

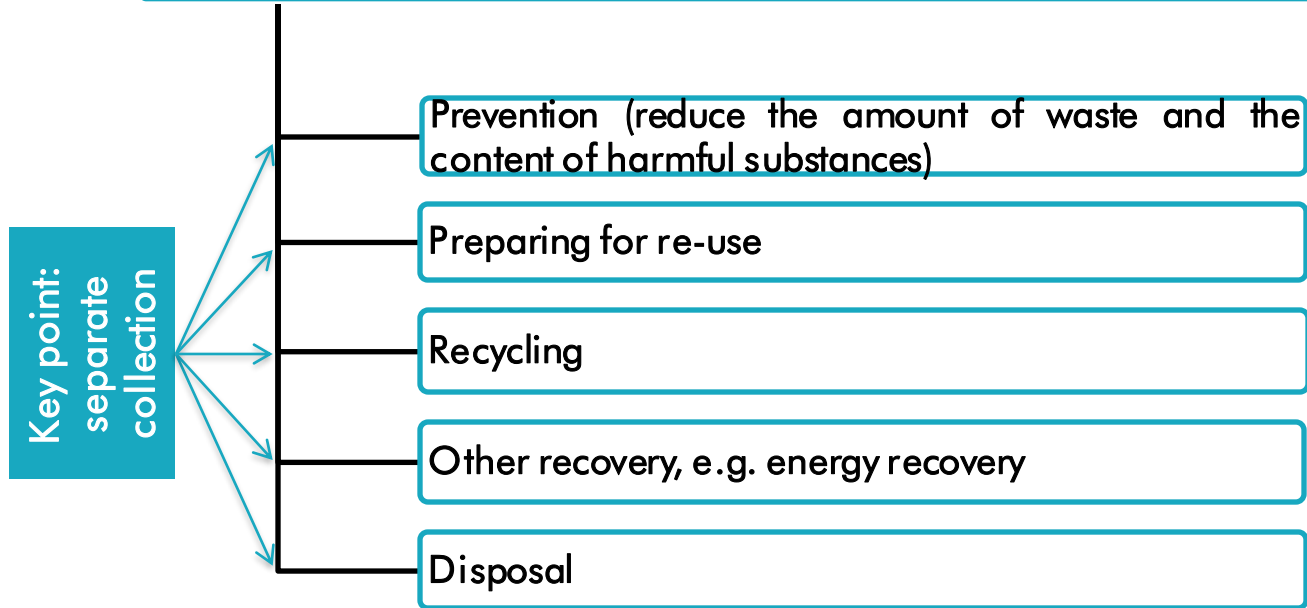


REGIONE AUTONOMA  
DE SARDIGNIA  
REGIONE AUTONOMA  
DELLA SARDEGNA

# MUNICIPAL SOLID WASTE MANAGEMENT PLAN



## European waste management hierarchy



## European Union Environment Action Programme until 2020

landfilling is limited to residual (i.e. non-recyclable and non-recoverable) waste

energy recovery is limited to non-recyclable materials

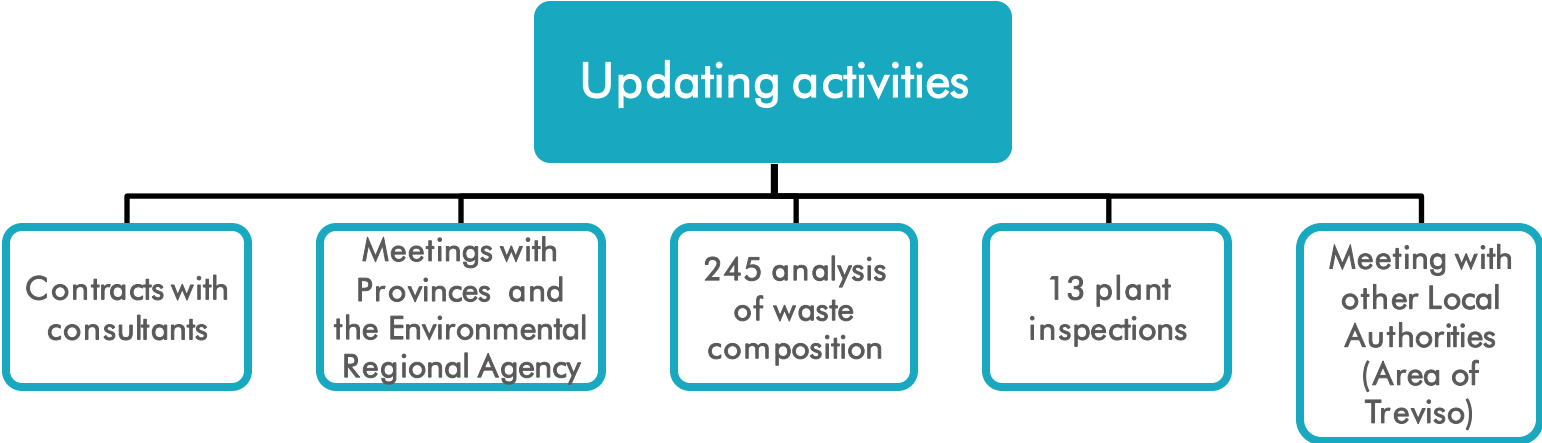
recycled waste is used as a major, reliable source of raw materials for the EU

hazardous waste has to be safely managed and its generation to be reduced

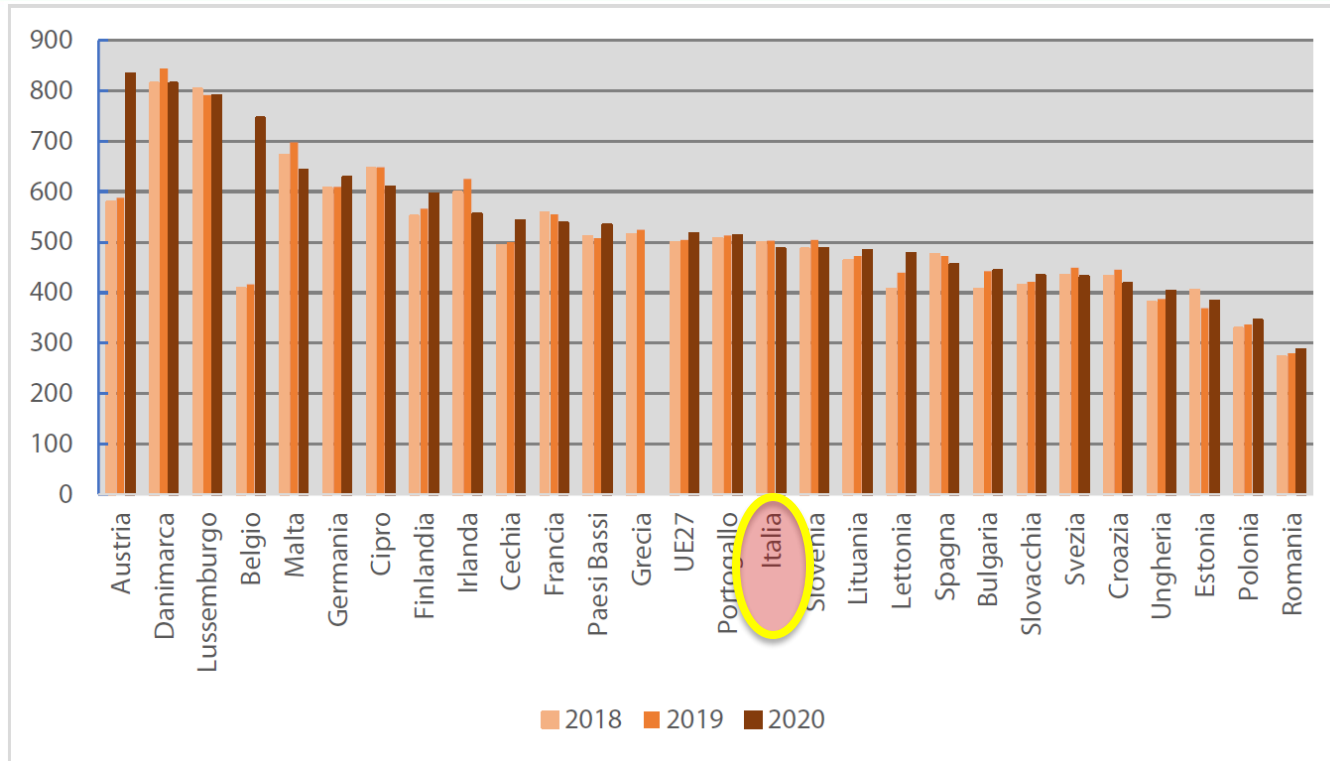
illegal waste export has to be eradicated

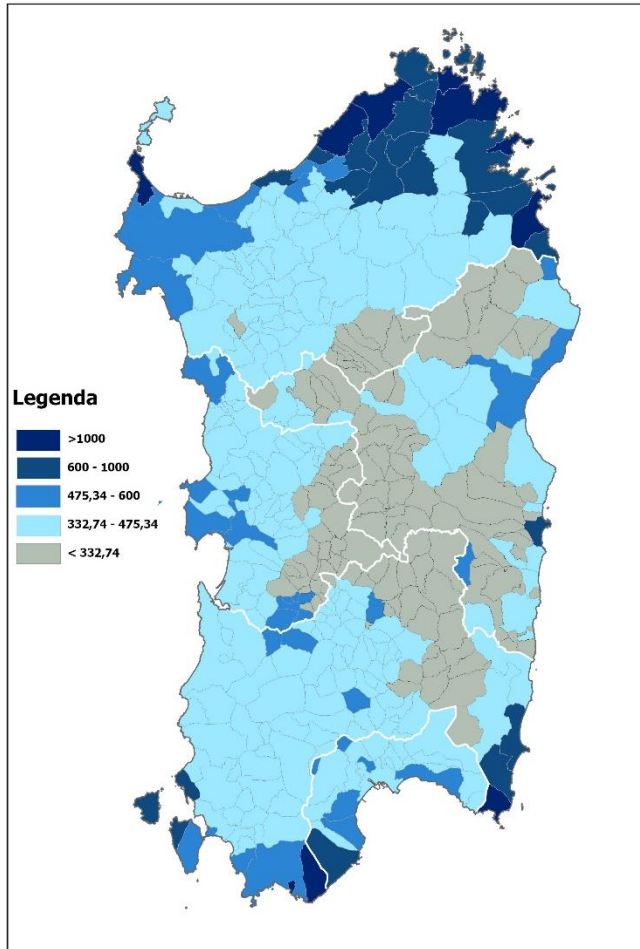
food waste production has to be reduced (avoidance)





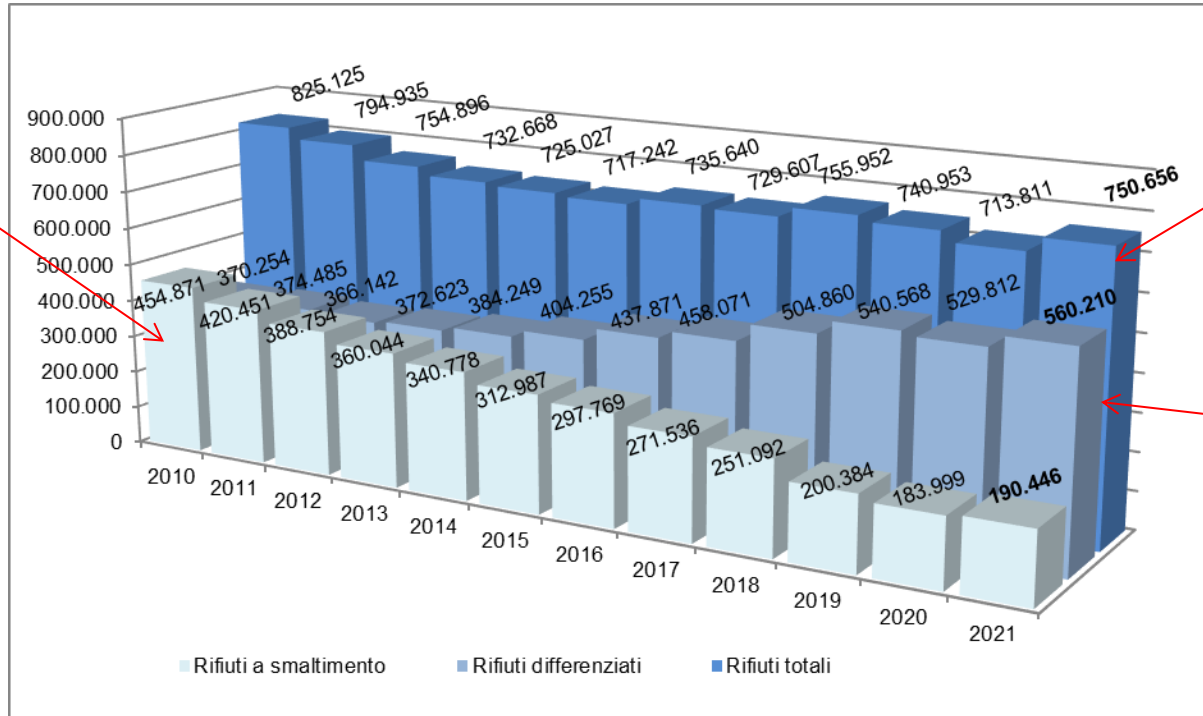
## Current situation of MSW management in EU – kg per capita





436 kg per capita in 2014  
433 kg per capita in 2015  
445 kg per capita in 2016  
443 kg per capita in 2017  
461 kg per capita in 2018  
454 kg per capita in 2019  
447 kg per capita in 2020  
475 kg per capita in 2021

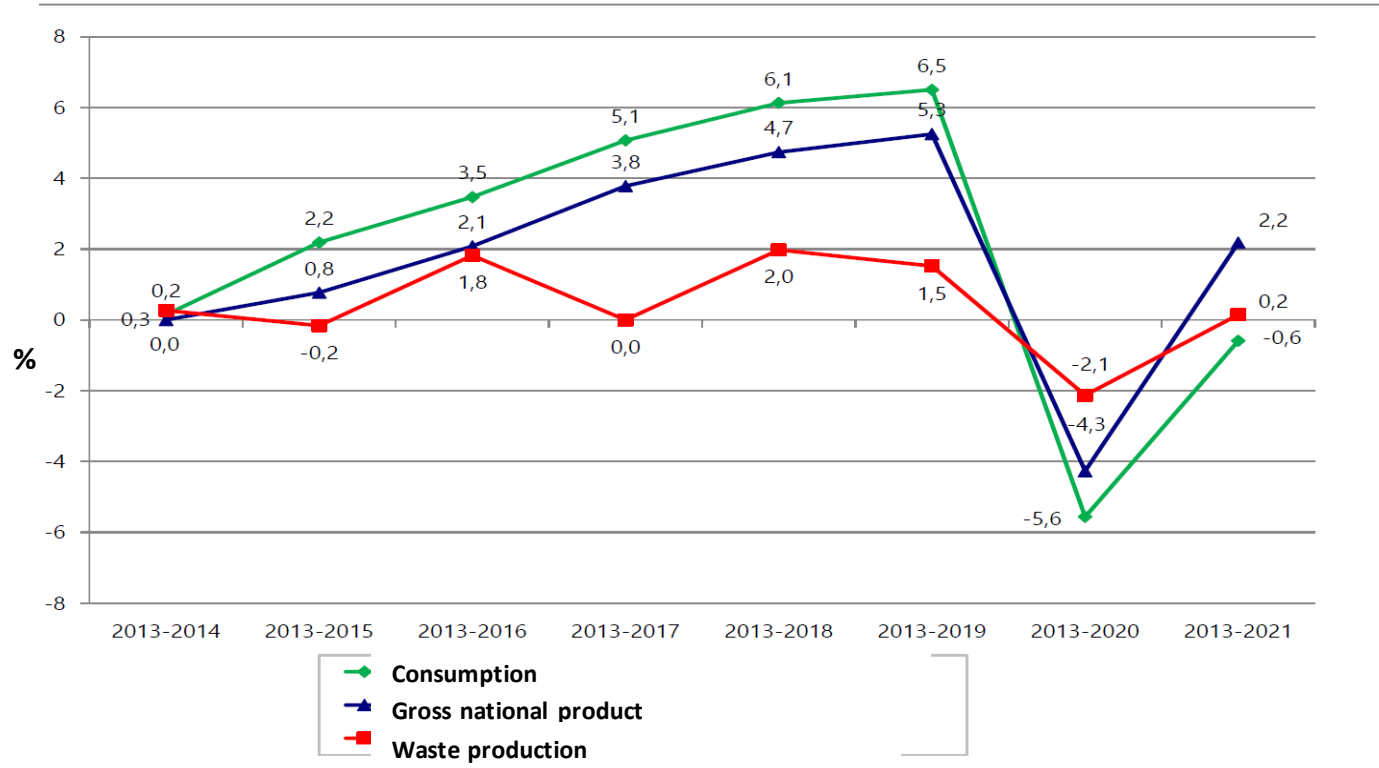
Disposal



Total

Separate collection

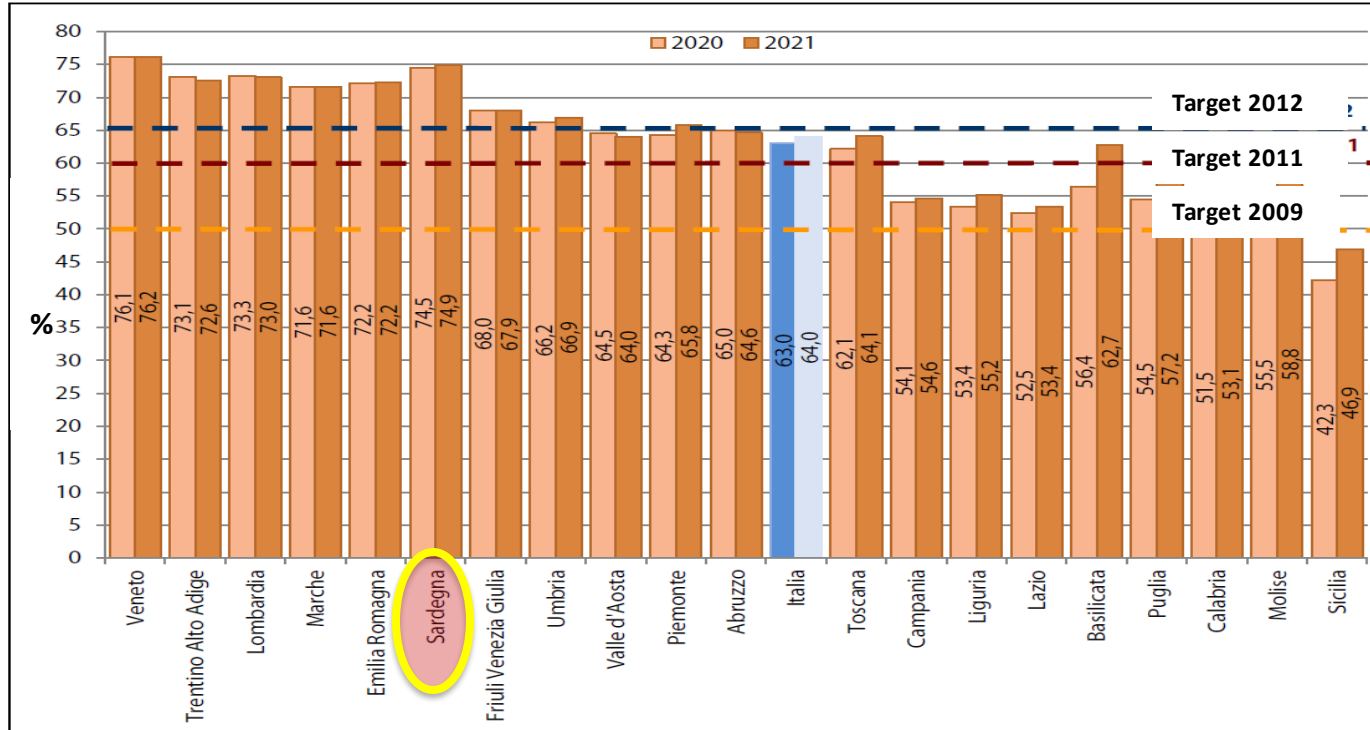




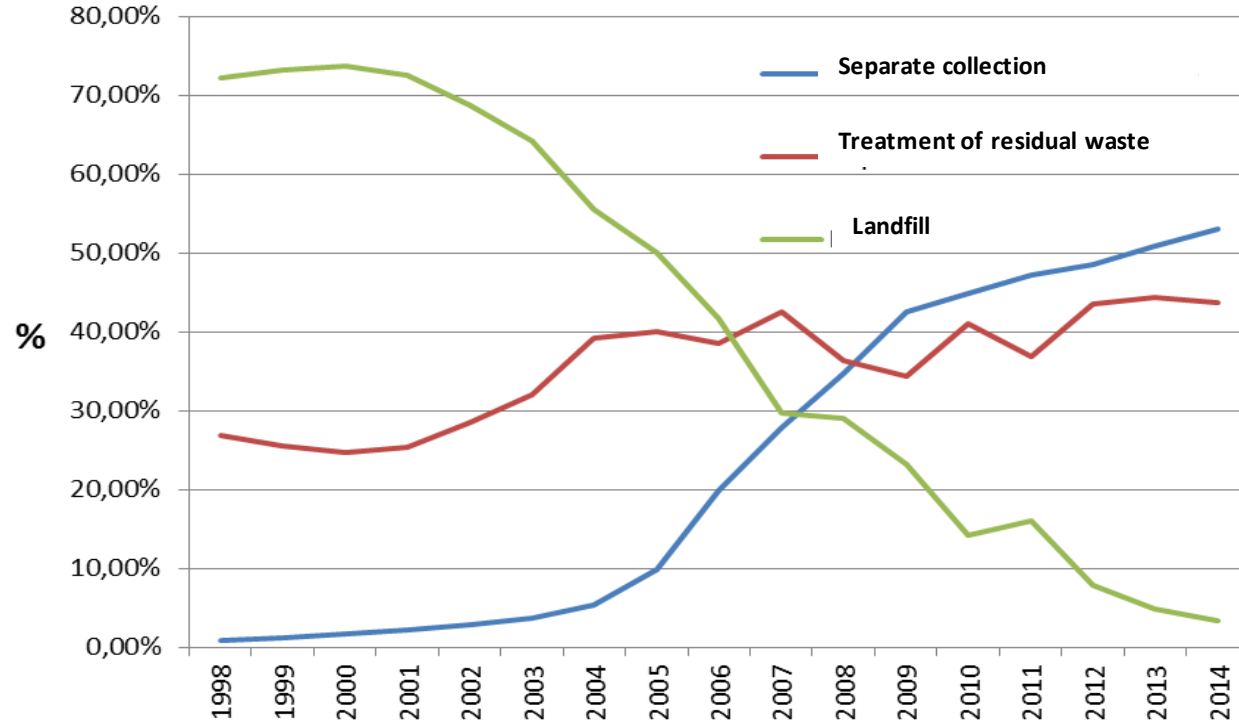


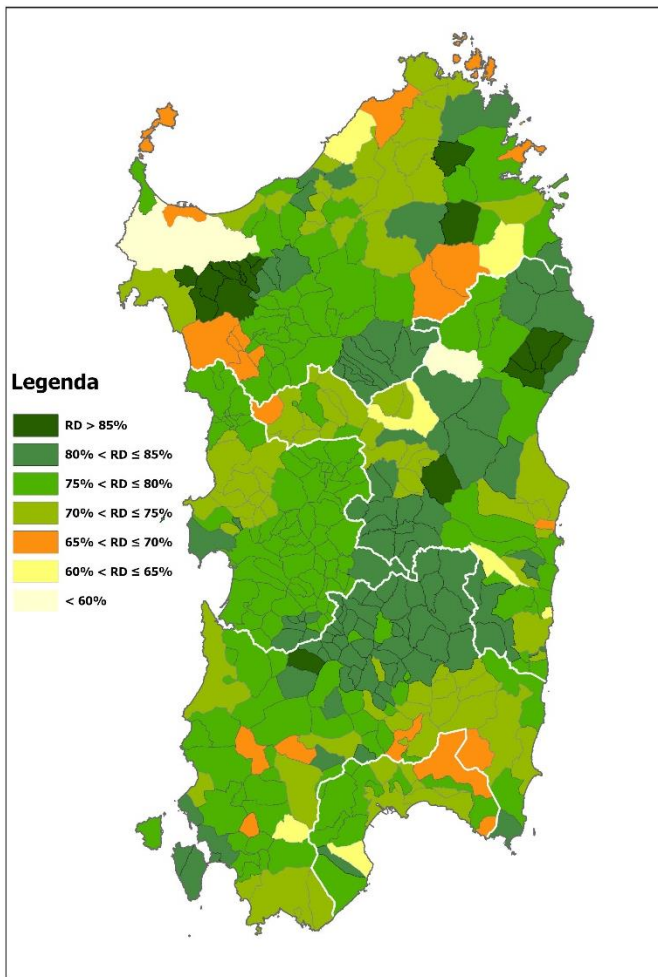


# Current MSW management – Separate collection efficiency in Italy



## Current MSW management – Evolution over time in Sardinia





$$RD(\%) = \frac{\sum_i RD_i}{\sum_i RD_i + RU_{ind}} \times 100$$

$\sum RD_i$  = sum of waste collected in separate way and recoverable

$RU_{ind}$  = residual waste

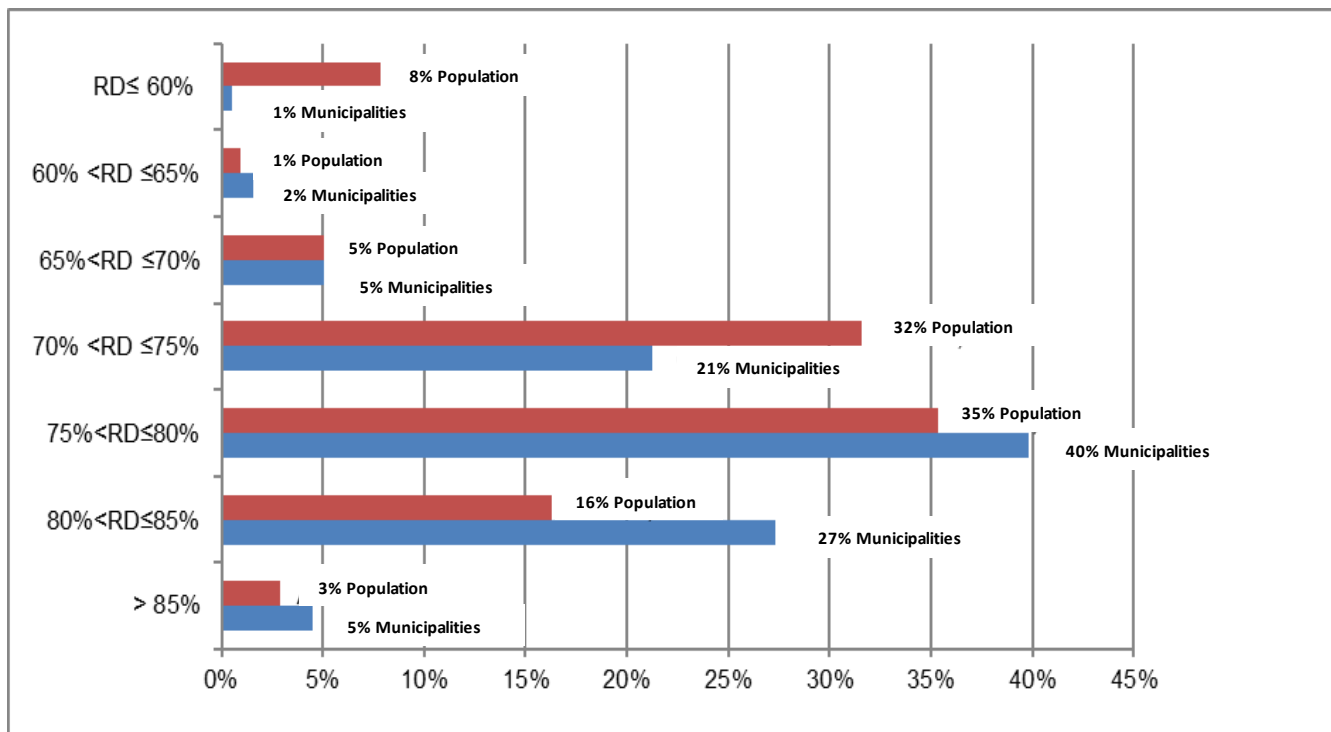


% RD	N. Municipalities	% Municipalities	% Inhabitants
> 85%	17	5%	3%
80% < RD ≤ 85%	103	27%	16%
75% < RD ≤ 80%	150	40%	35%
70% < RD ≤ 75%	80	21%	32%
65% < RD ≤ 70%	19	5%	5%
60% < RD ≤ 65%	6	2%	1%
RD ≤ 60%	2	1%	8%

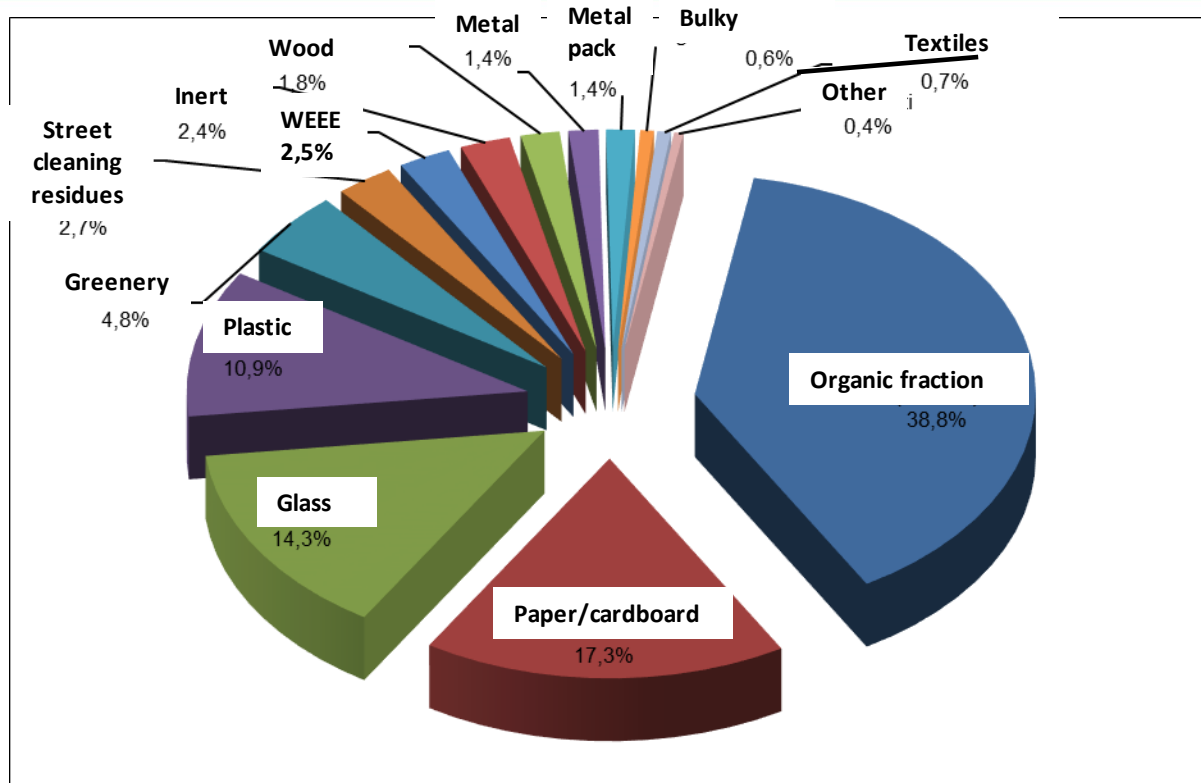
Inhabitants

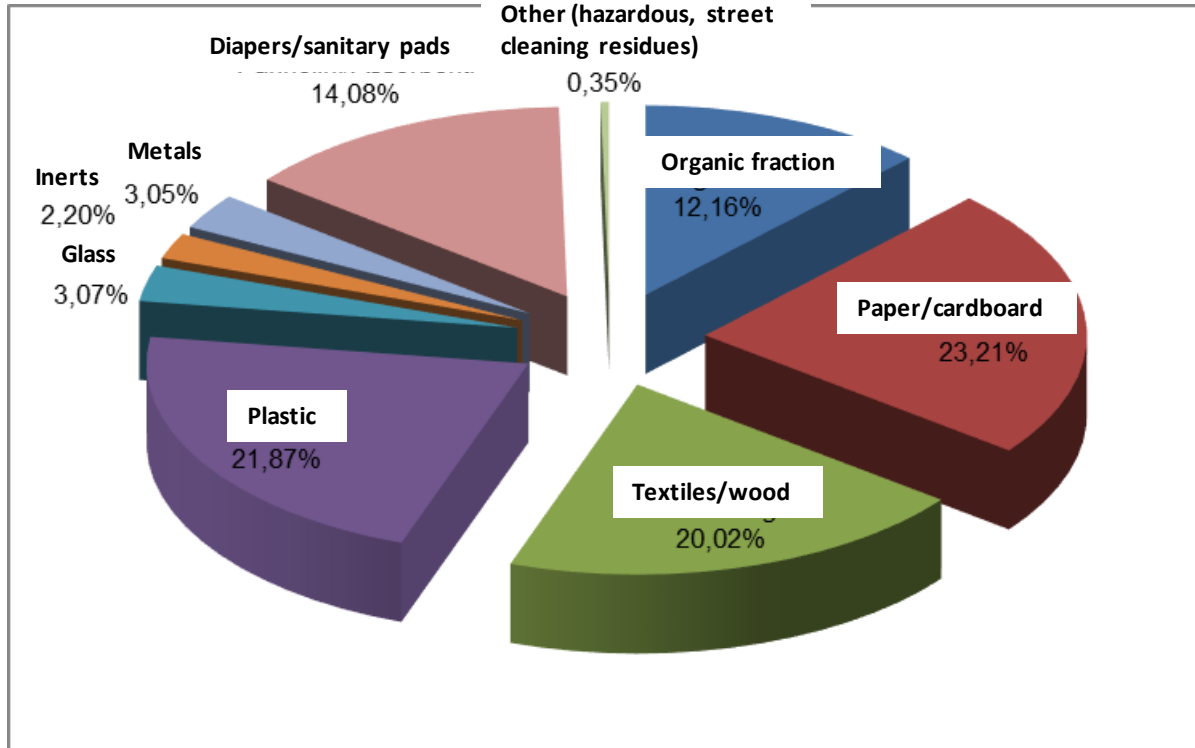


## Current MSW management – Separate collection efficiency in Sardinia



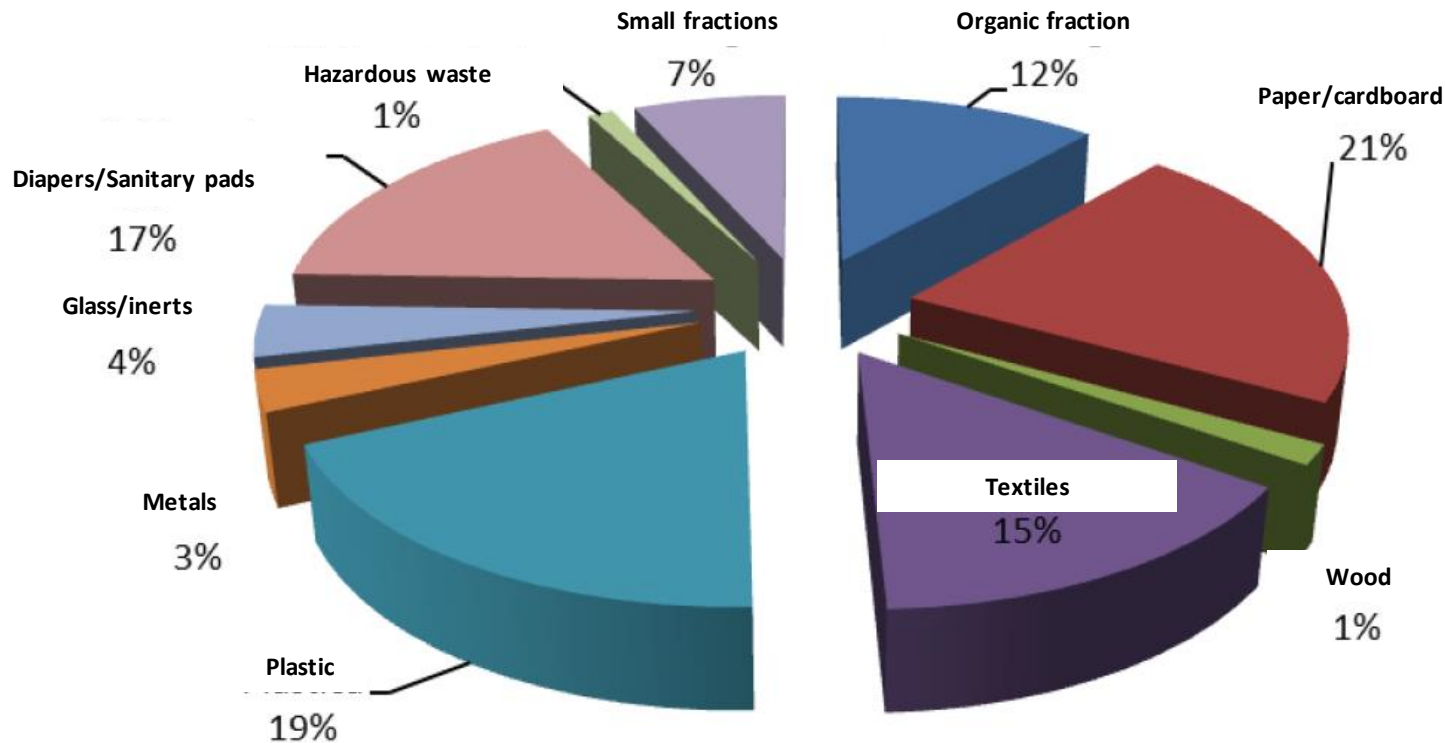
# Current MSW management – Composition of MSW from separate collection



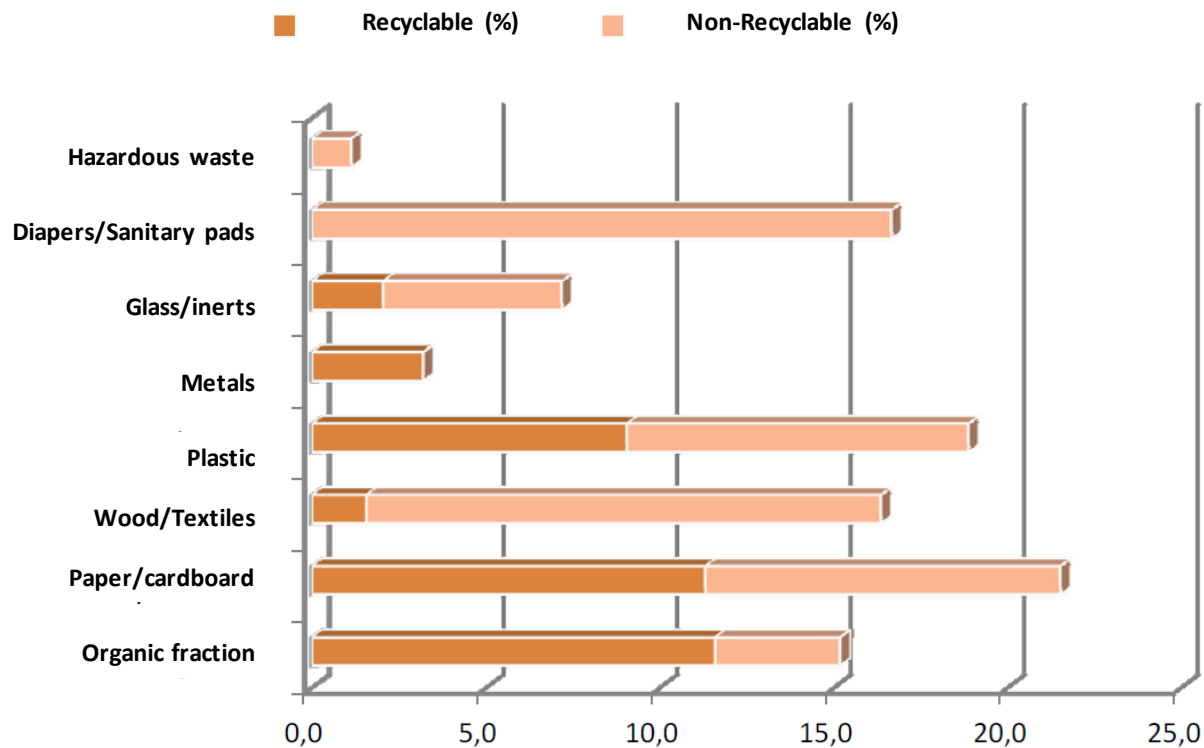


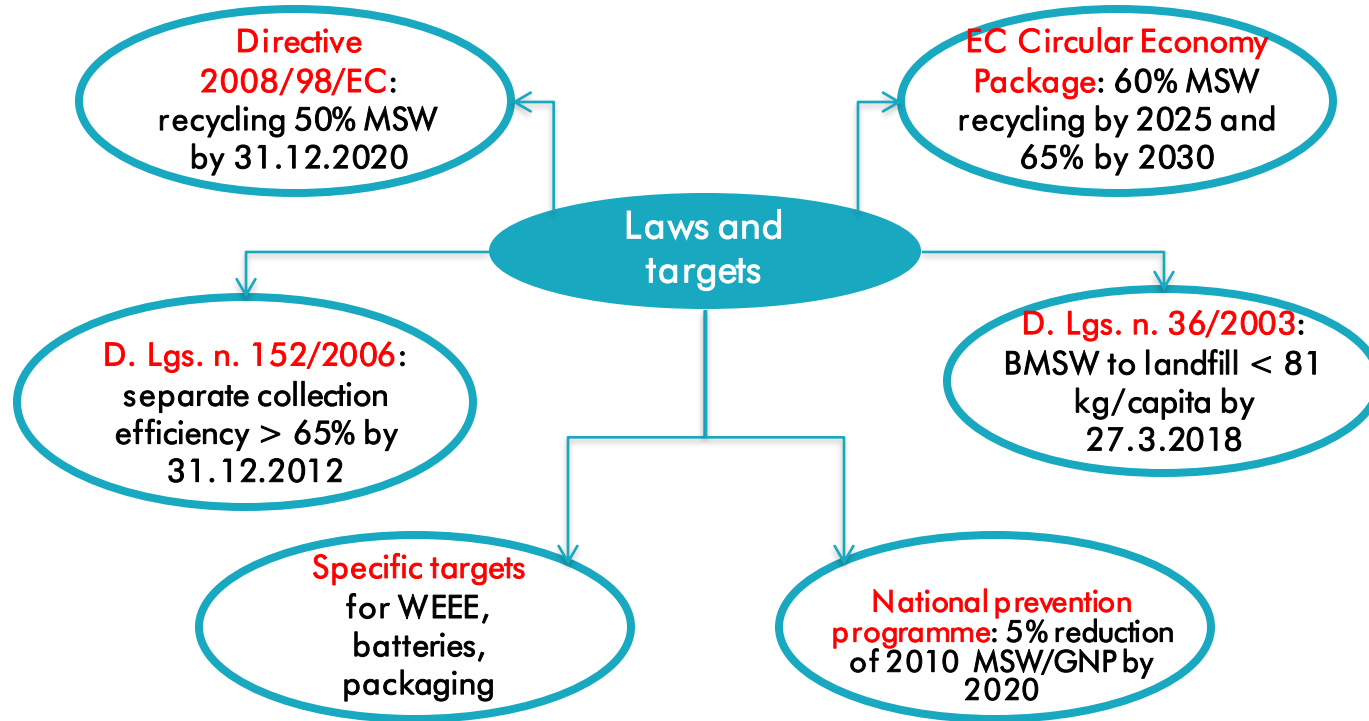


## Current MSW management – Composition of residual waste – Best Municipalities



## Current MSW management – Composition of residual waste – Best Municipalities



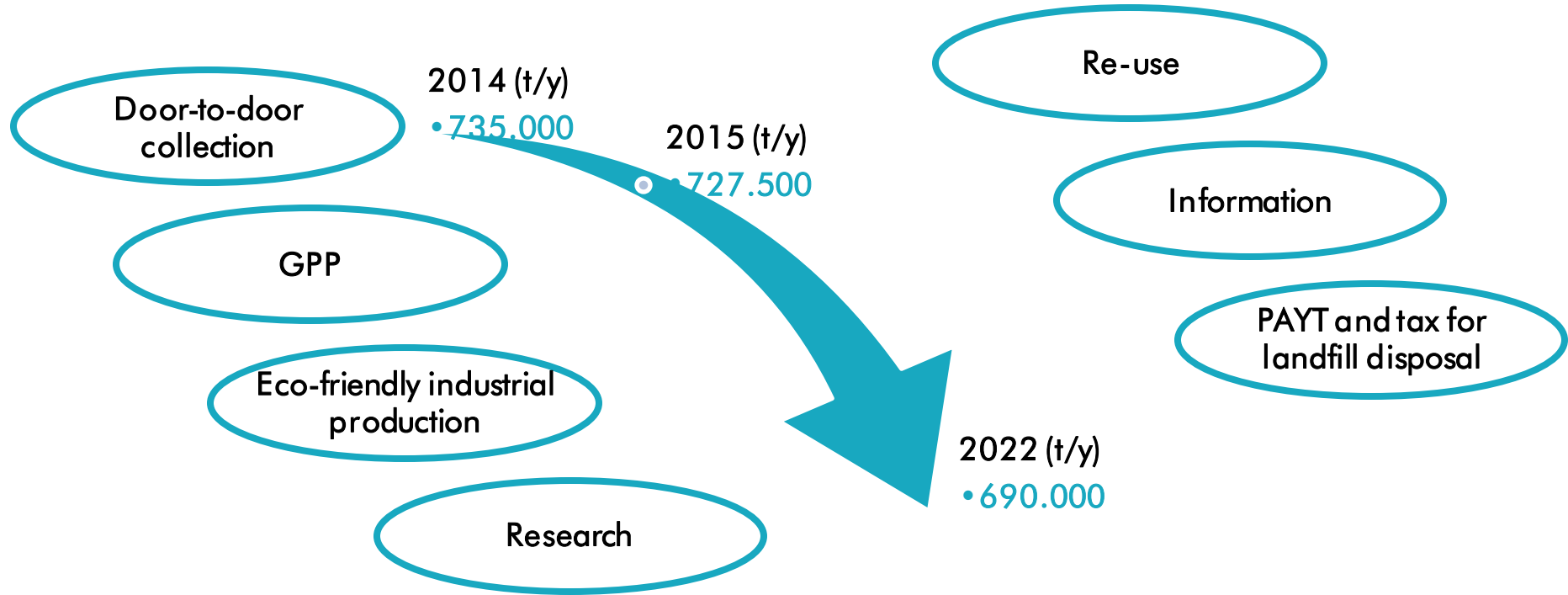


GENERAL OBJECTIVES	SPECIFIC OBJECTIVES YEAR 2022
<b>1. Reducing production and harmfulness of MSW</b>	<b>10% reduction of the 2010 MSW production / GNP</b> before 31.12.2022;
	Reduction of the per capita production down to 415 kg/capita/y;
	Reduction of food waste production;
	Reduction of harmfulness of hazardous MSW.
<b>2. Increasing the amount of MSW to be prepared for reuse</b>	Separate collection and preparation for reuse of specific MSW flows
<b>3. Increasing the MSW recycling %</b>	Development of local enterprises which recycle waste or use recycled waste as a major, reliable source of raw material
	<b>80% target for separate collection efficiency in all the Regions and territorial areas</b> before 31.12.2022.
	<b>70% target (by weight) for preparation for reuse and recycling</b> before 31.12.2022.
	Separate collection and recycling of specific MSW flows: <ul style="list-style-type: none"> <li>- W.E.E.E.,</li> <li>- Batteries and accumulators,</li> <li>- Packaging waste.</li> </ul>

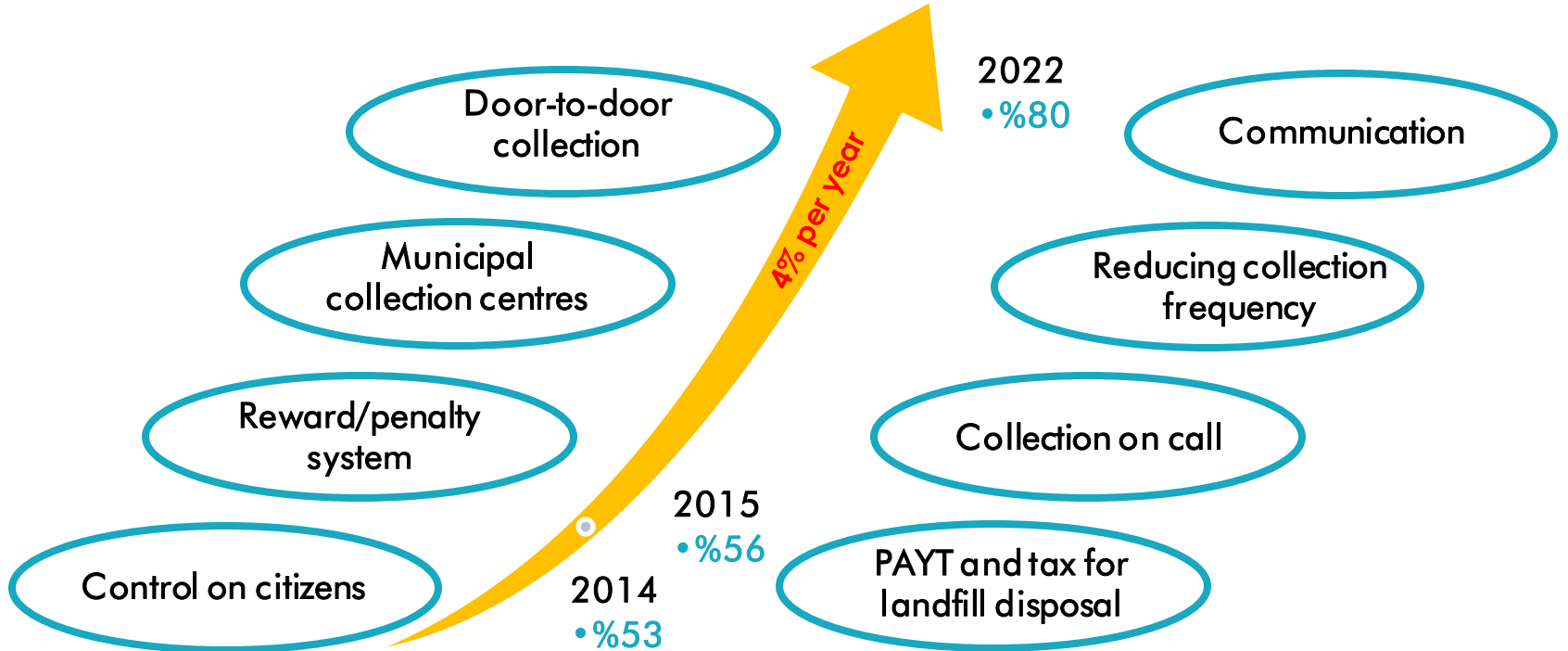
GENERAL OBJECTIVES	SPECIFIC OBJECTIVES YEAR 2022
4. Minimization of thermal energy recovery (incineration)	Energy recovery of only from MSW fractions which are not technically and economically suited for recycling
	Energy recovery from the whole regional residual waste
5. Reducing landfill disposal	Landfilling of MSW fractions which are not suited for material or energy recovery and of residues resulting from MSW treatment
	Reduction of landfill disposal of biodegradable MSW down to 81 kg/capita/y before 27.3.2018 and to 10-15 kg/capita/y before 31.12.2022.
	Zeroing of landfill disposal of recoverable MSW before 31.12.2022.
	Reduction of MSW landfill disposal down to 10% of total production before 31.12.2022.
6. Minimisation of the environmental burden and costs related to the integrated waste management	Reduction of greenhouse gases production related to the regional integrated waste management system
	Optimization of the location of recycling plants according to the proximity principle
	Technical-economic optimization of biodegradable MSW recycling processes
7. Reduction and prevention of desertification	Increasing the amount of organic carbon in the soil
8. Management of the transitional period until the constitution of the new Authority for integrated solid waste management in the optimal territorial area	Assessment of the public plants that will be used by the new Authority for the integrated management of MSW
	Preserving the public property of disposal plants.
	Optimization of disposal costs by using standard costs and standardization of disposal fees



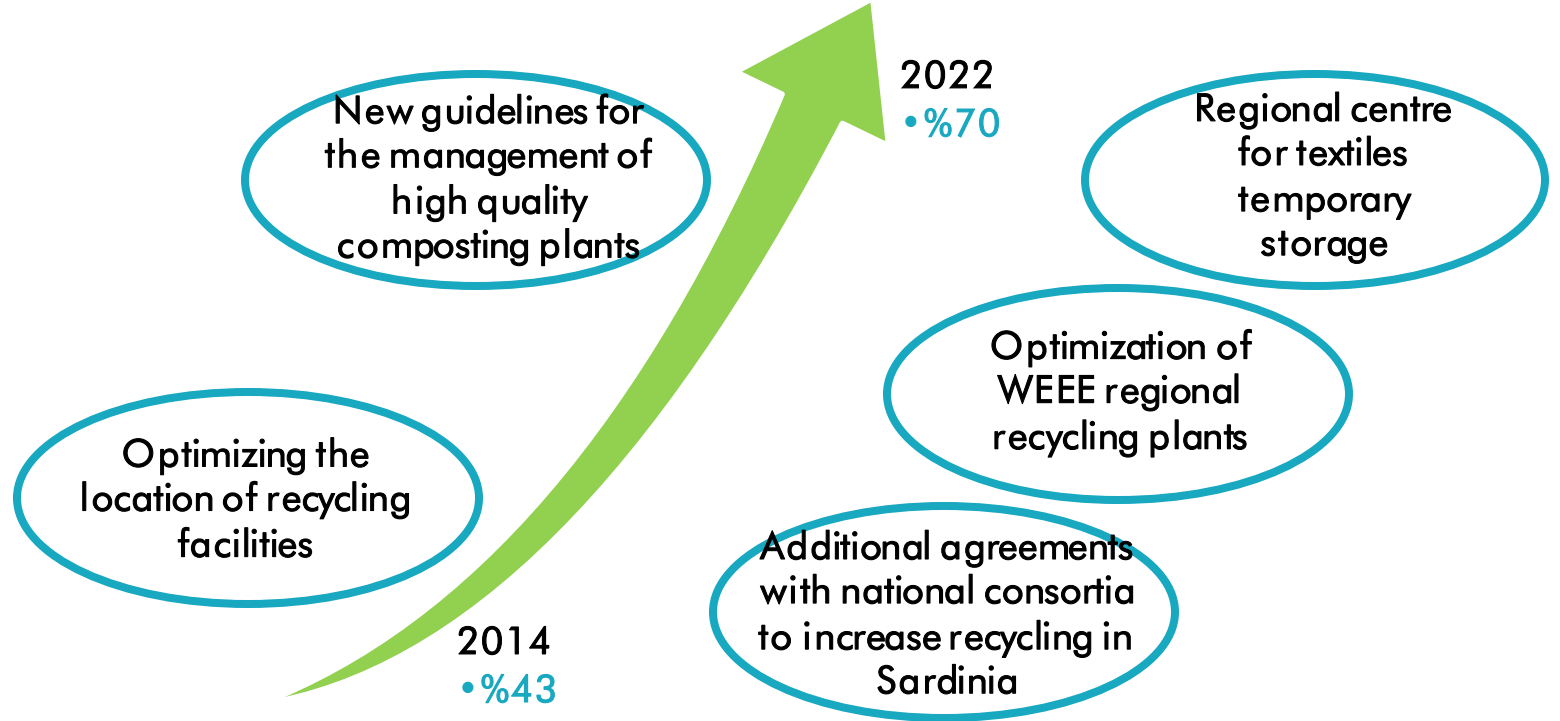
Target: 10% reduction of the 2010 MSW production / GNP before 31.12.2022



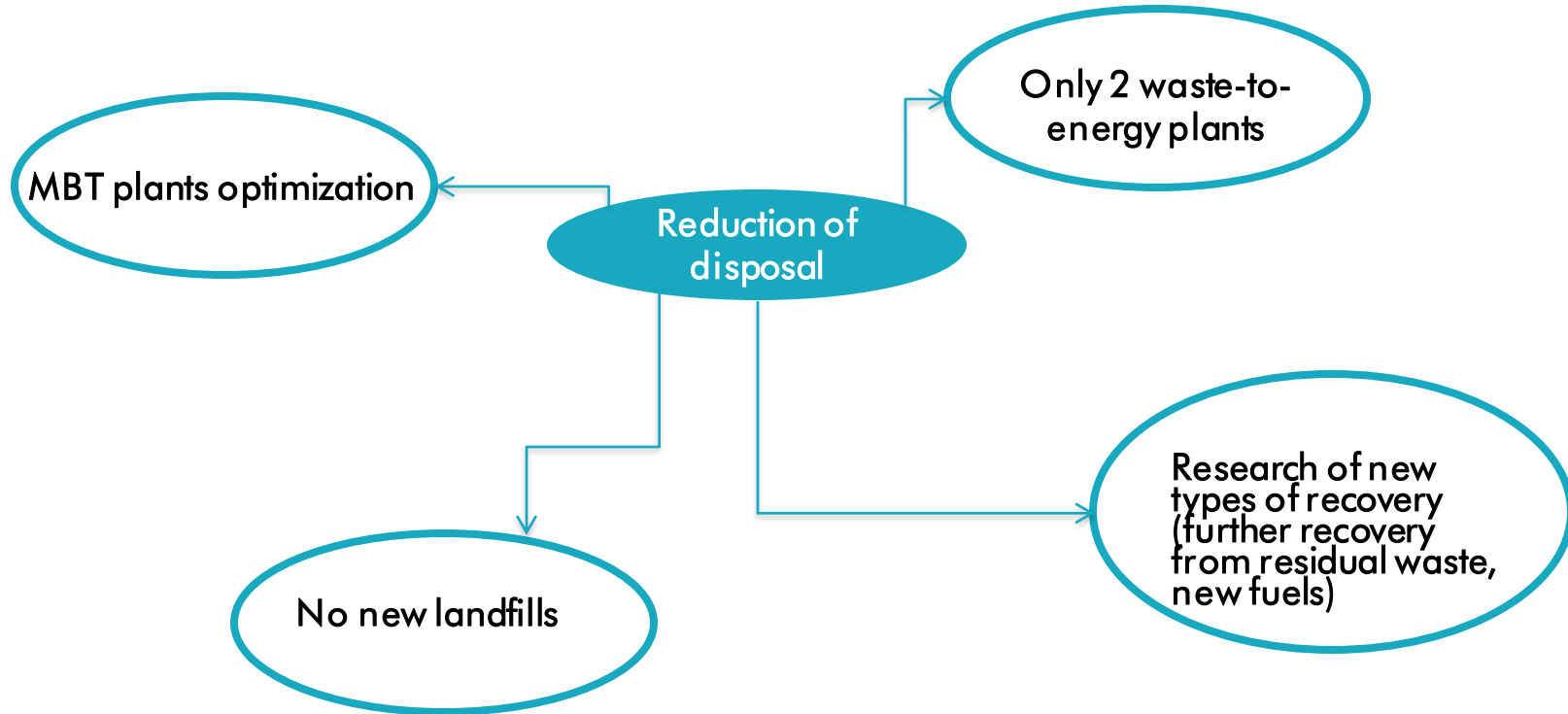
Target: 80% efficiency



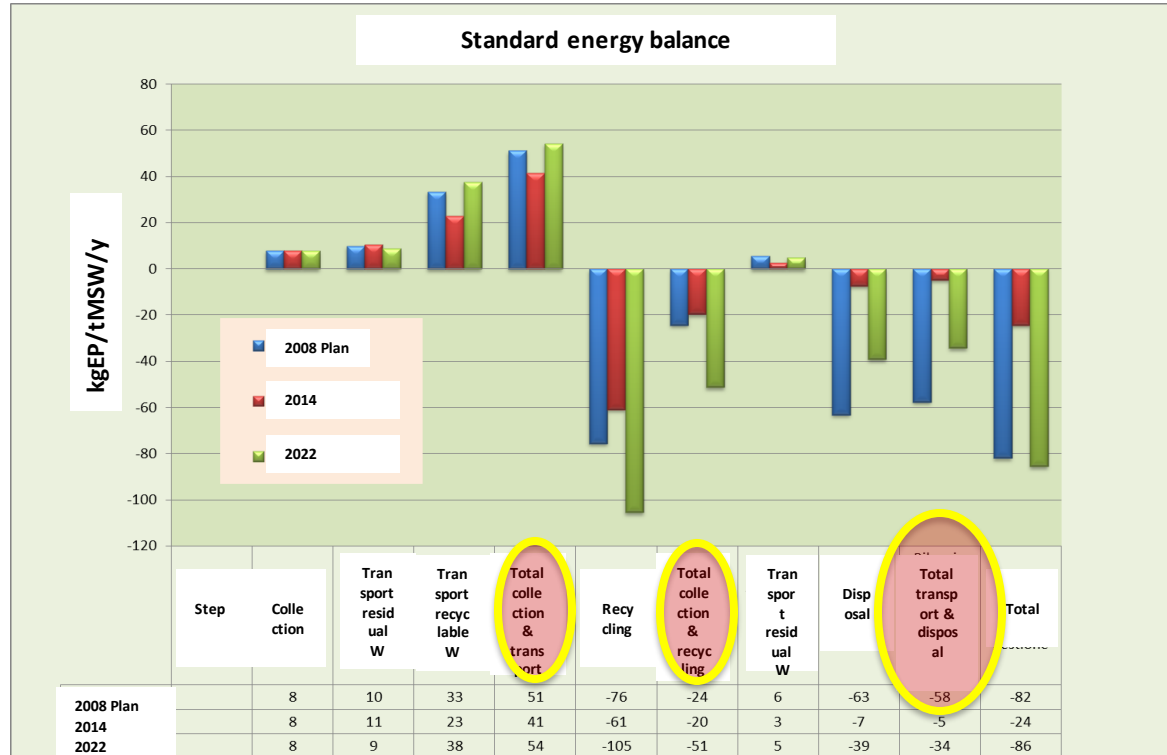
Target: recycling 70% of overall production



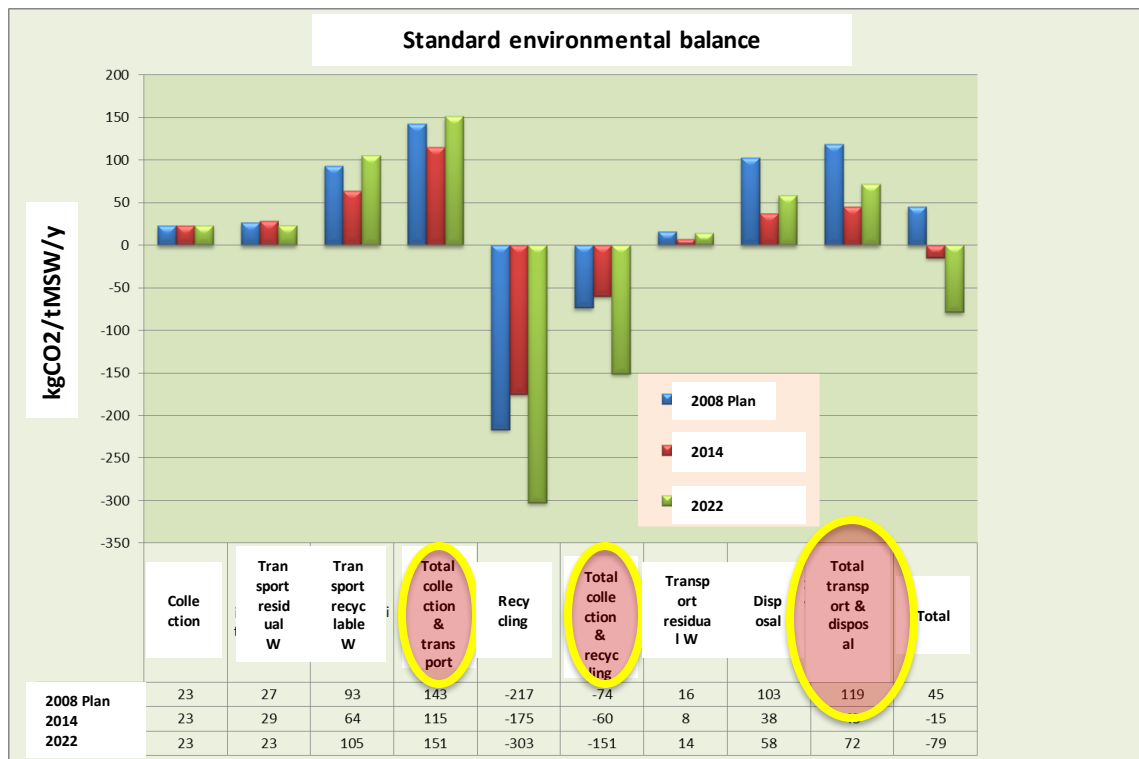


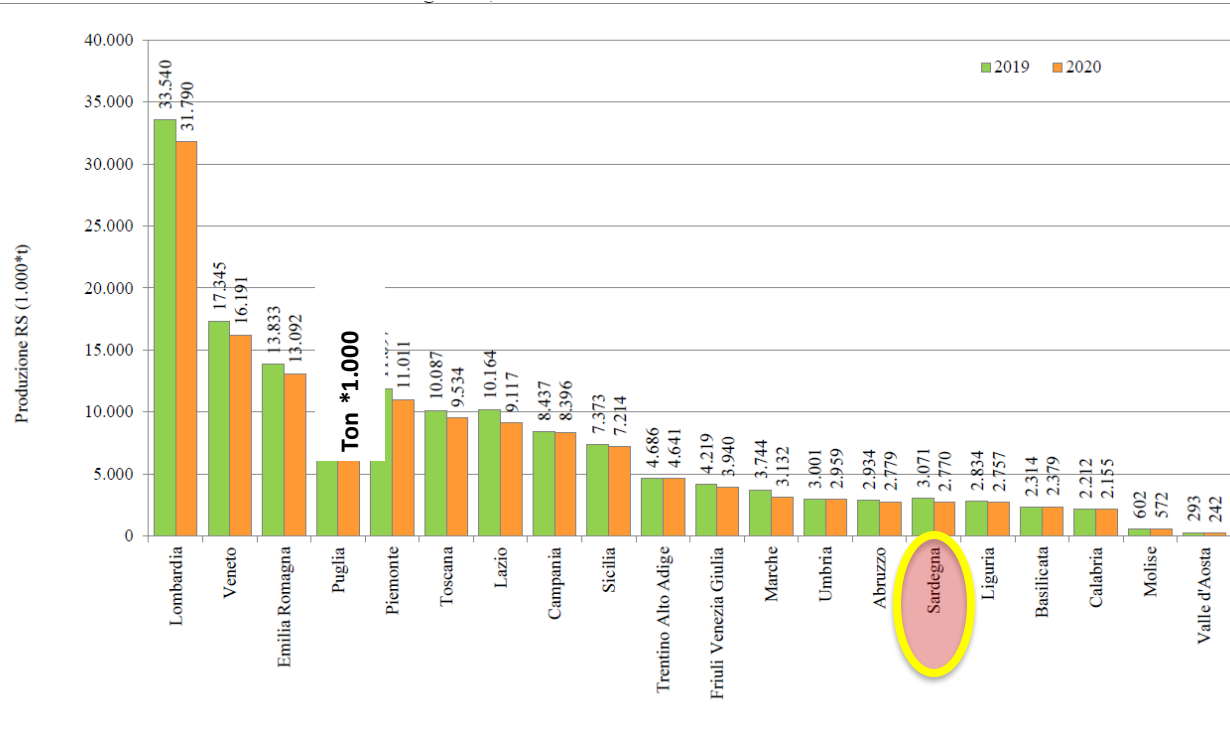


# Municipal solid waste management plan updating – Energy balance



# Municipal solid waste management plan updating – Environmental balance





Big producer	536.026 tons
Inerts	929.908 tons
Rehabilitations	101.305 tons
Secondary	115.932 tons
Others	756.952 tons
<b>Total 2018</b>	<b>2.440.124 tons</b>

