



# Ethnobotany of Ecological-Based Tourist Centres in the Western Zone of Ekiti State, Nigeria

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**Abstract:** The rapid appraisal method was used to assess the potentials of ecological-based tourism in three tourist centres situated in the western zone of Ekiti State, Nigeria. Visits were made to the centres. In each centre, the tree species, in the vegetation, situated within 50m radius of the main attractive feature of the centre were identified. The ethnobotanical values of the species were defined by 20 randomly selected aboriginal respondents that were interviewed with the aid of semi-structured questionnaire matrix. Also, in each centre, 10 tourists were randomly selected and interviewed on the values of the flora species in the centre. While the aboriginal respondents were versed on the identification and ethnobotanical values of the flora species, the tourist respondents were grossly deficient on these. Thus the results obtained revealed that the centres could serve as avenues to educate tourists on the biodiversity, ecology and ethnobotany of flora species in the immediate vicinities of the centres. Also, restoration of Nature's Study as a subject in primary schools will also improve the consciousness and awareness of the populace on the conservation of the nation's renewable natural resources.

**Keywords:** Ethnobotany, Ecological-Based, Tourism, Flora, Nigeria

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## 1. Introduction

Ecological-based tourism, otherwise referred to as ecotourism or nature tourism, is a subset of tourism that involves travelling to relatively undisturbed natural areas with the objective of admiring, studying and enjoying the scenery and its wild plants and animals as well as the cultural features embedded therein [1]. It is a relatively new development [2], with a relatively high potentials in the tourist industry.

Bushnell [3] described ecotourism as a form of development that respect tradition and culture, protects and preserves the environment, educates and welcomes visitors. While the vegetation is considered as a major pre-requisite in the determination of a site for tourism purpose [4], the aboriginal community is seen as a major stakeholder in the management of tourist sites [5].

The importance of tourism on economic development of a nation cannot be over-emphasised. Bello *et. al.* [6] asserted that tourism has direct, indirect and induced impact on the economy. Nigeria is reputed for having tremendous

ecotourism potentials [1, 7]. The country is rich in flora and fauna species. The flora species, in addition to supporting and sustaining the fauna species, are equally of numerous ethnobotanical values. The biological diversity maintains the functioning of the ecosystem. Unfortunately, these resources are being threatened by several factors such as population growth, change in land use, illegal grazing of livestock, bush burning, excessive poaching [8], urbanisation, increasing demand for food, deforestation [9, 10] and catastrophic processes [11, 12].

Previous studies [13, 14] have asserted that tremendous ecotourism potentials abound in Ekiti State, Nigeria. However a dearth of information abounds on the enhancement of these potentials as previous studies have failed to consider the ethnobotanical values of the flora species in the vegetation housing the tourist sites. Thus the study being reported here aimed to achieve this.



## 2.2. Methods

Visits were made to the three tourist centres –Erinjiyan-Ekiti, Ikogosi-Ekiti and Ipole-Iloro-Ekiti. The major attractive feature in each centre was identified. The flora species within 30 metre radius of the main attractive feature in each centre were identified and recorded.

In each community housing the centre, 20 aboriginal residents were randomly selected and interviewed individually with the aim of determining the ethnobotanical values of the identified flora species. Also in each centre, 20 tourists were randomly selected and interviewed on their knowledge on the ethnobotanical values of the flora species.

Group interviews were conducted among the aboriginal and tourist respondents in each tourist centre. Four groups, each consisting of minimum of three respondents, were interviewed in each centre in order to determine group consensus on the information provided at individual interviews. Similarly, key informants, specifically, the Chief Priest (Iya Erin) of Erin Sacred Fish River, Tour Guards of the Warm and Cold Springs and Community Leaders in Ipole-Iloro-Ekiti, were identified and interviewed.

All the interviews were conducted with the aid of semi-structured questionnaire matrix [16]. The interviews were focused, conversational and two-way in communication.

## 3. Results

The major attractive feature in Erinjiyan-Ekiti was the Erin Ayonigba River that contained sacred fish. It is a taboo to kill fish in this river. Also the river flows in an unusual direction. Information obtained from the key informants revealed that fish from the river could not be boiled to cook. Also anybody

that kills fish from the river is liable to the wraths of the river goddess which ranged from infection with strange diseases, misfortune to death. Similarly, the *Raphia* palms in the banks of the river must not be tapped.

Field observation revealed that all the aborigines were quite familiar with the myths and taboos associated with the river. Most of the aboriginal respondents were female (60%, Table 1), over 20 years in age, illiterates and mostly worshippers of the river goddess, and reside in the close vicinity of the river. In contrast, the tourist respondents were quite ignorant of these myths and taboos. They were male dominated (67%), mostly of over 20 years, Christians and literates.

The warm and cold springs constituted the tourist centre in Ikogosi-Ekiti where the meeting point of the warm and cold springs was of special attraction. Field observation revealed that the springs were discovered by a Baptist missionary about 6 decades before this study. The centre has since been developed to an international standard. The tourist centre in Ipole-Iloro-Ekiti was the Arinta waterfall. The fall which occurred in 7 cascades is laden with difficult terrains hence most tourists were limited to visiting the last cascade (7<sup>th</sup> Cascade).

The tourists' respondents in Ikogosi-Ekiti were more diverse in terms of tribes and places of domicile more than those of Erinjiyan-Ekiti. Tourists interviewed in Ipole-Iloro-Ekiti were less diverse when compared to those of Ikogosi-Ekiti but more diverse than those of Erinjiyan-Ekiti. Myths and taboos were not associated with the tourist centres in Ikogosi and Ipole-Iloro-Ekiti. The aboriginal respondents in both Ikogosi and Ipole-Iloro-Ekiti were male dominated, adults, illiterates and Christians while those of the tourists were equally male dominated, adults, Christians but literates.

**Table 1.** Socio-economic Classification of Respondents in the Three Eco-tourists' Centres in Ekiti Western Region of Nigeria.

Feature	Description	Proportion (%) of Respondents*							
		Aborigines				Tourists			
		A	B	C	AT	A	B	C	AT
Sex	Male	40	65	60	55	80	55	65	67
	Female	60	35	40	45	20	45	35	33
	< 20	10	5	15	10	15	50	40	35
Age (Yrs)	20-60	65	75	70	70	65	40	50	52
	> 60	25	20	15	20	20	10	10	13
	Christians	45	65	70	60	85	80	75	80
Religion	Muslims	5	25	20	17	15	20	20	18
	Others	50	10	10	23	0	0	5	2
	Literates	10	45	40	32	95	100	90	95
Education Status	Illiterates	90	55	60	68	5	0	10	5
Occupation	Students	10	5	10	8	60	50	70	60
Agriculture-related		55	80	85	83	20	10	20	18
Non Agriculture-related		5	15	5	8	20	40	10	22

\* A: Erin Ayonigba Sacred Fish River

B: Warm and Cold Springs, Ikogosi-Ekiti

C: Arinta Water Fall, Ipole-Iloro-Ekiti

AT: Average Total

A total of 5 flora species, consisting of 4 trees and 1 herb were identified at the source of Erin river in Erinjiyan-Ekiti (Table 2), 40 flora species were identified within 30m radius of

the meeting point of the warm and cold springs in Ikogosi-Ekiti (Table 3), while 17 flora species, one of which is a herb (Table 4) were enumerated at the Arinta water fall in Ipole-Iloro-Ekiti.

**Table 2.** List of Identified Flora Species in Erin Ayonigba Sacred Fish River, Erinjyan-Ekiti.

S/n	Species	Family	Habit
Botanical	Vernacular		
1. <i>Canna indica</i>	Ido	Cannaceae	H
2. <i>Dracaenia manni</i>	Peregun	Dracaenaceae	T
3. <i>Ficus thonningii</i>	Odan	Moraceae	T
4. <i>Ficus platyphlla</i>	Agbagba	Moraceae	T
5. <i>Raphia hookeri</i>	Ope-Ogoro	Arecaceae	T

**Table 3.** List of Identified Flora Species in the Warm and Cold Springs, Ikogosi-Ekiti.

S/n	Species	Family	Habit
Botanical	Vernacular		
1. <i>Albizia ferruginea</i>	Ayinre	Mimosaceae	T
2. <i>Albizia zygia</i>	Ayunre	Mimosaceae	T
3. <i>Alchornea cordifolia</i>	Ipa	Euphorbiaceae	T
4. <i>Alstonia boonei</i>	Ahun	Apocynaceae	T
5. <i>Anthocleista vogelii</i>	Sapo, Apar	Loganiaceae	T
6. <i>Azadirachta indica</i>	Dongoyaro	Meliaceae	T
7. <i>Berlinia grandiflora</i>	Apado	Caesalpiniaceae	S / T
8. <i>Bosqueia angolensis</i>	Oropa	Moraceae	T
9. <i>Bridelia ferruginea</i>	Ira	Euphorbiaceae	S / T
10. <i>Canarium schwenfurtii</i>	Arasekosun	Burseraceae	T
11. <i>Ceiba pentandra</i>	Eegungun	Bombacaceae	T
11. <i>Chrysophyllum albidium</i>	Agbalumo	Sapotaceae	T
12. <i>Cleistopholis patens</i>	Apako	Annonaceae	T
13. <i>Diospyros mespiliformis</i>	Dudu	Ebenaceae	T
14. <i>Dracaenia mannii</i>	Peregun	Dracaenaceae	T
15. <i>Elaeis guineensis</i>	Ope	Elaeocarpaceae	T
16. <i>Entandrophragma cylindricum</i> Ijebo	Meliaceae	T	
17. <i>Ficus thonningii</i>	Odan	Moraceae	T
18. <i>Funtumia elastica</i>	Ire	Apocynaceae	T
19. <i>Gmelina arborea</i>	Melaina	Verbanaceae	T
20. <i>Holarrhena floribunda</i>	Ako-Ire	Apocynaceae	T
21. <i>Khaya grandifoliola</i>	Oganwo	Meliaceae	T
22. <i>Mangifera indica</i>	Mangoro	Anacardiaceae	T
22. <i>Mitragyna stipulosa</i>	Okobo	Rubiaceae	T
23. <i>Musanga cecropioides</i>	Agbao	Cecropiaceae	T
24. <i>Nesogordonia papaverifera</i>	Opepe	Sterculiaceae	T
25. <i>Newbouldia laevis</i>	Akoko	Bignoniaceae	S / T
26. <i>Ochroma lagopus</i>	Akooko	Bombacaceae	T
27. <i>Pentaclethra macrophylla</i>	Pala	Mimosaceae	T
28. <i>Picalima nitida</i>	Erin	Apocynaceae	S / T
29. <i>Pitadeniastrum africanum</i>	Agbonyin	Mimosaceae	T
30. <i>Pterocarpus osun</i>	Osun	Papilionaceae	T
31. <i>Raphia hookeri</i>	Ogoro	Arecaceae	T
32. <i>Rauvolfia vomitoria</i>	Asofeyeje	Apocynaceae	T
33. <i>Ricinodendron heudelotii</i>	Erinado	Euphorbiaceae	T
34. <i>Spondias mombin</i>	Okikan	Anacardiaceae	T
35. <i>Sterculia tragacantha</i>	Olofulofulo	Sterculiaceae	T
36. <i>Tectonia grandis</i>	Tiiki	Verbenaceae	T
37. <i>Terminalia ivorensis</i>	Idigbo	Combretaceae	T
38. <i>Terminalia superba</i>	Afara	Combretaceae	T
39. <i>Treulia africana</i>	Afon	Moraceae	T
40. <i>Triplochiton scleroxylon</i>	Arere	Sterculiaceae	T

**Table 4.** List of Identified Flora Species in the Last Cascade of Arinta Water Fall, Ipole-Iloro-Ekiti.

S/n	Species	Family	Habit
Botanical	Vernacular		
1. <i>Albizia zygia</i>	Ayunre	Mimosaceae	T
2. <i>Alstonia boonei</i>	Ahun	Apocynaceae	T
3. <i>Anthoclesta vogelii</i>	Sapo	Loganiaceae	T
4. <i>Arthocarpus atllis</i>	Berefuutu	Moraceae	T
5. <i>Brachystegia eurycoma</i>	Eku	Caesalpiniaceae	T
6. <i>Cassia sieberiana</i>	Arindan-tooro	Caesalpiniaceae	T
7. <i>Ceiba pentandra</i>	Eegigun	Bombacaceae	T

S/n	Species	Family	Habit
Botanical	Vernacular		
8. <i>Celtis mildbraedii</i>	Ita	Ulmaceae	T
9. <i>Daniellia ogea</i>	Iya	Caesalpiniaceae	T
10. <i>Funtumia elastica</i>	Ire	Apocynaceae	T
11. <i>Glyphaea brevis</i>	Atori	Tiliaceae	S / T
12. <i>Pentaclethra macrophylla</i>	Pala	Mimosaceae	T
13. <i>Piptadeniastrum africanum</i>	Agboyin	Mimosaceae	T
14. <i>Ricinodendron heudelotii</i>	Erinado	Euphorbiaceae	T
15. <i>Sterculia tragacantha</i>	Olofulufulu	Sterculiaceae	T
16. <i>Thaumatococcus daniellii</i>	Eeran	Marantaceae	H
17. <i>Zanthoxylum zanthoxyloides</i> Ata	Rutaceae	S / T	

Table 5. Technical knowledge of Respondents on Identified flora species.

Description	Proportion (%) of Respondents*							
	Aborigines				Tourists			
	A	B	C	AT	A	B	C	AT
Respondents ability to identify flora species at the site	100	100	100	100	20	20	25	22
Respondents ability to identify the ethnobotanical values of over 50% of the identified flora species at the site	100	100	100	100	20	15	25	20

Table 5 shows the technical knowledge of respondents on the identified flora species. While the aboriginal respondents (100%) were able to identify the flora species identified at the tourist sites, only few proportion (22%) of the tourist respondents were able to identify some of the species. Also while all the aboriginal respondents were familiar with the ethnobotanical values of over 50% of the identified flora species at the tourist centres, only 20% of the tourist respondents were familiar with the ethnobotanical values of over 50% of the flora species. Field observation revealed that tourists ethnobotanical knowledge were limited to fruits (especially *Elaeis guineensis* and *Mangifera indica*) and shade trees. They also value the use of trees for fuel though they were deficient in the knowledge of species preference for fuel. Familiarity was also demonstrated for exotic tree

species, especially *Azadirachta indica*, *Gmelina arborea* and *Tectonia grandis*.

The ethnobotanical values of the identified flora species were defined by the aboriginals in the three tourist centres (Table 6). These ranged from medicine (Table 7) to fuel, timber, shade, boundary marking, wrapping leaves and to utilization for mat making. Both the aboriginal and tourists' respondents revealed that most of the identified flora species were not cultivated in their places of domiciliation. Table 8 revealed that only 21% of the identified species were cultivated in the communities housing the tourist centres in this study while the tourist respondents identified only 15% of the identified species as being cultivated. Thus majority of the identified species were not cultivated in the study area.

Table 6. Ethnobotanical Values of the Identified Flora Species as Acknowledged by the Aborigines of the Three Eco-tourists' Centres in Ekiti Western Region of Nigeria.

Ethnobotanical Values	Species
Medicine	<i>A. ferruginea</i> , <i>A. zygia</i> , <i>A. couldifolia</i> , <i>A. boonei</i> , <i>A. vogelii</i> , <i>A. attlis</i> , <i>A. indica</i> , <i>B. auriculata</i> , <i>B. angolensis</i> , <i>B. sternnocarpa</i> , <i>C. schwenfurtii</i> , <i>C. indica</i> , <i>C. sieberiana</i> , <i>C. pentandra</i> , <i>C. albidum</i> , <i>D. ogea</i> , <i>D. manni</i> , <i>E. guineensis</i> , <i>E. cylindricum</i> , <i>F. platyphlla</i> , <i>F. thonningii</i> , <i>F. elastic</i> , <i>G. brevis</i> , <i>G. arborea</i> , <i>H. floribunda</i> , <i>K. grandiflora</i> , <i>M. indica</i> , <i>M. stipulosa</i> , <i>M. cecropioides</i> , <i>N. papaverifera</i> , <i>N. laevis</i> , <i>P. macrophylla</i> , <i>P. nitida</i> , <i>P. africanum</i> , <i>P. osun</i> , <i>R. hookeri</i> , <i>R. vomitoria</i> , <i>R. heudelotii</i> , <i>S. mombin</i> , <i>S. tragacantha</i> , <i>T. grandis</i> , <i>T. glaucescens</i> , <i>T. superba</i> , <i>T. danielli</i> , <i>T. africana</i> , <i>T. scleroxylon</i> , <i>Z. zanthoxyloides</i>
% of the identified species: 91%	
Fuelwood:	<i>A. ferruginea</i> , <i>A. zygia</i> , <i>A. couldifolia</i> , <i>A. vogelii</i> , <i>B. auriculata</i> , <i>B. angolensis</i> , <i>B. eurycoma</i> , <i>B. sternnocarpa</i> , <i>C. schwenfurtii</i> , <i>C. sieberiana</i> , <i>C. pentandra</i> , <i>C. mildbraedii</i> , <i>C. patens</i> , <i>D. ogea</i> , <i>D. mesiliformis</i> , <i>E. cylindricum</i> , <i>F. elastic</i> , <i>G. arborea</i> , <i>H. floribunda</i> , <i>K. grandiflora</i> , <i>M. stipulosa</i> , <i>M. cecropioides</i> , <i>N. papaverifera</i> , <i>N. laevis</i> , <i>O. lagopus</i> , <i>P. macrophylla</i> , <i>P. nitida</i> , <i>P. africanum</i> , <i>P. osun</i> , <i>R. vomitoria</i> , <i>R. heudelotii</i> , <i>S. mombin</i> , <i>S. tragacantha</i> , <i>T. grandis</i> , <i>T. glaucescens</i> , <i>T. superba</i> , <i>T. Africana</i> , <i>T. scleroxylon</i> , <i>Z. zanthoxyloides</i>
% of the identified species: 75%	
Timber / Furniture:	<i>A. ferruginea</i> , <i>A. zygia</i> , <i>A. boonei</i> , <i>B. grandifolia</i> , <i>B. eurycoma</i> , <i>C. schwenfurtii</i> , <i>C. pentandra</i> , <i>C. mildbraedii</i> , <i>C. albidum</i> , <i>D. ogea</i> , <i>D. mesiliformis</i> , <i>E. cylindricum</i> , <i>G. arborea</i> , <i>K. grandiflora</i> , <i>M. stipulosa</i> , <i>N. paverifera</i> , <i>P. africanum</i> , <i>P. osun</i> , <i>R. heudelotii</i> , <i>S. tragacantha</i> , <i>T. grandis</i> , <i>T. glaucescens</i> , <i>T. superba</i> , <i>T. africana</i> , <i>T. scleroxylon</i>
% of the identified species: 47%	
Shade:	<i>A. indica</i> , <i>F. thonningii</i> , <i>F. platyphlla</i> , <i>G. arborea</i> , <i>M. indica</i> , <i>S. mombin</i> , <i>T. grandis</i>
% of the identified species: 13%	
Fruits / Food:	<i>A. attlis</i> , <i>C. albidum</i> , <i>E. guineensis</i> , <i>M. indica</i>
% of the identified species: 8%	
Culture / Spiritual:	<i>C. pentandra</i> , <i>D. manni</i> , <i>N. laevis</i> , <i>P. osun</i>

Ethnobotanical Values	Species
% of the identified species: 8%	
Wine:	<i>R. hookeri</i>
% of the identified species: 2%	
Boundary Marking:	<i>D. manni</i>
% of the identified species: 2%	
Wrapping/Preservation:	<i>T. daniella</i>
% of the identified species: 2%	
Mat:	<i>T. daniella</i>
% of the identified species: 2%	

**Table 7.** Ethnomedicinal Values of Some of the Identified Flora Species as Acknowledged by the Aborigines of the Three Eco-tourists' Centres in Ekiti Western Region of Nigeria.

S/n Species	Ethnomedicinal Values
<i>Albizia ferruginea</i>	Dysentary, constipation, dressing of wounds
<i>Albizia zygia</i>	Measles
<i>Alchornea couldifolia</i>	Cough, Gonorrhoea, fever, rheumatism, ulcer, tooth ache, ringworm
<i>Alstonia boonei</i>	Rheumatism,
<i>Anthoclestia vogelii</i> Yellow	Fever, Gonorrhoea, Dysentary
<i>Arthocarpus atlis</i>	Hypertension, High blood pressure
<i>Azadirachta indica</i>	Malaria, Skin diseases, jaundice, roundworms, head lice
<i>Berlinia auriculata</i>	Rheumatism, Malaria
<i>Bosqueia angolensis</i>	Diarrhoea, STDs
<i>Bridelia sternnocarpa</i>	Malaria, Dental health
<i>Canarium schwenfurtii</i>	Gonorrhoea, rheumatism, round worm
<i>Canna indica</i>	Fever
<i>Cassia sieberiana</i>	Venereal diseases, elephantiasis, dysentery, piles
<i>Ceiba pentandra</i>	Fever, headache, gonorrhoea, syphilis, diabetics
<i>Chrysophyllum albidum</i>	Fever, Malaria
<i>Daniellia ogea</i>	Treating infection
<i>Dracaenia manni</i>	Dressing of wounds
<i>Elaeis guineensis</i>	Malaria
<i>Entandrophragma cylindricum</i>	Fever, cough, diabetics
<i>Ficus platyphlla</i>	Convulsion, toothache
<i>Ficus thonningii</i>	Children ailment
<i>Funtumia elastic</i>	Jaundice, piles
<i>Glyphaea brevis</i>	Gonorrhoea, fever, dressing of wounds
<i>Gmelina arborea</i>	Gonorrhoea, cough, fever, catarh
<i>Holarrhena floribunda</i>	Dysentery, fever, jaundice
<i>Khaya grandiflora</i>	Malaria, Pile, Dysentery
<i>Mangifera indica</i>	Malaria, diarrhoea, diabetes, dysentery, insomnia, piles
<i>Mitragyna stipulosa</i>	Fever, dressing of wounds, cough, dysentery
<i>Musanga cecropioides</i>	Tapeworms, dysentery, fever
<i>Nesogordonia papaverifera</i>	Dysentery, toothache
<i>Neubouldia laevis</i>	Malaria, dysentery, elephantiasis, tooth ache
<i>Pentaclethra macrophylla</i>	Fever, stomach ache, dressing of sores
<i>Picalima nitida</i>	Fever, hypertension, headache, diabetics, chest pains
<i>Pitadeniastrum africanum</i>	Headache, toothache
<i>Pterocarpus osun</i>	Skin diseases
<i>Raphia hookeri</i>	Measles, Malaria
<i>Rauwolfia vomitoria</i>	Hypertension, insomnia, dysentery, diarrhoea
<i>Ricinodendron heudelotii</i>	Elephantiasis, pains
<i>Spondia mombin</i>	Diarrhoea, gonorrhoea, cough, fever
<i>Sterculia tragacantha</i>	Gonorrhoea, fever
<i>Tectonia grandis</i>	Headache, toothache
<i>Terminalia glaucescens</i>	Diarrhoea, dysentery, ulcer, dressing of wound
<i>Terminalia superba</i>	Purgative, pile, malaria
<i>Thaumatococcus danielli</i>	Diabetics
<i>Treculia Africana</i>	Cough, malaria
<i>Triplochiton scleroxylon</i>	Hypertension, Headache
<i>Zanthoxylum zanthoxyloides</i>	Cough

**Table 8.** Cultivation Status of the Identified Flora Species in the Three Eco-tourists' Centres in Ekiti Western Region of Nigeria.

Status	
Aboriginal Respondents Cultivated Species:	<i>A. attlis</i> , <i>A. indica</i> , <i>C. albidium</i> , <i>D. manni</i> , <i>E. guineensis</i> , <i>F. thonningii</i> , <i>F. platyphylla</i> , <i>G. arborea</i> , <i>M. indica</i> , <i>S. mombins</i> , <i>T. grandis</i>
% of the identified species: 21%	
Tourists' Respondents Cultivated Species:	<i>A. attlis</i> , <i>A. indica</i> , <i>E. guineensis</i> , <i>F. thonningii</i> , <i>F. platyphylla</i> , <i>G. arborea</i> , <i>M. indica</i> , <i>T. grandis</i>
% of the identified species: 15%	

## 4. Discussion

The tourist sites examined in this study were adequately suitable for ecotourism. Drum and Moore [17] opined that ecotourism enhanced biodiversity maintenance, provides justification for protected areas, environmental education and visitors' awareness. It also serves as source of revenue and employment as well as enhancing cultural exchange. Field observation made revealed that all tourist centres considered in this study fit into the above. The aboriginal vegetation in the centres was conserved. While the conservation at the River Erin was borne out of taboo, those of the other centres were borne out of government policy.

The aboriginal and tourist respondents cut across the diverse socio-economic classes (Table 1) thus suggesting that all the respondents were conscious of the tourism potentials of the study sites. Hence socio-economic classifications were not considered as necessary pre-requisites to respondents' consciousness on tourism. Previous study by Kayode *et al.* [18] has affirmed that differences in peoples' socio-economy have no negative effect on their consciousness on environmental issues.

The aboriginal respondents demonstrated extensive ecological knowledge on the flora species present in their environment (Table 5) thus confirming the previous assertion of Kayode [19]. Elsewhere, Stewarts [20] asserted that the aboriginal people in North South West of Australia recognised the cultural values of biodiversity and their environment. Field observation revealed that most of the tourist respondents care less about the ecology of flora species in their environment. Similarly they lacked knowledge on the ethnobotanical values of the species (Tables 2-4).

The inability of the tourists to identify and recognise the ethnobotanical values of the identified species could also be attributed to the existence of disturbed environment that abound in many urban areas from where the tourists came from. Such disturbance often resulted in forest fragmentation. Elsewhere in Brazil, Laurence *et al.* [21] observed that mortality of trees in fragmented patches has been found to be twice that of similar trees in the forest interior. Thus it is likely that the destruction of vegetation might have resulted in the loss of traditional ecological knowledge of residents on flora species in such environment. Results from previous study of Nyamadzawo *et al.* [22] also tend to support this 'out of sight, out of mind' position.

Also, the existing education system in Nigeria lacked the study of nature in the curricula of her primary schools that constituted the foundation of knowledge. Field observation revealed that most of the student tourists were Senior

Secondary School students, few of them claimed to be science students. Hence they were grossly deficient on environmental matter thus suggesting that education policy deficient in 'nature's study' might escalate ignorance on environmental issue, especially among the youths.

The protection of the tourist centres examined in this study confirmed their suitability for ecotourism. Annon [23] asserted that ecotourism is a form of tourism involving visiting fragile, pristine, and relatively undisturbed natural areas. Thus suggesting that these centres, are appropriate for educational purposes, especially for study on environmental issues. Results from this study revealed that all three tourist centres enjoyed high visitations especially by students and youths from various parts of the country and abroad who lacked vital knowledge on the ecology and ethnobotanical values of the flora species in these sites (Tables 6 and 7). Previous assertion by Buckley [24] has predicted an ever increasing number of visits to ecotourism centres on a global scale.

Information revealed by the respondents revealed that few species of the identified flora species were cultivated (Table 8). *A. attlis*, *C. albidium*, *E. guineensis* and *M. indica* were cultivated for their fruits. *A. indica*, *F. thonningii*, *F. platyphylla*, *G. arborea*, *S. mombins* and *T. grandis* were cultivated for the provision of shade while *D. manni* was cultivated as boundary marker. Most of the identified flora species were indigenous. Study by Kayode *et al.* [25] asserted that indigenous tree species were often uncultivated in the study area rather dependency, according to Kayode and Omotoyinbo [26], has been limited to the preserved wildlings. Thus, with the rapid decline in the density of indigenous tree species in Nigeria, the conservation of flora species in the tourist centres examined in this study is justified. Knowledge on the ethnobotanical values of the indigenous flora species may constitute positive incentive for their cultivation and domestication.

The primary attractions in ecotourism encompass flora, fauna, and cultural integrity of local people [23]. Observation made revealed that, as at the time of this study, the Hot and Cold Springs has been fully developed with necessary facilities, the development of Arinta Water Fall is at infancy while no reasonable development has been carried out on River Erin. River Erin is located at the heart of the town and the river flows through the entire town (Erinjiyan-Ekiti) hence natives often interact with tourists visiting the river. The Hot and Cold Springs as well as Arinta Water Fall were located at the outskirts of the towns hence limited interactions with natives abound. Efforts should be made to improve on the interactions between the aboriginals and the visiting tourists in these centres.

Similarly, tourism is expected to improve the standard of

living of the aboriginal community [27-29], increase income and investment [30-32], and enhance more business activities for local communities [32]. Field observation and information from the aboriginal respondents revealed that the three tourist centres examined have failed to fulfil these objectives. Efforts should be made to encourage the natives to improve on their economy through the sale of souvenirs, such as literature that enumerate the ethnobotanical values of the flora species and flora products, to tourists.

## 5. Conclusion

There is the need to improve on the potentials of these tourist centres to educate tourists on the biodiversity, ecology and ethnobotany of flora species in the immediate vicinities of the centres. Elsewhere in developed clime, information on the above are often provided such tourist centres thus enabling tourists the opportunity to learn about the biodiversity of the species as well as the cultural heritage of the host communities. The restoration of Nature's Study as a subject in primary schools will also improve the consciousness and awareness of the populace on the conservation of the nation's renewable natural resources.

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