

## THE USE OF GEOSPATIAL APPROACH IN ASSESSING THE IMPACTS OF LONG DISTANCE TO SCHOOL ON STUDENTS AND PUPILS OF GIDAN MANGO/GARATU AXIS IN BOSSO LOCAL GOVERNMENT AREA OF NIGER STATE, NIGERIA

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### ABSTRACT

Since modern formal education was introduced in developing countries, efforts have been made by various countries including Nigeria to universalize basic education. Based on the importance of education to development, there is need to address the effect of long distance between settlements and schools. Educational institutions are often scarce in rural areas, even when accessible, children may have to walk long distances to attend, which could have a greater deterring effect on girls due to safety reasons - hence adding to gender disparities. Many children, in rural areas, struggle with real difficulties such as walking long distance to school, the lack of classrooms. The aim of this study is to use geospatial approach in assessing the impacts of long distance to school on students and pupils of Gidan Mangoro and Garatu axis in Bosso local government Area. The data utilized in this study include structured questionnaires (QS) distributed throughout the five schools in the study area and the soft copy and hard copy of Quick bird image of 2006 of the study area was employed with the base map of the study area. Intensive field survey was carried out with the use of global positioning system (GPS) to locate the actual point of schools and settlements within the study area. Results show that, the majority of the pupils and students do walk long distance (between 0.5km-2.3km) to school. The impacts of this long distance trekking to school on the students and pupils within Gidan-Mangoro and Garatu area include; lateness to school, been tired quickly while doing school activities such as lessons, sleeping while lessons are going on and many are discouraged of going to school because of this stress of walking a long distance and it impacts on their body and on their learning capacity. Recommendations include that the various tares of government and stakeholders should establish more schools in the study area with the necessary facilities for effective teaching and learning; government should not shed the responsibility of providing equal education opportunity for rural residents in the name of limited resources; a map showing distribution and location of schools should be updated time to time for better decision making.

**KEYWORDS :** Geospatial approach, long distance trekking, rural residents, decision making, global positioning system

Since modern formal education was introduced in developing countries, efforts have been made by various countries including Nigeria to universalize basic education. The relevance of education was challenged, particularly so, for rural areas. He further said that this is not limited to primary education only, but also touched on secondary education. Rural schools face unique challenges associated with geographic isolation, limited school and community resources. Akanle, 2007 said that, formal and quality education remains the vehicle for social-economic development and social mobilization in any society, therefore there is a need to address the quality and effect of long distance between settlements and schools. Educational institutions are often scarce in rural areas. Even when accessible, children may have to walk long distances to attend, which could have a greater deterring effect on girls due to safety reasons - hence adding to gender disparities. (Wyn and Stokes, 1998; Swindled, 1998)

Rural schools face unique challenges associated with geographic isolation, racial segregation, and limited school and community resources. Many children, in rural

areas, struggle with real difficulties such as walking long distance to school (Michael, 2008).

Rural and small urban communities face a different set of issues than more urbanized areas when it comes to looking at pedestrian and bicycle access to schools. While infrastructure remains a problem in rural areas, distance is often a more important factor than auto traffic or crime in determining transportation choices. However, some children in rural communities still walk or bike up to a few miles to get to school. (Rucs, 2008).

#### **The Objectives of The Study Were**

- i. Mapping the distribution and location of Public schools in the study area.
- ii. To delineate the distances between schools and the neighboring villages.
- iii. To identify various effect of long distances between schools and villages on students/pupils.

#### **DESCRIPTION OF THE STUDY AREA**

The study area selected for this project is Gidan Mangoro-Garatu and the surrounding community within

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Bosso Local Government Area of Niger State Nigeria. Gidan Mangoro-Garatu is located between kilometers 12 to kilometer 20 away from Minna town the state capital of Niger state. Minna lies approximately between the latitude of 9<sup>o</sup>.33N and 9<sup>o</sup>.45N and Longitude 6<sup>o</sup>.34E and 6<sup>o</sup>.42E. Bosso Local Government Area is bordered to Badegi and Gbako Local Governments in the north, Chanchaga Local Government at east, Wushishi Local Government at west.

The study area has a mean annual rainfall of 1100mm to 1600mm. The duration of the rainy season is approximately 180 days. The mean monthly temperature is highest in March (30.5<sup>o</sup>) and lowest in August (22.30<sup>o</sup>). Dry season commences in October. Three major soils types can be found in the State. These include the ferruginous tropical soils, hydromorphic soils and ferosols. The most predominant soil type is the ferruginous tropical soils which are basically derived from the Basement Complex rocks, as well as from old sedimentary rocks. Such ferruginous tropical soils are ideal for the cultivation of guinea corn, maize, millet, yam and groundnut.

**METHODOLOGY**

One thousand (1000) structured questionnaires were distributed throughout the five schools in the study area but eight hundred and sixty two were returned which were both of qualitative and quantitative method aimed at obtaining detail information on personality, concepts and effects of long distance to school on individual students and pupils for better qualitative and quantitative information. The respondents were given enough time enough time to freely go through the questionnaire and treat it rightly. It was

distributed regardless of sex, age, and background.

The soft copy and hard copy of Quick bird image of 2006 of the study area was employed with the base map of the study area. The database software used for this project was ArcGIS 9.3. Reference points are supplied through the coordinates gotten from field survey with the use of GPS to locate the actual point of schools and the actual point of each settlement within the study area (figure 1).

**RESULTS AND DISCUSSION**

In carrying out mapping and delineating of the existing schools in the study area, an extensive field survey was carried out with the aid of Global Positioning System (GPS) in getting the coordinates of the existing schools within the area, in order to map out the location of schools and settlements (villages) so as to determining the distance of the schools from the various settlements and also to calculate the distance cover by the students and pupils to schools. Five schools were identified to be existing within the study area, two junior secondary schools and three primary schools. Table 1 shows the names of the schools, community, and coordinates of the schools within the area. figure 2 shows the delineating map of the study area and figure 3 shows the spatial location (proximity) of the existing schools (Kufoniyi, 1998; Ezra, 2005).

From the field survey carried out in this research work, it was discovered that the study area as a rural area has scattered settlement with an average of about 500 meters to 2,356 meters (0.5km-2.34km) apart from each other. LEA Primary school at Gbada accommodates pupils from Gidan-Mangoro, Gbanji, Dama, Ekpigi, Padikpe and some hamlets

**Table 1 : Names of Schools and Coordinates**

S/NO	Name of School	Coordinate	Community
1	Junior Day Sec. school	N09° 34'17.4" E 006° 29'01.8"	Gbada
2	L.E.A Primary School	N09° 34'17.4" E 006° 29'38.3"	Gbada
3	LEA Primary School	N09° 31'57.5" E 006° 28'05.2"	Gidan Kwano
4	Junior Secondary School	N09° 28'29.8" E 006° 26'14.2"	Garatu
5	L.E.A. Primary School	N09° 29'12.7" E 006° 26'26.0"	Garatu

Source: Researcher's Field Survey

found within the area. Day Secondary school in Gbada accommodates students from about 18 villages in the area which makes the school highly concentrated. LEA Primary school at Gidan-Kwano accommodates majority of pupils within the area with average distance of about 300 meters to 1,700 meters (0.3km-1.7km) distance apart, while LEA primary school in Garatu and the secondary school there accommodates pupils within the area with an approximate distance of 900meters to 2,300 meters (0.9km-2.3km). Table 2 shows distance of communities to schools (Finch, 1984; Coffery, 1992).

The study shows that the majority of the pupils and students are within the age group of 3-8 years with 21.2%, 9-14 years with 39.6%, 15-19years with 37.9%, while 20 years and above with 1.3%. This shows that, the majority of the respondents are at teenage and adolescent stage which makes them more relevant to this study. 78.2% of the respondent agrees that their villages are very far from the

school, while 21.8% have the school close to their villages and houses (Bassy, 1993; Adelabu, 2008).

Majority of the pupils and students do walk long distance to school 78.2% of the respondents indicated this. The same 78.2% of the respondents do get to school late because of walking a long distance to school, while 21.8% do get to school early. This majority of the students and pupils that do walk long distance stated that they do get tired quickly while doing school activities such as lessons. 61% of the students and pupils do sleep while lessons are going on. This was confirmed by the teachers during the interactive session with them. 39% of the students and pupils

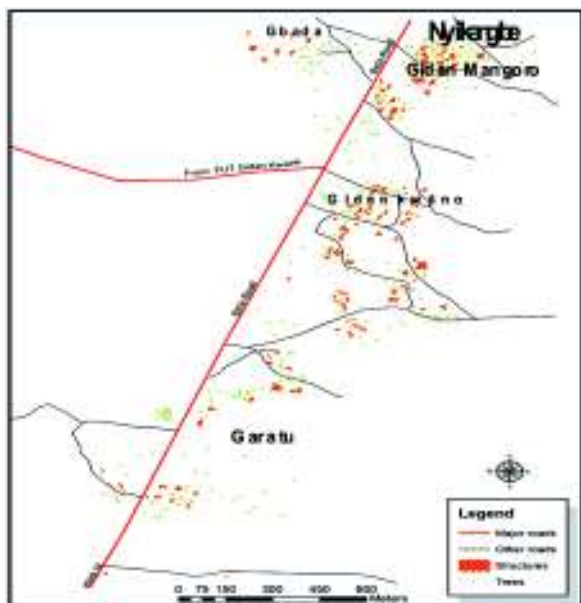


Figure 1: Various Settlements of the Study Area

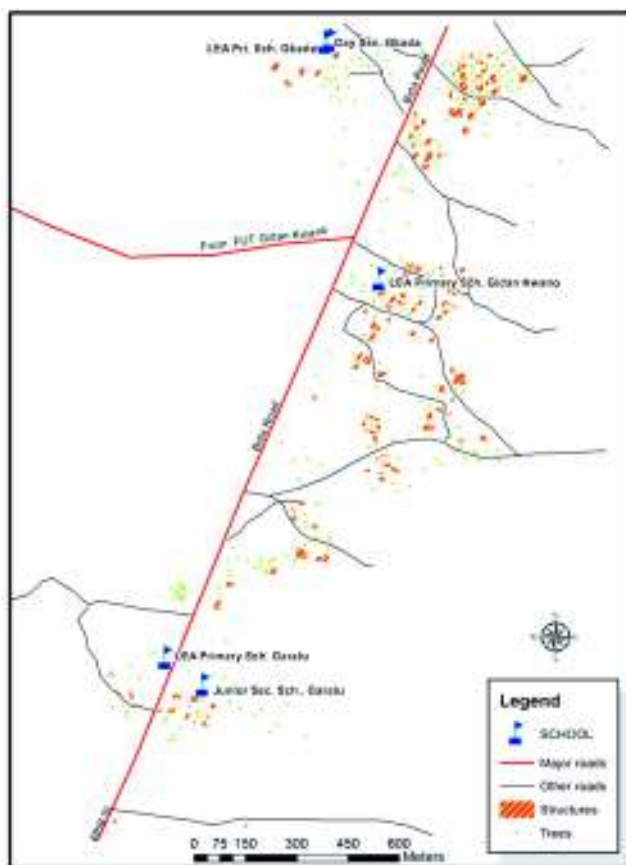
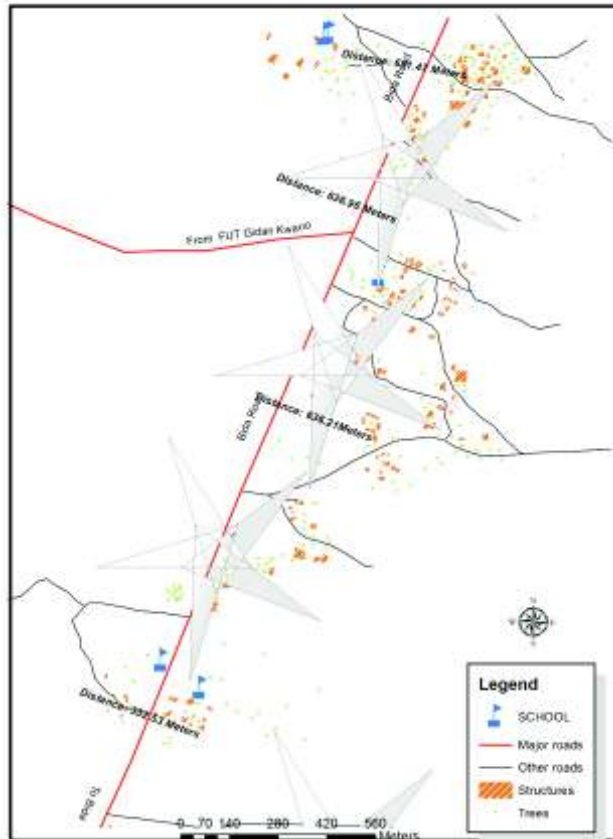


Figure 2 : Delineating Map of The Study Area Showing the Schools

Table 2 : Distance of Communities to Schools

Communities	Junior Day Sec. School Gbada	LEA Pry school Gbada	Gidan Kwano Pry School	Junior Sec. School Garatu	LEA pry School Garatu
Gidan Mangoro	531.56meters	531.56meters	763.02meters	1567.89meters	1569.89meters
Gidan Kwano	980.03meters	980.03meters	340.09meters	1120.76meters	1121.76meters
Tunga fulani	1320.06meters	1320.06meters	903.76meters	986.00meters	986.00meters
Ruga	2145.09meters	2145.09meters	1732.05meters	2356meters	2356meters



**Figure 3 : Neighbourhood Proximity of the Study Area**

that their villages are not too far from school or do have a better means of transportation to school (bicycle/motorcycle) are not victims of this effect. This same 61% of the respondents indicated that, they are discouraged of going to school because of this stress of walking a long distance and it impacts. The teachers also testified to this discouragement of the students and the pupils as a strong effect of long distance walk to the school. (Ayeni, 1986)

## CONCLUSION

The study area as a rural area has scattered settlement with an average of about 500 meters to 2,356 meters (0.5km-2.34km) apart from each other. Five schools were identified to be existing within the study area, two junior secondary schools and three primary schools. LEA Primary school at Gbada accommodates pupils within the area with an approximate distance of 500meters to 2,100 meters (0.5km-2.1km). Day Secondary school in Gbada

accommodates students from about 18 villages in the area which makes the school highly concentrated. It accommodates students within the area with an approximate distance of 500meters to 2,100 meters (0.5km-2.1km) apart as of the LEA primary school at Gbada. LEA Primary school at Gidan-Kwano accommodates majority of pupils within the area with average distance of about 300 meters to 1,700 meters (0.3km-1.7km) distance apart, while LEA primary school in Garatu and the secondary school there accommodates pupils and students within the area with an approximate distance of 900meters to 2,300 meters (0.9km-2.3km).

Majority of the students and pupils are at teenage and adolescent stage of life. Most of the villages settlements are very far from the school and majority of the pupils and students do walk long distance (between 0.5km-2.3km) to school. The impacts of this long distance trekking to school on the students and pupils within Gidan-Mangoro and Garatu area include; lateness to school because of the distance to school, been tired quickly while doing school activities such as lessons, sleeping while lessons are going on and many are discouraged of going to school because of this stress of walking a long distance and it impacts on their body and on their learning capacity. These were confirmed by the teachers during the interactive section with them. Long distance trekking to school by students and pupils especially those of the rural area do affect the moral and learning capability in which many of them, especially the girls do abstain or drop out completely from school in Nigeria.

Based on the findings of this study, the following recommendations have been made; the various tares of Government and stakeholders should establish more schools in the study area with the necessary facilities for effective teaching and learning. Government should not shed the responsibility of providing equal education opportunity for rural residents in the name of limited resources. More priority should be given to financing rural schools (providing learning/teaching facilities and transportations) from the increase in public expenditure allocated to education in yearly budget. A map showing distribution and location of schools should be updated time to time for better decision making.

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