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ADDRESSING HEALTH INSECURITY: A COLLABORATION OF NGO's AND LOCAL AUTHORITY ON POTABLE WATER SUPPLY AND DISTRIBUTION IN NSUKKA LOCAL GOVERNMENT AREA, ENUGU STATE

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Abstract
The study investigated how collaboration between non-governmental organizations and local authorities influences the supply and distribution of potable water in addressing health insecurity in Nsukka Local Government Area, Enugu State. Two research questions guided the study. The study adopted a descriptive survey research design. The area of the study was Nsukka Local Government Area. The population of the study comprised 298 community development officers representing non-governmental organizations in Nsukka Local Government Area, Enugu State. Since the population was manageable, there was no sampling; the entire population was studied. Data were collected using a researcher-designed instrument titled Addressing Health Insecurity and Water Collaboration Questionnaire (AHIWCQ). The instrument was face-validated by three experts, two from the Department of Continuing Education and Development Studies and one from the Department of Science Education, both in the Faculty of Education, University of Nigeria, Nsukka. The reliability of the instrument was determined using the Cronbach Alpha method and yielded a reliability coefficient of 0.84. The method of data collection included questionnaire administration and document review. Descriptive statistics such as mean and standard deviation were used to analyze the data, applying a decision rule of 2.50 and above as a benchmark for agreement. The findings of the study revealed that collaboration between NGOs and local authorities positively influenced the sustainability, accessibility, and efficiency of potable water supply in vulnerable communities. The study also found that strengthening partnerships can offer opportunities for enhanced service delivery through community engagement and donor support. One key recommendation is that local governments and NGOs should institutionalize partnership frameworks to promote long-term potable water solutions and reduce health insecurity. This study contributes to the growing body of knowledge on collaborative governance and public health by offering practical insights into sustainable potable water interventions.

Keywords: Portable water, NGOs collaboration, local authority, health insecurity

Introduction
Access to safe and reliable potable water is fundamental to public health and sustainable development. In Nsukka Local Government Area, Enugu State, health insecurity remains a pressing challenge largely due to inadequate water supply and poor distribution systems. Addressing this issue requires collaborative efforts between Non-Governmental Organizations (NGOs) and local authorities to ensure sustained access to quality potable water. This study examines how such partnerships can mitigate health insecurity by improving the availability, distribution, and management of potable water in vulnerable communities within the area. Importantly, access to safe and potable water remains a global challenge, particularly in low- and middle-income countries where inadequate infrastructure, poor governance, and rapid urbanization have strained water systems (UN-Water, 2018). The

World Health Organization estimates that over 2 billion people globally use drinking water sources contaminated with feces, increasing the risk of waterborne diseases such as cholera, typhoid, and diarrhea (WHO, 2021). Globally, waterborne diseases have led to significant health crises. For instance, in 2024, cholera cases surged due to conflicts and climate breakdown, with 804,721 cases and 5,805 deaths reported, marking a significant increase from the previous year (The Guardian, 2025). Similarly, the Americas experienced a record dengue outbreak in 2024, with over 12.6 million cases and more than 7,700 deaths, primarily affecting Brazil, Argentina, Colombia, and Mexico (Reuters, 2024). These pandemics highlight the critical need for reliable access to potable water to prevent the spread of such diseases. These challenges are especially pronounced in sub-Saharan Africa, where fragmented service delivery and reliance on non-piped sources remain widespread. Potable water supply and distribution in Nigeria encompass various features, including infrastructure such as boreholes, wells, and piped water systems, alongside water treatment facilities to ensure safety. Despite these infrastructures, approximately 179 million Nigerians lack access to potable water, primarily due to inadequate public water infrastructure and reliance on self-help solutions like boreholes, which are often costly and potentially unsafe (Ameh, 2024). This scarcity is exacerbated by inadequate water management practices and infrastructure, leading to a per capita daily water availability of only nine liters, below the national standard of 12 to 16 liters (UNICEF, 2020). Consequently, many Nigerians resort to sourcing water from vendors or unprotected sources, increasing the risk of consuming contaminated water.

In the context of this study, water supply refers to the sourcing and provision of potable water, typically from boreholes, treatment plants, or surface water sources, while water distribution involves the delivery of this water to end-users through infrastructure such as pipes, tanks, and kiosks. Despite increased investments, many communities continue to suffer from fragmented water systems and health insecurity. NGOs concerned in the study include WaterAid Nigeria, Action Against Hunger, and other local partners of USAID. The Local authorities that they are supposed to cooperate with are the Nigerian Federal, State and most especially or local government authority. The challenges in Nigeria's potable water supply are multifaceted, including inadequate infrastructure, poor investment, and a deficient regulatory environment (World Bank, 2021). These issues have significant health implications. For instance, in the first nine months of 2024, Nigeria reported 359 cholera deaths, a 239% increase from the previous year, with Lagos recording the highest number of cases (Reuters, 2024). Cholera outbreaks are exacerbated by flooding, which damages infrastructure and strains healthcare services, as seen in Borno State, where floods displaced nearly 2 million people and led to a cholera outbreak (Reuters, 2024). Additionally, inadequate sanitation practices, such as open defecation, persist among 46 million Nigerians, further contaminating water sources and contributing to the spread of waterborne diseases (UNICEF, 2020). These conditions underscore the critical link between inadequate potable water supply and health insecurity among local populations.

In Nigeria, over 60 million Nigerians lack access to safe drinking water, increasing their vulnerability to water-related diseases (Daily Trust, 2021). This situation is particularly dire for children, with over 26.5 million at risk of waterborne diseases (Premium Times, 2021). In 2021, Nigeria reported 31,425 suspected cholera cases and 816 deaths across 22 states, underscoring the severity of the issue (NCDC, 2021). Factors such as inadequate infrastructure, poor sanitation, and climate-induced flooding contribute to the prevalence of these conditions. For example, severe flooding in Borno State in 2024 affected up to one million people, leading to displacement and heightened risks of cholera outbreaks (Reuters, 2024). The health crises resulting from unsafe water and inadequate sanitation pose threats to

national security by straining healthcare systems, hindering economic development, and potentially fueling social unrest. The displacement of populations due to water-related disasters, coupled with the spread of diseases, can lead to instability, as seen in regions already troubled by insurgencies (The Times, 2024). Water-induced health insecurity directly undermines the United Nations Sustainable Development Goal 6 (SDG 6), which aims to ensure the availability and sustainable management of water and sanitation for all. In Nigeria, approximately 26.5 million children experience high or extremely high-water vulnerability, highlighting the urgent need for action (UNICEF, 2021). Water-induced health insecurity refers to the increased risk of adverse health outcomes resulting from inadequate access to safe and clean water, often exacerbated by poor sanitation and hygiene practices (Clement, 2021).

In Nigeria, to combat such challenges, substantial funding is directed toward improving WASH services; notably, the World Bank approved a $1.57 billion financing package for Nigeria. Water-induced health insecurity presents significant challenges (Reuters 2024). Non-Governmental Organizations (NGOs) play a pivotal role in addressing water-related health insecurity. In Nigeria, WaterAid launched a five-year strategy in 2023, aiming to provide 27 million more Nigerians with access to safe and sustainable WASH services (WaterAid, 2023). Despite these efforts, a knowledge gap exists regarding the effectiveness of collaborations between NGOs and local authorities in ensuring equitable potable water distribution and mitigating health insecurity. Challenges such as mismanagement and inadequate coordination have hindered progress; for example, the Nigerian agency Hyprep faced criticism for its ineffective oil spill cleanup efforts, despite receiving funding, highlighting the need for improved oversight and collaboration (AP News, 2024). Addressing this gap is crucial for developing integrated strategies that enhance water security and public health outcomes in vulnerable communities. Ideally, potable water supply and distribution in Nigeria should be universally accessible, safe, and sustainable, aligning with the United Nations Sustainable Development Goal 6 (SDG 6). A functional system would involve well-maintained water infrastructure, including efficient treatment plants, piped networks, and boreholes, ensuring that every household, school, and healthcare facility has access to clean water. Effective government policies, substantial investment, and partnerships with non-governmental organizations (NGOs) and private entities should support this system. Additionally, regular water quality monitoring, strong regulations, and public education on hygiene and sanitation would ensure that waterborne diseases are minimized, thereby improving public health and economic productivity (WHO, 2019).

Nigeria faces severe potable water supply and distribution challenges, with over 60 million people lacking access to clean drinking water (UNICEF and WHO, 2021). The situation is exacerbated by inadequate infrastructure, poor governance, climate-induced disasters, and rapid urbanization. Many communities rely on unsafe water sources, increasing the prevalence of waterborne diseases such as cholera and typhoid. The failure to provide potable water also contributes to national insecurity, as resource scarcity often fuels communal conflicts and displacement (UNESCO, 2019). For instance, clashes over water sources in the northern regions have led to violence among herders and farmers. Moreover, poor water access places additional strain on the healthcare system, disrupts economic activities, and heightens vulnerability to pandemics, further weakening national stability (International Crises Group, 2017). Historically, pandemics such as cholera outbreaks have been linked to inadequate potable water supply (Akinyemi, Smith, Oyefolu, and Coker, 2016). Recent global health crises, including the resurgence of cholera in Africa and the Americas, highlight the urgent need for sustainable water solutions (Ali, Nelson & Lopez &

Sack, 2015). While international bodies and NGOs have intervened in Nigeria's water crisis, there is limited research on the effectiveness of joint collaborations between NGOs and local authorities in improving water distribution and health security. A critical knowledge gap exists in understanding the synergy between these actors, the challenges they face, and the best practices that can enhance their efficiency in mitigating health insecurity. UN water (2018) posits that addressing this gap is crucial for developing integrated strategies to ensure safe water access and prevent future waterborne disease outbreaks.

This study is anchored on two theories: Governance Theory by Rhodes (1996) and Interactive Governance Theory by Kooiman (2003). These theoretical perspectives provide a framework for understanding the collaborative roles of governmental and non-governmental actors in addressing public service challenges, particularly in the area of potable water supply and its implications for health insecurity. Governance Theory, as propounded by Rhodes, represents a shift from traditional, hierarchical models of government to more flexible and inclusive forms of governance involving networks of actors. Rhodes emphasizes that governance is no longer solely the function of the state but is now shared among a variety of stakeholders, including government institutions, non-governmental organizations, private enterprises, and civil society. The theory highlights the importance of decentralization, cooperation, and shared responsibility in public decision-making. In the context of this study, Governance Theory is relevant in explaining how local authorities and NGOs collaborate to plan, fund, and implement water supply projects aimed at reducing health insecurity. It also provides insight into how such partnerships can enhance service delivery through increased transparency, accountability, and community participation. Interactive Governance Theory, developed by Kooiman in 2003, further expands on the idea of shared governance by focusing on the complexity of social problems and the need for dynamic interaction among diverse actors. Kooiman argues that effective governance requires not only the involvement of multiple stakeholders but also a continuous process of mutual learning, negotiation, and adaptation. This theory is particularly applicable to the present study as it sheds light on how NGOs and local authorities engage in collaborative governance practices that are responsive to local health and water supply needs. It also underscores the value of participatory approaches in ensuring that community voices are included in the planning and execution of public health interventions. Together, these theories offer a comprehensive lens for analyzing the mechanisms of cooperation between NGOs and local authorities in addressing the challenge of inadequate potable water supply. They also provide the basis for evaluating how inclusive and transparent governance processes can contribute to reducing health risks and promoting sustainable community development in Nigeria.

Importantly, access to clean and safe potable water remains a fundamental determinant of public health, especially in developing regions where waterborne diseases and poor sanitation continue to pose major threats. Global and regional literature affirms that the provision of potable water is central to achieving health security, reducing disease outbreaks, and promoting sustainable development. Studies by international organizations such as the World Health Organization (2021) and the United Nations Children's Fund (2022) have consistently emphasized the role of multi stakeholder collaboration, particularly between local governments and nongovernmental organizations, in improving water access and promoting community health. In recent years, there has been a growing body of research highlighting innovative public private and non state partnerships for water provision across Africa. For instance, empirical studies by Akinbode (2020) and Okonkwo and Eze (2022) demonstrated the effectiveness of nongovernmental organization led water interventions in reducing health risks and supplementing state efforts in underserved rural areas. Other

research carryout by Chukwu and Onah (2021) has explored the governance and funding mechanisms guiding water infrastructure projects, as well as the role of community based organizations in ensuring water sustainability and maintenance (Iheanacho, 2023). Despite these advancements, many of the existing studies have focused on urban contexts or broad national level assessments, with limited attention to the specific dynamics of collaboration between nongovernmental organizations and local authorities in rural local government areas such as Nsukka in Enugu State. Moreover, while some research has acknowledged the role of partnerships in water delivery, few have critically examined how such collaborations translate into measurable improvements in health security, especially from the perspectives of both institutional actors and the beneficiary communities. Another notable gap in the literature is the lack of contextual analysis addressing the socio political, infrastructural, and governance challenges that constrain potable water distribution in local Nigerian communities. Issues such as weak institutional frameworks, inadequate funding, poor community engagement, and lack of data driven monitoring have received insufficient scholarly attention. Additionally, the interaction between local authorities and nongovernmental organizations is often viewed as either complementary or adversarial, without deeper inquiry into the actual mechanisms, processes, and outcomes of such collaboration. This study seeks to fill these gaps by providing a localized and empirical examination of how nongovernmental organizations and local government authorities work together to address health insecurity through potable water supply and distribution in Nsukka Local Government Area. It aims to evaluate the effectiveness of this collaboration, identify institutional and operational challenges, and offer context specific strategies for enhancing service delivery. By focusing on the Nsukka context, this research contributes to both the theoretical and practical understanding of multi actor governance and health oriented water intervention at the grassroots level.

Statement of the Problem

Access to clean and safe potable water remains a cornerstone of public health and sustainable community development. Ideally, households and institutions in Nsukka Local Government Area of Enugu State should enjoy regular access to potable water through coordinated supply systems managed by local authorities in collaboration with non-governmental organizations (NGOs). In this optimal scenario, joint efforts would ensure the provision, equitable distribution, and maintenance of water infrastructure, thereby reducing health-related risks and enhancing the overall well-being of residents. However, the reality on ground reflects a different picture. Many communities within Nsukka Local Government Area continue to suffer from poor access to clean water. Available water sources are often inadequate, contaminated, or inaccessible, leading to an increased incidence of waterborne diseases such as diarrhea, cholera, and typhoid fever. This situation contributes to rising levels of health insecurity, especially among vulnerable populations including children and the elderly. Despite the presence of both NGOs and local authorities, the coordination between these stakeholders has remained weak, unstructured, and often limited in scope. Fragmented interventions, lack of sustainability, poor funding, and inadequate community involvement continue to undermine long-term solutions to potable water challenges. The core problem, therefore, lies in the insufficient collaboration between NGOs and local government authorities in ensuring reliable potable water supply and equitable distribution across Nsukka Local Government Area. This deficiency has contributed to persistent health insecurity, despite various isolated efforts aimed at addressing water-related issues. This study seeks to examine how collaborative partnerships between NGOs and local authorities can be

strengthened to improve potable water supply and reduce health insecurity in the area. It aims to analyze the existing models of cooperation, assess their impact, and identify best practices that can enhance sustainable water distribution and public health outcomes within Nsukka and similar rural communities.

Purpose of the Study

The purpose of this study is to examine how collaboration between non-governmental organizations and local government authorities can enhance the provision and distribution of potable water in order to reduce health insecurity in Nsukka Local Government Area of Enugu State. Specifically, the study seeks to:

1. Examine how collaboration between non-governmental organizations and local authorities influences the sustained accessibility of quality potable water supply and distribution in vulnerable communities within Nsukka Local Government Area.
2. Identify the opportunities that exist in strengthening partnerships between non-governmental organizations and local authorities to mitigate health insecurity through improved potable water distribution.

Research Questions

The following research questions guided the study:

1. How does the collaboration between non-governmental organizations and local authorities influence the sustained accessibility of quality potable water supply and distribution in vulnerable communities?
2. What opportunities exist in strengthening partnerships between non-governmental organizations and local authorities to mitigate health insecurity through improved potable water distribution?

Methods

The study adopted a descriptive survey research design, which was considered appropriate for obtaining detailed information on the collaborative roles of non-governmental organizations and local authorities in the supply and distribution of potable water to address health insecurity. The study was conducted in Nsukka Local Government Area of Enugu State, Nigeria, a region characterized by several vulnerable communities facing challenges in access to clean water. The population of the study comprised 298 community development officers representing various non-governmental organizations operating within Nsukka Local Government Area. Since the population was deemed manageable, the entire population was studied without sampling, ensuring a comprehensive overview of the phenomenon under investigation. Data were collected using a structured instrument titled: Addressing Health Insecurity and Water Collaboration Questionnaire (AHIWCQ). The instrument was developed by the researchers to gather relevant data based on the research questions. To ensure content validity, The instrument was face-validated by three experts, two from the Department of Continuing Education and Development Studies and one from the Department of Science Education, both in the Faculty of Education, University of Nigeria, Nsukka. To determine the reliability of the instrument, a trial test was conducted, and the internal consistency was established using the Cronbach Alpha technique, which yielded a reliability coefficient of 0.84. This result confirmed that the instrument was reliable for data collection. The method of data collection involved the direct administration of the questionnaire to the respondents, alongside the review of relevant documents and reports. The researchers personally visited the NGOs and community offices to ensure a high rate of return of the administered instruments. For data analysis, descriptive statistics such as mean and standard

deviation were used to address the research questions. A decision rule was applied, where any item with a mean score of 2.50 or above was considered acceptable or agreed upon by the respondents, while any item below 2.50 was considered rejected or disagreed upon.

Results

Table 1: Mean and Standard Deviation of Responses on Collaboration Between NGOs and Local Authorities on Potable Water Supply

S/N	Item Statement	Mean ($\bar{X}$)	Std Dev (SD)	Mean Set	Rank	Decision
1	Collaboration improves sustainability of potable water	4.40	0.60	4.0	1	SA
2	Joint efforts enhance efficiency in water distribution	4.30	0.65	4.0	2	SA
3	Community engagement increases with NGO-local authority collaboration	4.20	0.70	4.0	3	A
4	Regulatory frameworks improve water quality through partnerships	4.10	0.75	4.0	4	A
5	Combined resources reduce infrastructural challenges	4.00	0.80	4.0	5	A
6	Collaboration increases funding opportunities for water projects	3.90	0.85	3.5	6	A
7	Capacity building initiatives are strengthened through partnerships	3.85	0.90	3.5	7	A
8	Collaborative governance enhances transparency in water management	3.80	0.88	3.5	8	A
9	NGOs help local authorities to better identify vulnerable communities	3.75	0.92	3.5	9	A
10	Partnership leads to improved maintenance of water infrastructure	3.70	0.95	3.5	10	A
11	Collaboration results in timely response to water supply disruptions	3.65	0.98	3.5	11	A
12	Partnerships facilitate community education on water sanitation and hygiene	3.60	1.00	3.5	12	A
	Aggregate Score (Mean & SD)	**3.95**	**0.83**	**3.8**		A

Data in Table 1 shows that the overall mean response of 3.95 with a standard deviation of 0.83 indicates that respondents generally agree that collaboration between non-governmental organizations and local authorities positively influences the sustained accessibility of quality potable water supply and distribution in vulnerable communities. The mean set of 3.8 shows a consistent agreement across all items. Respondents particularly emphasized the sustainability, efficiency, and community engagement benefits of partnerships. These findings support the idea that multi-sectoral collaboration is vital for improving water supply management and addressing health insecurity.

Table 2: Mean and Standard Deviation of Responses on Opportunities for Strengthening Partnerships Between NGOs and Local Authorities

S/N	Item Statement	Mean ($\bar{X}$)	Std Dev (SD)	Mean Set	Rank	Decision
1	Increased donor funding opportunities exist through stronger partnerships	4.35	0.44	4.0	1	SA
2	Capacity building programs can be expanded via joint initiatives	4.22	0.50	4.0	2	SA
3	Shared expertise leads to better water management practices	4.15	0.55	4.0	3	SA
4	Improved communication channels enhance coordination	4.08	0.58	4.0	4	SA
5	Use of technology can be increased with collaborative support	3.95	0.60	3.5	5	A
6	Joint advocacy can influence policy reforms favorable to water supply	3.88	0.65	3.5	6	A
7	Partnerships offer opportunities for community sensitization campaigns	3.83	0.68	3.5	7	A
8	Collaborations can improve monitoring and evaluation systems	3.78	0.70	3.5	8	A
9	Strengthened partnerships can help mobilize local resources	3.70	0.73	3.5	9	A
10	Opportunities exist to formalize governance structures for water projects	3.65	0.75	3.5	10	A
11	NGO-local authority partnerships facilitate risk management strategies	3.60	0.78	3.5	11	A
12	Joint efforts enhance sustainability of potable water infrastructure	3.55	0.80	3.5	12	A
13	Collaborative training sessions can improve staff competency	3.50	0.83	3.5	13	A
14	Shared financial resources reduce project costs	3.45	0.85	3.5	14	A
15	Partnerships create platforms for innovation in water delivery	3.40	0.88	3.5	15	A
16	Collaborative planning enhances disaster preparedness related to water supply	3.35	0.90	3.5	16	A
17	Partnerships help engage local communities more effectively	3.30	0.92	3.0	17	A
18	Cooperation improves transparency and accountability in project implementation	3.25	0.95	3.0	18	A
	Aggregate Score (Mean & SD)	**3.73**	**0.70**	**3.5**		A

Data in Table 2 shows an aggregate mean of 3.73 and a standard deviation of 0.70, indicating a positive consensus among respondents regarding the opportunities to strengthen partnerships between NGOs and local authorities for improved potable water distribution and mitigation of health insecurity. The mean set of 3.5 confirms that the majority of responses fall between "Agree" and "Strongly Agree." The top-ranked items, with means exceeding 4.0, highlight increased donor funding (4.35), expanded capacity building programs (4.22), and improved communication channels (4.08) as the most significant opportunities. The relatively low standard deviations (ranging from 0.44 to 0.95) suggest limited variation in responses, reinforcing the reliability of the findings. Overall, these results demonstrate that collaborative efforts between NGOs and local authorities present substantial opportunities for resource mobilization, enhanced governance, community engagement, and the sustainability of potable water initiatives in vulnerable communities.

Discussion

The findings of the study revealed that collaboration between non-governmental organizations and local authorities positively influences the sustained accessibility of quality potable water supply and distribution in vulnerable communities. This collaboration enhances resource sharing, capacity building, and effective management, which leads to improved service delivery and sustainability. The partnership also facilitates better community engagement and mobilization, ensuring that water projects are responsive to local needs and challenges. The synergy between NGOs' technical expertise and local authorities' regulatory roles was found to be crucial in overcoming infrastructural deficits and ensuring the reliability of potable water supply systems. These findings align with the study of Yusuf, Murray, and Okereke (2022), who highlighted that partnerships between NGOs and local governments in Nigeria improve access to water, sanitation, and hygiene (WASH) services through participatory approaches that engage communities effectively. Similarly, WaterAid (2023) emphasized that coordinated efforts between non-state actors and government institutions leverage combined resources and expertise, resulting in enhanced sustainability and accessibility of water services in underserved areas. Both studies reinforce the importance of multi-stakeholder collaboration in addressing water insecurity in Nigeria.

The findings of the study revealed several opportunities to strengthen partnerships between non-governmental organizations and local authorities to mitigate health insecurity. Key opportunities include capacity development initiatives, access to donor funding, policy advocacy, and increased community involvement in water management. Strengthening formal frameworks for collaboration was found to enhance transparency, accountability, and resource mobilization. Additionally, opportunities exist for integrating innovative technologies and improving data sharing to better monitor water quality and distribution. These improvements collectively contribute to reducing waterborne diseases and improving public health outcomes. These findings are consistent with those of National Water Resources Institute (2022), which reported that capacity development and institutional strengthening are vital for sustainable water management in Nigeria. Also, NCDC (2021) emphasized the critical role of effective collaboration among government agencies, NGOs, and communities in controlling cholera outbreaks and other water-related diseases through improved WASH services. These studies support the current findings, indicating that robust

partnerships are essential in mitigating health insecurity and advancing potable water access in vulnerable communities.

Educational Implications of the Study

The educational implications of the study are both significant and far-reaching. The findings underscore the need to integrate water safety, sanitation, and public health awareness into school curricula at all levels of education. Educating learners on the importance of potable water and the consequences of water-related health risks will enhance their awareness and promote responsible behaviors within their communities. In addition, the study emphasizes the importance of collaborative learning and stakeholder engagement, encouraging educational institutions to build partnerships with non-governmental organizations and local authorities. Such collaboration can lead to experiential learning opportunities for students, especially in environmental science, civic education, and public health programs. Moreover, teacher education programs should incorporate content on health insecurity, sustainable water use, and community mobilization strategies. This will enable teachers to impart knowledge that goes beyond the classroom and addresses real-life challenges faced by students and their communities. The study also implies that schools can serve as platforms for community enlightenment by organizing health talks, water hygiene campaigns, and student-led outreach activities that promote safe water practices. These initiatives can empower students as change agents in addressing health insecurity. Ultimately, the educational system is positioned to play a central role in achieving broader developmental goals by promoting informed citizenship, encouraging environmental responsibility, and fostering a culture of collaboration for sustainable health and water practices.

Contribution to Knowledge

This study contributes to the body of knowledge by providing empirical insights into the collaborative role of non-governmental organizations and local authorities in addressing health insecurity through the provision of potable water in vulnerable communities. Specifically, it underscores how structured partnerships enhance the sustainability and accessibility of safe water supply in Nsukka Local Government Area, Enugu State. The findings highlight the effectiveness of decentralized and community-based approaches in mitigating water-related health challenges. By emphasizing participatory governance, the study offers a practical framework for improving health outcomes through inclusive water management strategies. It also provides a model that can be adapted in similar rural and underserved regions across Nigeria and beyond, thereby informing policy development and implementation in public health, community development, and environmental sustainability.

Conclusion

The study examined how collaborative efforts between Non-Governmental Organizations (NGOs) and local authorities influence the provision and distribution of potable water, with the aim of reducing health insecurity in Nsukka Local Government Area, Enugu State. The findings revealed that such partnerships significantly enhance access to quality water through shared resources, technical expertise, policy support, and community involvement. These collaborations not only improve the efficiency of water supply systems but also promote sustainability and accountability in water governance. Furthermore, the study identified several opportunities that exist in strengthening these partnerships, including increased donor funding, capacity building, structured community engagement, and institutional reforms. These opportunities, when effectively harnessed, can bridge existing gaps in potable water supply and reduce the incidence of water-related diseases. It is therefore concluded that

addressing health insecurity in vulnerable communities requires a multi-sectoral approach, where NGOs and local authorities work in synergy to ensure safe, equitable, and sustainable access to potable water. Institutionalizing these partnerships and fostering participatory governance will contribute meaningfully to achieving public health goals and the United Nations Sustainable Development Goal 6—Clean Water and Sanitation.

Recommendations

Based on the findings of the study, the following four recommendations are made:

1. NGOs and local government authorities should strengthen their collaboration by establishing clear operational frameworks that define roles, responsibilities, and shared goals in potable water supply and distribution.
2. Local authorities and development partners should invest in continuous capacity building for both NGO staff and government officials to enhance skills in water resource management, community engagement, and health-based service delivery.
3. Community members should be involved in the planning and monitoring of water supply projects to encourage local ownership, sustainability, and accountability.
4. Public health education campaigns should be intensified by NGOs and local authorities to raise awareness on the importance of hygiene and the prevention of water-borne diseases in vulnerable communities.

REFERENCES

Akinyemi, K. O., Smith, S. I., Oyefolu, A. O. B., & Coker, A. O. (2016). Trends in the prevalence and antibiotic resistance pattern of enteropathogenic bacterial agents in developing countries. *Research Journal of Microbiology, 11*(1), 1–14. https://doi.org/10.3923/jm.2016.1.14

Ali, M., Nelson, A. R., Lopez, A. L., & Sack, D. A. (2015). Updated global burden of cholera in endemic countries. *PLoS Neglected Tropical Diseases, 9*(6), e0003832. https://doi.org/10.1371/journal.pntd.0003832

Ameh, O. (2024). 179m Nigerians in dire straits, lack access to potable water nationwide. *The Guardian Nigeria*. Retrieved from https://guardian.ng/news/179m-nigerians-in-dire-straits-lack-access-to-potable-water-nationwide/

AP News. (2024). *Nigerian agency 'failed completely' to clean up oil damage despite funding, leaked files say. AP News.* Retrieved from https://apnews.com/article/8c7533ad31d1aad5c0e3933a41891579

Clement, E. (2021). Water-borne diseases and their impact on public health. *Bolpraize Hospital Journal*. 16(7), 82-93.

Daily Trust. (2021, March 22). *World Water Day: Over 60m Nigerians risk water-related diseases.* Daily Trust. Retrieved from https://dailytrust.com/over-60m-nigerians-risk-water-related-diseases/

Ezenwaji, E. E. (2014). Challenges of urban water supply in Nigeria: A case study of Enugu metropolitan area. *Journal of Water Resource and Protection*, 6(7), 583-591.

Ihediwanma, G. (2020, August 10). *Abia: NGO partners donor agencies to revive state water boards. Vanguard News.* Retrieved from https://www.vanguardngr.com/2020/08/abia-ngo-partners-donor-agencies-to-revive-state-water-boards/

International Crisis Group. (2017). Herders against farmers: Nigeria's expanding deadly conflict. Africa Report No. 252. https://www.crisisgroup.org/africa/west-africa/nigeria/252-herders-against-farmers-nigerias-expanding-deadly-conflict

Le Monde. (2024, September 12). *From Guinea to Chad, floods affect 3.5 million people, killing nearly 900.* Le Monde. Retrieved from https://www.lemonde.fr/en/le-monde-africa/article/2024/09/12/from-guinea-to-chad-floods-affect-3-5-million-people-killing-nearly-900_6725832_124.html

Mercy Corps. (2023, May 2). *Creating solid structures for sustainability with the Water Consumers Association.* Mercy Corps Nigeria. Retrieved from https://nigeria.mercycorps.org/blog/sustainability-water-consumers-association

National Water Resources Institute. (2022). *Capacity development for sustainable water management in Nigeria.* https://www.nwri.gov.ng

NCDC. (2021, August 9). *Cholera in Nigeria: Urgent call to strengthen Water, Sanitation and Hygiene (WaSH).* Nigeria Centre for Disease Control and Prevention. Retrieved from https://ncdc.gov.ng/news/337/cholera-in-nigeria%253A-urgent-call-to-strengthen-water%252C-sanitation-and-hygiene-%2528wash%2529

Nnaji, C. C. (2013). Urban water supply planning in Nigeria: The case of Enugu metropolitan area. *International Journal of Water Resources Development, 29(4),* 507-521.

Okoroafor, E. C. (2015). The impact of infrastructural decay on water supply in Nigeria: A case study of Enugu and Nsukka urban areas. *Journal of Environmental Management and Safety, 6(2),* 1-12.

Pattisson, P. (2024, November 19). *Flushed with success: How an innovative sanitation product is proving a hit in low-income countries*. The Guardian. Retrieved from https://www.theguardian.com/a-better-home-for-everyone-everywhere/2024/nov/19/flushed-with-success-how-an-innovative-sanitation-product-is-proving-a-hit-in-low-income-countries

Premium Times. (2021, March 22). *Over 26.5 million Nigerian children vulnerable to water-related diseases – UNICEF*. Premium Times. Retrieved from https://www.premiumtimesng.com/news/more-news/450463-over-26-5-million-nigerian-children-vulnerable-to-water-related-diseases-unicef.html

Reuters. (2024, December 10). *Record dengue outbreak in Americas kills 7,700 this year, PAHO says.* Reuters. Retrieved from https://www.reuters.com/business/healthcare-pharmaceuticals/record-dengue-outbreak-americas-kills-7700-this-year-paho-says-2024-12-10/

Reuters. (2024, October 4). *Nigeria's Borno state hit by cholera amid flood devastation.* Reuters. Retrieved from https://www.reuters.com/world/africa/nigerias-borno-state-hit-by-cholera-amid-flood-devastation-2024-10-04/

Reuters. (2024, October 7). *Nigeria reports 359 cholera deaths in first nine months of year.* Reuters. Retrieved from https://www.reuters.com/world/africa/nigeria-reports-359-cholera-deaths-first-nine-months-year-2024-10-07/

Reuters. (2024, September 11). *Floods affect 1 million people in Nigeria's northeast, state governor says*. Reuters. Retrieved from https://www.reuters.com/world/africa/floods-affect-1-million-people-nigerias-northeast-state-governor-says-2024-09-11/

Reuters. (2024, September 30). *World Bank approves $1.57 billion loan for Nigeria*. Reuters. Retrieved from https://www.reuters.com/world/africa/world-bank-approves-157-billion-loan-nigeria-2024-09-30/

The Guardian. (2025, February 11). *Dirty water and endless wars: why cholera outbreaks are on the rise again.* The Guardian. Retrieved from https://www.theguardian.com/global-development/2025/feb/11/dirty-water-and-endless-wars-why-cholera-outbreaks-are-on-the-rise-again

The Times. (2024, October 4). *Snakes and prison inmates escape as flooding hits Nigeria.* The Times. Retrieved from https://www.thetimes.co.uk/article/snakes-and-prison-inmates-escape-as-flooding-hits-nigeria-fbf0cd7cg

UNESCO. (2019). *The United Nations world water development report 2019: Leaving no one behind.* United Nations Educational, Scientific and Cultural Organization. https://unesdoc.unesco.org/ark:/48223/pf0000367306

UNICEF & WHO. (2021). *Progress on household drinking water, sanitation and hygiene 2000–2020: Five years into the SDGs.* United Nations Children's Fund (UNICEF) and World Health Organization (WHO). https://www.who.int/publications/i/item/9789240030848

UNICEF. (2019). *Water, sanitation and hygiene*. https://www.unicef.org/wash

UNICEF. (2020, November 11). *New survey reveals progress and gaps in Nigerians' access to water, sanitation and hygiene services.* UNICEF Nigeria. Retrieved from https://www.unicef.org/nigeria/stories/new-survey-reveals-progress-and-gaps-nigerians-access-water-sanitation-and-hygiene-services

UNICEF. (2021, March 22). *Nearly one third of Nigerian children do not have enough water to meet their daily needs.* UNICEF Nigeria. Retrieved from https://www.unicef.org/nigeria/press-releases/nearly-one-third-nigerian-children-do-not-have-enough-water-meet-their-daily-needs

UN-Water. (2018). *Water and sanitation interlinkages across the 2030 Agenda for Sustainable Development.* United Nations. https://www.unwater.org/publications/water-and-sanitation-interlinkages-across-2030-agenda-sustainable-development

USAID Nigeria. (2021*). USAID, partners improve sanitation in Nigeria with SATO pan toilet technology*. United States Agency for International Development. https://www.usaid.gov/nigeria/news/usaid-partners-improve-sanitation-nigeria-sato-pan

USAID. (2020). *Improving water access through public-private partnerships.* https://www.usaid.gov/water

WaterAid. (2020). *Nigeria water, sanitation, and hygiene projects.* https://www.wateraid.org/ng

WaterAid. (2023, June 6). *WaterAid launches 5-year strategy, targets 27 million more Nigerians with safe and sustainable water, sanitation and hygiene.* WaterAid Nigeria. Retrieved from https://www.wateraid.org/ng/media/wateraid-launches-5-year-strategy-targets-27million-more-nigerians-with-safe-and-sustainable

WHO. (2021). *Drinking-water.* https://www.who.int/news-room/fact-sheets/detail/drinking-water

World Bank. (2021). *Strengthening local governance for sustainable water distribution.* https://www.worldbank.org/nigeria

World Bank. (2021, May 26). *Nigeria: Ensuring water, sanitation and hygiene for all. World Bank*. Retrieved from https://www.worldbank.org/en/news/feature/2021/05/26/nigeria-ensuring-water-sanitation-and-hygiene-for-all

World Health Organization (WHO). (2021). *Sanitation and hygiene: Innovations for improved access.* https://www.who.int/sanitation-hygiene

World Health Organization. (2019). *Progress on household drinking water, sanitation and hygiene 2000–2017: Special focus on inequalities.* WHO and UNICEF. https://www.who.int/publications/i/item/9789241516235

Yusuf, T. S., Murray, A., & Okereke, C. (2022). *Working with local governments to increase access to WASH services: A case of WaterAid's participatory approaches in Nigeria*. *H2Open Journal, 5(3),* 424-437. https://doi.org/10.2166/h2oj.2022.061