# Implication of Ineffective Policy Implementation for Community Participation on Waste Management in Bauchi State, Nigeria

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**Abstract**

*The paper examines implications of ineffective waste management policy implementation through community participation in Bauchi State, Nigeria. Factors militating against effective policy implementation were ananlysed. Data was derived from the public using questionnaires instrument, which was used in generating information about factors militating against effective waste management policy implementation. Secondary data was derived from Bauchi State Urban Development Board and National Population Commission Office at Bauchi, as well as from internet and library sources. Stepwise sampling technique was employed in the selection of sample points and a sample size of 480. Frequency tabulations showing percentages of public perception were used in collating and analysing the questionnaire responses. It was discovered that public failure to pay for solid waste evacuation service in ensuring environmental cleanliness is one of the major factors responsible for the persistence of poor SWM. However, among new other factors discovered is variation in respondents' occupational and educational qualification as displayed by respondents' perceptions between the ubanised and less/non ubanised LGAs in the three senatorial districts sampled. In order to overcome this problem, it was recommended among others that health education program on solid waste management and the effect of poor solid waste management on the environment should be organized by the governments. This might reduce public level of ignorance on implications of poor waste management, hence the appreciation of environmental quality in terms of cleanliness.*

**Keywords**: Policy Implementation, Community Participation, Waste Management

## INTRODUCTION

The growth of human population coupled with increased economic activities and increased consumption of goods and services in towns and cities result in high rate of solid waste generation. It is inevitable that almost every human activity involves solid waste generation, hence the need for the provision of effective framework and institutional mechanisms to properly manage these wastes (Schubeler, 1996; Lagbas - Aranas, 2015). Boya, Chunxia and Hongtao (2017) opined three important aspect of sound waste management for the Chinese cities, i) Policy Regulatory, ii) Institutional, Technical and Performance, and iii) Funding/Financing/ Economics aspects of sustainable waste management that, the entire value chain elements of waste management of – waste generation, segregation, collection, transfer, treatment and disposal, resource recovery to be addressed through 3Rs.

In realization of the importance of Solid Waste Management (SWM) as an environmental issue that encompasses every human community, which is considered to be given serious attention, the Federal Ministry of Environment (FME, 2005) Nigeria in the year 2005 provided the institutional policy roles (guidelines) for the three tiers of government, private sector, civil society organizations and public sector, in tackling solid waste management problems in

country. Policy entails a statement of intent, and is implemented as a procedure or protocol (Egonmwan, 2000). Policy can be referred to as a principle of behaviour or conduct thought to be desirable or necessary as formally expressed by government or other authoritative body. On the other hand, guidelines can be thought as a plan or explanation to guide one in setting standards or determine a course of action or behaviour. With this background, the institutional roles for the three tiers of Nigerian government provided by the FME in 2005 were such that, the policy guidelines are aimed at tackling SWM problems in Nigeria (Environmental Protection, Environmental Assessment and Environmental Education).

Policy implementation is the process of putting a plan into practice by carrying out planned activities, including compliance and enforcement activities or ensuring such activities are carried out in accordance with the guidelines for identification of regions and agencies/institutions for implementation (Agamuthu, Chenayah, Hamid, and Victor, 2011; EMBP, 2014).

Policy implementation reflects a complex change process where government decisions are transformed into programs, procedures, regulations, or practices aimed at social betterment (DeGroff and Cargo, 2009). Public policy implementation as described by Egonmwan (2000) is a major problem confronting the developing countries. In relativity, the successful implementation of public policy is difficult in developed countries; it is more difficult in the developing countries and it may be most difficult in reform oriented governments in the developing countries such as Africa. Major constraints observed include lack of clear policy assigning responsibilities, poor environmental perception, and inappropriate institutional framework, weak and poorly enforced environmental laws, and inadequate professional manpower/research activities (Kabiru, Mohammed and Alhaji, 2017). Implementation of policy as observed usually focused on major areas of environmental sanitation which is SWM (FME, 2005).

Waste management is the collection, transportation, processing, recycling or disposal of waste materials. The term usually relates to materials produced by human activities and is generally undertaken to reduce their effect on health, the environment or aesthetic (USEPA, 2014). To improve performance in Metropolitan Solid waste management, all stakeholders must be willing to accept responsibility to remedy failures and deficiencies and restoring accountability in the solid waste system will be critical (Johanna, Peder, Sigurd, Collen, Anna, Mark, Tim and Susan, 2017); while, Amit (2017) employed statistical multiple linear regression to assess the solid waste disposal performance with respect to, provincial resource use policy's influence on comprehensive utilisation rate of industrial solid waste in Chinese cities.

In spite of the Federal Government's policy guidelines for effective and efficient SWM, many towns of Bauchi State in particular, may not be exempted from SWM problems such as unauthorized dump sites, unban and stream channels blockages. In Bauchi State, treatment of solid wastes was not often carried out and incineration of wastes or use of approved sanitary landfill was non-existent. The most common practice was open dumping and burning of waste within residential areas and at illegal and legal dumps. It is therefore pertinent to ask the question, what is responsible possible for the uncontrolled prevalence and accumulation of wastes in open spaces, drainages and on major road sides in the study area? Do the people in Bauchi State perceive poor SWM as a cause of environmental pollution (land, air and water), diseases incidence, road blockages and perhaps accidents? Could poor waste management practices be viewed as against the background understanding that waste management policies and guidelines exist at all levels of government, to guide and ensure effective waste

management system in the State? New public policies often take a long time to become an established routine (Ajayi, 2006). In view of this assertion, one might want to know whether the objectives of the policy on SWM problems are fully followed in the State after a decade of implementation. These situations therefore, make it necessary to investigate and encourage community participation in waste management. In this paper an attempt has been made in appraising the level of peoples' perception about success or failure of and compliance with implementation of the policy guidelines on SWM IN Bauchi State.

**The Study Area**

The Bauchi State is bounded by latitudes 9º 30´ and 12º30´ north of the Equator and the western and eastern stretch falls within longitudes 8º45´ East and 11º 03´ east of the Greenwich Meridian (Ajaegbu, 2000; Logbaby, 2014). Within these coordinates lies the state total land area covering about 49,259 sq. km. This is about 4.9million ha out of the Nigeria's 92.4million ha the Nigeria's total land mass (CPN, 2014a and 2014b). The neighboring states that share common boundary with the state are Kano and Jigawa from the north, Yobe and Gombe to the east, Taraba and Plateau to the south, and Kaduna to the west (Figure 1).
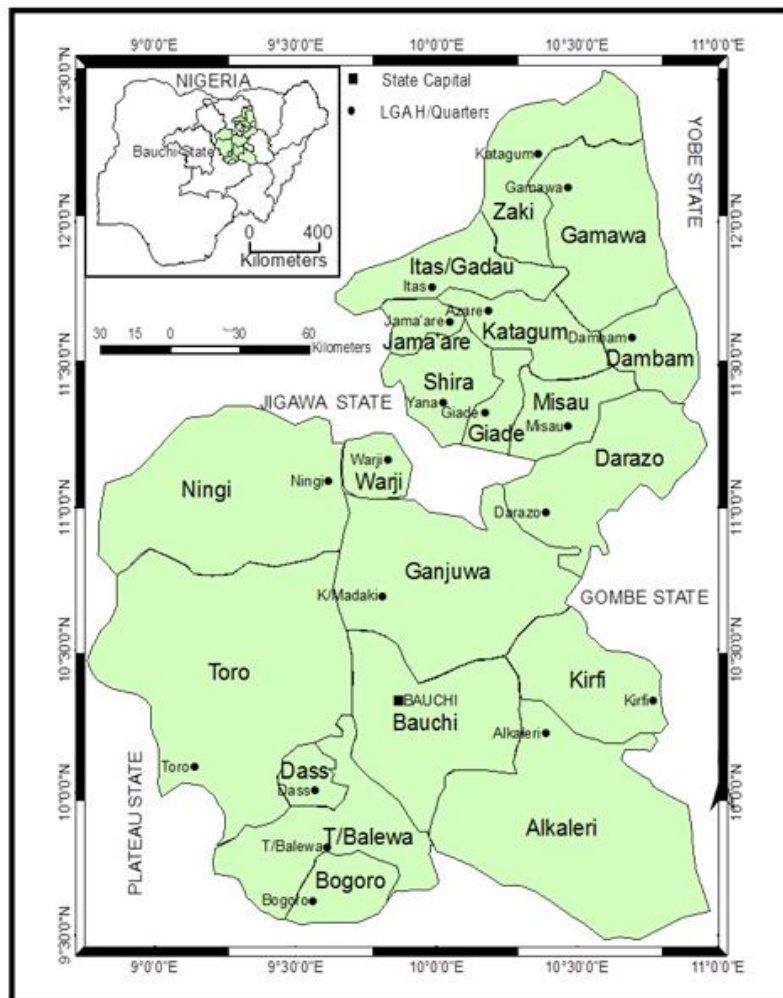


Figure 1: Location of the Study Area, Bauchi State

Bauchi state is characterized with tropical continental climate which records warm temperatures throughout the year and relatively moderate rainfall for about six to seven months (during summer season of the northern tropic). Temperatures and rainfall ranges between

annual mean minimum of 21°C in December-January to annual mean maximum of 33°C in March-April and rainfall of 700mm in the northern and 1,300mm in the southern parts of the state respectively. The relief is moderately high ranging between 600m to 729m a.m.s.l. and the terrain well drain except along rivers flood plains where the soils are mainly loam to loam-clay in nature. Large water courses traversing the area include rivers Gongola and Jama'are. Bauchi state has high population of about 4,653066 (CPN, 2014b) of people and a density of 94.7/km$^2$ who are engaged in various economic activities such as agriculture, various trading types and educational institutions.

Most considerably, population of the state is on the increase. This couple with the favourable prevailing climatic conditions has attracted high economic activities which come along with high rate of solid waste generation with direct implication on the aesthetic and environmental cleanliness. Hence, this require more efforts on the part of policy implementers and recipients to strive hard in implementing and complying with environmental policies as goals towards attaining healthy and clean environment.

## METHODOLOGY

To assess the factors militating against effective waste management policy implementation in the State, a number of queries were raised to elicit information on possible reasons responsible for persistence of poor waste management in Bauchi state. Members of the public were presented with five (5) items representing various components of policy guidelines put in place by government for effective SWM in the State and asked to give their opinion about factors influencing those policy items. The five policy items include:

    i.     Willingness to pay for solid waste evacuation service to ensure environmental cleanliness.
    ii.    Enlightenment and public education on good SWM practices.
    iii.   Implementation of State legislations on SWM at the State level.
    iv.   Adequacy of policy specifications and guidelines in tackling SWM problems.
    v.    Promotion of private sector participation in the delivery of waste management services activities.

Data was generated using structured questionnaire on waste management and factors militating against effective waste management policy implementation from the public sector in the state respectively. Random sampling technique was used to select from the population (Bauchi State) two LGAs Katagum and Jama'are from the northern, Darazo and Ningi from the central and Bauchi and Alkaleri from the southern senatorial zones of the state and two settlements in each of the selected LGAs (Figure 2).

Questionnaire was administered to 20 respondents systematically randomly selected from two settlements in each LGA which yielded a total sample size of 480 across the selected LGAs. Data was analysed using frequencies and percentages of the 'agreed' and 'disagreed' options for factors militating against effective policy implementation in the study area.

## RESULTS AND DISCUSSION

### Factors influencing waste management policy implementation

The results obtained (Table 1) revealed that implementation of legislations on SWM at the State level was the main factor militating against effective SWA and ranked first among the

five factors assessed. Other factors examined included public enlightenment/education on good SWM practices, adequacy of policy specifications and guidelines in handling SWM problems, willingness to payment for solid waste evacuation service to ensure environmental cleanliness, and private sector participation in the delivery of waste management services in the state. The result shows variation in opinion between males and females respondent about the relative strengths of the factors influencing waste management policy implementation in Bauchi State. Significantly more females (77.2%) than males (64.6%) were of the opinion poor legislation was the leading factor affecting SWM policy implementation in the state. This was followed by people's willingness to pay for waste evacuation (expressed by 68.8% females and 53.3% males as the second most important affecting SWM policy success in Bauchi state. On the other hand, most male respondents (65.8%) and females (61.0%) were of the view that inadequate public enlightenment/education, and private sector participation were also important factors militating against effective public policy implementation on SWM in Bauchi State.
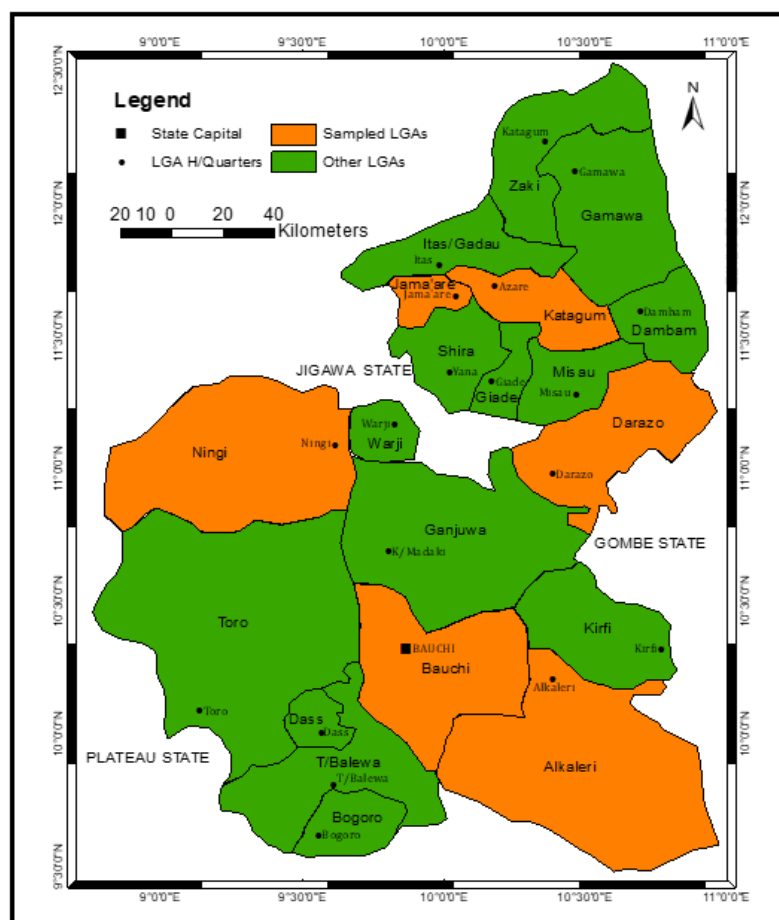


**Figure 2**: The study area depicting sampled Local Government Areas

The result also showed differences in perception between younger and the older adults about specific factors affecting SWM in the state. Most of the younger adult respondents (aged 30-50) generally appear to manifest extreme opinion by associating poor SWM policy implementation to inadequacy of legislations and willingness to payment for solid waste evacuation services as major culprits for the ineffectiveness in SWM policy implementation in Bauchi state (Table 1). The general perception was that the state government and local governments have the sole responsibility for managing solid waste problems in the state. The Private sector was rank fifth among all major stakeholders.

**Table 1**: Factors Militating Against Effective Waste Management Policy Implementation by Items in Bauchi State

| S/N | Question | Frequency and percentage (%) of responses | | | | | | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | Sex | | | | | | | | Age (Years) | | | | | | | |
| | | Number | | Agree % | | Disagree % | | Total % | | Number | | Agree % | | Disagree % | | Total % | |
| | | M | F | M (%) | F (%) | M (%) | F (%) | M (%) | F (%) | <30-40 | 41-50 | <30-40 (%) | 41-50 (%) | <30-40 (%) | 41-50 (%) | <30-40 (%) | 41-50 (%) |
| 1 | Payment for solid waste evacuation | 334 | 77 | 178 | 53 | 156 | 24 | | | 344 | 67 | 192 | 39 | 152 | 28 | | |
| | | | | (53.29) | (68.83) | (46.71) | (31.17) | (100) | (100) | | | (55.81) | (58.21) | (44.19) | (41.79) | (100) | (100) |
| 2 | Enlightenment and public education | 298 | 79 | 182 | 52 | 116 | 27 | | | 322 | 55 | 206 | 28 | 116 | 27 | | |
| | | | | (61.07) | (65.82) | (38.93) | (34.18) | (100) | (100) | | | (63.98) | (50.91) | (36.03) | (49.09) | (100) | (100) |
| 3 | Legislations on SWM | 249 | 66 | 161 | 51 | 88 | 15 | | | 279 | 36 | 192 | 20 | 87 | 16 | | |
| | | | | (64.66) | (77.27) | (35.34) | (22.73) | (100) | (100) | | | (68.82) | (55.56) | (31.18) | (44.44) | (100) | (100) |
| 4 | Adequacy of Policy specifications | 263 | 69 | 170 | 43 | 93 | 26 | | | 282 | 50 | 181 | 32 | 101 | 18 | | |
| | | | | (64.64) | (62.32) | (35.36) | (37.68) | (100) | (100) | | | (64.18) | (64.00) | (35.82) | (36.00) | (100) | (100) |
| 5 | Private sector participation | 384 | 71 | 224 | 36 | 160 | 35 | | | 302 | 53 | 136 | 24 | 166 | 29 | | |
| | | | | (58.33) | (50.70) | (41.67) | (49.30) | (100) | (100) | | | (45.03) | (45.28) | (54.97) | (54.72) | (100) | (100) |

**Table 2**: Public Perception about Factors Militating against Effective Waste Management Policy Implementation in Bauchi State

| S/N | Item | Agree | Agree % | Disagree | Disagree % |
|-----|------|-------|---------|----------|------------|
| 1 | Payment for waste evacuation. | 231 | 56.20 | 180 | 43.80 |
| 2 | Enlightenment and public education. | 234 | 62.07 | 143 | 37.93 |
| 3 | Implementation of legislations on SWM. | 212 | 67.30 | 103 | 32.70 |
| 4 | Adequacy of policy guidelines. | 213 | 64.16 | 119 | 35.84 |
| 5 | Promotion of private sector participation. | 160 | 45.07 | 195 | 54.93 |
| | **Total** | **1050** | **58.66** | **740** | **41.34** |

Generally, the perception of respondents in the state is that, implementation of legislations on SWM, adequacy of policy guidelines and enlightenment and public education as well as payment for waste evacuation are the three main factors militating against effective SWM in the State. The respondents' perception and understanding of the policy guidelines, its implementation and success however varied between LGAs (Table 3, Figure 3). More than one third (33%) of the population surveyed in Alkaleri and Bauchi LGAs understood and participated in the implementation of the SWM policy.

**Table 3:** Spatial Pattern of Peoples' Perception about Factors Militating Against Policy Implementation in Bauchi State

| LGA | Agree | Agree % | Disagree | Disagree % | Response total | Total % |
|-----|-------|---------|----------|------------|----------------|---------|
| Alkaleri | 268 | 68.54 | 123 | 31.46 | 391 | 100 |
| Bauchi | 325 | 75.06 | 108 | 24.94 | 433 | 100 |
| Darazo | 253 | 54.06 | 215 | 45.94 | 468 | 100 |
| Ningi | 150 | 48.54 | 159 | 51.46 | 309 | 100 |
| Jama'are | 193 | 41.07 | 277 | 58.93 | 470 | 100 |
| Katagum | 211 | 56.12 | 165 | 43.88 | 376 | 100 |

The pattern displayed in Table 3 may be explained by the environmental settings and socio-economic characteristics of the respondents in the different LGAs. For instance, Bauchi LGA with Bauchi town as the state capital and its adjoining Alkaleri LGA are the major towns, centrally located and urban in character. The urban inhabitants most are enlightened communities who should be aware and knowledgeable of government policies and are willing to implement them.
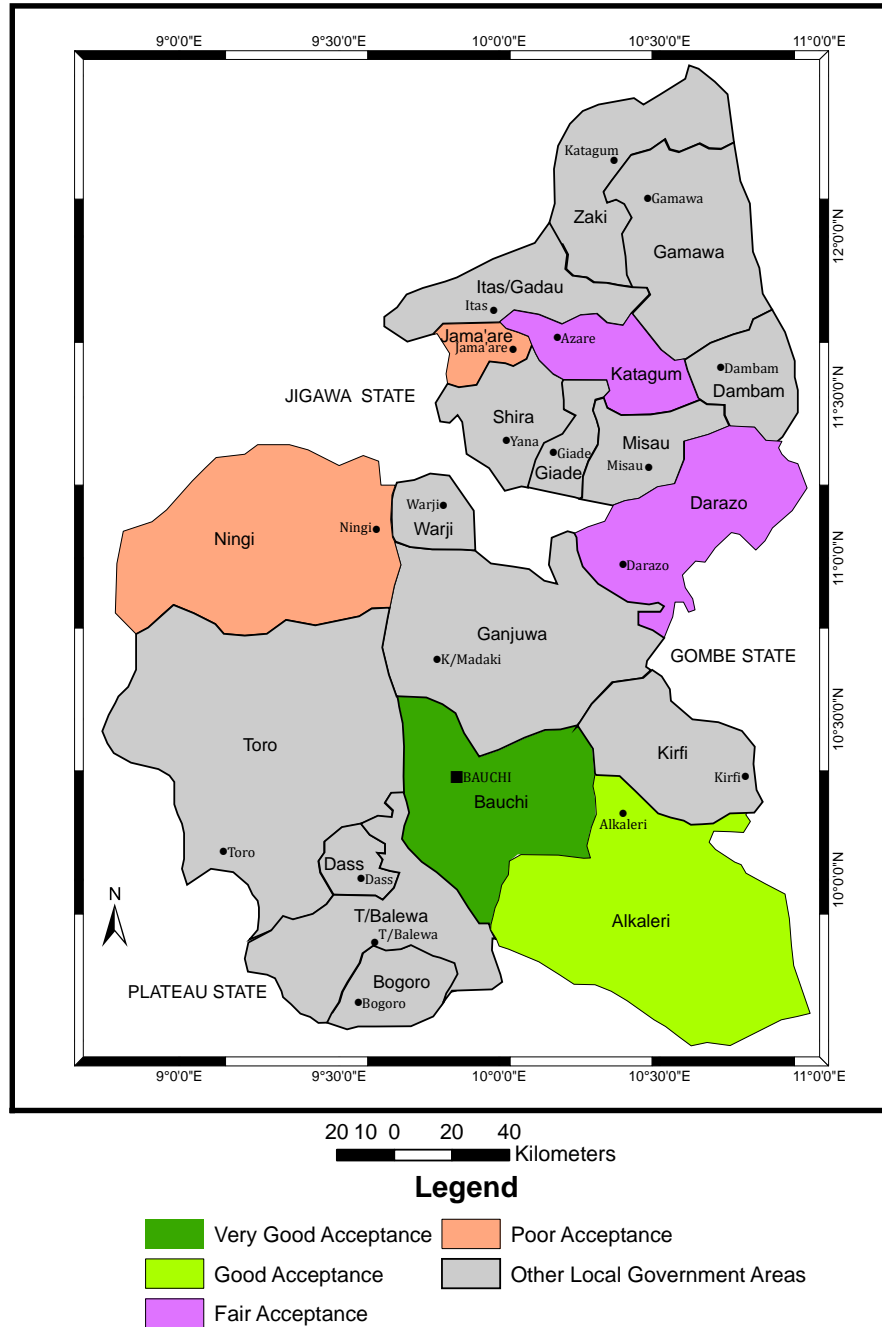
**Figure 3:** Spatial Pattern of Peoples' Perception about Factors Militating Against Policy Implementation among Sampled LGAs

The behavior of respondents in Darazo and Kataguma LGAs can also be connected to the proximity of Darazo to Gombe town the capital of Gombe state and it exacting influence on the adjoining Katagum LGA. On the other hand, Ningi and Jama'are show low response which could be attributed to their remote locations from the urban setting and less likely to be influenced by the prevailing socio-economic activities in the urban center.  Another revealing fact from this study is the inability of both the State and Local Governments in

the State to promote private sector participation in effective waste management and implementation of policy guidelines in Bauchi State.

In effect, there were clearly defined roles for the three tiers of government, private sector and civil society organizations, which were considered rich, highly adequate and having wide scope of coverage but, findings show their little engagement in SWM in the state. The study identified four (4) important factors militating against successful compliance with SWM policy guidelines in Bauchi state. These were;

1. The 2005 SWM policy guidelines (ideally designed by the Federal Ministry of Environment to maximize the public good and to serve the interest of the nation) did not compare the actual policy statements to public policy theories in making best choice of approach;
2. There was distance decay effect in the pattern of success and public compliance to policy implementation such that the LGAs closer to state capital tended to have higher levels of compliance;
3. Variations in respondents' occupational and educational qualification, based on the ground that those in LGAs with lower educational achievements were mostly engaged in primary activities (especially farming) exhibit lower compliance levels with the policy, and therefore policy implementation becomes a failure, and
4. Flawed and unclear timeframe for stake holders' SWM policy implementation. This was in agreement with Warren (2014) that indicated regulatory frameworks, political support, clear timeframes, stable budgets, and clear definition of roles were the most important factors needed to be in place for maintaining effective implementation.

Corroborating USEPA (2014), SWM challenges and issues that should be considered while framing solid waste policy in minimizing the influence of militating factors should include proper waste generation, segregation, collection, transportation and disposal methods, landfill management, hazardous and other toxic material management, treatment, incineration, recycling and other technology standards, monitoring, evaluation and continuous improvement methods.

**CONCLUSION AND RECOMMENDATIONS**

It could be concluded that, in addition to unfair readiness of public to pay for solid waste evacuation service in ensuring environmental cleanliness and Local Governments inability to promote private sector participation in the delivery of waste management services there are new emerging factors responsible for the persistence of ineffective SWM in Bauchi State. The new factor discovered to be militating against the success of SWM in Bauchi State are; i) Flaw in the 2005 SWM policy guidelines to compare policy statements with policy theories in achieving successful implementation, ii) Distance decay effect in the pattern of compliance and success of the policy. iii) Variations in respondents' occupation and educational qualifications, based on the ground that, lower educational qualifications among public in LGAs of Bauchi State were consequential to public engagement in primary activities, poor policy compliance and implementation's failure, and iv) Ineffective and unclear timeframe for stake holders' participation. The recommendations are proffered:

1. The governments should outline and promote private sector participation in the delivery of waste management services, as well as outlining the services of other stake holders in SWM. This will pave ways for the necessarily needed improvements in maintaining efficient waste management implementation's status, thereby reducing waste related problems.
2. Governments should strengthen their legislative instruments and establish necessary sanctions and enforcement mechanisms on members of the public who fail to comply with environmental legislations and laws.
3. Health education program on solid waste management and the effect of poor solid waste management on the environment should be organized by the Governments. This will reduce public level of ignorance on implications of poor waste management, hence the appreciation of environmental quality in terms of cleanliness.
4. The public should be encouraged to establish community self - help groups, so as to help in environmental sanitation in their individual neighborhoods. Additional staff recruitment and training by the governments on waste management matters, vehemently becomes advisable. These should be supported with adequate provision and proper maintenance of equipment/facilities, at regular intervals. This was deemed inevitably needed for the rigorous tasks attached to having effective SWM.

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