

# LIFE BIOBEST

GUIDING THE MAINSTREAMING OF BEST BIO-WASTE RECYCLING  
PRACTICES IN EUROPE

## D3.4: Country Factsheets on the analysis of communication and engagement practices

WP3: Set of Guidelines

T3.4: Analysis of communication and engagement practices

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Public Report



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## N°2: Factsheet on Exemplary Communication and Engagement Strategies for bio-waste collection | Italy: Focus on Milan

The bio-waste management system implemented in Milan serves as a pioneering model for urban areas worldwide, highlighting the critical role of effective communication strategies. Through targeted outreach efforts and digital tools such as the "PuliAmo" app, the programme ensures active community involvement and engagement. Emphasising the importance of clear communication, Milan's approach has not only achieved high levels of participation and satisfaction among residents but has also inspired similar initiatives globally.

### MILAN

Population (inhab.)	Density (inhab./km <sup>2</sup> )	Type
1,372,000 (2023)	7,551	Urban

#### Background elements

The proper management of food waste, separated at source, is a key element of Milan's [Food Policy for Sustainability](#). While separation of bio waste from the Ho.Re.Ca. sector and other large producers (e.g. green groceries, butchers) was rolled out in 1995, collection of bio-waste from households was introduced in 2012 through a D-t-D system, using 120 L containers and vented kitchen caddies with biodegradable bags. The presence of a dedicated space in each building proved to be fundamental to having a well-working, user-friendly (and therefore) high performing system also in high-rise buildings (where 85% of Milan's population resides).

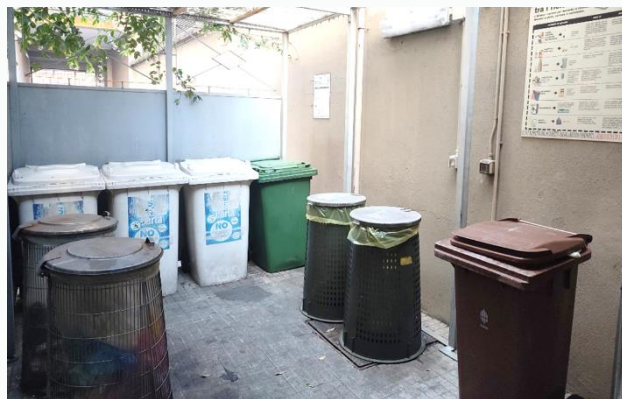


Image 1. A typical "waste room" with various receptacles for collection of different waste fractions. The brown bin on the right-hand side is dedicated to kitchen waste.

AMSA's (public waste management company) management services reach 100% of all users within the boundaries of the MSW collection service, i.e. households, local businesses and open markets. The scheme captures approximately 140,000 tonnes per year of kitchen waste. Collected bio-waste is processed at AMSA's anaerobic digestion site, with a capacity of 100,000 tonnes per year, followed by composting to produce over 20,000 tonnes of compost annually, along with 8 million cubic meters of bio-methane.

### Bio-waste collection model

Kitchen waste is collected through a dedicated D-t-D collection scheme, while large quantities of garden waste are delivered to municipal recycling centres located throughout the city.

Households receive a welcome kit upon activating new waste service accounts, which includes vented kitchen caddies (10 litres), EN 13432-certified compostable bags, and, if necessary, a bin for newly constructed buildings. Initially, a starter kit containing 52 bags was provided to cover six months of collection, but now residents can purchase compostable bags from various retailers, following the ban on conventional plastic shopping bags enacted in Italy in 2016. Damaged bins are replaced by AMSA as part of routine assistance, and a bin washing service is available upon request for a fee.



Image 2. The typical "starter kit", including the vented kitchen caddy (10 L) with a roll of compostable bags (right hand side) and (left) the wheeled bin (120 L) for the building – proportions are modified. *Umido* on the sticker translates wet waste, which is the common definition for kitchen waste in Italy.

Once the compostable bags are full, they are either transferred into larger caddies for single homes or taken downstairs to dedicated wheeled bins, each with a capacity of 120 litres. On average, one wheeled bin is shared by approximately a dozen households and



is placed in waste rooms or designated areas within the property. These bins are then placed outside the property on designated collection days, which vary depending on the neighbourhood. For large producers such as Ho.Re.Ca. and grocery stores organic, the collection frequency increases to six times per week.

## Best Practices description

### 1. Outreach and raising citizen's awareness

The scheme's success hinges on its user-friendliness, which maximises participation. Factors contributing to this include specific collection tools such as user-friendly compostable-bags and a higher collection frequency compared to residual waste, making it convenient for customers to separate bio-waste. However, its effectiveness also relies heavily on ongoing communication and awareness-raising efforts to ensure that users understand and align their behaviours with the operation of the scheme:

- **Clear instructions were provided along with the delivery of the starter kits**, which preceded the scheme's rollout. This rollout occurred in four subsequent enlargement stages, spanning from November 2012 to June 2014, with each stage covering approximately 350,000 people. Due to the dynamic nature of the population, characterised by frequent movement in and out of the city, providing instructions to new inhabitants has been crucial for the scheme's success.
- The main communication channels and tools used are digital (social media), and traditional (flyers, billboard advertising, mail, posters).
- AMSA faces challenges in engaging the younger generation and involving foreign communities. Effective communication tools therefore include **multilingual advertising and posters**. For example, during the initial stages, AMSA translated separate collection **instructions into 10 different languages**, resulting in 180,000 individual deliveries to residents from foreign communities, fostering a sense of belonging and increasing their engagement in waste management practices.
- Given the complexity and size of the city, a key role is also played by a **dedicated app**, named "PuliAmo" which is a catchy play on words in Italian. In 2022, the app was used on average by some 3,000 users/month. The app provides all the needed information for citizens, with regards to:
  - the collection calendar in each area;
  - additional services, such as where the nearest municipal recycling centre is;
  - an inventory of "what goes where": instructions for how to separate various materials.



Image 3. A flyer providing instructions on compostable bags (left) and the booklets translated in 10 different languages with front adapted to portray users in the most appealing way for the different targeted communities (right).

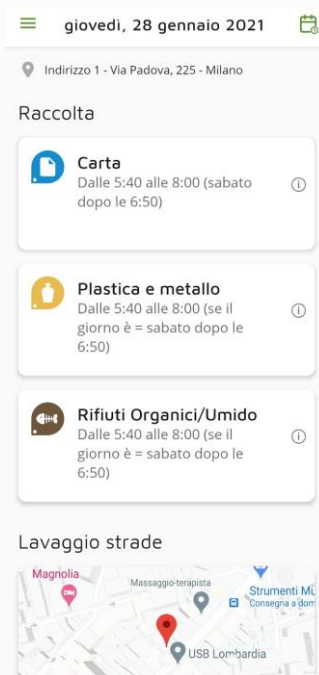


Image 4. Screenshots from the PuliAmo app – calendar of collection in the neighbourhood.



Image 5. Screenshots from the PuliAmo app instructions for separation of various items.



## 2. Stakeholder involvement process, impact and feedback

Citizens, businesses and institutional activities (e.g. schools) are involved in a consultation process through a customer satisfaction analysis which is run on a regular basis to get their feedback on the scheme, so as to assess the need for future improvements. There are also other contact channels that allow AMSA to monitor customer's feedback, such as focus groups, the "Puliamo" app, websites and meetings.

The customer satisfaction analysis done in 2023 included a poll (interviews over the phone) from some 40,000 people across the 40 different neighbourhoods, including foreign communities. The [survey results](#) revealed a high level of satisfaction with waste management services, with **95% of respondents reporting feeling "satisfied."**

AMSA employs around **30 waste inspectors** responsible for assessing the quality of various waste fractions, including residual waste, placed outside properties on collection days. The fact that bags for residual waste were changed to transparent ones allowed these control inspections to be easier, whilst also making more citizens aware of their waste generation.

These employees have the authority to issue fines to condominiums (which can range from 200 to 1,200 EUR) if the separated materials do not meet the required standards, or if recyclables/compostables are found in residual waste. Despite an average of 40,000 fines issued annually, which may seem significant, it is relatively minimal compared to the size of Milan's population, the number of homes and businesses, the five waste fractions collected, and the frequency of collections. This underscores the importance of "peer pressure" within the community, where established residents play a role in educating and monitoring newcomers and less committed individuals, ensuring adherence to waste separation guidelines.

## 3. Ripple effect and dissemination

Milan's scheme has been widely recognised as groundbreaking due to its scale and performance. This visibility has sparked similar initiatives in other cities served by the [A2A group](#) (to which AMSA belongs), such as Bergamo and Brescia, as well as in densely populated municipalities in the Greater Milan metropolitan area, which totals approximately 8 million people. Moreover, Milan's programme has inspired cities worldwide to explore and implement kitchen waste collection initiatives, even in challenging contexts. Milan has hosted numerous delegations from around the globe.



### Key results

<b>Change in participation</b>	The scheme was rolled out to cover 100% of the population and large producers. The reduced collection rounds for residual waste and include transparent bags for inspection, made the participation rate near 100%
<b>MSW separate collection rate (2022)</b>	62%
<b>Residual waste generation per capita (2022)</b>	177 kg/inhab./yr
<b>Bio-waste collection per capita (2022)</b>	101 kg/inhab./yr (This refers to kitchen waste only; 70% coming from households, 30% from businesses)
<b>Impurities in bio-waste (% of weight) (2022)</b>	5% (This refers to kitchen waste only)
<b>Bio-waste in residual waste (% of weight) (2019)</b>	11.1% (Compositional analysis reveals that the separate collection scheme captures around 87% of the city's total kitchen waste)

### Lessons-learned

- It is crucial, particularly in a large city, to **actively engage diverse ethnic communities through targeted initiatives and communication**. At a minimum this should be having information available in the relevant different languages, but it should also result in the delivery of communications tailored to each community (e.g. different sites or platforms that are most popular with different ethnic communities).
- **Fostering a sense of collective responsibility among households and businesses is essential for ensuring compliance** with waste separation practices. The consolidation of "peer pressure" encourages individuals to adhere to guidelines and contributes to the overall success of waste management efforts. Such a mechanism is triggered by the measures taken, both in the so-called "hardware" section (design of scheme, user-friendliness) and the software one (communication, education).
- In D-t-D collection systems like those in Milan, residents are directly responsible for emptying their kitchen caddies into the bio-waste bin located in the





condominium waste room for collection. Failure to sort waste properly may result in fines or penalties imposed by local authorities, **fostering greater accountability and compliance with the system** compared to bring schemes or open street containers.

- **Reduced frequency for residual waste and transparent bags makes it more convenient to separate bio-waste**, as it nudges citizens to separate their bio-waste more effectively so that they can avoid the nuisances of storing food waste for longer durations;
- A **multi-level targeted and far-reaching communication programme makes it the social norm to take part in the scheme** and therefore encourages proper separation of bio-waste.



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