

Food waste collection in metropolitan areas: Milan (Italy)

**London , 9 July 2014
Environment Committee Meeting**

Marco Ricci-Jürgensen
CIC – Italian Composting and Biogas Association- Rome-Italy
Chair of the ISWA-WG on biological treatment of Waste

www.compost.it





CIC – Consorzio Italiano Compostatori (Italian Composting and Biogas Consortium)



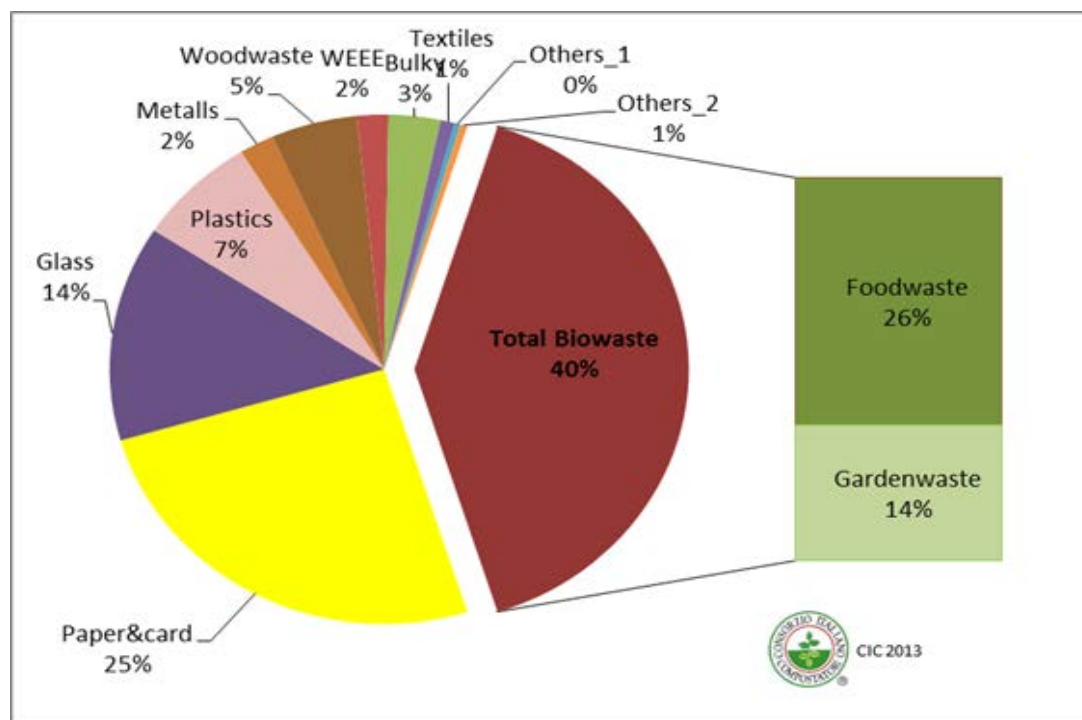
- unites public and private companies, local authorities and others involved in the production of compost,
- Involves producers of machinery and equipment,
- includes producers of fertilisers, research bodies etc
- Recycling sector for biowaste: 283 composting plant and 32 AD plants
- Surveys and monitors Biowaste collection in Italy
- Supports development of National legislation on biowaste management and composting
- International cooperation (ECN, ISWA, etc.)



Separate collection of biowaste in Italy

- Sep collection for about 35 M population
- 3,1 M t Food waste
- 1,7 M t Green waste

Composting & AD is Italy's first recycling sector for MSW





Separate collection of biowaste in Italy



- **Specific collection scheme for food waste**
 - Including cooked food (i.e. meat, fish, etc.)
 - Collection 2-4 times/week

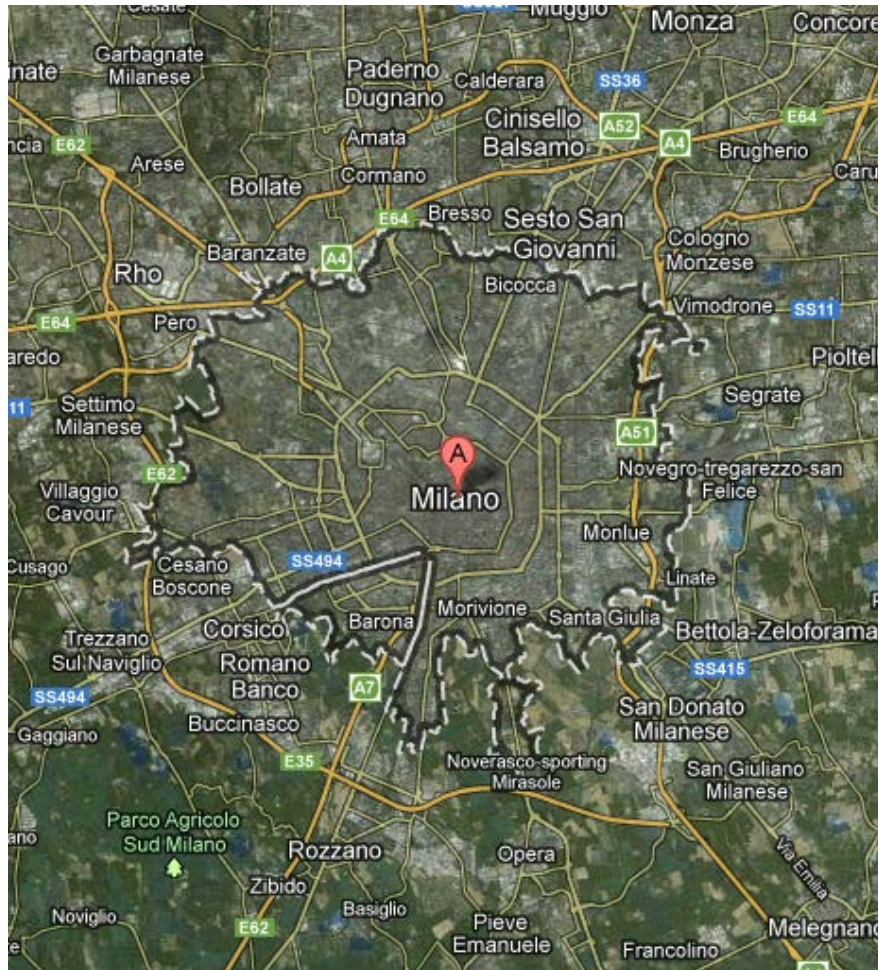


- **Specific collection scheme for green waste**
 - Bring-sites at Community Centers
 - Curbside collection with low-frequency 0,5-1 times/week

- **Collection schemes for food waste are used both by households and (small) commercial activities (Ho.Re.Ca)**



Milan Metropolitan Area



Population 1.5 M inhab

Density 5-7000 inhab/km²

Italy's most vital Economical center

Transient population

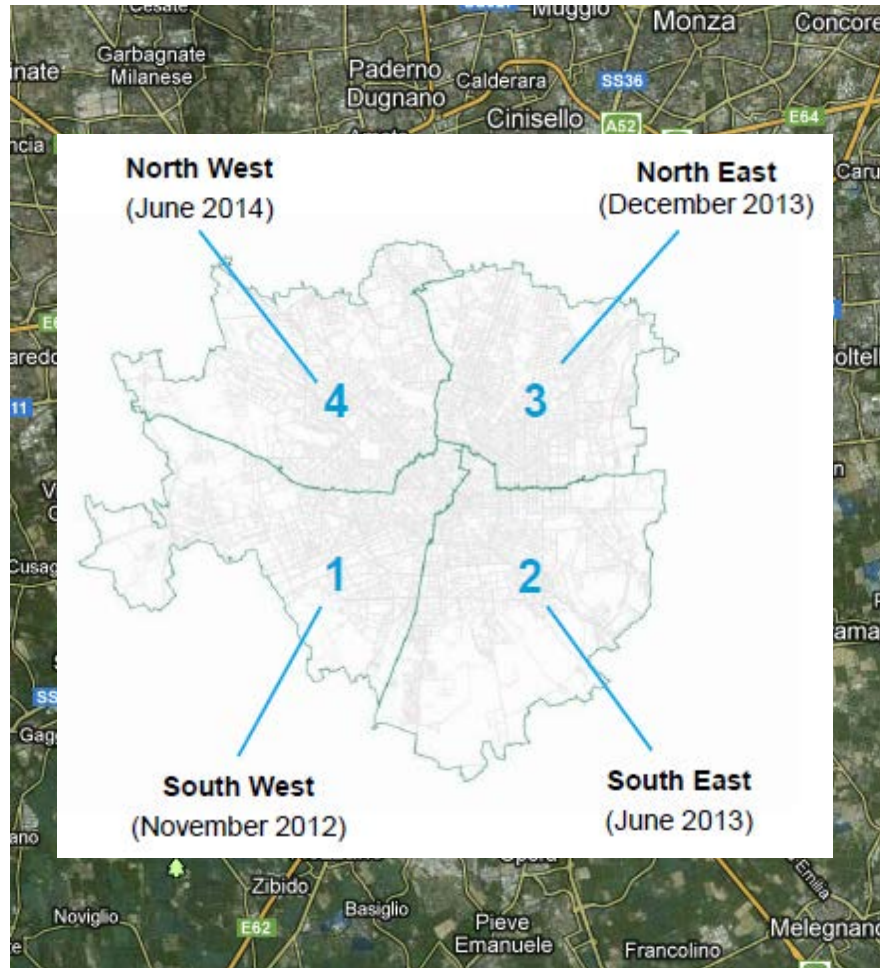
Year 2012: food waste collection at Ho.Re.Ca sector only → 23kg/inhab/yr

Recycling rate 34,5%

AMSA is a Public-owned company responsible for MSW management in Milan



Milan Metropolitan Area



4 Districts of 320,000 population;
about 120,000 HH/district

Stepwise introduction of
separate collection (Nov 2012 →
June 2014)

3-steps for each district:

1. Investigate – survey
2. Distribution of collection tools
3. Awareness and information



1, Investigate and survey each district



- Verify available spaces for bio-bins inside private-property (common areas)
- Preliminary contacts with building-managers
- Map and close refuse chutes
- Map critical areas





2, Distribution of biobins and starter-kit





Distribution of biobins and starter-kit

- Vented 10 l- kitchen-caddy & 25 Biobags Mater-Bi®
- Info-leaflet
- Call-Center
- Specific APP and web-page
- The number of biobins adapted to the dimension of each block (multi-apartment building)



Il sacchetto, quale ci metto?

I sacchetti non sono tutti uguali. Per raccogliere l'umido si devono utilizzare solo sacchetti compostabili, certificati:



Possano essere utilizzati anche i sacchetti compostabili della spesa.

Utilizzando i sacchetti compostabili la qualità della raccolta è migliore e si evitano sanzioni.

Per informazioni:

www.amsa.it
servizioclienti@amsa.it

Numero Verde
800-332299





Source separation of foodwaste is difficult....



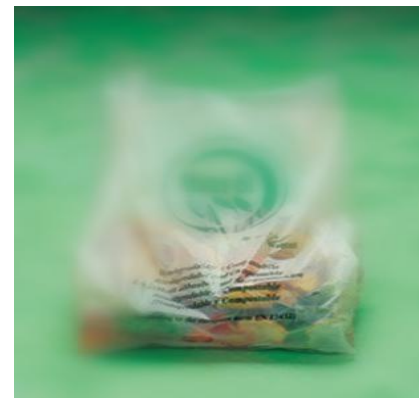
- High moisture
- Leachate
- putrescible
- High density

**Likely to be
uncomfortable**

?



The need for kitchen-caddies?



AMSa - Raccolta della Frazione Umida - Mozilla Firefox

File Modifica Visualizza Cronologia Segnalibri Strumenti Aiuto

"MSS? Mo Mama!, Le contraddizioni... Posta in arrivo (113) - ricci.personal@... Google AMSA - Raccolta della Frazione Umida

www.amsa.it/gruppo/cms/amsa/progetti_speciali/index.html

File audio per non vedenti

Lavora con noi Bandi e Fornitori

Cerca

Chi Siamo Progetti Speciali Comunicazione Servizi Trova e Risolvi

Sei in: | Raccolta della Frazione Umida

Raccolta della Frazione Umida





Lunedì 16 settembre inizia la consegna dei contenitori per la raccolta differenziata dell'umido presso le utenze domestiche nella zona nord est di Milano, corrispondente alle zone 2 e 9 e completamento della zona 3.

Con questa estensione la raccolta dell'umido, **che partirà lunedì 9 dicembre**, raggiungerà circa il 75% del territorio cittadino.

Clicca sull'immagine per verificare se il tuo stabile è nella zona interessata

Servizio Clienti +

http://www.amsa.it/gruppo/cms/amsa/multilingua/uk/separate_waste/milano.html



ЯК РОЗДІЛЯЮТЬСЯ
ВІДХОДИ? >

ЗБІР ВОЛОГОЇ ЧАСТИНИ >

КУДИ Я ПОВИНЕН ЦЕ
ПОМІСТИТИ? >

Збір харчових відходів

Ці свідчення дійсні для муніципалітету Мілана ТІЛЬКИ

З 9-го грудня 2013 року у північно-східній частині Мілану, яка включає райони 2, 3 та 9, запроваджено збір харчових відходів.

На цьому, третьому, етапі збір харчових відходів, що почався у 2012 році, відбувається у 75% міста.

Збір харчових відходів у решті міста – північно-західних районах – буде запроваджено впродовж червня 2014 року.



10-літровий контейнер, що надається всім користувачам, було обрано на основі попереднього досвіду в Італії. Це вентиляований кошик, конструкція якої дозволяє зменшити до мінімуму незручності від неприємних запахів і утворення рідини.

Харчові відходи потрібно покласти у біорозкладний мішок, який треба помістити у вентиляований кошик, а потім покласти у відповідний коричневий контейнер кондомініуму.

Дні та час збору харчових відходів такі ж, як і ті, що вже діють стосовно загального збору (нейтральних прозорих мішків).

Запуск третього етапу збору харчових відходів, що відбувся 9-го грудня 2013 року, супроводжує перші два етапи, які охопили південно-західні та південно-східні райони міста, та включений до програми муніципалітету Мілану по вдосконаленню системи збору відходів, що підлягають переробці, постановою мерії №70/2013 про роздільний збір відходів.

ЯК ЗБИРАТИ ОРГАНІЧНІ ВІДХОДИ? +

ЧИ ПРОВОДИТЬСЯ БУДЬ-ЯКА ОПЛАТА ЗА КОНТЕЙНЕРИ? +

ЩО ВИКИДАТИ У БІОРОЗКЛАДНИЙ ПАКЕТ ДЛЯ СМІТТЯ? +

ЩО НЕ ВИКИДАТИ? +

У ЯКІ ДНІ ВИВОЗИТИМЕТЬСЯ СМІТТЯ З ОРГАНІЧНИМИ ВІДХОДАМИ? +

ЯК ЗАСТОСОВУВАТИМЕТЬСЯ ЗІБРАНІ ОРГАНІЧНІ ВІДХОДИ? +



Municipality of Milan





Municipality of Milan





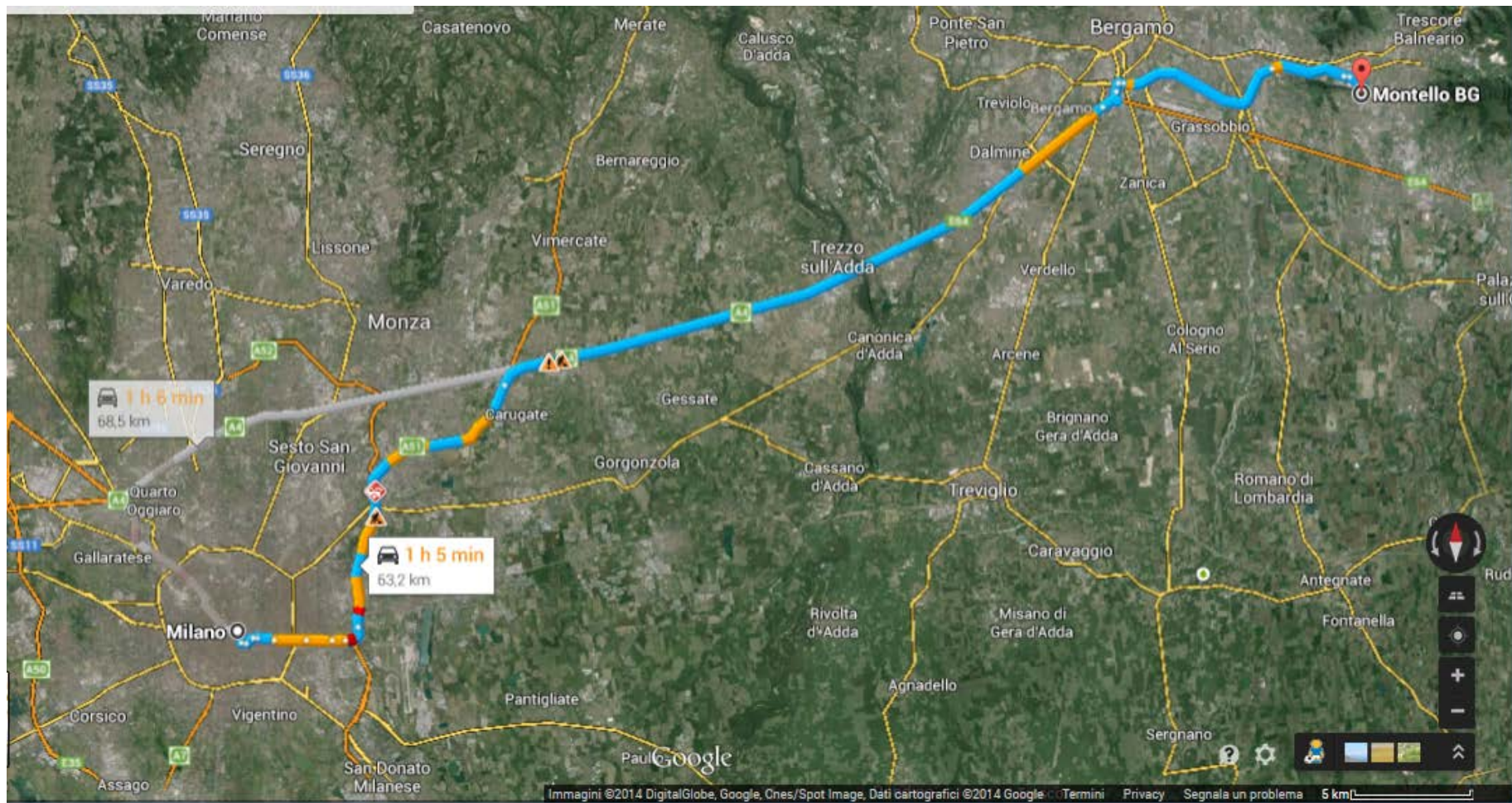
Municipality of Milano



- Collection at HH: → 2/week
- Ho.Re.Ca, Schools → 6/week
- Collection mainly with non-compacting vehicles
- Vehicles with methane or biodiesel
- Foodwaste brought into 2 transfer stations
- packer-trucks for transport to AD/composting plant
- Residual waste collection reduced (crews are transferred to food waste collection)
- Rise in separate collection of packaging waste



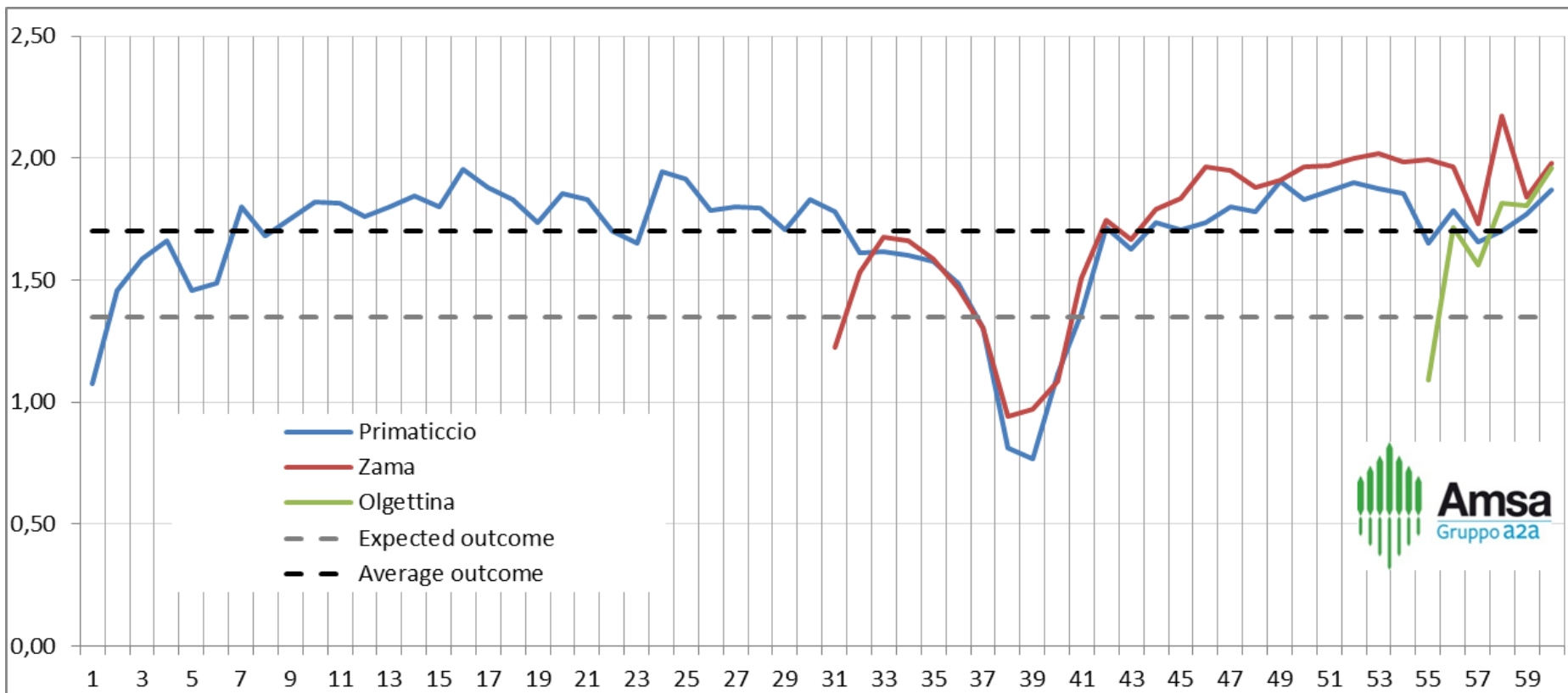
Location of collection and recycling





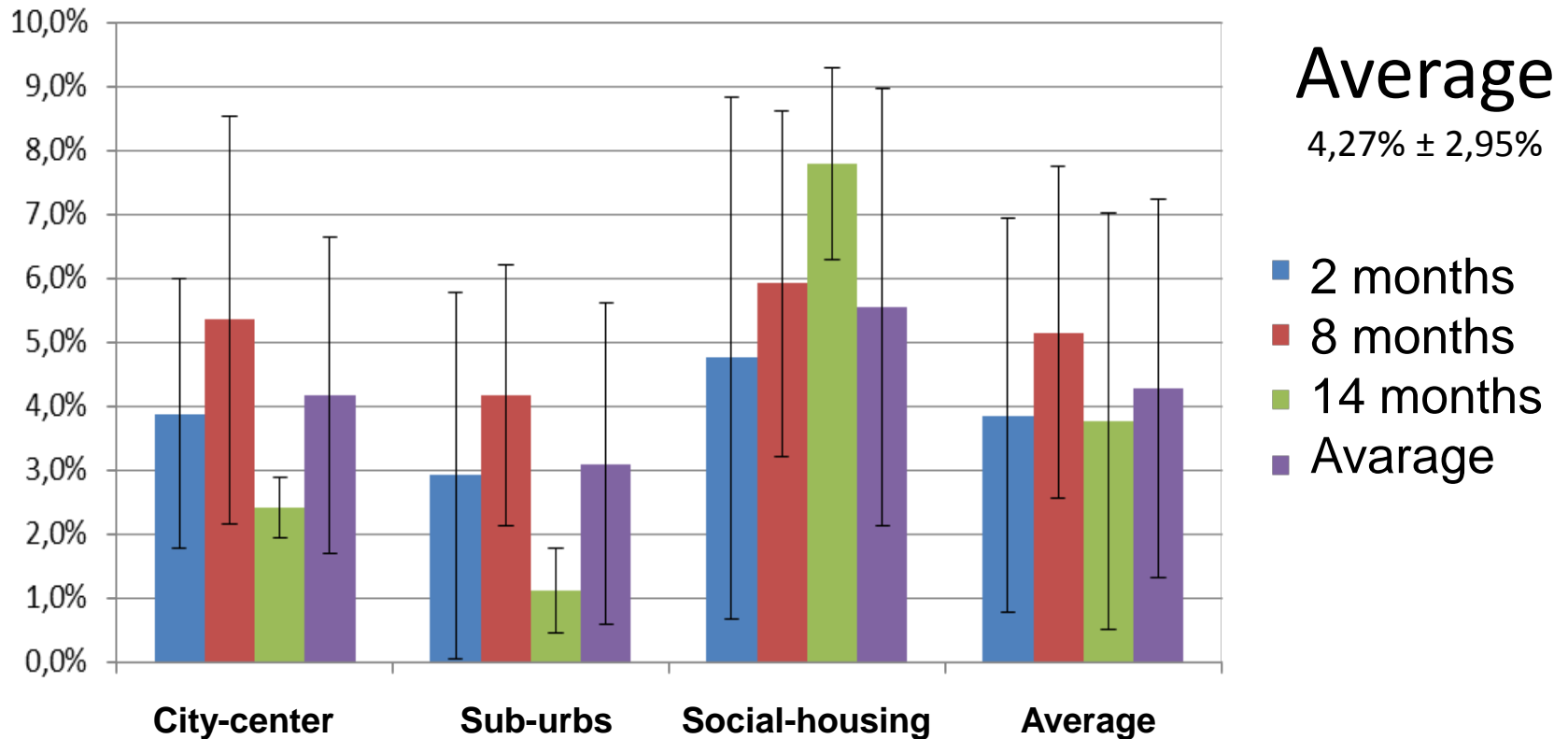
Weekly collection rate of foodwaste (kg/inhab/week)

- **Separate collection of foodwaste** : from Ho.Re.Ca only → 23kg/inhab/yr
- **Separate collection of foodwaste** : including families → 91kg/inhab/yr





Quality of food waste (non-compostable content)

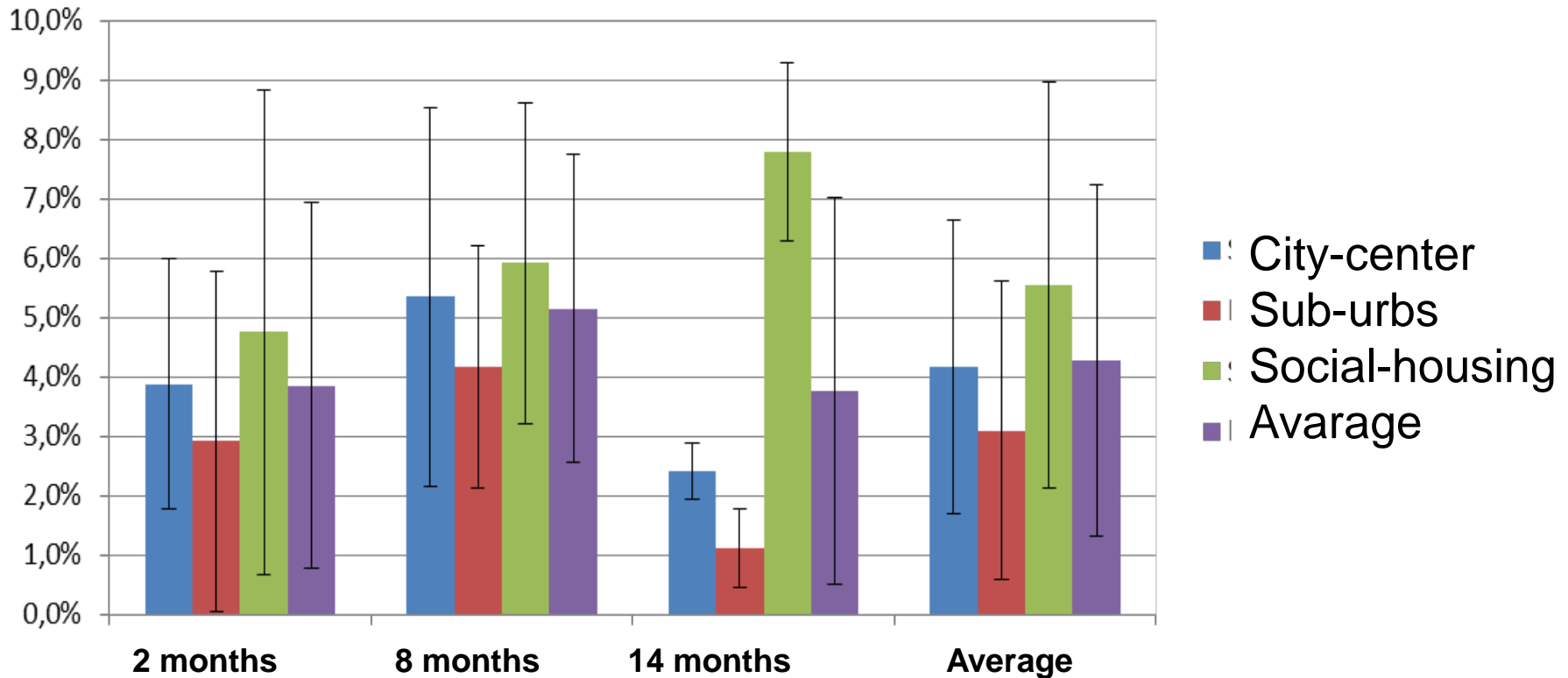


Analysis performed by CIC

Source: AMSA 2014,



Quality of food waste (non-compostable content)



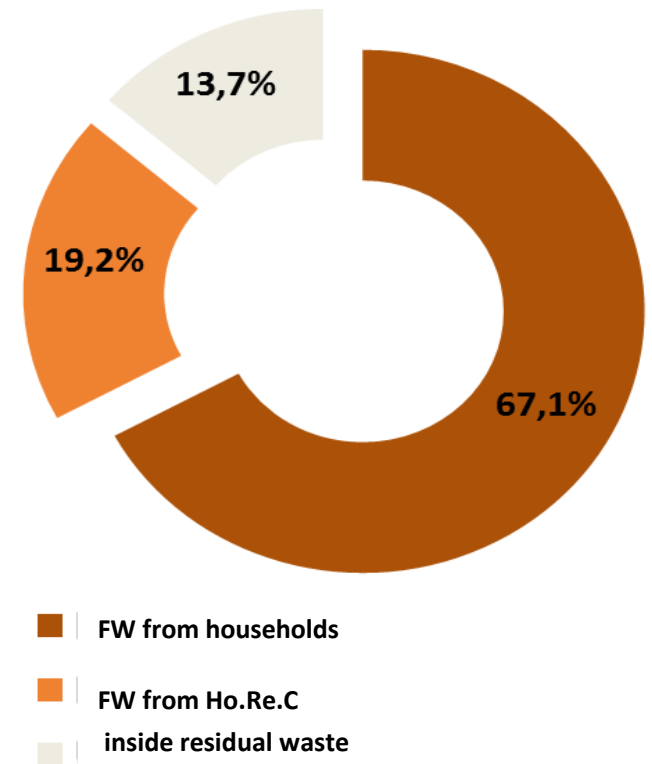
Analysis performed by CIC

Source: AMSA 2014,



Diversion of food waste from residual waste

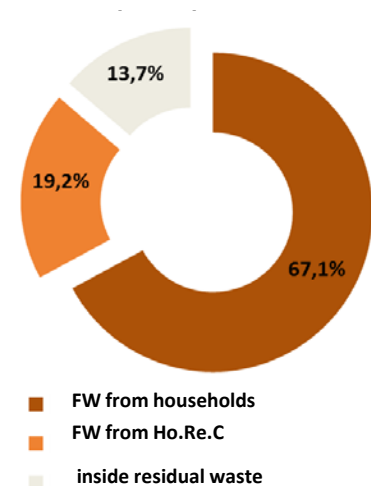
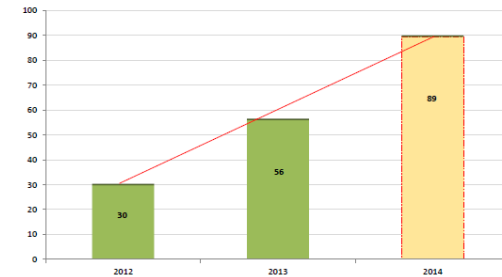
- Combining waste-composition analysis of residual waste and foodwaste
- 86% of food waste in separate collection
- 14% inside residual waste





Results:

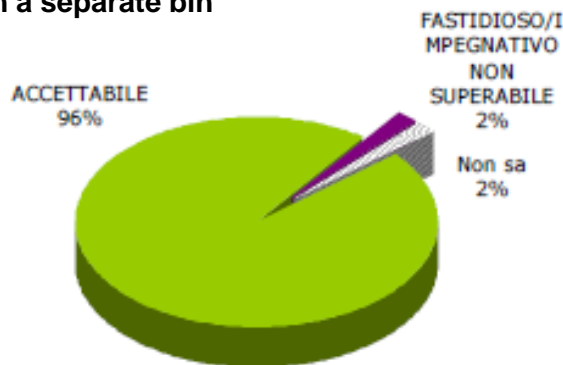
- Diversion of foodwaste from MSW:
 - Foodwaste from 23kg/inhab/yr (Horeca only) → 90 kg/inhab/yr
 - 22% of total foodwaste from Ho.Re.Ca. sector
- Purity of foodwaste from sep. collection:
 - average non-compostable content 4.3%
- compostable bags: 76% of all bags used for SS of foodv dedicated and from supermarkets (shoppers)
- Diversion of biowaste:
 - 86% in separate collection schemes
 - 14% in residual waste
- Recycling of 260,000 t/yr of foodwaste (2014/2015)



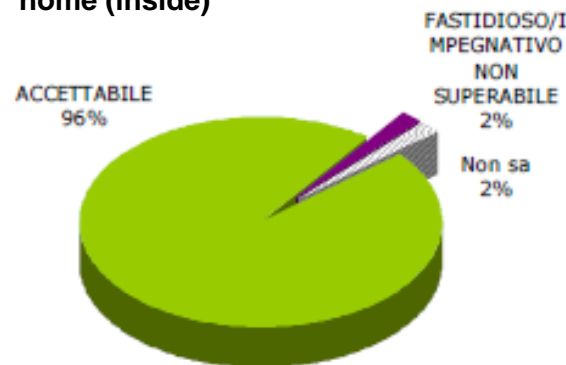


Customer satisfaction

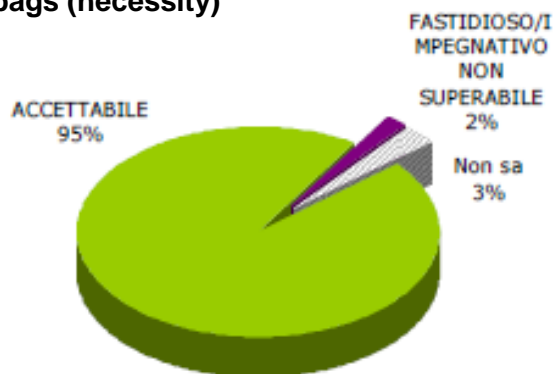
Collecting food waste in a separate bin



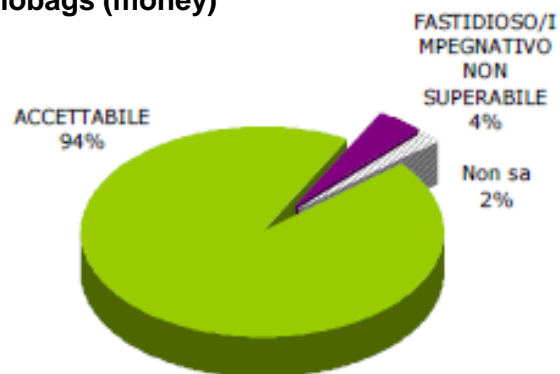
A kitchen-caddy at home (inside)



Supply with specific biobags (necessity)



To buy specific biobags (money)



Valori percentuali - Base casi: 800

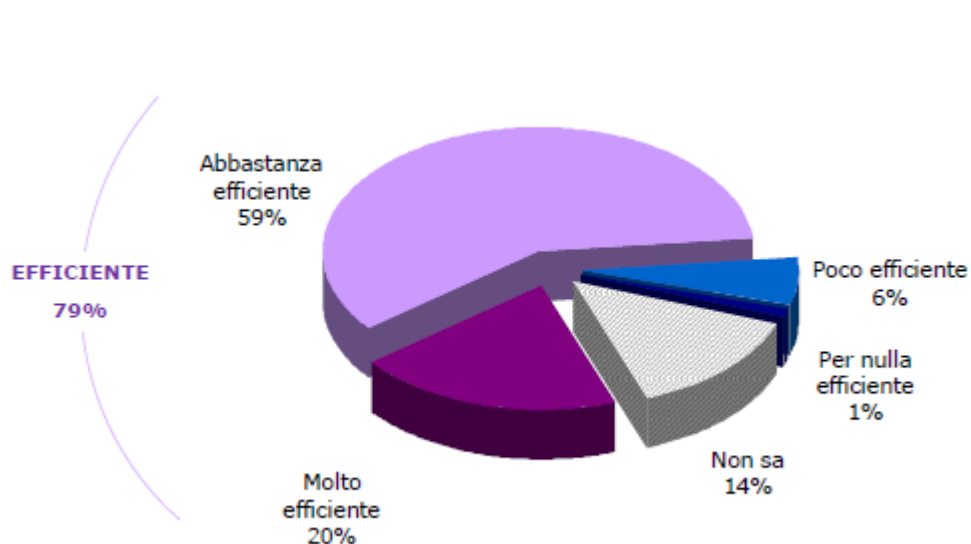


Source: ISPO investigation 800 inhabitants

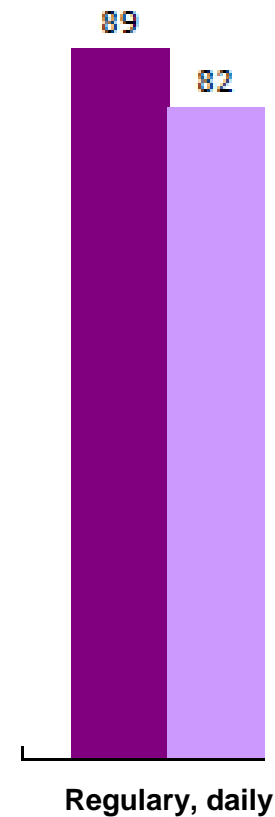


Customer satisfaction

Evaluation of the collection service for food waste

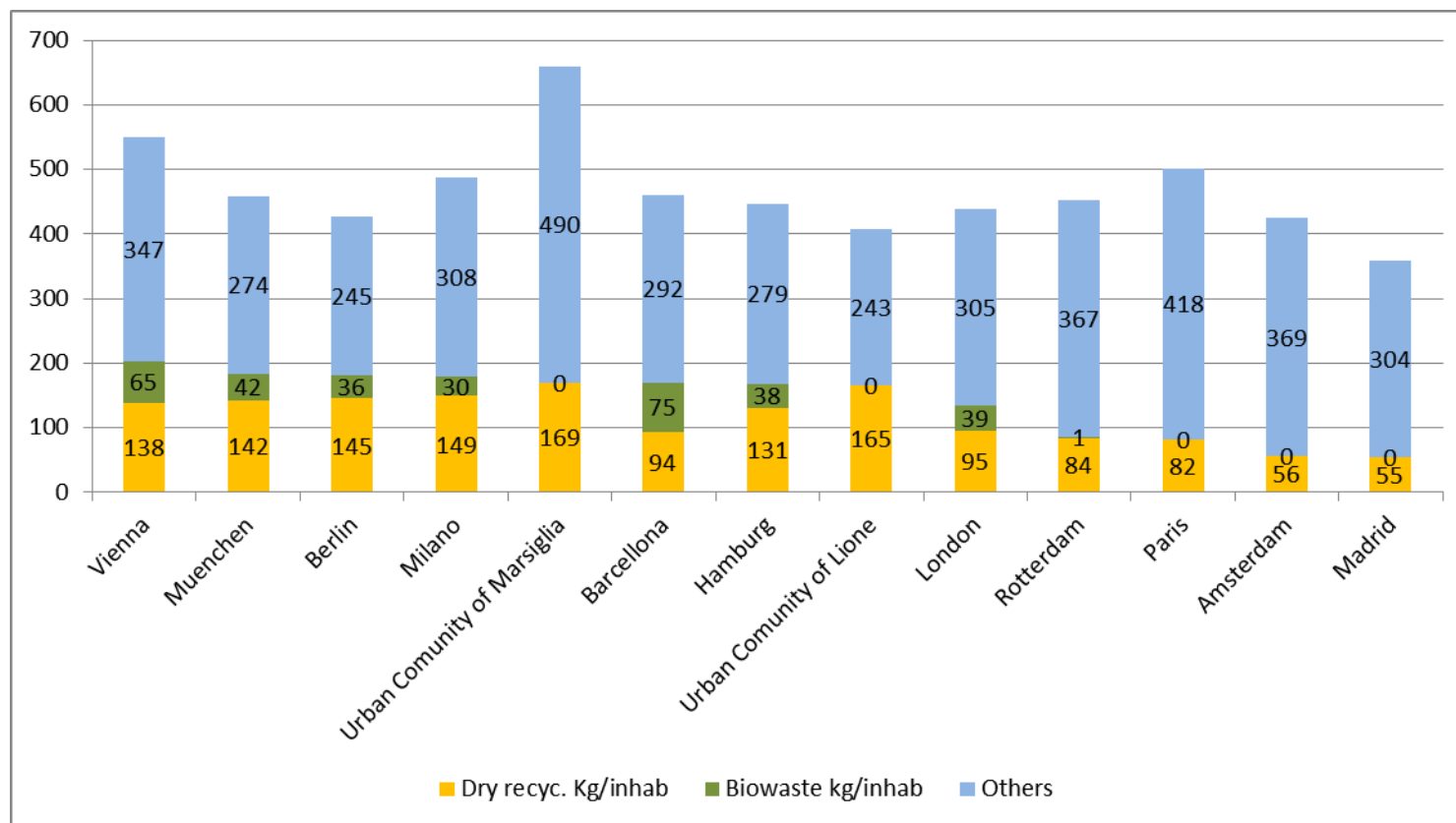


Practising separate collection of foodwaste





Focus on metropolitan areas and cities (year 2012)

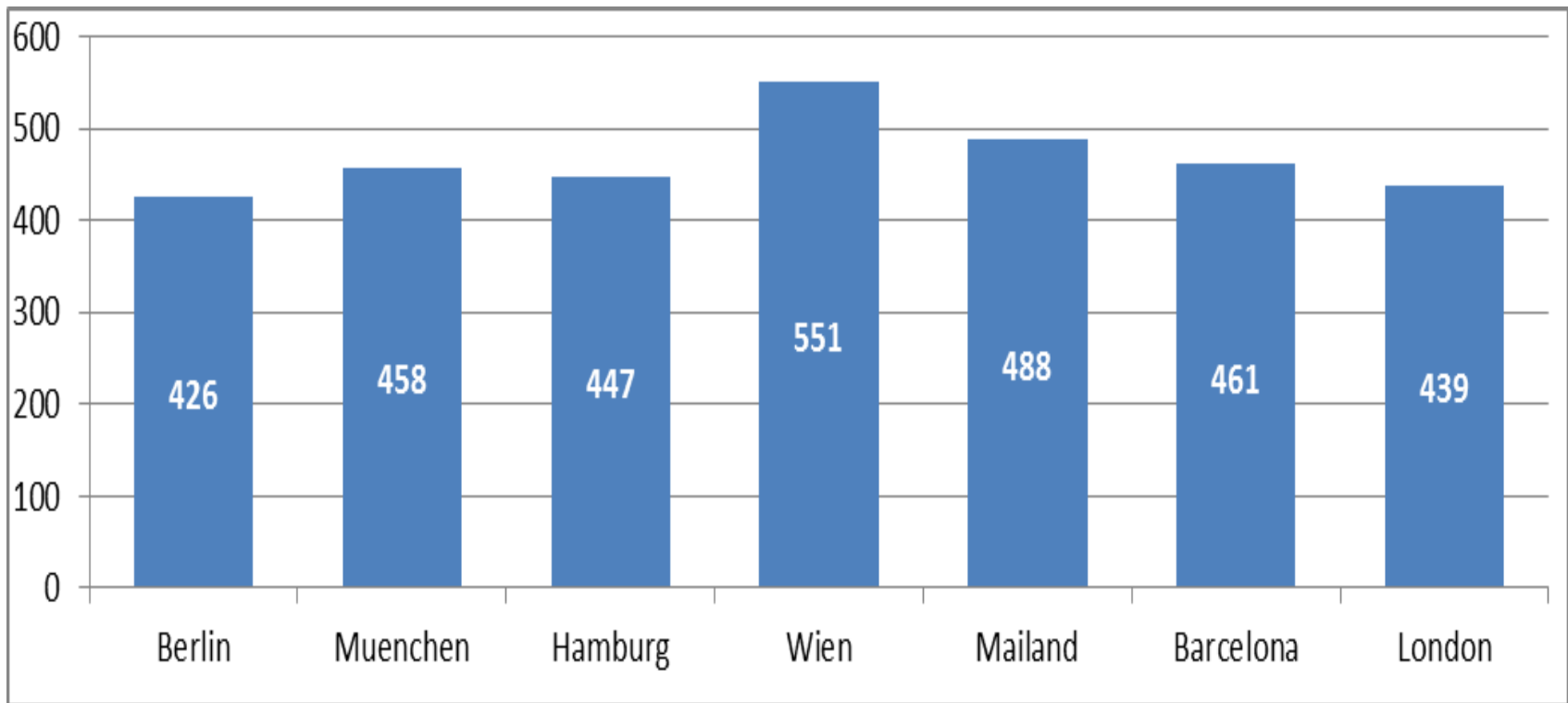


Source: AMSA 2014, base on official reports of each City for year 2012



Comparison with other Cities in Europe

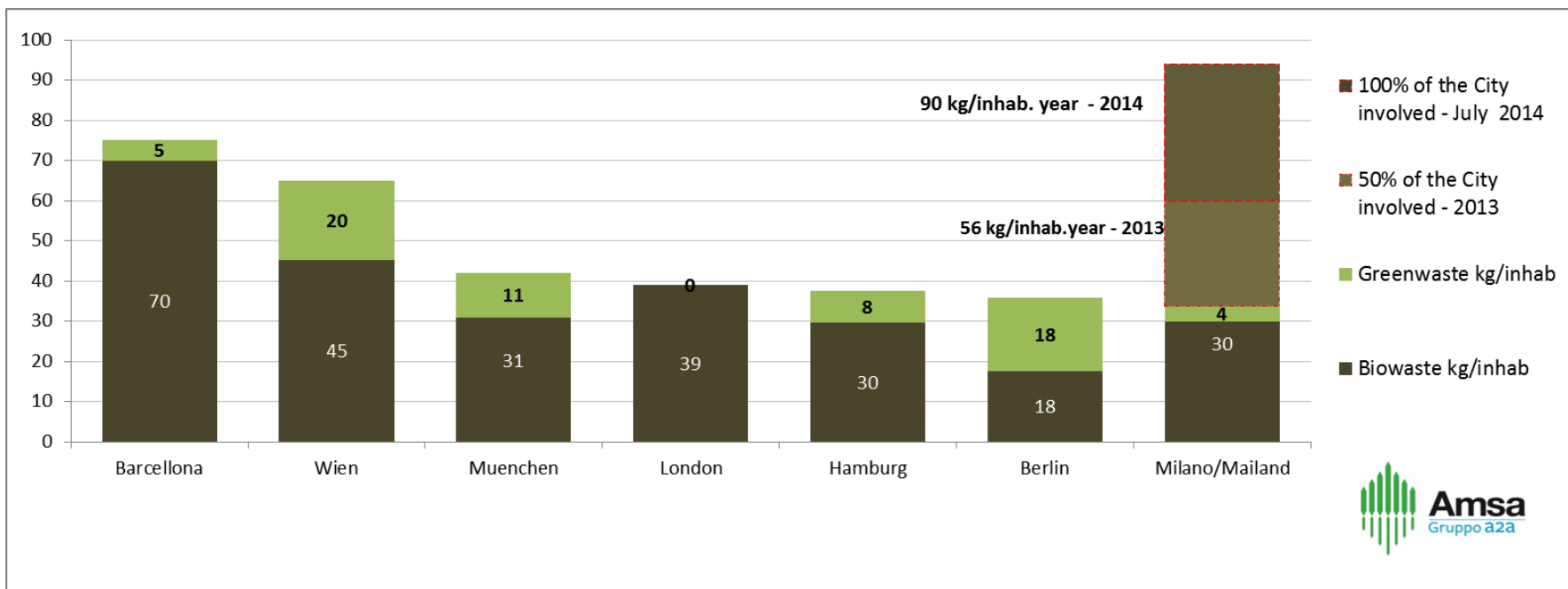
- Similar complexity (population and density)
- Foodwaste is included in the MSW management scheme
- Survey based on official reports for year 2012



MSW production **450 – 550 kg/inhab./yr**



Comparison with other Cities in Europe



- Milan : data include forecast or year 2014
- Milan: Biowaste is 100% food waste
- München, Berlin, Hamburg and Vienna: Biowaste contains significant amounts of green waste
- Barcelona: bring-schemes (large road containers)



Conclusions

- Separate collection of food waste in Milan (and other Cities in Italy) reaches outstanding results (90 kg/inhab/yr)
- 86% Diversion of foodwaste from mixed MSW (i.e. 14% still in residual waste)
- Use of vented kitchen-caddy & compostable bio-bags (EN13342 certified) allows for large acceptance and participation
- Non-compostables are low (<5%) allowing for recycling at AD/C plant

→ Food waste collection effective also in metropolitan areas

Thank you

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Italian Composting and Biogas Association