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Defining and evaluating the waste prevention needs of local authorities in Greece

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creative thinking development

Let's think about cost...

- How much will implementing waste prevention **cost** for the Municipality?
or better:
- How much would the Municipality **save** if they implemented Prevention on some products or materials?



Let's think about cost...

Before a Municipality starts to design and implement prevention actions for a material, it is useful to know the ***true cost of management of a material per ton or per item*** that they already pay, so that they will be able to estimate the ***financial benefit*** from the Prevention action that will keep the material from being managed as waste.

Let's think about cost...

1. Calculation of the cost of management of each material and
2. Comparison of it to the average cost of waste management

Let's think about cost...

The elements that need to be determined are

- 1. the quantity of the material to be prevented**
and
- 2. its management cost.** (staff, outsourced labour, equipment (operational cost and depreciation cost), cleaning supplies, management studies, cost of disposal or treatment, exceptional annual fees and other expenses.

Record-keeping and calculations are done on an **annual basis.**

Calculation of the current cost of management of a material (€/t)

$$M = V \times (C/A) + W \times (TDF/A)$$

- **M** = The current management cost of the material to be prevented, in euro per ton,
- **A** = The total amount of waste in the LA, in tons per year,
- **V** = The volume percentage (vol%) of the material in the total amount of waste,
- **W** = The weight percentage (wt%) of the material in the total amount of waste,
- **C** = The cost of collection – transportation of all waste in the LA, in euro per year,
- **TDF** = The total cost of final treatment, disposal and other fees of the LA, in euro per year.

Municipality/Community special characteristics

The special characteristics of a Municipality / Community can more or less influence the effective implementation of a Waste Prevention action.

For this reason, a Local Authority must identify them, analyze them and take them into serious consideration during the design of a Prevention program.

The demographic criterion

- Small < 10000
- Medium $10000 - 50000$
- Large > 50000



The demographic criterion

It affects:

- selection of the action,
- design of the action,
- selection of information methods,
- implementation and
- Measurement of the results



The demographic criterion

- centres for collection, repair and reselling products → not effective in small municipalities
- electronic governance → not as much effective for small municipalities



Average age of population

- up to 45 years old
- 45-65 years old
- over 65 years old.



Average age of population

The younger the average resident of the LA is, the more effective “difficult” actions can be



Average age of population

- printed or face-to-face
if the average age is over 65,
- electronic if average age is
less than 65



Municipal units

- In small distances
- Relatively distanced but with easy access
- In a distance and with difficult access (rough roads, small islands)



Municipal units

Remotely placed: actions start in some units and then expand to others



Collection centers need **accessibility** from all municipal units (otherwise design must include interventions to all units)



Density of population / building conditions

Population Density → Prevalent type of building

- Over 9.000 residents / km² → Apartment buildings
- 1000 - 9000 residents / km² → Apartment buildings and duplex houses
- 100 – 1000 residents / km² → Duplex and detached houses
- Up to 100 / km² → Detached houses, cottages



Density of population / building conditions

- Reduction of waste: less bins, less garbage trucks, better movement of residents
- Densely populated areas: minimum or more effective use of free spaces

Unemployment rates in the Municipality/Community

Actions with, directly or indirectly, positive financial results for the residents

- reduction of municipal fees,
- creation of jobs,
- application of PAYT,
- vocational training for the unemployed



Geography

- Urban
- Semi-urban
- Rural
- Mountainous
- Insular
- Remote from urban areas
- Coastal



Geography

Rural areas:

high proportion of organics → animal food

Islands: (poor quality of tap water)

Installation of filters → reduction of plastic bottles

Environmental characteristics

- If there are free spaces
- If there are green spaces (public parks, groves)
- If there are NATURA areas
- If there are any other special environmental characteristics



Environmental characteristics

- Free spaces → collection and reuse centers
- Parks and groves → composting on the spot
- Island of Zakynthos, Greece (habitat of Careta-careta) → plastic bags



Characteristic infrastructures

- Small or large industries, industrial parks
- Ports, marinas
- Airport
- Railway station
- Public assembly areas (plazas with shops, concert halls, election gathering areas, archaeological sites)



Characteristic infrastructures

- Replacement of single use products with multiple use ones
- Serving of non-bottled beverages
- Communication actions in schools (vast student resource)
- Glass containers
- On-the-spot composting of food residuals

Level of environmental awareness of the residents

If pilot projects for sustainable waste management have previously been implemented (home composting, separation at the source, etc) then the residents are fairly accustomed to waste management issues, therefore more complex actions such as targeted or even total application of PAYT in the municipality /community can be implemented.



Social partners / networking

In order for Prevention actions to be effective, they must be adopted by local bodies, such as:

- Active environmental / cultural residents' groups
- Active commercial / professional associations
- Local teachers associations
- Other local initiatives
- National initiatives



Communication of the local authority with the residents

- Local media
- Newspapers / magazines (printed)
- Radio stations
- TV
- Digital media
- Blogs
- Portal
- Private corporate means of communication (e.g. client lists)
- Access to and cooperation with nationwide media



Communication of the local authority with the residents

The LA can project

- the goals and the progress
- the intermediate and the expected results
- Support by local media → message on a daily basis (effectively absorbed by residents)
- Presentation of intermediate accomplishments → satisfaction and active participation of the residents



Does my LA have an immediate problem with waste?

- The landfill that serves the LA is full
- The existing landfill is about to be full
- The current waste management
- has a large cost
- The existing landfill has a very expensive Fee of reception
- The treatment unit that receives the waste has a high fee of reception etc.



Does my LA have an immediate problem with waste?

- Actions that reduce significantly the waste production
- Organics, paper, packaging, C&D, food catering hotels, large schools, large areas of gathering people

Table of characteristics for the municipality

	Characteristic or Parameter	What applies to the municipality / community	Possible compatible ideas for Prevention
1	Demographically, the population of the LA is: A. Small B. Medium C. Large		
2	What is the average age of the population in the LA? A. up to 45 years old B. 45-65 years old C. over 65 years old		

Choosing thematic prevention fields

- Based on the identification of specific characteristics of the LA, the municipality has to choose which of the 24 thematic prevention fields given in the Prevention Guide should be excluded, and which can be selected as the most suitable for each LA.



24 thematic prevention fields

- Plastic bags
- Food and kitchen wastes
- Green waste
- Plastic bottles
- Packaging
- Textiles – clothing
- Toys – furniture
- WEEE
- Paper
- C&D waste
- Hazardous household waste
- Household goods
- Green points
- Schools
- Offices
- Hotels
- Restaurants & catering
- Crowded public places
- Sustainable public procurements
- PAYT
- Public awareness
- E-government

Table of thematic fields

	Characteristic or Parameter	What applies to the municipality / community	Thematic fields to be a) excluded b) selected
1	Demographically, the population of the LA is: A. Small B. Medium C. Large		
2	What is the average age of the population in the LA? A. up to 45 years old B. 45-65 years old C. over 65 years old		

Selection Criteria

For the selection of a particular action, and in order to be effective and realistic, the implementation of the proposed prevention activities, should take into account the following criteria:

Selection Criteria

- Demographic criterion
- Implementation cost (no cost, < 1 euro, > 0,2-1 euro)
- Organizational difficulties
- Quantitative waste reduction due to the action



Selection of actions from

- Database of Prevention Ideas in the LAWPreT project platform
- Prevention actions presented in the Best Practices and the Case Studies
- Prevention actions which can be found as links, in the platform of LAWPreT (www.waste-prevention.gr)
- From the proposed Prevention actions contained in Prevention Action Plan of each country
- From any other available source

Result

A list of thematic fields with each field containing some prevention activities.

Max: 50-70 actions



Final list of thematic fields and Prevention Actions and LA's Commitment

Preparation of:

- proposed list of actions,
- the data,
- conclusions
- recommendations
- indicative financial resources needed for each action
- indicative implementation timetable
- prioritization of actions per Thematic Field



LA's Commitment



Mayor



Municipal (Community) Council

Municipal Council ↔ Waste prevention team



Final decision

Evaluating the Results

- Qualitative and quantitative evaluation
- Monitoring of indicators
- Explain if the activity is helping to meet the long-term goal and how
- Evaluate the strong and weak points of the activity
- What are the areas in which the activity has succeeded?
- Have there been any obstacles/problems?
- How can these be overcome in the future?
- How the activity can be fine-tuned?
- What corrective measures need to be taken?



Thank you

