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School of Pure and Applied Sciences
Environmental Conservation and Management
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WASP Tool

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THE IMPACT OF SOCIAL ATTITUDE IN WASTE PREVENTION PROGRAMS; THE CASE STUDY OF THE WATER PLASTIC CONTAINER FROM KIDS IN PRIMARY SCHOOLS IN INSULAR COMMUNITY.

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PROJECT I.D

Study Area: Greece – Cyprus

Budget : 1 800 000 Euros

Harokopoio University of Athens (Cordinator)

DEDISA (Chania)

ESDAK (Herakleion)

EPEM (Greece)

ENVIROMENTAL TECHNOLOGY (Cyprus)

Municipality of Paralimni (Cyprus)

ΔΕΔΙΣΑ

ΕΠΕΜ

εσδακ ενιαίος σύνδεσμος διαχείρισης απορριμμάτων Κρήτης

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Definition

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ACCORDING TO THE REVISED WASTE FRAMEWORK DIRECTIVE, WASTE PREVENTION EMBRACES ALL THE MEASURES TAKEN BEFORE A SUBSTANCE, MATERIAL OR PRODUCT HAS BECOME WASTE, THAT REDUCE THE:

- the quantity of waste,
- the adverse impacts of the generated waste on environmental and human health, and
- the content of harmful substances in materials and products.

Waste Prevention

WASTE PREVENTION

- encompasses a range of policy options
- it reduces the amount and toxicity of waste before recycling, composting, energy recovery and before landfilling become options.
- includes measures to reduce the adverse impacts of the generated waste on the environment and human health.
- can be achieved by reducing the quantity of material used in the creation of products
- Increases the efficiency with which products, once created, are used.
- encompasses actions that can be undertaken once a product reaches its end-of-life: rather than discarding the product, the final user should consider re-use, repair or refurbishment as options.
- Extending a product's lifetime or considering options like reuse are forms of prevention though diversion of waste flows
- Contribute to the reduction of environmental impacts induced by waste management
- improved resource efficiency through energy savings and reduced material use,
- Minimised the production of hazardous waste and therefore improved conditions for public health.

AREA DESCRIPTION

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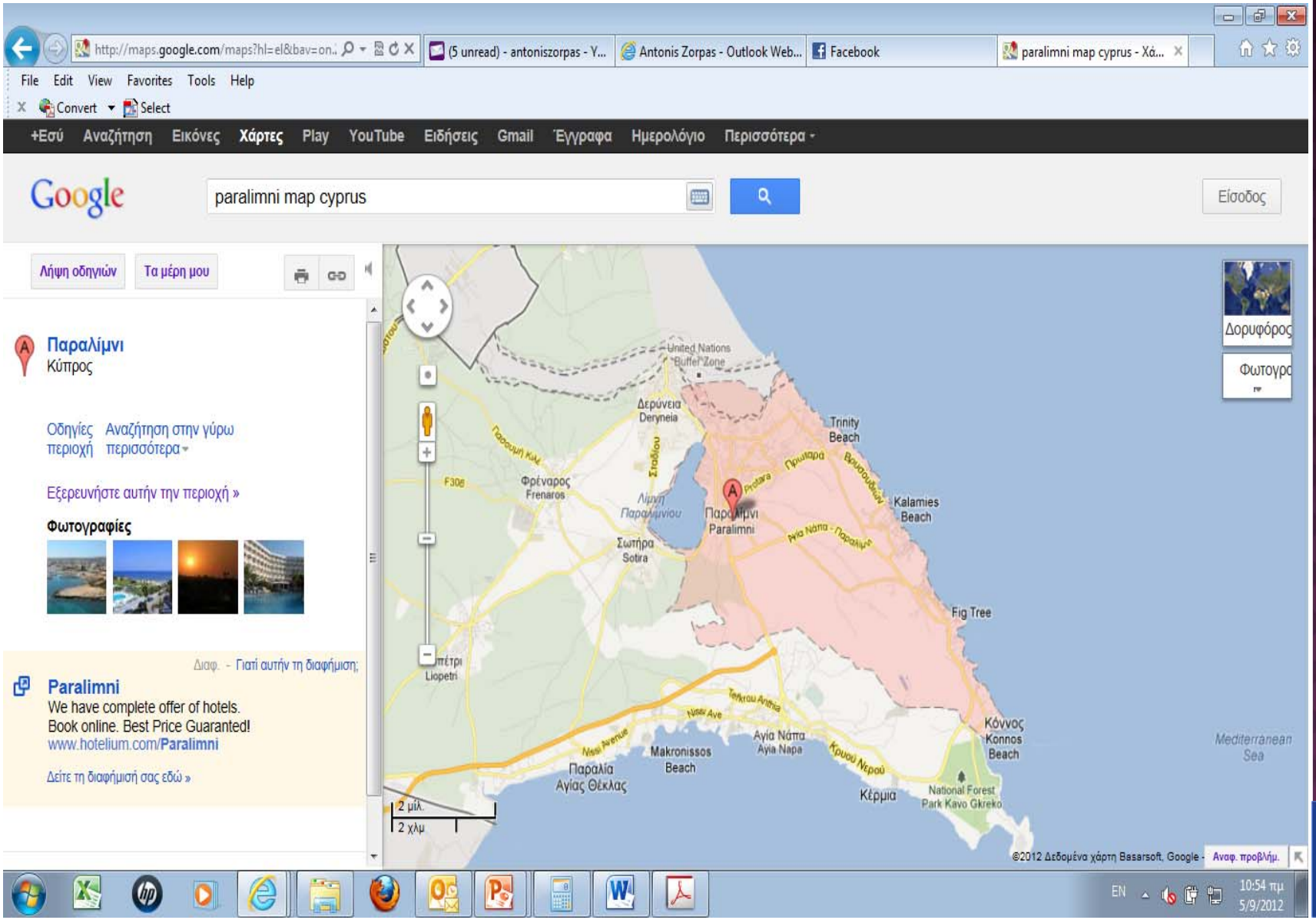

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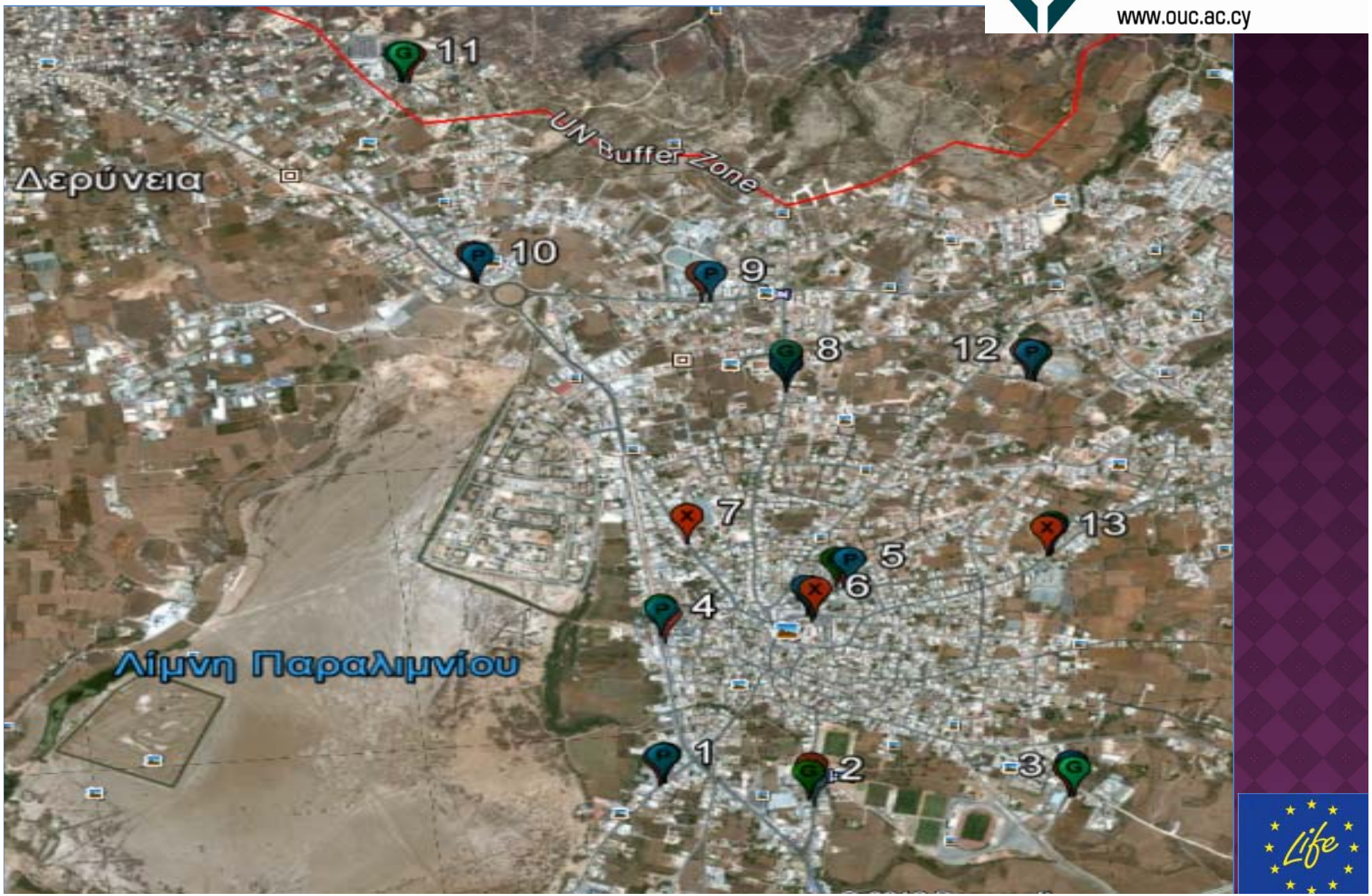
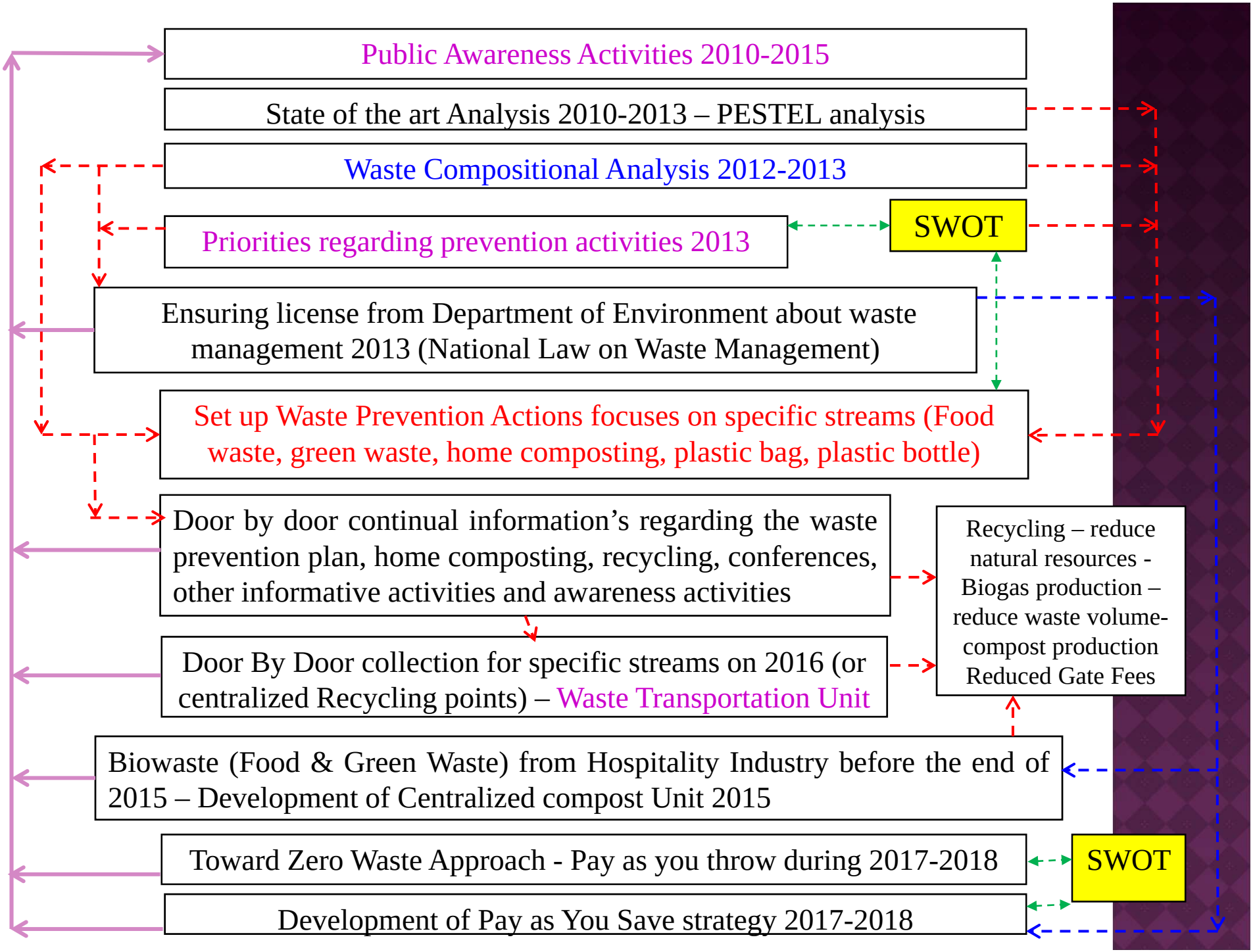
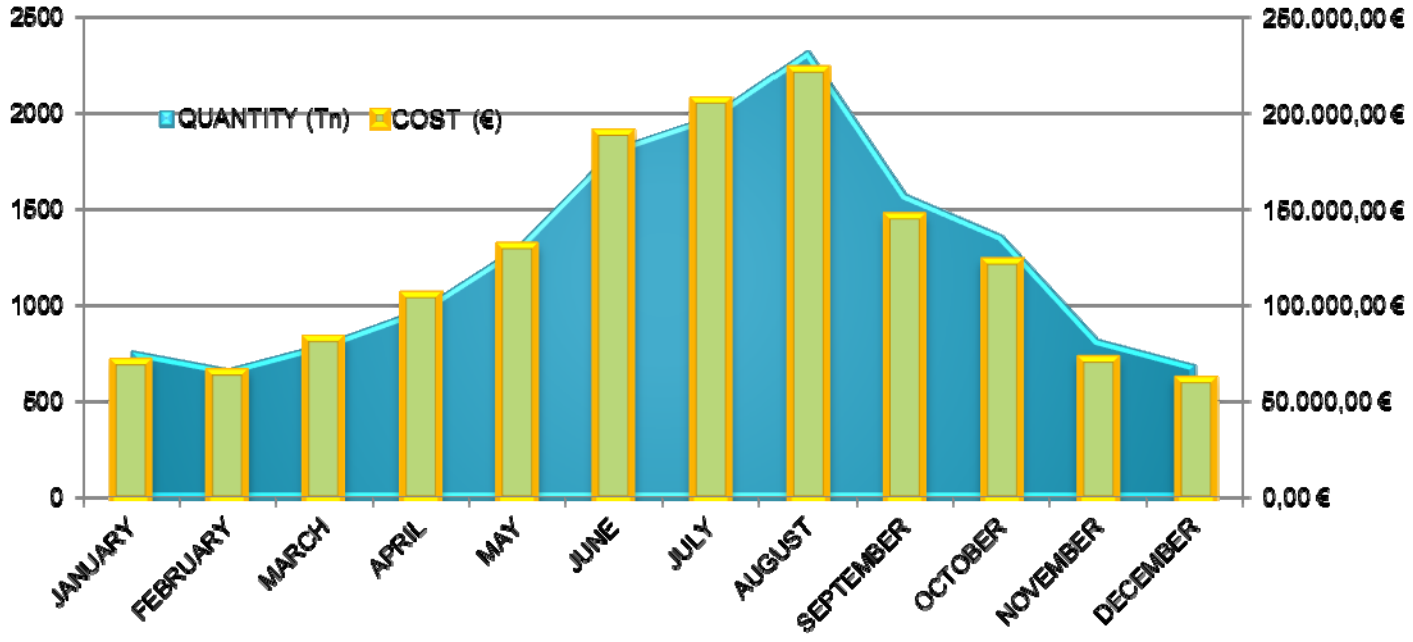


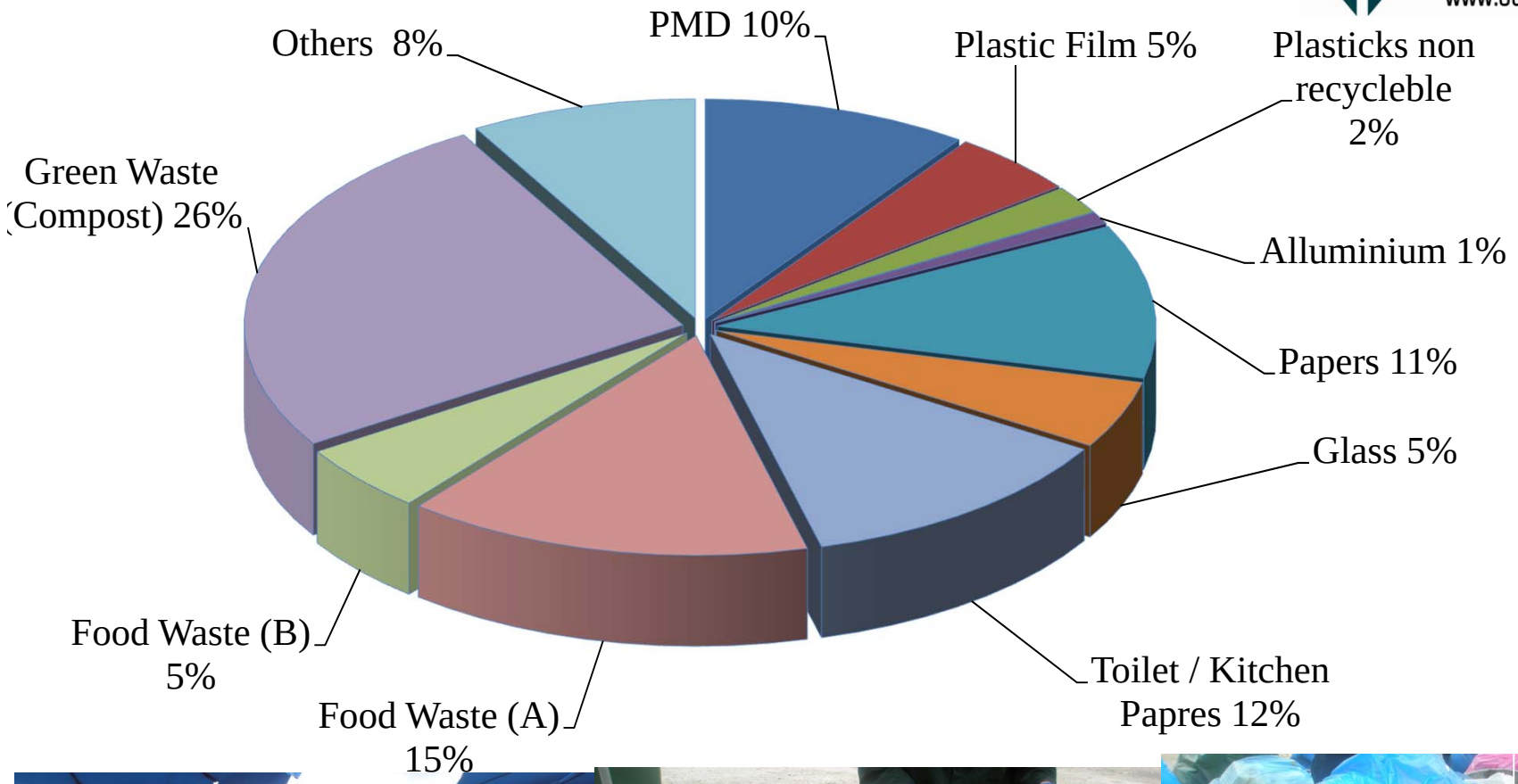

Public Awareness Activities 2010-2015
State of the art Analysis 2010-2013 – PESTEL analysis
Waste Compositional Analysis 2012-2013
Priorities regarding prevention activities 2013
SWOT
Ensuring license from Department of Environment about waste management 2013 (National Law on Waste Management)
Set up Waste Prevention Actions focuses on specific streams (Food waste, green waste, home composting, plastic bag, plastic bottle)
Door by door continual information's regarding the waste prevention plan, home composting, recycling, conferences, other informative activities and awareness activities
Recycling – reduce natural resources - Biogas production – reduce waste volume- compost production Reduced Gate Fees
Door By Door collection for specific streams on 2016 (or centralized Recycling points) – Waste Transportation Unit
Biowaste (Food & Green Waste) from Hospitality Industry before the end of 2015 – Development of Centralized compost Unit 2015
Toward Zero Waste Approach - Pay as you throw during 2017-2018
SWOT
Development of Pay as You Save strategy 2017-2018

TOTAL AMOUNT OF WASTE

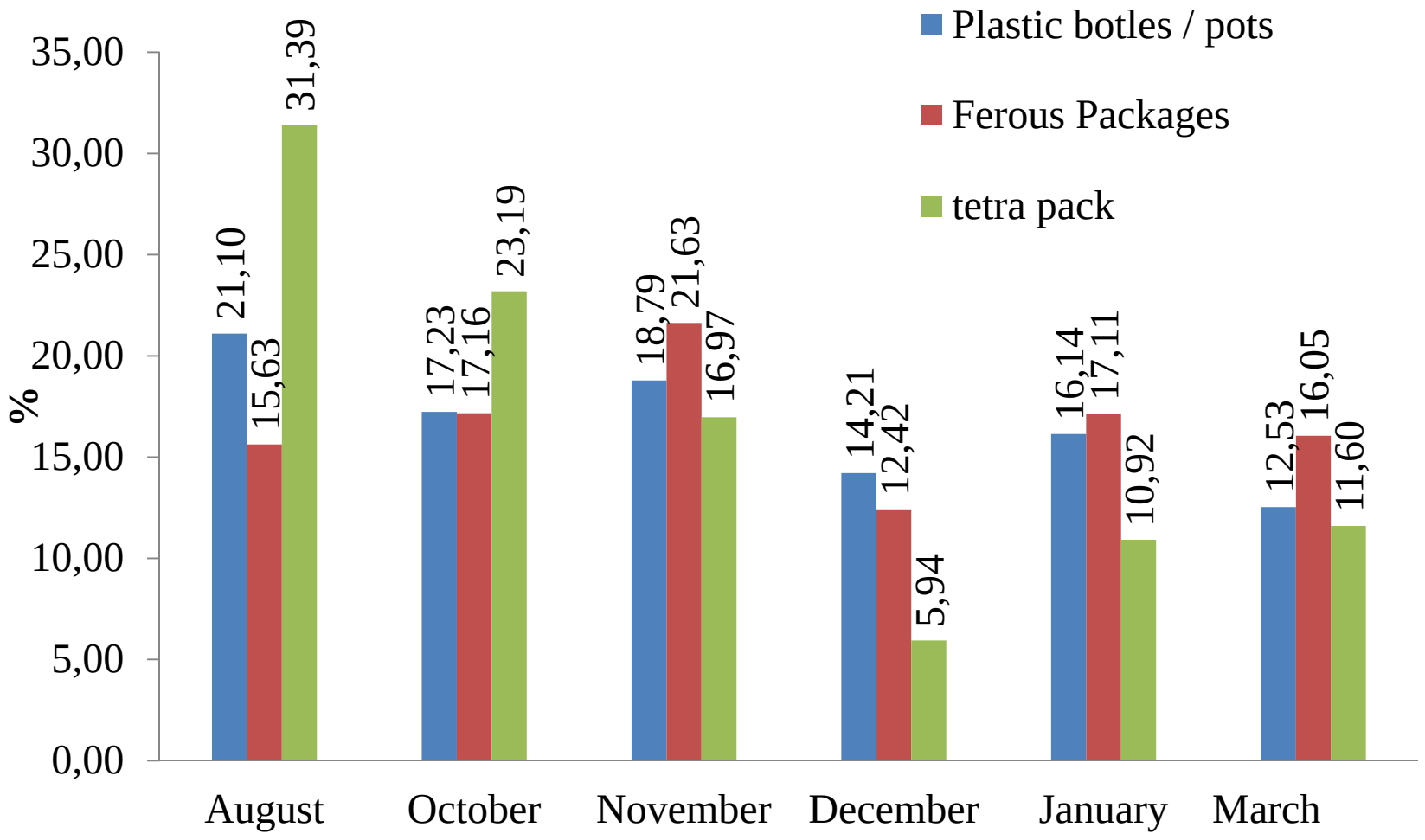
- for the year **2011** which had been collected and transferred to the plant were **15099.3 t** while the total cost was up to **1 470 000 €**
- KMWTP charge until the end of 2012, 54.8 €/t for the mix waste, 46.8 €/t for the green waste, 80.80 €/t for the recyclable waste and 100.80 €/t for the rest waste.



WASTE COMPOSITIONAL ANALYSIS



PMD Waste stream compositional analysis



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HOW THE COMPOSITIONAL ANALYSIS AFFECT THE WASTE MANAGEMENT IN PARALIMNI MUNICIPALITY AND HOW WE CONVINCE CITIZENS AND THE COUNCIL TO PARTICIPATED ON THOSE ACTIVITIES

- **From the 1.47 m Euros on 2012**

→ 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 GDC-R-program

→ 382200 euros consist green waste that could be composted

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

MUNICIPALITY OF PARALIMNI PREVENTION ACTIVITIES

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(i) home composting (with 200 participants in order to reduce food waste and green waste forward to the landfill), Backyard and On-Site Composting

(ii) reduction of plastic bottles of water container of 500 ml (with 986 participants),

(iii) reduction of plastic shopping bags

(vi) development of traditional recipe using left overs that's we will reduce the food wastes that are resulting to the landfills

(v) materials exchange (like toys, books, clothes etc)

(vi) Promoting waste prevention practices like rent and repair stores

A large number of behaviours can have a positive impact on reducing waste generation and the efforts towards waste prevention *(WRAP, 2009)*

- Refiling water containers bottle
- Refiling coffee cups
- Refiling shopping Bags
- I.M.P.Y and not N.I.M.P.Y
- Smart shopping list
- Meal planning
- Shopping list
- Proper storage of food items
- Using leftovers
- Cooking the right amount of food
- Expiration data labels

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Reducing Plastic BOTTLES

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Total estimated Quantities in 12 month period

18 250 000 pcs

365 T in 12 μήνες

20000 €

Plastic bottle of 500 ml

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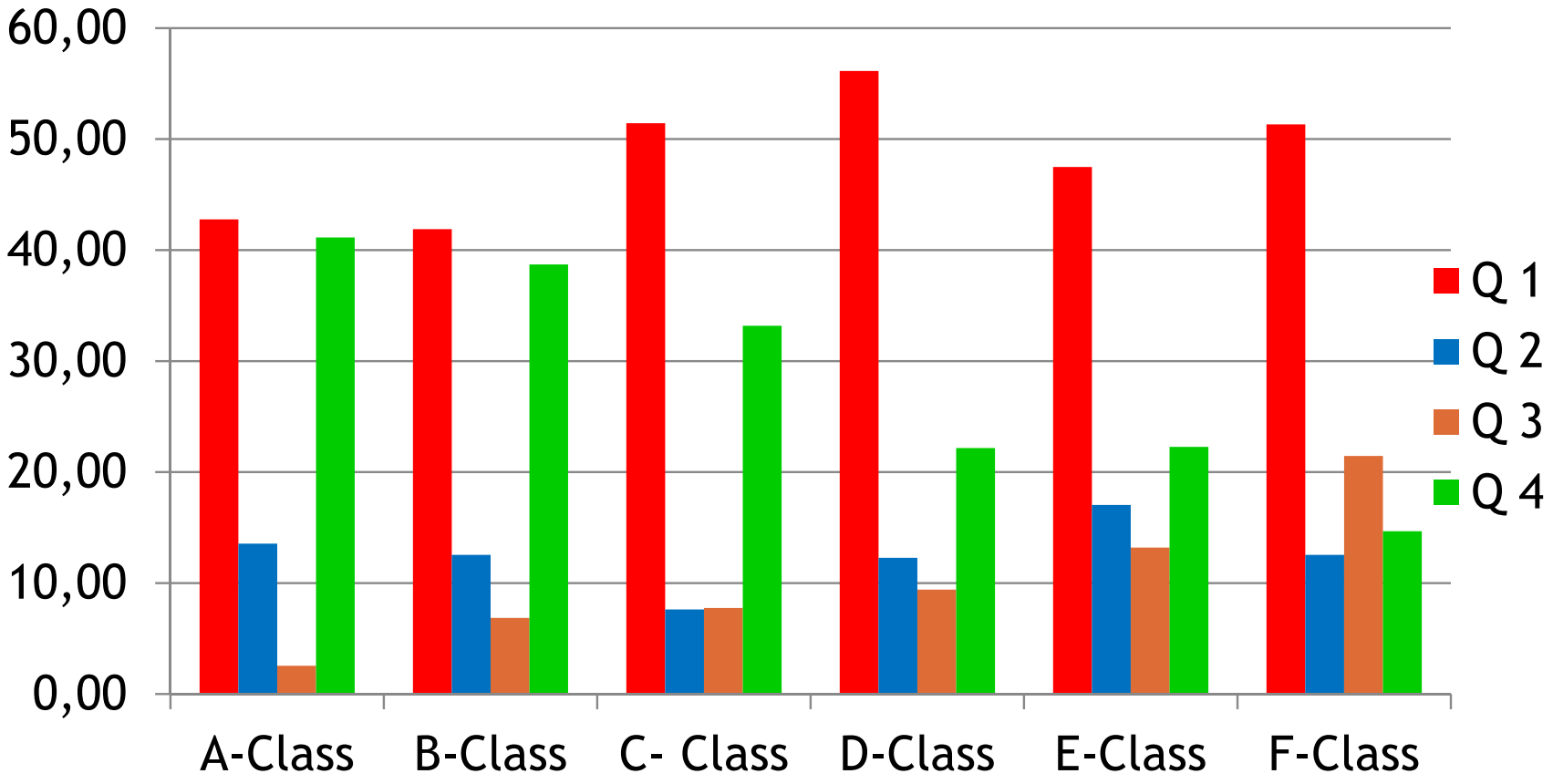
Reducing Plastic BOTTLES

	Students
A Primary	272
B Primary	257
C Primary	242
D Primary	275
Gymnasium (Secondary Scholl)	640
Lyceum	674
Technical School	120
Total	2480
Operation Days	180
Estimated daylily Volume	1860 pcs
Yearly quantity	334800 pcs
weight per bottle	20 gr
Total yearly weight (school period only)	7.2 t from Schools

Student “LCA” = 1500 Euros only the hours that in in the school


WASP Tool
ΠΡΟΛΗΨΗ

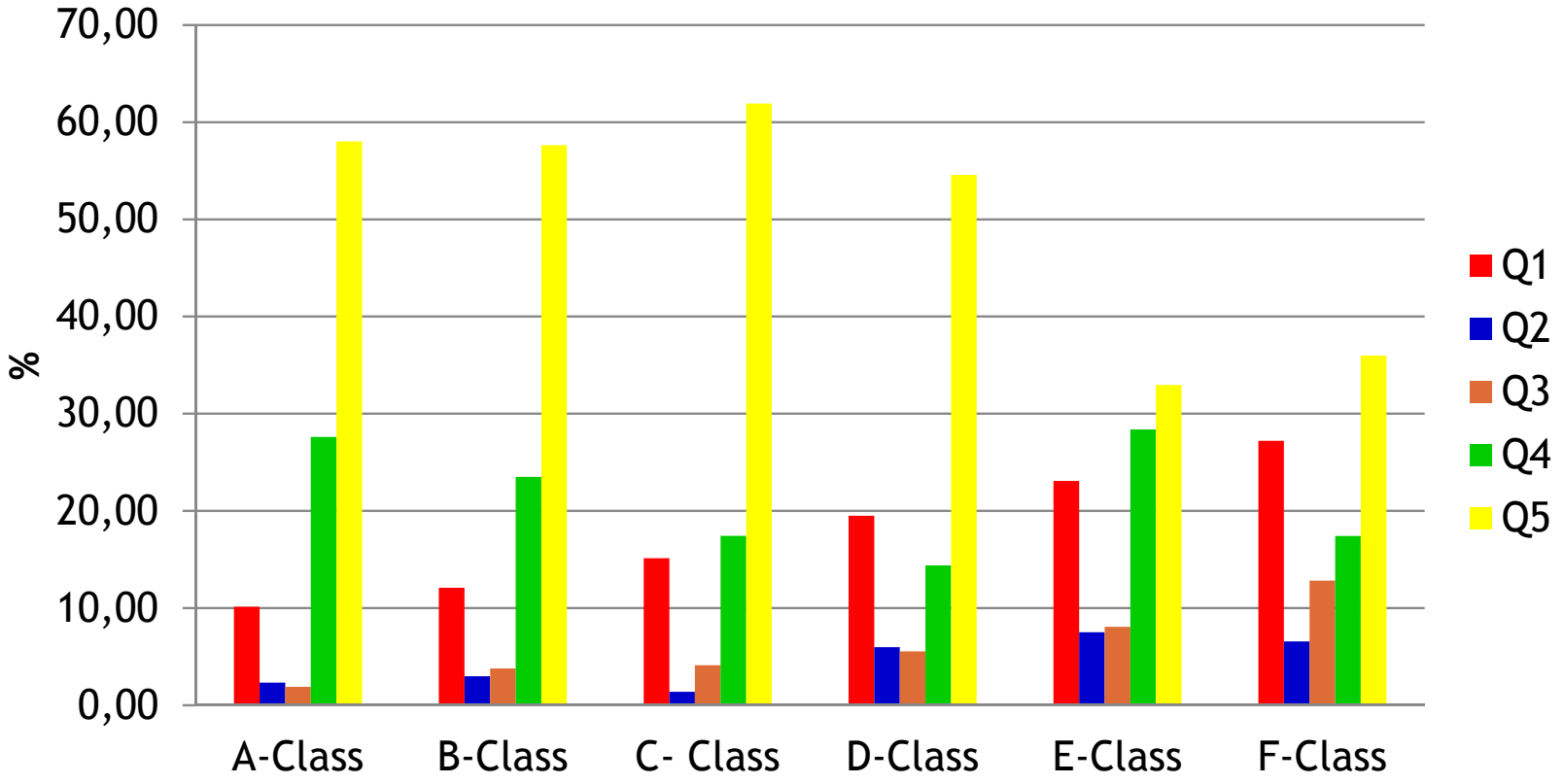
EVALUATION OF STUDENTS BEHAVIOURS PER CLASS AND FOR ALL THE FOUR PRIMARY SCHOOLS AND FOR THE FIRST WEEK (BEFORE THE REFILING BOTTLE)



which children's were bring their own refiling plastic bottles (Q1), how many of them refill the same bottle (Q2), how many they used to buy water from the Scholl (Q3), how many they bring their own water bag (any container) (Q4)

- As indicated from the evaluation the smaller kids (Class A and B are used to bring their own small plastic bottles or their own water plastic bags) while the biggest ages (especially Class E and F) they use to have their own plastic small bottles (of 500 ml) and do not bring their own water plastic bags, while at the same time they used to (if they need more water or if they forgot to bring their own water) to buy water from the School.
- This is happening for two main reasons:
  - (i) the parents used to give money to the kids to have with them if they need to buy something and
  - (ii) due to the fact that biggest ages are shame to bring their own water plastic bags and they preferred to buy, indicated to the others that "we are getting teenagers" and "we are controlling our self's". The main reason that the smaller kids (Class A and B) used to bring their own plastic bottles or their own water plastic bags is due to the fact that parents wants to be sure that their kids, they will have during the day their own water as they fill more save. Actually the parents every morning prepare their kids school bags. They do not fill save to give them money to buy something from the school for many reasons.

EVALUATION OF STUDENTS BEHAVIOURS PER CLASS AND FOR ALL THE FOUR PRIMARY SCHOOLS AND FOR THE FIRST WEEK (AFTER THE REFILING BOTTLE)



they bring with them the specific refiling stainless steel bottles that were given to them (Q5).

- It is obvious that after the specific information's that were given to the teachers, parents and students from all ages accept the Stainless Steel Water Refiling Bottles (SSWRB) but mostly the smaller kids (A Class and then B Class) as are more receptive and enthusiastic for something new. Impressing was that the biggest kids (E and F class) they accept to use this new Stainless Steel Water Refiling Bottles (SSWRB) in more than 30% and they didn't buy water from the school (the percentage of buying water from the school from the first to second week were reduce **from 13% and 21% to 8 % and 12 %** respectively for class E and F).
- However, as the biggest kids behave or want to presented as adolescents they chose to reuse their plastic bottle, or to bring their own water plastic bag or to have the new Stainless Steel Water Refiling Bottles (SSWRB) **in more than 90 %** for class E and more than 87% of class F.

CONCLUSIONS

- Waste prevention encompasses a range of policy options and has a broad range of benefits.
- Targeting at-source waste production, it reduces the amount and toxicity of waste before recycling, composting, energy recovery and landfilling become options.
- Waste prevention also includes measures to reduce the adverse impacts of the generated waste on the environment and human health. The waste minimization prevention campaign is in priority in order to achieve all the proposed activities.
- Public awareness event must be taken into account before the establishment of any prevention action. It is not easy to change people's behaviour without any specific awareness event.

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