

An underwater photograph of a diver swimming towards the camera. The diver is wearing a mask and fins. The water is dark, and many small fish are visible around the diver. A large yellow triangle is overlaid on the left side of the image, containing the text.

THE STORY OF SARDINIA

CASE STUDY

#10

Fifteen years ago Sardinia was Italy's worst performing region in waste management. Today, it is the best performing island in the Mediterranean. Who said Zero Waste cannot work in tourist destinations?

HOW THE SYSTEM WORKS IN ITALY

Waste management powers in Italy are distributed between different authorities. Municipalities are in charge of separate collection of waste, supra-municipal authorities (provinces or districts) are in charge of waste treatment, and regions have set up waste management plans and coordinate the provincial and local policies.

A smooth coordination between all three levels is therefore key to ensure that transition happens. In this case, the Region of Sardinia has managed to drive policies effectively, setting up the right rules and incentives for municipalities and guiding principles for provinces and districts to move forward.

HOW IT ALL BEGAN

Starting from scratch, national and European targets on waste management were the main first drivers for Sardinia to start rethinking their system. The Landfill directive set staged targets on biowaste diversion from landfills and the prohibition of landfilling untreated waste.

These obligations were far from reality in 2003, with only two municipalities collecting biowaste in Sardinia and the average separate collection at 3.8%. However, in 2004 the Region of Sardinia set up

a Regional Programme for Biowaste within its Waste Management Plan with a clear principle: while untreated biowaste was a hazard, if sorted and treated separately, it could be a benefit for the environment. The plan intended, hence, to make sure that biowaste stopped being a nuisance for the environment in landfills and that it became a benefit for soils as compost.

The Programme set out the following measures:

- > Compulsory separate collection of biowaste, including staged capture rates targets, aiming at collecting, at least 105 kg of biowaste per inhabitant by 2018.

- > An increase of the landfill tax from the minimum set up in Italian law back then (10€/t) to the maximum (25.8€/t).

- > The introduction of a bonus/malus system on the cost of residual waste management, to reward or penalize municipalities on the basis of their performance.

- > The promotion of door-to-door as the preferred model for separate collection of waste, along with pay-as-you-throw schemes and home composting

Sardinia was until 2003 in the rearguard of Italy and Europe in terms of waste management. With a separate collection rate of 3.8%, this popular tourist island used to send all the remaining waste to landfills and incineration.

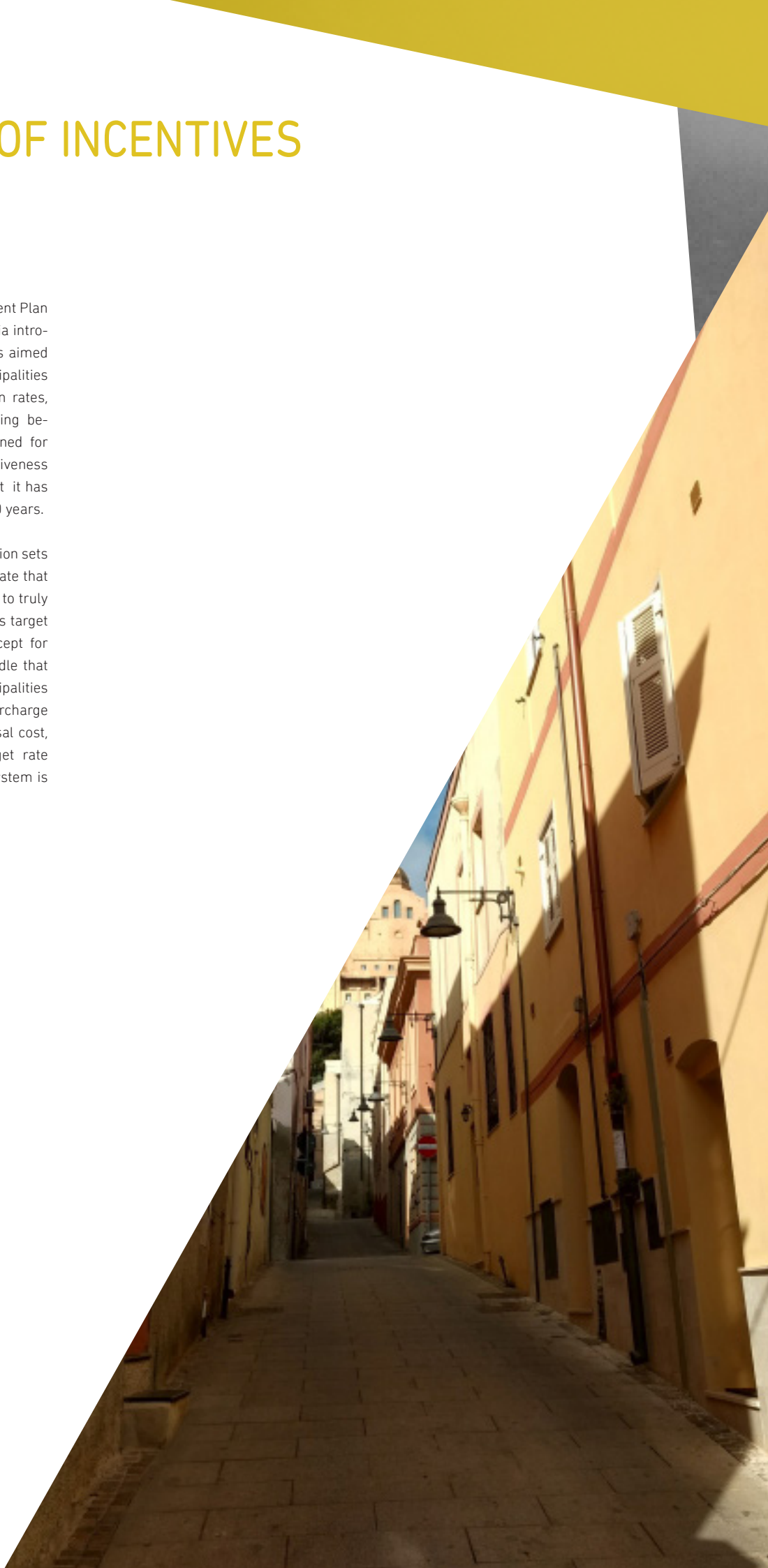
However, a strategy based on the promotion of separate collection with particular attention to bio-waste, and a carefully designed system of incentives in combination with several municipalities championing the transition towards zero waste, is delivering results. In 2016 Sardinia collected separately 56% of its waste, and plans to reach 80% by 2022 over the whole island.



SYSTEM OF INCENTIVES

Through its Waste Management Plan of 2008, the region of Sardinia introduced a system of incentives aimed at rewarding those municipalities with high separate collection rates, while penalising those lagging behind. Although initially planned for a couple of years, the effectiveness of the system has meant that it has remained in place for over 10 years.

The system is simple: the region sets a target separate collection rate that is slightly above the average to truly incentivise improvement. This target is reviewed periodically. Except for a certain amount in the middle that keep balanced, those municipalities below the target have a surcharge on the residual waste disposal cost, while those above the target rate receive a bonus on it. The system is fully balanced internally.



TWO ZERO WASTE STARS

ORISTANO

Oristano is Sardinia's best performing provincial capital. With door-to-door collection covering its 32,000 inhabitants, the town has reached 75.6% separate collection and 117 kg per inhabitant of residual waste in 2016 and reached over 80% in 2017 without pay-as-you-throw.

The town introduced door-to-door separate collection in 2009, some years after the neighbouring municipalities. Oristano was particularly driven by its willingness to take the lead as provincial capital, and the sudden increase they had seen in residual waste bins (30% increase in two years) coming from neighbouring towns with door-to-door, which typically occurs when a municipality with roadside containers is surrounded by other municipalities collecting waste door-to-door.

The transition was very smooth, particularly because of a decreasing level of tolerance from the administration towards low quality sorting that has allowed citizens to adapt progressively.

One civic amenity is available on the outskirts of the city and complements the door-to-door collection. In the past they had bring-in points to provide flexibility to

tourists and residents, but these easily became hotspots for illegal dumping. Today, 6 mobile collection points have proved to work efficiently in providing extra flexibility to residents and tourists, while reducing the illegal dumping.

The town hall is happy with the transition and with the results, although they aim at getting beyond and reaching 90% separate collection. The municipality is preparing a new contract for waste collection that intends to include pay-as-you-throw schemes and a reduction of the collection of residuals from once a week to fortnightly. This contrasts with non zero waste Italian cities that often collect mixed waste between three times weekly and daily. In this case, high capture of organics reduces the fermentability of residual waste and, hence, the need of such regular collection.

Results of Oristano:

	2008	2016	Difference
Residual waste	495.83 kg/inhab	117.27 kg/inhab	-76%
Separate collection rate	10.81%	75.61%	+64.8%

TORTOLI

Tortoli is a touristy coastal town in Eastern Sardinia of eleven thousand people. Very well known for its beaches, the town gets very busy in the high season, seeing its population increase three times in the summer period.

Back in 2013, Tortoli was at 55% separate collection and already collected door-to-door, but had stagnated for some years. A new contract and more stringent rules for participation were brought in 2013. Tortoli today reaches 90% separate collection and barely produced 53kg of residual waste per inhabitant in 2017. Four civic amenity sites complement the system, allowing citizens to have greater flexibility; one of these is located on the coast to serve the tourists.

Tortoli's success largely depends on two factors. Firstly, the municipality is fully aligned with the company collecting waste. In this regard, the municipality is engaged in supporting control of proper separate collection of waste and to widely communicate

about the need to sort.

Secondly, Tortoli took into account its tourist sector, directly engaging with hotels and camping sites to convince companies to shift internally. Similarly to households, hotels and camping sites have to meet high quality sorting, as unsorted waste doesn't get collected. Once the HORECA (food services industry) sector was made aware of the direction and the main objectives, they have proved to organise themselves effectively to drive separate collection in their establishments.

Visual signs for sorting (instead of written ones) and some translated versions on the beaches have also helped reaching out more easily the floating population.

Despite the good results, Tortoli still thinks that there's margin for improvement with regards to waste prevention, for instance by rewarding those who prevent waste, and offering adaptability and flexibility of door-to-door collection. The foreseen implementation of pay-as-you-throw will also provide a fundamental driver for further improvement.

	2014	2017	Difference
Residuals	3325 t	591 t	-78%
Waste generation	6008 t	5465 t	-9%

RESULTS

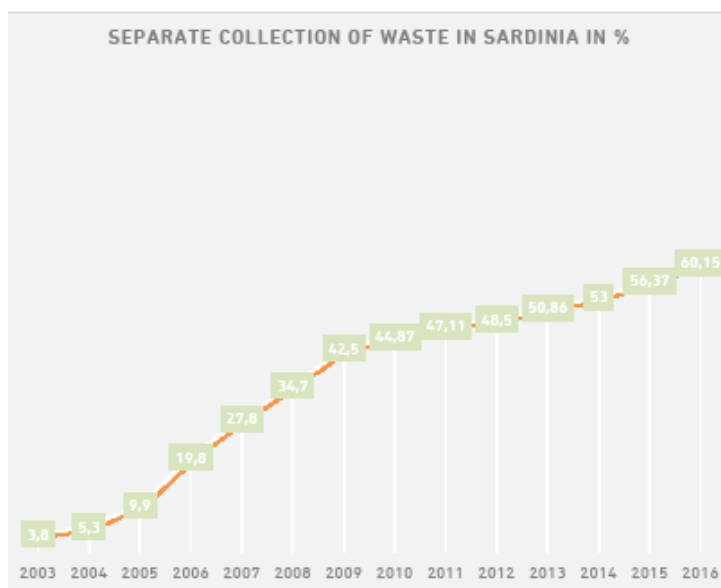
Although still far from perfect, Sardinia is today the best performing island in the Mediterranean in terms of waste management, and sits at the forefront of Italian and European regions.

The focus on bio-waste separate collection and the incentives to reduce residuals have proved very effective to drive a fast transition. Indeed, separate collection rates in Sardinia have improved year on year since the obligation of separate collection of biowaste, reaching 60% in 2016.

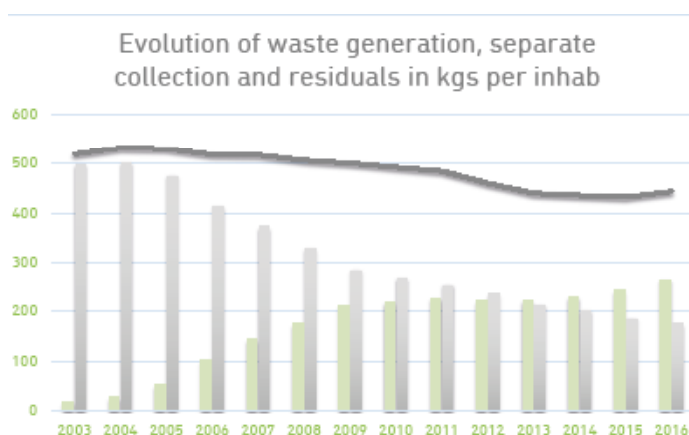
At the same time, waste generation per capita has decreased consistent-

ly, moving from 520 kg per inhabitant in 2003 to 443 kg per inhabitant in 2016.

These two figures combined result in a significant reduction of residual waste that has decreased from 500 kg per inhabitant in 2003 to 176 kg per inhabitant in 2016. Although there is still large room for improvement, the significant reduction of residual waste has made the island significantly less dependent on large facilities for disposal, raising questions for the need of the two incinerators currently in operation on the island.



Separate collection of waste in Sardinia (%)



Evolution of waste generation, separate collection and residuals (kg) per inhabitant

CHALLENGES & LOOKING FORWARD

CHALLENGES

Moving beyond current performance will require getting large cities involved that still lag behind in separate collection and biowaste capture.

Cagliari, the capital of the island and its largest city, wants to boost its poor separate collection rates, currently based on the use of roadside containers, through the introduction of door-to-door separate collection in 2018. Sassari (the second largest city) and Alghero (the fifth largest one) are also planning this move by then. The success of these transitions will definitely impact the numbers of the whole island.

LOOKING FORWARD

Despite the good results so far, in its new Waste Management Plan of

2016, the Region is looking beyond the level of ambition of the European Commission and has set very ambitious targets by 2022, among which:

> 70% recycling target

> 80% separate collection of waste

> 10% reduction on the relation between waste and GDP on the basis of 2010

In order to meet these targets, the regional government aims at rolling out door-to-door separate collection and pay-as-you-throw schemes across the whole island. Additionally, the Region is planning to raise the target of separate collection set out for the system of incentives that is currently at 65% to avoid penalties, and 70% to get rewarded.

For more information visit:

www.zerowasteurope.eu

www.facebook.com/ZeroWasteEurope

Or contact:

hello@zerowasteurope.eu

Twitter @zerowasteurope

Sources

ISPRA

Sardegna Ambiente

Municipality of Oristano

Municipality of Tortolì

ISPRA and Sardegna Ambiente 2017

Zero Waste Europe was
created to empower communities
to rethink their relationship with the
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 by Ferran Rosa

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