



Biowaste management in Italy

Collection schemes, Good practises and Composting

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Marco Ricci-Jürgensen
CIC – Consorzio Italiano Compostatori
Rome-Italy
www.compost.it

Presentation content:

- Legal drivers for SS of biowaste
- Food (FW) and Garden-waste (GV) collection – main results
- Effectiveness: capture rates and quality
- Use of compostable bags
- conclusion



CIC – Consorzio Italiano Compostatori (Italian Composting Association)

- unites public and private companies, local authorities and others involved in the production of compost,
- Involves producers of machinery and equipment,
- includes producers of fertilisers, research bodies etc
- 359 composting plant and 16 AD plants
- Manages National Quality Standard for Compost
- Surveys and Monitors Biowaste collection



Main legislative drivers:

European WFD (2008/98/EC) requires Member States to:

- take measures to encourage separate collection of biowaste for composting and AD.
- by 2020 recycle 50% of all waste from households

European Landfill Directive (99/31/EC) requires Member states to:

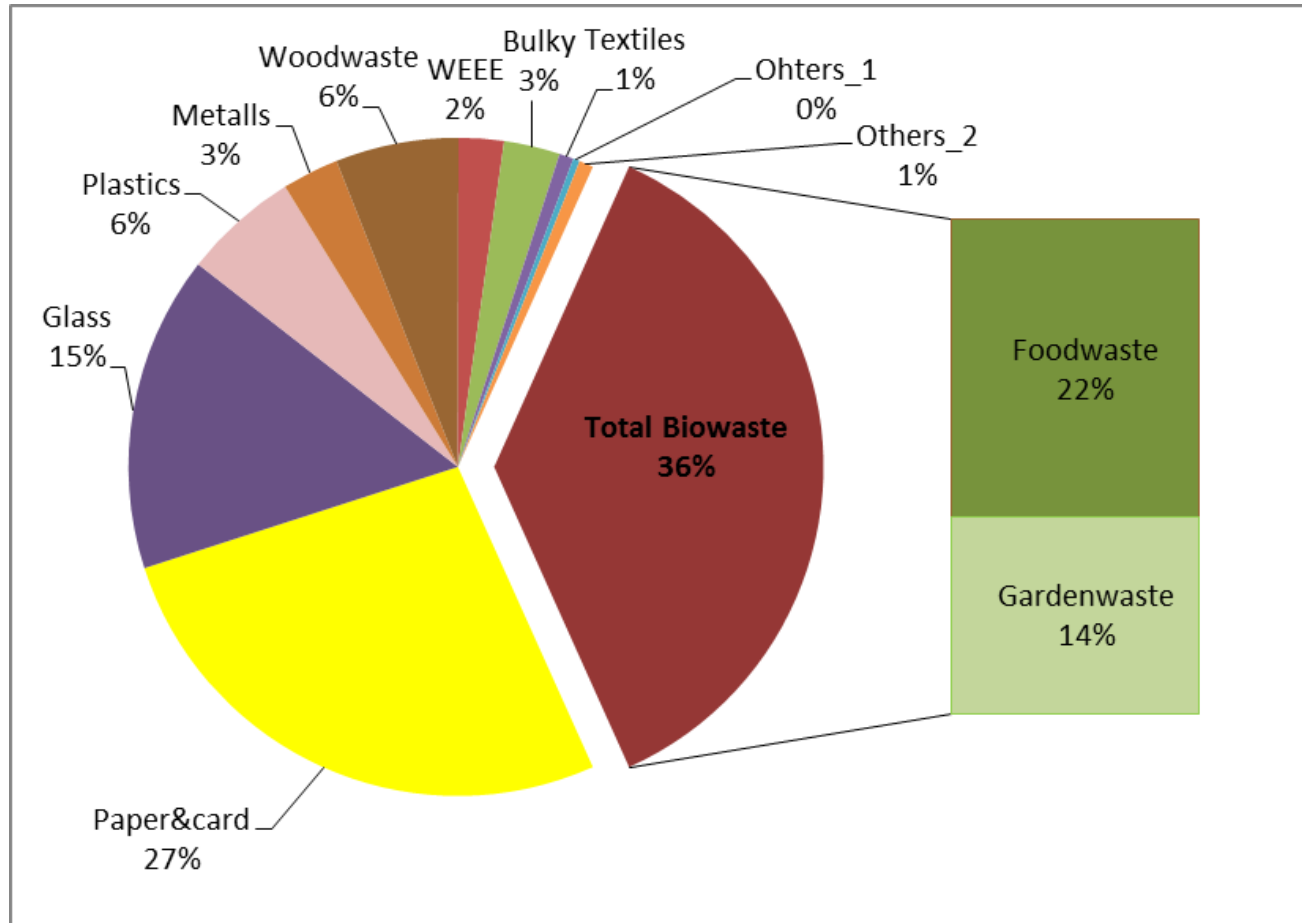
- Pre-treat all waste before landfilling (disposal)
- by 2016 divert 65% of biowaste from landfill

Italian WFL (DLGS 252/06) requires Municipalities/District-Areas to:

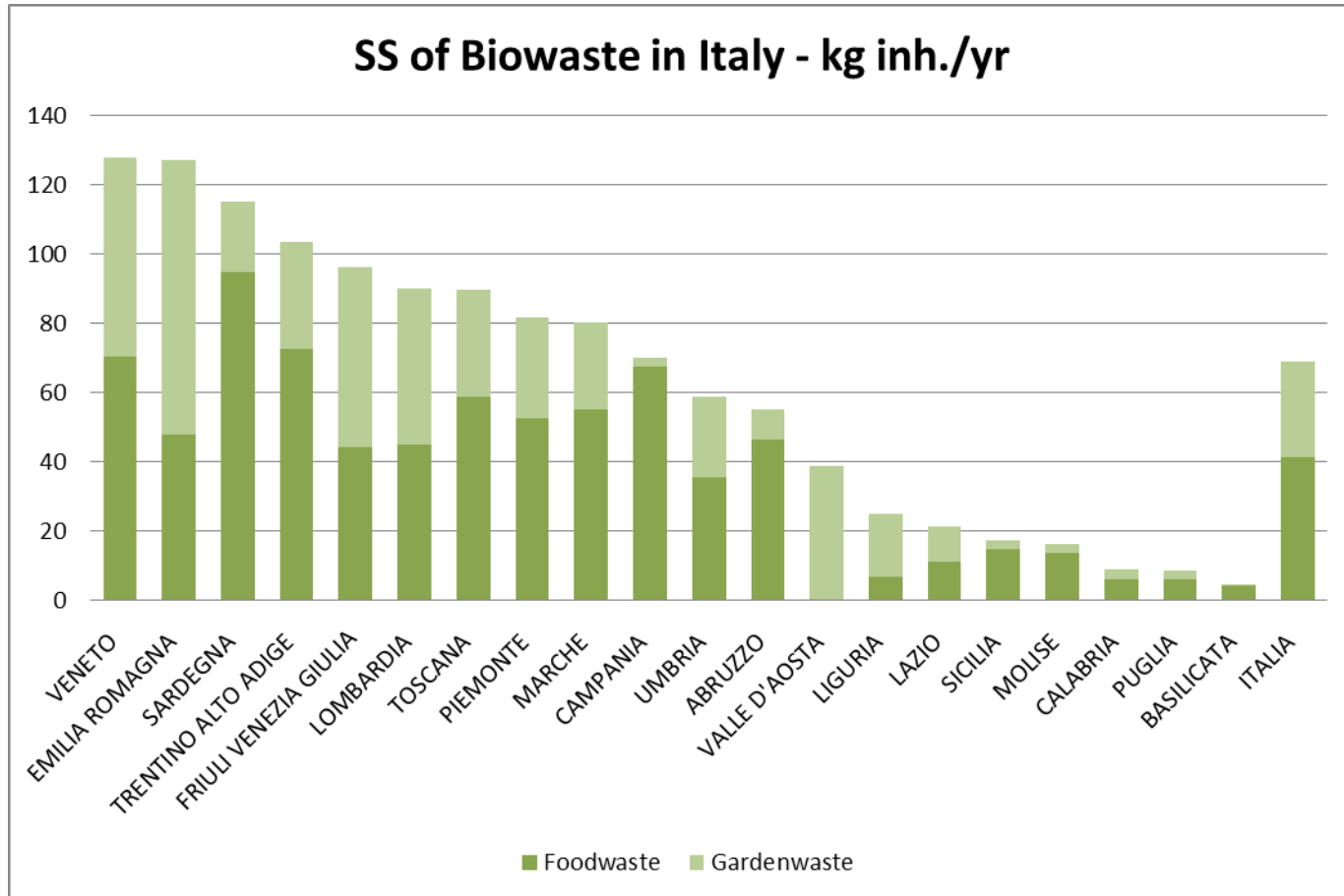
- by 2012 reduce disposal to 35% of total MSW (total sep. coll. min 65%)
- SS Biowaste with reusable bins and/or compostable bags;
- Increases landfill-cost by 20€/ton for district not complying to recycling target



Separate collection of MSW- Italy 2010



Separate collection of MSW- Italy 2010



Biowaste production and collection: key-data

Foodwaste (FW)



- 20-30% of MSW
- Bulk density: 0,6-0,8 kg/liter
- High moisture

SSO: 70 – 130 kg/inhab/yr.

Yard and Gardenwaste (GW)



- 2-4kg/m²/yr.
- Bulk density: 0,15 – 0,35 kg/l
- Medium to low moisture
- **Sesonality** (wheather, rain)

SSO: 20– 70 kg/inhab/yr.
(preventable by home-composting)



Best practise approach – Italy/Spain/UK

- **Foodwaste** collected separately from garden waste
 - Cooked food and meat&fish allowed
 - High frequency (2 to 4 times/week)
 - Clean and comfortable (bags&caddies)
 - FW bins taylored to HH size (from bin to wheely-bin)
 - Vehicles (open lorries)
- **Gardenwaste** at
 - Municipal Collection Centers
 - DtD at low frequency (1/month; on demand; seasonality)
 - Homecomposting
- **Residual waste:** collected with low FW content
 - Low frequency (1/week up to 1 /month)
 - PAYT fees



Intensive SS of Biowaste:

- Buildings up to 6 HH



Compostable bags



vented kitchen-caddy



35 liter HDPE bucket

- Buildings with Flats/appartments



Compostable bags



vented kitchen-caddy



120/240 liter HDPE wheelbins

Biobags are a key-factor for success:

Paper, MaterBi, etc	IF compostable according to EN 13432 standard	OK for sep. collection of foodwaste
Plastic-bags (PE)	are non-compostable	NO use for sep. collection of foodwaste
Oxo-degradabel plastics	Not suitable for composting processes	NO use for sep. collection of foodwaste

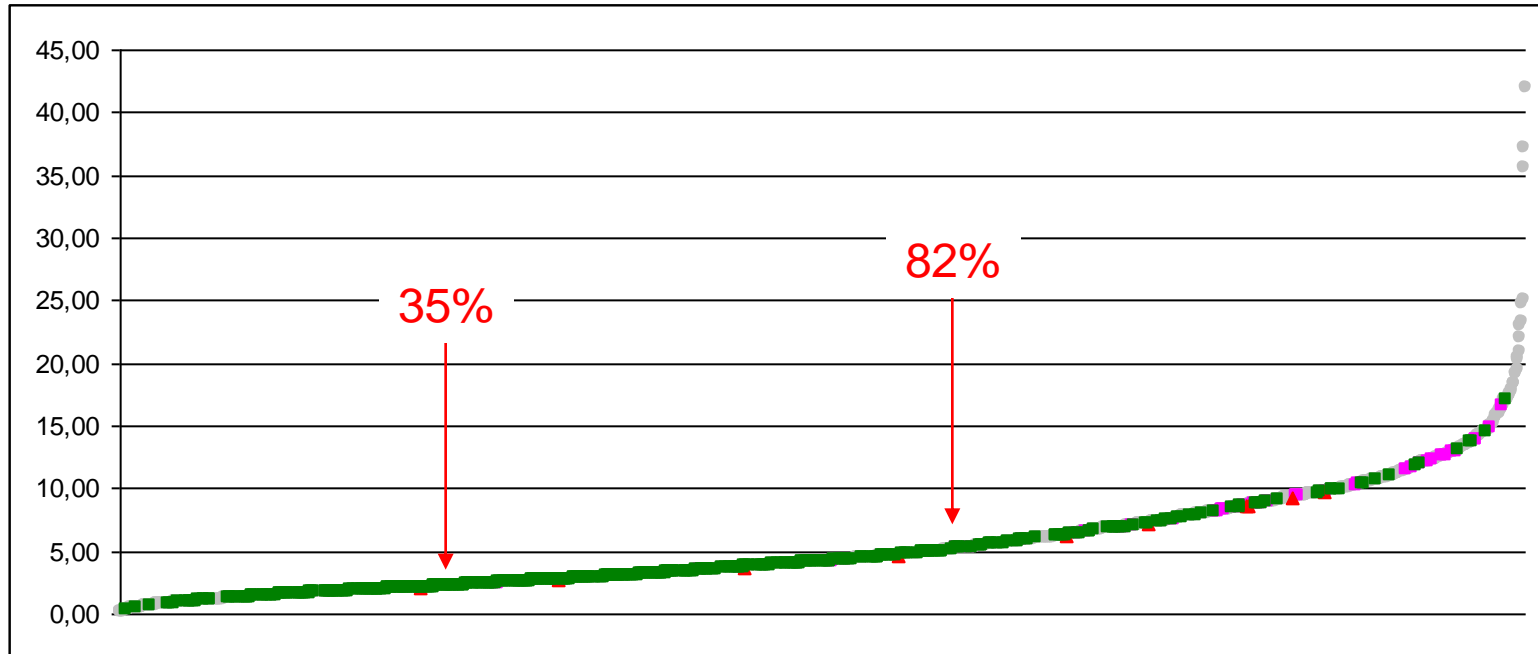
- Enhance HH in managing wet, putrescible FW
- Biobags must comply with EU Standard (EN13432)
- Bags (if possible) certified



SS of Biowaste: size bins correctly

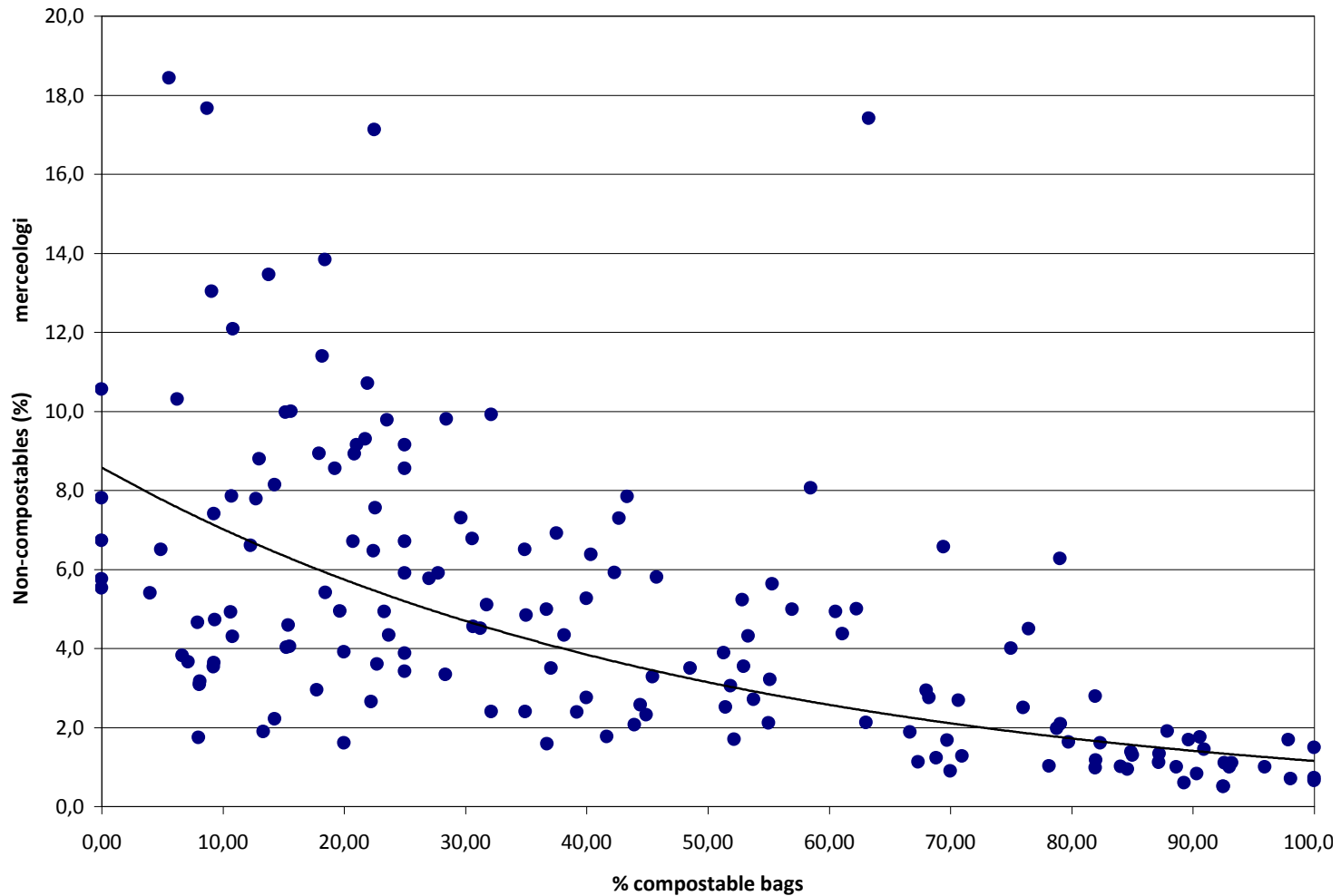


Quality of SS Foodwaste: quota of non-compostables delivered at gate



Source: CIC – Consorzio Italiano Compostatori/ *Italian Composting Association*
www.compost.it

SS of Foodwaste: purity vs use of compostable bags



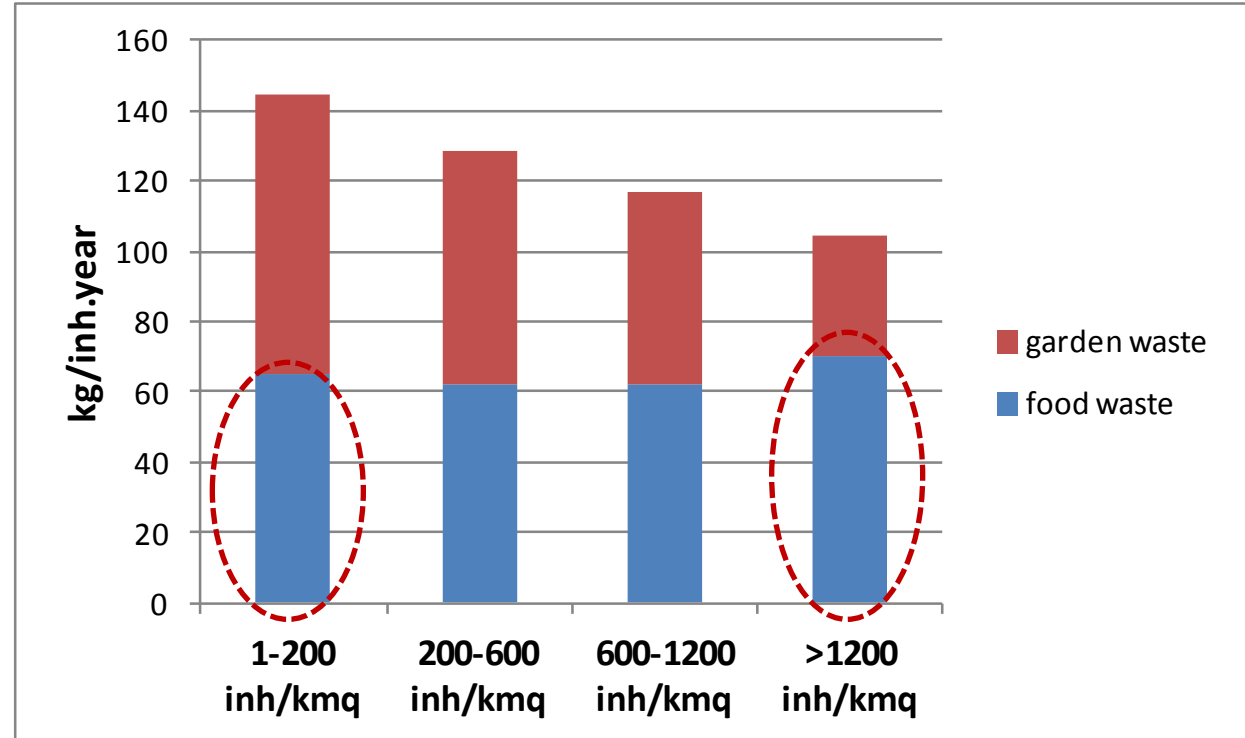
Good results both in rural areas (low population density) and in highly urbanized cities

- Lombardy: collection and population density

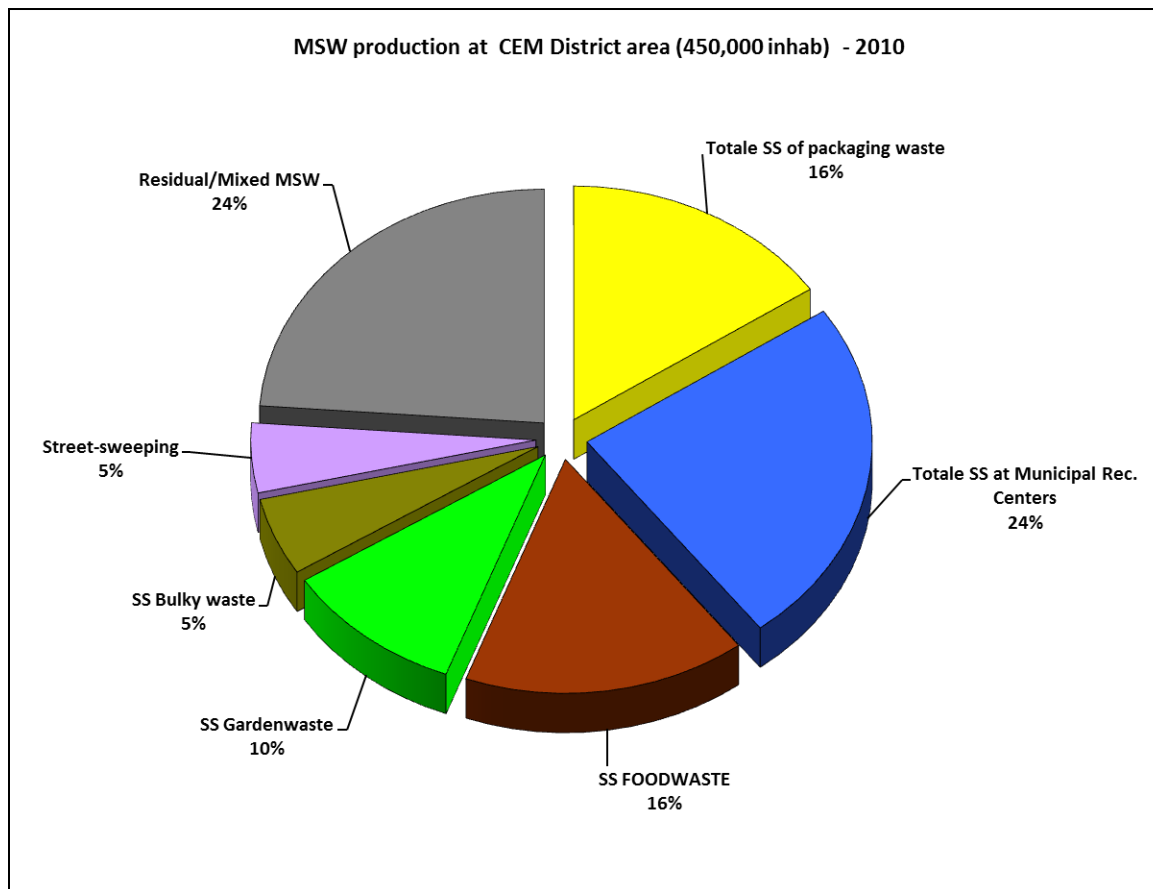
720 municipalities

- 148 with 1-200 inh/km²

- 162 with > 1200 inh/km²



Results for a waste-management district (CEM-Ambiente east-Milan)



- 30% MSW disposed / not-recycled: complying with Italian NWL
- More than 70% of MSW is sep. collected and send to recycling –facilities: complies with WFD (2008/98/EC)
- FW accounts for 16% of MSW, the same as total SS of packaging-waste!
- Significant amounts of waste are collected at municipal recycling Centers (bulky, weee, and others)



Conclusions:

- SS of organics from MSW represents Italy's largest recycling industry managing 4, 2Mt/yr producing 1,4Mt/yr of quality compost used in agriculture, landscaping, etc.
- Intensive source-separation of biowaste is a key-factor for gaining high recycling rates and is currently applied in 3000 municipalities involving ca. 36 M inhab.
- DtD for FW collection combined with compostable bags/shoppers are showing best-performances in terms of:
 - Diversion (70-130 kg/inh/yr)
 - Quality: 80% of CIC's waste-composition analysis show non-compostables below 5% w/w
- Key-factor: sep. collection only with (certified) compostable bags according to EU13432 standard
- CIC's surveys shows that biowaste collected under optimized conditions and afterwards recycled in composting plants, contributes in achieving Italian and EU strategy-targets



Thank you

Marco Ricci - Juergensen

CIC - Consorzio Italiano Compostatori

headoffices: via Cavour, 183/A, Rome, Italy

ricci.eco@gmail.com

+39 – 06 – 4740589

skype: ricci.eco

www.compost.it