# RISK REDUCTION OF HOUSEHOLD REFUSE
## (A case study of Shagari low-cost, Mubi north (LGA) Adamawa State,Nigeria)

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**ABSTRACT**

*Lack of refuse dumping points has made the residents of Shagari law cost well armed with some health and environmental related hazards. These studies investigate the effect of household refuse on the resident of Shagari low-cost. A well structured questionnaire was administered to elicit views of the respondent in the study area through adopting cluster sampling method. A total of 100 questionnaires were selected and divided into 50 each to both sections of the study area: interview was conducted to each household head. Data obtained was analyzed using simple parentages to determine the major hazard in the area. Results showed that majority of the household are civil servant and traders, earning reasonable monthly income. 68% of the respondent has experienced the effect of living close to waste dumping areas. Which include unpleasant smell and polluted smoke when refuse is burnt. Whose consequence are eye and respiratory induction, human injury from broken bottled or sharp object as well as from water, insect and air borne disease hence, the need to urgently address these menace before it overwhelm the capacities of the community becomes paramount, thus the community should be given more enlightenment and refuse dumping sites should be created by the local government area.*

## INTRODUCTION

Household refuse is a waste that comes out from a house which is occupied by an individual or many person as a result of their day to day activities., The refuse range from death batteries, bleach containers, baby nappies, plastics, food scraps etc. Refuse from households, if not dispose and mange properly, will bring many health and environmental hazards on the resident and its environs. Oguntoke and Ogunwede (2003) observed that unsanitary disposal of solid waste generated in urban centre have negative consequence on the health and living conditions of rural and urban periphery communities. Amusan et al (1999) stressed that the handling and disposal of domestic waste have become intractable environmental problem, households disposed their waste indiscriminately around their neighborhood and resulted in creating a safe heaven for houseflies, mosquitoes etc. This resorted in spreading of infectious disease such as malaria, diarrhoza, typhoid fever and the like (Modebe at al 2011). It has also been observed in Accra, Ghana, that there is respiratory health symptoms among adult and children as a result of waste burning around the neighborhood. (Boadi and Juitunem, 2005) Jimoh (2003) suggested that there is need for a better method of handling and disposal of domestic waste. This should be done to avoid metals with negative health implication from being consumed by man, because people have been monitored in eating plants that grew on refuse dumpsite.

In developed nations such refuse are package into wide variety of product. For instance in north America where a Garbage is being produced at a rate of 220 million tons per year or about 2 kilogram per person per day were processed into varying useful product (Fellmann et al, 2005) According to UN.ISDR (2005) risk could be defined as the probability of harmful consequence or expected loss (death, injuries, property, livelihood economic disrupted and environmental damage as a result of the interaction between natural or human induced hazards and vulnerable conditions, Shagari Low-cost resident are also suffering from these treats around their houses due to lack of dumping point. This may generate more consequence on their health condition.

This research therefore examined the hazard and the risk attached to domestic waste on the inhabitant of Shagari low-cost of Mubi North Local government, Adamawa State and proffer ways of mitigating these hazards.

## METHODOLOGY

### THE STUDY AREA

Shagari low cost is in Mubi north local government area of Adamawa State, Nigeria. it is situated between latitude $10^0$15N, longitude $13^0$16E and an altitude of 696m above sea level (Encarta, 2007) The area is located in the northern Guinea savanna belt of Nigeria vegetation zone. it has two distinctive season, Wet and dry which is peculiar to the tropical continental climate. The dry season spans from, November to March, while the wet season with annual rainfall range of 1000mm- 1050mm, and mean monthly temperature is $27.8^0$C (Adebayo, 1999). climate in the area is influence by altitude.

### METHOD OF DATA COLLECTION

Shagari low cost is individual into two section based on the layout . A sample of hundred houses were selected from the two section that is 50 house each. This was done using the cluster sampling method. The household were interviewed by administered questions. Some of the respondent (house heads )are illiterate and they were directly interviewed and the questionnaire were filed. The data obtained was analyzed using simple parentage. Secondary data was obtained from published books and journals.

### RESULT AND DISCUSSION

The results of the findings show that 65.6% of the respondents are male and 34.4% are female as shown in table1.Table 2 shows the age distribution of the respondents which reveals that 5.4% are below the age of 15, 22.6% are within the ages of 16-30, 48.4% are within the ages of 31 - 43, 19.3% are within the ages of 46 - 60 and 4.3% are above the age of 60. This reveals that the productive age group of 31-43 are

**Table 1: Gender of the respondent**

| Gender | Frequency | Percentage |
|---|---|---|
| Male | 61 | 65.6 |
| Female | 32 | 34.4 |

***Source: Fieldwork, 2013***.

**Table 2: Age of the Respondents**

| Age | No of respondents | Percentage |
|---|---|---|
| below 15 years | 5 | 5.4 |
| 16-30 | 21 | 22.6 |
| 31-43 | 45 | 48.4 |
| 46-60 | 18 | 19.3 |
| 60 and above | 4 | 4.3 |

***Source: Fieldwork, 2013***.

Table 2 indicated that about 50% of the sample population are married while 25% of the sample pupation speakegude language followed by Margi with 15% and Higgins 14% while 9% each of the composition are Fulani and Njanyi.

**Table: 2. marital Status and Tribes Of the respondent**

| Marital status | No of respondents | Percentage |
|---|---|---|
| Married | 46 | 49.5 |
| Single | 33 | 35.5 |
| Wide wed | 8 | 8.6 |
| Divorce | 6 | 6.5 |

***Source: Fieldwork, 2013.***

| Tribe | No of respondents | Percentage |
|---|---|---|
| Gude | 24 | 25.8 |
| Njanyi | 12 | 12.9 |
| Fulani | 12 | 13.9 |
| Higgie | 13 | 14.0 |
| Marghi | 14 | 15.0 |
| Fali | 9 | 9.7 |

| | | |
|---|---|---|
| Others | 9 | 9.7 |

***Source: Fieldwork, 2013***.

**Table 3:**

Also stated that 35.5% of the sample population have secondary ed caution and about 38% and civil servant. Those engage in business activities are 34.4% also farmers constituted 16% of the sample population. Corresponding, 32.2% of sample generated are age monthly income between N41000 to N20,000 and about 26% have above N60,000 19% are getting between N31,000 to N40,000 the n only 11.8% earning from N10,000 to N20,000.

Table 3: Education, occupation and average income of the respondent

| **Education** | **No of respondents** | **Percentage** |
|---|---|---|
| Quaranic | 18 | 19.3 |
| Primary | 17 | 18.3 |
| Secondary | 33 | 35.5 |
| Tertiary | 21 | 22.6 |
| None | 4 | 4.3 |

***Source: Fieldwork, 2013***.

| **Occupation** | **No of respondents** | **Percentage** |
|---|---|---|
| Civil Servant | 36 | 38.7 |
| Business | 32 | 34.4 |
| Farming | 15 | 16.1 |
| Others | 10 | `10.8 |

***Source: Fieldwork, 2013.***

| **Average monthly income** | **No of respondents** | **Percentage** |
|---|---|---|
| N10,000-N20,000 | 11 | 11.8 |

| | | |
|---|---|---|
| N21,000-N30,000 | 10 | 10.8 |
| N31,000-N40,000 | 18 | 19.4 |
| N41,000-N50,000 | 30 | 32.2 |
| More than 60,000 | 24 | 25.8 |

***Source: Fieldwork, 2013.***

Table : 4 shows most households in the study area comprise persons between 3 to in number which denoted 36-5% of the sampled house holds. Followed by 31-2% of the houses had from 7 to 10 people

**Table; 4 Number of persons per household in relation to refuse generating in the study area.**

| **Person** | **No of respondents** | **Percentage** |
|---|---|---|
| 1-2 | 4 | 4.3 |
| 3-6 | 34 | 36.5 |
| 7-10 | 29 | 31.2 |
| 11-15 | 21 | 22.6 |
| 20 and above | 5 | 5.4 |

***Source: Fieldwork, 2013.***

**Table: 5**: In the same way, identified majority of the se household member had experience effect of hazardous waste in their area. Thus, in developing countries the higher the number of people in household the higher garbage generated. Further more as a result of that leads to occurrence of some emergencies e.g disease outbreak, flood, pollution etc.

Table 5: respondent opinion about their experience of any hazardous west affect

| **Responses** | **No of Respondents** | **Percentage** |
|---|---|---|
| Yes | 64 | 68.8 |

| | | |
|---|---|---|
| No | 29 | 31.2 |

***Source: Fieldwork, 2013***.

Table 6: pollution of ground was identified as major refuse hazard in the area. When domestic animals (goats, cow, dog children etc) coverage on the various refuse dump sites in the area, then wind blows and disperse the refused onto the street of the study area. Hence, this takes place due to lack of proper dumping point.

Earlier, it has been observed by Modebe at al (2011) that indiscriminate dumping of house hold waste around the neighborhood will result in creating a breeding ground for all kind o vectors which spread infections disease such as malaria colera, typhoid fever etc. air pollution another hazard that threatening the heath of residents in the area, where by refuse is being burnt which emits toxic smoke. Also exposure to infected dust, especially during dry sea son, will lead to eye and respiratory infection on resident in the study area.

Table 6: household refuse hazard in the area

| **Hazards** | **No of Respondents** | **Percentage** |
|---|---|---|
| Pollution of ground | 26 | 28.0 |
| Pollution of air | 22 | 23.7 |
| Pollution of water | 14 | 15.0 |
| Disease break down | 16 | 17.2 |
| Flooding | 15 | 16.1 |
| Total | 93 | 100 |

***Source: Fieldwork, 2013***.

Table : 7 indicated that hazardous and nor hazardous waste a re all being generated in the study area but hazardous refuse is more harmful which is very detrimental to the health of resident in the area. This in consonant with the earning from Agamuthu (2012) that people should stop using

florescent tubes and used energy saving bulbs and if the doctor gives you medicine finish it. These measures will reduces the treats from hazardous waste drastically.

Table 7: respondent opinion on the type of waste generated.

| Waste | No of respondents | Percentage |
|---|---|---|
| Hazardous waste | 52 | 55.9 |
| Non hazardous waste | 41 | 44.1 |

***Source: Fieldwork, 2013***.

**Table 8** also identified that majority of people in the study area live close to their refuse dump sites which made them more vulnerable to many health hazards.

Table 8 Respondent opinions on whether refuse dumpsites is located close to their houses for disposal of refuse.

| Responses | No of respondents | Percentage |
|---|---|---|
| Yes | 72 | 77.4 |
| No | 21 | 22.6 |

***Source: Fieldwork, 2013.***

Table: 9 identified that all the dumping sites in the study area were not designated by government for refuse dumping purpose , with 91.4% responses. This shows there is no official refuse dumping point in the study area.

**Table 9 respondent opinion on whether the dumping site is earmarked by government or not**

| Responses | No of respondents | Percentage |
|---|---|---|
| Yes | 8 | 8.6 |
| No | 85 | 91.4 |

***Source: Fieldwork, 2013***.

Similarly, table 10 identified that majority of the resident with 44.1% responses were leaving the refuse in the dumpsites to decomposed without applying any method of mitigating the health hazard. Then burning the refuse is the second method applied with 34.4% responses.

10: **Respondent opinion on the method applied in reducing this hazard of household refuse**.

| **Responses** | **No of respondents** | **Percentage** |
|---|---|---|
| Burning the refuse | 32 | 34.4 |
| Disposing in a pit hall | 5 | 5.4 |
| Giving t cart pusher | 15 | 16.1 |
| Left to decompose | 41 | 44.1 |

***Source: Fieldwork, 2013***.

Lastly table 11 indicated that if any of the hazard in relation household refuse resorted to an emergency situation e.g disease out break, flooding etc mostly friends of the victim rendered help.

Table 11: respondent opinion on who intervene for assistance when there is emergency.

| **Responses** | **No of respondents** | **Percentage** |
|---|---|---|
| Local government | 5 | 5.4 |
| Friends | 60 | 64.5 |
| Relative | 28 | 30.1 |

***Source: Fieldwork, 2013.***

## CONCLUSION

The effects of household refuse on the resident of Shagari low-cost were examined. Studies identifies that refuse is being dumped arbitrary in the neighborhood due to lack of dumping

points designated by the authorities. moreover , this has been adversely threatening the health condition of the inhabitant. Consequently the following recommendations will go along way in minimizing the hazards that may likely come into fruition as a result of the indiscriminate waste disposal.

1. Local authorities should increase awareness on the danger of living close to refuse dump site.
2. Structured refuse dumping points should be introduced in the area.
3. Method of sorting the household refuse should be implemented. Therefore the organic waste (food scrap, animal waste garden waste, papers etc) will be decomposed for animal's feeds or fertilizer while the inorganic waste (plastics, metals, glasses etc). Also will be recycled.
4. Local government or community based volunteers should be introduced, so that they should be monitoring the sanitary aspect in the area.
5. Fine should be enforced by the local authorities on any one found dumping refused indiscriminately in the area.

**REFERENCES**

1) Boadi KO, Kuitunem N. Environmental and health impact of household solid waste handling and disposal practiced in third words cities: The case of the Accra metropolitan area, Ghana Journal of environ. Health 68 (H) 32-36 2005.
2) Dr. Olusegun E. Ojo (2004) environmental protection and disaster risk reduction. A school guide UN/ISDR Africa educational series, volume I, issue 3. UMVOTO Africa (Pty) Ltd cape town, South Africa
3) Fellman J.D Getis A. and Getis J (2005) humans' geography eighth edition, New York, the MC Graw- ttill companies, New York 508- 509 P.
4) Huntley S. (2010) recycling household waste: composition collection and public participation Jan, 2013 www.lineone.net/ngoovemit/extra/umessay.htm

5) Jimoh M.A (2003) analysis of plant from refuse jump sited for presence of heavy metals. Paper presented at 11$^{Th}$ annual conference of environment and behaviors association of Nigeria (EBAN) held Nov, 26$^{th}$ -27$^{th}$ , 2003 Akure, Nigeria.

6) M. Idesma, et al OUU E. NKIRU, OCN ANE (2003) public health implications of house hold solid waste management in Akwa south east Nigeria journal of public health vol. I number I retrieved January 2013 ww.ajol.infor/…/4660

7) Muran M.W, Siwar C. (2007) waste management and recycling practice of the urban poor: a case study in Kaula Lumpur city Malaysia. Wastes manage RU. 25 (1); p3-13.

8) Oguntoke O, and Ogunwele, Y.A (2003) impact of insanitary waste disposal on the health of rural dwellers. Case of Lukosi village (Ogun State) paper presented at 11$^{th}$ Annual conference of environment and behavior associated of Nigeria (EBAN) held Nov. 26$^{th}$ -27$^{th}$ 2003 Akure, Nigeria.

9) Owaduge S. (2010) slid waste management in Lokoja metropolis . accessed online July 2010, www.greatestcities.com/users/owagde

10) Slack R.J Gronow, Vouvcolulis N. (2005) household hazardous waste in municipal landfill contaminants in l lea chaste, science total environment pg. 337 (1-3) and pg. 119 -137

11) Stephan B, selvaraju R, Jenny D.D and Federica (2008) disaster risk management system analysis FAO united natitus Rome Italy. Pg 5 & 68

12) www.brgove.com/../householdhazadous.htm