



Assessment of Water Sanitation and Hygiene Practice among ... Ishaku, R. (2026)

Assessment Of Water Sanitation and Hygiene Practice Among Citizens In Mubi North Local Government Area Of Adamawa State, Nigeria

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Abstract

A survey design study was conducted to check the functionality of Water Sanitation and Hygiene Practice (WASH) implemented by Non-governmental organization (NGOs) in Mubi North LGA, Adamawa state. The study adopts a descriptive survey design. The target population consist of all secondary school principal, primary health centre, community head (Jauro) and educated house hold (women) in the area. A stratified random sample technique was used in the study. A structured questionnaire using Likert scale was used for the purpose of data collection. Data collected from the field of study were subjected to statistical package called statistic 8.0, where it was analyzed and presented in tables using simple percentage and mean to answer research question. Result from the study on health facility reveals that the sustainability of WASH facilities is heavily dictated by institutional budget constraints and patient poverty. it was concluded that, the sustainability of sanitation and hygiene projects is directly tied to community involvement; house hold and good funding from donors or governments. It was recommended that members of the community should participate in the process of sustaining water and sanitation infrastructure. There is need to encourage women to improve their economic sources of living. Non-governmental organization should have a strong feedback mechanism on each WASH projects in the community, community members especially women should be educated on village loan saving association to support their personnel hygiene practices at home.

Keys words; Sustainability, WASH, Women, Community

Introduction

Safe water and sanitation are essential not only for health and well-being but also for their impact on everyday life. Water used for drinking, irrigation, bathing, and various household purposes can become contaminated, and consumption of contaminated or unsafe water results in poor health outcomes, such as diarrhea, neglected tropical diseases (NTDs), and even death (World Health Organization [WHO] 2022a). Therefore, having access to improved water sources and sanitation facilities is considered a right that is fundamental to enjoying other human rights (Armah et al. 2018; Kayser et al. 2019). According to WHO (2022b), an improved water source is one that is protected from outside contamination, especially from fecal matter, while an unimproved water source is not protected from outside contamination. An improved sanitation facility is one that hygienically separates excreta from human contact while an unimproved sanitation facility does not offer this protection (WHO 2022b). Household water, sanitation, and hygiene (WASH) sources have been shown to have crucial socioeconomic development and health implications. In low-income or developing countries, most water-borne diseases have been associated with drinking unsafe water. In Africa, more than 2,000 people die every day from illnesses that are related to poor sanitation and hygiene, and drinking unsafe water (Abubakar 2019). Limited access to safe drinking water and improved sanitation facilities, as well as improper or lack of water treatment practices, can promote the spread of water-borne diseases (Omole & Ndambuki 2014; Prüss-Üstün et al. 2018). There is a high concern for the sustainability of water, sanitation, and hygiene (WASH) services, such as provision of water supply and sanitation services, in community. Sustainability in the WASH services means that the WASH services remain functional, even after the WASH implemented organization leaves that place (Cross P., et al 2016). Study conducted by Joseph G., et al 2019 mentioned that many WASH services



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failed, especially in rural areas, where water supply or sanitation services are implemented, because of this a lot of investment are wasted due to this problem. For example, it was estimated that the WASH system failure in Africa resulted in a lost investment of \$1.2 billion (Bonsor *et al* 2001). He furthermore mentioned unsustainable WASH services inhibit the progress of the UN Sustainable Development Goals 6 that is, achieving 100% access to safely managed water and sanitation services. Accesses to sustainable water, sanitation and hygiene (WASH) practices remain critical challenges in Mubi North, where a socio-economic factor heavily influences intervention out comes. Many women in Mubi have been educated on sanitation hygiene practices, most of them couldn't sustained this hygiene practices, they face barriers to sustained these practices due to poverty which undermine long term WASH sustainability in both house hold and communities

Literature Review

The issues affecting sustainability of water sanitation hygiene practices has been richly discussed by diverse theoretical frameworks contributing to nuanced understanding intricate discussion. (Adams *et al.* 2016; Emenike *et al.* 2017; Abubakar 2019; Rodriguez 2019), reported that socioeconomic factors, such as poverty, education, and residence type (urban or rural), have important implications for longevity of safe water, sanitation and health behavior. In a secondary data analysis of the 2008 Ghanaian Demographic and Health Surveys (GDHS), Adams *et al.* (2016) found that poverty level, education level, and region / type of residence were among significant predictors of sustainability to an improved drinking water source. In another study conducted by Irianti *et al.* (2016) using 2007 Indonesian family life survey data, the researchers found education, wealth, toilet type, and place of residence to be among significant determinants of household drinking water sources in Indonesia. A study conducted by Action (2019) focused on rural settlements in parts of southwest Nigeria found that the majority of the households of which most were low-income– relied on unimproved water sources and sanitation facilities. Emenike *et al.* (2017)'s study on southwest Nigeria reported that increased income was correlated with access to improved water sources. Similarly, Rotowa *et al.* (2015) in Akure, a city in southwestern Nigeria, mentioned that Nigerians who earned higher income used improved sanitation facilities and that Nigerians in community whose education level was below tertiary education used unimproved sanitation facilities.

Concepts of WASH Sustainability in Community

The concept of sustainability gained ground in the 1980s when environmental degradation and pollution was at its highest globally and defining sustainability and development has been difficult. Project intervention sustainability is recognized as a key factor to be considered in donor funded projects. According to Harvey and Hurworth (2017), project sustainability refers to a project's ability to continue serving the community or stakeholders for an extended period of time. Furthermore, they describe sustainability as a company's capacity to build a growth strategy and advancement that works indefinitely (Ochelle, 2020). A study by Foxand (2017) investigated the long-term viability of projects in rural parts of South Africa's Limpopo Province. Form his study it was discovered that projects could not be performed and sustained without the active engagement of the community. He further buttress many projects fail, leaving populations in a state of abject poverty due to poor sustainability. Another study on the survival rate of community-based projects in South Africa conducted by Korten (2020) found that lack of relevant skills, poor finances and education to manage projects has a negative impact on most project sustainability because project managers and their teams make mistakes and blunders that impede project sustainability. Research by Muttagi (2017) found that the failure of many donor-funded projects in developing nations may be traced back to ineffective administration of grassroots efforts. Many donor-funded initiatives in developing countries



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have failed because of poor administration of community projects. This research seek to unveil where many community member fail to have access to clean water, poor sanitation practices in primary health care and many unused toilets in our secondary schools despite WASH intervention by NGOs in Mubi North

Statements of the Problem

Numerous WASH projects like toilets, in secondary school, boreholes, women education on hygiene practices have been implemented in Mubi North by several International Non-Governmental organization and local Non-Governmental organization in Mubi North, and their long term sustainability is undermine by socioeconomic determinant, such as house income among women, education levy in secondary school, poor funding of secondary school by government. These factors result in low functionality rate of toilets in secondary schools, poor hygiene practice among women, and poor WASH facilities in primary health center. Purdum, (2002) mentioned that, despite attempts to enhance community WASH practices in communities, long term sustainability remains a concern. Most of these projects implemented by Non-Governmental Organization water, sanitation and hygiene programs fail within three years after inception that why this study seeks to unveil factors contributing poor management practices of WASH in Mubi LGA.

Theoretical Framework

The legitimacy theory as developed by Woodward (1995) states that there should be congruence between the expectations of the local community and the value addition to be achieved from a project. This implies that legitimacy is a value system derived from the existence of a project within the community which makes it acceptable. This also means that the perceptions of key stakeholders about the existence, impact and activities of the project are justifiable and appropriate to the community and the government institutions. This theory is supported by Brown (2017), arguing that legitimacy is determined by the project organization's perceptions of its social contract within society. It has to do with the legal, acceptable, and defensible right to be and do anything in a community. In their chosen path of action, organizations must fulfill a social compact within society in a way that is legitimate, acceptable, and justifiable. This theory will be beneficial in this research since it will aid in the development of a clear understanding of the legality, admissibility and justification of the sanitation and hygiene projects. Sustainability of the projects in Mubi will depend on whether they are acceptable to the local communities and comply with the legal and environmental requirements of the country national governments.

Objective of the Study

The objective of the study is to Assess Water sanitation and Hygiene (WASH) intervention among citizens in Mubi North Local Government Area of Adamawa state. Specifically, to identify socioeconomic determinant influencing the sustainability of WASH intervention in Mubi North LGA

Methodology

Research Design

The study adopts a descriptive survey design. According to Cooper and Schindler (2014), this strategy is used when the researcher is interested in determining who, what, where, when, or how much information is being gathered. According to Orodho (2018), descriptive survey design is ideal since it is used to gather data that portrays contemporary occurrences by asking individuals questions about their views, attitudes, actions, or values. It is also useful for describing or investigating the current condition of two or more variables. Because they are objective, this design was helpful in describing and measuring the elements that affect the sustainability of the sanitation and hygiene initiatives by Non- governmental Organizations has completed in Mubi North.



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Target Population

According to Cooper and Schindler (2017), population refers to the entire collection of goods or subjects that a researcher is interested in. Populations could be defined by Kothari (2017) as the universe or complete set of humans, things, or stuff that has common observable traits and hold the correct information that the researcher is looking for. The target population consisted of five secondary school principal, ten primary health centre officer, five community head (Jauro) and ten educated house hold (women) on WASH by NGOs in Mubi North. In each selected ward. Mubi has eleven wards and seven ward were selected where WASH facilities in health care centre, secondary schools, and women that has undergo training on WASH practices.

Sample Size and Sampling Procedures

According to Creswell (2016), a sampling frame refers to the actual occurrences or persons from which a sample was drawn to represent the total population. The sampling frame for this study included five secondary school principal, community heads; ten health officer ten houses hold women who have undergone intervention in each ward. A stratified random sample technique was used in the study. This is due to the research population's heterogeneity, which principal officers was obtained from each unit, and the sub-categories were connected to provide full stratified samples as provided by Yamane (1967). According to Creswell (2016), a sampling frame refers to the actual occurrences or persons from which a sample was drawn to represent the total population. The sampling frame for this study included two secondary school principal, two community head, two health officer and two houses hold women who has undergone intervention per ward. A stratified random sample technique was used in the study. This is due to the research population's heterogeneity, which principal officers was obtained from each unit, and the sub-categories were connected to provide full stratified samples as provided by Yamane (1967).

The sample size of the study was 180 respondents using Yamane’s formula

Table 1: Sample Procedure of Respondent

Wards	School Principal	Health Officers	Community Leaders	Train Women on WASH Practice	Total
Yelwa	5	10	5	10	30
Muchala	5	3	5	10	23
Vintim	5	7	5	10	27
Bahuli	5	7	5	10	27
Sabon layi	5	10	5	15	35
Muchalla	3	3	3	10	19
Mijulu	3	3	3	10	19
Total					180

Data Collection Procedure

A structured questionnaire using Likart scale was used for the purpose of data collection. The researcher was in a position to gather data of both a quantitative and a qualitative nature from the respondent. The goal of a questionnaire, according to Alshenqeeti (2014), is to ensure that the data acquired accurately reflects the respondents' thoughts and sentiments. The major goal of employing questionnaires in this study was to guarantee that all of the respondents are given the same questions, reducing interviewer effect and other anomalies.

Validity of Research Instrument

According to Kothari (2017), the effectiveness or accuracy with which a research instrument evaluates the notion or variable that it is supposed to test run is known as validity. The content validity of the instrument was established in this study by pilot-testing it on ten randomly selected health workers, two community head, and two principal officers in Mubi North, The ten randomly



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selected individuals were not involved in the final study to avoid biasness since they had been exposed to the instrument. The researcher then revised the instrument to ensure that it has all of the information and addresses the study's objectives.

Data Analysis

Data collected from the field of study were subjected to statistical package called statistic 8.0, where it was analyzed and presented in tables using simple percentage and mean to answer research question.

Presentation of Results

This comprehensive analysis explores the socio-economic factors influencing the sustainability of Water, Sanitation, and Hygiene (WASH) practices and facilities in Mubi North. Based on the data regarding school-based presented on table1. WASH facilities indicates a significant majority of respondents (89.3 %) agree that a lack of dedicated school funding is the primary barrier preventing regular toilet maintenance, this financial strain is compounded by the economic status of the community. 93.9 % of participants believe that parents low-income levels strictly limit their ability to contribute essential supplies such as soap and hand sanitizer. Consequently, 89.3 % of the surveyed population observes that toilets break down frequently due to a lack of repair funds. A critical trend identified is the post-intervention gap, where 81.2 % of respondents feel that once NGOs or government bodies complete the initial installation, there is a total cessation of supply chains for toiletries. Ultimately, 87.4 % of respondents conclude that poor school revenue has a direct, negative effect on the long-term sustainability of these facilities.

Table 1: Factors Influencing the Sustainability of WASH Practices Maintenances due to Economic Factor in Mubi North LGA

SN	Variables	Mean	SD	SA %	Agree %	S %	D. %
1	Lack of school funding prevent regular toilet maintenance	1.38	1.48	61.5	89.3	19.2	10
2	Parent's low-income limits contributions for toilets supplies (soap, sanitizer etc.).	1.78	1.37	93.9	63.3	10.3	13.6
3	Toilets break down often due to poor funding for repairs	1.54	1.89	89.3	56.9	81.3	12.8
4	Since intervention by NGOs / governments no one care to supply toiletries	1.66	1.82	72.3	81.2	14.7	11.8
5	School poor revenue has effects on toilet maintenances	1.47	1.87	68.8	87.4	11.0	10.8
6	Cluster Mean				1.68		

Sources: Field Survey 2025

Result presented on table 2 in the context of healthcare, reveal that the sustainability of WASH facilities is heavily dictated by institutional budget constraints and patients' poverty. Approximately 85.6 % of the data suggests that limited budgets allocated to Primary Health Care centers result in unreliable water and sanitation services. The hygiene environment is further compromised by the financial status of the users, 89.4% of respondents agree that patients cannot afford to provide their



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own soap or sanitizer, which leads to worsening hygiene conditions within the clinics. Delays in repairs are almost universally attributed to a lack of government funding (87.5%). Furthermore, 72.87 % of respondents believe that general community poverty reduces overall compliance with WASH standards. These factors culminate in a significant waste of infrastructure, as 70.7 % of participants report that many WASH facilities remain unused simply because they have fallen into disrepair due to poor maintenance.

Table 2: Factors Influencing the Sustainability of WASH Facilities in Primary Health Care in Mubi North

SN	Variables	Mean	SD	SA %	A %	SD %	D %
1	Limited budget to primary health care causes unreliable water / sanitation Centre	1.97	0.7	63.3	85.6	17.3	13.8
2	Patients can't afford soap / sanitizer, worsening hygiene in primary health care	1.62	0.52	89.4	74.7	11.8	4.1
3	Lack of government funding delay WASH repair	1.83	1.63	87.5	85.1	4.6	2.8
4	Poverty in community reduces WASH compliances	1.43	0.49	72.7	70.1	19.2	18.0
5	Most WASH facilities are not in used due to poor maintenance	1.54	0.50	70.7	64.1	19.2	26.0
Cluster Mean		1.66					

Sources: Field Survey 2025

Results presented on table 3 reveal reveals a stark divide between hygiene knowledge and financial capability among women in Mubi North, while training programs appear to be well-received, 72.2 % of women stated that they cannot afford the supplies recommended during those sessions. Poverty is cited by 76.9 % of respondents as the direct reason they cannot maintain home toilets or latrines. Specifically, 65.8 % of women lack the funds to purchase basic sanitizers for their families, and 78.5 % confirm that family income is the ultimate limiting factor in their ability to sustain hygiene practices. The data suggests that modern hygiene practices are perceived as a luxury, with 78.9 % of respondents agreeing that these standards are simply too expensive for the average household to maintain.

Table 3: Factors Influencing the Sustainability of WASH Practices among Women in Mubi North

SN	Variables	Mean	SD	SA%	A%	SD %	D %
1	I lack money to buy sanitizer for home WASH practices in my family	1.72	0.50	72.2	48.6	34.6	20.6
2	Poverty prevents me from maintaining home toilets / latrines WASH practices	2.01	1.23	76.9	60.9	20.1	22.1
3	Training was good but I can't afford recommended supplies	1.94	1.23	60.5	65.8	22.3	31.4



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4	Family income limits my abilities to sustain WASH	1.50	0.63	76.9	78.5	42.8	1.8
5	Modern hygiene practices among women are expensive I can afford	1.59	0.78	78.9	40.4	20.8	30.9
Cluster Mean		1.72					

Sources: Field Survey 2025 / 2026

Results presented on table 4 shows the functionality of public water points, where the data shows a breakdown in the community-funded maintenance model. Roughly 74.4 % of respondents state that their boreholes are currently non-functional because of a lack of financial support for maintenance. Although user fees are a common strategy for sustainability, 70.7% of the community agrees that widespread poverty prevents the collection of these fees for repairs. This creates a dependency on external aid. 70.3 % of respondents admit that once donor or government funding ceases, the community is unable to repair the borehole after a breakdown. There is also a notable issue with resource management, as 77.6 % agree that low-income households tend to overuse the borehole without contributing to its upkeep. Interestingly, 70.2 % of the data suggests that the mere presence of a borehole sometimes discourages community members from contributing, as they may take the access for granted until the facility fails completely.

Table 4: Factors Influencing the Sustainability of Water Borehole in Mubi North after Intervention by NGOs/ Government

SN	Variables	Mean	SD	SA%	A%	SD%	D%
1	Our bore hole are not functioning due to lack of financials support for maintenances	1.77	068	74.4	73.9	19.3	20.4
2	Community poverty prevent user fees for bore hole repairs	1.72	0.76	54.3	70.7	44.1	10.9
3	Since break down of borehole because of lack fund from donor and government, we couldn't repair borehole	1.55	0.71	56.9	70.3	19.6	24.3
4	Low-income house over use borehole without contributing	1.69	0.58	69.48	77.6	20.12	12.8
5	Access to borehole discourage community member from contributing	1.42	0.58	57.4	70.2	21.1	29.3
6	Cluster Mean	1.52					

Sources: Field Survey 2025

Discussion of Findings

The objective of this study was to assess the Socio-Economic Determinant of the sustainability of WASH intervention among women household, schools, health centre and community participation in sustainability of sanitation and hygiene projects implemented by NGOS, the study found out that there was a positive and significant relationship between the keys factors participation and sustainability of sanitation and hygiene projects. The study found that all the four variables play a significant role in sustaining WASH projects. These results are in line with those of Odhiambo (2020), who argues that community support for a project guarantees its success by empowering previously marginalized groups and movements to enhance their influence and control over the project's resources and governing structures. According to Orodho (2017) community participation in project planning like WASH and implementation ensures project ownership and contributed to long term



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viability of community-based. The study is also in line with the finding of Foxand (2017) who reported that long-term viability of projects in rural parts of South Africa's Limpopo Province that has to do with WASH intervention, from his study it was discovered that WASH projects could not be performed and sustained without the active engagement of the community. He further buttresses many projects fail, leaving populations in a state of abject poverty due to poor sustainability. Another study on the survival rate of community-based projects in South Africa conducted by Korten (2020) found that lack of relevant skills, poor finances and education to manage projects has a negative impact on most project sustainability because project managers and their teams make mistakes and blunders that impede project sustainability. A Research by Muttagi (2017) found that the failure of many donor-funded projects in developing nations may be traced back to ineffective administration of grassroots efforts. Many donor-funded initiatives in developing countries have failed because of poor administration of community projects

Conclusion

The research findings suggest that the success of sanitation and hygiene projects could only be sustained when government and community members that are well to do support the projects after implementation. The sustainability of sanitation and hygiene projects is directly tied to community involvement; house old and good funding from donors or governments. Further, the study found that parents who had students in secondary school had an effect on the sustainability of sanitation and hygiene projects implemented in their varicose school. This confirmed by the majority of respondents who strongly agree that lack of school fees affected the sustainability of sanitation and hygiene projects. Therefore, this study concluded that there was a positive and significant effect on the sustainability of sanitation and hygiene projects implemented by NGOS in Mubi North

Recommendation

Based on the findings it is therefore, recommended that

1. All members of the community should participate in the process of sustaining water and sanitation infrastructure.
2. There is need to encourage women to improve their economic sources of living.
3. Non-governmental organization should have a strong feedback mechanism on each WASH projects in the community.
4. community members especially women should be educated on village loan saving association to support their personnel hygiene practices at home.

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DOI: <https://doi.org/10.64348/zije.2026343>

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