

Science for Environment Policy

Better management of construction waste needed to improve recycling rates in Lisbon

Management of waste from construction and demolition sites is a major concern, particularly in urban areas where large volumes of materials are generated. A recent study on the construction and demolition waste (CDW) produced in Lisbon, Portugal, suggests that improved municipal collection systems are needed to reduce the amount of waste ending up in landfill or illegal disposal sites.

In Portugal, new legislation specifically covering CDW came into force in 2008. Under this legislation a chain of responsibility involving all parties must be established to ensure the [waste](#) produced is properly managed. The legislation includes planning and management measures to reduce the amount of CDW generated, to separate at source, and to recycle and reuse this waste.

In this study, conducted under the LIFE project, REAGIR – Recycling and re-use of CDW as a part of Integrated Waste Management¹, the researchers estimated the amount of CDW produced in the Lisbon Metropolitan Area (LMA), Portugal, for the years 2006 and 2007, before implementation of the new legislation. Knowing the amount, type, source and destination of CDW in the LMA provides a basis for managing CDW in a more sustainable way.

The amount of CDW produced in the LMA was estimated from information on the construction of new buildings and the remodelling of existing buildings, but excluded soil waste from excavations. Remodelling includes the expansion, alteration, rebuilding and demolition of existing properties. Calculations of the overall volumes of CDW produced were based on the surface area of completed projects, removal of CDW by collection and transportation firms and dumping at illegal sites, which can pose a risk to the local environment and people living nearby.

Results reveal that in the LMA as a whole, about 90% of construction work in 2006-2007 consisted of new buildings and nearly 10% was remodelling work. In contrast, in one of the municipalities in the LMA, the municipality of Lisbon, 17% of work was new construction and 83% was remodelling. During these two years, collection and transport companies in the LMA were estimated to have moved around 3456 tons (t) of CDW a day, with about 60% of the CDW handled by these companies coming from remodelling jobs. In addition, nearly 81 t/day of CDW from remodelling jobs were collected by municipalities and about 28 t/day of CDW were also voluntarily delivered to eco-recycling centres.

For the municipality of Lisbon, CDW waste generated in 2007 was about 40% higher than CDW estimates in 1997. Nevertheless, over the decade, the composition of the CDW waste did not change much, consisting mainly of concrete, bricks, tiles, wood, glass, plastics, iron and steel.

The destination of only approximately 32% of the CDW produced in the LMA could be identified. Of the remainder, about 5% is reused in recycled aggregates for building, and about 79% of the CDW collected is disposed of in landfill. Despite treatment, disposal and landfill facilities being located within 23 km from the centre of Lisbon, it appears that the Lisbon municipal collection system, in particular, is inadequate to deal with the volumes of CDW generated and some of the waste is dumped in illegal sites. Improvement of the urban collection system the promotion of recycling and encouragement of greater responsibility by all stakeholders are necessary to reduce the amount of CDW ending up in landfill or in illegal sites.



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1. http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n_pr oj_id=2345&docType=pdf