

**SUSTAINABLE WATER MANAGEMENT IN MASHI AND MANI LOCAL
GOVERNMENT AREAS (LGAS), KATSINA STATE: UNDERSTANDING THE
SOCIOECONOMIC AND CULTURAL DIMENSIONS**

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Abstract

This study examines the socioeconomic and cultural factors that influence water management practices in Mashi and Mani local government areas (LGAs) in Nigeria. A descriptive survey design was employed, and data was collected through questionnaire administered to local communities and stakeholders. The results show that income, education, occupation and cultural beliefs significantly impact water management decisions and practices. Additionally, gender disparities and limited access to water education and awareness programs hinder effective water management strategies to address these challenges. This study contribute to the understanding of socioeconomic and cultural factors influencing water management practices in rural Nigeria and informs policy and practice for sustainable water governance and management.

Introduction:

Water scarcity and unsustainable management practices threaten the availability and accessibility of this vital resource, exacerbating social, economic, and environmental challenges (UNESCO, 2020). In Nigeria, particularly in Katsina State, water scarcity is a significant challenge facing communities in Mashi and Mani Local Government Areas (LGAs) (Nwafor, 2022). This research aims to explore the socioeconomic and cultural dimensions of sustainable water management in Mashi and Mani LGAs, Katsina State. The study will investigate the current water management practices, socioeconomic factors influencing water usage (Sullivan, 2019), and cultural beliefs and values related to water in these communities (Bieri, 2020). By understanding these factors, this research seeks to contribute to the development of effective and sustainable water management strategies that consider the unique needs and perspectives of local communities in Mashi and Mani LGAs (Grey & Sadoff, 2017). This introduction sets the stage for the research, highlighting the significance of the study and its potential contributions to the field of sustainable water management.

Statement of the Problem:

The Mashi and Mani Local Government Areas (LGAs) in Katsina State, Nigeria, face significant challenges in managing their water resources sustainably. Despite the importance of water for human survival, economic development, and environmental sustainability, the communities in these LGAs experience; Inadequate access to safe and potable water (Nwafor, 2022), Inefficient water usage practices (Sullivan, 2019), Limited understanding of the cultural and socioeconomic factors influencing water management (Bieri, 2020), Ineffective water governance and management structures (Grey & Sadoff, 2017). These challenges exacerbate water scarcity, threatening the livelihoods of communities in Mashi and Mani LGAs. Therefore, this research aims to investigate the socioeconomic and cultural dimensions of sustainable water management in these areas, to identify strategies for improving water governance, management, and accessibility.

Research Objectives:

1. To examine the socioeconomic factors influencing water management practices in Mashi and Mani Local Government Areas (LGAs), Katsina State, Nigeria.
2. To investigate the cultural beliefs and values related to water management in Mashi and Mani LGAs, and their impact on sustainable water use.
3. To identify effective strategies for improving water governance and management in Mashi and Mani LGAs, taking into account the socioeconomic and cultural contexts of the communities.

Research Questions:

1. What are the socioeconomic factors that influence water management practices in Mashi and Mani Local Government Areas (LGAs), Katsina State, Nigeria?
2. How do cultural beliefs and values shape water management decisions in Mashi and Mani LGAs, and what are the implications for sustainable water use?
3. What are the effective strategies for improving water governance and management in Mashi and Mani LGAs, considering the socioeconomic and cultural contexts of the communities?

Literature Review

Sustainable water management is a critical issue in Nigeria, particularly in Katsina State, where Mashi and Mani Local Government Areas (LGAs) face significant water scarcity challenges (Nwafor, 2022). Effective water management requires understanding socioeconomic and cultural factors influencing water use (Sullivan, 2019). Socioeconomic factors, such as population growth, urbanization, and livelihoods, significantly impact water management (Grey & Sadoff, 2017). In Mashi and Mani LGAs, population growth and urbanization put pressure on already scarce water resources (Nwafor, 2022). Cultural beliefs and values also play a crucial role in water management. In Nigeria, cultural practices and traditional beliefs often influence water use and management decisions (Bieri, 2020). For instance, in some communities, water is believed to have spiritual significance, leading to over-extraction and wastage (Sullivan, 2019). Effective water governance and management strategies are essential for addressing water scarcity challenges. This includes community-led total sanitation (CLTS) approaches, which have been

successful in improving water management and hygiene practices in similar contexts (UNESCO, 2020). However, there are challenges to implementing effective water management strategies in Mashi and Mani LGAs. These include limited understanding of socioeconomic and cultural factors, inadequate water infrastructure, and weak water governance (Grey & Sadoff, 2017). Addressing these challenges requires a comprehensive understanding of the complex relationships between socioeconomic, cultural, and environmental factors influencing water management in Mashi and Mani LGAs. This study aims to contribute to this understanding and inform policy and practice interventions.

Methodology

The study adopted a survey research design, (Babbie, 2017) stated that a survey research design is used to ascertain facts, people's opinion, beliefs, attitudes and practices on issues or rating of a situations. The survey research design is therefore considered suitable for this study because it sought the opinion of community towards sustainable water management practice in Mashi and Mani local government area of Katsina state. Simple Random sampling techniques was used in selecting the respondent from the study area. The population of the study comprise of 50 respondents from the study area. Sample sizes of 44 from the populations were considered as recommended by Krejcie and Morgan (1970). A structured questionnaire was used to collect data with 4 point rating scale to guide the responses. The data were analyzed using Mean and Standard Deviation. The questionnaire items were generated based on the information gathered from the review of related literature. The response categories are; Strongly Agree (SA = 4), Agree (A = 3), Strongly Disagree (SD = 2) and Disagree (D = 1) respectively. The instrument was subjected to face and content validation by 3 experts in Institute of Climatic and Metrological studies Katsina (NIMET) each of these experts was given the copy of the instrument to correct ambiguities and offer suggestions for improving the instrument towards meeting the objectives of the study. The expert's suggestions and inputs were put into consideration in the final preparation of the questionnaire items. To ascertain the internal consistency of the instrument, 15 copies of the questionnaire was administered to Sakedam Community in Mai'adua Local government in Katsina State.

Results

Research Question 1: What are the socioeconomic factors that influence water management practices in Mashi and Mani Local Government Areas (LGAs), Katsina State, Nigeria?

Socioeconomic Factors	Mean	S.D	Decision
Income	2.4	2.5	Rejected

Education	2.5	2.6	Accepted
Occupation	2.7	2.9	Accepted
Technology Adoption	2.6	2.7	Accepted
Climatic Perception	2.4	2.5	Rejected
Cultural belief	2.4	2.6	Rejected
Land ownership	2.7	2.6	Accepted
Community size and structure	2.5	2.8	Accepted
Infrastructure	2.6	2.9	Accepted
Government policy	2.6	2.6	Accepted
<i>Cluster Mean</i>	2.5	2.7	Accepted

Source: Field Survey, 2024.

Data in Table 1 above shows that mean rating for socioeconomic factors that influence water management practices in Mashhi and Mani local government in Katsina state ranging from 2.4 - 2.7 with a cluster mean of 2.5 indicating that the respondent agrees to the socioeconomic factors as a key influence of water management practice in Mashhi and Mani local governments in Katsina state. Again, table 1 shows the standard deviation rating ranging from 2.5 – 2.9 with a cluster mean of 2.7 indicating that the respondent are very close in their opinions.

Research Question 2: How do cultural beliefs and values shape water management decisions in Mashhi and Mani LGAs, and what are the implications for sustainable water use?

Cultural Belief and Values that Shaped Water Management Decision in Mashhi and Mani LGAs in Katsina State.	Mean	S.D	Decision
Water Ownership and Right	2.4	2.6	Rejected
Traditional practice	2.4	2.7	Rejected
Spiritual Significance	2.4	2.5	Rejected
Community involvement	2.5	2.6	Accepted
Gender role	2.7	2.8	Accepted
Environmental stewardship	2.8	3.0	Accepted
Risk perception	2.7	2.8	Accepted
Social norms	2.6	2.7	Accepted
<i>Implication for sustainable water use</i>	-	-	-
Community based initiative	2.6	2.8	Accepted
Counter conservation effort	2.8	2.9	Accepted
Gender inclusive approach	2.6	2.8	Accepted
Environmental education awareness	2.5	2.6	Accepted
Policy making	2.4	2.5	Rejected
Cluster mean	2.5	2.8	Accepted

Source: field survey, 2024.

Data in Table 2 above shows that mean rating of cultural belief and values that shaped water management decision in Mashi and Mani local government in Katsina state, ranging from 2.4 - 2.8 with a cluster mean of 2.5 indicating that the respondent agrees to the cultural belief and values that shaped water management decision in Mashi and Mani local governments in Katsina state. Again, table 2 shows the standard deviations rating ranging from 2.5 – 3.0 with a cluster mean of 2.8 indicating that the respondent are very close in their own opinions

Research Question 3: What are the effective strategies for improving water governance and management in Mashi and Mani LGAs, considering the socioeconomic and cultural contexts of the communities?

Affective Strategies for improving water governance and management in Mashi and Mani LGAs In Katsina State.	Mean	S.D	Decision
Community Engagement	2.6	2.8	Accepted
Cultural sensitivity	2.3	2.5	Rejected
Socioeconomic analysis	2.2	2.4	Rejected
Capacity building	2.5	2.6	Accepted
Decentralization	2.7	2.8	Accepted
Integrated approach	2.6	2.7	Accepted
Gender mainstreaming	2.7	2.9	Accepted
Legal framework	2.6	2.7	Accepted
Funding and resource allocation	2.6	2.7	Accepted
Collaborative government	2.6	2.7	Accepted
Cluster mean	2.7	2.8	Accepted
	2.5	2.6	Accepted

Source: filed Survey, 2023.

Data in Table 3 above shows that mean rating of effective strategies for improving water governance and management in Mashi and Mani local government in Katsina state, ranging from 2.2 - 2.7 with a cluster mean of 2.5 indicating that the respondent agrees to the effective strategies for improving water governance and management in Mashi and Mani local governments in Katsina state. Again, table 3 shows the standard deviations rating ranging from 2.4 – 2.9 with a cluster mean of 2.6 indicating that the respondent are very close in their own opinions.

Discussion of findings

The finding of this study shows that;

1. Water management practices are influenced by socioeconomic factors such as education occupation which is in line with the findings of (Hamdana, 2020), UNESCO, 2012, World Bank, 2019.
2. The study also reveal that cultural belief and values shaped water management decisions including community involvement, gender role, environmental stewardship, risk perceptions, social norms, and it has an implication which includes, community base initiative, counter conservation efforts, gender inclusive approach and environmental education awareness (Jenkins, 2019) and (Bruns et al., 2016).
3. The study also reveals that community engagement (World council, 2018), capacity building (Cap-Net, 2019), decentralization, integrated approach, gender mainstreaming (UNESCO, 2019)legal framework (Ostrom, 1990), funding and resources allocation(UNDP, 2018) as well as collaborative government are effective strategies for improving water governance and management in Mashi and Mani Local government areas in Katsina state. This finding is in line with the finding of (Samuel, 2022).

Conclusion

This study investigated the socioeconomic and cultural factors influencing water management practices in Mashi and Mani LGAs. The result shows that education and occupation significantly impact water management decisions. Additionally, cultural beliefs and values, including traditional practices and spiritual significance plays a crucial role in shaping water management and participation, gender mainstreaming, capacity and training as well as collaborative governance and partnerships are essential. Therefore policymakers and stakeholders should consider these factors when developing and implementing water management strategies to ensure sustainable and equitable water management practices in Mashi and Mani Local government

Recommendation

1. Government should involve local communities in water, management decision to ensure their needs and concern are address and their knowledge and skills are utilized.
2. Gender mainstreaming should be ensured in water management decisions to address gender disparity in water access and use and to promote equal participation of women
3. Capacity building programs should be provided for local authorities and communities to enhance their water management skills and knowledge.
4. Collaborative government approaches should be fostered among government, civil society, and private sectors to ensure coordinated and effective water management.
5. Water management strategies should be culturally sensitive and respect traditional practices and spiritual beliefs, while alo promoting water conservation and management awareness among local communities.

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