The challenge of increasing source segregated waste collection in the Central region of Portugal

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The recycling of household waste such as glass, paper/cardboard and plastic/metal/composites is an important part of waste management in Portugal. The increase of recycling rates is a European and national target imposed by the Directive on Waste 2008/98/EC, transposed into Portuguese legislation. In 2020 the preparing for re-use and recycling of waste materials (paper, metal, plastic and glass) from municipalities must reach a minimum of 50% by weight. In Portugal, increasing the re-use and recycling is largely seen in two trends: i) use of mechanical and biological treatment facilities (MBT) in which both organic and recyclable materials are recovered from unsorted waste; ii) improved source segregated waste collection, such as road containers, Civic Amenity sites and door-to-door collection where glass, paper/cardboard, plastic/metal and other recyclable materials are separately collected from unsorted waste (Environmental Portuguese Agency, 2014).

The main purpose of the present work is to assess and discuss the source segregation rates of packaging waste (glass, paper/cardboard and plastic/metal/composites) in the central region of Portugal. This region comprises 36 municipalities and is bordered by Oporto in the north and Leiria in the south, with 938,367 inhabitants which represents 9% of the Portuguese population and 7.3% of total territory. The recyclable waste is collected by a multi-municipal company, ERSUC S. A., that represents a partnership between a public company owned by the central state (“Empresa Geral do Fomento”– currently under a privatization process) and the municipalities (ERSUC S. A., 2015).

ERSUC S. A. managed 358,628 tonnes of unsorted waste and 29,775 tonnes of recyclable waste in 2014. The recyclable waste is mainly collected at road containers (about 95%) followed by Civic Amenity sites and door-to-door collection (<5%). The evolution of unsorted and recyclable waste collection from 2010 to 2014 is shown in Fig 1. The total amount of unsorted and recyclable waste decreased between 2010 and 2013 (7.7% in unsorted waste and 14.8% in recyclable waste) while in 2014 unsorted waste had a slight increase (2.9%). The collection of plastic/metal/composites packaging waste also had an increase of about 2 thousand tonnes in 2014, while glass and paper/cardboard waste collection remained constant.

The source segregation rate is defined as the amount of recyclable waste collected separately divided by the amount of total MSW collected within the municipal road containers/bins/bags system. Source segregation rate for each municipality is shown in Fig 2. The average source segregation rate in study area in 2014 was 7.7% being far below the national value of 13.6% (INE, 2015). The municipality of “Sever do Vouga” (pop. 12 000) had the highest source segregation rate: 13.0% (37.4 kg person⁻¹ year⁻¹); followed by “Castanheira-de-Pêra” (11.6%; 31.5 kg person⁻¹ year⁻¹), “Cantanhede” (11.3%; 38.6 kg person⁻¹ year⁻¹) and “Mealhada” (10.9%; 39.5 kg person⁻¹ year⁻¹). Source segregation rates were lowest in “Pampilhosa da Serra” (4.6%; 16.8 kg person⁻¹ year⁻¹) and “Ansião” (5.5%; 15.6 kg person⁻¹ year⁻¹). It is remarkable that small, rural municipalities have higher source segregation rates than the most affluent areas of Coimbra (pop. 130,000) or Aveiro (pop. 77 229), in the ERSUC area.
In the Central region of Portugal, road container for recyclable waste is the prevalent model for source segregated collection system, accounting to 95% of all collected recyclables. On the other hand, decision makers are comfortable with such low source segregation rates, because they are confident that MBT will allow to sort out recyclables from unsorted waste and achieve the European Union targets. So, overall no changes to the current waste collection model are conceived to improve the current rates.

During the last two decades several recycling awareness campaigns took place in Portugal which promoted the separation of paper/cardboard, plastic/metal and glass in road containers. Although these campaigns motivated and attracted people’s attention, the action of “Recycle” is depended only on altruism, goodwill and sense of civic duty.

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**References**