

Stock Flow Diagram Analysis on Solid Waste Management in Malaysia

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Abstract. The effectiveness on solid waste management is a major importance to societies. Numerous generation of solid waste from our daily activities has risked for our communities. These due to rapid population grow and advance in economic development. Moreover, the complexity of solid waste management is inherently involved large scale, diverse and element of uncertainties that must assist stakeholders with deviating objectives. In this paper, we proposed a system dynamics simulation by developing a stock flow diagram to illustrate the solid waste generation process and waste recycle process. The analysis highlights the impact on increasing the number of population toward the amount of solid waste generated and the amount of recycled waste. The results show an increment in the number of population as well as the amount of recycled waste will decrease the amount of waste generated. It is positively represent the achievement of government aim to minimize the amount of waste to be disposed by year 2020.

Keywords: Solid Waste Management; System Dynamics; Stock Flow Diagram.

INTRODUCTION

Solid waste management is a crucial task nowadays and becoming important issues in every country, including Malaysia. This complex processes cause by an economics enhancement and rapid population growth. Life style changes among the citizen will increase the waste generation rate especially in urban area. The number of population, income level, education level, occupations and personal attitude are indirectly contributed to the increment in volume of waste generation. The large amount of waste generated every day due to numerous activities such as food preparation, construction, institution occasion and festivals activities.

The solid waste generated has exerted great adverse impacts on the society, the economics and the total environment. To address the problems caused by solid wastes, a great deal of research effort has been made over the last decades, which aiming at investigating solid waste management issues and ultimately reducing its quantities. In addition, this is also in line with the critical principle of ecology balances, that emphasizes on creation of economic systems where material flows are reused or recycled rather than becoming a waste. The research attempt has of course led to a variety of management measures that can be potentially applied to minimize the solid waste. Furthermore,