IOSR Journal Of Humanities And Social Science (IOSR-JHSS)
Volume 19, Issue 10, Ver. VIII (Oct. 2014), PP 109-120
e-ISSN: 2279-0837, p-ISSN: 2279-0845.
www.iosrjournals.org

Designing and Developing a Gis Database For Tourism In Nigeria: The Case Of Anambra State

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Abstract: *Tourism has been noted to be one of the important sectors of the Nigerian economy. Tourism is a highly complex activity which requires tools that aid in an effective decision-making to come to terms with the competing economic, social and environmental demands of sustainable development. Geographic Information System (GIS) is one of such tools. GIS being an information system that is capable of answering questions about where facilities and resources are located represents enormous benefits to the tourism sector of any economy. The power of GIS lies not only in the ability to visualize spatial relationships, but also beyond the space to the holistic view of the world with its many interconnected components and complex relationships. The use of GIS technology could assist the Anambra State government as well as the Nigerian government with better planning of tourism infrastructure, location and dissemination of such infrastructure, production of better quality maps showing tourists sites etc because of the dynamic capability of GIS tools to incorporate changes that occur over time to its database. A GIS database for tourism in Anambra State was created using some selected roads, tourist attractions and facilities with the aid of base maps and GPS. This paper presents the significant role that GIS can play in tourism development in Anambra State if a complete database for tourism in the State is designed and developed.*

Keywords*: GIS, Tourism, Anambra, Nigeria*

I. Introduction

Tourism is one of the major sources of income in the world today and an important export industry and chief of foreign exchange in many countries like United States of America (U.SA.), United Kingdom (UK), Germany, China, and Austria while African countries like Kenya and Zimbabwe have approximately 80% tourists coming into their countries primarily for wildlife (Graham-Douglas, 2008). International tourist arrivals reached a record of 982million, an increase of 4.6% in 2010, while receipts grew by 3.8% to US$1.030billion (£740bn) (UNWTO, 2011). Tourism is now the greener pastures most developing countries have focused attention to due to its enormous benefits like infrastructural development, job creation, conservation of environment etc (Okonkwo and Odum, 2010). In Nigeria, it is an important sector that has not fully developed, though; it is one of the country's fastest growing industries (Oladipo, 2010). Recently, it is contributing about 3% of Nigeria GDP (Nigeria Tourism Master
Plan, 2006).

Tourism has historically been dependent on the character of the destination, including attractions, beaches and resorts. It is a complex activity that requires the availability of certain parameters (e.g. accessible road networks, standard accommodation facilities, attractions etc) and information on potential and existing attraction sites. Information on these parameters and attraction sites can be gathered, processed, organized and stored using tools such as Global Positioning System (GPS), Geographic Information System (GIS) coupled with remote sensing. After gathering the needed data about a destination, the data must be stored in a retrievable form to enhance tourism, and this can be achieved with the aid of GIS.

Geographic Information Systems (GIS) is one of the most remarkable technologic innovations in tourism planning and decision making. "Both GIS and tourism share a common characteristic, that is, both cross the boundaries of disciplines and application areas. GIS has been applied in many fields including geography, forestry, urban development and planning, and environmental studies. Similarly, tourism has been a subject of interest to geographers, economists, business, environmental planners, anthropologists, and archeologists" (Avdimiotis and Christou, 2002:1). This makes the potential applications of GIS in tourism significant.

Moreover, maps have been known to play vital roles in identifying and locating tourist attractions. GIS however provides the facility to extract different sets of information (e.g. tourist attractions, hotels and their distances from one another, roads, settlements, vegetation, land use data, changes in tourism resources) from a map and use them as required (Fajuyigbe, Balogun and Obembe, 2007) because of the dynamic capability of GIS tools to incorporate changes that occur over time to its database (see Table 1).

Tourist maps in Nigeria are not easily seen or available, where available it is lacking in comprehension, accuracy and up-to date georeferencing (Olabintan and Ajirotutu, 2012). This paper presents the practical use of GIS to process, organise, store and disseminate already captured data on tourist attraction sites to enhance tourism development in Nigeria with special emphasis on Anambra State where few attractions were mapped and used in preparing a thematic layer.

Table 1: Capabilities of a GIS

Functional capabilities of a GIS	GIS Basic Questions	Tourism Applications
1. Data entry, storage and manipulation	1. What is at? 1.Location	1. Tourism Resource Inventories
2. Map production	2. Where is it? 2.Condition	2. Identify most suitable locations for development
3. Database integration and management	3. What has changed? 3.Trend	3. Measure tourism impacts
4. Data queries and searches	4. Which is the best route? 4.Routing	4. Visitor management/flows
5. Spatial analysis	5.Pattern 5. What is the pattern?	5. Analyze relationships associated with resource use
6. Spatial modelling	6.Modelling	
7. Decision support	6. What if…?	6. Assess potential impacts of tourism development

Source: Bahaire and Elliot-White 1999, p. 159 (cited in Avdimiotis and Christou, 2002:2)

1.1 Definition Of Terms

What is GIS?

GIS is a computer based set of tools for collecting, mapping, analyzing, storing, retrieving, and displaying spatial and non spatial data from geographic world for a particular set of purposes that varies from one discipline to another. It is a computer software that links geographic information (*where things are*) with descriptive information (*what things are*).Unlike a flat paper map, where what you see is what you get, GIS can present many layer of different information (www.esri.com). GIS is both a database system with specific capabilities for spatially referenced data as well as a set of operations for working (analysis) with the data (Wheatley *et al*. 2002). It is also a set of computerized tools used to collect, archive, manage, retrieve, analyze and output geographic and other related kinds of attribute data (Chikwanda 2004).

According to Fellaman *et al* (2008) GIS is "both an integrated software package for handling, processing, and analyzing geographical data and a computer database in which any piece of information is attributed to a precise geographic location. They further explained that a GIS database can be seen as a set of discrete informational overlays lined by reference to a basic locational grid of latitude and longitude.

What is Tourism?

World Tourism Organisation (1995) has defined tourism as "the movement of people to and stay in places outside their usual home for at least twenty-four hours but not more than one consecutive year for leisure, business and other purposes not related to any form of employment from within the place visited." It is the temporary movement of people to destinations outside their normal places of work and residence, the activities undertaken during their stay in those destinations and facilities created to cater to their needs (Cook *et al*, 2006). Tourism is the movement of person(s) (tourist(s) from one socio-cultural background to another with the main intention of engaging in recreation and adventure. There are two main types of tourism namely domestic tourism (residents of a country travelling within their country. A Nigeria from Sokoto travels to Obudu Cattle Ranch in Calabar) and international tourism connotes nationals of a country travelling to another country for instance Nigerians travelling to Spain.

Looking for a comprehensive definition of tourism is elusive, because the definition is marred with a lot of bias, each definition is given based on the authors level of biasness and each generation and epoch defines it based on its usefulness and perception while the interdisciplinary nature of the concept makes the definition more complex (Marguba, 2001 and Odum 2011). Any attempt to define tourism is an all but impossible task (Holloway, 2006). Although Okpoko *et al* (2008) succinctly identified five notable characteristics of most tourism definitions namely:

> (i) *tourism arises from the movement of people to and stay in various destinations as well as their activities therein (ii) that the journey to and the stay take place outside one's normal place of residence and work (iii) that the movement must not be less*

than twenty-four hours and not more than one year. Any movement away from home that is less than 24 hours is referred to as excursion (iv) that the movement to other destination is temporary and short-term, with the intention of returning home within a few days, weeks or months (v) that the money spent during such travel and stay is derived from home and not earned in the destination.

There are various kinds/forms of tourism namely: cultural tourism, religious tourism, business tourism, sports tourism, ecotourism, humane tourism, responsible tourism etc.

Tourism is an activity highly depended on environmental resources. It is also a phenomenon, which in the event of lack of proper planning and management is likely to erode its environmental base, hence, the strength of tourism planning and decision making can be enhanced with GIS applications, which provide a toolbox of techniques and technologies of different applications to the achievement of sustainable tourism planning development.

Tourism cannot thrive without accurate and reliable information about a destination as listed in table 3 (appendix) which will be the main element that will draw tourists/visitors. A tourist/visitor cannot visit a destination he/she has little or no knowledge about. Therefore, there are a whole lot of questions to ask about tourism data e.g. what kinds of tourist attractions are there in a place and their locations? Where are tourists coming from? What attraction do they visit most? What time of the year do they normally come? What types of hotels are in the destinations? The distance between hotels and attractions, is the attractions developed like having lodging and restaurants facilities, etc? All these questions can be gathered, uploaded with the aid of GIS and can be accessed by tourists and updated by tourism planners. Table 2 shows some tourism related issues and GIS applications.

Table 2: Common tourism-related issues and GIS applications

Problems	GIS Application
Benchmark/database	Systematic inventory of tourism resources
Environmental management	Facilitating monitoring of specific indicators
Conflicts	Mapping recreational conflicts: recreation-wildlife; user conflict
Tourism behavior	Wilderness perceptions
Carrying capacity	Identify suitable locations for tourism/recreation development
Prediction	Simulating and modeling spatial outcomes of proposed tourism development
Data integration	Integrating socio-economic and environmental datasets within a given spatial unit
Development control and direction	Decision support systems

Source: Adapted from Butler 1993:33 (cited in Bahaire and Elliott-White 1999:162 and cited in Avdimiotis and Christou, 2002:3).

II. Literature Review

The use of GIS in tourism studies has being minimal though GIS technology has been in tourism related literature over the years (Gunn and Larsen, 1988). Some scholars are of the view that its application has been limited to recreational facility inventory; visitor impact assessment; tourism-based land management, recreation- wildlife conflicts, mapping wilderness perceptions (Nedovic-Budic *et al* 1999; Feick and Hall, 2000; Nepal, 1999; Caver, 1995 in Wayne, 2003).

GIS has been applied in designing and development of tourism destinations in Zlatibor (Cajetina) and Zlatar (Novavaros) areas of Serbia (Jovanovic and Ngegus, 2008); while Avdimiotis and Christous (2002) used GIS to establish or measure the carrying capacities of the Muncipality of Chalkidiki, Greece. According to them the carrying capacity can be defined as the maximum number of tourists that can be accommodated in a specific area (place of reception) of tourists) without causing any desirable alteration in the natural-economic and social environment of the host community. Seker et al (2002) applied GIS to support planning activities for tourism in the Manavgat region located in southern coast of Turkey, and focused on the analysis, decision making and management using GIS technique.

In Nigeria, Fadahunsi (2010) portrayed the importance of GIS and tourism management using it to create awareness of the existence of the tourist attraction centres to the prospective visitors in Osun State. In a related study, Omitogun and Oyinloye (2008) worked on Osogbo grove in Osun State with the aid of remote sensing and GIS in order to get the sacred grove registered on the World Tourist Map. Similarly, Ayeni (2006) developed a user-friendly Multimedia GIS database which constitutes a great resource for producing various tourist maps of Nigeria and for educational institutions offering courses in tourism in Nigeria. Fajuyigbe et al (2007) developed a web-based Geographical Information System (GIS) for Tourism in Oyo State, Nigeria and

their project revealed that presenting tourism information in GIS in a computer environment and the internet would offer an unparallel platform for the management and promotion of the tourism industry in Oyo State.

Though, the integration of tourism data and GIS data is still a big challenge for the tourism industry today , it was observed from the reviewed literatures that using GIS always keeps the information up to date, reduces cost and saves time, provides information for decision support and policy making, increases efficiency in tourism activities, increases management control etc (Avdimiotis and Christous, 2002; Seker et al 2002; Ayeni, 2006; Fajuyigbe et al 2007; Fadahunsi, 2010). The advantages of GIS in tourism as identified above, informed the choice of this research which sought to design and develop a GIS database for tourism using spatial and attribute data in Anambra State as this has not been done for the State.

III. Study Area

Nigeria is located within Latitudes 4° and 14°N, and Longitudes 3° and 15°E. It is bordered by the Republic of Benin in the west, Chad and Cameroon in the east, Lake Chad in the northeast, Niger in the north and has a coast that lies on the Gulf of Guinea in the south. Nigeria has a land area of 910770 Sq.Km. Some notable geographical features in Nigeria include the Mambilla Plateau, Biu plateau, Adamawa highlands, , Jos Plateau, Obudu Plateau, the Niger River, River Benue and Niger Delta.

Etymologically, Anambra derived its name from Omambala River which is easily called Anambra River. Omambala River is on the Northern part of Anambra State and stretches to the famous River Niger (Anambra State Diary 1994 in Odum 2011). The indigenous ethnic groups in Anambra state are the Igbo (98% of population) and a small population of Igala (2% of the population) who live in the North western part of the state (http://en.wikipedia.org/wiki/Anambra_State).

Anambra State is geographically located in the southeastern Nigeria, and it is bounded by Delta State to the West, Imo State to the South, Enugu State to the East and Kogi to the North. It is located between Latitude 5°41.293'N and Latitude 6°46.327'N, and Longitude 6°37.014'E and Longitude 7°21.608'E. It has one of the highest population's densities in Africa. The State comprises numerous thickly populated villages, a number of small towns and a few major towns; some areas are so thickly populated that the estimated density is 1500-2000 persons living within every square kilometer (www.anambrastate.org). In 2006, the population was estimated to 4,182,032, while the density remains 863/km in 2006 (Anambra State Government Pamphlet 2008 in Odum 2011) with a total land area of 4,844 km^2 (1,870 sq mi) (www.anambrastate.org).

IV. Methodology

Tourism attractions in Nigeria data were classified into four types viz; Natural, Historic, Man-made and Cultural attractions (see appendix for the list of tourism attractions in Anambra State and Nigeria).

4.1 Creating GIS database for tourist attraction sites

GIS makes use of two data elements spatial and attribute data. Spatial data is referred to as a known location (established longitude and latitude coordinates) on the surface of the Earth. The spatial data elements comprises of using of exact standard geographical frame of reference such as latitude and longitude, and using surrogates spatial references like postcode while the attribute data show statistical and non-location data (e.g. images, texts) associated with a spatial entity (Jovanovic and Njegus, 2008:263). The Database for these tourism (attractions) data was created using the co-ordinates of their geographical locations in their various States in Nigeria. The spatial data were developed using Google Earth (web mapping application) and ArcGIS 10.0 software.

4.2 Methods of data acquisition

Two methods were employed viz; primary and secondary.

4.2.1 Primary data: the co-ordinates of the sampled attractions and some tourism facilities in Anambra State were collected by ground truthing with GPS.

4.2.2 Secondary data: these were collected through journals and literatures e.g. the list of attractions and the States where they are located.

4.3 Procedure for the development of the GIS database

- Trace the 36 States of Nigeria and roads (Keyhole Markup Language (KML) shape files) on Google Earth which are already geo-referenced. These formed the base maps. Keyhole Markup Language (KML) is the primary mechanism supported by Google for interchanging GIS data, maps, and graphics information in the Google Earth and Google Maps communities. In addition, map services published using ArcGIS Server can be served using KML. Dynamic KML content is retrieved each time the map service is accessed from ArcGIS Server. This enables up-to-date KML content to be served for dynamic GIS content.

- Import these KML polygons and paths (shape files) into ArcGIS 10.0 and convert them to layers using the Conversion Tools in ArcToolbox.
- Create another shape file (points) to locate the various attractions.
- Merge the different polygon (e.g. States shape files) into one layer using the ArcToolbox in Arcmap (See Fig.1).
- Create relationships and queries among the features (See Fig.1 and 2). E.g. The Analysis (Proximity) tools in the ArcToolbox can be used to calculate the nearest distances from one attraction to another.

The procedure above was followed to produce Fig.2, a thematic map layer showing selected hotels and tourist attraction sites in Anambra State. With data on tourism facilities like the road network, hotels, flora and fauna inventory, modes of transport, locations of airports, banks and parks, towns in Anambra State, Nigeria etc, tourists and the public can get answers to certain questions (e.g. the distance to different towns, the nearest hotel) by making queries once linked to a webpage (using the hyperlink tool on the GIS software).

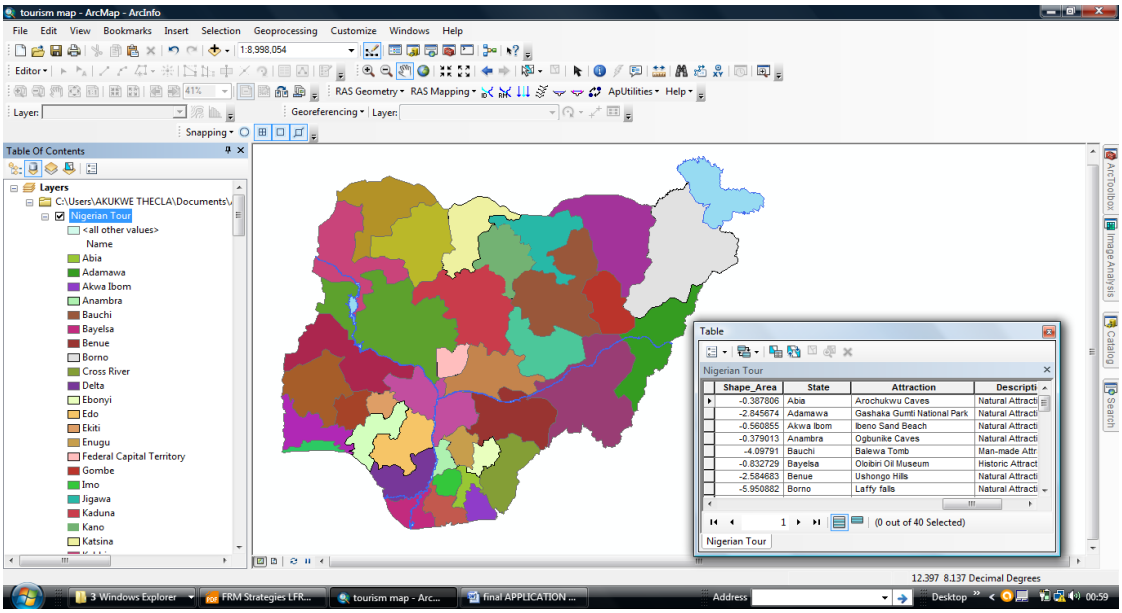

Fig.1: Map of Nigeria showing the 36 States where tourism attractions are located
Note the attribute table in the figure.

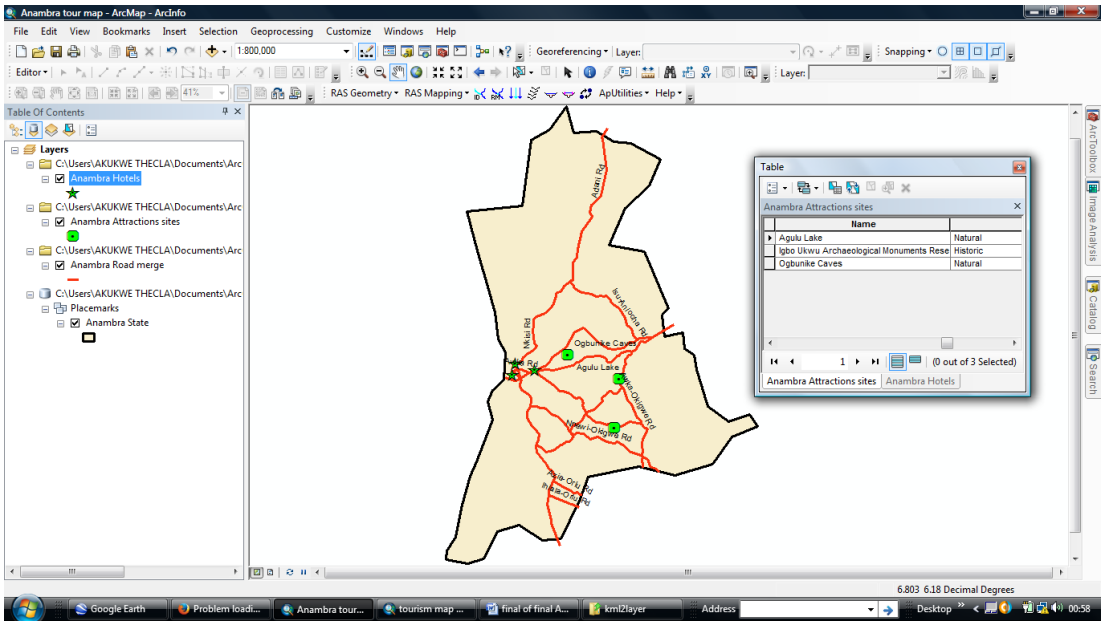

Fig.2: Map of Anambra State showing major roads and some tourism attractions.

3.4 The Role of GIS in Tourism

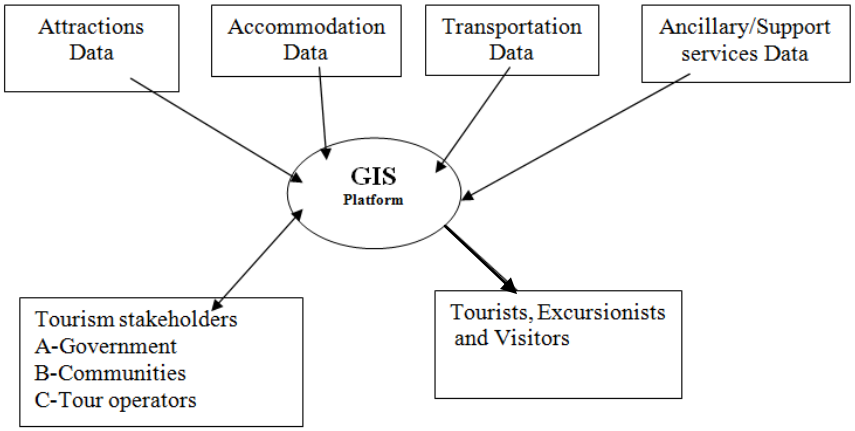

Fig.3: A proposed Tourism-GIS model of communication

V. Importance of GIS Application In Tourism

GIS in tourism is advantageous to both tourists and for the tourism development authorities. These advantages are outlined below;

1. GIS gives detailed and enriched information about a tourist destination

A GIS database would give intending tourist enlightenment and enriched information of his/her destination of choice as well as the various cultural and natural attractions therein. Moreover GIS data/information will assist tourist in making comparative analysis to know areas to visit. This is possible once the GIS database (showing tourism attractions and facilities) is linked to the Anambra State website.

2. **GIS Applications helps in Tourism Planning and Decision Making Process**

Tourism development is a complex phenomenon, because stakeholders have to face challenges like other competitive economic, social and environmental requirements of sustainable development. Environmental exploration, impact assessments and simulation are vital to tourism development, and GIS can assist in auditing environmental conditions, assess the suitability of an area/location for any proposed tourism development, taking cognizance of conflicting interests and modelling relationships (Bahaire and Elliot-white, 1999:159). GIS gives room for comparative study of land use options and other environmental resources e.g. there are areas that might have a good attraction but it may not be developed rather will be more useful in other activities like agriculture or industrial sites. A complete GIS database will help Anambra State Authority weigh their options of either investing in tourism or other alternatives like farming.

3. **Creation of Inventory and data base for tourism experts, tourists and different stakeholders**

GIS application helps in performing numerous tasks in tourism planning and development. First is creating resource inventory, area designation and map overlay, comparative land use and impact analysis, community participation, data integration and management etc. Its application can provide different types of information and maps which can be of enormous benefits to Nigeria Tourism Development Co-operation (NTDC), travel agencies, tour operators in Nigeria for easy planning and allocation of resources.

4. Monitoring of trends, events and movements and adaptive to change

During festival periods like fishing festivals, Dubar, boat regatta, New Yam festival, the popular Calabar festival etc. Tourism planners and Nigeria Tourism Development Co-operations (NTDC) can use GIS technology to monitor such big events. This will assist in the area of indicating the population size, the pattern of movements, and impacts of tourists on the environment. Once a GIS database has been created, it can be updated easily by adding new features to already existing ones. For example, trend analysis can be done using GIS tools to monitor changes over the years. GIS can provide a set of tools, which can be used for tourism planning and development. Also, GIS tools can equally be employed to monitor the movement of animals in game reserves and National parks, especially animals that are going into extinction. Similarly, the trend of cultural festivals (e.g. New Yam festivals, Ofala Festival, Mmanwu) in Anambra State can be monitored and analyse with using GIS.

5. **Internet Advantage/ Reduction in fraud**

GIS application over internet (web-based GIS) is a landmark technological development in tourism planning and policy making. The internet has opened new ways of computer related communications, giving room for new methods of information circulation, group working, social interaction/chatting, and easy integration of models and samples of ideas. The multimedia ability of the web has made it a medium for visual representations like graphs and diagrams of different forms, maps, and images are now easy to implement as text (Avdimiotis and Christou, 2002). With the adaptability and capability of GIS on the internet, tourists can confirm geographical information with tour operators on line and access other vital information. This will help to reduce fraudster who usually place none existing destination in other defraud unsuspecting tourists.

VI. Challenges Of GIS in Tourism in Nigeria

- Human resource - tourism development and practice is still relatively new in this part of the world, while government is yet to pay adequate attention needed to develop the sector. The number of tertiary institution offering tourism and GIS courses is still low. This creates a big gap in creating the man power needed to drive the industry. Similarly, GIS training in Nigeria is still very low due to lack of expertise and the newness of the technology in the country.
- Non acceptance of technological advancement/ ignorance of the current trends of events - some Nigerians are sluggish in changing from the traditional/primitive ways of data collection and analysis; they still prefer the manual method of using their drawing boards, pens, tracing sheets, makers, T-square etc. While some prefer their analogue method where data are acquired and store in boxes in the office and manually retrieved when the need arises, some are of ignorant of the current trends of events (the use of GIS technology). Most tourism units and departments in Nigeria, still prefer manual/traditional method of data collection especially in the area of inventory probably due to the financial gains as a result of going to site (duty allowances) than learning the GIS and that is easy and fast; giving answers in seconds and minutes.
- Expensive nature of GIS Laboratory- a complete GIS laboratory requires some expensive equipment and software (including remote sensing tools). The Nigeria SAT-1 that was launched in September, 2003 cost Nigerian government a whooping sum of $13m. The cost of acquiring GIS components and software is equally expensive. Since Department of Tourism is still under Ministry of Information and Culture in Anambra State, it is difficult to convince the State on the imperativeness of GIS technology.
- Poor public awareness- the knowledge, benefits and functions of GIS is not known beyond tertiary institutions that offer GIS as a course of study. Fadahunsi (2010) added that "many see GIS as a "beyond–the-reach" technology, while some mystify it; this has kept many from grasping the immense opportunity and power it gives especially in decision making". Therefore, one may ask, how many tourism departments, ministry and parastatal have the knowledge of this GIS?

VII. Recommendations

There is urgent need to critically look into potentials of application of GIS in the tourism industry of Anambra state and Nigeria at large. Other countries of the world and multinationals are benefitting from this technology. Example, Hertz Corporation is using the technologies of geographic information systems, global positioning satellites (GPS), and electronic route guidance software in its Hertz NeverLost[sm] system. When a traveler picks up a Hertz NeverLost[sm] equipped rental car, he or she can punch in the address of a hotel and receive computer-generated voice instructions and video display of the directions (Cook *et al*, 2006).

Institutions of higher learning are to take the lead in the integration of GIS into various courses with special interest in archaeology (including geography) and tourism studies with the aim of making tourism in Nigeria meet up with international standards (Olukole, 2007). It will also equip Nigerian graduates to compete favorably with their peers all over the world, and we equally advocate for establishment of GIS centers in all the thirty-six States of the federation.

It is highly recommended that the application of GIS in tourism in Nigeria should be diversified (it should involve other attractions like the National parks, Game reserve, protected areas, caves, waterfalls etc). It should not be on only cultural attractions and this will help to re-direct the tourist pressure on these cultural tourism (especially fishing festivals, Calabar carnival, and Abuja carnival, New yam festival) areas to avoid exceeding some destination's carrying capacity which will lead to environmental degradation.

VIII. Conclusion

Tourism has been noted as one of the world's largest, fast and rapid growing sector with a contribution of 10% to global GDP, creating employment for 200 million people. The importance of GIS to tourism cannot be overemphasized. It is beneficial to both tourist operators and tourists themselves. Its ability to add changes in an existing destination makes it appealing to marketers while changes brought by tourist activities/tourism

related activities can be monitored with GIS thereby ensuring sustainability because such changes can be monitored and remedied if it is detrimental. GIS being an information system that is capable of answering questions about where facilities and resources are located presents enormous benefits. Until recently, the use of GIS in Nigeria has been limited to oil fields, hydroelectric power, national forest and agriculture among others at the expense of other projects like tourism and archaeological projects. NTDC is yet to make good use of such facility. This is seen in the dearth of a comprehensive and detailed map of tourist attractions in the country.

Anambra State is one of the States in the Eastern Region with numerous tourist attractions yawning for development. GIS is a vital tool that can be explored by the State to develop its tourism potentials and expand its tourism market. It gives accurate location of distances between one attraction to the other, road networks, hotels, distance between hotels and attractions etc. If a tourist is armed with detailed information about a destination it might increase his/her appeal to such a destination. A look at Fig.2 shows a GIS platform with few tourism attractions and hotels in the State which a tourist can use to know what is obtainable and other attributes of his destination.

Therefore, the application of GIS in tourism is recommended because of the easiness and fastness in identifying tourist sites and attractions with accompanied details so that Nigeria will have a comprehensive map of what they have in each State, Local Government Area and Town.

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Table 2: List of States in Nigeria with some of their attractions

S/NO	STATE	ATTRACTIONS	DESCRIPTION
1	**Abia**	Arochukwu Caves	Natural Attraction
		National War Museum Umuahia & Museum of Colonial History Aba	Historic/Man-made Attraction
		Akwette Weaving Centre Arts and Crafts (Souvenirs)	Cultural Attraction
		Long juju of Arochukwu Cultural festivals	Cultural Attraction
		Azumini Blue River	Natural Atraction
		Museum of Colonial History Monument	Man-Made/Historic
2	**Adamawa**	Gashaka Gumti National Park	Natural Attraction
		Sukur (UNESCO World Monument Heritage Site)	Man-made/cultural Attraction
		Lamurde Hot Spring	Natural Attraction
		Modibbo Adam's Tomb Monument	Man-made Attraction
		Three Sister Rocks Monument and Mandara Mountains	Natural Attractions
		Kiri Dam	Natural Attraction
3	**AkwaIbom**	Ibeno Sand Beach	Natural Attraction
		IBOM Mobil oil treatment	Man-made Attraction
		Ekpo Masquerade festival	Cultural Attraction
		Oron Museum/ Monument	Man-made Attraction
		Mary Slessor House/ Monument Tomb	Historic Attraction
4	**Anambra**	Ogbunike Caves	Natural Attraction
		Rojeny Tourist Village	Man-made Attraction
		Agulu lake/Gully	Natural Attraction
		Aguleri Game Reserve	Natural Attraction
		Igbo Ukwu Archaeological Monuments Reservations	Historic Attraction
		Egwu-imo-awka festival	Cultural Attraction
		Owerre-ezukalla cave	Natural Attraction
		Ajalli cave	Historic Attraction
		Ufuma cave	Historic Attraction
		New Yam Festival	Cultural Attraction
5	**Bauchi**	Balewa Tomb	Man-made Attraction
		Lame/Bura Game Reserve	Natural Attraction
		Geji Rock Painting	Historic Attraction
		Yankari National Park	Natural Attraction
6	**Bayelsa**	Oloibiri Oil Museum	Historic Attraction
		Slale Transit Hall Resort	Man-made Attraction
		Igidi Shrine	Cultural Attraction
		Kolo Creek	Natural Attraction
7	**Benue**	Ushongo Hills	Natural Attraction
		Ikwe Holiday Resort	Man-made Attraction
		Enemabia Warm Spring	Natural Attraction
		Kwag-hir Puppet Festival	Cultural Attraction
		Dajo Pottery, Makurdi Traditional TIV Anger Weavers Monument Ajikpo	Cultural Attraction
		J.S. Tarka Foundation Cultural Centre Makurdi	Man-made Attraction
		Montane Game Reserve	Natural Attraction
		Katsina-Ala River	Natural Attraction
8	**Borno**	Laffy falls	Natural Attraction
		Chad Basin National Park	Natural Attraction
		Abba Kari Zoo	Natural Attraction
		Gwoza Hills Natural	Natural Attraction
		Sambisa Game Reserve	Natural Attraction
		Kyarimi Amusement Resort	Man-made Attraction
9	**Cross River**	Kwa falls	Natural Attraction
		Agbokim falls	Natural Attraction
		Obudu Cattle Ranch Resort	Man-made Attraction
		Cross River National Park	Natural Attraction

		Ekpe Masquerade	Cultural Attraction
		National Museum and Monuments	Man-made Attractions
		Slave history museum	Man-made Attractions
		Old residency museum	Man-made Attractions
		Tinapa	Man-made Attractions
		Marina Resort	Man-made Attractions
10	**Delta**	Chief Nana's Palace	Cultural Attraction
		Ethiope River	Natural Attraction
		Escravo's Beach	Natural Attraction
11	**Ebonyi**	Umuana Afikpo Golden Natural Lake Sand Beach	Natural Attraction
		Quarry Sites	Man-made Attraction
		Salt mining site in Ubulu	Man-made Attraction
12	**Edo**	Fugar Caves	Natural Attraction
		Okomu Wildlife Eco-Tourism Sanctuary	Natural Attraction
		Igun Bronze Casting,	Cultural Attraction
		Oba's Palace, Benin	Cultural Attraction
		Ramat Park	Man-made Attraction
		Sakpoba Holiday Resort	Man-made Attraction
		Asoro Shrine	Cultural Attraction
		Samorikal Hills	Natural Attraction
13	**Ekiti**	Erinta Falls	Natural Attraction
		Olosunta Hills	Natural Attraction
		Ikogosi, Warm Spring	Natural Attraction
14	**Enugu**	Mmanwu Festival	Cultural Attraction
		Nike Holiday Resort	Man-made Attraction
		Ezeagu Tourist Complex	Man-made Attraction
		Nkalagu Silicon Sand	Man-made Attraction
		Iva Valley Coal Mine	Natural-made Attraction
		Iheneke Lake	Natural Attraction
		Ezeagu Cave	Natural Attraction
		Museum of National Unity	Man-made Attraction
15	**FCT**	Abuja Amusement Park,	Man-made Attraction
		Abuja Gardens	Man-Made Attraction
		Abuja Zoological Garden and Zoo	Man-made Attraction
		ECOWAS Secretariat Man-made	Man-made Attraction
		Women Development Resort	Man-made Attraction
		Abuja Plant Nursery	Man-made Attraction
		Aso Rock	Man-made Attraction
		Usman Dam	Man-made Attraction
		IBB Golf Course Sports	Man-made Attraction
		Jabi Dam	Man-made Attraction
16	**Gombe**	Tula Highlands/Hills Physical	Natural Attraction
		The Famous Tangale Dome Shaped Rock/Hill Formation	Natural Attraction
		Dadin Kowa Dam/Tomatoes Factory & Farms	Man-made Attraction
		Buba Yero Tomb	Man-made Attraction
17	**Imo**	Oguta Lake	Natural Attraction
		Ikeji Festival	Cultural Attraction
		Palm Beach Holiday Resort, Ibawari-Ogwa village	Man-made Attraction
		Zoological and Botanical Garden	Natural Attraction
		Mbari-cultural center	Man-made Attraction
		Amusement Park	Man-made Attraction
		Owerri Zoo	Man-made Attraction
18	**Jigawa**	Hadejia/Ngum Wetlands and Bird Sanctuary	Natural Attraction
		Ringim Dyeing Pits	Cultural Attraction
		Baturiya Birds Sanctuary Wildlife	Natural Attraction
		Wowan Rafi Lake	Natural Attraction
19	**Kaduna**	Luggard Hall and Government Monument Bridge	Historic Attraction
		General Hassan Usman Park	Man-made Attraction
		Nok Terra Cotta, Nok Village	Cultural Attraction
		National Museum	Man-made Attraction
		Emir of Zazzau's Palace	Cultural Attraction
		Jakaranda Pottery	Man-made Attraction
20	**Kano**	Roxy Amusement Park, Cooky Amusement Park Kano	Man-made Attraction
		Hills and Valleys Amusement Park Dawakin Kudu Junction	Man-made Attraction
		Bagauda Lake/Tiga Lake Resort	Man-made Attraction
		Audu Bako Zoo	Man-made Attraction
		Durbar	Cultural Attraction
		Gidan Makama Museum	Man-made Attraction
		Emir of Kano's Palace	Cultural Attraction

		Kofar Mata Dyeing Pit	Cultural Attraction
		Bagauda Lake Resort Conference Centre	Man-Made Attraction
21	**Katsina**	300 years old Gobarau Minaret	Cultural Attraction
		Emir of Katsina Palace	Cultural Attraction
		10th Century Kusugu Well	Cultural Attraction
		11th Century KASTINA City Walls of 7 gates	Historic Attraction
		Jibia Holiday Resort	Man-made Attraction
22	**Kebbi**	Argungu Fishing Festival	Cultural Attraction
		Kanta Museum (Monument)	Man-made Attraction
		Girmace Shrine in Zuru	Cultural Attraction
		Emir of Gwandu's Palace	Cultural Attraction
		Emir of Argungu's palace	Cultural Attraction
		Emir of Zuru's palace	Cultural Attraction
		Rima River	Natural Attraction
23	**Kogi**	Ata Igala's Palace	Cultural Attraction
		Inikpi (Shrine) Statue (Monument)	Cultural Attraction
		Kpata Rock	Natural Attraction
		Confluence Zone (River Niger and River Benue intercession)	Natural Attraction
		Confluence Hotel	Man-made Attraction
		Relics of Colonial History	Historic Attraction
		Lord Luggard's Residence & Office	Historic Attraction
		Iron of Liberty Monument	Man-made Attraction
24	**Kwara**	Owu Water Falls	Natural Attraction
		Wreckage of Mungo Park Boat (Monument)	Historic Attraction
		Owe Kajita Falls and Owu Water Falls	Natural Attraction
		Ubo Aiyegunle Lake	Natural Attraction
25	**Lagos**	Bar Beach, Badagry Beach, Kaiyetoro Maiyegun Beach, Eleko Beach, Lekki Peninsula.	Natural Attraction
		Apapa Amusement Park, Frankid Leisure Park, Festac Resort	Man-made Attraction
		Lekki Conservation Centre	Man-made Attraction
		National Museum, Onikan Museum	Man-made Attraction
		Slave Relics (Monument)	Historic Attraction
		First Storey Building (Monument)	Historic Attraction
		MUSON Centre, and National Theatre	Man-made Attraction
		Oba's Palace	Cultural Attraction
		Eyo Festival	Cultural Attraction
26	**Nassarawa**	Peperuwa Lake	Natural Attraction
		Late Captain Maloney Tomb	Man-made Attraction
		Ogan Fishing and Cultural Festival	Cultural Attraction
		Akiri Warm Spring with Curative Power	Natural Attraction
		Dyeing Pits and Calabash Carving in Lafia	Cultural Attraction
		Farin Ruwa Falls Wildlife/Eco-Tourism	Natural Attraction
		Numan Rocks	Natural Attraction
		Eggon Hills and Caves	Natural Attraction
		Keffi Hunting (competiton)	Cultural Attraction
27	**Niger**	Gurara Falls	Natural Attraction
		Zuma Rock	Natural Attraction
		Kainji Lake National Park Wildlife	Natural Attraction
		Brass/Glass Works in Bida	Cultural Attraction
		Shirro Dam Tourist Resort	Natural/Man-made Attraction
		Mayanka Water Falls	Natural Attraction
28	**Ogun**	Adire Market	Cultural Attraction
		Olumo Rock	Natural Attraction
		Birikisu Sungbo Shrine	Cultural Attraction
		Obute-Oni Tourist Beach	Natural Attraction
		Alake of Egbaland (Monument)	Historic Attraction
		Ogunde Theatre Centre (Monument)	Man-made Attraction
29	**Ondo**	Idanre Hills	Natural Attraction
		Ipale Iloro Water Fall	Natural Attraction
		Owo Museum	Man-made Attraction
30	**Osun**	Mat Weaving	Cultural Attraction
		Ooni's Palace	Cultural Attraction
		Osun Osogbo Festival	Cultural Attraction
		Obafemi Awolowo University	Cultural Attraction
31	**Oyo**	Igbeti Hills	Natural Attraction
		Trans Amusement Park	Man-made Attraction
		Captain Bower, Tower(Monument)	Man-Made Attraction
		Agodi Gardens	Man-made Attraction

		Old Oyo National Park	Natural Attraction
		University of Ibadan Zoo/ Zoological Garden	Man-made Attraction
		Alaafin of Oyo's Palace	Cultural Attraction
		Calabash Carving	Cultural Attraction
		Ado-Awage Suspended Lake	Natural Attraction
		Aso Oke Weaving	Cultural Attraction
32	**Plateau**	Assop Falls	Natural Attraction
		Shere Hills	Natural Attraction
		International Youth Tourism Centre	Man-made Attraction
		Rayfield Resort	Man-made Attraction
		Jos Wildlife Park	Natural Attraction/Man-made
		Jos Zoo	Man-made Attraction
		MONTANA Museum	Man-made Attraction
		Naraguta Leather Works, Arts & Crafts	Man-made/Cultural Attraction
		Solomon Lar Amusement Park	Man-made Attraction
33	**Rivers**	Monument of King Jaja of Opobo	Man-made Attraction
		Okrika Aquatic Stadium	Man-made Attraction
		Ifoko Beach	Natural Attraction
		Port Harcourt Tourist Beach	Natural Attraction
34	**Sokoto**	Tomb of Usman Dan Fodio	Man-made Attraction
		Sultan's Palace	Cultural Attraction
		Sokoto Museum	Man-made Attraction
35	**Taraba**	Mambilla Holiday Resort	Man-made Attraction
		Gashaka Gumti National Park	Natural Attraction
		Kpambo and Fikiyu Mysterious Rocks	Natural Attraction
36	**Yobe**	Dufuna Canoe	Historic Attraction
		Nguru Bird Life Project	Natural Attraction
		Gujba Forest Reserve Wildlife	Natural Attraction
		Fika Ancient Town	Historic Attraction
		Mai Madrinama's Palace	Cultural Attraction
37	**Zamfara**	Kuyambana Game Reserve	Natural Attraction
		Dashi tunnel	Natural Attraction
		Kiyawa city wall	Historic Attraction
		Bakolori dam	Man-made Attraction

Source: Adapted from Nigeria First National Biodiversity Report 2001)