

Centre for Environmental Studies  
and Sustainable Development

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The Open University of Sri Lanka

MSc Degree in Environmental Science

EMPOWERING SCHOOL CHILDREN TO TACKLE PLASTIC POLLUTION: A

STUDY OF HOUSEHOLD PLASTIC USAGE AND DISPOSAL IN

BULATHKOHUPITIYA, SRI LANKA

A dissertation submitted

by

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## ABSTRACT

The increasing accumulation of household plastic waste presents a pressing environmental and public health challenge in Sri Lanka, with distinct usage patterns and waste management practices emerging across urban, semi-urban, and rural regions. The study, conducted in the Bulathkohupitiya Pradeshiya Sabha area, explores plastic consumption, disposal behaviour, and environmental awareness among households, with a specific focus on students from Grades 9 to 11. Using structured questionnaires and participatory waste audits involving 150 students across three representative schools, the research identified LDPE as the most commonly consumed plastic type, particularly in rural areas ( $28.7 \pm 16.7$  items per house unit per two weeks), due to its affordability and widespread use in packaging. Semi-urban areas showed higher HDPE usage ( $13.08 \pm 11.2$  items per house unit per two weeks), while urban households demonstrated a more balanced distribution of plastic types, reflecting varied lifestyles and consumption patterns. Shopping bags and food wrappers emerged as dominant waste items, and shopping bags were most prevalent in rural settings (Approximately 20%) and wrappers in semi-urban areas (approximately 30%) were commonly found, with ice wrappers being the most frequent among them. Disposal practices were deeply concerning, with burning identified as the most common method, especially in rural areas where over 80% of LDPE and more than 70% of PETE and HDPE are burned, releasing harmful gases and making environmental problems worse. In contrast, recycling remained below 20%, and reuse practices rarely exceeded 30%, reflecting both infrastructural limitations and a lack of sustainable alternatives. Urban, semi-urban, and rural students all reported school as their primary source of environmental information, with 42 urban, 44 semi-urban, and 35 rural participants indicating they learned about environmental issues through school. Media sources such as television and newspapers were the second most common source, with 27 urban, 30 semi-urban, and 33 rural students reporting this. These findings showed that formal education plays a key role in environmental awareness across all regions, while media also significantly contributed, especially in rural areas where it nearly matches school-based learning. Strengthening schools as centers for environmental learning and fostering collaboration among government, schools, communities, and the private sector was key to achieving sustainable waste management and environmental fairness in the Bulathkohupitiya region.