

Study of the Environmental Problems Associated with Solid Waste Disposal Practices: A case from the Mihintale Town

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Introduction

The total volume of waste in the world is nearly 800 billion tons, which includes more than 300 billion tons of solid waste. Mining industry annually produces about 30 million tons of solid waste, and the primary processing of ores leaves 60-95% of the total recycled rock mass. Only 45-65% of solid waste from their total in the mining industry are used to backfill waste pits, gaps, and cracks from mining operations, about 1% for filling worked out space, and almost 5% is buried in the deep sea (<http://usefulresearchpapers.com>). 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. In Sri Lanka, poor solid waste management Practices, lack of funds and irresponsible behavior of dwellers are reflecting the worst scenario in the country.

Problem of the research

To emphasize the major solid waste management issues in the small 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. Mihintale town is selected as a case study. Mihintale 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 Mihintale town. 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 Mihintale town. 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.

We do have some sustainable solutions, options that let us meet our current needs and provide for future generations as well. Our most promising alternatives are waste reduction and recycling. Therefore we have to practice of waste management concept. Waste management is the collection, transportation, processing or disposal of waste materials, usually ones produced by human activity, in an effort to reduce their effect on human health and communities. Focus in recent decades has been to reduce waste materials' effect on the natural world and environment, and to recover resources from them through waste management (Miller, 2005). As more countries develop and population growth rates increase around the world, the amount of waste produced will become a major environmental issue. Landfills, incineration and more traditional forms of waste management will have to give way to the widespread use of environmentally friendly techniques such as Reduce, reuse, Re-cycling and recover.

There is a need to develop an integrated waste management plan for mihintale town with a priority on waste recycling to reduce the final amount of waste for disposal. The Mihintale pradasiya saba should develop an environmental awareness programme on recycling supported by placement of the recycling containers at strategic points to collect recyclable waste. The pradasiya saba should come up with a strategy of supporting household separation at source.