

ESTIMATION AND MANAGEMENT OF MOBILE PHONE WASTE (M-WASTE) IN SRI LANKA

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Electrical and Electronic Wastes (E-Waste) are generated due to the rapid increase of technology and economic activities in developed and developing countries in the world. Currently, E-Waste shows the fastest growing waste stream of about 4% with comparison to other waste streams. Discarded or obsolete mobile phone wastes (M-Waste) represent the largest proportion of E-Waste stream. In Sri Lanka, demand for mobile phones is relatively high and a recent study revealed that the mobile phone penetration increased from 28% to 40% in past few years.

Therefore, M-Waste management is an urgent requirement in Sri Lanka to protect the environment and public health. There are certain approaches taken to manage M-Wastes in Sri Lanka. National Implementation Plan for electronic waste in Sri Lanka is a part of a pilot project on environmentally sound management of electronic waste in Asia and Pacific. There are some regulations enacted on use and disposal of mobile phones and technical guidelines to manage used lead acid batteries. However, the steps that have been taken to manage M-Wastes in Sri Lanka are not sufficient.

The objectives of this study were to estimate the outflows end-of-life of mobile phones and past and future trends in the generation of obsolete mobile phones in Sri Lanka. A combination of two models was used to achieve above objectives. At the first step, time series multiple life span model was used to estimate outflows end-of-life obsolete mobile phones. Then, the simplified logistic function model was used to estimate the values of obsolete mobile phones in the future. Data were collected from available records, telephone interviews and face to face interviews. Questionnaires were also distributed among people in various levels in the society.

The results revealed that the average life span of a mobile phone is approximately three years and the different types of end-of-life of mobile phones included reuse, store, recycle, throw with other waste, and just open dumping. The percentages of different end-of-life were 50%, 20%, 12%, 11% and 7%. According to the logistic function model, the number of obsolete mobile phones by 2035 will be more than 20 million. The results of the study revealed that the obsolete mobile phones would be a severe problem in Sri Lanka in future. Therefore, it is necessary to encourage investors to implement recycling facilities in large scales to manage the problem of M-Waste in Sri Lanka.