

This paper utilized system dynamics modeling as a new analytical approach to predict both the municipal waste generated and the associated disposal costs in developing areas. This approach facilitates the decomposition of general waste into its main components to enable municipalities to manage recyclables and find out the feasibility of performing recycling better rather than disposal by performing comparative disposal cost analysis. This study is different from previous work as it only considers population as a factor to predict the total waste generated and recycled, together with the associated expenditure and disposal cost savings. The approach is verified by applying it to a case study in Nablus and demonstrates the evaluation of the quantity and composition of generated waste by considering population as the main influencing factor. The quantity and composition of municipal solid waste was evaluated to identify opportunities for waste recycling in the Nablus municipality. Municipal solid waste was collected and classified into eight main physical categories. The system dynamics model enable the quantity of each generated component such as plastic and metals to be anticipated together with the cost of recycling or disposal.