



ISSN: 2319-5967

ISO 9001:2008 Certified

International Journal of Engineering Science and Innovative Technology (IJESIT)

Volume 3, Issue 5, September 2014

Impact of Waste on Environment at Kerrey area-Khartoum State

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Abstract- The different types of wastes that carry poisonous materials can affect the biotic and abiotic components. This can happen when the wastes accumulate in the area without proper processing. The objectives of this study are to define the different types of wastes, to find out the impact of wastes on environment and to minimize their impact on people and environment by adopting some innovative abatement and control methods. Data collected using questionnaire, observations and interview. The main findings revealed that, the emission of gases during burning of the wastes affects the people, animals, surface and ground water and soil and atmosphere. Awareness of people about the dangers of wastes is very important.

Index terms: Animals, awareness, emission, pollution, process.

I. INTRODUCTION

The main sources of wastes come from economic and social activities (Mohamed, 2006). Waste is affected by annual seasons, geographical location, style of living, human activities, level of economic conditions, state of peace or war, efficiency of waste collection in the area and awareness of population by impacts of waste (Ahmed, 1997). The uncontrolled burning of accumulated wastes creates smoke and other air pollutants which release toxic substances into the environment. The scavengers and animals invade open dumps and spread the wastes over the area. Thereby spreading germs and diseases and also destroying the natural beauty of the place (Ronald et al, 2002). Bad waste management practices can result in land and air pollution and can cause respiratory problems and other adverse health effects as contamination are absorbed from the lungs into other parts of the body (Internet, 2014). The hazardous chemicals that get into the soil can harm plants when they take up the contamination through their roots. If humans eat plants and animals that have been in contact with such polluted soils, there can be negative impact on their health, so directly or indirectly pass to the human beings through meat or dairy products. The leachate forms very harmful mixture of chemicals that may result in hazardous substances entering surface water, ground water or soil (Internet, 2014). Sayed (2006) reported that, the internally displaced persons (IDPs) in Khartoum State caused over population in the three cities , Omdurman, Khartoum and Khartoum North .As the number of population increases amount of waste increases. This has caused a big problem in process of waste collection, transportation and processing. This condition resulted in environmental pollution in the area through spread of diseases (El Mighar, 2013).

II. RESEARCH PROBLEM

The accumulation of wastes in one place without processing it through proper means can cause some problems. The collected wastes accumulated nearby a settlements area, usually is scattered by people, animals and wind. The random open burning of waste emits obnoxious smell, different gasses which have impact on the environment which in turn would affect human, animals and plants life.

III. RESEARCH OBJECTIVES

The objectives of the study are:

- 1- To define the different types of wastes and to find out the impact of wastes on environment.
- 2- To device new methods to minimize the impact of wastes on people and environment.

IV. METHODOLOGY

This study has adopted the following methods:

1. A questionnaire has been designed for twenty five respondents in the study area. The questions concentrated on the impact of wastes on environment.
2. People working in environmental health sector in the area have been interviewed.



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- 3. Observation of accumulated wastes in the site at Kerrey.

V. RESULT AND DISSCUSION

A. Source of wastes

When the respondents were asked about the main sources of wastes that come from the markets, hospitals, settlements, restaurants, hotels, residue of agriculture and factories, 60% of them answered yes. The rest of respondents answered that; they do not know the sources of wastes. This is due to the ignorance of the latter group about the danger of wastes (see: Table 1).

Table (1): Source of wastes

Table with 3 columns: Answer, Frequency, Percentage. Rows: Yes (15, 60), No (10, 40), Total (25, 100)

Source: Researcher, 2014

B. Impact of wastes on human

In (Table 2) 80% of the respondents answered yes, it is clear that the emission of carbon dioxide, smoke, obnoxious odour in the air come from the wastes that affect the respiratory systems when entering the lungs through the noses. While the spread of wastes over large area by animals such as: goats, dogs, birds and people can spread diseases that are carried by flies and rats from the contaminated dumps .This case is the same as reported in (Internet, 2014).

Table (2): Impact of wastes on man

Table with 3 columns: Answer, Frequency, Percentage. Rows: Yes (20, 80), No (5, 20), Total (25, 100)

Source: Researcher, 2014

C. Impact of wastes on animals

In (Table 3) 64% of the respondents answered yes, the wastes have impact on animals because the animals eat the plastic bags which are indigestible and leads to death. Additionally, strange and toxic materials can cause harm and death among animals depending on the level of toxicity. This case is the same as mentioned in (Internet, 2014).

Table (3): Impact of wastes on animals

Table with 3 columns: Answer, Frequency, Percentage. Rows: Yes (16, 64), No (9, 36), Total (25, 100)

Source: Researcher, 2014

D. Impact of wastes on the atmosphere

In table (4) 84% the respondents answered yes, the atmosphere is polluted before and after burning the wastes. It affects respiratory systems through taking in of contaminated particles. This condition is the same as reported by ELNeelain University in (2013) and (Ronald et al, 2002). It is obvious that, burning of wastes emit different gases such as carbon dioxide and methane which contribute to an increase in the greenhouse gases, while smoke and minute particles spread in the air and cover the settlement areas causing air pollution (see: Table 4).

Table (4): impact of wastes on the atmosphere

Table with 3 columns: Answer, Frequency, Percentage. Rows: Yes (21, 84.0), No (4, 16.0), Total (25, 100)

Source: Researcher, 2014



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E. Impact of wastes on the soil

In table (5) 84% of the targeted group answered yes, the accumulation of waste on the ground affects the soil by leachate, that results from decomposition of accumulated wastes over a long period of time which contains unknown compounds. The leachate consists of different materials that are having impact on the physical and chemical composition of the soil. This leads to change in the characteristic of soil. It becomes unsuitable for planting and kills the soil organisms. This impact is the same as stated in the report written by ELNeelain University in (2013). The impact on soil by the fluid has led to the fact that the soil becomes unsuitable for agriculture as well as affecting the growth of vegetation cover and disrupting the process of food chains.

Table (5): Impact of wastes on soil

Answer	Frequency	Percentage
Yes	21	84.0
No	4	16.0
Total	25	100

Source: Researcher, 2014

F. Impact of waste on water

In table (6) 84% of population answered yes, the wastes have impact on surface and ground water. This occurred through the transportation of wastes by runoff water that result from heavy rain falls that transport the wastes to the river and ponds which in turn polluting the water. On the other hand the polluted water is percolated into the ground causing further pollution to the underground water. This is similar as reported in (Internet, 2014).

Table (6): impact of wastes on water

Answer	Frequency	Percentage
Yes	21	84.0
No	4	16.0
Total	25	100

Source: Researcher, 2014

G. Methods of wastes collection

In table (7) 32% of respondents answered yes, The transportation of wastes by uncovered tracks has led to the scattering of wastes along the roads, particularly plastic bags can be easily carried away by the blowing wind which have caused a lot of problems to people living in vicinity. The majority of respondents which represented 68% of the total target group have no good idea about the collection of wastes.

Table (7): Methods of wastes collection

Answer	Frequency	Percentage
Yes	8	32.0
No	17	68.0
Total	25	100

Source: Researcher, 2014

H. Environmental awareness

In table (8) 68% of the respondents answered no, there is no environmental awareness in the area to enlighten the people about the impacts of wastes on the air, water, animals, soil and people.

Table (8): Environmental awareness

Answer	Frequency	Percentage
Yes	8	32.0
No	17	68.0
Total	25	100

Source: Researcher, 2014



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VI. CONCLUSION

The study concluded that, the place of wastes accumulation is unsuitable dumping waste materials. And the burning of wastes is having impact on air, soil, ground and surface water, animals and people. The wastes disturb the lives of people in the nature. Because it makes the people suffer more than in the war.

VII. RECOMMENDATIONS

The study has recommended that:

- 1- People must be aware about the risks caused by wastes.
- 2- Good methods should be used for collecting wastes.
- 3- Maintenance of water courses is very important.
- 4- Innovation of suitable means to get rid of wastes.

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