



Management of organic waste in the Mediterranean *from policies to implementation*

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Marco Ricci-Jürgensen



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About myself



CIC Italian Composting and Biogas Association

Senior Expert

www.compost.it



Altereko sas – consulting for circular economy

CEO

www.altereko.it



ISWA International Solid Waste Association

Vice-Chair of the Working Group on Biological Treatment of Waste

www.iswa.org



ECN European Compost Network

Chair of the Task Group on Compostable Bioplastics

www.compostnetwork.info



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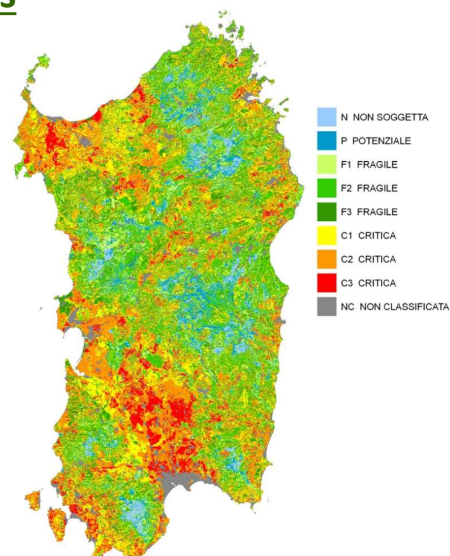
THE CHALLENGES ...



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A typical situation for mediterranean soils

- 54% of Sardinia's soils have a critical level of pre-desertification
- Compost obtained from organic waste can play a key-role to fight desertification and restore fertility of soils
- compost produced from high-quality biowaste, collected separately

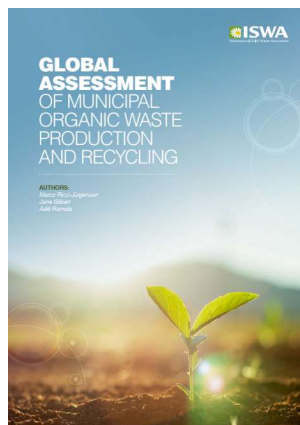


Carta delle aree sensibili alla desertificazione in Sardegna fonte: <http://annuario.isprambiente.it/> 2011



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Make City's aware about the pivotal role of organic waste in MSW management

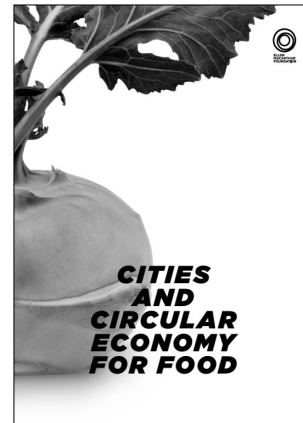


- 935 M tpa of organic waste generated globally
- 53% of MSW of a city is organic waste
- 37 megacities: MSW generated equivalent to the amounts generated in the EU-28
- by 2050 80% of all food to be consumed in cities

Typical MSW production of a city



MSW in cities - kg/capita/day: **0.90**
Organic waste - kg/capita/day: **0.48**



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Benefits of Food waste diversion

- Separate collection of biowaste converts a

WASTE into a RESOURCE

Impacts **Benefits**



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Reduce and dispose MSW better



- Reduce quantities of waste disposed
- Less putrescibility inside MSW → lower methane and leachate from landfills

→ Enhance residual waste management and separate collection of dry recyclables



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Compost production in Italy, 2019



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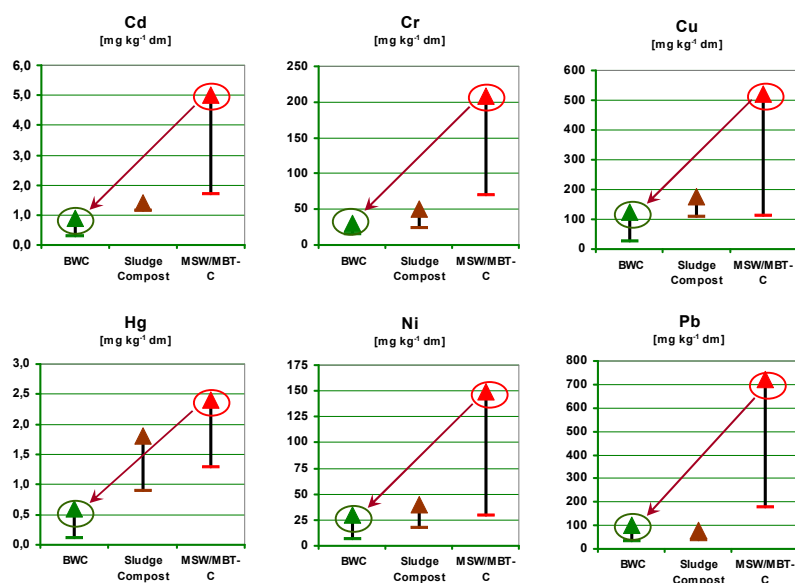
What policies to promote compost production and use?

- Support the production of quality compost
- EoW status: product or waste?
- Educating farmers: what is compost?
- Supporting the use of compost? The value of organic carbon
- Building the «appropriate» infrastructure
- Setting the correct policy framework



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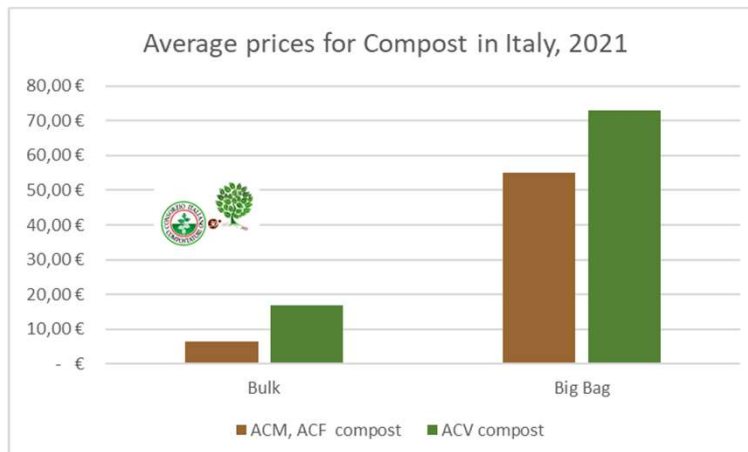
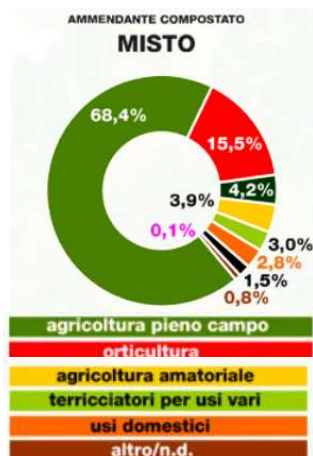
Quality of compost remarkably better if produced from SS feedstock!



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The market for compost



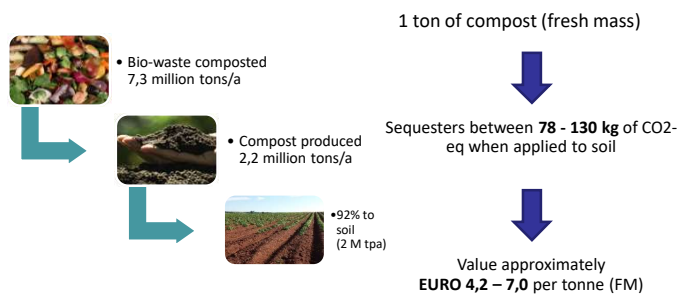
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The handbook on compost use



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Composting in Italy and C sequestration



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Compostaje en Italia y Carbono



2 million tons compost to soil every year



211.000 tons CO₂-eq sequestered in soil every year



26 billion smartphone charges



853 million km in a car



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The value of organic C in soil



KEY FINDINGS

- Two million tonnes of compost is applied to soil annually in Italy, sequestering an estimated 211 thousand tonnes of carbon dioxide equivalents a year.
- Italian compost produced from separately collected bio-waste has an estimated monetary value of between EURO 29.46 - 32.27 per tonne of compost (fresh mass) when both its carbon sequestration potential and nutrient values are accounted for.
- The Italian composting sector manufactures compost with an estimated total value of EURO 60 – 65 million annually.

These are broken down as follows:

- One tonne of Italian compost (fresh mass) can sequester between 78 and 130 kg of carbon dioxide equivalents when applied to soil.
- This can be valued at between EURO 4.2 - 7.0 per tonne (FM).
- One tonne of compost contains a total nutrient value of approximately EURO 25 per tonne (FM).
- It would take an estimated 5.9 tonnes of compost (FM) per hectare to raise the receiving soil's organic content by 0.4%.



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Do households separate food waste regularly?



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MSW collection schemes

Bring schemes

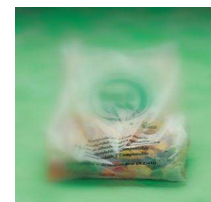


Kerbside collection (stepwise)



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Kitchen-caddies & compostable bags



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It's difficult to make compost from plastics



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Frequencies of collection for food waste

CALENDARI DE RECOLLIDA

Els residus es poden treure a partir de les 20h.
La recollida es realitza el dia següent de 5.00 a 11.00h.

DILLUNS

DIMARTS
ORGANICADIMECRES
RESTADIJOUS
ORGANICA

DIVENDRES



DISSABTE

DIUMENGE
ORGANICA

ELS BOLQUERS, LES COMPRESSES I ELS EXCREMENTS D'ANIMALS DOMESTICS
ES PODEN TREURE CADA DIA DE RECOLLIDA EN UNA BOSSA A PART.

RESTES DE JARDINERIA
ES PODEN TREURE FINS A 60 LITRES ELS DIES D'ORGANICA, DINS UN RECIPIENT PROPI SENSE BOSSA DE PLASTIC

MODEL D'APORTACIÓ

Els dos cubells porten TAG, per tal de controlar la participació i automatitzar les incidències



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Communication



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A practical case: Sardinia

- Island in the Mediterranean Sea, Region of Italy
- Special regulatory regional power
- 1.700.000 inhabitants, 377 municipalities, 8 Provinces
- Scarcely populated (70 inhabitants / km²)
- Very high tourism in summer



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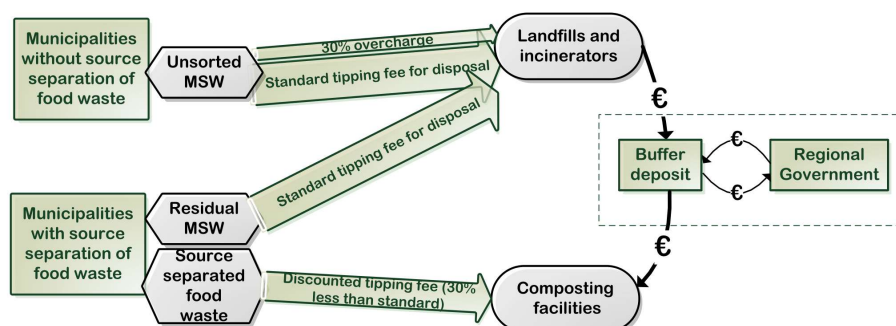
Sardinia's MSW Master Plan

- Year 2004: separate collection of MSW: 5%
- reduce residual waste to less than 35% of total MSW by 2012
- Develop separate collection of biowaste (food waste)
- Management and tenders for MSW to be done at district level (i.e. including more municipalities)
- **Introduce an economical driver → incentive scheme**
- **2004: Start of Incentive deposit/financing scheme**
- Support the realization of composting plants
- Promote quality and market for compost
- Cooperation with the Italian Composting (and Biogas) Association CIC



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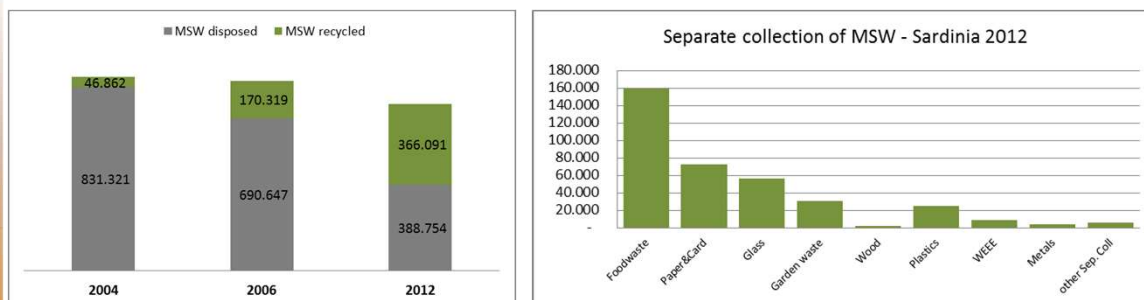
The basic incentive scheme



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Key data about MSW management in Sardinia



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What policies to promote compost production and use?

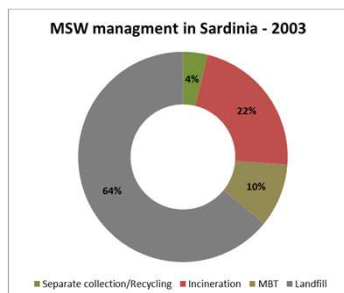
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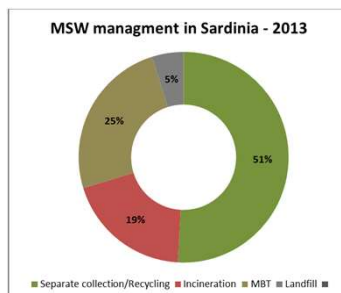
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Island of Sardinia, IT

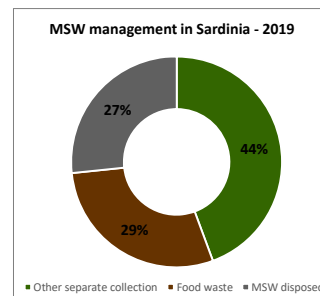
Situation in year 2004



Situation in year 2013



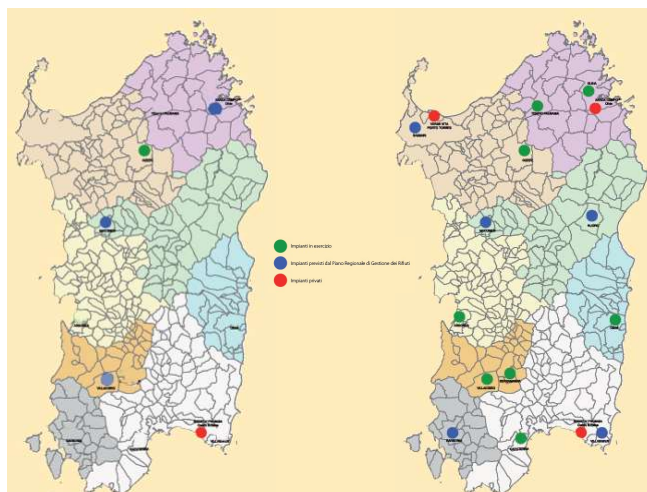
Situation in year 2019



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Composting plants – Sardinia

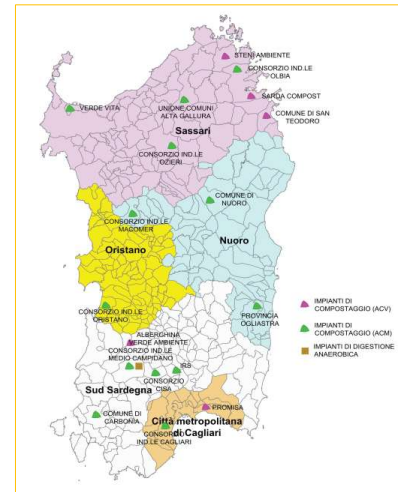
2004



2012



2017



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Composting plants – Sardinia

2004	2012	2017
2 plants (+3)	11 plants	18 plants + 1AD
5200 tpa collected	204'000 tpa treated	230'000 tpa treated
		52'000 tpa compost



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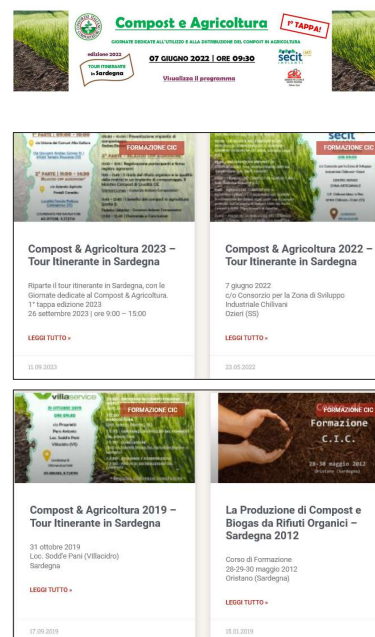


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Compost and Sardinia



www.compost.it



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ISWA Soils project

Quantify the Benefit of Organic Matter in Compost and Digestate When Applied to Soils'

Started in 2018 & completed Q1 2020



Copies available to download at: www.iswa.org



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ENI CBCMED
Cooperating across borders
in the Mediterranean

Project funded by the
EUROPEAN UNION

REGIONE AUTONOMA DI SARDEGNA
REGIONE AUTONOMA DELLA SARDEGNA

SIRCLES

Supporting Circular Economy Opportunities for
Employment and Social Inclusion

About the project Partnership News Events Library

<https://www.enicbmed.eu/projects/sircles>

Shutterstock

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Setting the policy framework

4. SCENARIOS AND POLICY RECOMMENDATIONS

LESSON LEARNT	BENEFITS
Direct involvement of local institutions since the beginning of the project/idea	<ul style="list-style-type: none"> Navigate legal requirements. Ensure compliance with regulations. Foster a supportive policy environment.
Engagement of the private sector by promoting public-private partnership	<ul style="list-style-type: none"> Provide a constant supply of biowaste. Having compost buyers. Financial sustainability of the project.
Promotion of public awareness for the success of the initiatives	<ul style="list-style-type: none"> Encourage individuals to adopt circular practices in their homes and communities. spread knowledge and create a culture of responsible waste management. Improve the quality of the final compost.

<https://www.enicbcmcd.eu/sircles-policy-toolkit-circular-economy-employment-and-training>



www.compost.it



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Thank you

Marco Ricci - Jürgensen
ricci@compost.it

CIC – Consorzio Italiano Compostatori - Rome-Italy



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