

Exploring the circular bioeconomy
potential in the cities



Living Lab #1 - Città Metropolitana di Napoli (CMNA)

Sistema attuale di gestione dei rifiuti organici, sfide e buone pratiche



25 Marzo 2022



10:00 - 12:00



On-line



Partecipazione gratuita

For more:

🖥 www.biocircularcities.eu
✉ info@biocircularcities.eu
📱 @biocirc_cities



This project has received funding from the Bio-based Industries Joint Undertaking (JU) under the European Union's Horizon 2020 research and innovation programme under grant agreement No 101023516. The JU receives support from the European Union's Horizon 2020 research and innovation programme and the Bio-based Industries Consortium

Agenda

h 9.50 - Registrazione virtuale

h 10.00 - Introduzione e benvenuto

- Introduzione al meeting – obiettivi ed agenda
- Presentazione degli Enti coinvolti (tavola rotonda)

Moderatore: Enrica Leccisi, Città Metropolitana di Napoli

h 10.20 - Presentazione del Progetto Biocircularcities

- Obiettivi del progetto, casi studio, Living labs

Rosaria Chifari, Fundació ENT - Project Leader

h 10.40 - Presentazione del caso studio: Rifiuti organici nella CMNA

- Sistema attuale di gestione dei rifiuti organici urbani ed agro-industriali
- Contesto normativo vigente e buone pratiche di economia circolare in Europa, in Italia ed in ambito locale

Enrica Leccisi, CMNA e Rosaria Chifari, Fundació ENT

h 11.00 - Dibattito sulle sfide da affrontare nella gestione dei rifiuti organici

Discussione sulle sfide principali esistenti per il sistema di gestione dei rifiuti organici urbani ed agro-industriali nella Città Metropolitana di Napoli

Moderatore: Amalia Zucaro, ENEA

h 11.20 - Dibattito sulle potenziali alternative di economia circolare

Condivisione delle azioni di successo ed individuazione di possibili alternative di economia circolare al fine di migliorare e valorizzare il sistema di gestione dei rifiuti organici urbani ed agro-industriali nella Città Metropolitana di Napoli

Moderatori: Enrica Leccisi, CMNA ed Amalia Zucaro, ENEA

h 11.40 - Conclusioni, sviluppi futuri, osservazioni e domande



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<https://biocircularcities.eu/>



CITTÀ METROPOLITANA
DI NAPOLI

ENEA



AMB
Area Metropolitana
di Barcellona



CIVITTA



Presentation of local stakeholders

Mural platform: knowing the participants to the living lab

Explanation on how Mural is working

Each participant will drag a post it inserting under the logo of their entity, their name & surname and keys words on their expertise.



15 minutes:

3 minutes writing

12 minutes round table presentation



MURAL LINK:

<https://app.mural.co/t/fundacioent1413/m/fundacioent1413/1648037407179/c2f76a0a2e9b75314e03d1d4a2dfdce9a6d5846b?sender=uf5af56d1f9f0ac3f08b41378>



BIO CIRCULAR CITIES

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First Living Lab

Current biowaste management system, challenges and best practices
in the Metropolitan City of Naples

Enrica Leccisi, CMNA

25 th March 2022



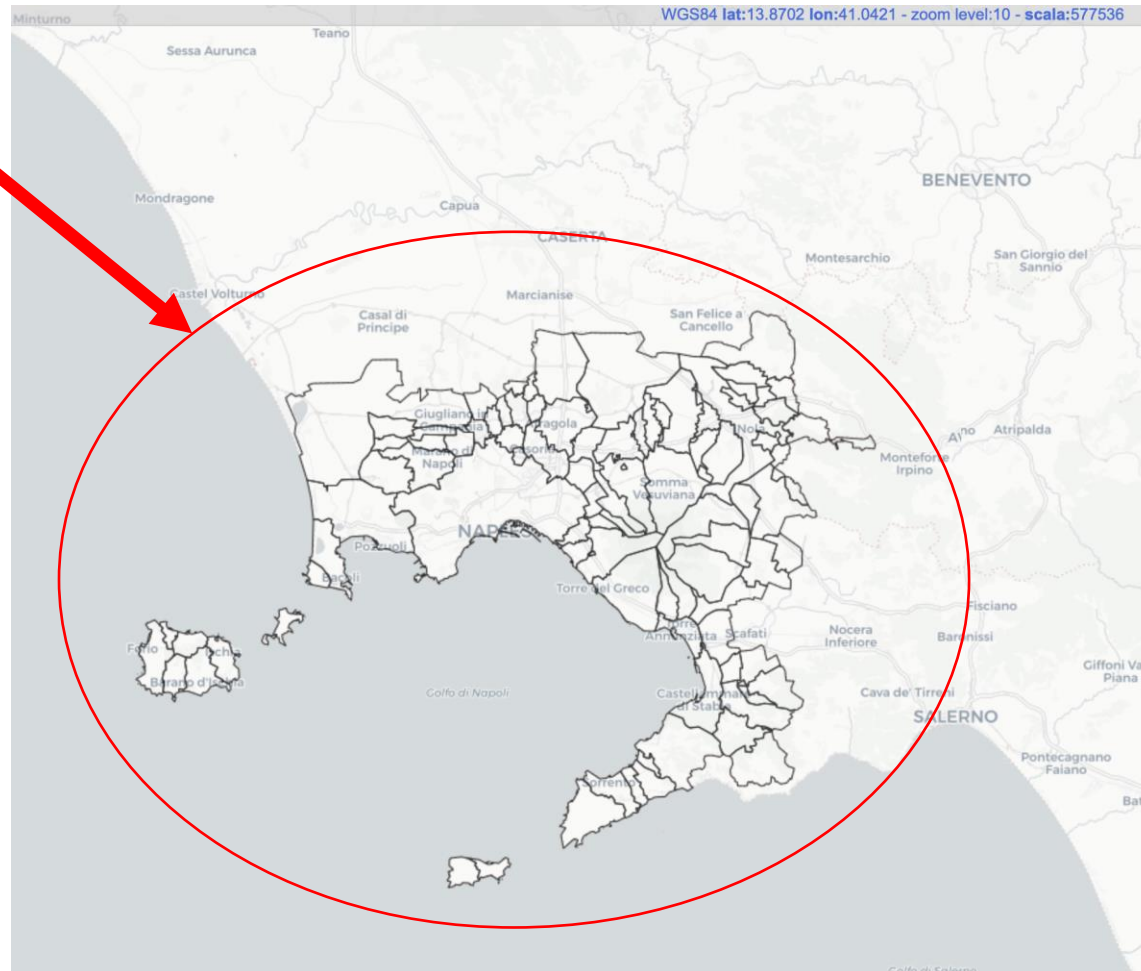
Biowaste: state of the art

Current MSW management in the Metropolitan City of Naples

The pilot area: The Metropolitan City of Naples (CMNA)



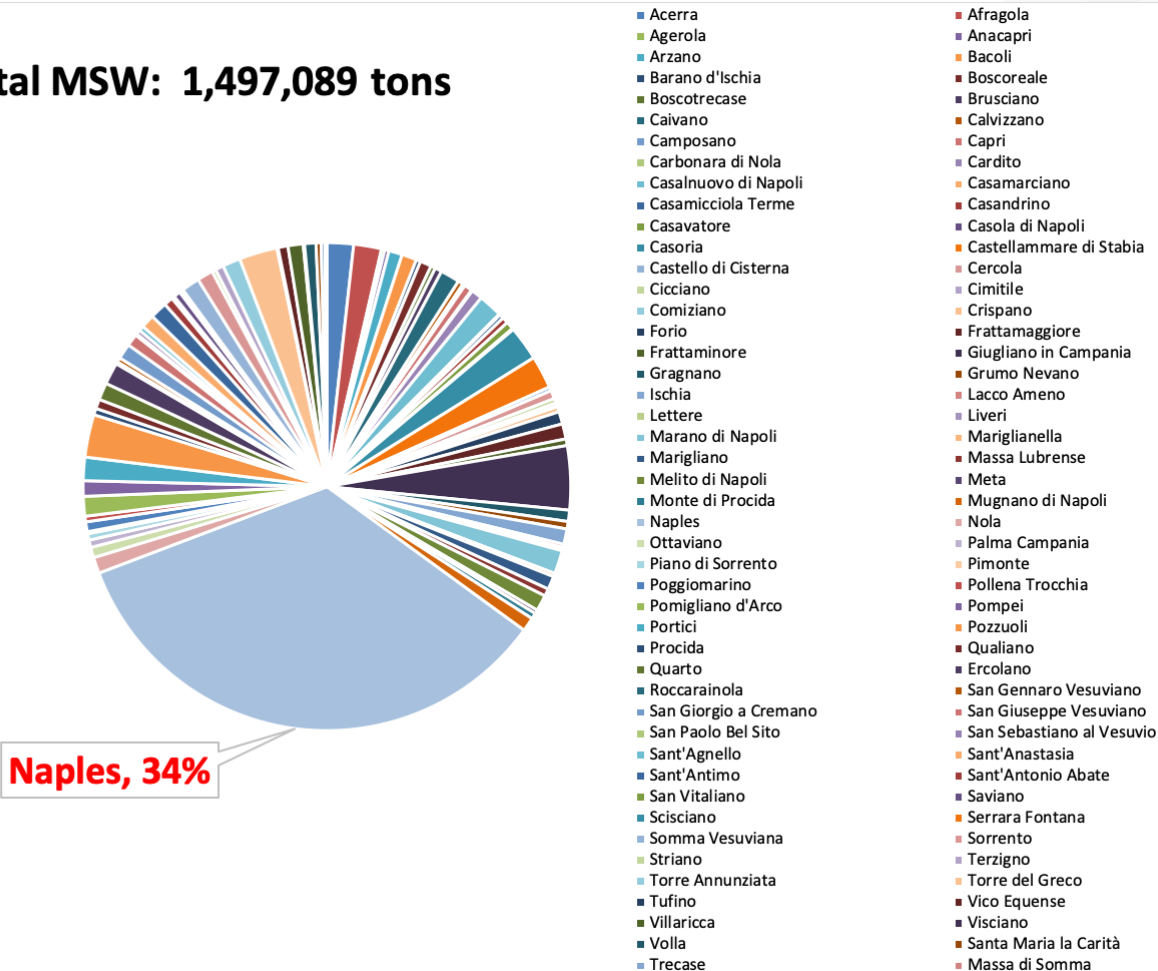
Main characteristics of the pilot territory



- 92 Municipalities
- 3 ATO: Naples 1, Naples 2, Naples 3
- Number of inhabitants: 3,082,905
- Total MSW: ~1,497,089 tons
- Total not separated collection: ~782,183 ton
- Total separate collection: ~696,906 ton
- Separate collection: 47.12%
- Total bio-waste: 302,909 tons
- Source and year of data: ARPAC, 2019

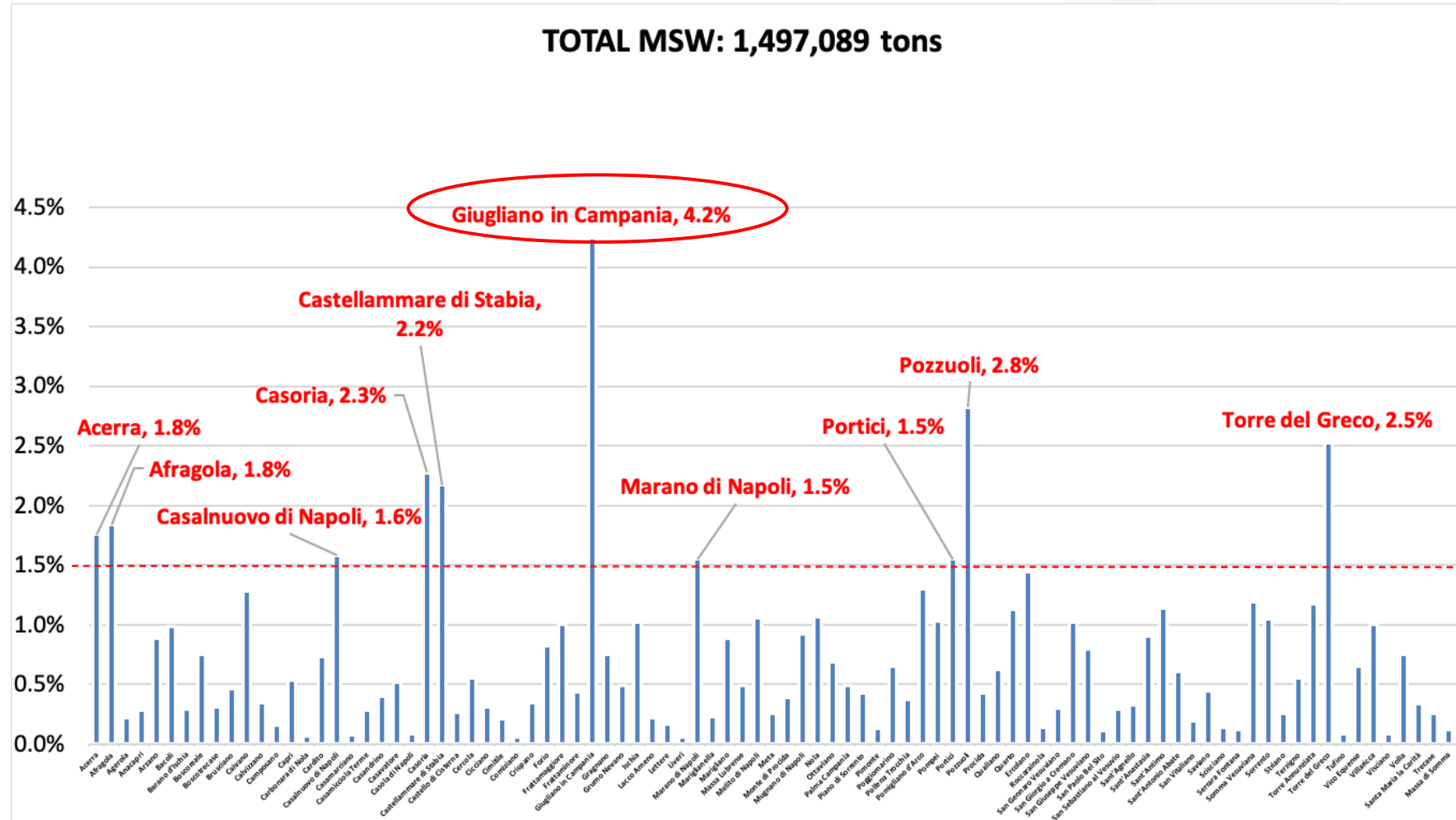
Main characteristics of the pilot area: MSW generation

Total MSW: 1,497,089 tons



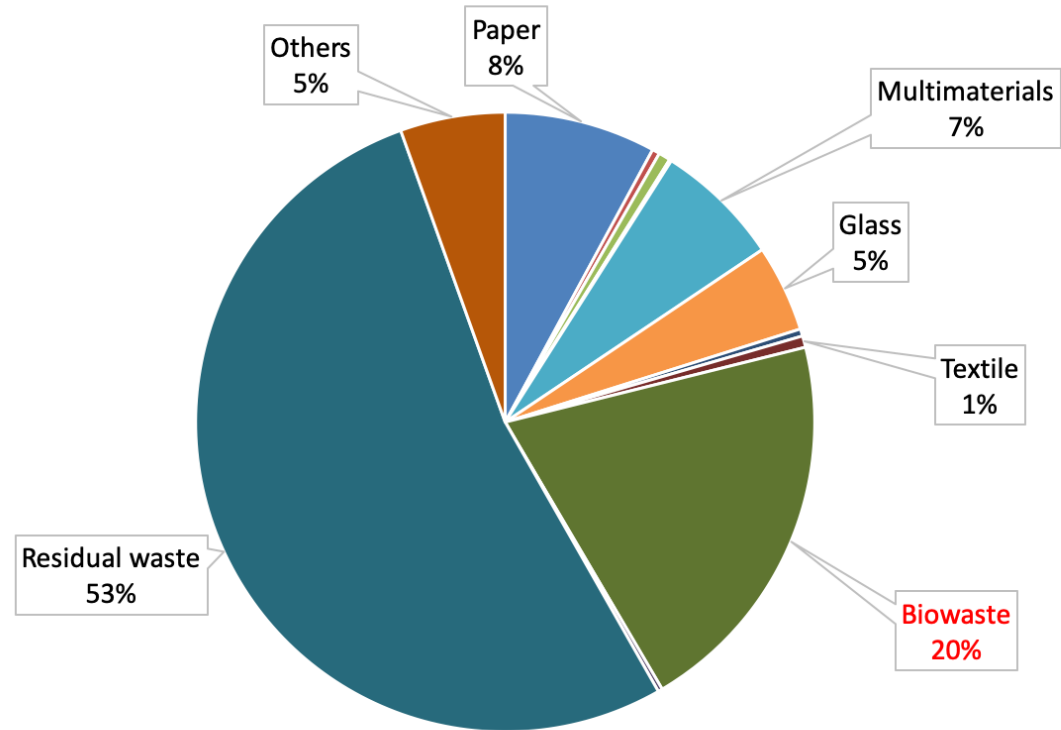
- Naples municipality alone (ATO 1) represents 34% of the total MSW of CMNA

Main characteristics of the pilot area: MSW generation



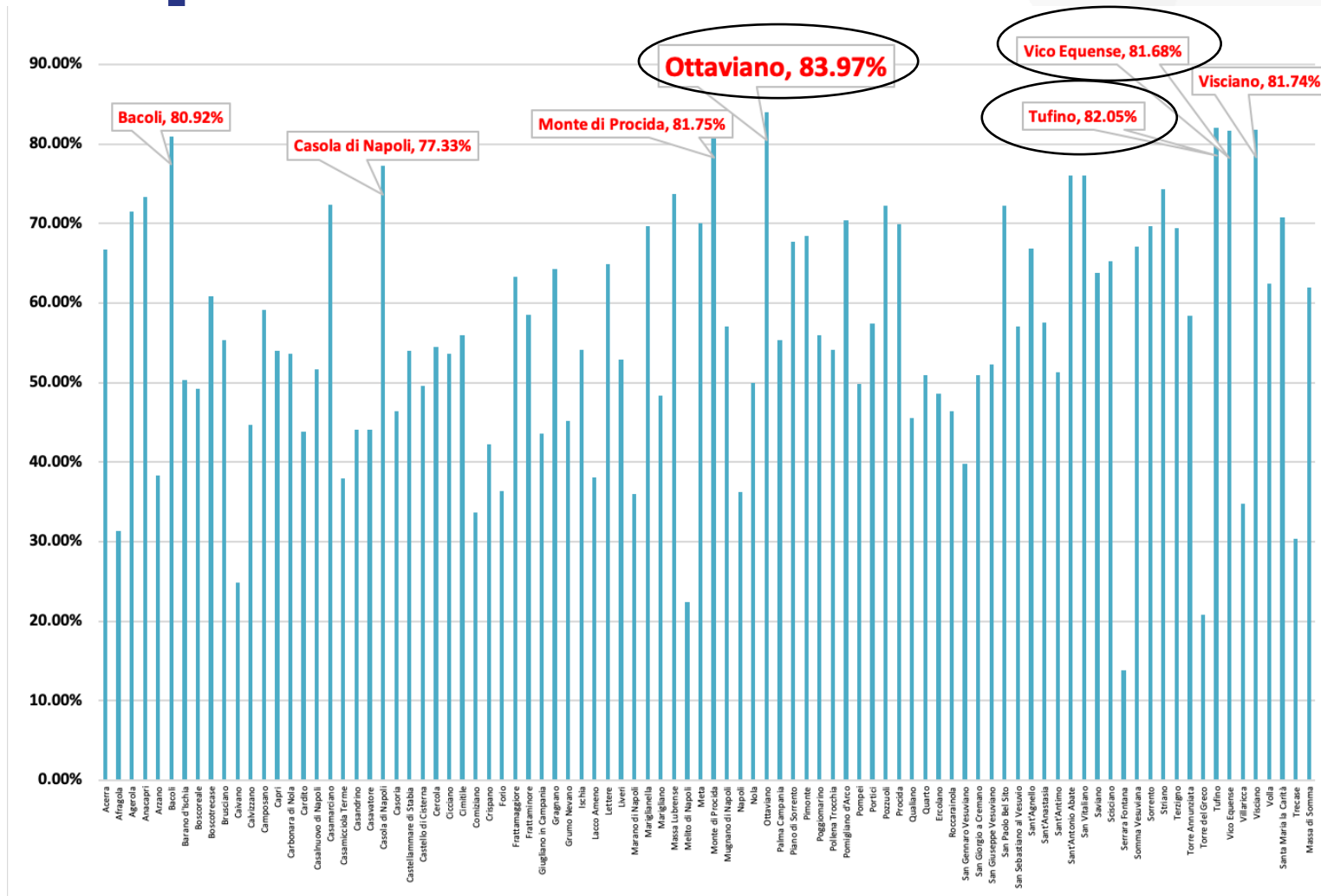
- Another 22.2 % of the total MSW of CMNA is associated with 10 municipalities.
- The other 56.2% is distributed by the other 81 municipalities.

MSW composition in CMNA



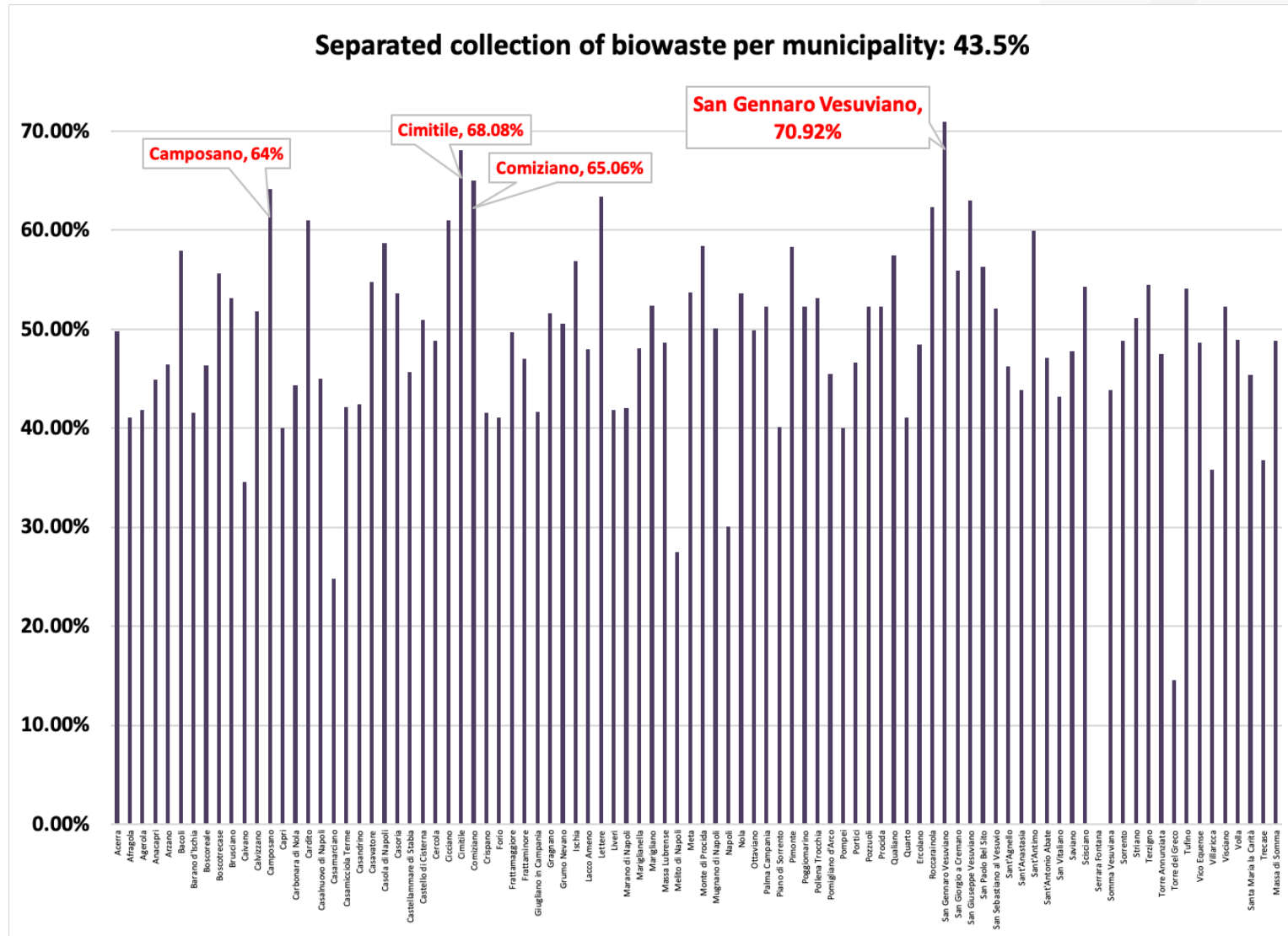
- Total MSW: ~1,497,089 tons
- Total source separated bio-waste: 302,909 tons (20% of collected MSW)
- Source and year of data: ARPAC, 2019

Main characteristics of the pilot area: separate collection



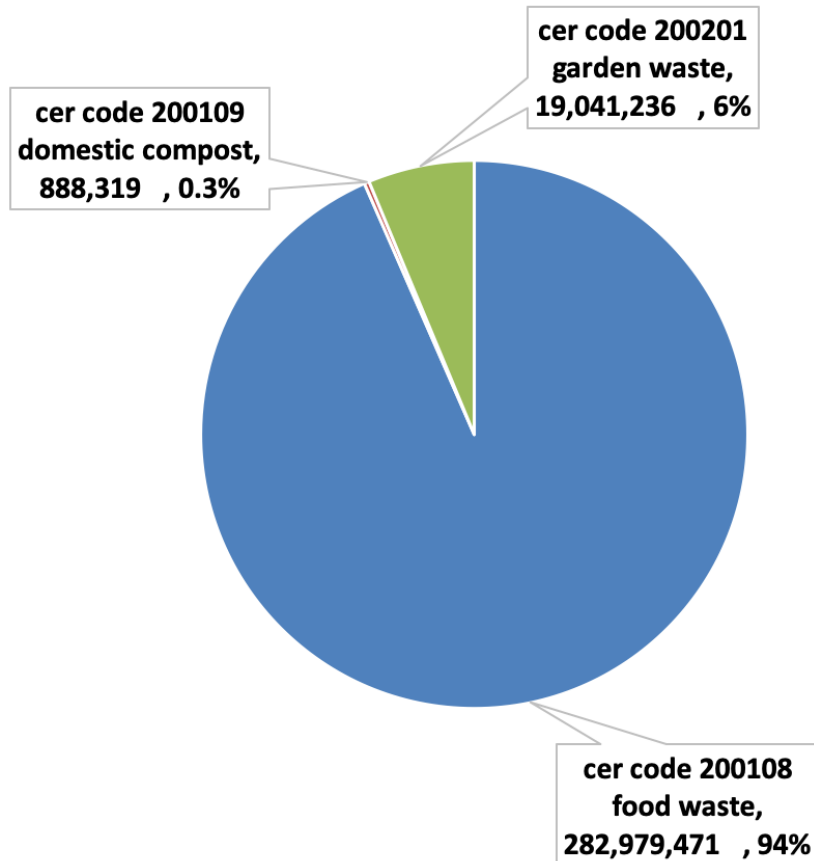
- MSW: 1,497,089 tons
- The average of MSW separate collection in CMNA is 47.12%
- The highest separate collection is in the municipality of Ottaviano with 84%, while Naples is about 35%

Source separated biowaste in CMNA [%]



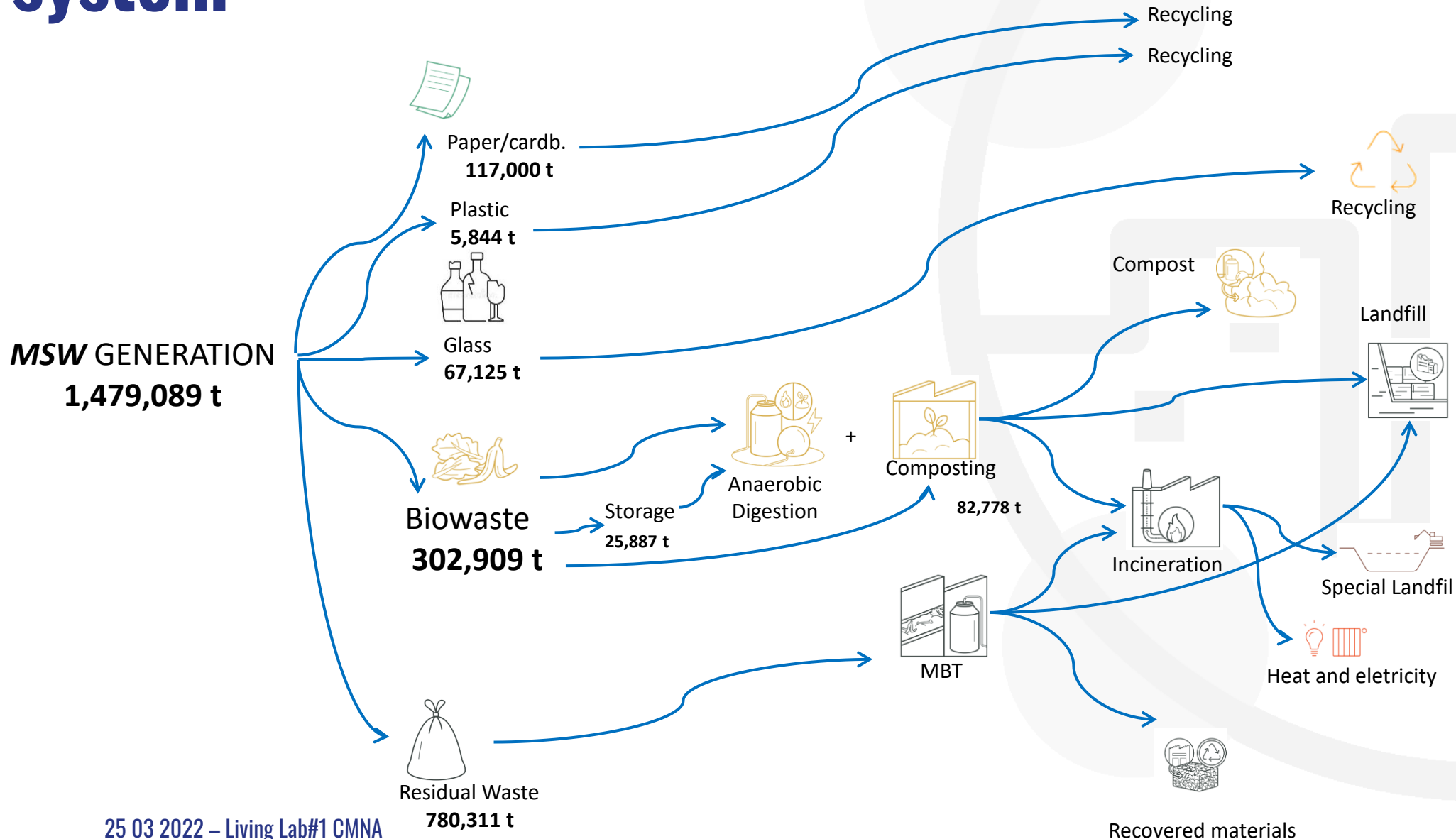
- Total source separated biowaste in CMNA: 302,909 tons
- % biowaste on total separated collection: 43.5%
- The highest rate of SC of biowaste is in San Gennaro Vesuviano (71%) followed by Cimitile (68%), Comiziano (65%), and Camposano (64%).

Source separated biowaste by type

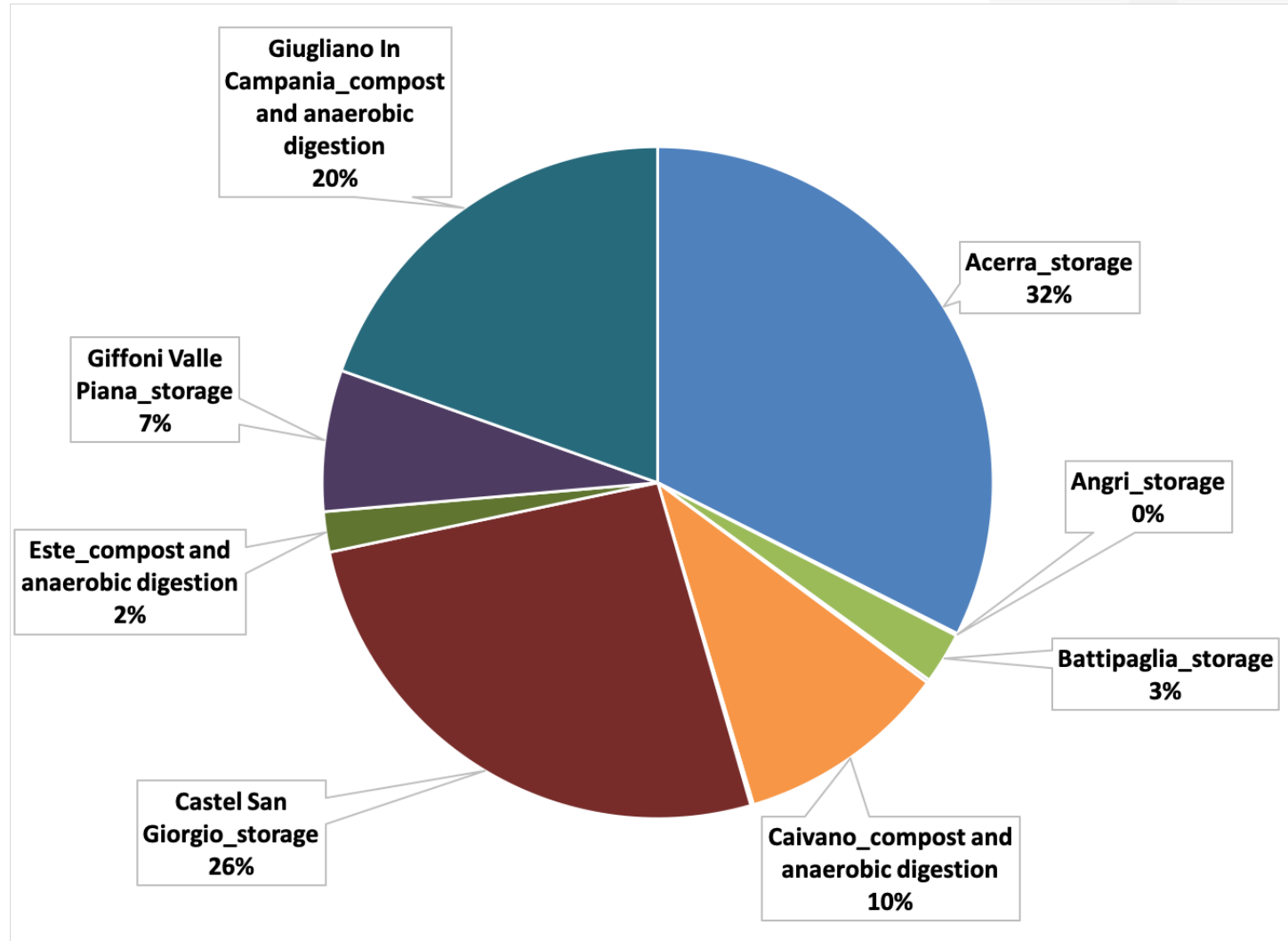


- 94% of the biowaste is from food waste. CER code: 200108
- 6% of biowaste is from garden waste. CER code is 200201
- 0.3% of biowaste is from domestic compost. CER code is 200109.

Flow diagram of the current MSW management system



Current MSW biowaste management



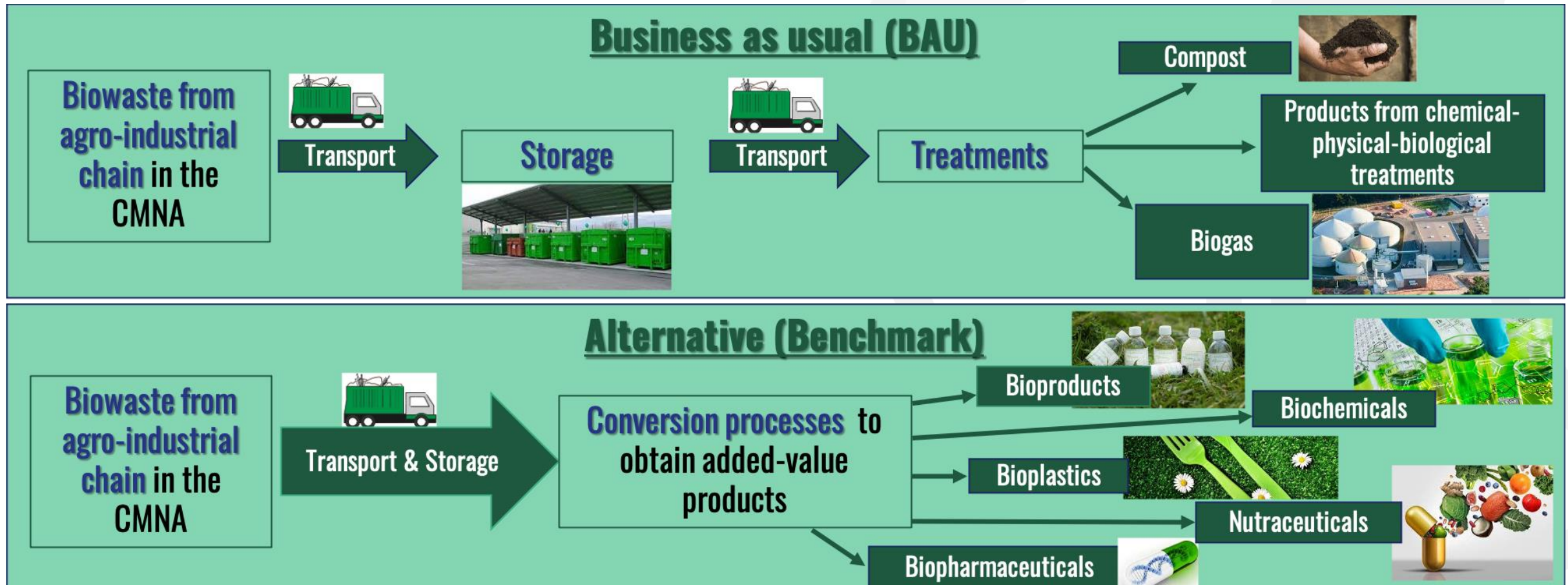
- 68% of source separated biowaste for MSW is finally treated out of Campania Region

Selected biowaste chain

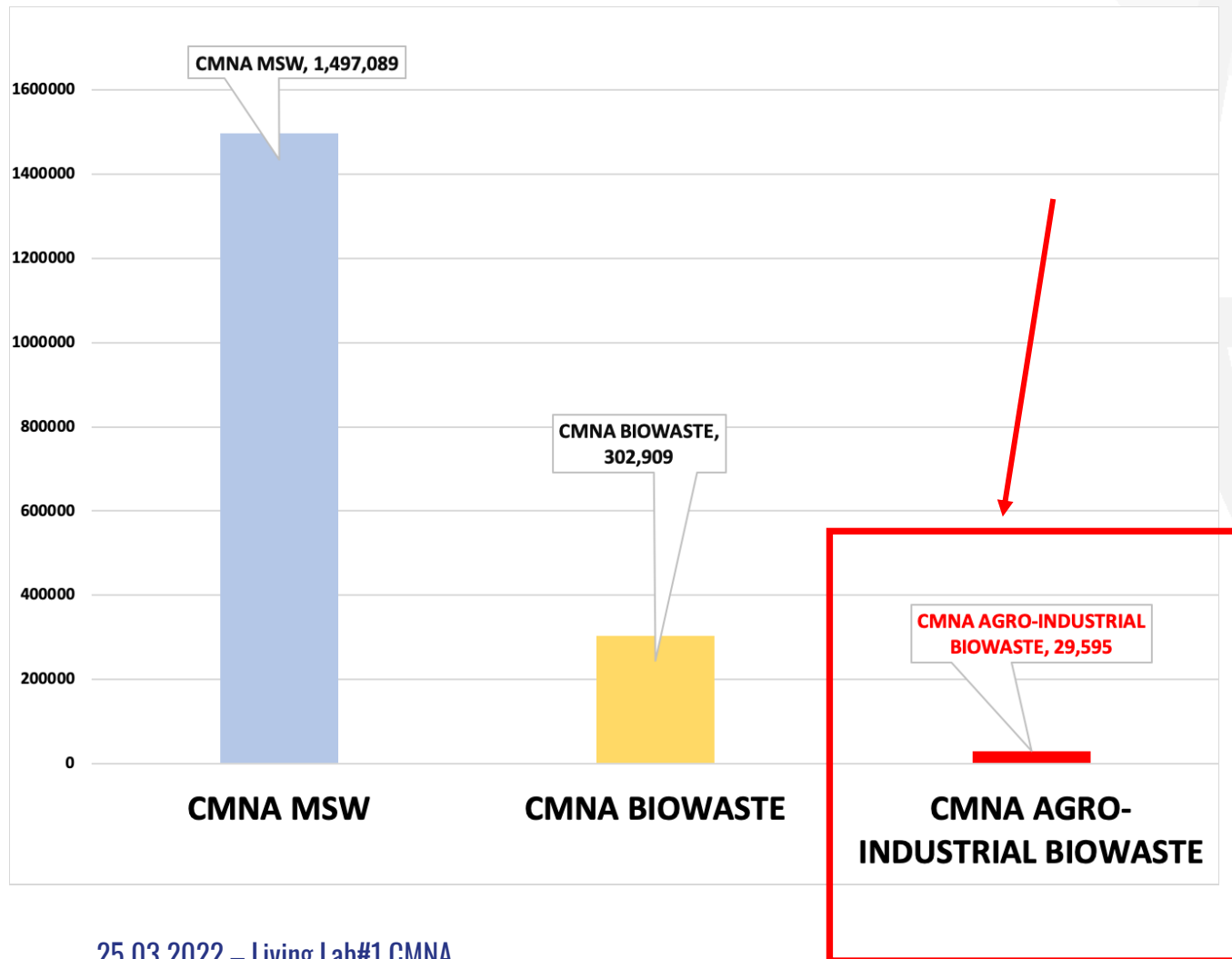
The Metropolitan City of Naples pilot territory



Selected biowaste chain: Agro-industrial biowaste in CMNA

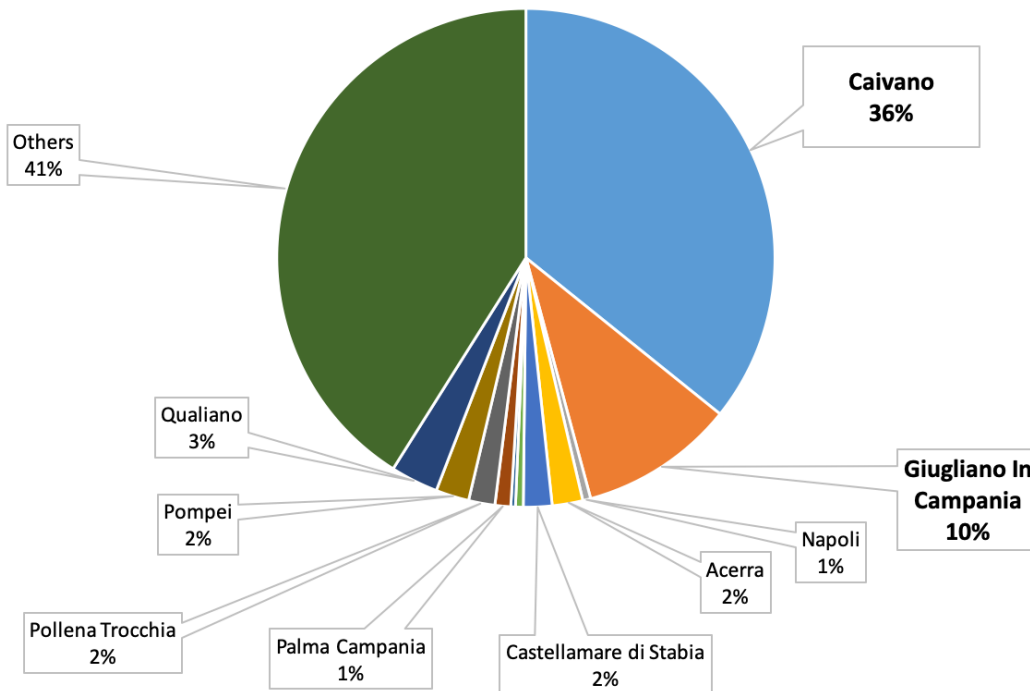


MSW biowaste vs agro-industrial biowaste in CMNA



- The selected biowaste chain in CMNA is the organic fraction of agro-industrial waste.
- The numbers of producers in CMNA is about 500 units
- The total amount of agro-industrial bio-waste is 29,595 tons
- Source and year of data: Arpac, 2019

Agro-industrial biowaste per municipality in CMNA



- Total agro-industrial biowaste is 29,595 tons
- The highest rate of agro-industrial biowaste is in Caivano (36%), 50% of which is from Unilever Italia Manufacturing Srl
- 7 CER codes are associated with the agro-industrial biowaste from CMNA.
- The highest rate is 020502

Policy framework on circular bioeconomy

The EU and the Metropolitan City of Naples context



Approach

• Aims

- Review of regulatory framework related to circular economy and biowaste management both at European and local level in the selected areas of study
- To identify barriers and opportunities that limit or promote the circular use of bio-based products and processes

• Scope

- Territorial level: European, National, Regional, Local
- Where and which are the barriers?
- Can be circularity really promoted?



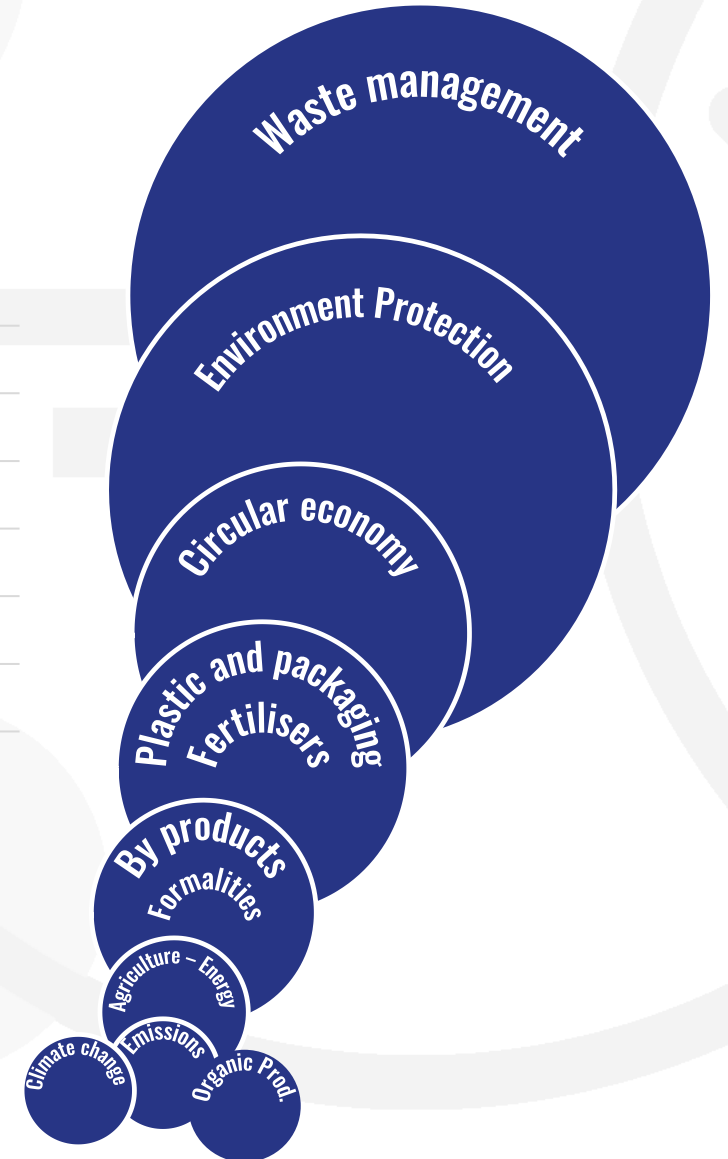
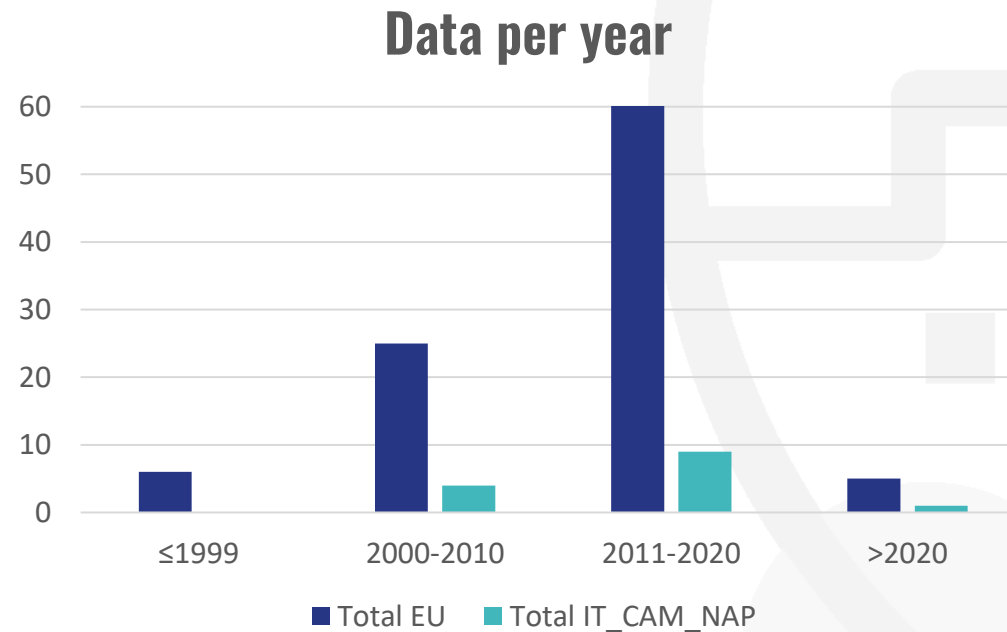
Summary of Regulatory and policy framework



- Evolution along the years.

Pilot: CMNA

- Europe
- Italy
- Campania
- Metropolitan City of Naples



Relevant Plans and Directives at EU level



CIRCULAR ECONOMY

- **Planification**

- COM(2015) 614 final. Closing the loop. An EU action plan for the circular economy
- COM/2018/673 final. A sustainable Bioeconomy for Europe: Strengthening the connection between economy, society and the environment
- COM/2020/98 final. A new Circular Economy Action Plan for a cleaner and more competitive Europe

- **Main regulation**

- Waste Framework Directive. Directive 2008/98, on waste and repealing certain directives
- Landfill Directive. Directive 1999/31, on the landfill of waste

Key messages from regulation framework in biowaste chain (EU level)



• Key messages at European level

Landfill:

Directive 1999/31
Directive 2018/850

- Reduction of biodegradable waste in landfill
 - Prohibited in landfill: BW of MSW from separate collection
 - 2035 – only 10% of MSW to landfill

Waste:

Directive 2008/98
Directive 2018/851
Decision 2019/1004

- Obligation of separate collection or recycling at source of biowaste (from 31st Dec 2023)
- Recycling targets of municipal waste (in weight)
 - 2025 – 55%
 - 2030 – 60%
 - 2035 – 65%

Recycling:

Decision 2019/1004

- Bioestabilised from MBT will not account for recycling rate

Key messages from regulation framework in biowaste chain (local level)



- The main National law is the Decreto legislativo 3 aprile 2006, n. 152 Norme in materia ambientale (G.U. n. 88 del 14 aprile 2006)
- It is important for the implementation of the Waste Framework Directive provides for measures aimed at protecting the environment and human health
- Locally, most of the regulations are set at Campania Region level
- The main goal is to prevent wastes aiming to improve the efficiency of resources and reducing the environmental impacts on the environment



Key messages from regulation framework in biowaste chain (local level)



- Important goals are:
 - 5% reduction in the ratio of generated municipal solid waste (MSW)
 - Implement circular economy
- The main macro-topics are related to the environment protection
- One of the main goal is to create a more effective interconnections among the various bioeconomy sectors in Italy as well as their value chains
- *What are the main bottlenecks in the existing regulation framework?*

Best practices

The Metropolitan City of Naples - pilot territory



Approach

• Aims

- Identify actions that can increase value of biowaste collected

• Scope

- Territorial level: European, National, Regional, Local
- Main topic: biowaste as main
- Related topics:
 - Technological innovation
 - Optimization and efficacy of collection System
 - Communication and dissemination activities
 - Fiscality
 - Control, surveillance, and sanctions



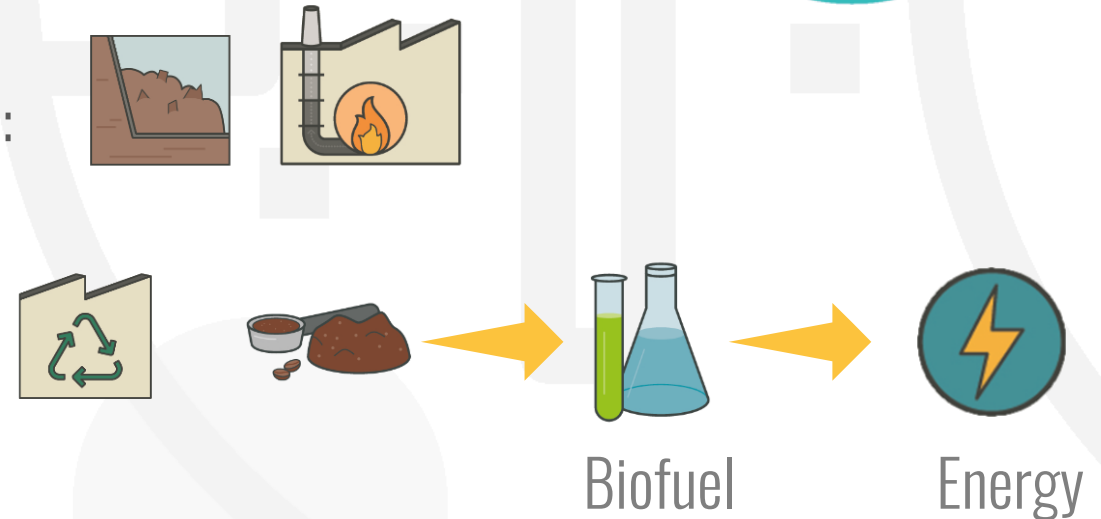
- Prevention
- Separate collection
- Preparing for re-use
- Decentralised treatment
- System Nudge
- Optimization biodegradable waste composting plants

Most relevant good practices in biowaste management (local level)

- Relevant good practices for the pilot (CMNA)

Technological
innovation:
Waste into green
energy

- Waste: coffee residues
- Current management:
- New management



Criticità e buone pratiche nella gestione dei rifiuti organici municipali e agroindustriali

Esercizio collaborativo in Mural sulle criticità e le potenziali strategie o buone pratiche per migliorare la gestione dei rifiuti organici di origine municipale e agroindustriale

Ciascun partecipante condividerà la propria esperienza rispondendo alla seguente domanda:



40 minuti:

10 minuti scrittura

20 minuti tavola rotonda

5+5 votazioni & conclusioni

In base alla sua esperienza, può indicare delle **criticità** (normative, tecnologiche, gestionali) del sistema di gestione dei rifiuti organici municipali ed agro-industriali che ritiene utile affrontare insieme e può suggerire qualche **strategia o buona pratica** di raccolta, trattamento e valorizzazione per questi rifiuti organici?

MURAL LINK:

<https://app.mural.co/t/fundacioent1413/m/fundacioent1413/1648048069345/d6b5a50dff60ca0a3d4ece403436559c7be86f13?sender=uf5af56d1f9f0ac3f08b41378>

Questions? Comments?





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Thank you

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