



Δήμος Λευκωσίας
Nicosia Municipality

Nicosia Municipality Waste Management Practices and Policies

**Nicosia
23 October 2016**



Δήμος Λευκωσίας
Nicosia Municipality

- **Michael Lagos**
- Municipal Health Inspector
- Head of Nicosia Municipality Cleaning and Health Department



Task of the day

- To provide support and guidance regarding municipal waste management practices and policies.
- Exchange views and ideas.





Δήμος Λευκωσίας
Nicosia Municipality

What is health?

- The World **Health** Organization (**WHO**) defined **health** in its broader sense in its 1948 constitution as "a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity"





Environmental factors affecting health

- The term 'environmental health' refers to many different factors in a person's surroundings. Generally speaking, environmental health risks include problems with:
 - Air quality
 - Water quality
 - Food quality and safety
 - Waste disposal/sanitation
 - Hazardous substances
 - Unsafe public spaces
 - Housing conditions





Δήμος Λευκωσίας
Nicosia Municipality

Healthy Cities (World Health Organisation)

A healthy city should strive to provide a clean, safe physical environment of high quality





Cyprus major environmental problems

- **Climate Change**
- Cyprus is a country already experiencing climate change, especially through extensive droughts and the associated impacts on water supply, biodiversity and other sectors.
- **Nature and Biodiversity**
- The most serious threats to nature and biodiversity in Cyprus are the effects of climate change, land use change, invasive species, illegal hunting, long drought periods and forest fires. Residential development, infrastructure, tourism and quarrying are among the most serious threats that ecosystems are facing today. Furthermore highway and rural road construction has led to habitat loss and a fragmentation of nature areas.
- **Waste**
- Due to very high consumption patterns Cyprus has one of the biggest waste generation rates. The environmental, health and socioeconomic impacts of the uncontrolled disposal of waste are also considerable given the size of the island. The reduction of waste generation rates and their management according to the waste hierarchy is therefore a priority.



Definitions, types of waste

- Waste, defined by [Directive 2008/98/EC](#) Article 3(1) as ‘any substance or object which the holder discards or intends or is required to discard’, potentially represents an enormous loss of resources in the form of both materials and energy; in addition, the management and disposal of waste can have serious environmental impacts.
- EU waste management policies aim to reduce the environmental and health impacts of waste and to improve the EU’s [resource efficiency](#).
- The long-term aim of these policies is to reduce the amount of waste generated and when waste generation is unavoidable to promote it as a resource and achieve higher levels of recycling and the safe disposal of waste.



Waste generation

- Waste generation encompasses those activities in which materials are identified as no longer being of value and are either thrown away or gathered together for disposal.
- What is important in waste generation is to note that there is an identification step and that this step varies with each type.





Δήμος Λευκωσίας
Nicosia Municipality

MSW generation rates influences

- Economic development
- The degree of industrialization
- Tourism
- Public habits awareness
- Local climate





Waste Classification

- municipal solid waste – solid waste generated by households, offices, shops and hotels;
- hospital solid waste – waste from hospitals and healthcare facilities;
- industrial solid waste – solid waste generated by industrial units; and
- construction and demolition solid waste.



Waste composition categories

Waste category	Waste components
Organic matter	Waste from foodstuff (e.g., food and vegetable refuse, fruit skins, stem of green, corncob, leaves, grass, and manure)
Paper/carboard	Paper, paper bags, cardboard, corrugated board, box board, newsprint, magazines, tissue, office paper, and mixed paper (e.g., all papers that do not fit into other categories)
Plastic	Wrapping film, plastic bags, polythene, plastic bottles, plastic hoses, plastic strings, and so on
Glass	Bottles, glassware, light bulbs, ceramics, and so on
Metal	Both ferrous and non-ferrous metals including cans, wire, fence, knives, bottle covers, aluminum cans and other aluminum materials (e.g., foil, ware, and bimetal)
Wood	Products comprised of wood (e.g., furniture)
Miscellaneous	Materials comprised of leather, rubber, fiber, textiles, soils, and more (e.g., yard waste, tires, batteries, large appliances, nappies/sanitary products, medical waste, and so on)



Municipal Solid Waste Management

- A comprehensive waste collection, treatment, recovery and disposal method that aims to provide environmental sustainability, economic affordability and social acceptance for any specific region



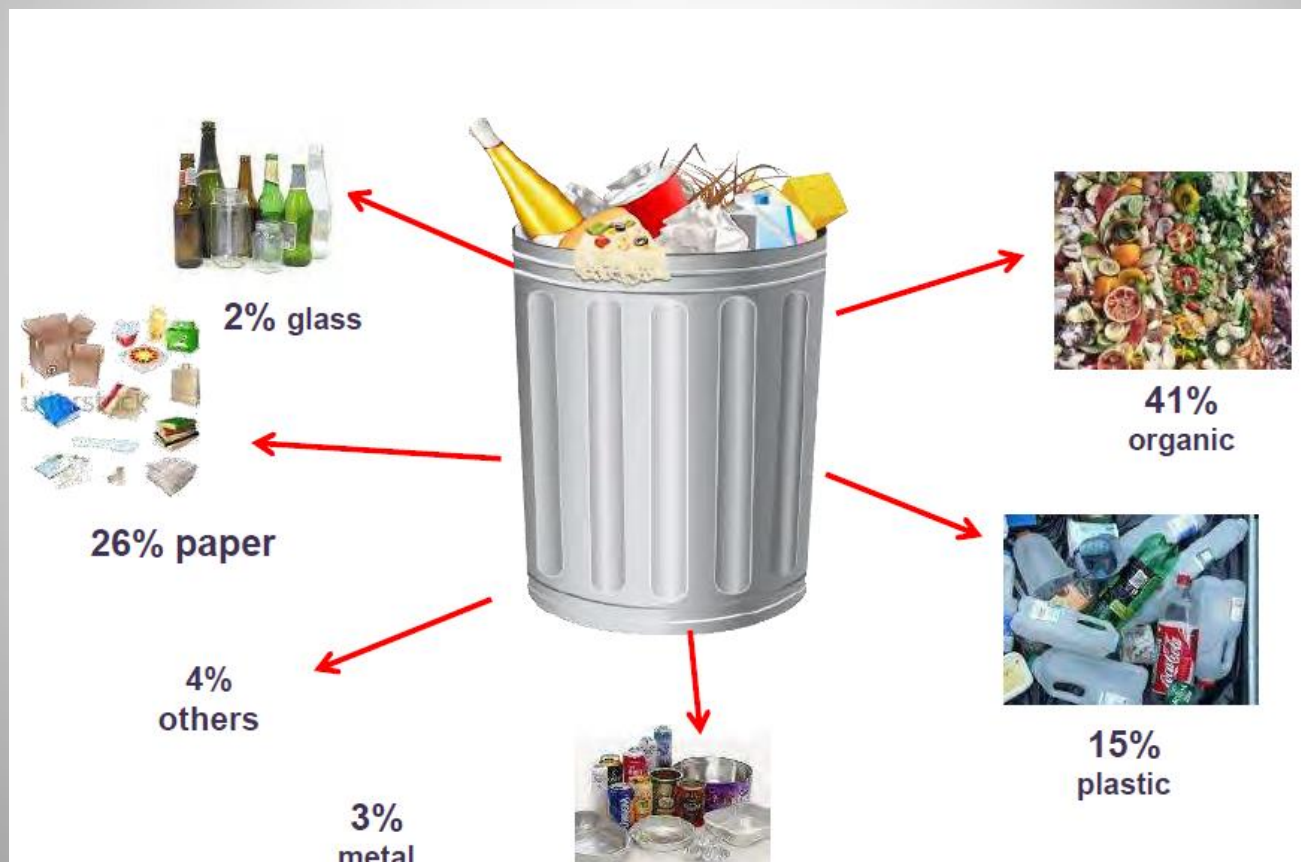


Functional elements of Municipal Solid Waste Management

- waste generation
- waste handling and sorting
- waste storage and processing at source
- collection
- sorting, processing and transformation
- transfer and transport
- disposal



MSW composition in Cyprus





Cypriots generate 624kg of waste, recycling at just 12%

- Cypriots generated an average of 624kg of waste per person in 2013 according to Eurostat data, and of that amount 12% was recycled. Cyprus ranks third in the production of waste in the EU, behind Denmark and Luxembourg.
- The average amount of municipal waste generated per person in 2013 in the EU was 481 kg, down by 8.7% compared with its peak of 527 kg per person in 2002. Since 2007, the generation of waste per person has constantly decreased in the EU to below its mid-1990s level.
- Of the 481kg of waste generated per person in the EU, 470 kg were processed. 31% was landfilled, 28% recycled, 26% incinerated and 15% composted. The share of waste recycled or composted in the EU has steadily increased over time, from 18% in 1995 to 43% in 2013.

(Eurostat)

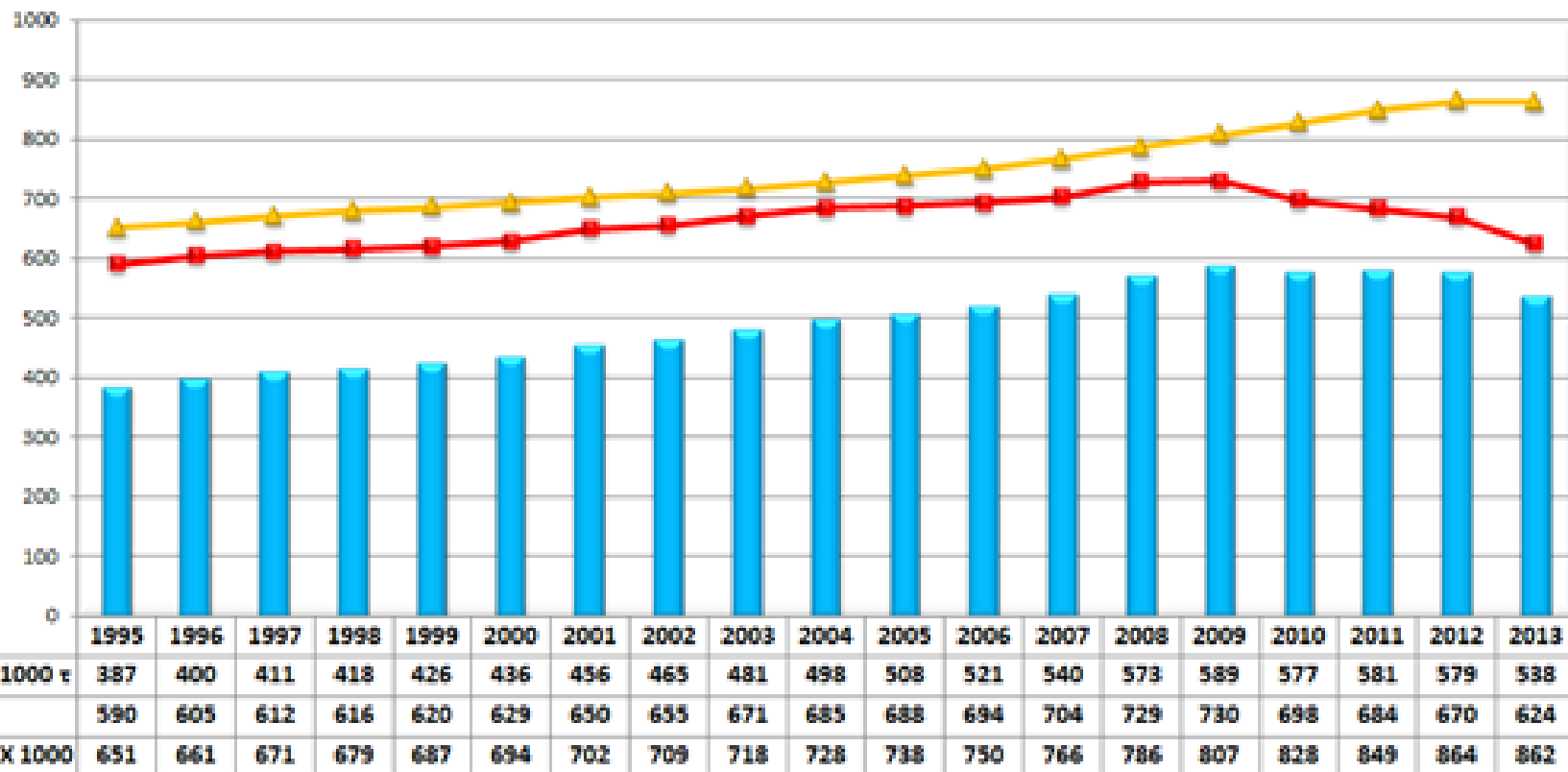


CYPRUS

Production of Municipal Solid Waste (1995-2013)

Eurostat

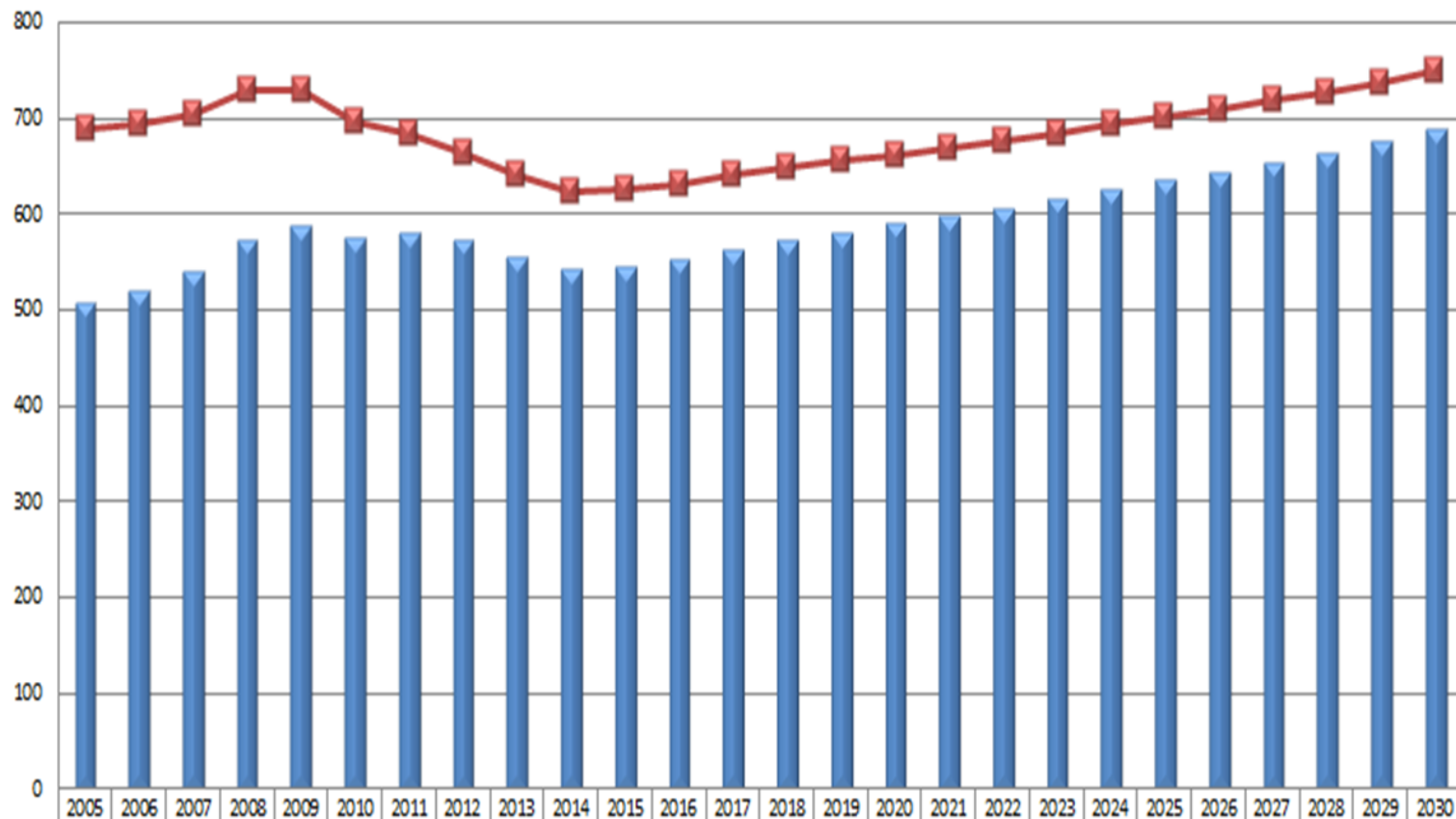
Συσχέτιση παραγωγής αστικών στερεών αποβλητων και πληθυσμού
1995 -2013





Predictions – Production of MSW 2013-2030 (Eurostat)

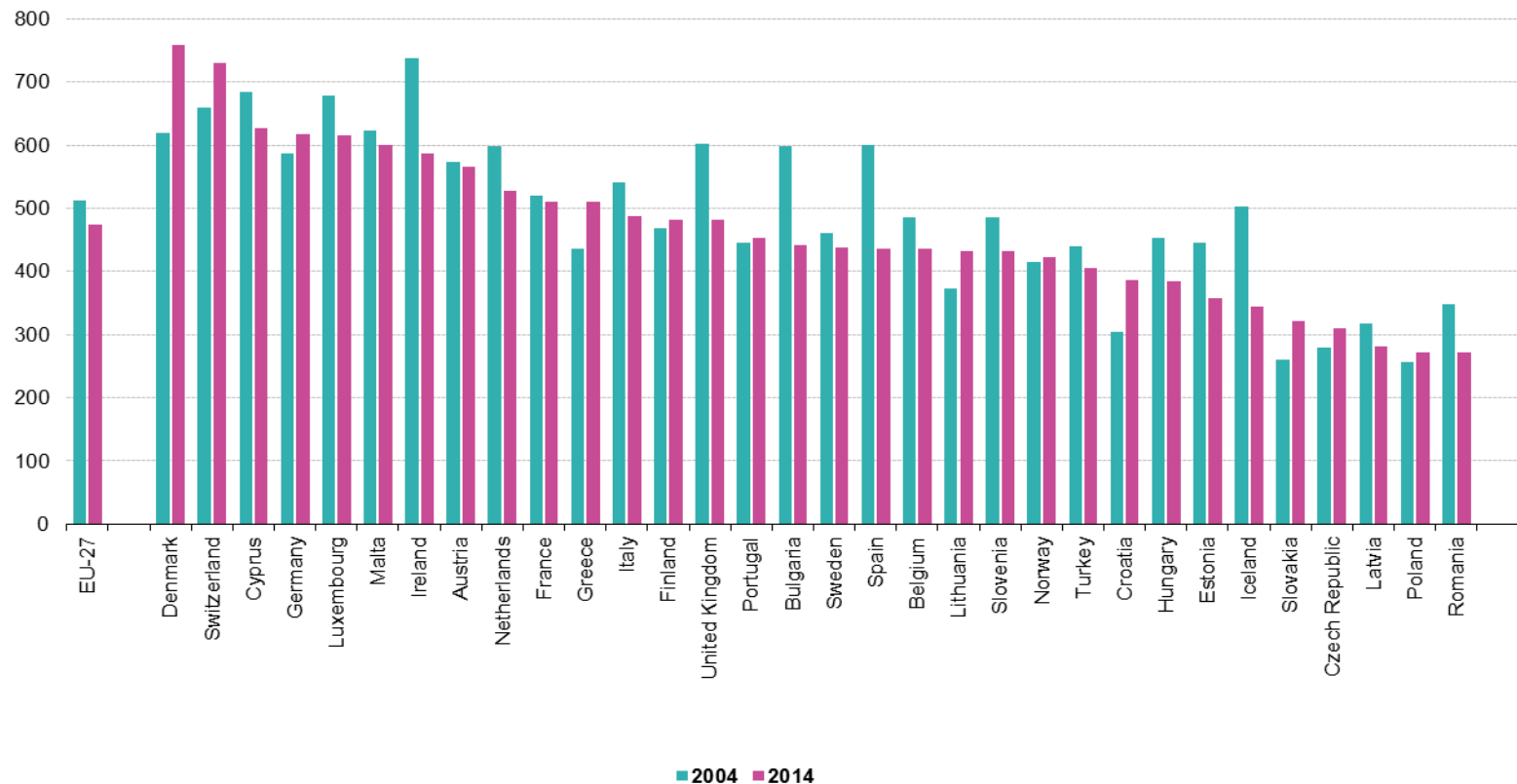
Προβλέψεις παραγωγής δημοτικών στερεών αποβλήτων μέχρι 2030



Παραγωγή Χ1000t	508	521	540	573	589	577	580	572	555	542	546	553	564	573	581	590	598	607	616	626	635	645	655	665	677	689
kg/κάτοικο	688	694	704	729	730	697	683	663	641	623	626	631	640	648	655	662	669	677	685	693	701	709	718	727	737	748



Municipal waste generated by country in 2004 and 2014, sorted by 2014 level (kg per capita) (Eurostat)





EU Waste Framework Directive

- The EU umbrella regulation is the Waste Framework Directive (WFD), which provides definitions of key concepts such as waste, end-of-waste status, re-use and recycling and is based on three main principles.
- Prevention: this refers to two aspects: prevention of waste and prevention of the harmful effects of waste.
- Polluter-pays principle: the costs of waste management shall be borne by the original waste producer or by the current or previous waste holders
- Extended producer responsibility: aims to strengthen the re-use and the prevention, recycling and other recovery of waste.



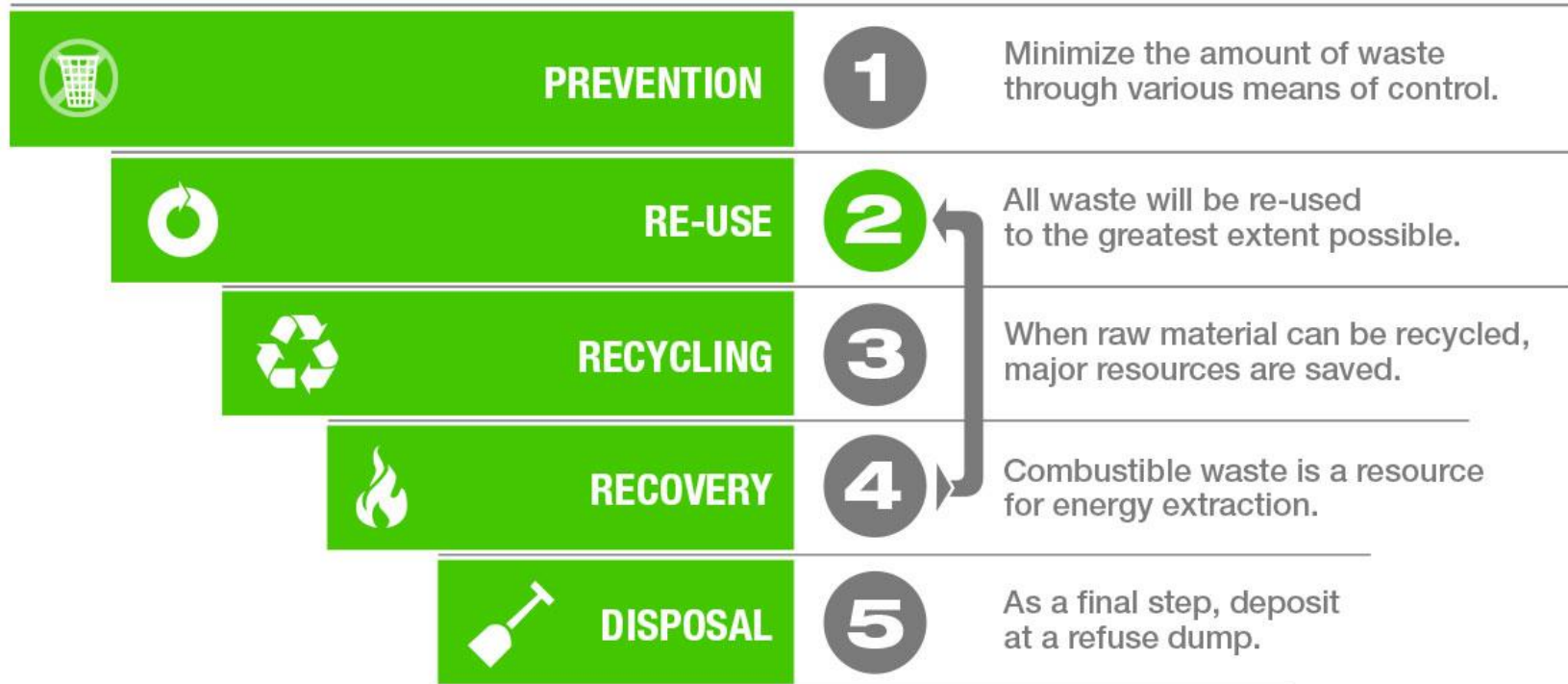
The Waste Hierarchy



According to Framework Directive on Waste 98/2008



EU'S WASTE HIERARCHY





Δήμος Λευκωσίας
Nicosia Municipality



REDUCE REUSE RECYCLE



Δήμος Λευκωσίας
Nicosia Municipality

It's not WASTE until it's WASTED!





Management of MSW in Cyprus



Cyprus is a relatively small country in the EU. The generation of MSW increased in Cyprus with 25 % between 2001 and 2010, with a peak in 2009. Per capita MSW generation was one of the highest in the EU (760 kg/cap in 2010), well above the EU average.

The Cyprus policy for the management of waste follows the waste hierarchy (prevention, preparing for re-use, recycling, recovery and disposal).

The priority target is the efficient management of natural resources and waste through the reduction of the production of waste and disposal to landfills, the encouragement of re-use, recycling and recovery and the environmental management in order to reduce to the minimum any negative effects to the human health and the environment.



New waste management philosophy in Cyprus

Redesigning our national SW strategy ...

- Intensive efforts are needed for Cyprus to coop with its EU obligations and raised it in rank among with other member states
- Cyprus set the qualitative and quantitative objectives and plans, and to achieve them will proceed with specific measures
- Regulatory provisions
- Economic incentives.





Δήμος Λευκωσίας
Nicosia Municipality

The role of Municipalities

- **Municipal Cleaning and Sanitation Department**

One of the chief competencies of Municipalities, is the collection, depositing and processing of waste, as well as the protection and improvement of the environment.

- Since cleanliness and environmental hygiene contribute to improving the quality of life but also safeguard public health, this constitutes a priority for the Municipality and one of its chief challenges.





Δήμος Λευκωσίας
Nicosia Municipality

Competencies of the Environmental and Sanitation Service

- Garbage collection.
- Collecting trimmings and other bulky objects via clean-up campaigns held from time to time or as an on demand service.
- Street cleaning and cleaning of public and communal spaces.
- Washing of streets, squares, covered public car parks, open marketplaces and municipal dumpsters.
- Collaborating with collective schemes, companies and competent organisations for managing special waste flows.





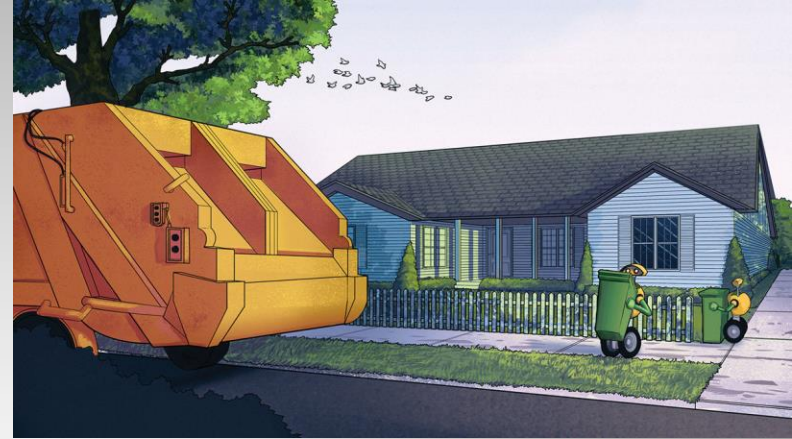
The case of Nicosia Municipality

- Population **55.014**
- Size **20,72Km²**
- Number of houses and businesses **30.578**
- Total amount of waste disposed to landfill in 2015 **31577000 Kg.**
- Materials collected separately for recycling in 2015
 - PMD **672090 kg**
 - Paper **1117375 kg**
 - Glass **1789465 kg**
- Green waste composted **1040490 kg**
- Electric and electrical equipment separately collected **1605 kg**



Δήμος Λευκωσίας
Nicosia Municipality

Garbage collection



- Residential and commercial sections are serviced twice a week due to health, sanitation and aesthetics.
 - Bad odors caused by decomposition and accumulated quantities
 - Prevent fly breeding
 - Leakage from bag and bins
- City center and heavy commercial areas, are serviced daily or accordingly (Nicosia Historic center pedestrian roads is serviced 3 times a day.)
- During weekends and holidays we deal with increased production of waste so, special collection shifts within city center and market streets.
- It is estimated that each week approximately 750 tonnes of garbage is collected
- Waste is directed to Kotsiatis landfill



Δήμος Λευκωσίας
Nicosia Municipality

Collection of tree cuttings and other bulky objects

- Tree cuttings and bulky items are collected
 - Via clean-up campaigns scheduled three times a year
 - On demand service
 - Complaints investigation
 - Unauthorised droppings in empty land plots
 - Drop off to the green point





Δήμος Λευκωσίας
Nicosia Municipality

Street cleaning and cleaning of communal spaces



- The Municipality has a set weekly schedule for cleaning the city streets and various public places like public squares, pedestrian roads, municipal parkings etc. Areas are grouped into three categories: high density, medium density, and low density (residential, commercial, high density, point of interest, etc).
- Street and public places cleaning is achieved with a variety of methods:
 - Manual street cleaning
 - Street cleaning personnel allocated in sectors
 - Mechanical street sweeping
 - Water washing vehicle



Other cleaning activities

- Washing of streets, squares, covered public car parks, and municipal dumpsters.
- Plot and open spaces cleaning
- Cleaning campaigns
- Municipal Markets and open marketplaces cleaning
- Events support
- Cleaning of municipal dumpsters
- Weed removal

[illegible]



Δήμος Λευκωσίας
Nicosia Municipality

Collaborating with collective schemes, companies and competent organisations on managing waste flows

- Recyclable materials (glass, aluminum, paper, plastics)
- Green waste
- Clothing and footwear
- End-of-life vehicles
- Batteries
- Electrical and electronic devices
- Collection, transport, processing and final disposal of animal cadavers (dogs, cats)





Δήμος Λευκωσίας
Nicosia Municipality

Operation of a green point

- Nicosia Municipality residents can take their waste (bulky items, furniture, tree cuttings, etc) to a green point industrial area.
- In addition, the municipality collects all garden waste from people's homes once a month. The dates for various areas are listed on the website and the service is free of charge. Those who need to dispose of garbage at other times call the municipality.



Δήμος Λευκωσίας
Nicosia Municipality

ΛΩΡΕΑΝ ΓΙΑ ΟΛΟΥΣ ΤΟΥΣ ΔΗΜΟΤΕΣ

έχουμε πράσινο σημείο

στόχος μας:

Να σταματήσουμε την ανεξέλεγκτη τοποθέτηση
αχρήστων στους ανοικτούς χώρους της πόλης μας

Στο πράσινο σημείο οι δημότες μπορούν να μεταφέρουν τα ακόλουθα:



κόπρην
απόβλητα κήπου
φύλλα, κλάδοι, κλαδιά,
λακτά κ.λπ.



κουτιά, διάφορα υαλικά
αντικείμενα, πλαστικά,
κασέτες, παλαιά
βιβλία κ.λπ.



οχήματα
κλάδοι, ξύλινα
αντικείμενα



μικρά
οχήματα
κλάδοι, ξύλινα
αντικείμενα



απόβλητα
απόβλητα
απόβλητα
απόβλητα



απόβλητα
απόβλητα
απόβλητα
απόβλητα



απόβλητα
απόβλητα
απόβλητα
απόβλητα



απόβλητα
απόβλητα
απόβλητα
απόβλητα



απόβλητα
απόβλητα
απόβλητα
απόβλητα



απόβλητα
απόβλητα
απόβλητα
απόβλητα



απόβλητα
απόβλητα
απόβλητα
απόβλητα



απόβλητα
απόβλητα
απόβλητα
απόβλητα

Τμήμα Καθαριότητας Δήμου Λευκωσίας
Οδός Πάνη Κοραμίη 2, Καϊμακλί
Το πράσινο σημείο είναι ανοικτό
Δευτέρα με Παρασκευή 7.00 - 17.00 / Σάββατο 7.00 - 12.00





What is your role?

- The importance of public support for waste policies, in terms of involvement in decision-making, and in changing attitudes and behaviour towards waste, is becoming recognised as an important part of waste management.
- Public awareness and participation is a critical component in any waste management program, in addition to appropriate legislation, strong technical support, and adequate funding.
- Waste is the result of human activities and everyone needs to have a proper understanding of waste management issues, without which the success of even the best conceived waste management plan becomes questionable.
- The challenge waste managers now face is how to facilitate public education and involvement in moving towards the adoption of a new waste ethic.



Δήμος Λευκωσίας
Nicosia Municipality

The role of the public



- The efficiency of the waste management system can be affected by the level of individual cooperation.
 - Not in my back yard syndrome of households
 - Special waste collection schedules conformity
 - Location of refuse containers to be collected affects the cost and efficiency of waste collection
 - Application of the 3R's principle
- The maintenance of adequate sanitary facilities for temporarily storing refuse is considered a responsibility of the individual householder or businessman.
- Collection days must be complied with.
- Source separation of various waste streams facilitate the authorities towards sustainable waste management and recycling practices.
- Citizens are more likely to dispose their waste illegally and not be concerned to separate their waste for recycling if they lack the appropriate facilities or if such facilities are not easily accessible to them.
- Participation in source separation of recyclables without any significant financial benefit can be challenging as it is considered time consuming.



Δήμος Λευκωσίας
Nicosia Municipality





Δήμος Λευκωσίας
Nicosia Municipality





Δήμος Λευκωσίας
Nicosia Municipality

Healthy city checklist

A healthy city aims to provide:

- a clean, safe physical environment of high quality



Clean city, a healthy city

