

# Assessment of Social Infrastructure Facilities in Muchalla Town Mubi North for Sustainable Development Plan and Good Governance

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**Abstract:-** This study assessed the existing social infrastructure in Muchalla town with the view to improve their functionality and sustainability for socio-economic wellbeing, strategic development plan and good governance in the community. Field survey formed the basis for primary data carried out through site visitation, inventory taking and assessment of facilities, utilities and services. Ten (10) questionnaires were administered in twenty six (26) street blocks stratified for the study encompassing 262 households. The data were presented using statistical and graphical tools such as; maps, graphs, charts and tables. The study discovered that, most of the people needs a lot of socioeconomic engagements to meet up their family responsibilities. Majority of the respondents attended formal education as such an average Muchalla can be adjudged literate or enlightened. The mode of transportation (motorcycle 25.19% and bicycle 23.66%) adopted depicts convenient for their terrain and major occupation (farming) of the people. None functional classrooms and the offices in schools are due to poor maintenance and lack of furniture. Facilities provided in the various schools are not adequate except toilets and sport fields. Inventory of public facilities, utilities and services are generally adequate but need improvement on small scale industries and provision of electricity. Recommended is adherence to the National Infrastructure Plan and best practices, by Local, State and Federal government social infrastructure providers as importance working tool for community plans for the delivery and development of needed social infrastructure.

**Keywords:-** Social Infrastructure, Sustainable Development Plan, Good Governance.

## I. INTRODUCTION

Critical infrastructure is always noted with great concern when it is not available in a community. People become worried about electricity, water supply and healthcare facility among others when there is a shortage and raise alarm when roads are in bad condition or frequent breakdown of vehicles leading to change of routes. Recently, our social infrastructure and the shared spaces meant for social interactions are functionally weak due to the covid-19

pandemic effect on social space utilization. Commercial establishments experience little or no patronage due to social distancing enforcement in open spaces and other social centers in place for the community.

Social infrastructure is essential for existing and new development of healthy communities which must be planned for, to ensure provision of social services across all ages. The amenities and services available within a community also influence the quality of life in local communities as a whole including the health and wellbeing of individual member. Badland *et al.*(2014) and Lowe *et al.*(2015) stressed that, timely and accessible delivery of social infrastructure is an essential domain for conducive living in a review of livability indicators. The review according to Lowe *et al.*(2013), defined a livable community as safe, attractive, socially inclusive and cohesive, environmentally sustainable with affordable and diverse housing, linked by convenient public transport, walking and cycling infrastructure to employment, education, local shops and community services, leisure and cultural opportunities and public open space.

Infrastructure constitute the basic physical and organizational structures required for the functioning of a society like industries, housing, roads, bridges, health services and governance among others. It is the enterprise or the products, services and facilities necessary for an economy to function (Sullivan and Sheffrin, 2003). The term technically meant the structures that support the society such as roads, water supply, sewers, electricity, telecommunications, and so forth, and can be defined as "the physical components of interrelated systems providing commodities and services essential to enable, sustain, or enhance societal living conditions" (Fulmer, 2009).

Infrastructure facilitates the production of goods and services, as well as the distribution of finished products to end-users (markets), and also basic social services such as schools and hospitals; for example, roads enable the transportation of raw materials to a factory (American Heritage Dictionary, 2009).

The aim of the study is to assess the existing social infrastructure in Muchalla town Mubi with the view to improve their functionality and sustainability for socio-

economic wellbeing to substantiate the development plan of the community. The objectives are to: identify the existing social infrastructure; assess the functionality of the existing infrastructure; determine the adequacy of the existing facilities, utilities and services; and to recommend possible measures for effective and efficient development plan for guiding the present and the future development of the town.

## II. CONCEPTUAL FRAMEWORK

The word infrastructure according to Online Etymology Dictionary (2012), have been used in English since at least 1927 originally meaning "The installations that form the basis for any operation or system". Infrastructure in developing countries connotes roads and transport infrastructures. The advent of telecommunication infrastructure in Nigeria brought infrastructure to the front line as the products and services necessary for the performance of an entity.

There are two types of infrastructure, "Hard and Soft" infrastructure. Hard refers to the large physical networks necessary for the functioning of a modern industrial nation. Whereas "soft" infrastructure refers to all the institutions which are required to maintain the economic, health, cultural and social standards of a country, such as the financial system, the education system, the health system, the governance system, and judiciary system, as well as security (Kumar, 2005).

### A. Social infrastructure

Influences the development of community by means of the availability of quality healthcare, the safety of investment, the quality of the school system, the parks, recreational, and cultural opportunities, the availability, affordability, and quality of housing, and having a quality (De Lever, 2010)

Despite the importance of social infrastructure it is poorly defined hence services included within social infrastructure notably includes: hospitals and healthcare; education; childcare; community support agencies; sport and recreation; parks and playgrounds, community development services; housing; employment and training, legal and public safety; emergency services; public and community transport; arts and cultural institutions, such as movie theatres, art galleries, senior citizen centers or anywhere that brings people together (Whitzman2001; Temple and Reynolds 2007). Most of these services are funded by government and the delivery requires a lot of money. Nevertheless, the timely delivery of social infrastructure is critical to a community development because it curtails social service challenges of the entire society. Such services are important for the creation of the needed material and cultural living conditions for a community (Gabbrakmanov and Rubtsov2013).

### B. Sustainable Development

The WCED (1987). Bruntland Report defines sustainable development as the development that meets the needs of the present without compromising the ability of future generations to meet their own needs. This implies that development in general and social infrastructure development in particular should plan based on the present needs and

continuous needs of the future generation of humanity. Padiison (2001), as cited in Tekwa (2017), reported that, sustainable development entails the attainment of equilibrium among 3 contending sub-systems: economic, social-cultural, and environmental.

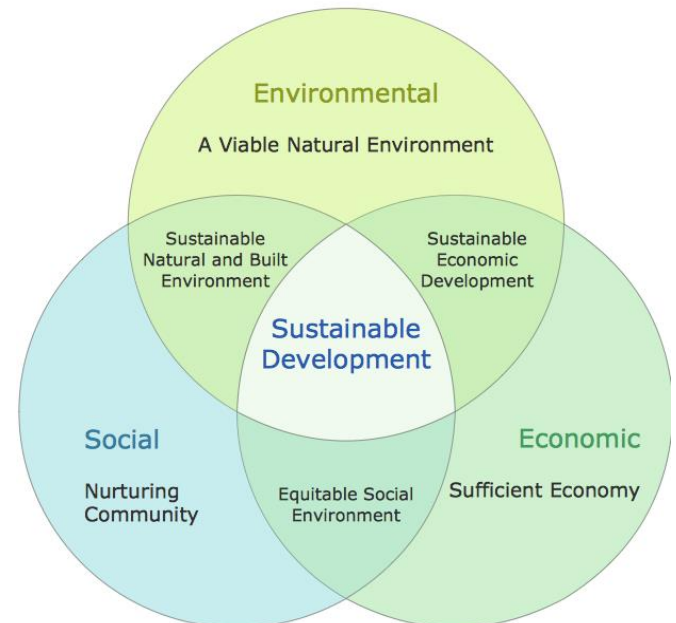


Fig. 1: Venn diagram depicting sustainable development  
Source: Tekwa 2017 cited Willard (2012)

Venn diagram of sustainability acknowledges the intersection of economic, environmental, and social factors. Peters (2000) stated that the ecological and sociological footprints of cities and towns have spread over the ever-wider area and that fewer places on planet earth are unaffected by this phenomenon. Changes in the development of urban environment as occasioned by increasing population, overcrowded habitations and uncontrolled use of natural resources might have resulted to ineffective ecological planning so many countries. Further observations by Daramola&Ibem (2010) have it that the pace and scale of population growth is more than the capacity to maintain acceptable standards of social infrastructure growth in towns and cities especially under developed nations of Africa, Asia and Latin America.

### C. Urban Governance

Un-Habitat (2004) as cited in Wanda and Kefas (2020), defines Urban Governance as "the exercise of economic, political and administrative authorities to manage a country's affairs at all levels". This comprises the mechanism, process and institutions, through which citizens and groups articulate their interest, exercise their civic rights, assemble their objectives and mediate their differences. Similarly UNDP, (1999), views good urban governance as "when societal norms and practices empowers and encourages people to make greater control over their own development in a manner that does not impinge upon the accepted rights of others".

### III. MATERIALS AND METHODS

Spatial data acquired for the study were location maps, high resolution satellite imagery revealing building footprints and circulation, digital elevation; model upon which elevation information was derived. Other spatial data used include, existing road network, facilities, utilities and services e.g. security services, educational facilities, clinic, location of boreholes and wells, among others.

Field survey formed the basis for primary data collected through site visitation with the satellite imagery for inventory

and assessment of the facilities, utilities and services. Ten (10) questionnaires were administered in each of the twenty six (26) street blocks stratified for that purpose which include two hundred and sixty two (262) households.

Secondary data were sourced from books, journals, internet and other reference materials. The data were presented using statistical and graphical tools such as; maps, graphs, charts and tables. The tools were employed in analyzing the descriptive and quantitative research data for easy comprehension.

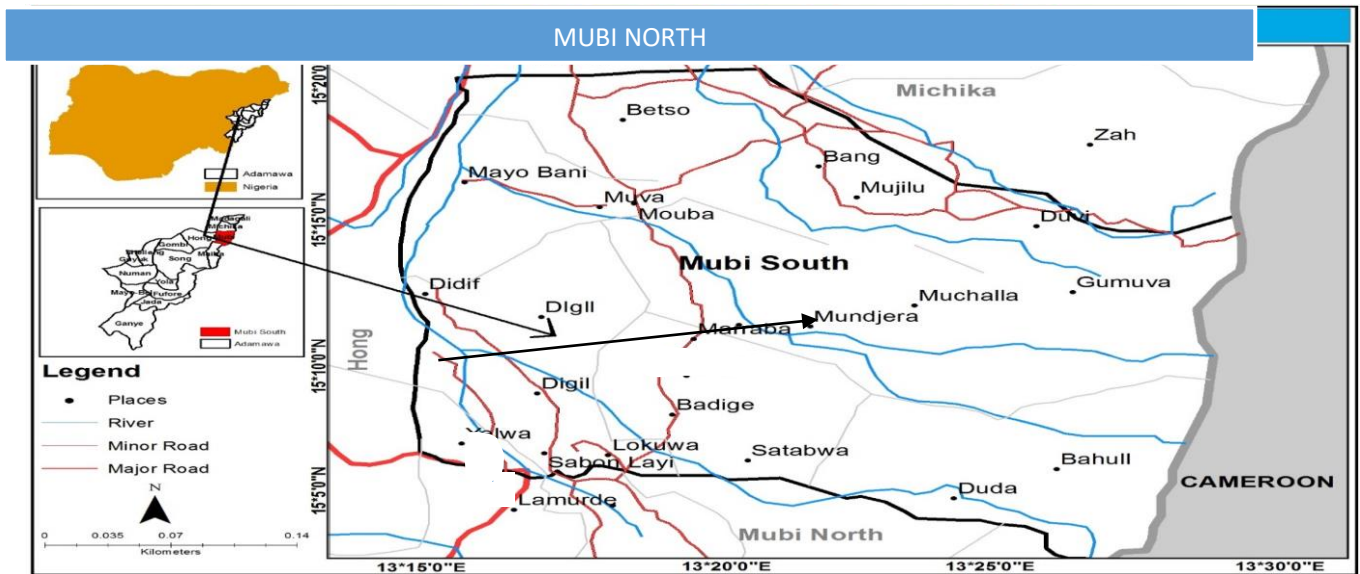


Fig. 2: Map of Mubi North Showing Study Site  
 Source: www.internet (google).com <https://en.m.wikipedia.org>

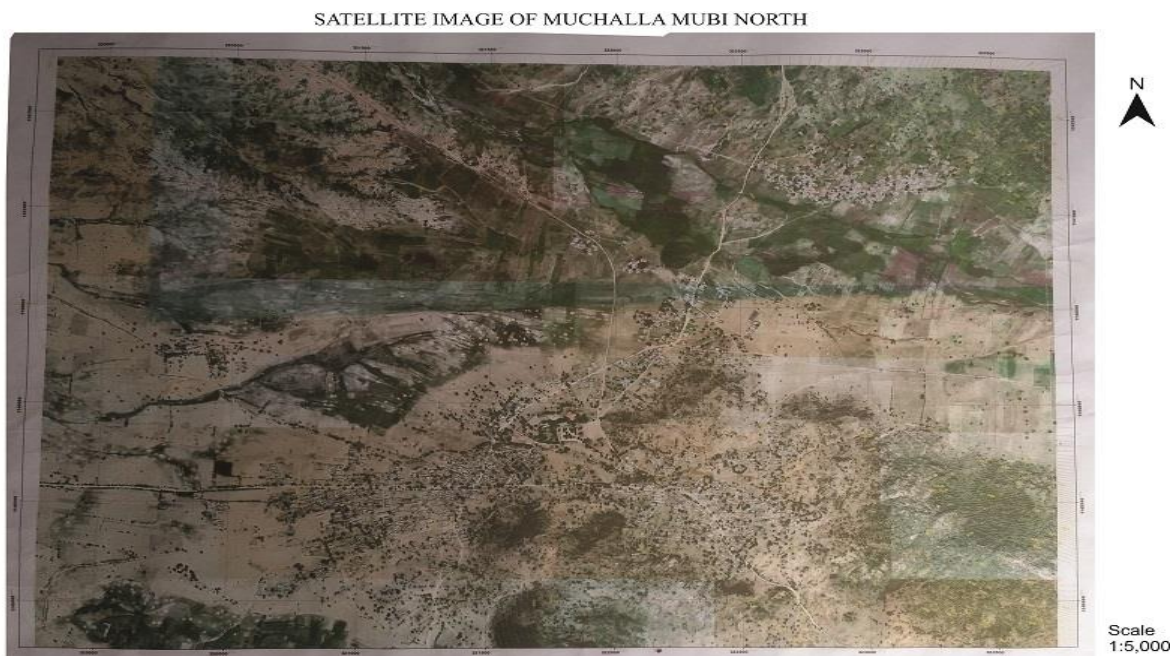


Fig. 3. Satellite Image of Muchalla

**IV. RESULTS AND DISCUSSION**

The results from the field work are presented and discussed as follow:

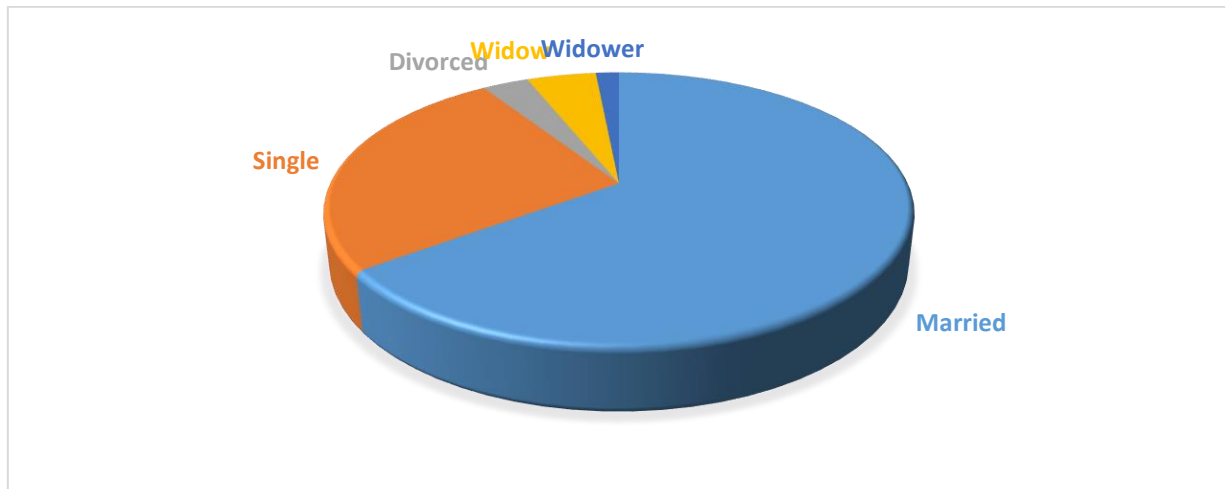


Fig. 4: Marital Status

Fig. 4 present information on the marital status of the 262 respondents. The figure shows that 64.63% of the respondents are married, 25.85% are single, 3.04% are divorced, 4.56% are widows and 1.52% are widowers. This implies that most of the people needs a lot of socioeconomic engagements to meet up their families’ responsibilities.

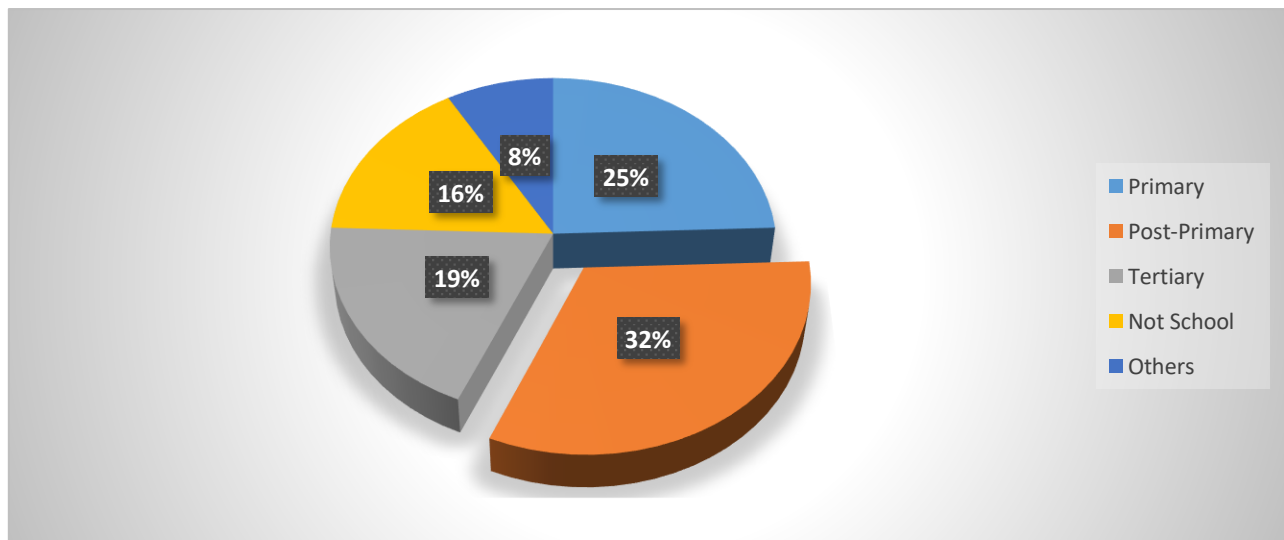


Fig. 5: Educational Status. Source:

Fig. 5 showed that 24.42% of the respondents attended primary school, 32.06% attended post primary, 19.84% attended tertiary institutions, 16.03% did not go to school and 8.39% attended other type of educational system. Summarily 76.32% of the respondents attended formal education ranging from primary school to tertiary institutions. This implies that most of the people have attended formal education at different levels and may require little awareness and more empowerment to bring about desirable transformation in the community.

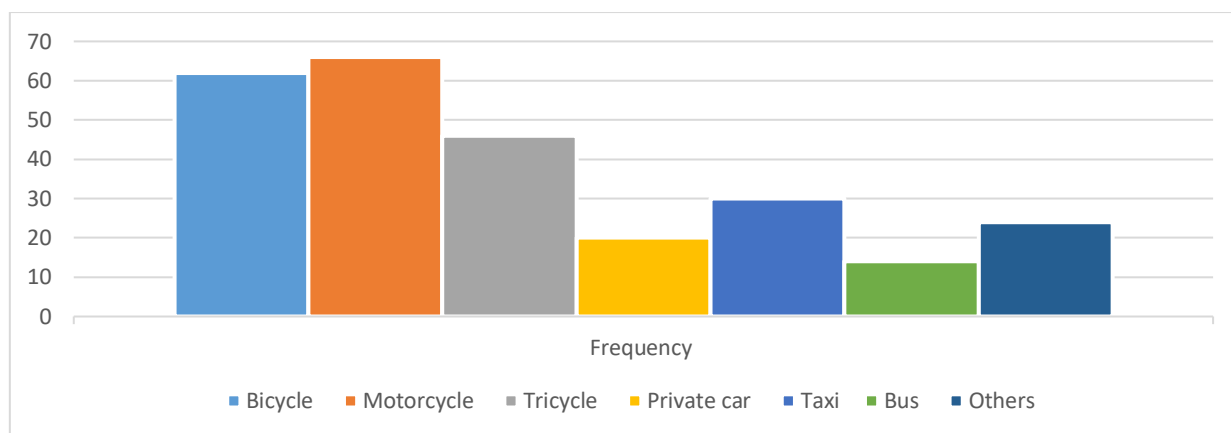


Fig 6: Mode of Transportation.

The fig. 6 above showed that, the major mode of transportation in Muchalla town is motorcycle (Achaba) which constitute 25.19%, followed by bicycle, 23.66%, tricycle 17.55%, private cars 7.63%, taxi 11.45%, bus 5.34% and other means of transport 9.16%. Motorcycle and bicycle as major mode of transportation is obvious due to the terrain and occupational structure of the community.

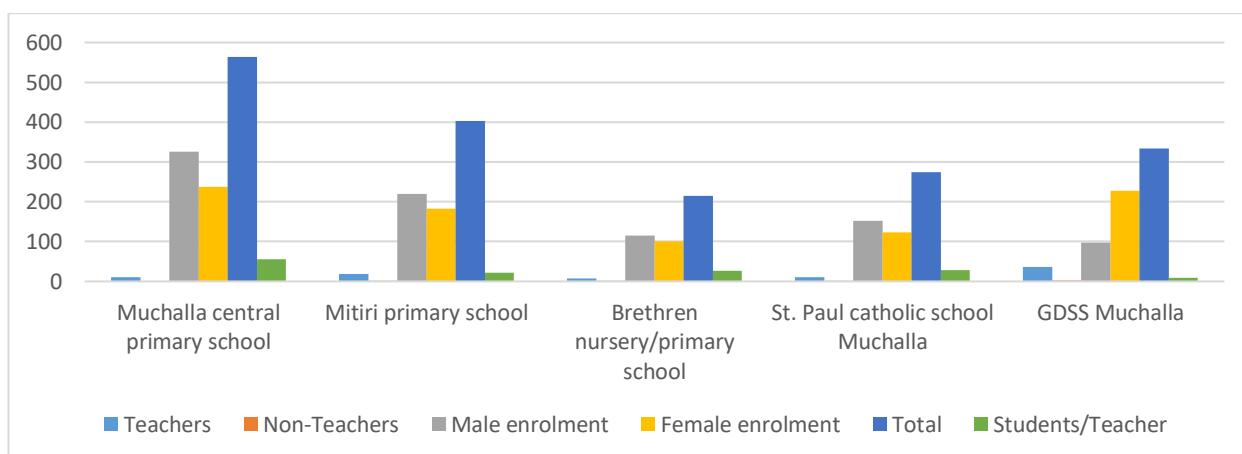


Fig. 7: Staff and Students Enrolment.

Fig. 7 showed that there are 10 teachers in Muchalla central primary school, no none teaching staff, 326 male and 238 female pupils while the number of pupil per teacher ratio is 56:1. Mitiri primary school has 18 teachers, 1 none teaching staff, 220 male and 183 female pupil and the pupil – teacher ratio is 22:1. Brethren nursery/primary school has 8 teachers, 1 none teaching staff, 115 male and 100 female pupil and the pupil per teacher ratio 27:1. St. Paul Catholic

School has 10 teachers, 1 none teaching staff, 152 male pupil and 123 female and pupil per teacher is 28. GDSS recorded 36 teachers, 3 none teaching staff 97 boys and 227 girls while pupil per teacher ratio is 9:1. Based on UN (2012) teacher pupil ratio of 40:1 and 35:1, Muchalla central primary school is understaffed (56:1) while GDSS Muchalla is over staffed (9:1)

S/NO	Name of school	Organisation
1	Muchalla Central Primary School	UBEB/Ministry of Education/Public
2	Mitiri Primary School	UBEB/ Ministry of Education/Public
3	Brethren Nursery/Primary School	Private
4	St. Paul Catholic School	Private
5	GDSS Muchalla	UBEB/ Post Primary Schools Management Board/Public

Table 1: Ownership and Development of Schools

Table 1 above presents Mitiri and Muchalla Central Primary as the two primary schools owned and developed by Universal Basic Education Board (UBEB) in collaboration with state ministry of education. Brethren and St. Paul Catholic schools belong to private bodies hence the churches

are responsible for their management and development. Government day secondary school Muchalla is under UBEB and Post primary schools management board.

S/NO	Name of school	Functional classrooms	Non functional	Functional office	Non functional
1	Muchalla central primary school	1(10%)	10 (90%)	1 (20%)	4 (80%)
2	Mitiri primary school	3 (50%)	3 (50%)	2 (67%)	1 (33%)
3	Brethren nursery/primary school	5 (71%)	2 (29%)	1 (50%)	1 (50%)
4	St Paul catholic school	3 (75%)	1 (25%)	1(100%)	–
5	GDSS Muchalla	9 (82%)	2 (18%)	2 (100%)	–
Total		21(54%)	18 (46%)	7(54%)	6 (46%)

Table 2: Functionality of Classrooms and Offices

Table 2 above shows the functionality of classrooms and offices in the various schools. Brethren and St. Paul schools recorded higher percentage of classroom functionality of 71% and 75% respectively while Muchalla central and Mitiri primary schools recorded 10% and 50%. Then GDSS Muchalla classrooms are functional up to 82%. Regarding

office functionality, St. Paul Catholic School and GDSS scored 100% functionality. Muchalla central, Mitiri and Brethren schools area 20%, 67% and 50% functional and 80%, 33% and 50% not functional respectively. This depicts that the existing none functional classrooms and the offices suffered poor maintenance and lack of furniture.

S/NO	Name of school	Water supply	Electricity	First aid	Sport field	Toilet	Hostel	Sport facilities	Staff Qtrs	Library	Laboratory
1	Muchalla central primary school	1	-	1	2	2	-	1	1	1	1
2	Mitiri primary school	3	-	1	2	3	-	2	1	1	1
3	Brethren nursery/ primary school	1	-	2	1	3	-	1	1	1	1
4	St Paul catholic school	1	-	1	1	3	-	2	1	1	1
5	GDSS Muchalla	4	-	3	4	3	–	3	2	3	3

Table 3: Rating of Adequacy of Facilities

The adequacy of facilities in table 3 were rated based on a 4 point Likert scale where; 4 = very adequate, 3= Adequate, 2= fairly adequate and 1= Not Adequate

school have fairly adequate sport field so also St Paul Catholic School, first aid in Brethren school and staff quarters in GDSS depict adequate. Inadequate water supply is recorded in Muchalla central, Brethren school and St. Paul Catholic schools. First aid is not adequate in Muchalla central, Mitiri and St Paul while sports field is not adequate in St. Paul and Brethren School. Electricity and boarding school are absent in Muchalla.

The table shows that GDSS Muchalla has very adequate water supply and sports field. The table further reveals that there is adequate water supply in Mitiri primary school, toilets in four schools, sports facilities, Library and Laboratory in GDSS. Muchalla central and Mitiri primary

S/N0	Facilities	Number	Status		Assessment
			Functional	Non- functional	
1	Boreholes with overhead tanks	7	5	2	Adequate
2	Hand pump boreholes	20	15	5	Adequate
3	Cement wells	8	6	2	Fairly adequate
4	Electricity	–	–	–	None
5	Hospital/clinic	3	2	1	Adequate
6	Patient Medicine store	3	3	–	Very adequate
7	Refuse disposal	–	–	–	Very adequate
8	Market/shopping centers	1	1	–	Adequate
9	Cemetery	2	2	–	Very adequate
10	Church	5	5	–	Very adequate
11	Mosque	1	1	–	Adequate
12	Small scale industries	2	2	–	Adequate

Table 4: General inventory of Existing Facilities

Table 4 depicts that, there are 7 boreholes with overhead tanks in Muchalla out of which 5 are functional and 2 not functional and adjudged adequate by the respondents. Twenty hand pump boreholes also exist, 15 are functional while 5 are not functional and were assessed to be adequate by the community. Six of the 8 wells in the area are functional while 2 are not and were assessed fairly adequate. Two of the 3 hospital/clinic available are functional and were adjudged to be adequate while the three patent medicine were all functional and very adequate. Official refuse collection and disposal facilities are not available in Muchalla however environmental sanitation seems to have no significant effect as they dispose refuse on farmland to serve as manure. The existing market has been assessed adequate but it require more structures and modern facilities like electricity, toilet and Motor Park among others. Two cemeteries are available and were assessed very adequate while the 5 churches were also assessed very adequate. The only mosque in the community was adjudged adequate as well as the two small scale industries in the area.

## V. CONCLUSION

Social infrastructure planning in communities requires greater attention in both policy and research programs. It should be noted equally in terms of importance as physical infrastructure considering its influence on health and wellbeing of people. It is worth noting that communities should not be built without physical infrastructure and equally not be delivering communities or planning neighborhoods without considering social infrastructure provision. The educational attainment of Muchalla people which ranges from primary to tertiary institution have given them advantage in understanding the importance of social infrastructure and socioeconomic potentials in the area which are adequately harnessed by the community. The mode of transportation (motorcycle and bicycle) adopted depicts convenient for their terrain and major occupation of the people. Even though most of the people are educated up to primary school level much is needed to improve quality education to cope challenges due to non-functional classrooms and offices in both the public and private schools. Most of the facilities provided in the various schools are adjudged not adequate except few like toilets and sport fields. Inventory of public utilities and services are generally adequate however there is need for improvement on small scale industries and provision of electricity.

## RECOMMENDATION

Based on the findings of the study, the researcher recommends that:

- There is a need to provide high quality educational infrastructure to ensure that both existing and future populations can access a full quality education at convenient times and locations throughout the town.
- More none teaching staff should be employed in schools e.g. nannies and nurses in nursery/primary schools then librarians, laboratory attendants, clerks among others in the schools as appropriate.

- Public loan facilities to farmers should extend to the community to boost their agricultural production and social infrastructure.
- Overstaffed schools due to perhaps proximity advantage should be rationalized over the other schools by the concerned management authorities.
- Social infrastructure services and facilities should be planned well to promote social cohesion and maximize efficient asset utilization through co-location and integrated services reflecting new, emerging models of service delivery approved by professionals.
- Based on the National Infrastructure Plan, best practices and good governance, local, state and federal government social infrastructure providers should consider the importance of working with each other and communities to plan for the delivery and development of social infrastructure.

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