

Assessment of household waste disposal system in tudun-wada area of billiri local government, Gombe state, Nigeria.

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Abstract: *The problem of household waste and its disposals is still an issue that requires urgent attention by everyone concerned about the wellbeing of the environment including the government. This study was conducted on the residential houses of Tudun-Wada in Billiri LGA of Gombe state. The assessment was carried out using random sampling administration of questionnaires to gather information from the respondents. The sample consists of 290 respondents. The data collected was analysed using descriptive statistics. The results showed that majority of the respondents are females within the age of 21-30. The household with 8 people and above having the majority with 43%. Majority of the people are low income earners and mostly secondary certificate holders and therefore have little understanding about the ideal of proper waste disposal methods. Recommendations were made based on the findings of the assessment.*

Keywords: Household, wastes, management, disposal, environment.

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I. Introduction

In most cities of Nigeria the rate at which waste is generated is alarming and needs urgent attention mainly due to the increase in population, social and economic activities of people in that environment. Hoornweg, (1999) opined that waste is inseparable from life due to the fact that man uses materials thereby generating wastes which are either stored or disposed which is directly related to the social, economic and cultural attributes of that particular environment. Waste generally refers to all unwanted and economically unusable materials that result from human activities, discarded purposefully or accidentally into the environment (Bappayo & Maidunoma, 2018). The issue of waste disposal and management are not new to man due to the fact that population size and technological advancement were not problems as at the early stage of man however with the rapid increase in population size, advancements in technology and urbanization waste disposal is beginning to pose a serious threat to the health of the environment all around the world (Momoh & Oladebeye, 2010).

According to Lebersorger & Beigl, (2011), Waste management involves the careful planning and collection of reliable and valid data concerning the amount of waste generated, factors influencing waste generation quantities and predictions concerning future waste generation. It also includes information about relevant influencing factors such as economic system, population size, policy measures and waste management measures on future waste quantities. (Momoh & Oladebeye, 2010) defined a household as a social unit comprising people living in the same house, with a head, and pooling their incomes together for the management of their dwelling unit. Dahlén & Lagerkvist (2010) stated that household waste collection can be divided into property-close collection in which the household wastes are deposited at home and when filled the containers are taken to dumpsites to be emptied and collection at drop-off points which involves the dropping of household wastes at designated location for the government waste agencies to pick them. Containers with different sizes and shapes are used at drop-off points. In property-close collection, combinations of bins, racks, sacks and bags are used, which are sometimes placed outdoors, sometimes indoors.

Momoh & Oladebeye, (2010) opined that the amount of waste generated and their composition depends on factors such as standard of living, dietary attitude, level of commercial activities taking place in the environment and also the time of the season whether raining season or dry season as the amount of waste generated differ from season to season. The major forms of household waste are liquid, solid and organic waste of which the solid waste is the one that needs the urgent attention of everyone in order to safe keep the environment. This paper focuses on the household as a unit and the amount of waste generated from each household based on their social, economic and cultural lifestyles.

II. Objectives of the Study

The objectives of the study are as follow:

1. To assess household waste disposal systems or methods used by families
2. Examine the implication of improper refuse disposal on the health of household in the area.

III. Methodology

The study was carried out in Tudun-Wada area of Billiri local government in Gombe State, Nigeria between the month of February and august of 2019. The method used involved the administration of questionnaires to respondents in the households in the area. The first part of the questionnaire sought to obtain demographic data such as age, gender, marital status, family size, educational level, occupation and income status while the second part was to obtain information on waste management as regards disposal methods and environmental effects of wastes (Akpen& Aondoakaa,2009).Three hundred (300) questionnaires were administered out of which 290 (104 male and 186 female) were received given 97% response. Simple random sampling was used in selecting the respondents. Descriptive statistics such as the percentages was used to analyse the results.

IV. Results and Discussion

Table 1: Distribution of Respondent according to their gender

S/N	Gender	Frequency	Percentage %
1	Male	104	36.0
2	Female	186	64.0

Table 1: shows that 36% of the respondent are males while 64% are females which differs from the result of Akpen&Aondoakaa,.(2009). The reason why the females may have higher percentage is because they are mostly involved in household chores which involve disposal of wastes.

Table 2: Distribution of respondents according to their aged

S/N	Age (Years)	Frequency	Percentage %
1	11-20	30	10.0
2	21-30	96	33.0
3	32-40	84	29.0
4	41 and above	80	28.0

Table 2: Show that respondent within the age of 21-30 with (33 %) constitute the majority which is in agreement with that of Akpen&Aondoakaa,.(2009) the reason for this is because this age group is considered active and have the ability to purchase most of their needs.

Table 3: Distribution of respondents according to person's in a household

S/N	Person's In A Household	Frequency	Percentage %
1	1-4	50	17.0
2	5-8	116	40.0
3	Above	124	43.0

Table 3: Shows that household with people above 8 has the majority with 43% , followed by household with 5-8 persons having 40% which is closely followed by 17% records of homes with more than 1-4 persons. The reason for that is not difficult to understand because a household with higher amount of occupant is expected to generate more waste than households with lesser occupants.

Table 4:Distribution of respondents according to dayscontainer get filled-up

S/N	Days To Container Filled-Up	Frequency	Percentage %
1	Below 4	161	56.0
2	5-8	91	31.0
3	Above	38	13.0

Table 4: Shows that majority of the respondents with 56% says it takes less than 4 days for waste containers to get filled up while 31% of the respondents claims it takes between 5 to 8 days for containers to get filled and a meagre 13% claims it take above 8 days for containers to get filled. The result correlates with Table 3 because it showed clearly that majority of the household in the area has more than 8 occupants.

Table 5: Distribution of respondents according to income

S/N	Income Per Month	Frequency	Percentage %
1	Below 20,000	162	56.0

2	21,000-60,000	77	27.0
3	61,000-100,000	33	11.0
4	Above 100,000	18	6.0

Table 5: Shows that 56% of the respondents earn below 20,000 per month, while 27% of the respondents earn between 21,000-60,000 per month, 11% earn between 61,000-100,000 per month. 6% earn above 100,000 per month. What this implies is that the area is occupied by people who live below the standard of minimum wage.

Table 6: Distribution of respondents by qualification

S/N	Variable	Frequency	Percentage %
1	B.ED,B.A, B.SC, ED & SC	58	20.0
2	NCE/DIPLOMA	80	28.0
3	Primary/Secondary	84	29.0
4	No Education	68	23.0
	Total	290	100%

Table 6 : Reveals that majority of the respondents have obtained primary or secondary school education with 29% followed by NCE/Diploma with 28% while 20% have first degree and those without any qualification accounting for 23.0%

Table 7: Distribution of respondents on household waste disposal systems

S/N	Items	Frequency	Percentage %
1	Refuse disposal in polythene bags	62	21.0
2	Refuse disposal in landfills	68	23.0
3	Household waste disposal in a drainage system	45	16.0
4	Household waste disposal in unauthorized place	44	15.0
5	Refuse waste disposal in front or back of house	53	18.0
6	Refuse disposal by the road side	19	7.0
	Total	290	100%

Table 7: Shows that 21% use polythene bags, 18% dump their refuse in front or at the back of their houses and 23% of the respondents use landfills area.

Table 8: Implication of improper household waste disposal among families

S/N	Items	Frequency	Percentage %
1	Breeding of mosquito and other micro invertebrate	23	8.0
2	Death of domestic animals	45	15.0
3	Blockage of waste drainage channels	46	16.0
4	Bad smell booming the household and neighborhood	52	18.0
5	Unsightly environment within the area	124	43.0
	Total	290	100%

Table 8: Indicates the possible problem encountered within the household from the system of refuse disposal with 43% stating that waste constitute an unfriendly sight in the environment followed by 18% who agrees that improper waste disposal cause bad smell within the household while people with 16% opined that improper disposal of waste causes blockage of drainage channels which could lead to flooding of the environment. 15% states that improper waste disposal could lead to the death of animals who may consume some of these waste found in the household while 8% states that the waste could breed mosquitoes and other micro invertebrate which could affect the health of the people in the environment.

V. Conclusion

This study was concerned with the assessment of household waste disposal system in Tudun-Wada area of Billiri Local Government in Gombe State, Nigeria. The study sought to obtain information about the ways by which households in the area dispose their various household waste and how the wastes affect their healthy living while the result obtained from the assessment is to be used in providing recommendations and awareness about the various safe methods of waste disposals.

VI. Recommendations

1. There is urgent need for the government to provide safe and better materials for efficient waste disposal
2. The government should create awareness on better handling of waste in the environment
3. Environmental sanitation should be encouraged by the government in all local government monthly
4. The occupants of the household should report waste defaulters to the necessary authorities for necessary actions to be taken

5. Drainage channels should be constructed in all areas for free and effective movement of waste.

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