



Research Paper

Application of Geospatial Techniques for Tourismsite at Sukur in Madagali Local Government Adamawa State

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Abstract

The study used geospatial technology in producing a map that will assist tourists in finding their way around Sukur tourism attraction in Adamawa State. Sukur is located in Madagali Local Government (LGA) of Adamawa state, which is in the North-Eastern part of Nigeria. It has very rich cultural heritage as well as natural landscapes, this creates potentials for major tourism activities. In this paper, coordinates of the study area was collected during field work through the use of a Global Positioning System. then the tools inthe Arc Gis,10.3 software was utilized to produce a map that identifies the roads and villages close to Sukur. The result is a guide map to assist tourists, visitors, villagers and policy makers in finding their way around Sukur at a glance using the map. This can increase public awareness of this region and if there is proper enlightenment, it can generate income.

Keywords: SUKUR KINGDOM, ARGIS, GEOSPATIAL TECHNOLOGY, GIS

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I. Introduction

Tourist maps are one of the most common groups of cartographic documents. Their variety in terms of content, subject matter and publication titles is a result of growing popularity of diverse forms of tourismactivity. Kacper et al (2017)

The production of maps using geospatial maps assists tourists in finding directions easily, maps can either be road maps, street guide maps, political maps or maps showing airports, railways etc. in tourism it can be maps givingdetailed information about different parks, museums, waterfalls, heritage sites or several kinds of attractions.

Sukur kingdom, is one of the ethnic groups located in the west of Mandara mountains within the Sukur district of Madagali North development area in Madagali Local Government area of Adamawa state of Nigeria, Sukur kingdom flourished between the early 16th and late 18th centuries as a cultural landscape. In 1999, Sukur cultural landscape became a world heritage site (WHS) and the first to be named in Nigeria. However, the survival of the cultural landscape is in serious doubt, especially with the recent spate of terrorist attacks which have ravaged the Northeastern region of Nigeria. This is more worrisome because not many research has been conducted in the area to highlight and document the tourism potentials of the landscape, to help spur more attention. Eysisi et al 2019

The GTTD contains international and domestic trips for 12,568 origin-destination links between and within 221 countries. Each record describes number of trips, average one-way distance between origin and destination, total return distance travelled, and direction of trips. For example, Austria-Belgium and Belgium-Austria are distinct records. Furthermore, the database contains data about total population, GDP per capita and the area of each country (Peeters & Landré 2012). Main sources and methods to build the GTTD are:

- domestic tourist trips per country, based on the relationship between number of trips and GDP per capita
- domestic average distance, based on the relationship between country area and known domestic tourist trip distance averages per EU country (Peeters et al. 2007)
- 15 largest domestic flows redistributed over distance classes, with averages of 200, 400, 600 and up to 6,000 km one-way (Peeters and Landré 2012)

Additionally, it is possible to create flow maps with ArcMap with the help of some tools from ArcToolbox. One can decide to split the OD table in two parts, one for intra-regional flows and one for inter-regional flows, or not. It is recommended to split the table. The flow map then distinguishes between inter-

regional trips represented by graduated symbols and intraregional trips represented by proportional symbols. This is visually more attractive. Martin Landré* & Paul Peeters

Data can be obtained through field work, satellite imageries, Google Earth and government ministries. Global positioning systems either hand held or differential Global Positioning System can be used to collect coordinates of tourism sites, access roads or places of interest that can aid a guide map production

The aim of this research is to produce a map showing the roads and villages leading to Sukur tourist destinations in Madagali Local Government of Adamawa state, Nigeria. Even though Sukur has been in existence for several years, it will be of tremendous benefit to write more about its tourism sites and produce more maps.

Furthermore, the objective of this research is to present an update information through map production, on routes and services which can aid people in finding this place.

II. Materials And Method

This research used both primary and secondary data. The secondary data included satellite imageries, journals. Magazines and existing maps. The primary data is coordinates of the study area using a handheld Global Positioning System

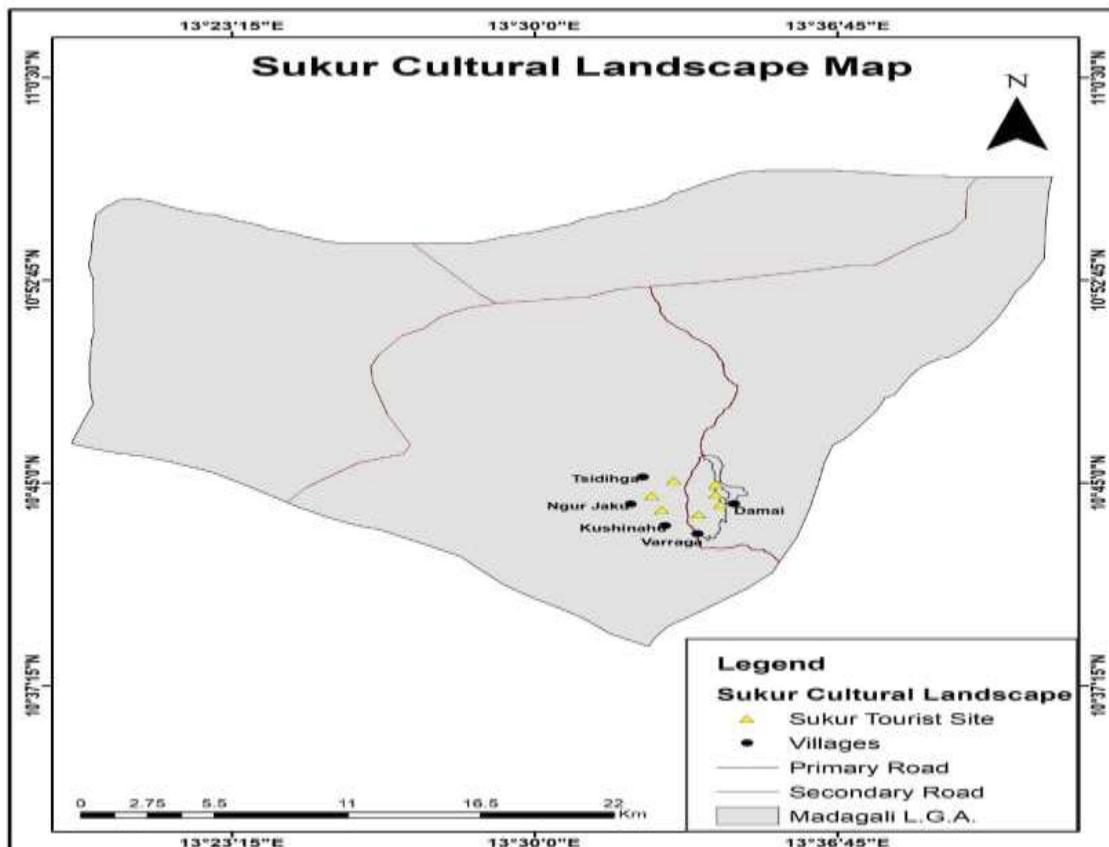
Coordinates of the study region was collected from the field using a Global Positioning System, then more data was also collected using Remote Sensing Application and then processed through Geographic Information System.

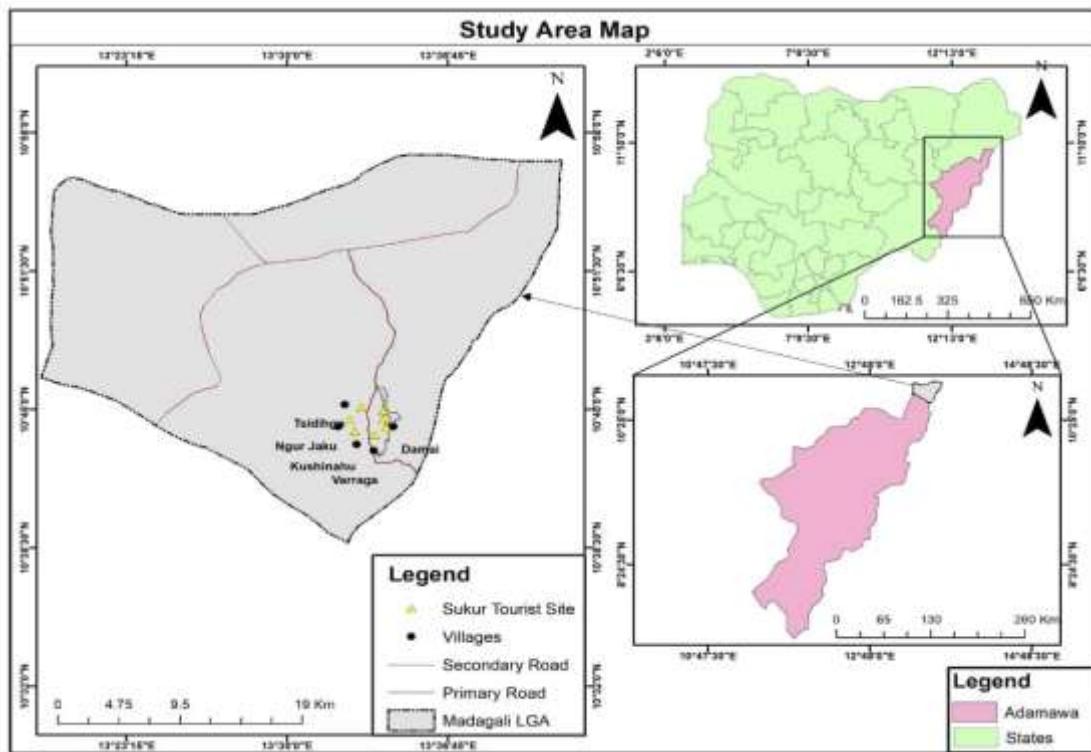
The existing maps was used for accuracy assessment as well as verification of the boundaries of the study area, names of the settlements and roads leading to Sukur.

The coordinates were plotted based on the coordinates from the handheld GPS, it can also be overlaid on the boundary or an imagery, this is to make sure that the analysis is done on the study area without going out. All pre-processing tasks was done using the ArcGIS 10.3

III. Results

ArcGIS 10.3 was used to design the map. The Figure below shows the map of the villages, primary and secondary roads that will assist Tourist in finding their way to Sukur. Therefore, the following villages can serve as a guide to locate this beautiful Tourist Attractions. Namely, Tsidihgua, Ngur Jaku, Kushinah, Varraga and Damai.





IV. Conclusion And Discussion

For a drastic improvement in Tourism activities in Sukur, of Madagali Local Government of Adamawa State North- East Nigeria, there has to be proper and regular up to date mapping to show all the access roads ranging from major roads, minor roads, footpaths, villages, rivers if any to assist tourists find their way easily. The use of satellite imageries of different years will also add great values to this map production and this has shown to be very efficient.

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