

# Methodology for generation programs for recovery of municipal solid waste in urban municipalities

Javier Orlando Avilés Sayas<sup>1</sup> and Constantino Gutiérrez Palacios<sup>1</sup>

<sup>1</sup>Posgrado en Ingeniería Ambiental, Universidad Nacional Autónoma de México, Ciudad Universitaria, Coyoacán, Distrito Federal, 04510, MÉXICO.

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Email: jo.avilessayas@gmail.com

## Introduction

The current pattern of production and consumption of society has led to an increase in the generation as well as the complexity of the composition of the municipal solid waste, which must be evacuated from the source and be properly treated to reduce its environmental impact. The process for retaining residual waste at the end of the treatment chain is disposal in a landfill (Colomer Mendoza & Gallardo Izquierdo, 2007).

-The disposal process has many limitations such as the space required for installation and operation as well as permanent loss of the products in the waste disposed (Avilés Sayas, 2011). Because of this is necessary to thoroughly exploit all the possibilities of recovery before disposing the waste, these processes must be framed within sustainable programs (SEMARNAT-GTZ, 2006).

-Currently in México, many of the systems operators of non-hazardous solid waste are not trained or in the integral management of solid waste or planning, so it is necessary to build tools to meet these needs for the establishment of flexible and exhaustive local valorization programs of municipal solid waste (GIZ, 2013).

## Method develop

-A key part in the development of this work was to have the experience of different participants involved in the recovery of municipal solid waste. The process traced is divided as follow:

1. Visits to determine the current actions took in the country
  - Different municipalities with valorization programs
  - Recycling plants
2. Determination of the elements involved in the valorization process
  - Participants involved in the process and their impacts on it
  - The waste recovery processes most commonly used in the country
3. Description of the steps for making decisions during the valorization process

## Results

-The presented methodology unifies processes of different valorization programs developed both in México and internationally but it concentrates in recovery methods used in the country. This methodology has a dual system, the first element is a group of diagrams to support decision making and the second is the description of the basis for decision-making. Figure 1 shows as example the diagram of the Valorization waste sequence.

-This methodology is conformed of the followed chapters:

1. Guidelines, in this one some parameters are set to define the objectives and scope of a waste valorization program
2. State and projection of waste management in the area, in this chapter the steps to determine the generation and composition of waste generated, the projection of the population and demand for materials, also describes the actual handling in the area.
3. Determining the valorization ways by kind of waste is based on identifying all the options in the area and assesses the best environmental, social and economic terms.
4. The establishment of social motivation serves to define the mechanism of participation of the users of the system in the valorization program. This motivation could be environmental, community, economic or regulative.
5. The determination of the separation system is based on the social motivation, this factor could be mechanically, manually or from the origin.

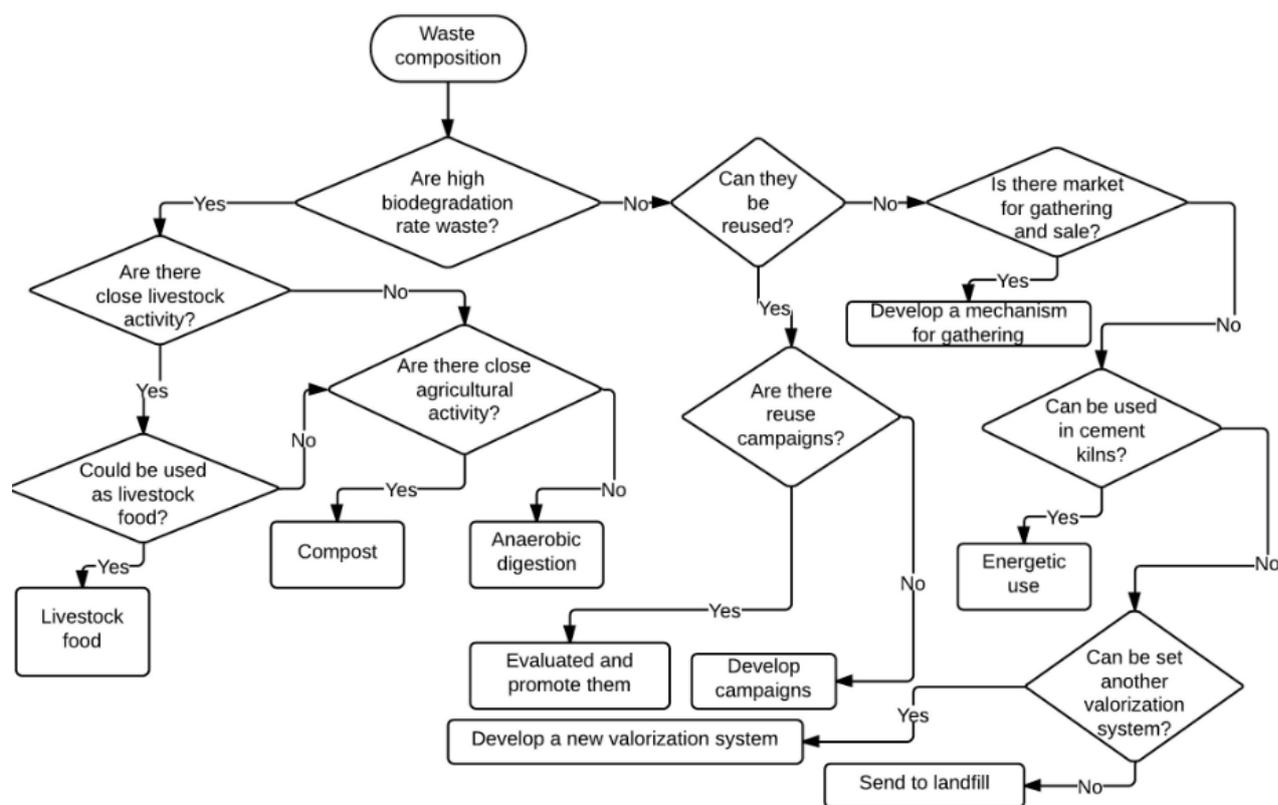


Figure 1 Waste valorization sequence

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