

ENVIRONMENTAL PROBLEMS ASSOCIATED WITH SOLID WASTE DISPOSAL PRACTICES: A CASE FROM THE ANURADHAPURA MUNICIPALITY

M.M.S.A. Marasinghe

Department of Social Sciences, Rajarata University of Sri Lanka,
Mihintale, Sri Lanka. *samalimarasinghe@yahoo.com*

Key words: solid waste disposal, Solid waste management, environmental issues, land pollution

Introduction

Insufficient provision of solid waste management facilities in Third World cities results in unsystematic disposal and unsanitary environments, which threatens the health of urban residents. Open dumping and irregular collections of solid waste are creating serious environmental threats in small towns of developing world. Waste is more easily recognized than defined. any garbage or refuse, sludge from a wastewater treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semi-solid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activities. What this basically means is that anything that we produce and do not reuse is solid waste. Something can become waste when it is no longer useful to the owner or it is used and fails to fulfill its purpose (Gourlay, 1992). Solid waste according to Miller (1988) is any useless, unwanted, or discarded material that is not liquid or gas.

Disposal of solid waste is a major environmental problem in Sri Lanka at present and has become a national issue. The National Action Plan of Sri Lanka (1998-2001) has identified solid waste disposal to be one of the major causes for environmental degradation. In Sri Lanka Solid Waste Generation of the municipal councils around 0.65 – 0.85 (kg/day/person), (UNEP 2011) and it has a high content of organic matter, moderate content of plastics and paper and low content of metal and glass and also having high moisture contents in it. In Sri Lanka, poor solid waste management Practices, lack of funds and irresponsible behavior of dwellers are reflecting the worst scenario in the country. Sri Lanka has not developed proper solid waste management system since independence. This study focused on solid waste management problem in Anuradhapura Urban Council (MUC). The objective of this study is to Environmental Problems Associated with Solid Waste Disposal Practices and, it has examined the current practices, challenges and issues.

In Anuradhapura MC there is no proper

method for the determination of the amount of Solid Waste disposal. There are no environmental protection measures taken for solid waste disposal here in the dump site. The executive organization stands for collection of wastes is Anuradhapura Municipal Council. These wastes consist of household wastes, market wastes, commercial wastes and wastes from drains. In order to that Health Care wastes and Industrial wastes are also coming in to the dumping site. Previously the sewages of the Anuradhapura MC were also brought to the treatment plant located nearby the dumping ground which is currently they have some difficulties in disposal.

Problem of the research

To emphasize the major solid waste management issues in the towns of in Sri Lanka, considering the above, this study is designed with the prime objectives of identifying the environmental problems of the Municipal Solid Waste dumping site and to recommend effective managerial measures to safeguard its environmental health in a sustainable manner. Municipal solid waste is the most common form of waste often referred to as trash or garbage. It consists of everyday items such as product packaging, grass clippings, furniture, clothing, bottles, food scraps, newspapers, appliances, paint, and batteries. Anuradhapura Urban council is selected as a case study. Anuradhapura city is facing the worst solid waste management issues due to poyaday season (e.g. poson poyaday) Open dumps of municipal solid waste are causing serious negative environmental impacts in the study area.

Research Methodology

The two broad types of data, the secondary and primary data is using in the study. The data are collecting through a questionnaire survey, observations, formal interviews and discussions with individuals and officials of the area. The samples of households are selecting randomly from each stratum. The stratified random sampling technique is using to collect household information. Secondary data also are using for the study. The SPSS statistical package is using to analyze the data and the two-way ANOVA technique is applying to obtain the required information to analyze the raw data and to evaluate the results.

Result and Recommendation

Research findings are clearly indicating that due to rapid growth devout migrant population, increments in solid waste generation rate, poor management, non-implementation of solid waste legislation and lack of funding are responsible for the solid waste management crises in the Anuradhapura Municipality.

Environmental Problems

Faulty solid waste management system is creating negative environmental impacts like land and water pollution, infectious diseases, blockage of open drain and small canals and loss of biodiversity in Nuwara wawa area. In addition to obviously, it degrades the aesthetic value of the environment, and along with it socio-economic issues such as lowering of land values, increase in informal sector employment like rag-picking and scavenging and related activities, health issues due to the breeding of stray cats, dogs, rats

and other vermin, mosquitoes, Effects on wild animals that are attracted to these waste dumps, like deer, bandicoots, which may cause death (due to suffocation or consumption of plastics and toxic substances) as well as whose feeding habits change causing changes to their immune systems and other vital processes that may even lead to irreversible changes, air pollution due to the anaerobic degradation of the biodegradable portion resulting in emission of air pollutants like methane, ammonia, hydrogen sulphide and other offensive gases, surface and ground water pollution from the leachate that seeps through the ground or is washed off with the surface runoff during wet weather.

Social Impacts

The researcher was found out seven problems associated with present day practices of waste disposal as perceived by them. A weightage was then assigned to each response based on the order of priority. Thus adjusted, the main problems identified in order of priority are: unpleasant odor when garbage is transported, garbage on either side of the main road fallen from the garbage trucks, loss in property value, unpleasant odor due to landfill site, traffic congestion due to garbage trucks and tractors, falling of garbage bags from garbage trucks on either side of the main road, arising of dust when garbage vehicles are going, deterioration of road conditions, increase in floods during the rainy season, Release of smoke and poisonous gases giving rise to safety problems, children affected by various diseases such as skin diseases in the area breeding ground for worms and

insects.

Conclusion

The focus of the study was on three factors, which were health, location, and the environment. In order to achieve its objectives, a comparison between the nearby residents and far away residents was very essential. As a result of the comparison, it was noted that both the nearby and far away residents were affected by the location of the dumpsite closer to their settlements. Results obtained proved that as you move away from the dumpsite the impact is not as severely affected as those who are closer to the dumpsite. It was also discovered that residents located less than 200 meters from the dumpsite are most affected by the dumpsite.

Recommendation

Dumpsites should be properly located and managed to minimize its effects on the environment. The government and municipalities should revise laws regarding the locations of dumpsites. These laws should include properly managed sites, which are well fenced in and away from human settlements. The government should annex laws which see to it that dumpsite are located properly and if it is not then action should be taken according to the law. There should be a follow up in the functioning of the dumpsites to avoid pollution on the environment and health hazards.

Municipalities should open dumpsites on remote areas with no residents closer to them to avoid the effect of the dumpsite on the nearby residents and monitor the dumpsite properly. They also have to control the litter and

monitor their volume. People need to be educated by health motivators about the effects of dumpsites on their health. This will limit the effect of the dumpsite on the residents. There should also be a follow-up to make sure that what they teach the residents is applied.

References

- Asian Productivity Organization, (2007), *Solid Waste Management: Issues and Challenges in Asia* Edited by the Environmental Management Centre, Mumbai, India
- Environmental impacts with waste disposal practices in a suburban municipality in Sri Lanka (Nilanthi Bandara and A .Hettiarachchi, *Int.J. Environment and waste management*,vol.6,Nos.1/2,2010)
- Municipal Solid waste management in the Southern province of Sri Lanka: problems, Issues, and challenges (Chandana K. Vidanaarachchi, Samuel T.S. Yuen, Sumith Pilapitiya)
- National Strategy for Solid Waste Management. (2002). [Government Report]. Ministry of Environment & Natural Resources Sri Lanka.
- Solid Waste Management Guideline for Local Authorities (KOKUSAI KOGYO CO., LTD, Dec 2003)