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Pathways to Sustainable WASH: Evaluating Long-Term Access to Water, Sanitation, And Hygiene in Mangu LGA, Plateau State

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Abstract

Access to safe water, improved sanitation, and hygienic practices remains a cornerstone of sustainable development and public health. This study investigates the long-term accessibility and sustainability of Water, Sanitation, and Hygiene (WASH) services in Mangu Local Government Area (LGA) of Plateau State, Nigeria. Despite numerous interventions, communities within the LGA continue to face disparities in access to clean water and basic sanitation infrastructure. Employing a mixed-methods approach that integrates household surveys, stakeholder interviews, and geospatial analysis, this research examines the adequacy, functionality, and resilience of existing WASH systems. Key indicators such as water source reliability, latrine usage, and hygiene behavior were analyzed in the context of environmental, institutional, and socio-economic factors. Findings reveal that while progress has been made, sustainability is threatened by infrastructural decay, weak governance structures, and limited community engagement. The study concludes with practical recommendations for strengthening WASH governance, enhancing community participation, and promoting adaptive strategies to ensure equitable and lasting access. These insights offer valuable guidance for policymakers, development partners, and local actors committed to achieving Sustainable Development Goal 6 in similar rural contexts.

Key Words: access, governance, hygiene, sustainability, WASH

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1. BACKGROUND TO THE STUDY

Microbiological waterborne diseases continue to be a major concern for public health globally. Pathogens from human and animal waste often contaminate drinking water sources such as streams and wells, leading to outbreaks of illnesses like cholera, dysentery, and typhoid fever [3],[17]. According to WHO and UNICEF (2014), there is a persistent need to improve access to safe water and sanitation, which are essential to preventing these diseases. Since the 2015 target year has passed, the global initiative, which originally aimed to reduce by half the proportion of people lacking safe access to drinking water and basic sanitation has transitioned into a renewed effort under the Sustainable Development Goals (SDGs).

However, by 2024, over 663 million people worldwide still had insufficient access to safe drinking water, with the highest burden observed among poor rural populations in developing countries [22],[24].

The significance of safe water in poverty alleviation, health promotion, and socio-economic development cannot be overstated, especially in contexts like Mangu Local Government Area (LGA) of Plateau State. Mangu is characterized by a dense population, vibrant commercial activities, and conflict-induced displacement of over 10,000 people in recent years. These crises place a strain on the already limited WASH infrastructure. Access to clean water and improved sanitation is critical to rebuilding lives and achieving the Sustainable Development Goals (SDGs), particularly SDG 6 which targets universal access to clean water and sanitation by 2030 [20],[26]

Efforts to achieve SDG 6 have provided new momentum to governmental and non-governmental interventions. Nigeria's National Rural Water Supply and Sanitation (RWSS) Programme aims to improve WASH delivery through an integrated approach, prioritizing underserved rural areas including communities, schools, and healthcare facilities [25],[24]. In this regard, Mangu LGA has become a focus of water and sanitation development agendas as part of national efforts to achieve the SDGs by 2030.

While global progress has been noted, from 76% access to improved drinking water in 1990 to 91% in 2015, significant disparities remain. The lowest levels of coverage exist in the 48 least developed countries, where eight in ten people in rural areas still lack access to safe water [22].In Nigeria, rural communities primarily depend on hand-dug wells, boreholes, natural springs, and rainwater harvesting, many of which are unreliable due to seasonal variations [11].

Water supply and sanitation remain core to national development, necessitating long-term, contextspecific planning [2]. The health benefits of rural water supply especially when paired with sanitation are well-documented. Safe excreta disposal, handwashing, and access to clean drinking water are foundational to improving community health outcomes [10],[23]

However, sanitation remains a key bottleneck in many rural and peri-urban communities. Poor sanitation contributes to the vicious cycle of poverty, disease, and reduced productivity (Genser *et al.,* 2008; [19]. Pit latrines often shared among multiple households are the most common form of sanitation in slums across Africa and Latin America [4]. [27] and [21] categorize any shared sanitation facility as unimproved, pointing to a need for more private, durable, and hygienic options.

This study seeks to assess the sustainability of WASH services in Mangu LGA by evaluating long-term access, quality, and reliability. It contributes to the ongoing discourse on bridging the rural-urban divide in WASH service delivery, particularly in post-crisis settings. This work is significant not only for addressing immediate health concerns but also for aligning with national and international development goals aimed at inclusive and equitable access to water and sanitation.

2. AIM AND OBJECTIVES

The aim of this research is to evaluate the sustainability and long-term accessibility of water, sanitation, and hygiene (WASH) services in Mangu Local Government Area of Plateau State, with a focus on identifying challenges, patterns of usage, and pathways to improved and equitable WASH delivery.

1. To establish the proportion of the population with access to improved drinking water sources,
2. To determine the percentage of the population with access to improved sanitation and
3. To access the level of community participation in the provision of water and sanitation.

3. MATERIAL AND METHODS

Fig. 1.1 is the map of Plateau State showing Mangu Local Government and Fig 1.2 is the map of Mangu LGA as the study area.

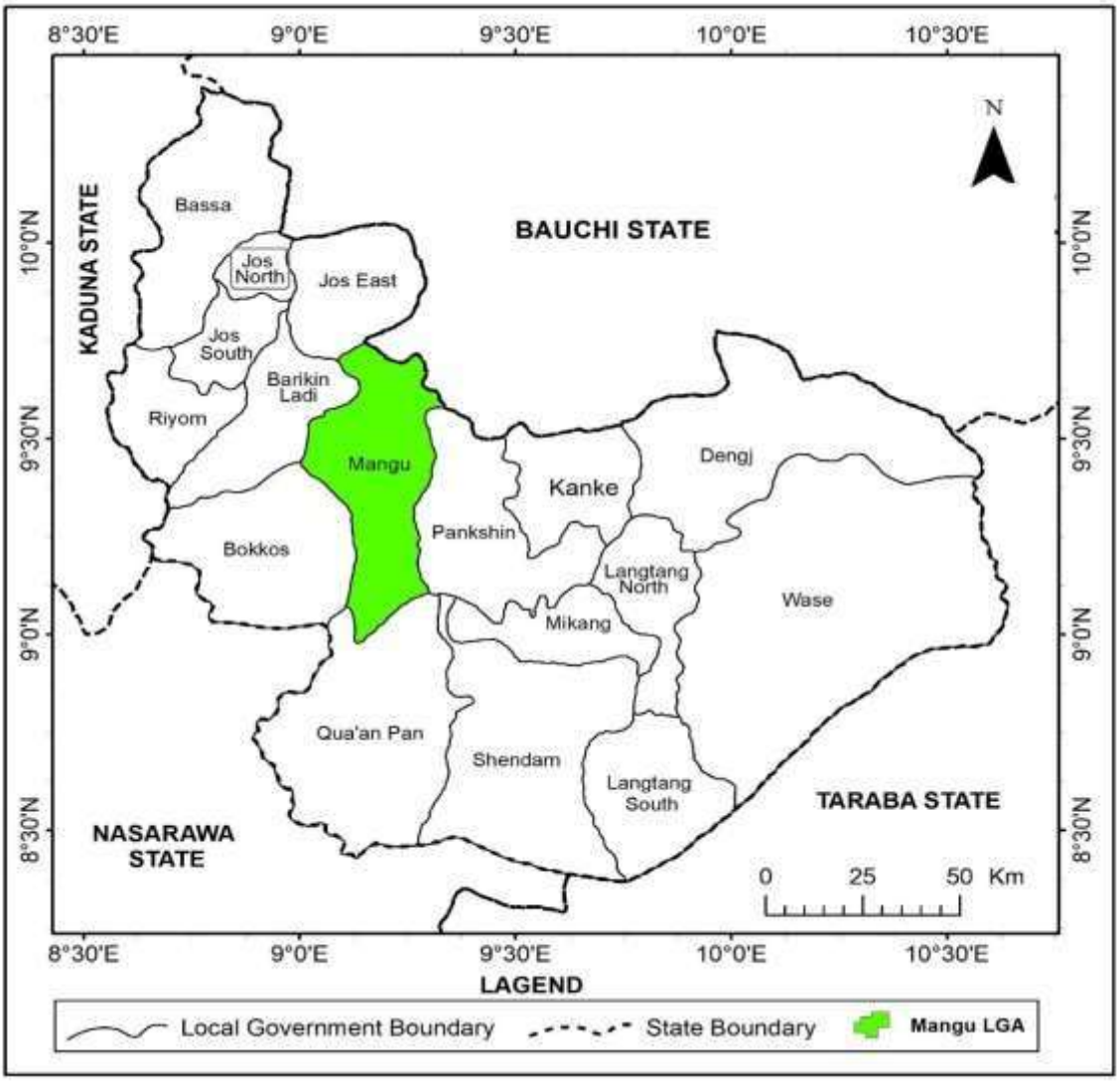

Fig. 1.1: Plateau State showing Mangu Local Government Area
Source: Adopted from Plateau State Ministry of Lands and Survey, Jos 2024

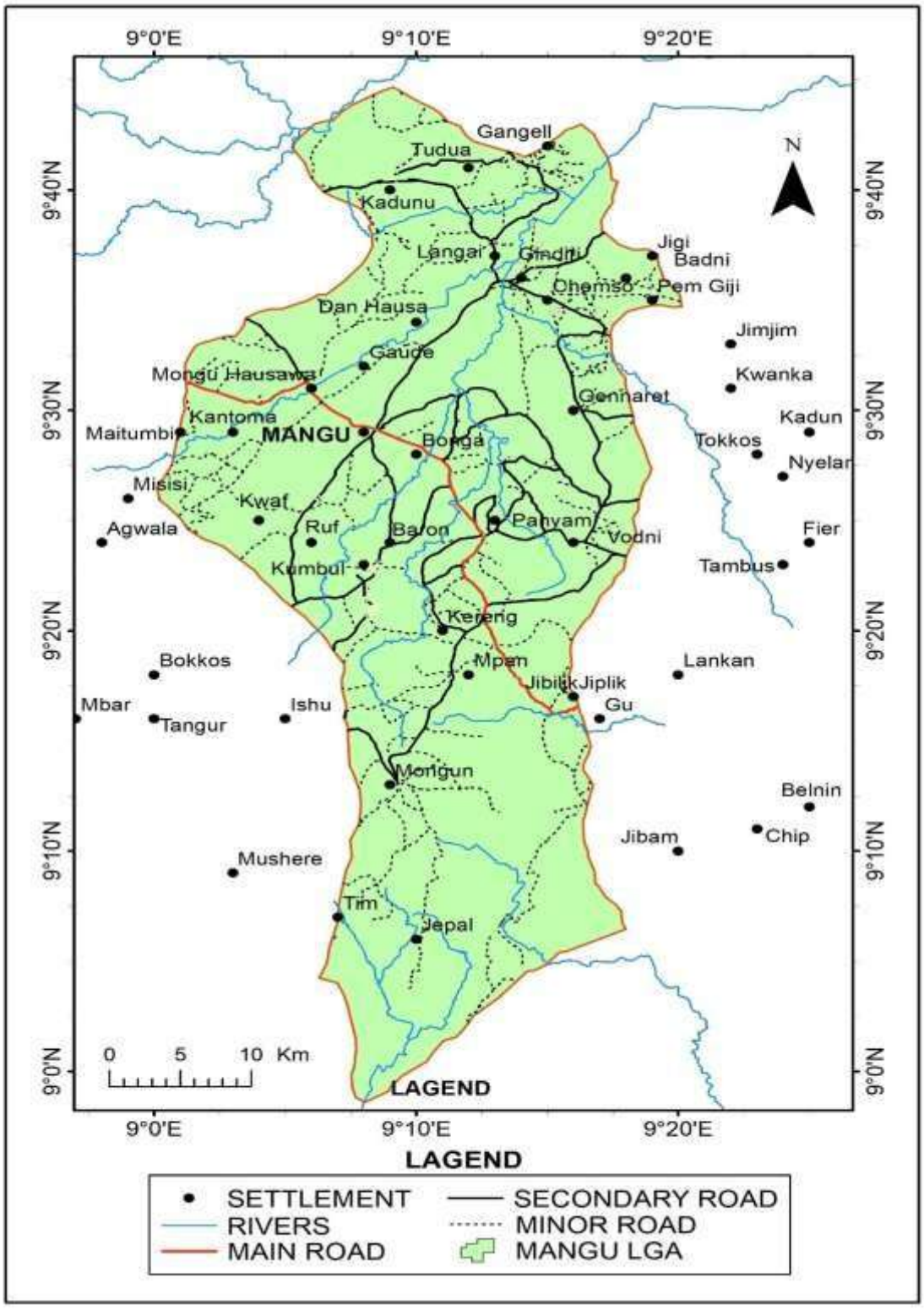

Fig. 1.2: Mangu Local Government Area (the Study Area)
Source: Adopted from Plateau State Ministry of Lands and Survey, Jos 2024

Scope: The scope of the research is viewed in the following ways:

Spatial: covering the entire Mangu Local Government Area (LGA) of Plateau State.

Temporal: it covers the reality obtainable in the study area previously from the conclusion of MDGs programme in 2014/2015 up to the year 2024.

Content scope: it centres on the assessment of accessibility to water, sanitation and hygiene in Mangu LGA of Plateau State, Nigeria

Conceptual Frameworks

The Concept of Community Ownership and Management of Water Supply Projects.

According to the United Nations International Children's Education Fund (UNICEF, 1999), a community should provide between 5 percent and 10 percent (%) of the capital cost of facilities. It proposes that communities should be able to provide labour for the construction of hand-dug wells, and any supporting agency or institution would provide technical assistance and training for the maintenance to ensure sustainability.

Improving community participation in needs assessment, planning, execution, management, and monitoring of programs is a priority for UNICEF. It emphasizes the establishment of cost-effective and appropriate technologies, especially hand-dug wells, under standardized and qualified technical supervision. Training community craftsmen in repair and maintenance procedures is another technical consideration. On the other hand, there are pressures for the private sector to provide community planning, design, building, and material and equipment delivery.

Considering the third objective of the research, key features of community ownership and management include:

- **i.** Having legal ownership and control of the services, including formal agreements with the project agency;
- **ii.** Selecting the level of service it requires, can afford, and can sustain with human and financial means;
- **iii.** Selecting the site for water points;
- **iv.** Contributing real (not token) cash of between 5 percent and 10 percent to the total cost of facilities;
- **v.** Creating a project management committee or board that is responsible for the project's management;
- **vi.** Accepting complete responsibility for operation and maintenance of the water systems, including collection, management, and safe keeping of funds and purchasing the goods and services required for maintaining the system;
- **vii.** Appointing its own caretakers to receive training and tools and be responsible for preventive and simple corrective maintenance; and
- **viii.** Being ready to undertake self-help action to assist with repairs, cleaning, and maintenance of the area around the water projects.

The premium placed on community financial obligation might create obstacles for meeting the set objectives of providing the widest rural areas with safe water. Most settlements have very small populations, and many of these cannot afford what is required to construct a hand- dug well of the standard and quality that is expected. This concept relates to having legal ownership and control of the services, selecting the site for water points, and creating a project management committee responsible for the project's management. All these will positively affect project sustainability in the study area and contribute to growth and development.

Study Area

Mangu LGC of Plateau State which lies within the North Central Zone of Nigeria and is within the guinea savannah vegetation zone of the country. The area is within the Jos Plateau and has the same characteristics of the Jos Plateau in terms of vegetation, geology, relief, soils, climate, hydrology and water resources.

The headquarters of Mangu LG is Mangu located at 9°31'00" N and 9°06'00" E. The grasslands that blanket the study area are littered with bare rocks. The altitude ranges from around 1,200 meters to about 1,500 metres above sea level.

Drainage: The study area is located about 1,000 metres above the sea level. Considering the elevation of the area, rivers in Mangu Local Government Area are at their youthful stage or first level of river development characterized by vertical erosion rather than horizontal erosion, due to the high speed of the water as a result of the slope. Some of these rivers include: River Gindiri, River Danhausa, River Mangu Halle and River Panyam.

The availability of water is important in the location of human settlements. It is impossible to think of any modern development without water. Most of these rivers are named after the settlements they passed through as shown below in part of the study area (Pyam Chiefdom).

a. The River Lere in Gindiri has two tributaries; Changal and Zandur rivers that flow over a rugged hilly terrain [16]. The basin area is approximately 177.2km^2.
b. The Dan-Hausa River whose basin covers an approximate area of 124.9km^2.
c. The Gimti basin in Langai district which covers approximately 199.8km^2 [6].

Vegetation: Central Part of Plateau State falls within the northern guinea savanna zone which consists mainly of short trees, grasses and the Plateau type of mosaic vegetation. Near some villages in the study area are thick hedges of cacti, which have been planted around household farms or compound lands. Fringing woodlands or gallery forests can be found along some river valleys (World Wildlife Fund, 2001).

Man’s cultural impact on the vegetation of the region has been considerable. Virtually all the original vegetation of the area, which was savanna woodland, has been replaced by grassland savanna with occasional shrubs and scanty woody shrubs. The human activity that greatly affected vegetation is mainly agriculture and settlement. Most of the area is now farmland; but there are still remnants of the

natural vegetation that are preserved here and there for a variety of purposes- food, shade, medicine, fuel, or some other economic or mythic value [9].

Economic Activities: The economy of the region is dominated by agriculture, mining, industry/manufacturing, tourism and transportation. Arable farming is practiced at varying levels of intensity everywhere in the study area. Agricultural land-use is the most important single means of rapidly altering the structure of vegetation in the region.

Materials and Methods

A total of 465 copies of Questionnaire One were administered to household heads within the study area. The sample size was determined using the [8] sample size determination table, which recommends a minimum of 384 respondents for populations exceeding 10,000 at a 95% confidence level and a 5% margin of error. To ensure adequate representation and account for possible non-responses, the sample was increased to 465. This approach aligns with the principles outlined by [5], who suggested that expanding sample size enhances reliability in studies involving heterogeneous populations. The questionnaires were proportionately distributed across the selected communities to capture variations in settlement types: urban, peri-urban, and rural, thereby ensuring a fair representation of household heads across the study area.

In addition, Questionnaire Two was administered to staff of water-producing agencies. Given the relatively small and specialized nature of this population, a purposive sampling technique was employed. This allowed the researcher to include all key technical and administrative personnel involved in water production, quality control, and distribution within the selected agencies. This method ensured that data were obtained from respondents with direct operational knowledge of water management and supply systems. Oral interviews, personal observation, key informant interview and photographs. The secondary data were obtained from the department of works and Water Sanitation and Hygiene (WASH) of Mangu LGA, Plateau State Water Board, Plateau State Rural Water Supply and Sanitation Agency (PRUWASSA), and Sustainable Development Goals (SDGs) office Jos.

Multi-stage sampling technique was used with towns and villages as the strata, and simple random sampling using figures for 2006 National Populations Census as projected. For instance, Mangu town itself was selected and smaller towns like Gindiri, Panyam, Ampang West and Mangun were selected. The villages here include places like Langai, Chanso, Mairana, Konbum and Jannaret. The researcher employed this method at this stage because stratified random sample is obtained by choosing elementary units (strata) in such a way that each unit in the population has an equal chance of being selected based on its sample size. 10 research assistants were trained for 3 days, after which they generated data for 2 weeks. Descriptive statistical technique was used in the data summary, they include tables, pie charts, bar charts, and percentages.

4. RESULTS AND DISCUSSION

One of the major water consuming factors in water and sanitation studies has always been family or household size as shown in Table 1.1, the larger the household size, the larger the quantity of water consumption. Small family sizes consume less water at a given time. This is in agreement with the findings of [12], that household size affects water consumption. Adding that, household with ten persons

with each using about 80 litres per day will need up to 800 litres to satisfy their daily water need. From the same

Table, 133 respondents receive ₦0000 to ₦ 39000 monthly earnings. High income may lead to better access to water and sanitation for economic reasons.

Table 1.1: Average Monthly Income of Respondents in Naira (₦) and Household Size

Average Monthly Income of Respondents in Naira (₦)							
	(1000-19000)	**(20000-39000)**	**(40000-59000)**	**(60000-79000)**	**(80000-99000)**	**100,000 +**	**Total**
	171	133	91	34	13	23	**465**
Household Size							
	LGA	**1-3**	**4-6**	**7-9**	**10+**	**Total**	
	Mangu	128	166	99	72	**465**	

Source: Author's Field Work, 2024

Average number of people per household (see Table 1.1 on household size) and average water consumption per person is analysed in Table 1.2 and Table 1.3.

Table 1.1 shows that the majority of respondents (171 or 36.8%) earn between ₦1,000 and ₦19,000 monthly, indicating a predominantly low-income population. This reflects the typical income distribution pattern in rural and semi-urban areas of Nigeria, where economic activities are largely subsistence-based [14]. Most households fall within the four to six-person range (35.7%), which aligns with national averages reported for northern Nigeria [15]

The data suggest that larger households with limited income may experience higher water demand relative to income capacity. Studies have shown that household size and income significantly influence domestic water consumption and accessibility [13]; Okoye & Achakpa, 2018). Thus, the variation in income and household size in Mangu LGA has direct implications for water use patterns and affordability within the area.

Table 1.2: Average Number of People Per Household (HH)

Mid Value of HH Size (x)	2	5	8	11	Total	∑x= 26
Frequency (f)	417	575	326	182	1,500	∑f= 1,500
Fx	834	2,875	2,608	2,002	8,319	∑fx= 8,319

Source: Author's Field Work, 2024

Average number of people per HH (Table 1.2) = ∑fx / ∑f = 8,317 / 1,500 = 5.5 = 6 person per HH.

Table 1.2 shows that the average household size in the study area is approximately six persons per household. This figure corresponds closely with the national average household size in northern Nigeria, which typically ranges between five and seven persons [15]. Such household sizes reflect the extended family structure common in rural communities, where shared living arrangements remain prevalent.

Table 1.3: Average Water Consumption Per Person Per Day.

Upper Value of the Classes= X	30 litres	60 litres	90 litres	120 litres	150 litres	180 litres	Total
Frequency = f	186	161	73	193	65	349	1,027
Fx	5,580	9,660	6,570	23,160	9,750	62,820	117,540

Source: Author's Field Work, 2024

Average Water consumption (Table 5.11b) = ∑fx / ∑f = 117,540 / 1,027 = 114.5 litres

Therefore, 6 persons consume 115 litres of water per day

1 person consumed 115 / 6 = 19.1 litres

About 20 litres of water consumed by 1 person per day is very inadequate (Tables 1.2 and Table1.3).

Table 1.3 reveals that the average water consumption per person per day is about 20 litres, which is below the World Health Organization's (WHO) minimum standard of 50 litres per person per day for basic domestic needs [28]. This indicates that residents in the study area experience inadequate access to water, which may affect hygiene and overall quality of life. The relationship between large household size and low per capita water consumption underscores the strain on available water resources and the socioeconomic challenges of water accessibility in the study area.

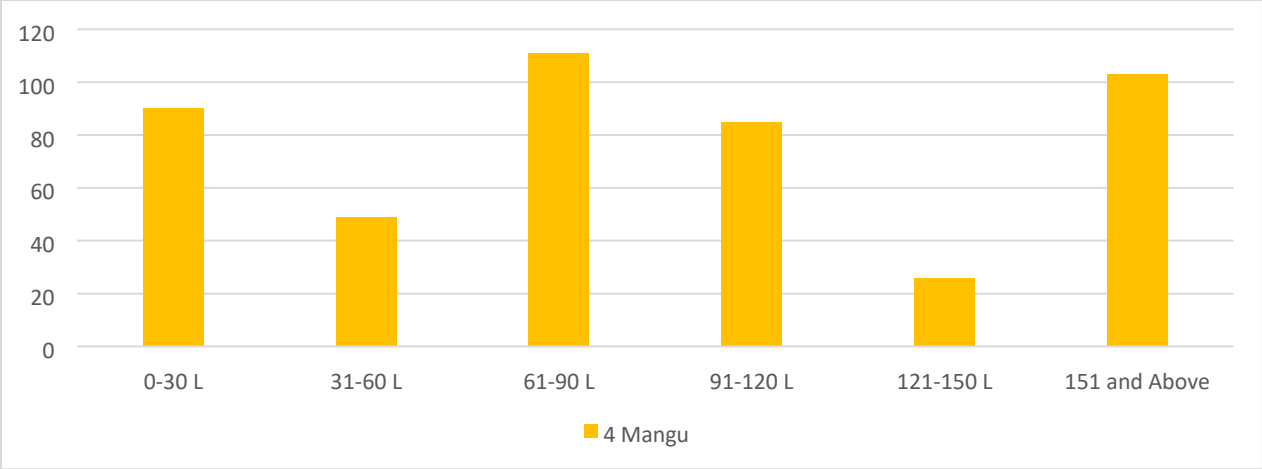

Figure 1.3: Litres (L) of Water Required Per Day in a Household Source: Author's Field Work, 2024

Water required in a household per day (Figure 1.3) is affected by the distance to the water point (Table 1.4). households that are far from water sources tend to consume less water, all things being equal.

Table 1.4: Distance of Water Source from the House in Meters/Kilometers

LGA	0-39m	40-79m	80-119m	120-157m	160-199m	200-499m	500-999m	1Km and <
Mangu	10	71	58	6	0	8	53	118

Source: Author's Field Work, 2024

Availability and access are not the same. In Table 1.4, 8 households covered a distance of between 200 and 499 meters to source water and 188 households went through over 1 km to source the commodity. The implications of these long distances are the challenges of illiteracy and disease amongst children and women in the study area.

Table 1.5: Factors Affecting Household Water Supply

LGA	Season	Cost	Distance	Labour
Mangu	**280**	**30**	**110**	**20**

Source: Author's Field Work, 2024

From Figure 1.3, the major factor affecting household water supply was seasonal variation with 280 respondents. Labour is the least with 20 respondents. Cost could be the major factor as it affects all other factors. This corresponds with other findings which has it that the major sources of water supply for the rural populace are hand-dug wells, boreholes, natural springs and streams, and rain water harvest, majority of which are highly unreliable due to weather uncertainties [11].

Table 1.6: shows result on the problems of water supply

Problems of Water Supply						
LGA	**Quality**	**Inadequacy**	**Distance**	**IRR**	**LDS**	**Others**
Mangu	110	148	124	54	18	11

Source: Author's Field Work, 2024

From Table 1.6, the major problem of water supply in Mangu inadequacy. This could be due to high population.

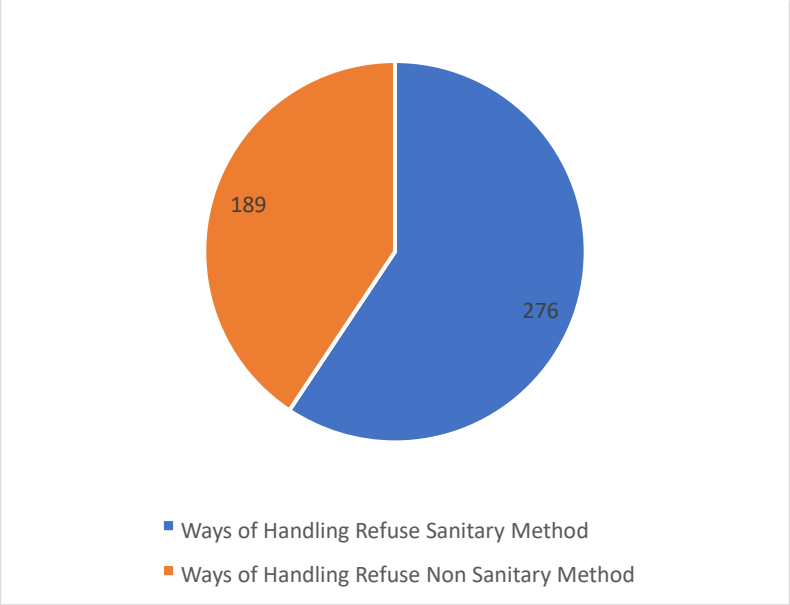

Fig. 1.4: Ways of handling refuse

Source: Author's Field Work, 2024

From 1.4, 276 respondents use sanitary method for handling refuse and 189 respondents use non sanitary methods which is dangerous to health. The non-sanitary method is one of reasons for the blockage of water drainages and causing floods in some areas.

In Figure 1.5, 280 households had toilet facility, and 85 households did not. Those without the sanitation facility were in health risk of poor sanitation leading to diseases.

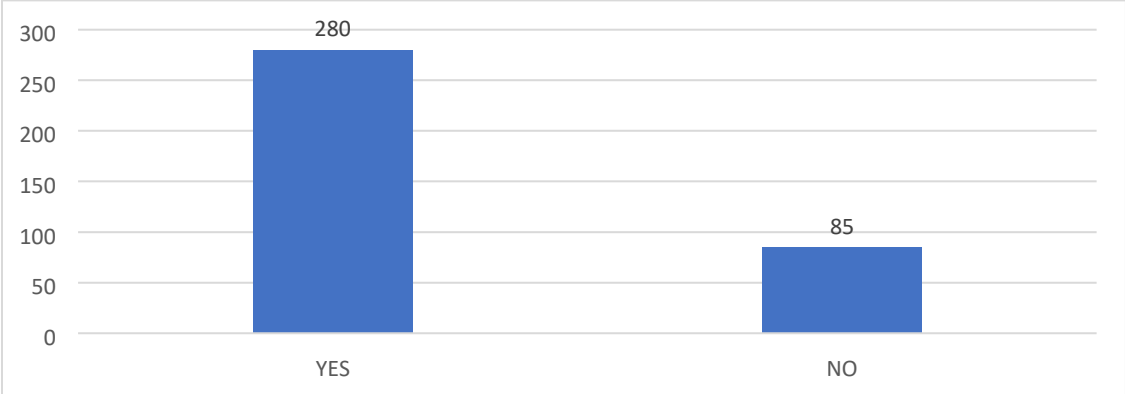

Figure 1.5: Availability of a Toilet Facility (Access to a Clean and Safe Toilet in a Household)

Source: Author's Field Work, 2024

Those without the facility practice open defecation. One of every 3 people in the world today have toilet [1]. The result indicates a significant improvement due to the impact of the SDGs programme on water and sanitation in the study area.

From Figure 1.5, the households without sanitation are faced with health challenges. Poor sanitation is part of the vicious circle of poverty and results in disease, illness and low productivity [7]. Sanitation facilities are lacking in many localities.

Table 1.7: The Nature of the Sanitation Facility

LGA	Flush Toilet	Dry Toilet
Mangu	217	63

Source: Author's Field Work, 2024

For flush and dry toilets, result shows that 217 households had flush toilet which is good for hygiene. The flush toilets here indicate water consumption in order to flush the toilets otherwise it will constitute health hazard. Dry toilets with 63 frequency means that less water was used. Providing adequate sanitation and access to improved drinking water minimizes the risk of coming into contact with dangerous bacteria and viruses. The flush and dry toilets are considered to be good sources of sanitation in line with [27] that Access to Sanitation measures the percentage of a country's population that has access to an improved source of sanitation.

Pit latrine is the least in number. This varies with the findings of [4], he established that Pit latrines are the dominant type of excreta disposal facilities in urban slums in Africa, Asia and Latin America and Carribean [4]. The types of pit latrines include traditional ones.

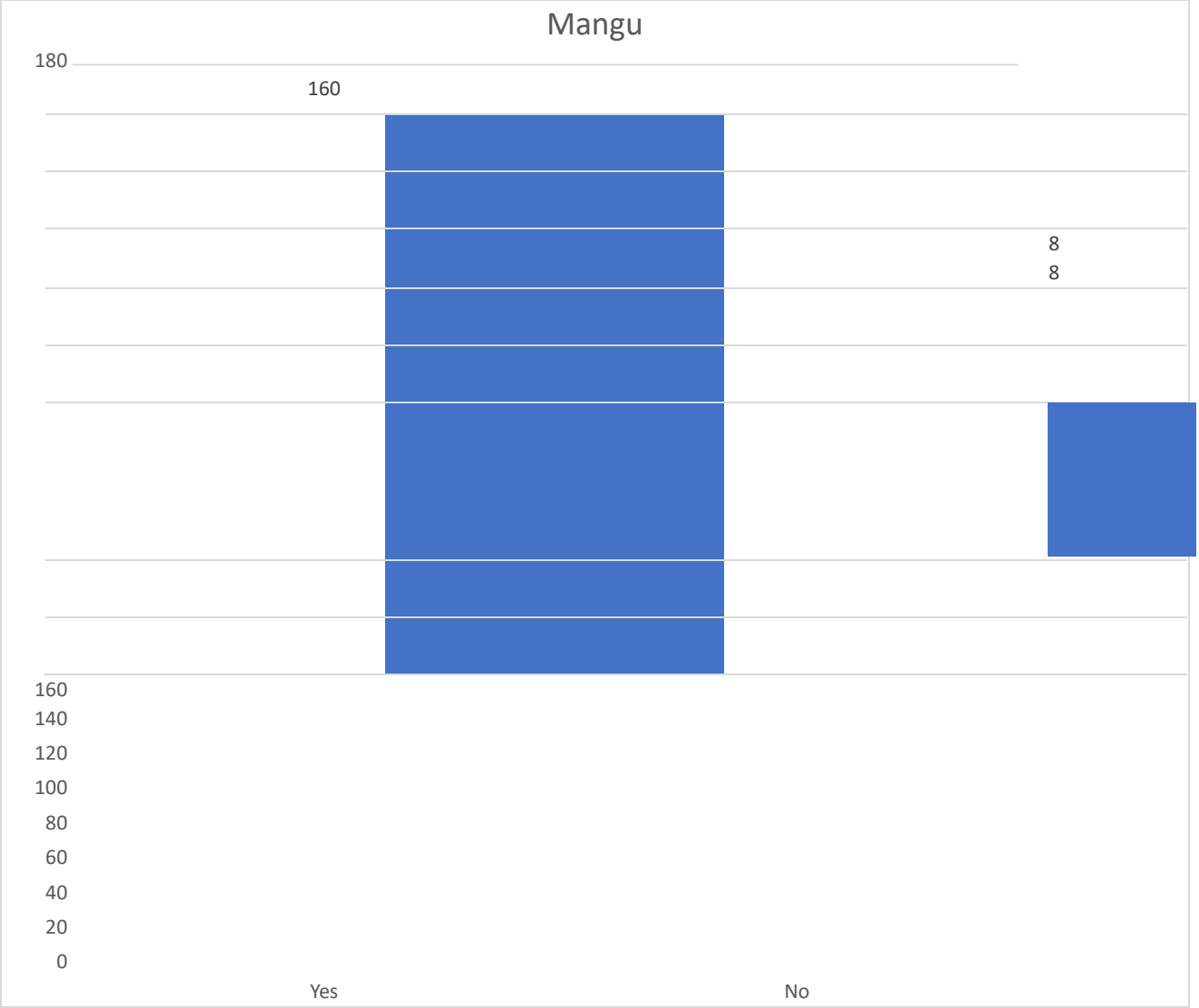

Figure 1.6: Showing the Involvement of Community Members in the Decision for the Selection of Water and Sanitation Projects

Source: Author's Field Work, 2024

Figure 1.6 reflects relationship between community involvement in the decision for the selection of projects and community involvement in the maintenance of the facility. By involvement in decision for selection, they have become part of the maintenance as it gives them sense of ownership and responsibility leading to sustainability. 160 respondents were involved in decision for selection while 88 were not involved.

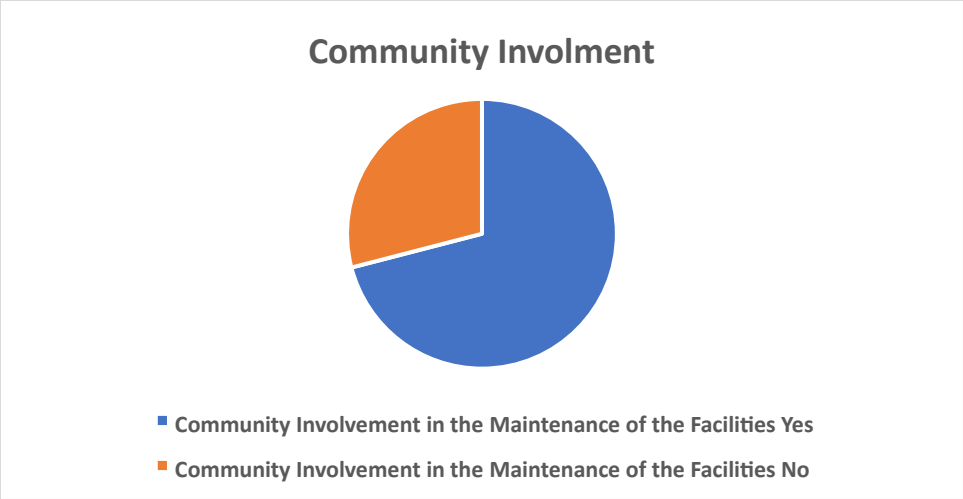

Fig. 1.7: Community Involvement in the Maintenance of the Facilities
Source: Author's Field Work, 2024

Sustainability in water and sanitation projects is affected when there is low community involvement in the selection of such projects. In Mangu LGA, there was consultation with the beneficiaries of the projects before construction thereby giving rise to a better community participation in the maintenance of the project. According UNICEF 1999, a community should provide between 5 and 10% of the capital cost of constructing facilities. It proposes that communities provide labour for the construction of hand-dug wells, and any supporting agency would provide technical assistance and training for the maintenance of the project.

RECOMMENDATION AND CONCLUSION

The researcher recommends for more provision of sanitation facilities and services in the study area, they include toilets, authorized ways of handling waste etc. Improvement in supervision of water and sanitation projects will bring about significant increase in the number of water and sanitation facilities considering increase in the population of Mangu LGA. There is also need to improve on the maintenance culture of the people to ensure project sustainability. The government should increase investment in the sector for higher productivity and to endure long life expectancy of the people.

From the findings, there is need for more awareness on SDGs activities in the study area, and the need for improvement in the provision of refuse collection facilities and services in the study area in line with the Sustainable Development Goals (SDGs). Maintenance culture is recommended in the study area to maintain scarce resource amongst competing needs. This will go a long way in enhancing sustainability of the water and sanitation facilities. The community participation should be sustained and encouraged for better result. The government should improve investment in the sector to increase productivity and stimulate national development. In conclusion, access to water and sanitation requires improvement in the study area to meet with acceptable global standards.

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Appendix 1

Questionnaire No. 1: **Household Access and Government Provision of Water and Sanitation**
INSTITUTION: Federal University Lokoja, Kogi State. DEPARTMENT OF ARTS AND SOCIAL SCIENCES.

TOPIC: ASSESSMENT OF ACCESSIBILITY TO WATER, SANITATION AND HYGIENE IN MANGU LOCAL GOVERNMENT AREA OF PLATEAU STATE, NIGERIA

Dear Respondent,

I am a staff of the Federal University Lokoja, Kogi State. I am undertaking research on the above topic, kindly supply the responses needed for the purpose of research only.

Thank you in anticipation.

SULE HARUNA BIBOT (P.1054) sule.bibot@fulokoja.edu.ng

INSTRUCTION: Please tick/fill as appropriate.

SECTION A: SOCIO-ECONOMIC AND DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS

Local Government Area……....District…… Ward……

1. **Name of Locality:** …….....

2. **Description of Locality** (a) Urban (b) Semi Urban (c) Rural (d) Others (Specify)….....
3. **Age of Respondent:** …….....
4. **Sex:** Male ( ) Female ( )
5. **Marital Status:** (a) Single (b) Married (c) Widowed (d) Divorced (e) Separated
6. **Level of Education:** (a) Non formal (b) Primary (c) Secondary (d) Tertiary (e) None.
7. **Occupation:**(a) Civil Servant (b) Farming (c) Trading (d) Artisan (e) Others (Specify):….....
8. **Average monthly income** of the head of household …….
9. **Household size:** ……..
10. **What type of house do you occupy?** (a) Detached Building (b) Bungalow (c) Duplex (d) Storey Building (e) Shared Accommodation (f) Face to Face (g) Flat (h) Others (specify) ……
11. **Tenancy Status** (a) Rented (b) Owner occupier (c) Provided by employer (d) Others ……

SECTION B: ACCESS TO WATER AND SANITATION

1. Awareness about Millennium Development Goals (MDGs) Yes No
2. Awareness about water and sanitation programme of MDGs Yes No
3. What are your sources of water supply? (tick as many as applicable) (a) Rain (b) Well (c) Borehole (d) tap (e) Streams/River (f) Water Vendors/table water (g) Others (specify)……
4. When was your water source constructed?……
5. How many litres of water are required per day in your household? .....
6. What is the distance of the source from the house (in km or meters)? .....
7. Availability of a toilet facility (Access to clean and safe toilet) Yes No
8. If Yes, what is the nature of the sanitation facility? (a) Flush toilet (sitting pan or squatting) (b) Dry toilet (pit latrine or vault or bucket toilet (c) others (specify)…….....
9. If flush toilet, specify (a) Sitting toilet (b) Squatting toilet
10. Distance from the toilet (a) in the building (b) outside the building
11. If outside the building, what is the distance in metres? ……
12. Who provided the facility? (a) Government (b) Community (c) religious organization (d) NGO (e) the landlord (f) others ……
13. When was the toilet facility constructed? ……
14. If government in 14 above, which one? (a) Federal (b) State (c) L. G. A. (d) MDG
15. How many toilet(s) do you have? …….....
16. What are the factors affecting your water supply? (a) Season (b) Cost (c) Distance (d) Labour (e) Others….....
17. What problem(s) do you encounter with water supply in your area? (a) Poor quality (b) Inadequate supply (c) Distance from source (d) Irregularity (e) Low dependence on source/supply (f) Others ……
18. List the domestic household water use in order of priority (Rank in order of impotence starting from the most important) (a) Cooking (b) Drinking (c) Bathing (d) Laundry (e) Flushing/Household Hygiene (f) Brewing.

19. Identify the strategies you adopt to reduce water shortage. (a) Fetching Rotationally (b) Reduce Consumption (c) Water Recycling (d) Denying access to non-household members
20. How do you handle your refuse? (i) (a) sanitary method (b) non sanitary method
21. If sanitary method in question 27 above, how? (a) collection by a sanitation agency (b) burning (c) dumping in a pit (e) use of dust bin with a cover (f) using a designated sanitation side (g) Others…...
22. If non sanitary method in question 27 above, how? (a) throw it in a bush or nearby area (b) using water body like a drainage channel (c) others ……

Appendix 2

Questionnaire No. 2: **Staff/People Engaged with the Provision of Water and Sanitation**

INSTITUTION: Federal University Lokoja, Kogi State.

TOPIC: ASSESSMENT OF ACCESSIBILITY TO WATER, SANITATION AND HYGIENE IN MANGU LOCAL GOVERNMENT AREA OF PLATEAU STATE, NIGERIA

Dear I am a staff of the Federal University Lokoja, Kogi State. I am undertaking research on the above topic, kindly supply the responses needed for the purpose of research only.

Thank you in anticipation.

SULE HARUNA BIBOT (P.1054) sule.bibot@fulokoja.edu.ng

INSTRUCTION: Please tick/fill as appropriate.

SECTION A:

SOCIO-ECONOMIC AND DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS.

Local Government Area…….……...District…….… Ward……

1. **Name of Locality:** …….....
2. **Description of Locality** (a) Urban (b) Semi Urban (c) Rural (d) Others (Specify)….....
3. **Age of Respondent:** …….....
4. **Rank of the Officer Responding** …….....
5. **Sex:** Male ( ) Female ( )
6. **Religion:** (a) Christianity (b) Islam (c) Others (specify)…….
7. **Level of Education:** (a) Non formal (b) Primary (c) Secondary (d) Tertiary (e) None.

SECTION B: QUESTIONNAIRE FOR STAFF/PEOPLE ENGAGED WITH THE PROVISION OF WATER AND SANITATION

1. Where is your place of work (a) MDGs Office (b) Water Board (c) Dam Construction site (d) LGA/State Secretariat (e) Religious organization (f) NGO (e) Others (specify) ……
2. What do you provide to the community? (a) Water (b) Sanitation Facility (c) both 'a' and 'b' (d) others……
3. How many projects have you executed? .....
4. Where are the locations of such projects? **Water supply**
   (a) Rural…….. ……...
   (b) Semi Urban ……
   (c) Urban ……
   Sanitation facilities

   (a) Rural ……
   (b) Semi Urban ……
   (c) Urban ……
5. What were your challenges in executing water and sanitation projects? (A) Funds (B) Lack of cooperation from the Community (C) Poor Monitoring and Supervision of Water Projects (b) Others: .
6. What was the regularity of your monitoring and supervision exercise? (a) Very Regular (b) Regular (c) Not Regular (d) Not at all
7. What was the experience of your project monitoring and supervision team? (a) Very Good (b) Good (c) Fair (d) Poor (e) Very Poor
8. To what extent were you able to cover your targeted areas? (a) Very good coverage (b) Good coverage (c) Fair coverage (d) Poor coverage (e) Very poor coverage
9. What is the contribution of your agency in the provision of water and sanitation? (a) Very good (b) Good (c) Fair (d) Poor (e) Very poor
10. What was the budgetary contribution of your agency to the provision of water and sanitation?.....
11. What were the constraints you faced in the provision of water and sanitation?
    ……..…… ……
    ……..
12. What suggestions can you give towards the achievement of MDG7 on water and sanitation?