


## General data

Population	151,049	 <p><a href="http://logrono.es">logrono.es</a></p>
Surface	79.55 km <sup>2</sup>	
Density	1,899 inh/km <sup>2</sup>	
Urbanisation class	A (50 – 100 % multi-family houses)	
Paper & cardboard recycling rate	96.38 %	

## National and regional system

Legislation & targets	<p>Law 22/2011 establishes the obligation of having (at least) separate collection for paper and cardboard, metal, plastics and glass until 2015. Local authorities are responsible for the separate collection of household waste.</p> <p>The general recycling rate set on the national level is in line with the EU Waste Framework Directive (2008/98/EC): 50 % preparation for reuse and recycling until 2020.<sup>1</sup> However, the national waste management plan foresees specific targets for different waste streams. For paper and cardboard, a 70 % recycling target has been set for 2020.<sup>2</sup></p>
EPR system	<p>EPR has been established in Spain in 1996 and is implemented both individually and collectively.<sup>3</sup> ECOEMBES is the company in charge of managing cardboard packaging waste.</p>

## Waste collection scheme

Separate collection was set up in Logroño in 1996<sup>4</sup>. The system conducts separate collection of Paper for Recycling (PFR) for households mainly via Bring Banks (BB) and via Recycling Yard (RY)<sup>5</sup>. The blue containers in the BB system are placed together with three other containers, for plastics-cans-tetra pack, glass and other domestic waste. These blue containers are the same all over Spain and thus easily recognisable to the citizen. They are above-ground containers with a capacity of 3200 l. In 2015, 468 containers were placed. The frequency of emptying is 4.5 times per week on average. The collection of the blue containers is conducted by trucks of 25 m<sup>3</sup> or 30 m<sup>3</sup> with lateral loading.

Recycling Yards use the same type of containers and are accessible to the citizens 71 hours per week.<sup>6</sup> Commercial waste and waste from administrations, schools, and institutions is also included in the municipal system, provided that its waste is similar in nature to the waste from households, both in quantity and in quality (6.850 in total).<sup>7</sup> For those types of entities in areas with a big density of shops, the city council has set up a door-to-door collection system. Commercial waste is collected in open trucks of 12 m<sup>3</sup>, 4 days per week in pedestrian zones and weekly for other commercials and institutions included in the municipal waste management system. Shops and institutions in areas with no density are using the bring bank system.

Service to the citizens: litres/inhabitant	2320 l/inh/year
	Distance to bring banks is < 50m, 323 inh/container
Service for small shops: litres/shop?	6.5 l/inh/year

<sup>1</sup> Ministerio de agricultura, alimentación y medio ambiente (2015): Plan estatal marco de gestión de residuos (PEMAR) 2016-2022, p. 36.

<sup>2</sup> idem, p. 37

<sup>3</sup> The legislation for cardboard packaging is LEY 11/1997, de 24 de abril, de Envases y Residuos de Envases.

<sup>4</sup> Waiting for confirmation

<sup>5</sup> Furthermore Logroño uses small collection points (puntos limpios). In the mobile collection points no paper & board is collected, the amounts in the stationary collection points are very small. The mobile collection points are moving along the city with a fixed frequency and schedule. There is 1 fixed point and 3 moving collection points. Find all details here: <http://www.logrolimpio.com/puntos-limpios/puntos-limpios-moviles/>

<sup>6</sup> Mon-Fri: 8 - 20 h. and Sat: 9 - 20 h.

<sup>7</sup> Municipal waste includes packaging from commercial buildings; residual waste produced in activities from service, commercials, maintenance, and industry, provided that they are of similar nature as household waste, both in quantity and quality; residue produced by consumption in bars, restaurants and other HORECA establishments; residue from general consumption, produced in residences, hotels, hospitals, clinics, schools, and other public buildings or buildings open to the public. Source: Ordenanza municipal de limpieza pública del término municipal de Logroño, artículo 41. Boletín oficial de Rioja, 19.06.2001, p. 2787, núm. 73.



## Information and communication

Annual awareness-raising campaigns on recycling and recovery of resources (including paper and cardboard) by Ecoembes. Educational programmes for schools (see Leaflet [here](#)). Participation in national campaign on paper recycling, “Tu papel es importante”: [www.tupapelesimportante.com](http://www.tupapelesimportante.com).

The NGO/association/researcher that responded to the questionnaire stated that citizens are rather poorly informed about what to do with their paper and cardboard waste and that the information provided to citizens and small businesses on waste sorting is not sufficient. This is reflected in the answers from the citizens, where 25 % feel rather poorly or poorly informed about how to sort their waste. For paper and cardboard, citizens are better informed however, only 11 % feel rather poorly informed. The main sources of information for citizens on paper & cardboard are the information provided on the containers and TV announcements/advertisements. The websites of the collector and the municipality, waste consultants, billboards, and the local newspaper are further but less important sources. The shop/small business that answered to the questionnaire also feels rather poorly informed about how to sort waste in general, but fairly well informed about how to sort paper and cardboard. The main sources of information are for the shop/small business TV announcement/advertisement, information on containers, and the website of the collector.

## Evolution paper & cardboard waste collected

	Paper & card in residual waste	Paper & card sep. collected			TOTAL
		Door-to-door	Bring Banks	Total sep. collection	
2006	1.14	0.82	29.84	30.66	31.80
2007	1.44	1.57	37.03	38.60	40.04
2008	1.56	1.63	40.07	41.70	43.26
2009	1.49	2.67	37.33	40.00	41.50
2010	1.48	3.36	36.18	39.54	41.02
2011	1.34	3.21	32.80	36.02	37.36
2012	1.21	2.89	29.61	32.49	33.71
2013	1.12	2.53	27.55	30.08	31.20
2014	1.13	2.48	27.70	30.18	31.30
2015	1.16	2.59	28.20	30.78	31.94

Table 1: Evolution of paper & cardboard waste collected 2006-2015 (kg/cap/y)

Door-to-door collection service is offered in dense areas and only for commercial waste and waste from administrations, schools, and institutions.

In addition to this, very insignificant amounts of paper & board get also collected via the regional eco-parks, where citizens can directly bring their paper & board, and via the mobile collection points. Since the other collection schemes are much more convenient, both of these options are used only punctual and amount to insignificant yearly amounts.

The largest part of paper and board for recycling is separately collected via the Bring Bank system. Only a minor part of paper and board is lost in residual waste.

The amount of PfR separately collected has been increasing until 2007/2008. The decline in the following years could be related to a potential change of consumption patterns as a consequence of the economic crisis.

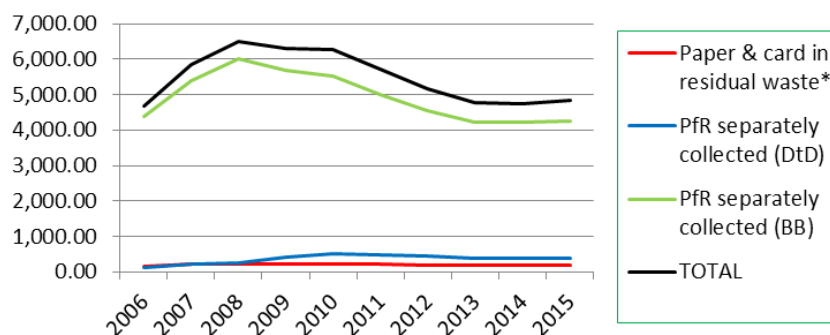


Figure 1: Evolution of paper & cardboard waste collected 2006-2015, in t

\*estimation



## Paper and cardboard waste treatment (2015)

Paper and cardboard that is collected separately is destined at recycling. Both the recyclables and the residual waste get transported to “Ecoparque” where it gets classified, prepared for recycling and recovered. Residual waste is sorted before going to landfill on the same side. Paper that appears in the residual waste stream (marginal quantities) is sorted out and sold outside Europe as it is not suitable for consumption in European paper mills following the EN643 standard.

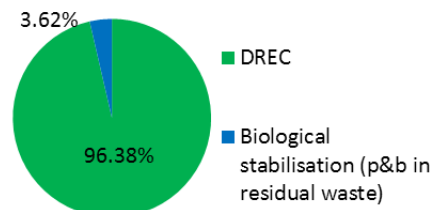


Figure 2: Paper and cardboard treatment in 2015 (in %)

## Costs and revenue, resources

Separate collection of recyclables is for free for the citizens. Annual fees are to be paid for the collection of residual waste, collected twice per year together with the fees for water and water treatment. The amount is calculated per household and depends on the category of the street. It can vary between 10,80 € and 68,22 € per semester. For a household of three (average), the fees increased by 17 % in the past ten years, 79 € in 2015. The fee for commercials and other entities included in the system depends on the type of entity, the type of economic activity the surface (m<sup>2</sup>), and the location (5 categories of location). For a commercial of up to 50m<sup>2</sup>, the fee per semester varies between 23,39 € and 100,9 € while for a restaurant of the same size, it varies between 41,35 € and 150,08 €, always depending on the street category.

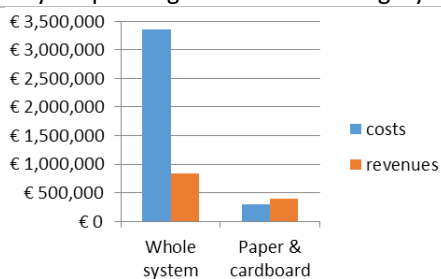


Figure 3: Cost coverage in 2015

The EPR scheme for packaging, ECOEMBES, finances the collection of cardboard packaging, corresponding to 40 % of the weight of the blue containers and for the commercial DtD collection up to a maximum limit of 3 kg/cap/y. Thanks to this and to the income through material selling, the municipality reaches a > 100 % cost coverage for the PfR fraction (in 2015: 163%). For the whole system including all waste fractions this is however quite different: Only about one quarter of the costs of the system are covered by the revenues (in 2015: 24.83 %).

## Stakeholder satisfaction

Overall, how satisfied or dissatisfied are you with the waste management services provided by your municipality?

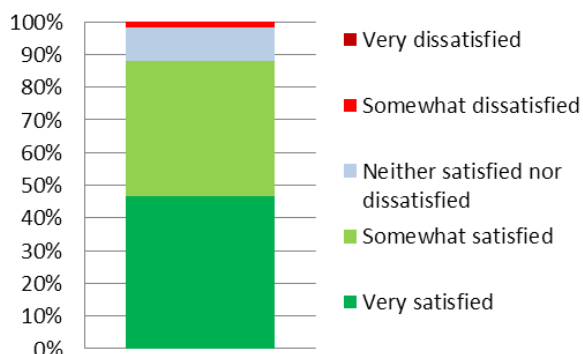


Figure 4: Overall satisfaction with WM services (citizens)

Agree or disagree with the following words describing the waste management services provided by your municipality

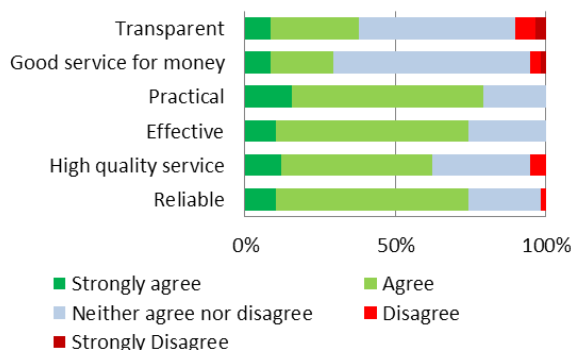


Figure 5: WM characteristics (citizens)

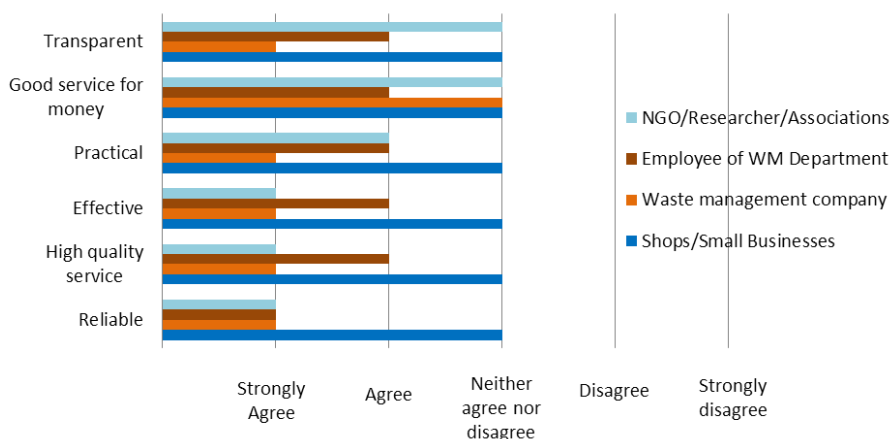
Out of the 58 respondents to the citizens questionnaire, 88% are somewhat or very satisfied with the waste management services provided by the municipality. All respondents state that they sort their waste and all but one consider it easy or very easy to sort paper & cardboard. The main issue that citizens mention is not having enough space to sort their waste at home (13 respondents – 22 %).



When asked what type of measures could simplify their sorting efforts, the main measures mentioned were

- Clear sorting instructions provided by the municipality (mentioned by 33)
- More space at home for the different bins (mentioned by 31)
- Collection bins that are comfortable to use (size, shape, cleanliness) (mentioned by 21)
- Collection bins in closer proximity (mentioned by 11)
- A waste consultant coming to my house to explain the system to me (mentioned by 3)
- Waste collection door-to-door (mentioned by 3)

Do you agree or disagree with the following words describing the waste management services provided by your municipality?



In general, the four other stakeholders questioned (see figure 4) seem to be quite satisfied with the waste management services of the municipality.

The NGO/ researcher/ association together with the small shop and the waste management company might have a doubt about receiving good service for money.

Figure 6: Feedback from other stakeholder groups

## Main problems/challenges

	Municipality ( <i>excel</i> )	Citizens ( <i>questionnaire</i> )	Waste management company ( <i>questionnaire</i> )	Employees of WM department ( <i>questionnaire</i> )
Impurities/contamination	<i>a few cases</i>	X		
Littering/fly-tipping	X		X	
Unpleasant surroundings/littering		XX	X	X
Vandalism of containers		X	X	X
Overflowing bins/ containers	<i>rare cases</i>	XX		
Burning containers	X			
Inadequate openings		XX		
Unsafe surroundings/not lighted		X		
Inconvenient distance (too far)		X		
Lack of or inadequate signs		X		
Blocked access to bins		X		
Theft		X		

- The waste management company notes that paper that is collected from citizens is sometimes deposited outside of the containers, thus causing littering issues.
- The paper mill is somewhat dissatisfied with the functioning of the WM system in this municipality as well as with quality of paper and cardboard that they receive from Logroño. The main issues are
  - Presence of materials other than paper
  - High moisture affecting the quality
  - Low quantities of corrugated cardboard

### More information:

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