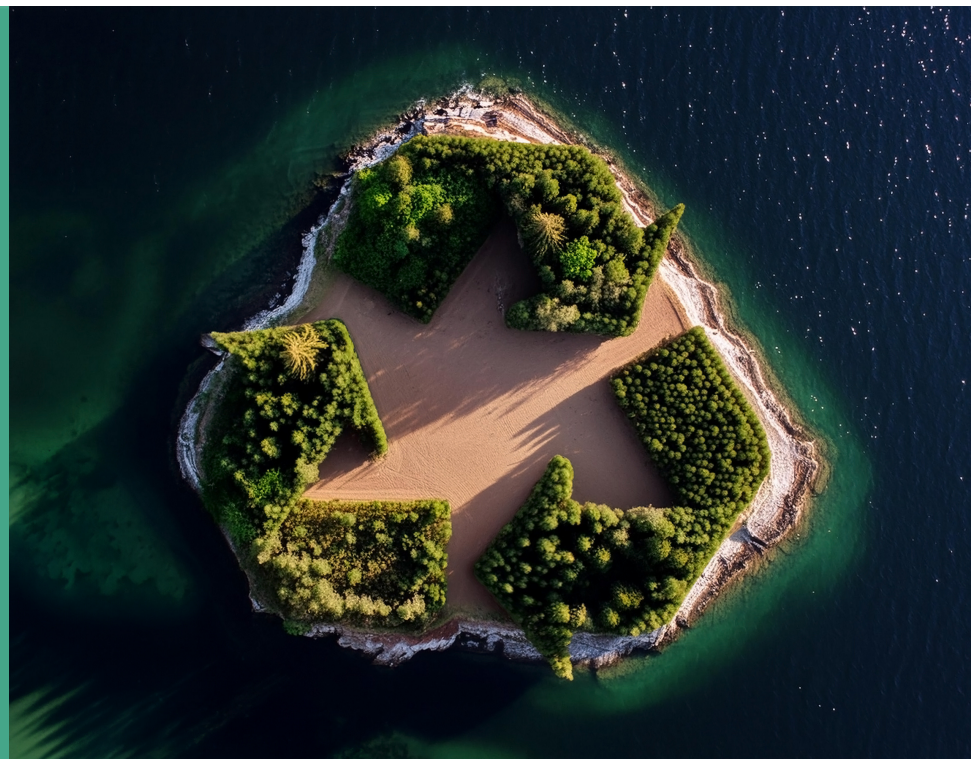


Transforming Islands' Waste Management: Overcoming Challenges with Sustainable Solutions



20 - 21 November 2024 | Berlin



**German RETech
Partnership**

On behalf of:



Federal Ministry
for the Environment, Nature Conservation,
Nuclear Safety and Consumer Protection

of the Federal Republic of Germany



MSW and Recycling in Italy – a focus on schemes applied in Mediterranean areas

Novembre 2024, Berlin

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Altereko sas, Verona – Italy

www.altereko.it



About Altereko...

- **27 years of experience in planning MSW management**, designing and up-grading of collection and transport schemes, assessing recycling facilities (focus on composting), planning communication and participation initiatives, chairing multi-linguistic, multi-tasking working groups or projects.
- **18 year foreign working experience** as consulting expert focusing on issues related to solid waste management. Extensive consultancy experience in the Solid Waste Sector – on Strategy and Policy, Fees&Taxes, Separate collection schemes - , both in ‘advanced’ and ‘low to middle income’ countries in Europe, Latin America and Asia.
- **13 years experience cooperating with international organisation/agencies** (as ECN-European Compost Network, ACRR, EEA-European Environment Agency, Sweepnet-GIZ, FAO, WorldBank, UNEP).

CV

Waste Management Companies\Italy



Public Authorities and Organisations\Italy



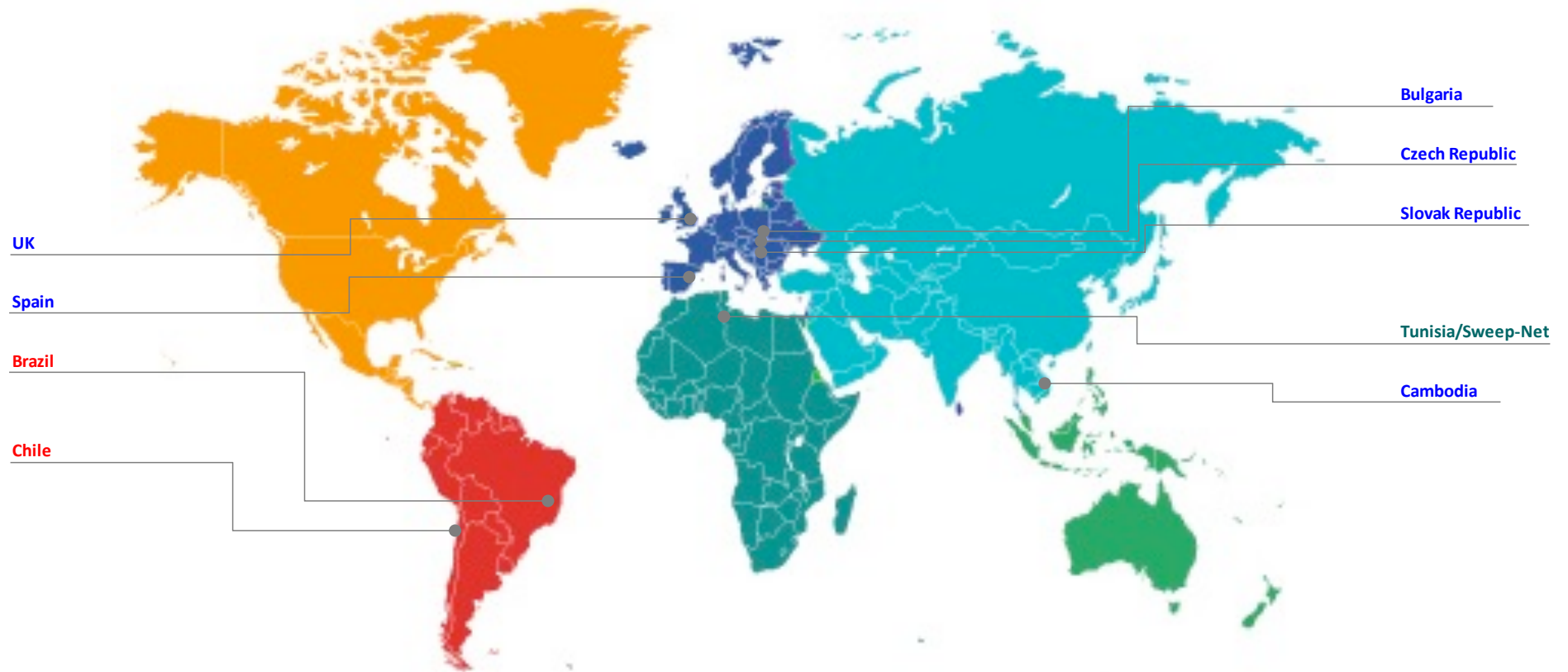
International Organisations



International clients and companies



Activities (outside Italy)



Content of the presentation

- Key elements about MSW recycling in Italy
- Key elements of the design of MSW collection in Italy
- The role of IT devices to meter waste generation and monitor collection service
- Examples from a touristic Island - Pantelleria

Italy: Main legislative drivers

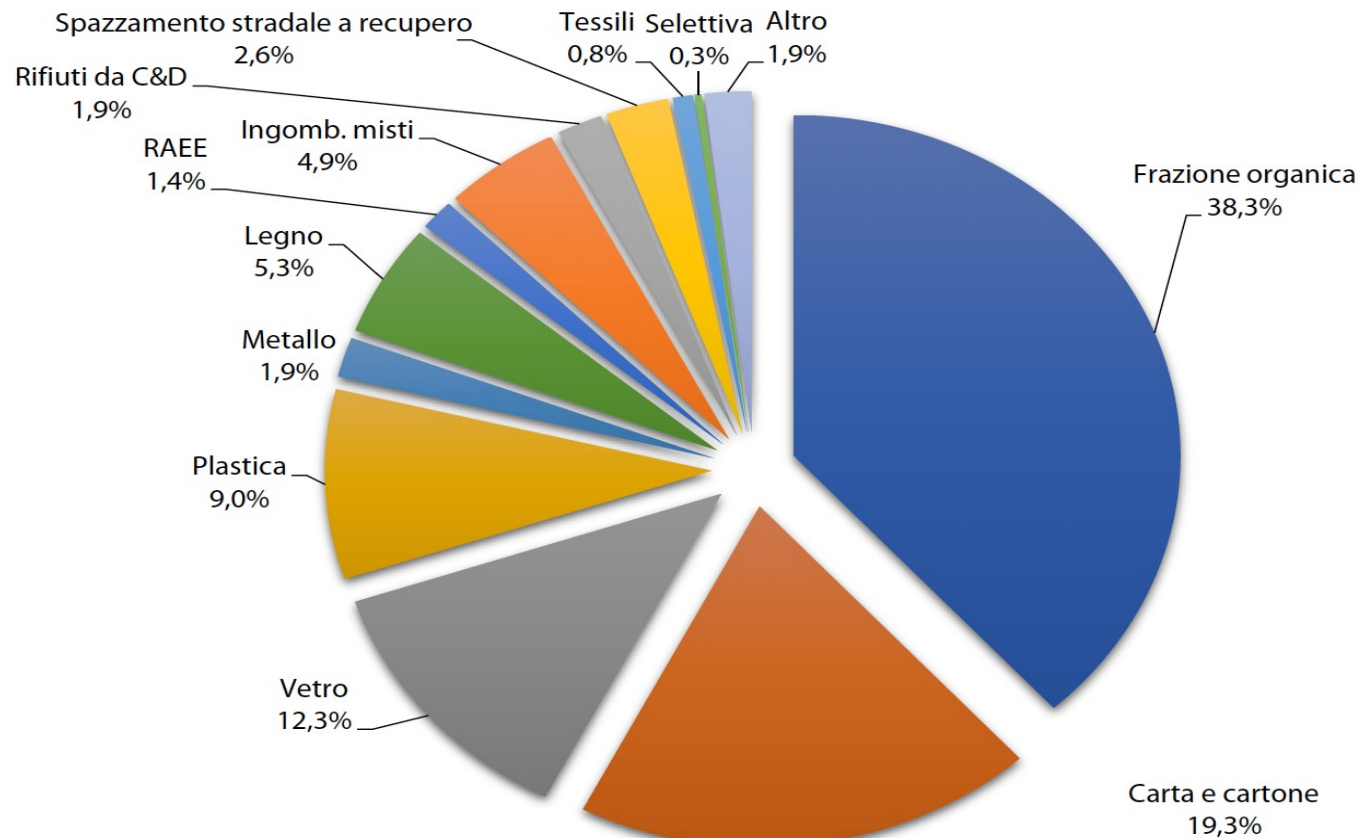
Italian WFL (DLGS 152/06) requires Municipalities/District-Areas to:

- reduce by 2012 disposal to 35% of total MSW (total sep. coll. min 65%)
- Collection of Biowaste with reusable bins and/or compostable bags;
- Increases landfill-cost by 20% for WM districts not complying to recycling target

Updates about IT legislation after 2018:

- by Jan-2022 mandatory separate collection of biowaste
- Incentive for biogas from biowaste & upgrading to biomethane

Separate collection of MSW in IT (year 2022)



RD	Kg/ab/y
Biowaste	125,1
Paper	61,3
Glass	38,2
Plastics	28,4
Metal/cans	6,3
Wood	17,1
Others	45,0

ISPRA: Rapporto rifiuti urbani 2023

Modern MSW management in Italy



Convenient tools to sort biowaste (food waste)

Sorting at home

- Vented kitchen caddies
- Compostable bioplastic
- For each household



Delivery to the collection

- In line with weekly production of a standard family
- Manual emptying
- High-density waste (it's wet food....)



Since 2015: new collection tools for residual waste



- 1 x 40 liter per family
- TAG RFID
- Collection services are traced
- Collection frequencies are low (i.e. 1/2weeks) compared to standard (i.e. 1/week)

Hardware on board and tracking of collection services

Low-cost small truck are used for door-to-door collection

Microchip serial code are automatically detected during normal emptying operation. No extra work for the operator

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*Collection dates are visible on real time on web using a laptop, tablet, smartphone etc. etc.
*Dates can be easily exported to Excel file



Veicolo	Storico	Tempo	Stato
Veicolo	Tutti i veicoli		
Tag ID	Tutti		
Servizi	Personalizzato		
Dal	21/12/2012	00:00	
Al	21/12/2012	23:59	
Cerca			

Data research interface



Codice/Descrizione	N°
E0040000270	21/12/2012 07:36
Strada 55 - (101)K 910 ZL - PRES.	
E0040000103	21/12/2012 06:10
Strada Provinciale 101 - (101)K 958 ZL - PRES.	
E0040000137	21/12/2012 07:49
Via Sperto Nervo - San. - (101)K 958 ZL - PRES.	
E0040000144	21/12/2012 06:38
Via Maria Gioia - San. - (101)K 958 ZL - PRES.	

Serial code E0040000270
E = ECODEPIONE SpA
0040 = 40 lt bucket
P = Plastic collection
005270 = serial number

Microchip serial code, truck n° plate, address, hour etc. etc.

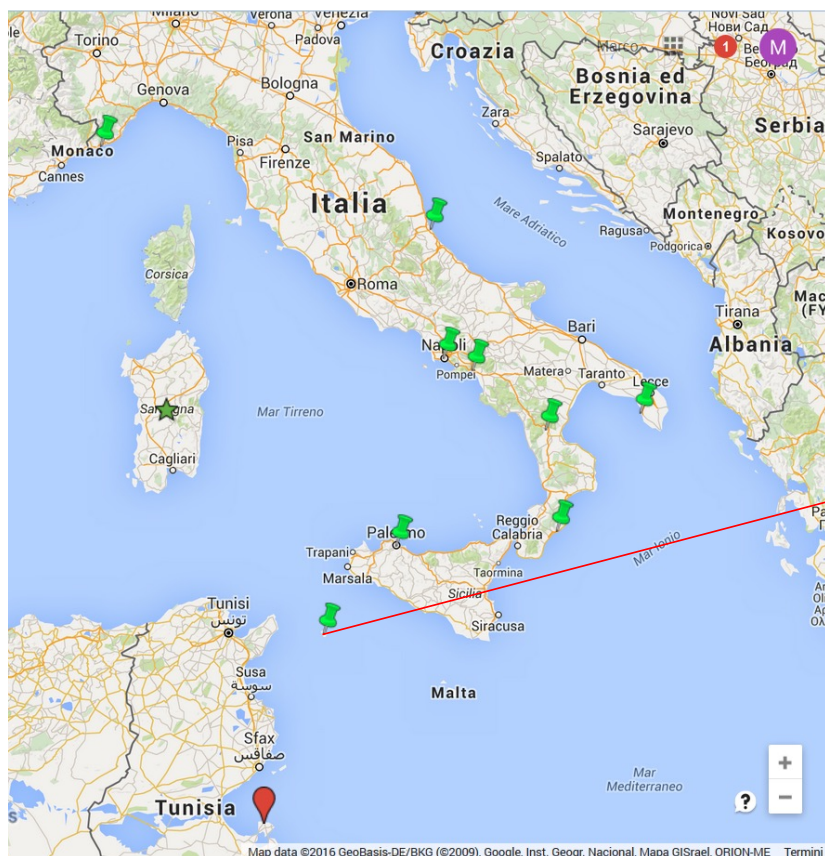


GOOGLE Streetview connection

Examples of intensive sorting schemes for waste collection:

Pantelleria island

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Pantelleria: key data

- Volcanic Island (UNESCO Heritage)
- Economy: Vineyards and Tourism
- Area: 83km²
- Location: 110km from Sicily, 70km from Tunisia
- Houses for vacations
- Few Hotels
- Residents : 7.715 (up to 15.000 in summer)
- Tourist: 80.000
- Service managed by Agesp, private company (tender)

MSW management: before and after

2014

Bring schemes



2015/2016

Kerbside collection (stepwise)



Equipment for collection at HH

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Collection in Pantelleria

MSW management Scheme	Residual waste	Food waste	Paper	Plastics & Cans	Glass	Mobile Collection	Collection Center
Main collection scheme	Kerbside	Kerbside	Kerbside	Kerbside	Kerbside	Bring scheme	Bring scheme
PAYT charge	no						
Collection tools for Households	40 liter buckes with RFID-TAG	23 liter buckes and 240 liter bins	40 liter buckes	40 liter buckes	40 liter buckes	set of 240 liter bins	
							
Collection N/week HH	2	3	0,5	1	0,5	2h/day/zone	
Collection N/week Commercial Act	2	6-7	4-7	4-7	4-7		
Amounts collected (kg/inhab/yr)	130	82	51	32	53		56

Kerbside collection

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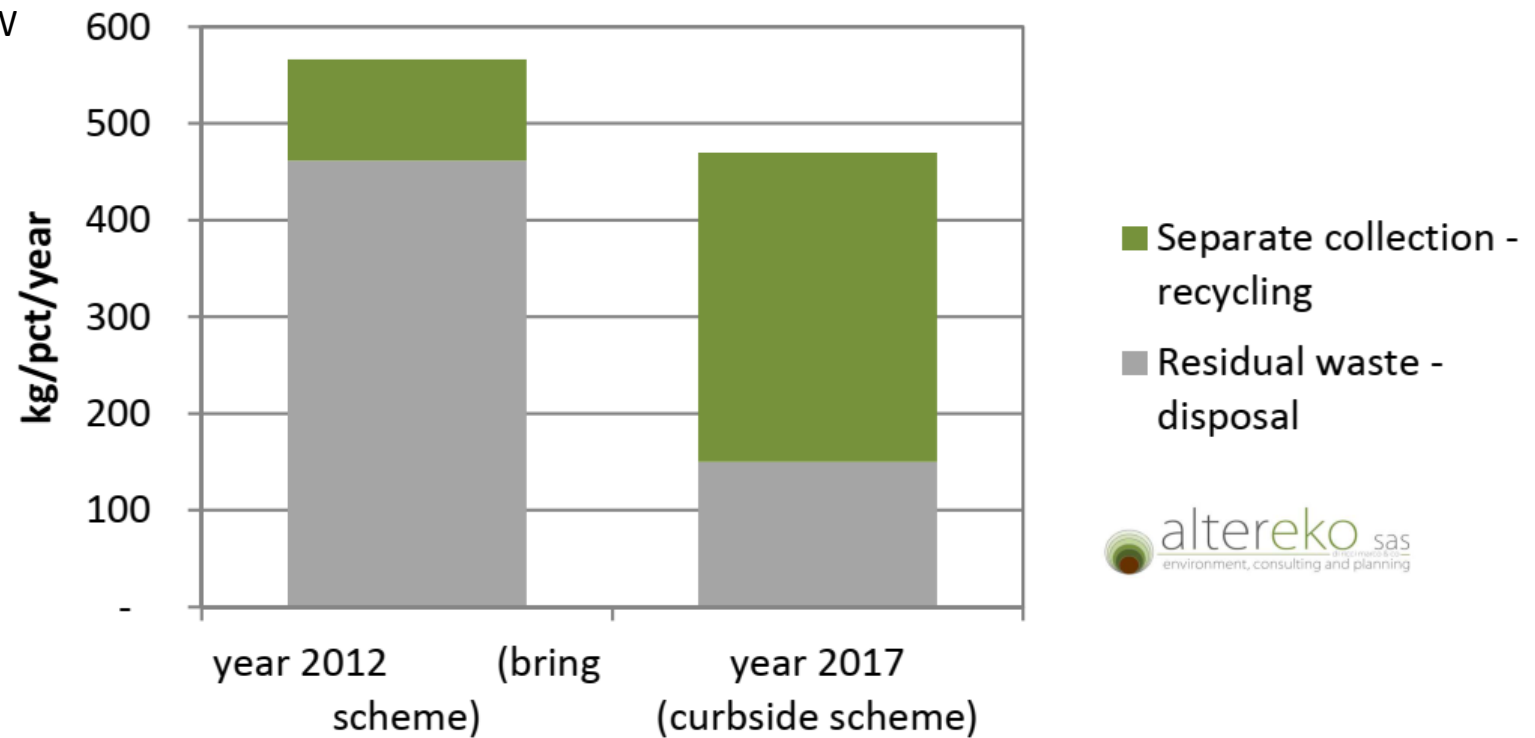
 **altereko** sas
di ricci marco & c.
environment, consulting and planning



Comparison between collection schemes

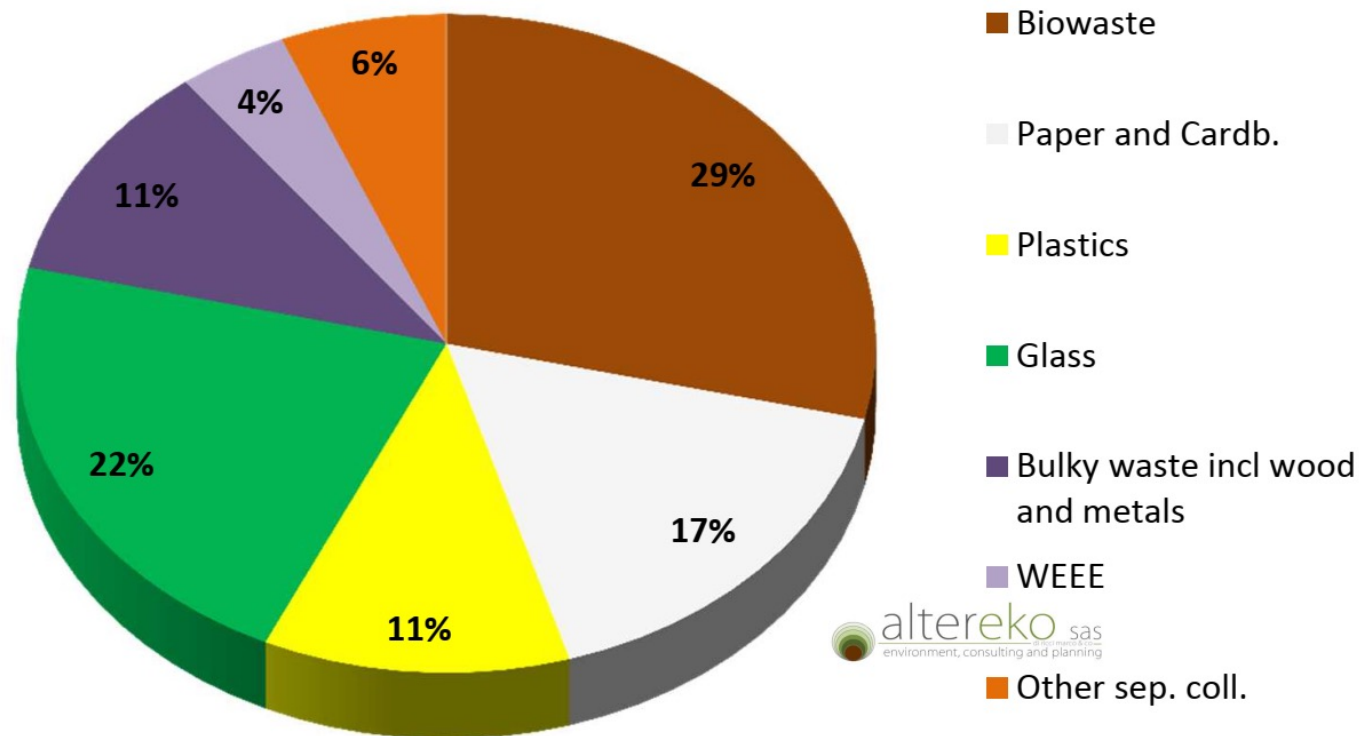
- 1.3 kg/p Total MSW
- -67% Disposal of MSW
- +200% recycling

MSW production, Island of Pantelleria (IT)



Results of MSW separate collection

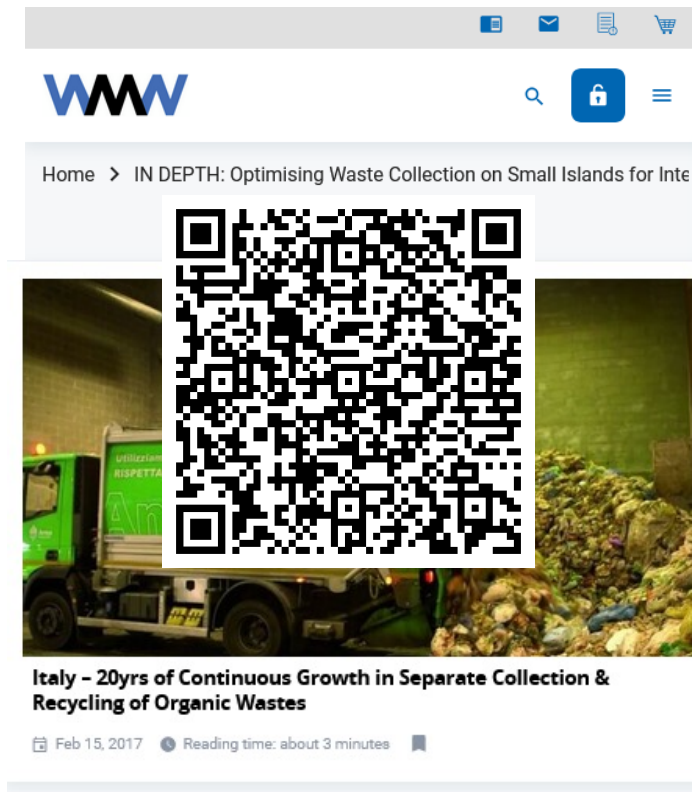
Separate collection year 2017, Island of Pantelleria (IT)



Lessons to be learned

- User-responsible collection scheme
- Never collect Food waste without a bucket/bin
- Choose the correct volumes
- Vented kitchen caddies need compostable liners
 - Paper
 - Bioplastics
- Food waste recycled at combined AD&Composting facilities (production of biomethan & compost)
- Financial analysis of MSW services (including 3-years plan)
- Application of PAYT charges (about ¼ of municipalities) on residual waste

Further readings



Thank you

Altereko sas\Verona\Italy

Stay in touch:

- it.linkedin.com/in/riccieco
- www.altereko.it
- watch us on youtube: <https://ogy.de/t0hs>

