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Differences between waste compositional analysis and management system from European and Mediterranean Area

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Globalization

Why are Waste produced?

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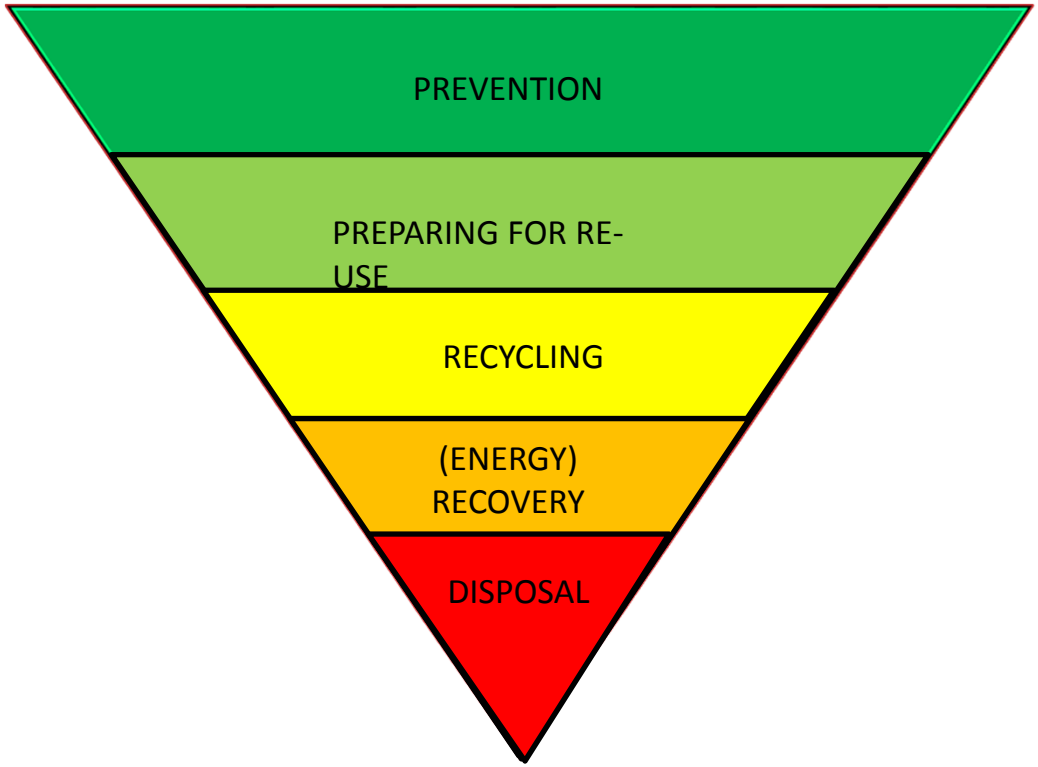
Waste Framework Directive (2008/98/EU)



Waste Management in EU (28) and waste generation per capital

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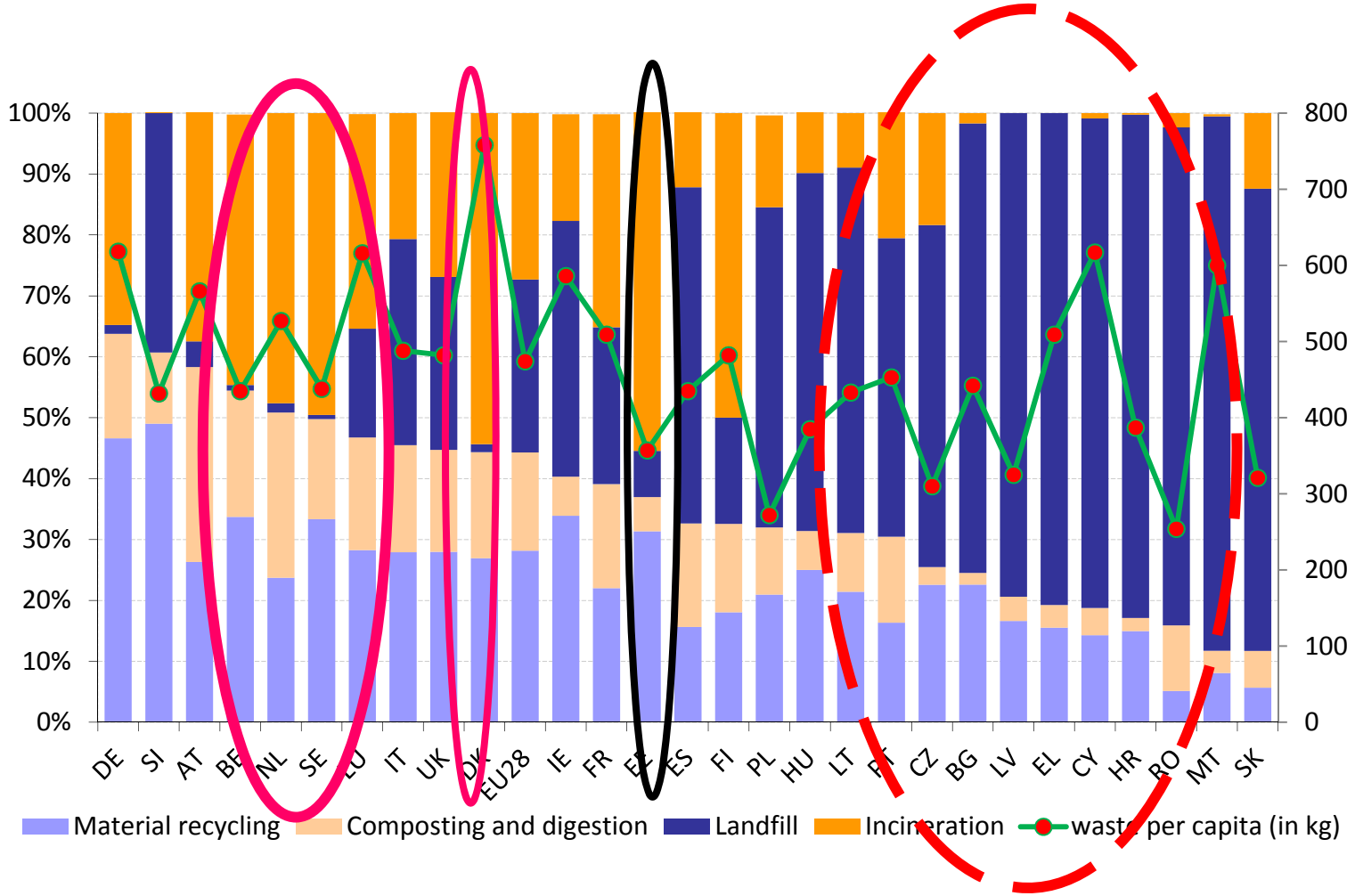
> 2.8 billion t of MSW are produced every year in EU 28



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Why compositional analysis ?

- This method is undertaken to understand different waste materials and the impact of an intervention or campaign on reducing the waste materials.
- Waste compositional analysis provides significant information for the type and the kind of waste generated in one area or in a whole country.
- Moreover, compositional analysis technique is used to estimate in detail the nature, scale and origin of food waste with survey work on household attitudes, claimed behaviour and socio-demographics.
- When using this approach, it is good practice to verify the data using separately collected data on MSW generation, treatment and disposal, especially in cases where they are based largely on modelling.
- Waste composition is one of the main factors influencing emissions from solid waste treatment, as different waste types contain different amount of degradable organic carbon and fossil carbon.
- Waste compositions, as well as the classifications used to collect data on waste composition in MSW vary widely in different regions and countries.
- Waste composition analysis is needed in order to promote several waste prevention practices in one area
- Strategic planning development

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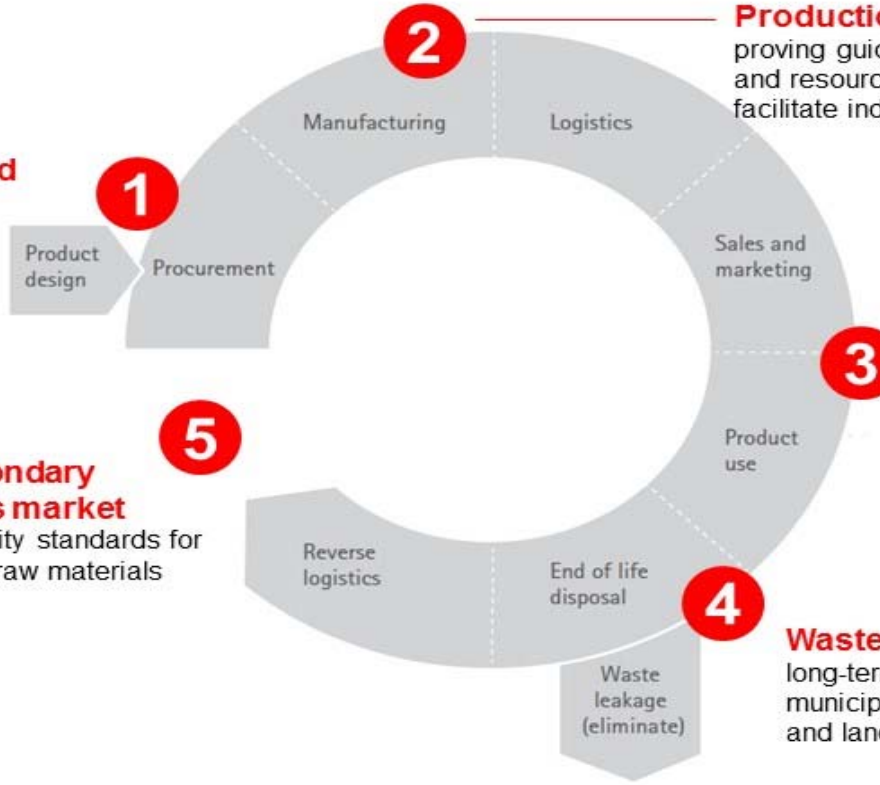
Five focus areas of the EU circular economy package

EU Circular Economy Package – five focus areas



Production processes
proving guidance on waste management and resource efficiency practices and facilitate industrial symbiosis.

Product Design and Procurement
promoting reparability, upgradability, durability and recyclability

Consumption
stimulating product durability, reuse activities, availability of repair information and spare parts.

The secondary materials market
setting quality standards for secondary raw materials

Waste Management
long-term recycling targets for municipal and packaging waste and landfill reduction

Targets to be achieved on 2030

- ✓ In particular increasing the share of municipal waste prepared for reuse and recycling to 65%,
- ✓ Increasing the share of packaging waste prepared for reuse and recycling to 75% (with specific targets for various materials used in packaging

- ✓ Reduced MSW disposed of in landfills up to 10%
- ✓ Setting minimum requirements for extended producer responsibility (to treat their products at the end of their life)
- ✓ Promoting prevention (including for waste) and re use
- ✓ **Increase life products**
- ✓ Strictly prohibition of the landfill of separate collected waste
- ✓ Promoting incentives for the adoption of the industrial symbiosis concept

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Requirements

In particular increasing the share of municipal waste prepared for reuse and recycling to 65%,

For each stream a target has been set

75 %, for glass
75% for paper and cardboard
30% for Al
75% for Fe
50 % for plastics
25%, for wood

prepared for reuse and recycling to 75%

85 %, for glass
85% for paper and cardboard
50% for Al
85% for Fe
75% for plastic
30%, for wood

2015 → 2025 → 2030

Recycling of MSW

55% w/w
60% w/w

For Organic Wastes

50% w/w
65% w/w

Reduced MSW disposed of in landfills

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Recycling Index in EU

World Bank Projections for compositional analysis

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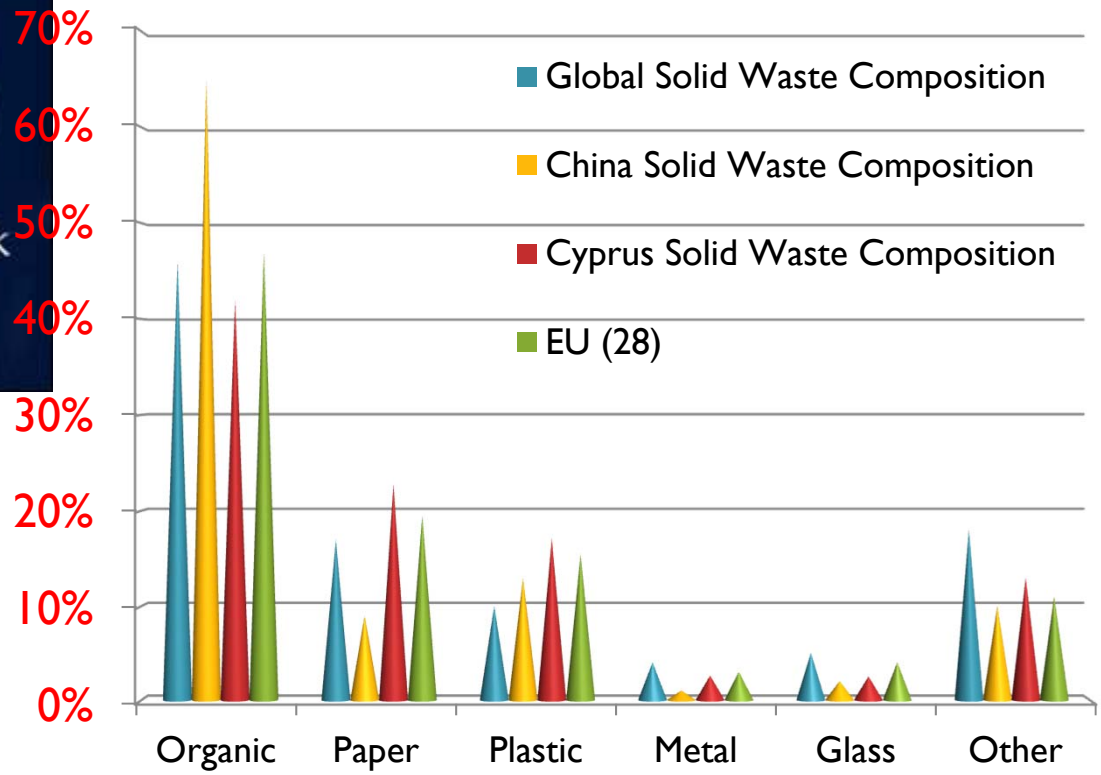
2012



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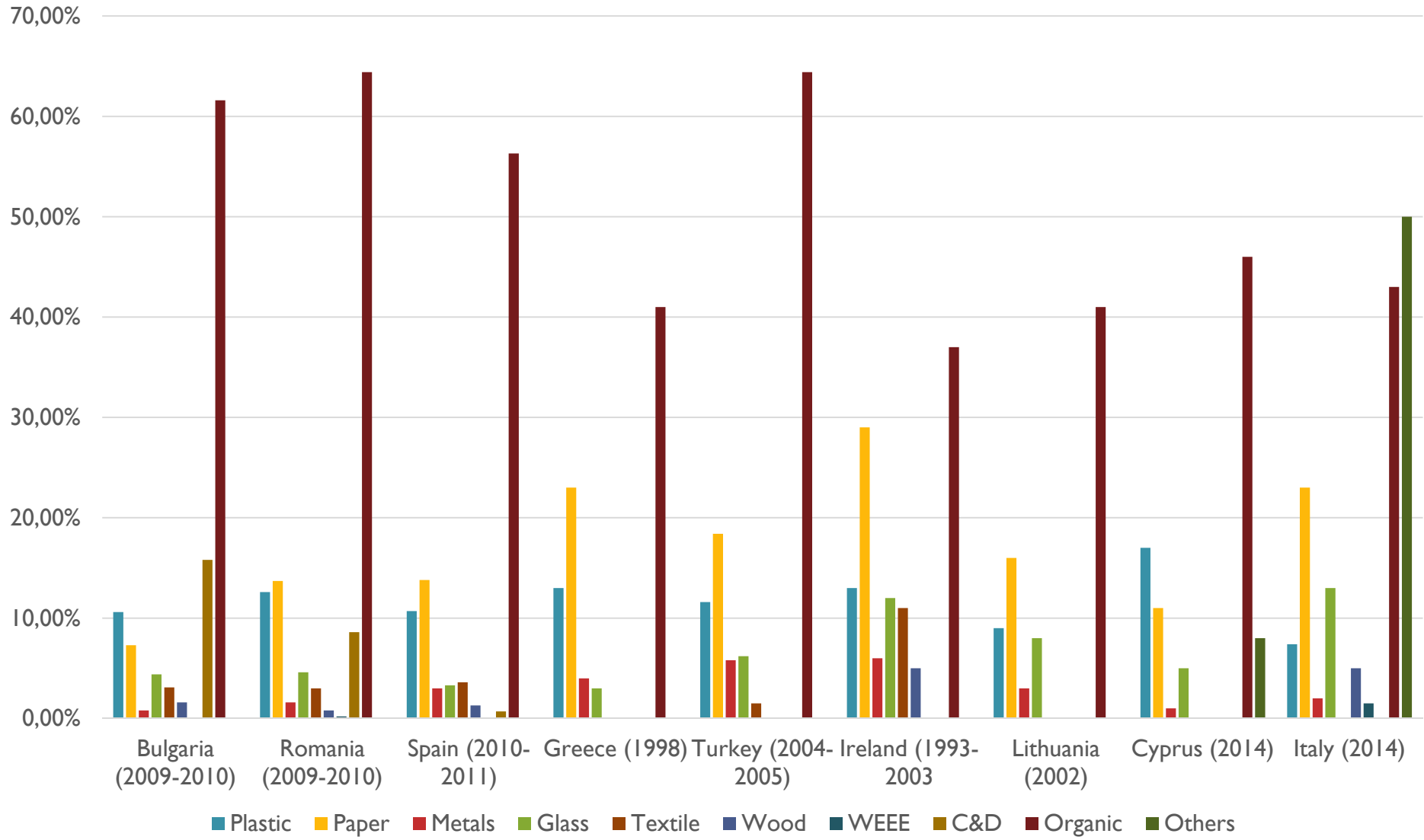

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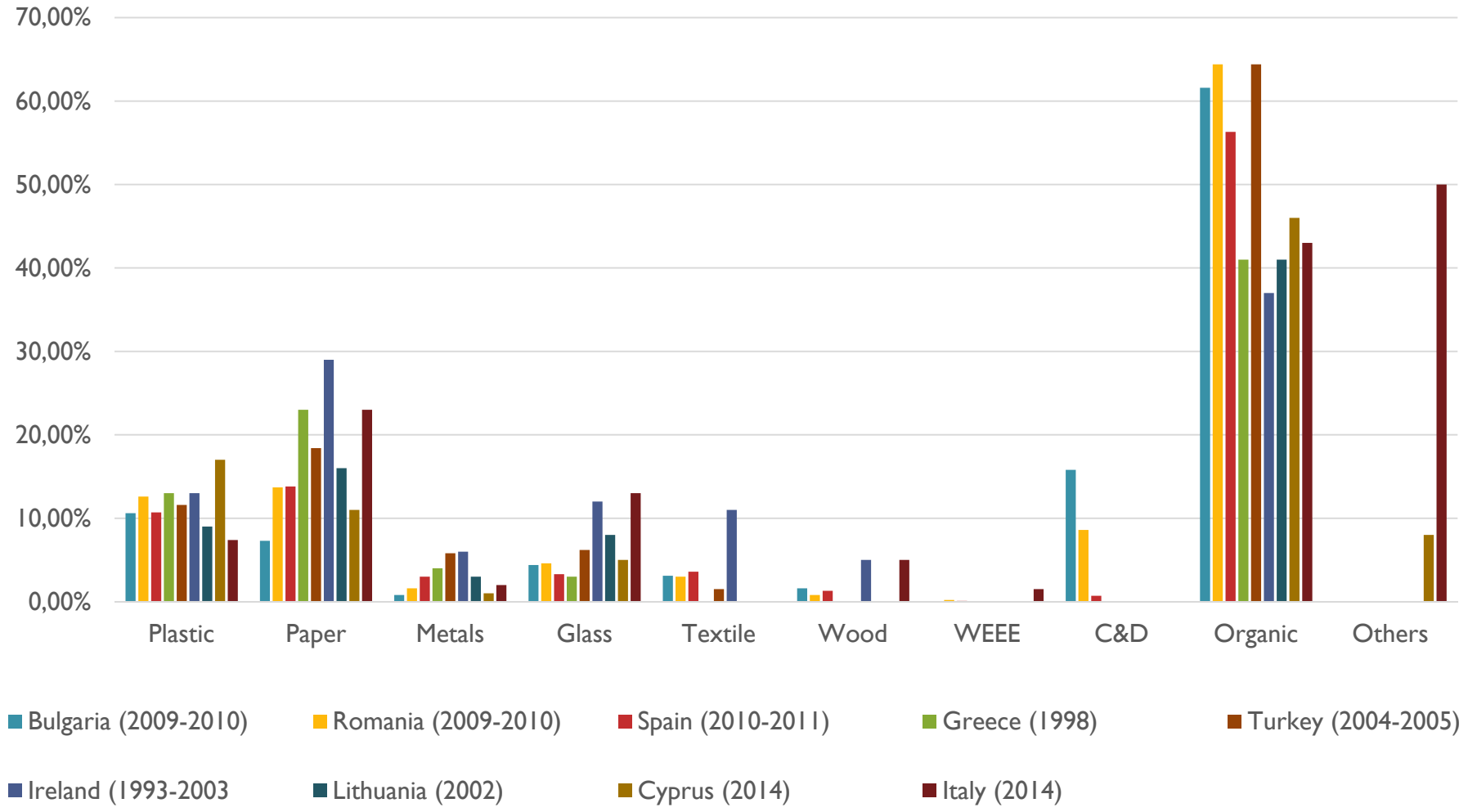

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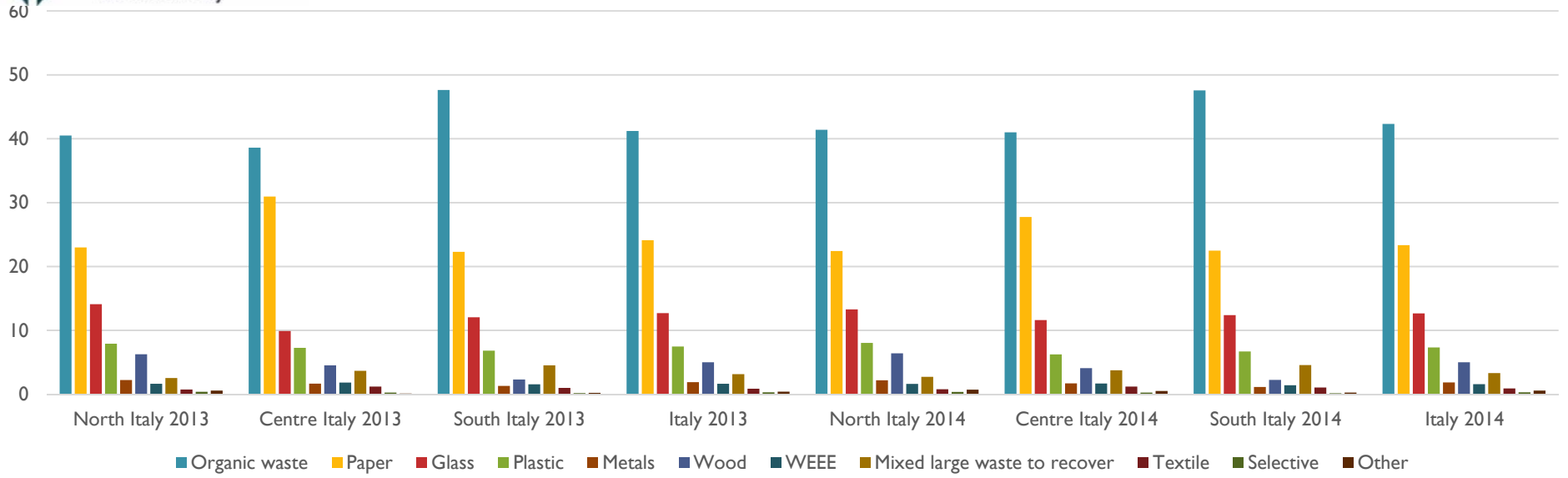
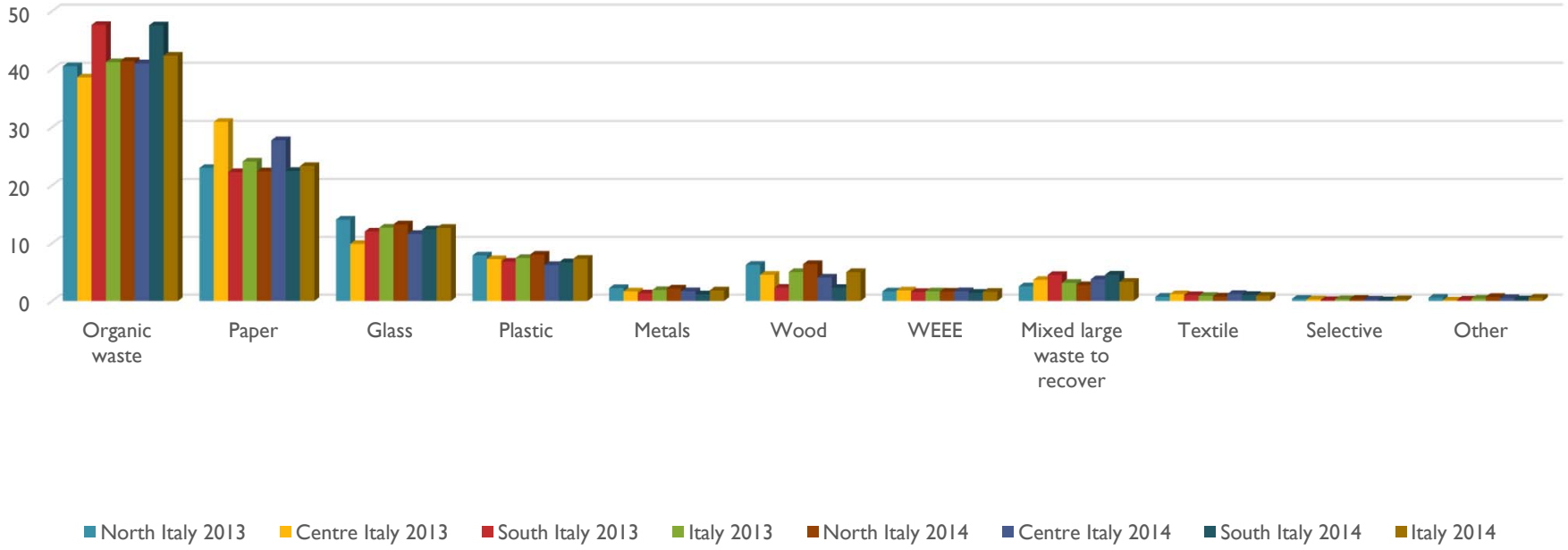
ITALY





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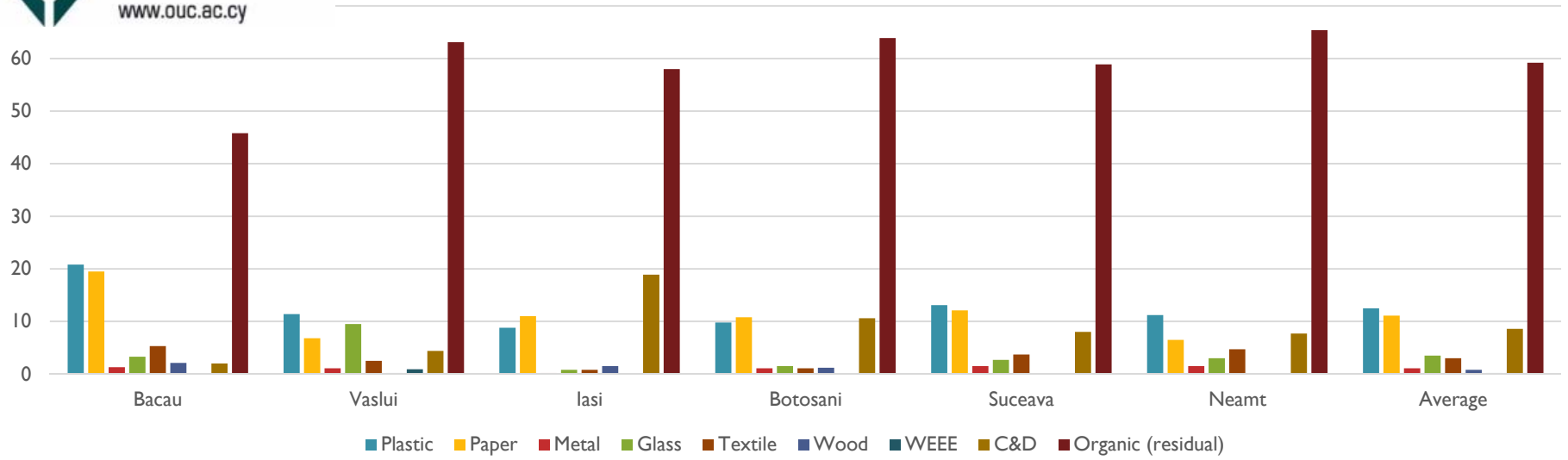
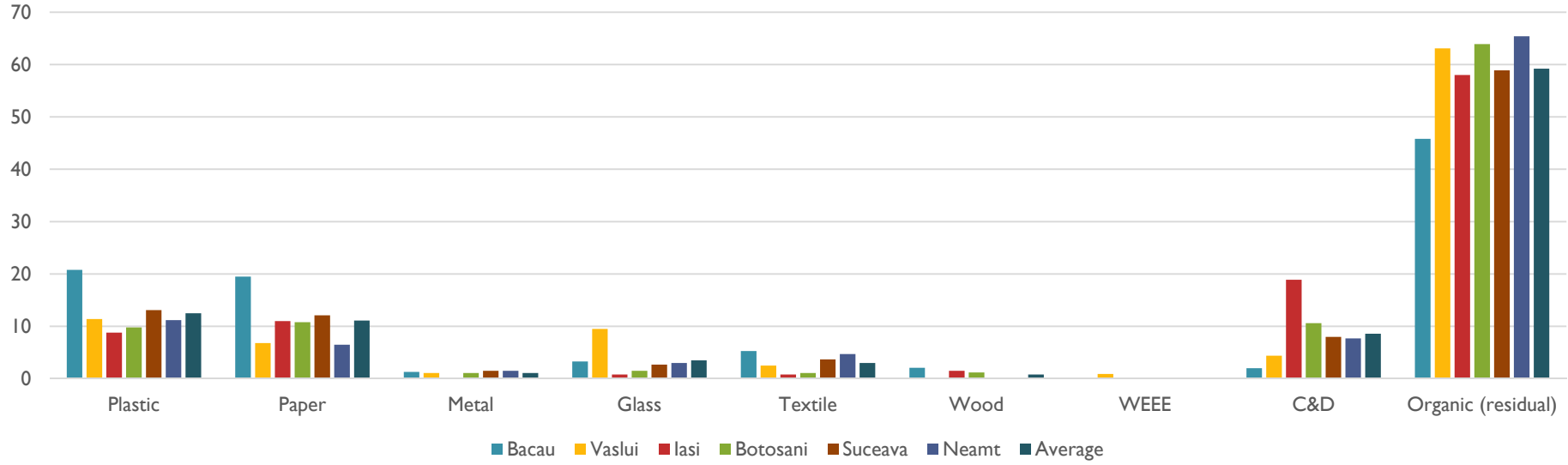
North –East region in Romania





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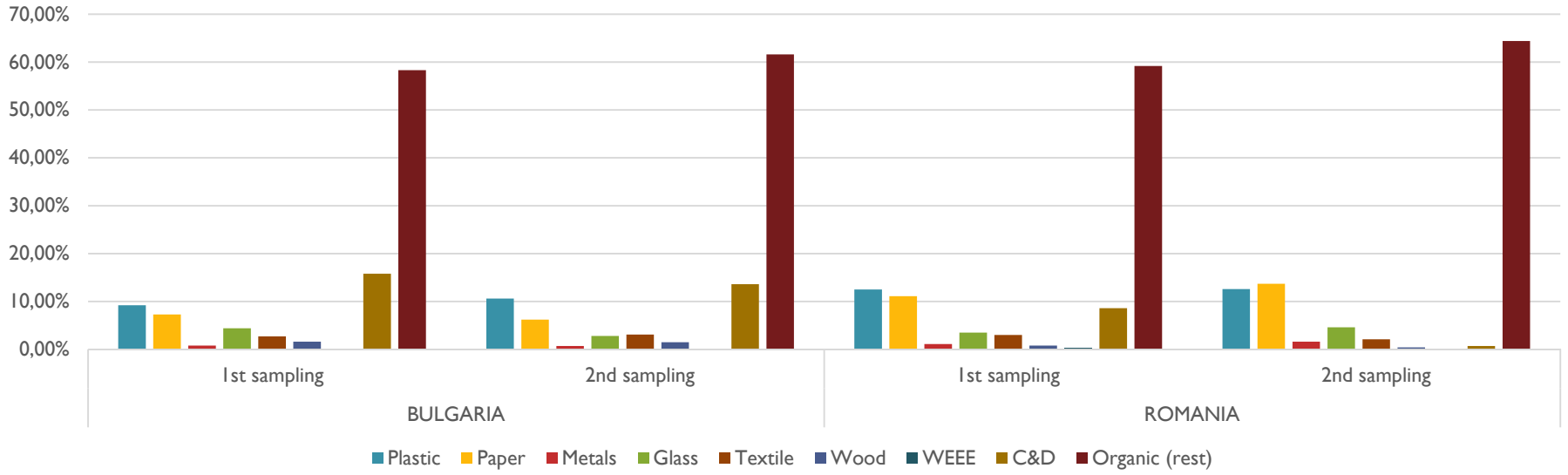
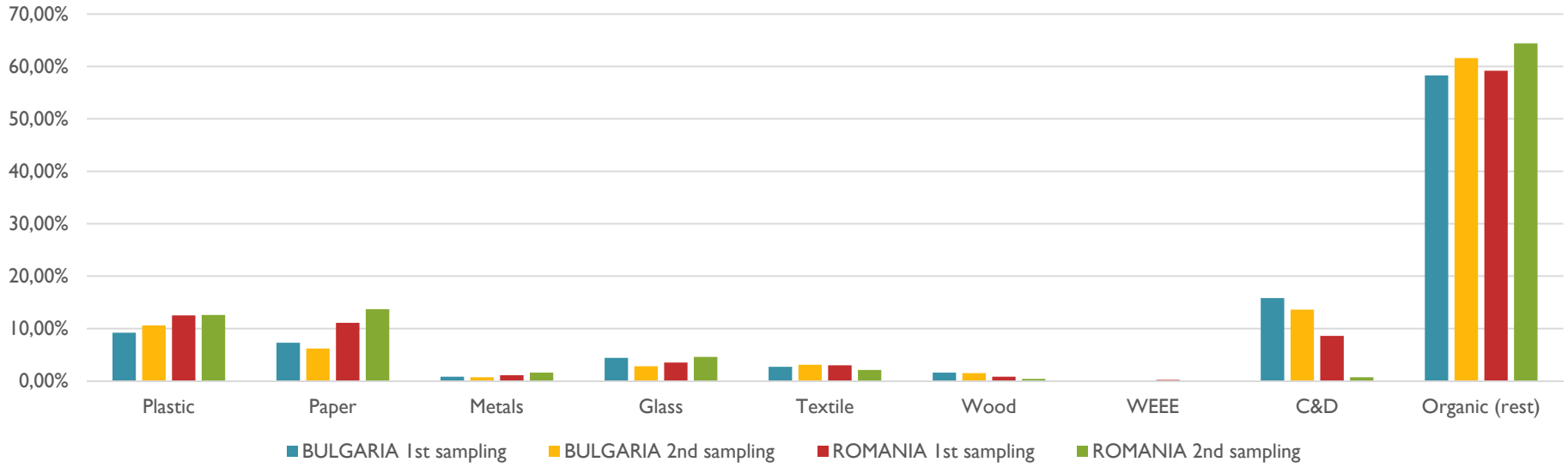
ison of the results from the first and second sampling campaigns 2010





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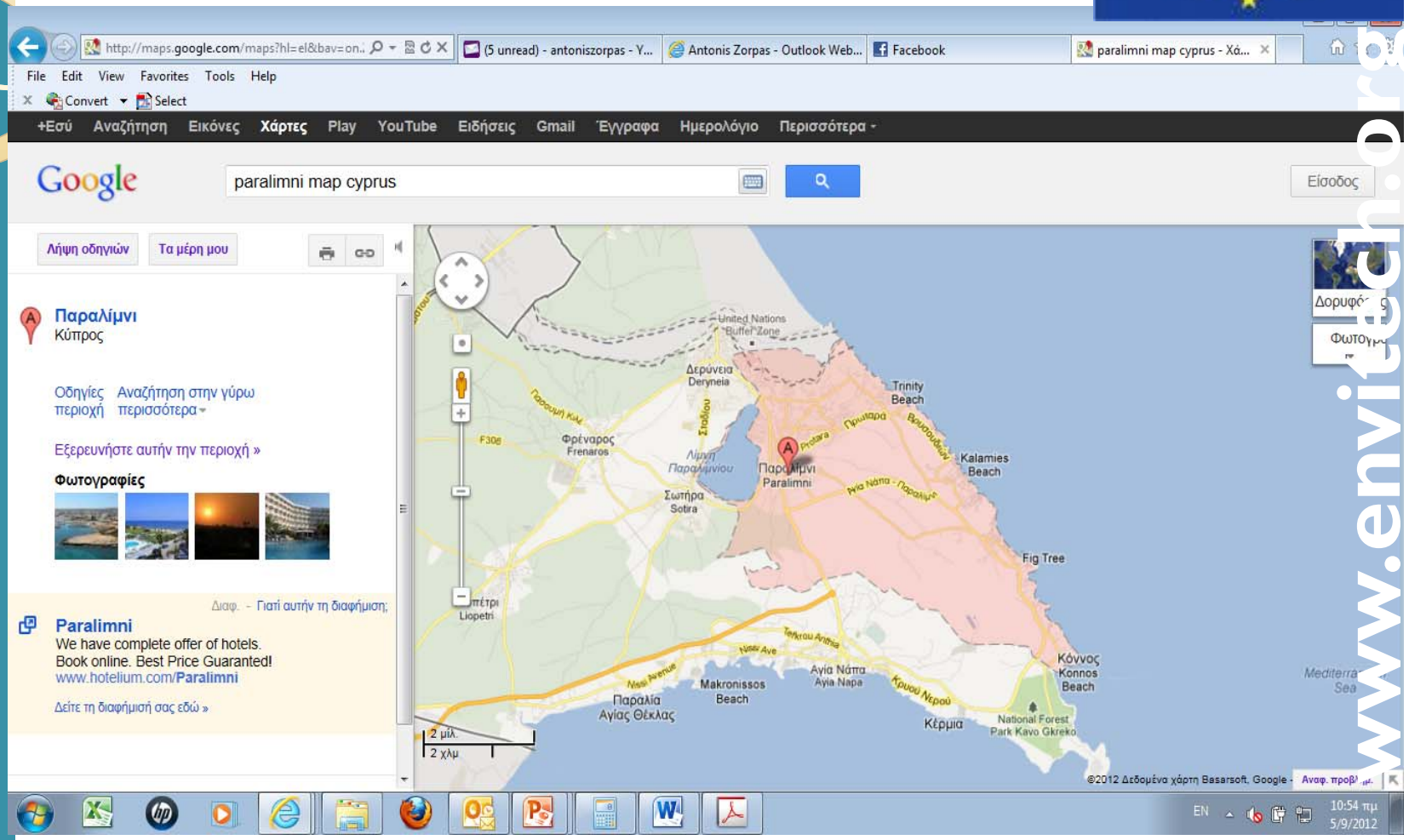
Study Area



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Waste compositional analysis categories

Main Categories	Sup categories
PMD	Plastic bottles/pots, metal packages, tetra pack (like milk, juices)
Plastic film (nylon)	
Plastics non-recyclable	straws, yogurts plastics, butter pots
Aluminium	Aluminium papers, tins/cans
Paper	Package, Newspapers, magazines, offices, advertised
Class	Bottles, others
Toilet-kitchen papers	
Food Waste (A)	Bakery's, confectionery, dairy-farming, meat, fish, cocked
Food Waste (B Whole, ready to eat)	Yogurt, wine, cocking oil, olives, eggs, banana, apples, pears, peaches, pomegranates, grapes, watermelons, oranges, passions fruits, mandarins, potatoes, girasol, tomatoes, lemons, cucumber, carrots, onions, breads, pasta
Compost (products that can be composted)	Vegetables, skin fruits, green waste, dust, soil
Stationery	Pens, pencils
Others	Toys, textile, shoes, medicines, syringe, spays, CDs, kitchen brush, lamps, polystyrene, batteries, chandlery, stones, metals (spoons, knifes, pans, screws)

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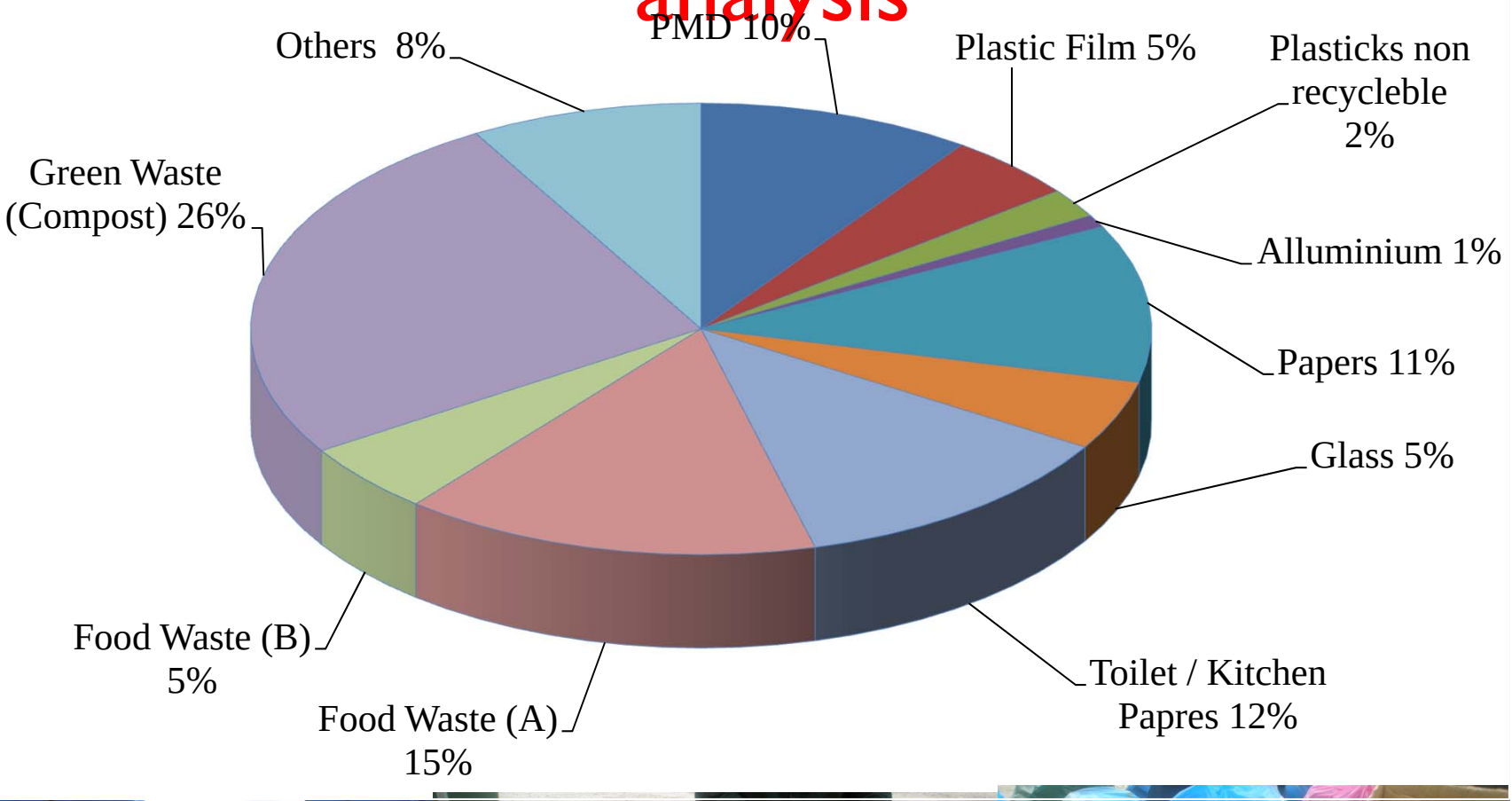
Cyprus Waste compositional analysis



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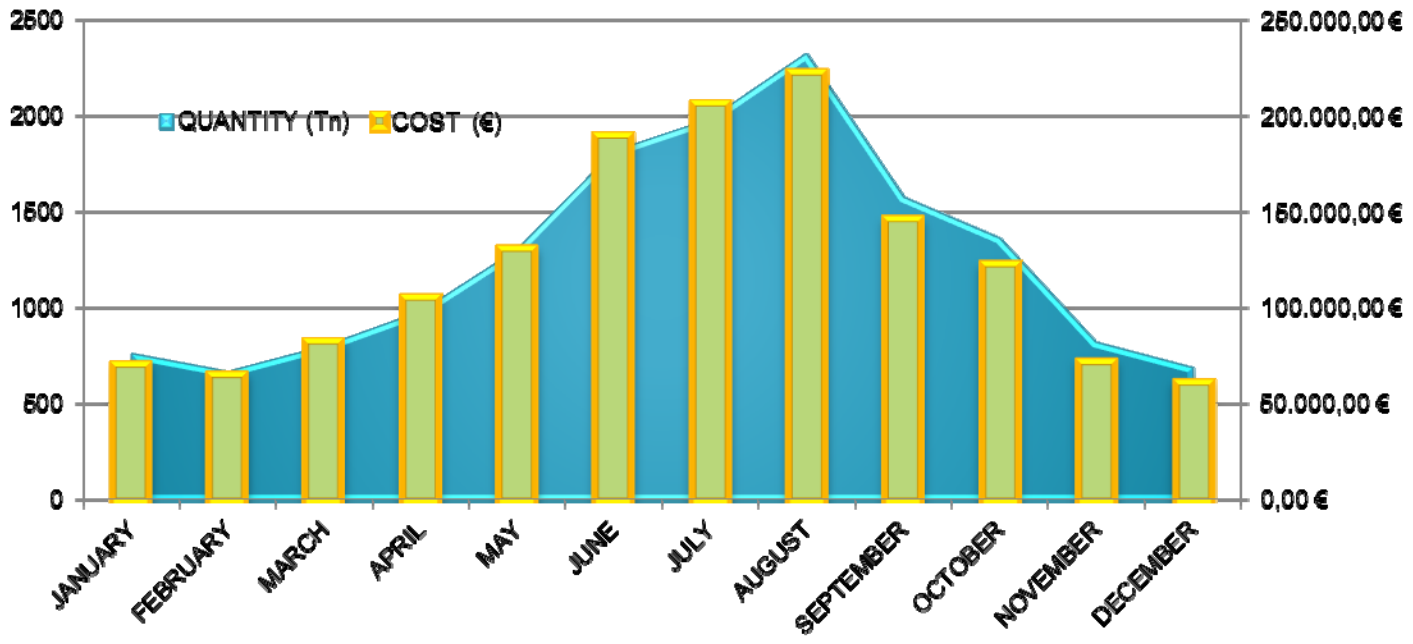
Total amount of waste in Paralimni Municipality (East Cyprus)

- for the year 2014 which had been collected and transferred to the plant were 150993 t while the total cost was up to 1.47 m €



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How the compositional analysis affect the waste management in Municipality

- From the 1.47 m Euros

→73500 euros were whole foods (like pasta, fruits, cans, rise etc that wasn't expiree)

→ 369900 euros were PMD, papers, glass that could be forward to the GD program

→ 382200 euros were green waste that could be composted

→ the final amount that the Municipality has to played could be 617400 euros

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Conclusion

- Most of the waste could potentially be separated by households for recycling
- Waste prevention techniques must be applied
- Several motivations must be set in order to increase recycling economy
- Socio economic impacts affects the production of several waste streams
- Its is clear that most effort should be set to reduced organic waste and mostly food waste which is mainly socio than environmental problem

ΑΝΟΙΚΤΟ ΠΑΝΕΠΙΣΤΗΜΙΟ ΚΥΠΡΟΥ
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