Improving The Municipal Solid Waste Management Plan Of The Municipality Of Nemocón (Colombia)

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ABSTRACT

The municipality of Nemocón (Colombia) located 45 km from Bogotá generates 810.3 t/year of municipal solid waste (MSW). Despite the Colombian national legal requirements, Nemocón Solid Waste Management Plan (SWMP) shows important deficiencies in the waste management system, especially concerning the final destination of waste.

During 2019 a set of activities have been performed in the town as an initial response to these needs with the participation of the community and local authorities. First, the design of the waste collection routes was analyzed and improved. Two routes were designed, supported by compacting vehicles with an average time of 3 hours (80 km per route) and 3 routes per week each. Besides, two shorter routes were designed for the collection of recyclable waste, supported by hand-drawn vehicles, with operating times of 6 hours (8-10 km per route) and daily routes.

With the support of students from the University of La Salle and the donation of an abandoned building, a Classification and Use Station (CUS) was implemented to strengthen the management of such recyclable waste. The CUS was provided with personal protection elements to improve their condition as managers of minor routes and the preliminary treatment of waste in the CUS, for later sale to wholesalers external managers.

Finally, a tax system was designed to finance the operation of the CUS (2500-2800 Euros/month) and promote greater separation volumes in the midterm, based on an adjustment to the normal
payment made by the users for the service of waste collection and management. This system took into account the different types of users (commercial, industrial, residential and official), local socioeconomic scale and national economic variables. The increased rate varies between 1 and 1.5% for all users in the first year of increase.