



# The Study of Solid Waste Management among the School Students of Sri Lanka

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**Abstract :** This study investigates solid waste management among school students in Sri Lanka. The disposal of Solid Waste has become one of the major environmental issues in Sri Lanka. Empirical studies suggest that solid waste management is needed to start at the school level to give authentic learning experiences and make them well aware. The sampling method was simple random sampling. The total sample was 2000 students and responded total numbers of students were 875 students. The study utilized a quantitative survey design with a questionnaire instrument. Data was collected through the postal questionnaire. Descriptive statistics were used to examine the level of solid waste management is implementing in the schools. Results showed that most of the students are well aware of solid waste management. But the practices of solid waste management in real life are low when compared to the level of awareness. Introducing and implementing of solid waste management program is a typical step to making good practices among school communities. Future studies are recommended for identifying best practices of solid waste management among school communities.

**Key terms– Solid waste, environment, management**

## 1. INTRODUCTION

When human history is considered, the needs of the past man were simple and the amount of waste generated from his actions was also small. It was not harmful to the environment while making them environmentally sustainable. But gradually as mankind acquired technological advances, everyday processes became more complex. The industrial and green revolutions also increased the amount of waste generated in various processes despite the advancement of mechanization. It takes a very long time for most of the materials that have been bequeathed to the world by the human race up to the modern generation through their many chemical creations. It is becoming a factor that strongly affects the existence of the modern human generation. Many countries around the world generate different types of waste in varying amounts, including hazardous waste such as nuclear waste. It is said that the environmental balance is falling due to the amount of garbage that the environment cannot bear. And it has been discovered that the breakdown of this ecological balance has affected the occurrence of severe climate changes.

Incidents such as the Methotamulla in year 2017 tragedy can be pointed out as a recent incident that has strongly affected the life of the Sri Lankan people. Environmental damage caused by informal waste management is a common sight in many parts of Sri Lanka. There are also many side problems caused by the informal disposal of solid waste. Deterioration of living environments for people, foul odors and pollution from the environment, epidemics of diseases like dengue, air pollution, pollution of water sources and the addition of heavy metals to them, floods even under light rain conditions, undiagnosed respiratory disorders, dysentery, Outbreaks of skin diseases etc. are just a few.

In this survey, attention was paid to the methods of waste disposal, the impact of garbage on the environment, the extent to which school students are aware of solid waste, and the fact that garbage can be a

resource. In this way, an understanding of the current state of solid waste management can be obtained and this information will help to prepare a successful program in the future.

### Literature review

During the last thirty years, there has been a rapid economic development in many countries of the world. But it appears that this development has only affected the quality of life of the people and has not contributed to sustainable development. As the United Nations Brundtland Commission -1987 points out, sustainability is not aimed at the current economy of man but should be directed to a future vision (Borowy, 2013). Thus, focusing our attention on sustainable development is a confirmation of the development of the future generations of a country.

It has been shown by Pires and Chang (2011) that solid waste management is an essential task in order to improve the health status of the people and increase the economic productivity. According to Pires and Chang (2011), solid waste management is the service provided by local governments to protect human health and the environment. According to Paghasian (2017) solid waste management is also an ethics that engages with public health, economy, conservation, aesthetics and other environmental issues through the control of production, storage, and transportation and exchange activities. It is stated by Gutberlet (2017) that solid waste can be managed by proper disposal of garbage collected from the streets and cities. According to Abubakar et al. (2022)'s statement, the solid waste management hierarchy is formed by preventing the occurrence of solid waste, reducing their adverse effects, reuse, recycling, composting, sanitary landfill, energy generation from waste, etc.

As far as Sri Lanka is concerned, it is time to focus on how to use them for the development of the country instead of the negative impact caused by the amount of solid waste that accumulates in the environment every day. It also raises the need to find the current situation and understanding regarding the solid waste collected here.

#### Research Problems

1. What is the level of knowledge of school students about solid waste management?
2. What are the solid waste management practices of students and schools?

#### Research objectives

1. To identify the level of knowledge of schools students about solid waste management
2. To determine the solid waste management practices of students and schools

## 2. METHODOLOGY

Obviously, in order to do research, it is required to have selected the appropriate methodology. Qualitative, quantitative, and hybrid approaches exist. In this study, a greater number of teachers will be questioned via quantitative research. Quantitative studies are described as study based mostly on data gathering that can be quantified and displayed in frequency tables so that they can be compared to other tables using advanced descriptive and inductive statistical analyses. This study was conducted by applying a quantitative descriptive method. For collecting the data, a questionnaire was used among 2000 students in 200 schools of Sri Lanka. The collected data was analyzed with descriptive statistics. The unit of analysis of the study was schools' students from grade 6 to grade 13 in randomly selected 200 schools of Sri Lanka.

## 3. RESULTS and DISCUSSION

Since 875 school students representing all school types and all provinces participated in this study, the findings will directly affect the implementation of policies and activities.

87% of the answers to the question of whether solid waste is sorted in the school state that it is done so and 66% of the schools that do so classify that they use colored bins for it. That is, it appears that the school system is highly aware of the classification of solid waste. It shows that about 48% of leftover food after school meals is taken back home. This may be due to the impact of an awareness or program in the school

regarding food waste in the school. The 30% response about putting the remaining food in the green bin can be shown as a good trend. In 19% of the schools, putting that food item in the biogas unit shows that an effective program of solid waste management is in place in some schools. Regarding the disposal of paper, showing that 36% of them are correctly placed in the blue bin, this is consistent with putting food in the green bin. But burning 34% of paper shows little understanding of its potential contribution to air pollution. But the fact that 77% of waste burning causes air pollution shows that despite the awareness, there is a lack of effective implementation. Saying that 31% of polythene is disposed of in the orange bin is a positive approach that compares favorably with the disposal of food and paper waste. The fact that polythene burning is still done about 10% indicates the need for further awareness about it. As far as the methods of disposing of waste are concerned, it is said that 25% is put in the green bin, 37% is put in a living cell and 23% is put in the garbage, so that there is sufficient awareness about the disposal of decomposing waste in the schools. Regarding the disposal of metal waste as well as glass bottles / glass shells, it is a good situation to put about 30% in the red bin and another 35% to take back home. There is a tendency of about 14% to collect and sell metal material as well as glass.

It appears that the materials that are discarded in the classrooms can be identified as non-biodegradable and that there is knowledge about the types of materials in the schools. Among the waste collected in the classrooms, food and paper were found to be the major amount, while other materials were not in significant amounts. Therefore, it is effective to manage the solid waste management of the school, which can manage the disposal of food and paper in the classrooms. Although the majority of schools classified solid waste as biodegradable and non-biodegradable, only 19% classified it as hazardous and non-hazardous. It appeared to coincide with the large accumulation of food and paper waste in classrooms. Accordingly, it was seen that it is appropriate to practice the management of waste in schools mainly in a non-degradable manner.

When examining the handling of the solid waste collected in the school by the local authorities, it is found that the majority of schools ie about 52% do not carry it that way. It is seen that in such carrying, all are carried and they are not carried separately. It was revealed that the carrying will be done only for a week.

Among the schools, about 72% stated that there is a compost unit in their school, and the majority of them, about 79%, use the compost for school cultivation. However, about 21% stated that there is a compost unit and it is not used for cultivation in the school due to the lack of understanding about its use.

About 95% of schools have banned bringing polythene to school. It is also a very good trend that 90% of people use lunch boxes to bring food. There are about 19% cases of paper recycling in schools, which is a very good situation. But it is difficult to make a full analysis as these types have not been asked in this questionnaire.

There is a high level of awareness about the harm caused by disposing of different types of waste in schools. Also, there is a high level of awareness that by disposing of garbage irregularly in schools, it affects the spread of dengue disease as well as the contamination of drinking water. Also, there is a high level of awareness about the diseases that can be caused by the irregular disposal of garbage. Moreover, there is a high awareness of the fact that burning waste damages the air, water and soil environments.

#### 4. CONCLUSION

It is a positive feature that school students have a high level of knowledge about solid waste management in the school community. But in practice, there is a significant difference between the knowledge and the amount of use of that knowledge. It is evident that solid waste management programs can be implemented in schools to create a practical understanding and habit of solid waste management in the future society.

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