feathers	40	51.3	38	48.7
21	Dye and colour yielding plants	42	53.8	36	46.2

Source: Field survey, 2021

Table 3: Prices of NTFPs at different levels

NTFPs	Qty	Farm Price(₦)	Market Price(₦)	Selling Price(₦)	
1.	Honey and bees wax	5 litres	5000	6000	7500
2.	Edible plant products	5kg	400	500	550
3.	Gums and resin exuding	1kg	900	1000	1500
4.	Bamboo	5kg	500	600	750
5.	Fuel wood; charcoal	10kg	600	650	700
6.	Fodder and forage	10kg	400	450	500
7.	Mushroom	50kg	400	450	600
8.	Calabash	1dozen	300	400	550
9.	Sponge	6 pack	400	450	500
10.	Broom	1dozen	500	600	700
11.	Bush meat	5kg	2500	3500	6000
12.	Nuts	1 congo	800	1000	1100
13.	Shea butter	5 kg	600	700	800
14.	Wrapping leaves	2kg	200	400	450
15.	Palm wine	25 litres	2000	2200	2400
16.	Ropes	1 bundle	450	470	510
17.	Medicinal plants	2kg	300	350	400
18.	Shells and bone	10kg	700	750	900
19.	Canes	2kg	250	300	450
20.	Hides, skins and feathers	5kg	500	600	700
21.	Dye	2 litres	250	300	400

Source: Field survey, 2021

Table 3 displayed the prices of NTFPS marketed and their charges at various levels. The products had specific fee tags, and these varies from the farm level to the very last retail selling price, for instance, honey which sells at #6000.00/ 5litres farm price is finally bought at #7500.00 to the very last consumers, while products including bush meat and palm wine which sell at# 2500.00 and #2000.00 are

offered at# 6000.00 and# 2400.00 respectively. This shows that the marketing of NTFPs is a worthwhile commercial enterprise in the study region. This was consistent with the findings of [12,13] that NTFPs are any biological resources collected from the wild by rural human beings for direct intake and income generation

Profitability of the most heavily marketed NTFPs in the study area

Consistent with the responses of the respondents, the best marketed NTFPs have been bush-meat and honey (73.1% and 71.8%, respectively). As a result, the profitability of these NTFPs changed into calculated and proven in tables 4 and 5.

Table 4 depicted the profitability of bush meat in the study location. Following the computation, it became observed that the marketing of bush meat became extremely worthwhile. The average gross margin received became ₦34,040.00, indicating that marketing efficiency became on a fine note, and the effectiveness established the earnings in line with price incurred at some point of the enterprise transaction, as determined through estimating the benefit cost ratio (BCR), which found out to be 2.53. As a result, for every ₦ 2.00 invested by respondents, a return of 53kobo was received. This supported the findings of [12,14,15], when they stated that non-timber forest products function a mechanism for poverty alleviation and local development.

Table 4: Profitability of Bush meat in the study area

Items	Cost (₦)
Variable cost	
Price per 20kg	10000.00
Transport cost	800.00
Labour	1500.00
Total variable cost	12,300.00
Fixed cost	
Depreciation on Cutlass	1200.00
Depreciation on Basket	1000.00
Depreciation on Sack bag	500.00
Depreciation on Tray	800.00
Depreciation on table	2500.00
Total fixed cost	6,000.00
Total cost (TVC + TFC)	18,300.00
Total income	46,340.00
Net profit	28,040.00
Gross margin (GM) (TC- TVC)	34,040.00
Benefit cost ratio (BCR)	2.53

Source: Field Survey 2021

Table 5 depicted the profitability of honey and bee wax within the area of study. It became determined that the advertising and marketing of honey and bee wax become also extremely worthwhile. The average gross margin obtained became ₦30,380.00, indicating that marketing efficiency was on a high-quality word, and the effectiveness verified the earnings in keeping with value incurred in the course of the business transaction, which become calculated through estimating the benefit cost ratio (BCR), which revealed 1.69 an end result, for each ₦ 1.00 invested via respondents, they

received a return of sixty-nine kobo. This supported the findings of [15,16], who stated that non-wood forest products serve as a mechanism for poverty alleviation and local development.

Table 5: Profitability of honey and bee wax in the study area

Items	Cost (₦)
Variable cost	
Price per 25litres	25,000.00
Transport cost	600.00
Labour	500.00
Total variable cost	26,100.00
Fixed cost	
Depreciation on jerry cans	1000.00
Depreciation on plastic bottles	3000.00
Depreciation on plastic bowls	800.00
Depreciation on table	2500.00
Total fixed cost	7,300.00
Total cost (TVC + TFC)	33,400.00
Total income	56,480.00
Net profit	23,080.00
Gross margin (GM) (TI- TVC)	30,380.00
Benefit cost ratio (BCR)	1.69

Source: Field Survey 2021

Marketing issues with NTFPs in the study area

Table 6 depicts the current issues associated with the marketing of NTFPs in the study area. Poor transportation was identified as the most significant problem in NTFPs marketing, accounting for 35.9% of the total; this was followed by a lack of storage space, accounting for 23.1%. Having no buyer to patronize the sellers of the products, on the other hand, recorded the lowest rate of 3.8%. This could be because most of the roads leading to forest areas are in poor condition. As a result, a poor transportation network leads to high costs in transporting products from the point of purchase to the destination of sales. This supported the findings of [11,17] who identified poor transportation as one of the major challenges of marketing NTFPs in Southwest Nigeria.

Table 6: Marketing problems of NTFPs in the study area

Problems	Frequency	Percentage
Poor transportation	28	35.9
Lack of storage facility	18	23.1
Seasonality	6	7.7
Price fluctuation	9	11.5
No buyer	3	3.8
Deforestation	10	12.8
Poor market outlet	4	5.2
Total	78	100

Source: Field Survey 2021

4.0 Conclusion

Based on the findings of this study, it was determined that the area was highly enriched with various varieties of NTFPs that serve the needs of the residents. Among these NTFPs are honey and bees wax, edible plant products such as black pepper, gums and resin exuding, bush meat, canes for making baskets, wrapping leaves, fuel wood, and charcoal.

The following recommendations were made based on the findings of this study: Sustainable Forest management of non-timber forest products should be implemented as a development strategy in the study area to ensure the continuous availability of non-timber forest products in the study area.

Awareness programs about the availability and importance of non-timber forest products should be organized for rural residents in and around the study area. Furthermore, orientation programs should be organized to educate forest-dependent communities about the business of non-timber forest products as a source of employment. Non-timber forest products can provide an additional source of income for those who earn a living. Road reconstruction and the installation of storage facilities should be provided to encourage non-timber forest products business in and around the study area

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Conflict of Interest: The author declared that no conflict of interest exists

Ethical Approval: Not applicable

Consent: Not applicable

Reference

1. Mahaptara, A. and Mitchell, C.P. (2011): Non-timber Forest Products Management Problems and Prospects: A case study from India. Retrieved on 8th June 2011 from <http://www.w3c.org/TR/1999/REC-html401-19991224/loose.dtd>
2. Andel, T.V. (2006): Non-timber forest products: The value of Wild Plants. Agromisa Publication 6 CTA, the Netherlands.
3. Agbogidi, A.O. (2010): Ethno-botanical survey of the Non-timber forest products in Sapele Local Government Area of Delta State, Nigeria. *African Journal of Plant Science*. Vol. 4(3), pp. 183-189 Retrieved on 8th June, 2011 from <http://www.academicjournals.org/ajps>
4. FAO, (2003): Management of non-timber forest products extraction: local institutions, ecological knowledge and market structure in south-eastern Zimbabwe. *Ecological economics* 70 (3), 454-461.
5. Tewari, D.D. (2012): Promoting non-timber forest products (NTFPs) to alleviate poverty and hunger in rural South Africa: A reflection on management and policy challenges. *African Journal of Business Management* Vol. 6(47), pp. 11635-11647, 28. <http://www.academicjournals.org/AJBM> DOI: 10.5897/AJBM12.583s.
6. Neumann, R.P.; Hirsch, E. (2000): Commercialisation of Non-Timber Forest Products. Review and Analysis of Research; CIFOR: Bogor, Indonesia.
7. Aiyeloja, A.A. and Ajewole, O.I. (2006): Non-timber Forest Products' Marketing in Nigeria: A case study of Osun State. *Educational Research and Reviews*. Vol.1 (2), pp. 52-58.
8. Krause, T.; Ness, B (2017): Energizing agroforestry: Ilex guayusa as an additional commodity to diversify Amazonian Agroforestry systems. *Int. J. Biodivers. Sci. Ecosyst. Serv. Manag.* 13, 191-203
9. Seeland, K.; Kilchling, P.; Hansmann, R. (2007): Urban Consumers' Attitudes towards Non-wood Forest Products and Services in Switzerland and an Assessment of Their Market Potential. *Small-Scale For. Econ. Manag. Policy* 6, 443-452
10. Olawuyi E.B. and Agbeja B.O. (2018). Socio-economic impact of gazetted forest reserves on forest dependent communities in Edo State, Nigeria. *Commonwealth Forestry Association (CFA) Conf. Proc.*, 2, 51-60
11. Babatunde T.O., Babatunde O.O, Adekola P.J, Ojo M.O and Shittu A.J. (2013) Marketing of some selected non-timber forest products in Boluwaduro Local Government area of Osun State. *Journal of Qualitative education*. 9(2), ISSN 0331-4790 pgs 167-177.
12. Babatunde T.O, Babatunde O.O. Okeleke S.O, Aduloju T. and Agboola F.O. (2020) Assessment of commercial importance and determinant factor influencing collection of non-timber forest products in adjoining communities of Lanlate forest reserve of Oyo State Nigeria *Journal of Research in Forestry, Wildlife & Environment* Vol 12 (1). Pp 62-69 University of Agriculture, Markudi

13. Babatunde T.O, Babatunde O.O, Oluwalana T. and Agboola F.O and Okeleke S.O. (2019) Evaluation on non-timber forest product collection in Arakanga Forest reserve in Ogun State Nigeria. *Nigeria Journal of Agricultural and Development Economies (NIJADE) University Of Abuja* Vol 5 (2) pp 123-136
14. Olawuyi E.B., Adejumo A.A. and Faleyimu O.I. (2019): Socio-economic impact of non-timber forest products in rural household income in Osho forest reserve, Oyo state, Nigeria. *Agric. Sci. Res. J.*, **9 (3)**, 27-348
15. Babatunde T.O, Babatunde O.O., Okeleke S.O., Oluwalana T., Ogundimu O.A. and Elesho R.O. 2019. Contributions of Non-Timber Forest Products to Household Income in the Adjoining Communities of the Lanlate Forest Reserve of Oyo State, Nigeria. ***FUOYE Journal of Agriculture and Human Ecology. Vol 3(1) pp 47-555.***
16. Babalola J.B.; Adesoji Oni; Ademola Atanda; Benedicta O; Oyejola- Oshodi. (2010): Poverty alleviation in Nigeria: lesson from socio-economic thoughts of Yoruba. <http://doi.org.111/j.1468-2451.20>
17. Tewari, D.D. (2012): Promoting non-timber forest products (NTFPs) to alleviate poverty and hunger in rural South Africa: A reflection on management and policy challenges. *African Journal of Business Management* Vol. 6(47), pp. 11635-11647, 28. <http://www.academicjournals.org/AJBM> DOI: 10.5897/AJBM12.583s.

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