



Zero Waste Europe was created to empower communities to rethink their relationship with resources. In a growing number of regions, local groups of individuals, businesses and city officials are taking significant steps towards eliminating waste in our society.

CASE STUDY #2



September 2014

THE STORY OF ARGENTONA

The Catalan town of Argentona, in the northeast of Barcelona, spearheads the network of Catalan Zero Waste municipalities. When the door-to-door collection system was introduced in 2004, Argentona more than doubled its recycling rates and became a pioneering reference in Catalonia.

By giving the contract for collection services to a local social enterprise, the municipality also boosted local employment and raised the environmental awareness of the community, showing once more that zero waste is not only about waste, but about our relationship with our surroundings and the empowerment of communities.

Changing Waste Collection

Up until 2004, Argentona had followed the most common waste collection system in Spain, consisting of the separate collection of four waste streams – glass, paper, lightweight packaging such as plastics and cans/tins, and residual, in separate containers placed on streets. Organic waste would not be collected separately, usually resulting in significant contamination in the recyclable and residual waste streams. Following this system, recycling rates were stable below 20% and most of the waste generated was taken to the incinerator in Mataró, located 5km away.

The opportunity to move away from this system came after the incinerator in Mataró showed signs of saturation. In 2001-2002, with increasing rates of waste generation, those municipalities that were sending waste to the incinerator realised they had a choice to make: either they would have to expand the incinerator, or they could develop a system that would increase recycling rates and make incineration



- Population: 12,000
- The door-to-door collection system is implemented in the old town, which is home to around 8,500 residents (75% of the population), with the rest of the population living in houses in the outskirts.

redundant. Fortunately, the mayors chose the latter and committed to improve the separate collection of waste.

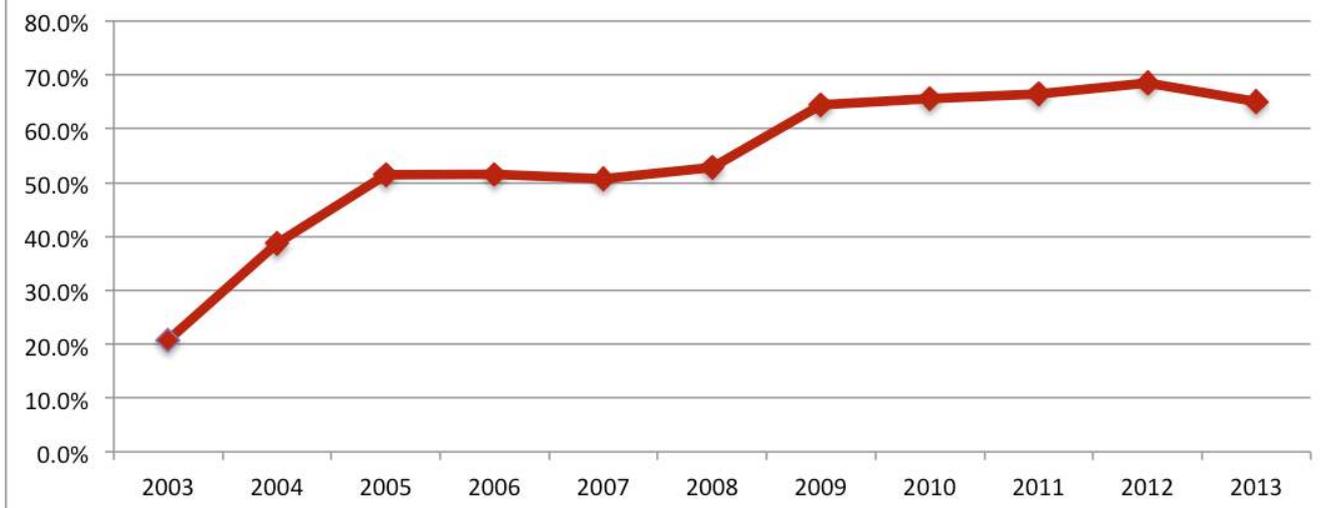
“Our motivation to improve the system was environmental but also social, as we believed that it was very important for people to be aware and engage on issues around waste”

Joan Pujol (Town Council Technical Expert on Waste)

Argentona, being one of the closest towns to the incinerator, was especially sensible to the waste issue, and took the ground-breaking initiative to start looking into alternatives. At the time, three small-sized towns in Catalonia had already started a door-to-door collection system, Tiana, Tona and Riudecanyes. Drawing from the experiences of these pioneering towns, the Argentona Town Council was convinced that door-to-door collection was the way forward.

The plan started getting shaped in 2002, with discussions within the Town Environmental Council and visits to those villages that had already implemented it. When the waste collection contract with FCC (Fomento de Construcciones y Contratas) was coming to an end in 2004, the Town Council was already decided to move forward with the implementation of the door-to-door collection system.

EVOLUTION of SEPARATE COLLECTION RATES in ARGENTONA (%/year)



Based on data from City Council of Argentona

Step by Step: Organic & Residual Waste First

Before kicking-off with the new system, the inhabitants of Argentona were informed about the upcoming changes with an awareness-raising campaign. In the first phase, a small brown bin was

distributed to everyone to separate food waste at home, and step-by-step the system started functioning. Businesses were charged for their food container, according to the size of the organic waste bin they required. Residual waste – what is not recyclable – was also collected door to door whereas other waste streams continued to be collected in containers.

Joan Pujol remembers that, “at the beginning it wasn’t easy, a minority of people refused to change their habits and even protested against the doorstep collection. Fortunately the Town Council decided to stay strong, to focus on making the first phase of implementation a success and let it calm down. And indeed, a few weeks later the system was already running smoothly without complaints”.



“at the beginning it wasn’t easy, a minority of people refused to change their habits...”

...the Town Council decided to stay strong...

... a few weeks later the system was already running smoothly without complaints”

Immediate Increase of Recycling Rates

The positive results were felt from the beginning, and **the percentage of separate collection increased spectacularly.** The new system reduced impurities in other waste streams, specially in the organic, and in 2005 it made it possible for separate collection rates to peak at 70% in the Argentona areas with doorstep collection, which in turn raised the overall Argentona rates up to 50% of separate collection. **At the same time, the quality of the organic material achieved records of**

Boosting the Local Economy

of only 2% contamination in 2009! Later on, the overall recycling rates continued to increase until they peaked again in 2012 at 68,5%.

Incentives were also provided for residents to begin composting at home, and in 2007 the municipality provided families with 113 composting bins for gardens and 15 wormery bins for free, along with info sessions and training on composting techniques. The initiative was much-welcomed by their neighbours, with many of them converting into passionate composters.

In the second phase, Argentona rolled out collection of paper and packaging waste at the doorstep, which took place in 2008. Glass collection remained through 'bottle banks' dotted around the municipality. As a result the rates of separate collection continued to climb.

Green Local Jobs!

Another co-benefit of the door-to-door collection system was **the boost in local employment, which tripled the number of jobs and improved social inclusion.** The service is provided by a local social enterprise called Arca Maresme empresa d'Inserció SL, which provides several different services and employs people in risk of social exclusion - at least 30% of its staff.

Before switching to door-to-door collection, the waste collection company (FCC - Fomento de Construcciones y Contratas) employed three people to carry out collection. Given the increased resources

required for collecting 7 days a week over longer shifts, that number increased to 11. Arca Maresme currently employs all of them.

This is one of the main lessons to learn from implementation of collection at the doorstep: **apart from boosting recycling rates, the largest share of collection costs are shifted from costs related to equipment, technologies and disposal, to creating new jobs, which ultimately feeds back into the local economy.**

What Is Collected When?

Waste fractions are collected door-to-door every day of the week, according to the different waste streams, by rear-loading trucks. Residents put out their waste at a specific time – between 8 and 10pm, with collection starting at 10pm.

Collection is organised as follows: thrice weekly collection of organic waste (food scraps and small garden wastes – grass cuttings, leaves), twice a week for lightweight packaging such as plastics and cans/tins, once a week for paper and residual waste and a daily collection service for used, disposable nappies (a separate container on the collection truck is used for this). The specific collection for nappies is intended to keep a user-friendly scheme that meets the needs of families using nappies/diapers, while enabling a very low collection frequency for the rest of the residual waste. In this way, **the system manages to cut collection costs, and drives most of the recyclables and compostable waste towards the appropriate plants.**



Sr. Josep Salvador Bosch became a passionate composter after he participated in composting training and received a compost bin. Now he uses all his kitchen and garden waste to make compost and feeds it back into the soil in his allotment. "This has been such a positive experience. It's a bit of work indeed, but it's more important to close the loop with nature and stop using chemical fertilizers, which I don't need anymore. This is definitely the way forward."

Argentona Introduces a Pay-As-You-Throw System in 2009

All of the collected recyclables are taken directly to the various local processing plants, while the residual fraction is taken to a sorting hub in nearby Mataró, where neighbouring municipalities also bring their residual waste to go through a Mechanical-Biological Treatment (MBT). This process pools further some of the unsorted recyclables within the residual waste, including organic material, and incinerates the rest. "Waste incineration is indeed not ideal", recognizes Joan Pujol, from the Argentona Council "but we are sending less and less waste to incineration as our residual fraction is continually minimized. Fortunately we don't have to provide the plant with a specific amount of waste anymore".

The Revolution of Paying According To Waste Generation

After the implementation of separate waste collection at the doorstep, it was important to introduce an incentive to keep improving the recycling rates and reduce waste generation. In 2009, it was time to implement a "Pay as you throw" (PAYT)

system, which would reward or penalise households economically according to how much waste they would produce.

Up until then, Argentona had had a municipality-wide fixed charge, which was levied on all residents within the doorstep collection area. When the PAYT system was introduced in 2009, residents were required to dispose of packaging and residual waste in special, taxed bags. Now the cost of waste management is covered through a combination of a fixed rate tax, which is intended to cover the partial fixed costs of the system, and a variable fee charged in proportion to the waste disposed of.

Reducing Waste & Saving Costs

Since 2009, this system has effectively reduced the overall residual waste by 15%, and it goes up to 60% waste reduction in the doorstep collection area! Packaging waste has also decreased by 15%, but according to Argentona municipality sources, some of this can be attributed to waste leakage into neighbouring municipalities with no PAYT charges.

Waste fractions are collected door-to-door every day of the week, according to the different waste streams.



The scheme is currently still largely self-funded, thanks to the waste service tax and the increased profits generated from the sale of recyclables to Ecoembes and Ecodrio (intermediary companies in charge of collecting plastic, paper/carton and glass packaging) that offset the increased operating costs of door-to-door collection. Also, Argentona recovers part of the landfill and incineration tax collected by the Catalan government from every municipality, in compensation for treating organic waste appropriately. **In conclusion, the numbers work: the doorstep collection system has proven to be even more economically viable than the container-based collection system, saving the municipality €35,000 a year.**

Latest Reforms in the System

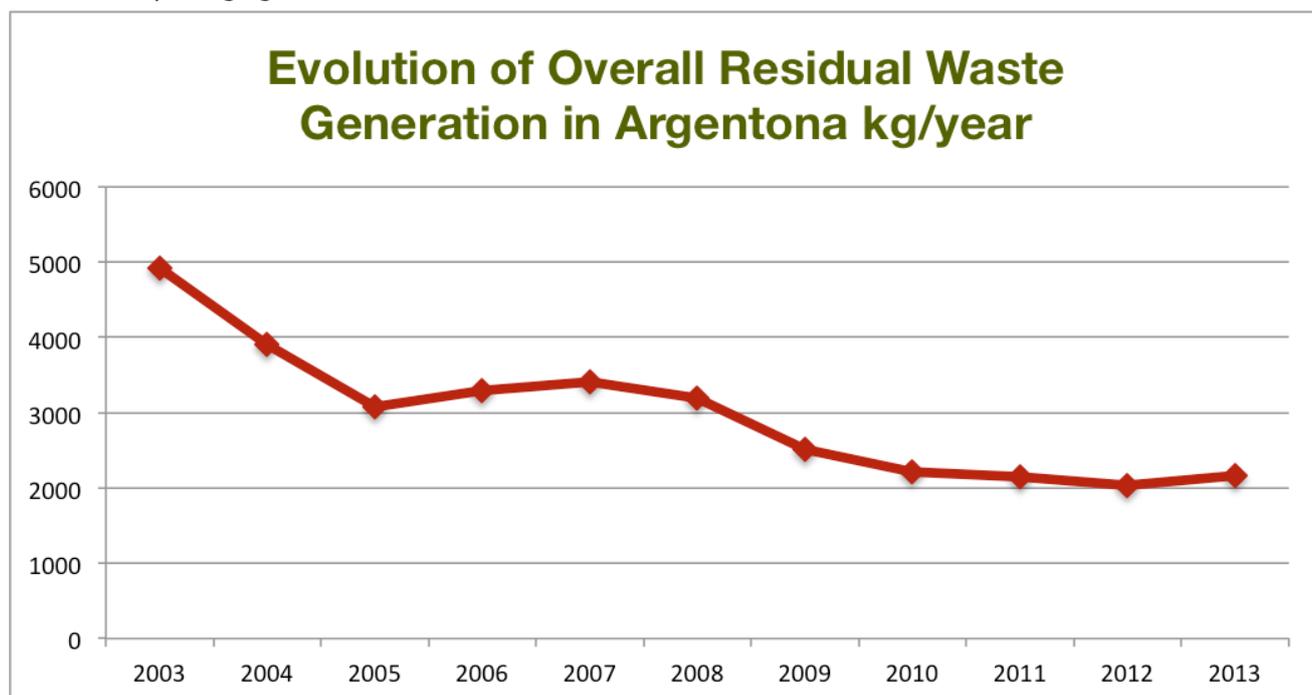
In 2011, the Town Hall introduced some flexibility into the PAYT scheme to combine a fixed and a variable cost. The variable part of the fee is determined now by the number of people in each household, which determines the number of bags that are given for residual and packaging waste.

Also, in 2013 the Town Hall abandoned the use statutory yellow bags for packaging waste from households, with the aim of reducing the leakage of waste into neighbouring towns, the so-called 'waste tourism'. Since then, residents can instead use any bag they want, of any type and size. Shops must continue using the statutory bags.

This simple change has had significant consequences. On the plus side, there has been an increase of collected separate waste, which shows that less of it is going to other towns, according to the Council. However, this change is no incentive to reduce packaging waste in the first place, and it is more difficult to monitor the quality of waste generated, since the thickness or color of some plastic bags can hide improper separation. Moreover, commercial spaces can now camouflage their packaging waste as household waste and avoid paying their fair share.

What Happens With Other Types of Waste?

Argentona has also improved in how it deals with other types of waste, such as bulky items, toxic waste or those particularly difficult to recycle, such as individual coffee capsules. For the bulky items, these can be collected at the doorstep every Monday morning or they can be transported to the town's tip (*Deixalleria*), which had to be doubled in size in 2008 as a result of the awareness campaign that promoted its use. Residents can also bring there their toxic waste, dry garden waste (pruned branches etc), construction waste, tires and vegetable and mineral oils. Around 80% of waste received by the *Deixalleria* is recycled. **Textiles are collected by a network of social enterprises in the region called Roba Amiga, through collection bins positioned in public places.** Good quality textiles are sold in Roba Amiga second hand shops, or shipped to developing countries. If they cannot be reused they are recycled as cleaning rags or fibres for industry.



Based on data from City Council of Argentona

Disposal

For the moment, what is not recycled or composted is sent for disposal to the nearby incinerator in Mataró, but the plan, like in any other town committed to zero waste, is to minimize the amount sent for disposal.

Given the success of separate waste collection in the area and the reduction of waste production due to the economic crisis, the incinerator is now facing a situation of overcapacity, which it compensates for by collecting and burning waste from the neighbouring towns. Indeed, a major problem in the region is the price competition between recycling and disposal.

Currently, the costs of disposal do not reflect the priorities established by the Waste

Hierarchy, and a combination of bad infrastructure planning, public funds and grants to disposal sites, and low disposal taxes (€7,40/t in this case, in comparison to a typical cost in Europe of around €100/t or more), means that composting is not yet cost-competitive with disposal options. This is a paradox which does not favour waste reduction and separate collection. The progressive increase in the incineration tax in Catalonia should fix this problem over time, creating a higher gate fee for incineration of waste as to make this option the least desirable possible, in compliance with the Waste Hierarchy.

Future challenges, future targets

Argentona has paved the way for other Catalan municipalities to walk the talk of Zero Waste. Over the last years, more and more municipalities have been adopting the door-to-door collection system and other prevention policies that have proven to be so successful in Argentona.



Guia pràctica
per a la recollida
porta a porta
en municipis
de fins a
5.000 habitants



Following the model, municipalities such as Celrà, Vilabreix or Olot have recently more than doubled their recycling rates in less than a year. For instance, **Celrà increased recycling rates from 21% in 2011 to 89% in 2013.**

In the meantime the network of Catalan Zero Waste municipalities continues to grow strong, comprising more than 55 municipalities, all public universities in Catalonia, 30 companies and more than forty organisations and platforms that are committed to working cooperatively in a common space to develop strategies for Zero Waste.

Written by Aimee Van Vliet

Sources

Argentona City Council
Estratègia Catalana de Residu Zero (Zero Waste Catalan Strategy)
<http://estrategiaresiduzero.cat>
Associació de Municipis Catalans per a la Recollida Porta a Porta
<http://portaaporta.cat/ca/index.php>



For more information visit:
www.zerowasteurope.eu
www.facebook.com/ZeroWasteEurope

Or contact:
info@zerowasteurope.eu
Twitter @zerowasteurope