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PERCEIVED EFFECTIVENESS OF ANAMBRA STATE GOVERNMENT IN ENSURING SUSTAINABLE MANAGEMENT OF WATER AND SANITATION

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ABSTRACT

The study determined the perceived effectiveness of the Anambra State Government in ensuring sustainable management of water and sanitation. One research question was formulated to guide the study and one null hypothesis was tested at 0.05 level of significance. The study used a descriptive survey research design. The population of the study was made up of 317 stakeholders in the area of environmental sustainability in Anambra State. No sampling was done because the population was manageable. The instrument used for data collection was a questionnaire. The reliability coefficient of the instrument which was 0.89 was determined using Cronbach's alpha. The instrument was validated by three experts from the Departments of Educational Foundations, Science Education and Adult and Continuing Education in Nnamdi Azikiwe University, Awka. The instrument was distributed and collected by the researcher through the assistance of three research assistants. Only 302 copies of the questionnaire were completed and returned. The data collected were analyzed using mean and analysis of variance (ANOVA). Post hoc analysis was conducted using bonferroni test for multiple comparisons. The finding of the study showed that the respondents perceived the Anambra State Government as ineffective in ensuring sustainable management of water and sanitation. The study equally revealed that the staff of the Ministry of Environment, Presidents General/Caretaker Chairmen and staff of the Non-Governmental Organizations differed significantly in their mean ratings on the effectiveness of the Anambra State Government in ensuring sustainable management of water and sanitation. Based on the findings, it was recommended, among others, that policy should be formulated and implemented towards provision of pipe borne water to all citizens at the point of need in families, communities and commercial centres. Water supply and improved sanitation should be enforced.

Keywords: Effectiveness, Sustainable Management, Water, Sanitation

Introduction

Sustainable Management of Water and Sanitation is an element of sustainable development goals which is among the environmental sustainable development goals set up by the UN in 2015 for promoting human health, clean environment and eradicating diseases. Water is the liquid that falls from the clouds as rain. It forms streams, lakes and seas. Water is one of the most vital

natural resources. It can absorb into the soil and evaporate directly from the soil surface or be transpired by growing plants. According to Biology Online (2023), water is a tasteless and odourless liquid at ambient temperature and pressure .It is a very important substance required to sustain vital activities of human such as nutrition, respiration, circulation, excretion and reproduction. Water is a life space as well as one of the basic substances in the formation of life environment (Zeyneb,2020).

Water is very imperative to an individual because it transports nutrients, oxygen and wastes in the body. It protects an individual's tissues and organs from shock and damage. The cornerstone of our lives is water. The human body needs water for everyday life. Water is at the centre of economic and social development. It is important to maintain health, grow food, manage the environment and create jobs. The role of water in a society cannot be overemphasized. This is because people cannot exist without water. It forms our landscape and is essential for the production of crops and animals, among others (Wageningen University & Research, 2023).

Water is quite important for sanitation .Without water sanitation is impossible. Sanitation is the provision of facilities and services for safe disposal of refuse, human urine and faeces. According to WHO (2010), sanitation is the safe disposal of human excreta. It is the means by which the health of people and the cleanliness of homes and cities are managed. Sanitation refers to the proper collection and disposal of human waste generated at homes and businesses. It refers to disposal methods (salvaging and open burning, among others) used to collect garbage and other waste generated from human activities (Trenchlesspedia, 2023).Sanitation is necessary for an individual, family and government which made it to be included among the Sustainable Development Goals (SDGs). This is because poor sanitation breeds diseases such as cholera, dysentery, typhoid, intestinal worm infections and polio while improved sanitation reduces the spread of the aforestated diseases (WHO, 2022). Proper sanitation promotes health, improves the quality of the environment and the quality of life in a community.

Water and sanitation are essential to promote global health, prosperity, stability and resilience. Access to safe water and sanitation saves lives, improves livelihoods and makes communities more resilient. Investments in water resources management power economies, support agriculture and safeguard ecosystems (USAID,2022). Safe drinking water and sanitation are crucial to human welfare, by supporting health and livelihoods and helping to create healthy environments. Drinking unsafe water impairs human health through illnesses such as diarrhea; untreated sewage can contaminate drinking water supplies and the environment, creating a heavy burden on communities (Neira cited in Premium Times Nigeria,2017). The Anambra State Government was charged to show more commitment in the campaign against open defecation because about 672,000 people still defecate in the open while about 70% of the

population do not have access to water, soap or hand washing facility in their homes (Thakka cited in Voice of Nigeria, 2020). Furthermore, the Anambra State Government launched the Clean Anambra Use of the Toilet Campaign, emergency on Water, Sanitation and Hygiene in 2020 as part of the ongoing global efforts to achieve total access to water by 2030, but a lot needs to be done because even after two years of the launch of Clean Anambra Use of Toilet Campaign, Anambra State does not have a single Local Government Area that is Open Defecation Free (ODF), while only 6.2% of schools in the state has proper hand washing facilities with soap and water (Thakka cited in Voice of Nigeria,2020). Water is quite necessary for the survival of all living creatures. It is a part of everyday life. It can be explained as a source of life necessary for sanitation and survival. It provides healthy living environment. Sanitation is the process of keeping places free from dirt and cannot be achieved without fresh water for drinking and cleaning.

Ensuring sustainable management of water and sanitation implies expanding and ensuring water and sanitation in the family, local and the entire state. SDGs propose that supply of water should be expanded in the developing countries and local supply and management of water and sanitation maximally enhanced. This will promote healthy environment, economic growth, investment and productivity in agriculture because water shortage reduces food security and incomes of farmers (UN Environment Programme, n.d) . In addition, the Covid-19 pandemic and other diseases have shown to global citizens the importance of access to clean water, sanitation and hygiene for preventing various diseases (UN, 2021). In this study, ensuring sustainable management of water and sanitation in Anambra State implies investing in water and sanitation facilities and protection of forests, rivers, mountains and lakes as well as creation of awareness on improving water and sanitation in different communities to promote a healthy environment and life.

Access to safe water, sanitation and sound management of fresh water ecosystems are essential to human health and to environmental sustainability and economic prosperity. Irrespective of this reality , globally about 2.4 billion people still do not have access to toilets, 1.8 billion people drink faecally contaminated water, and water scarcity affects more than 40% of the global production (UNDP, 2015 ; UNU, 2016). Furthermore, 829,000 deaths are caused each year by unsafe water and poor sanitation (World Health Organization, 2022) . Ensuring access to safe and affordable water will require investing in adequate infrastructure and sanitation facilities, supporting water efficiency, treatment technologies and rational use of water-related ecosystems. Ensuring universal safe and affordable drinking water involves reaching over 800 million people who lack basic services and improving availability and safety of services for over 2 billion people (United Nations Development Programme, 2022). Globally, in 2015, 4.5 billion people lacked safely managed sanitation services (with adequately disposed or treated excreta) and 2.3 billion lacked basic sanitation

(United Nations Development Programme, 2022).Sustainable management of water and access to safe water and sanitation are essential for unlocking economic growth and productivity. They provide vital leverage for existing investment in health and education. According to the United Nations Official Website for Sustainable Development Goals (2018), accessibility to clean water for all is an essential part of the world people want to live-in.

Nigeria is one of the countries which have the lowest supply of water and also experiences poor sanitation. According to WHO, UNICEF and WSMP (2010), in 2006, the population which has access to water was 47%. It increased marginally to 54% in 2010. In a similar vein, sanitation coverage improved from 30% to 35% in 2020. In Anambra State, which is the focus of this study, there are agencies set up for ensuring sustainable management of water and sanitation such as: Anambra State Environmental Protection Agency (ANSEPA), Anambra State Waste Management Agency (ASWAMA) and Rural Water Supply and Sanitation Agency (RUWASSA), however, water scarcity and pollution still exist. According to Roger (2018), water scarcity and pollution implies that citizens may suffer from air and water borne diseases. This is evident in both rural and urban areas where almost 95% of the households have no access to adequate water supply and sanitation. The situation seems to be worsening, as the proportion of people who has access to safe drinking water in Anambra State declined from 49.9% to 49 % between 1999 and 2003. Moreover, according to Ezekwo cited in Premium Times (2018) , the Anambra State Rural Water Supply and Sanitation Agency (RUWASSA) has completed 33 water supply schemes and rehabilitated 116 non-functional boreholes across the state to reduce water scarcity.

The Ministry of Environment is at the helm of environmental cleanliness and sanitation in Anambra State. The Ministry through the Anambra State Environmental Protection Agency (ANSEPA) engages contractors to do the regular collection and disposal of wastes. ANSEPA's functions in ensuring a clean environment include collection of refuse from designated places, of refuse bins at the strategic places (markets, streets, parks and gardens, commercial vehicles and government offices), periodic collection and disposal of wastes. It is the duty of ANSEPA to see that refuse sites are properly cleared (Nwakoby, Okoye & Chukwurah, 2020).

Despite the formulation of policies on environment, ANSEPA and other environmental friendly agencies seem not to embark on integrated effort towards protecting the environment. Their interest seems to be mainly restricted to the major cities. Improper sites and open dumps deface several cities, thereby endangering public health by encouraging the spread of odours and diseases (Nwakoby, Okoye & Chukwurah, 2020). Furthermore, refuse seems to be dumped indiscriminately on the roads and drainages. Mountains, forests, rivers, aquifers and lakes seem not to be protected enough. According to Anija-Obi et al (2013), public toilets and sanitation facilities are yet to be fully provided for

citizens. Though the Anambra State Waste Management Agency (ASWAMA) has distributed waste disposal containers at strategic places in Anambra State metropolis such receptacles are yet to be seen in the rural areas of the state. In addition, release of hazardous chemicals and materials (papers, waterproofs and plastics, among others) seems to be rampant in Anambra State. Hazardous chemicals from factories and materials litter almost all the major cities in Anambra State. It is the responsibility of the Anambra State Waste Management Agency to clean the three major cities (Awka, Onitsha and Nnewi) in Anambra State. The Anambra State Government in collaboration with the Federal Ministry of Health and the Carter Center organized an annual Neglected Tropical Diseases (NTDs) programme to treat 80% of the state population (of over five million) projected to be at risk, to combat air and water diseases (Okpala, cited in Premium Times, 2022). Water and air borne diseases seem prevalent in Anambra State (Park , cited in Oranye, Utharas & Nora, 2009).

In Anambra State, boreholes are dug, but there seems to be inadequate water treatment facilities attached to this. The efforts of intervention programmes and projects embarked upon by UNICEF / European Union sponsored groundwater development projects were not equipped with water treatment plants to ensure the quality of water for the growing population of Anambra State to reduce water borne diseases (Emeka et al., 2019). Similarly, the proportion of the population with sanitary means of excreta disposal declined from 85.5% in 1999 to 49 % (Anambra State Economic Empowerment Development Strategy, 2006).

Adequate water supply is a prerequisite for sustainable development of any economy. In order to make water available to all communities in Anambra State, the Integrated Water Resources Management Committee was inaugurated in August 2014 to render integrated approach to the management of water and related resources and to improve the implementation and management of water. Despite the constitution of the committee, there exists scarcity of water in all communities. It seems that not much has been done to implement integrated water resources to make water available to all communities in Anambra State. Water is not an infinite resource. Waste water can be recycled. According to United States Environmental Protection Agency (2022), water recycling is the process of treating waste water and reusing it. Recycled water can be reused for irrigation or toilet flushing. From the observation of the researcher and literature, waste water is not recycled for domestic and productive purposes in Anambra State.

Water and sanitation are the road map to healthy environment in any society. Any progressive society should embark on the health of her members .It is on this note that the researcher intends to determine the effectiveness of the Anambra State Government in ensuring sustainable management of water and sanitation. Effectiveness refers to achieving a desired result or outcome. It is the capability of producing a desired result or the ability to produce desired output. According to Oxford

University Press cited in Jakobsson and Stahl (2019), effectiveness is the degree to which something is successful in producing a desired result. Effectiveness is a measure of the match between stated goals and their achievement (Fraser , cited in Harvey, 2004) .It refers to something being able to achieve desired outcome .It implies the quality with which a task is carried out which leads to better performance or outcome . A task is referred to as effective if it produces intended result. This study focuses on finding out from the opinions of the staff of the Ministry of Environment, Presidents General/Caretaker Chairmen and staff of Non-Governmental Organizations whether Anambra State Government is ensuring sustainable management of water and sanitation. It implies measuring the degree to which the desired result as stipulated by the UN has been achieved. This will enable the researcher to identify gaps and identify evidence-based information to proffer recommendations for scaling-up of actions by the State Government towards achievement of sustainable management of water and sanitation which is an essential element of the environmental SDGs for the wellbeing of the citizens of Anambra State.

Statement of the Problem

Water is life. All human beings need improved water quality which is not exposed to contaminants such as parasites and viruses for healthy life and survival. In the developed countries such as UK, USA and Canada, pipe-borne water is provided at the point of need of the citizens. However, in developing countries such as Nigeria, pipe-borne water is not provided by the Government. Most often the populace get their water from boreholes and rivers which often are infected and contaminated .This leads to diseases such as typhoid and cholera .Furthermore, non-availability of pipe-borne water leads to poor hygiene and sanitation.

In Anambra State, the situation is not different. Although RUWASSA and ASWAMA are presently synergizing effort to provide water and improve sanitation, the impact seems not to have been felt by the people. Pipe-borne water is yet to be available at the point of need in many households in both rural and urban areas in the state. Furthermore, effective environmental sanitation is yet to be achieved. If safe water and improved sanitation are not provided by the Government, diseases such as diarrhea, dysentery, hepatitis A and typhoid will be widespread which may lead to untimely deaths. Prevention of these diseases is better than cure. This therefore, calls for this evidence –based study to determine the effectiveness of Anambra State Government in ensuring sustainable management of water and sanitation which is an element of SDGs in reaching universal access to drinking water and sanitation by the year 2030. This will provide a springboard for future planning, decision-taking and policy proposals in the area for a healthy society.

Research Question

A research question guided the study; in the perceptions of the staff of the Ministry of Environment, Presidents General/Caretaker Chairmen and NGOs:

1. How effective is Anambra State Government in ensuring sustainable management of water and sanitation?

Research Hypothesis

A null hypothesis (H_0) was tested at 0.05 level of significance:

1. There is no significant difference among the staff of the Ministry of Environment, Presidents General / Caretaker Chairmen and staff of the NGOs on the effectiveness of the Anambra State Government in ensuring sustainable management of water and sanitation.

Research Method

The study adopted a descriptive survey research design. The study was conducted in Anambra State of Nigeria. The population of the study was made up of 317 stakeholders in the area of environmental sustainability in Anambra State. No sampling was done because the population was manageable. The instrument used for data collection was a questionnaire. It was titled ‘‘Perceived Effectiveness of the Government in Ensuring Sustainable Management of Water and Sanitation Scale (PEGESMWSS)”. The instrument was divided into two parts, A and B. Part A (contains 3 items) focused on the personal data of the respondents while Part B (contains 22 items) focused on items addressing the research question. It elicited information on activities necessary for ensuring sustainable management of water and sanitation. Each of the items has 4-point response categories as follows: Very Effective (VE); Effective (E); Slightly Effective (SE) and Ineffective. The instrument for the study was validated by three experts in the Department of Adult and Continuing Education, Department of Educational Foundations (Measurement & Evaluation Unit) and Department of Science Education in the Faculty of Education, Nnamdi Azikiwe University, Awka .The draft of the instrument which contained the title of the study, the purpose of the study, the research question, scope of the study and the null hypothesis were given to the experts to scrutinize the relevance of the title of the study, coverage of the content areas, appropriateness of language use and clarity of purpose. Their corrections were used to produce the final copy of the instrument. The reliability of the instrument was carried out using 15 stakeholders in the Ministry of Environment, Association of Town Unions and NGOs in Enugu State (5 stakeholders in each case). The state was used because they share the same characteristics with the area of study. The data collected from the pilot test were analyzed and the internal consistency of the instrument was determined using Cronbach’s alpha. The coefficient alpha analysis yielded reliability of internal consistency of 0.89. The researcher administered 317 copies of the questionnaire to the respondents with the help of three research assistants (a staff of Ministry of Environment, a staff of Anambra State Association of Town Unions and a staff of the NGOs) who are stakeholders in environmental sustainability in Anambra State. The number of questionnaire which were completed and returned were 302

copies (95.3%) while 15 copies (4.7%) were lost.. The researcher used the 302 copies which were returned for the analysis. Mean and analysis of variance (ANOVA) were used for analyses. Mean was used to analyze the data on the research question while the ANOVA was used to test the null hypothesis at 0.05 level of significance. Analysis was done using Special Package for Social Sciences (SPSS) version 25. Post hoc analysis was carried out using Bonferroni test for multiple comparisons. The decision rule was based on the boundary true limit of the four-point response categories as follows:

Response Categories	Rating Points Boundary limits
Very Effective 4	3.50-4.00
Effective 3	2.50-3.49
Slightly Effective 2	1.50-2.49
Ineffective 1	1.00-1.49

Anambra State Government was considered effective in any item which scored 2.50 mean point and above while ineffective in any item that scored below 2.50.

A null hypothesis was accepted at 0.05 level of significance if the *F* value was less than the value of significance (*P* value) or otherwise, the null hypothesis was rejected.

Presentation of Results

Data collected in respect of the research question are presented in Table 1

.Table 1: Mean Ratings of the Respondents on the Perceived Effectiveness of Anambra State Government in Ensuring Sustainable Management of Water and Sanitation (*N=302)*

S/N	Items	SME (N = 90) $\bar{X}$	PGs/CTC (N = 177) $\bar{X}$	SNGOs (N = 35) $\bar{X}$	Total (N = 302) $\bar{X}$	Remark
1	Reducing water scarcity by providing water basin	2.32	2.16	1.81	2.09	Ineffective
2	Reducing water pollution by preventing dumping of chemical substances in rivers	2.48	2.13	2.47	2.36	Ineffective
3	Reducing indiscriminate dumping of refuse in water sources by providing waste evacuators	2.46	1.94	2.50	2.30	Ineffective
4	Minimizing indiscriminate disposal of plastic materials by mapping out collection sites for recycling	2.42	1.93	2.42	2.25	Ineffective
5	Implementing integrated water resources for availability of water to all communities by empowering water corporation	1.87	1.58	1.56	1.67	Ineffective

6	Creating awareness on improving water and sanitation in different communities by organizing seminars	2.35	2.00	2.39	2.24	Ineffective
7	Treating water with chlorine for domestic purposes	1.67	1.55	1.28	1.50	Ineffective
8	Treating water for productive purposes by providing granular activated carbon filters	1.55	1.33	1.14	1.34	Ineffective
9	Recycling water for productive purposes by providing sewage treatment plants	1.67	1.25	1.31	1.41	Ineffective
	Protecting and restoring water-related ecosystems such as:					
10	Mountains	2.16	2.11	2.50	2.25	Ineffective
11	Forests	2.31	2.08	2.53	2.30	Ineffective
12	Wetlands	2.28	1.98	2.33	2.19	Ineffective
13	Rivers	2.22	2.02	2.33	2.19	Ineffective
14	Aquifers	2.16	1.85	2.19	2.06	Ineffective
15	Lakes	2.14	1.86	2.19	2.06	Ineffective
16	Investing in providing amenities such as public toilets by increasing its budget	2.31	1.52	1.42	1.75	Ineffective
17	Providing sanitation facilities such as waste evacuators by making them available	2.43	2.27	2.44	2.38	Ineffective
18	Combating water borne diseases by equipping water projects with water treatment plants	2.15	1.82	1.50	1.82	Ineffective
19	Combating air-borne diseases by providing sensitization campaigns to communities	2.38	2.19	2.28	2.28	Ineffective
20	Creating awareness on health education by organizing seminars for community members	2.61	2.43	2.48	2.50	Effective
21	Paying cleaners of major cities frequently by making funds available	2.55	2.64	2.84	2.67	Effective
22	Promoting synergy of agencies concerned with environmental protection by enhancing their partnership	2.51	2.45	2.34	2.43	Ineffective

Total Mean Score	2.09	Ineffective

SME=Staff of Ministry of Environment, PGs/CTC =Presidents General/Caretaker Chairmen, SNGOs=Staff of Non-Governmental Organizations

With reference to the decision rule, Table 1 shows that the Anambra State Government was not effective in 20 items. They were only effective in 2 items. The grand mean of 2.09 corroborates this remark .Therefore based on the decision rule, the Government was ineffective in ensuring sustainable management of water and sanitation.

The null hypothesis is tested in Table 2.

Table 2: ANOVA on Effectiveness of Anambra State Government in Ensuring Sustainable Management of Water and Sanitation

		Sum of Squares	Df	Mean Square	F	Sig.	Eta-squared (ηp2)	Remark
Ensuring Sustainable Management of Water and Sanitation	Between Groups	4.290	2	2.145	13.738	<.001	.084	Significant
	Within Groups	46.531	300	.156				
	Total	50.821	302					

Table 2 indicates that the staff of the Ministry of Environment (N = 90; M = 2.23; SD = .45), Presidents General/Caretaker Chairmen (N = 177; M = 1.96; SD = .38) and the staff of NGOs (N = 35; M = 2.10; SD = .36) differed significantly in their mean ratings on the effectiveness of the Anambra State Government in ensuring sustainable management of water and sanitation , $F(2,302)$, =13.738, p = 0.001, ηp2 = .084. Post hoc analyses as presented in Table 3 indicates significant differences in the mean ratings on the effectiveness of the Anambra State government in ensuring sustainable management of water and sanitation between staff of the Ministry of Environment and Presidents General / Caretaker Chairmen ($p < .05$). However, significant differences did not occur between staff of the Ministry of Environment and staff of NGOs; between Presidents General / Caretaker Chairmen and staff of NGOs ($p > .05$).

Table 3: Post Hoc on Effectiveness of Anambra State Government in Ensuring Sustainable Management of Water and Sanitation

Multiple Comparisons

Dependent Variable: Ensuring Sustainable Management of Water and Sanitation
Bonferroni

(I) PDR	(J) PDR	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
Staff of the Ministry of Environment	Presidents General / Caretaker Chairmen	.26800*	.05169	<.001	.1435	.3925
	Staff of NGOs	.12584	.07831	.327	-.0627	.3144
Presidents General / Caretaker Chairmen	Staff of the Ministry of Environment	-.26800*	.05169	<.001	-.3925	-.1435
	Staff of NGOs	-.14216	.07221	.150	-.3160	.0317
Staff of NGOs	Staff of the Ministry of Environment	-.12584	.07831	.327	-.3144	.0627
	Presidents General / Caretaker Chairmen	.14216	.07221	.150	-.0317	.3160

*. The mean difference is significant at the 0.05 level.

Discussion of Findings

Analysis in Table 1 showed that the Anambra State Government was ineffective in ensuring sustainable management of water and sanitation. The finding is in line with the opinion of Anija-obi et al (2013) who stated that public toilets and sanitation facilities are yet to be fully provided for citizens in Anambra State. Though the Anambra State Waste Management Agency (ASWAMA) has distributed waste disposal containers at strategic places in Anambra State metropolis such receptacles are yet to be seen in the rural area of the state. Refuse seems to be dumped indiscriminately on the roads and drainages. Forests, mountains, rivers, aquifers and lakes seem not to be protected enough. Similarly, Emeka et al (2019) noted that the efforts of intervention programmes and projects embarked upon by UNICEF / European Union sponsored Groundwater Development Projects were not equipped with water treatment plants to ensure the quality of water for the growing population of Anambra State to reduce water borne diseases. Boreholes are dug, but there seems to be inadequate water treatment facilities attached to this.

Furthermore, the Anambra State Government was charged to show more commitment in the campaign against open defecation because about 672,000 people still defecate in the open while about 70% of the population do not have access to water, soap or hand washing facility in their homes (Thakka cited in Voice of Nigeria, 2020). Similarly, the Anambra State Government launched the Clean Anambra use of the Toilet Campaign, emergency on Water, Sanitation and Hygiene in 2020 as part of the ongoing global efforts to achieve total access to water by 2030, but a lot needs to be done because even after two years of the launch of Clean Anambra use of Toilet Campaign, Anambra State does not have a single Local Government Area that is Open Defecation Free (ODF), while only 6.2% of schools in

the state has proper hand washing facilities with soap and water (Thakka cited in Voice of Nigeria,2020).

The null hypothesis revealed that the staff of the Ministry of Environment, Presidents General / Caretaker Chairmen and staff of the NGOs differed significantly in their mean ratings on the effectiveness of the Anambra State Government in ensuring sustainable management of water and sanitation. However, the post hoc analysis indicated significant difference in the mean ratings between staff of the Ministry of Environment and Presidents General / Caretaker Chairmen. But significant differences did not occur between staff of the Ministry of Environment and staff of the NGOs; between Presidents General / Caretaker Chairmen and staff of the NGOs.

Conclusion

Based on the findings, it was concluded that the Anambra State government was ineffective in ensuring sustainable management of water and sanitation. The study also showed that the Staff of the Ministry of Environment, Presidents General/Caretaker Chairmen and staff of the NGOs differed significantly in their mean ratings on the effectiveness of the Anambra State Government in ensuring sustainable management of water and sanitation. Thus, the efforts of the Anambra State government should be doubled to achieve the targets of the goal as contained in the UN document which will help to achieve the goal in Anambra State.

Recommendations

Based on the findings of the study, the following recommendations were made:

1. Policy formulation and implementation towards provision of pipe borne water to all citizens at the point of need in families, communities and commercial centres. Water supply and improved sanitation should be enforced.
2. The Anambra State Environmental Protection Agency and other environmental friendly agencies should extend their functions to the rural areas.
3. The Anambra State Water Corporation should be revamped. This will help to reduce water scarcity and equally create job opportunities in the state.
4. Water treatment facilities should be attached to the existing boreholes in the state by the Ministry of Public Utilities. This will help to promote clean water.
5. Waste disposal containers should be extended to the rural areas of the state by the Anambra State Waste Management Agency.
6. Garbage /trash trucks should be made available for effective disposal of solid, liquid and gaseous wastes.
7. Garbage collectors should be trained and employed by both public and private enterprises to collect and dispose wastes from both rural and urban communities. Some of such

wastes can be recycled and put to use.

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