

# **MATERIAL FLOW ASSESSMENT AS A TOOL TO ASSESS A WASTE MANAGEMENT SYSTEM IN A CITY**

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## **Abstract**

The accelerated growth of the world's population is increasingly advancing towards an urban future, which leads to an increase in the amount of municipal solid waste that the municipalities must manage in an environmental way. Cities in the developing world are facing many challenges, being one of them the lack of information regarding the amount of waste produced in the city, composition and the final disposal. "Material Flow Analysis" has been considered a tool to visualize the flows of solid waste within a system to identify the main existing problems based on the distribution of the masses of the materials and the final sinks. This study reports on a study in an urban small-size Costa Rican city in which the amounts of waste produced by the household and commercial sectors were addressed. Utilizing this tool it was possible to address the waste management situation, waste generation rates, composition, treatment and final disposal practices. It was determine the amounts of waste being burned, buried in the backyards of homes, illegal discharges in empty lots, rivers, side of roads and alike. It was also possible to determine recycling rates, and the amount that is disposed in the landfill. Using this tool, the municipality can observe where the challenges are and make informed decisions on where improvements must be done.

## **Keywords:**

Material Flow Analysis, waste generation index, composition, developing countries