

MUNICIPAL SOLID WASTE MANAGEMENT IN GREECE – LEGISLATION – IMPLEMENTATION PROBLEMS.

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SUMMARY: Economic development, intense urbanization and change in consumption patterns have resulted in an increase of solid waste generation. However Greece is in a relatively early stage of its waste management infrastructure development. Unsatisfactory waste management practice aggravated by public opposition as well as environmental pollution due to uncontrolled dumps turn out through the investigation of relative complains by the Greek Ombudsmen. Information on the regulatory framework of the country to achieve compliance will be provided together with obstacles stemming from the local circumstances. An attempt is also made to outline a framework of total management, in terms of actions that make realistic solutions.

1. INTRODUCTION - THE GREEK OMBUDSMAN' S MANDATE

According to his fundamental *law 2477/97 that was amended by the law 3094/2003 the Greek Ombudsman* (GO) is an independent administrative authority with the mission to mediate between citizens and public authorities with the aim of protecting the right of the citizens to identify maladministration and insufficient protection of citizens' rights, while recommending appropriate solutions and ensuring observance of (restoring) legality.

The law provides additional authority to the Ombudsman for environmental issues because, although he does not "...investigate cases in which the administrative act has generated rights for third parties..." he shall proceed to the investigation of cases where, "*...there is manifest illegality or the main object of the case is related to the protection of the environment*".

Furthermore, the recent revision of article 24 of the Greek Constitution establishes the right of the individual to the environment and the principle of sustainable development. These new additions to the Constitution significantly extend the Ombudsman' s capacity to investigate and mediate environmental matters.

2. LEGAL FRAMEWORK

Waste represents an enormous loss of resources in the form of both materials and energy. The amount of waste produced can be seen as an indicator of how efficient we are as a society,

particularly in relation to our use of natural resources and waste treatment operations. Because much of the current activity in the field of municipal solid waste management (MSWM) is a direct consequence of recent legislation, a review of the relevant legislation is presented hereby.

The first attempt to establish technical specifications for solid waste management was the Sanitary Ordinance E1b/301/1964 on collection, transport and disposal of wastes, which is outdated. The Law 1650/86 as amended by Law 3010/02 lays down basic requirements regarding the handling of waste and prohibits the abandonment, or uncontrolled disposal.

Since then the legislative framework for waste management in Greece is mainly based on the EU legislation. A number of acts were issued which were supposed to correspond to the Waste Framework Directive (Council Directive 75/442/EEC on waste, as amended by Directive 91/156/EEC) but set obstacles of bureaucratic nature. In particular, they were very complex, involving a two phase regional planning, many regional services involved with overlapping or nonexistent jurisdictions and requiring a great number of permits and a lot of acts or regulations to be issued. As a consequence considerable delays have been observed in the procedures connected with the waste management planning.

In an attempt to rationalize, distinct competences and obtain a comprehensible legal framework, the Ministerial Decision 50910/2727/03 was issued which laid down the National Policy Plan (NPP). The waste policy goals set up by the first NPP are the prevention or reduction of waste production, the recovery of waste by means of recycling, re-use or reclamation, the closure and restoration of all uncontrolled dumps until 2008 and the establishment of an adequate network of disposal installations taking into account the best available technology. On the national level the Ministry of Physical Planning and Environment has to formulate waste policy goals in a NPP every five years. Figures for elaboration of the policy plan must be presented annually. The planning of disposal capacity has to be carried out on the regional level and Regions are legally obliged to issue Regional Waste Plans every five years. These plans must specify expected future waste flows, expected recovery of waste, as well as the kind and scale of arrangements for processing and disposal of the wastes. Before adapting the regional plans and their initiatives a certain period of 45 days are given to the local councils (municipal, prefectural and regional) for commenting on them. The pertinent Prefecture provides permits for waste handling, collection and transport as well as processing and disposal facilities, though the local authorities (Municipalities, associations) are competent to execute the works and develop and maintain a reliable, efficient and cost effective system of solid waste removal and disposal.

Decisions for the most suitable location of an activity will be part of the Environmental Impact Assessment and the regional authorities are the competent authorities to issue the environmental terms and the environmental permits of processing and disposal facilities.

In addition a number of Ministerial Decisions were issued in order to set the technical specifications for the design, operation and maintenance of sanitary landfills as well as recycling programs and the Ministerial Decision 29407/3508/02 which was issued in order to adopt the Council Directive 1999/31/EC on the landfill of waste, sets performance criteria and at the same time mandates the diversion of putrisable materials from the landfills.

With considerable delay the Law 2939/01 was issued in order to comply with the requirements posed by the Council Directive 94/65/EC on packaging and lays down measures aimed, as first priority, at preventing the production of packaging wastes and as additional fundamental principals at reusing, recycling and other forms of recovering packaging wastes and, hence, reducing the final disposal of such waste. The source reduction is the highest rank in the hierarchy and the law mandates that the manufactures receive, restore and process returned containers and execute reuse-recycling programs by forming private companies and organizations. In addition it mandates that the local authorities join these programs as well as the source separation of solid wastes by the consumers. Furthermore it outlines the general framework for the management of other wastes such as vehicles, demolition wastes, rubbers,

electrical and electronically equipments, batteries, newspapers and other paper products.

The Ministerial Decision 22912/1117/05 was issued to adopt the Council Directive 2000/76/EC and aims to prevent or limit as far as practicable the negative effects on the environment and the resulting risks to human health, from incineration.

Many other laws apply to control of solid waste management problems. These include the law regarding discharge to surface and ground waters, air discharge and protection of public health.

3. CURRENT SITUATION IN GREECE

Economic development, intense urbanization and change in consumption patterns have resulted in an increase of solid waste generation. The quantity of municipal waste generated in Greece increased 42.5% from 1995 to 2002, “see Table 1.1”, although remaining below the average amount of 500 kg generated per capita per year in many European countries (Commission of the European Communities, 2006).

With regard to municipal solid waste composition “see Table 1.2” only a few analyses of urban wastes have been carried out, leading to difficulties for monitoring the changes through time, season and economic activities (I. Agapitidis & I. Frantzis, 1998).

Despite the legal acts issued, inappropriate waste disposal and management practices still persist, leading to the degradation of surface and groundwater, air pollution and forest fires (EEA, 2005). Thus, Greece was referred to the Court of Justice over its failure to clean up two old and non- operational illegal waste dumps in Crete (situated at Kouroupitos and Messomouri). In 2000, the Court of Justice fined Greece a daily penalty of 20000 euros for the operation of the illegal rubbish dump at Kouroupitos. In October 2005 (Case C-205/03), the Court of Justice condemned Greece because of the existence of numerous illegal waste dumps. In the course of written procedures, the Greek authorities acknowledged that at least 1125 illegal or uncontrolled waste dumps were still operational. The number of uncontrolled dumps decreased from 3500 to 1450 approximately in the year 2002 and tends to decrease further to 500 in 2007, according to the Ministry of Environment.

In an effort to confront the problem there have been already constructed 43 sanitary landfills to serve 55% of the population though there are 19 under construction, which will serve 18% of the population “see Table 1.3”. In Attica and Thessaloniki prefectures, 93% and 71% of the population respectively is served by a single sanitary landfill per prefecture. In addition, 12 waste transfer stations in Athens region and 3 in other regions of the country are in operation.

Table 1.1. Municipal Solid Waste Production in Greece (in kg per capita per year) (EEA, 2005).

1995	1996	1997	1998	1999	2000	2001	2002	2003
306	344	372	388	405	421	430	436	441

Table 1.2. Solid Waste Composition in Greece (I. Agapitidis & I. Frantzis, 1998).

Material type	Athens 1985	Thessaloniki 1987	Rhodos 1989	Iraklio 1987	Naxos 1993	Average
Putrecibles	59.8%	51.7%	43%	52.5%	48%	47%
Paper	19.5%	17.7%	17%	17.2%	20.9%	20%
Metals	3.8%	5.9%	10%	2.8%	3.1%	4.5%
Plastics	7%	7.2%	10%	14.3%	10.3%	8.5%
Glass	2.6%	4.1%	14%	1.4%	4.2%	4.5%
Other	7.45%	13.4%	6%	11.7%	13.5%	15%

Table 1.3. Sanitary landfills in Greece (Technical Chamber of Greece, 2004).

Region	Sanitary Landfills	Munic/ties Served	Population served	Sanitary Landfills Under construction	Munic/ties Served
East Macedonia & Thrace	3	20	44.7%	1	5
Central Macedonia	7	15	34.4%	4	17
West Macedonia	0	0	0%	1	10
Thessaly	3	47	55.6%	3	58
Epirous	2	20	4.1%	0	0
West Greece	1	2	20.9%	3	19
Stereia Ellada	3	14	24.8%	3	26
Peloponesos	1	3	47%	2	7
North Aegean	0	0	0%	2	3
South Aegean	7	11	12.6%	0	0
Crete	11	38	24.9%	2	17
Ionian Islands	3	21	61.6%	2	18
Attica	1	70	93%		
Thessaloniki	1	23	71%	1	13

The amount of packaging waste generation in Greece increased from 68 kg/capita in 1997 to 94 kg/capita in 2002 that is not in line with the primary objective of the legislation. Initiatives by local municipalities to reduce packaging waste, and the extensive involvement of private companies mainly in paper packaging recycling, are examples of Greece's practical approach to improve the waste management situation. Since 2004 when the first permits were provided to certain organizations founded by industries and commercial companies to execute reuse-recycling programs, a significant number of municipal authorities participate by sign agreements with them. Two parallel streams of solid wastes were formed by separation at home. The first is the multi material recyclable stream and the second the refuse. The commingled recyclables were collected and transferred to a material recovery facility. There are only four materials recovery facilities at the moment. A mechanical material recovery facility has been constructed at Ano Liosia Landfill but it hasn't yet set in efficient operation. The percentage of packaging waste recycled in Greece estimated to be 14% of the total quantity of packaging waste generated for the period 2005-2006, although the estimation for the year 2007 is 20% reaching the target of 25%. The recycle percentage varied greatly from 65% of paper, to 10% of metals, 19 % of glass and 3 % of plastic. However Greece is on the starting period of the effort and still remains a lot to be solved as far as concerning the quality and quantity of participation (EEA, 2005).

A proposal for improvement is more consistent and reliable collection, wider information on the recycling projects as well as identification of a secondary material market for the sorted materials. The charges for the MSWM paid by the public to the municipalities are based on the area of their house or apartment and not on the quantities of waste produced. Furthermore the disposal fees that municipalities are charged are based mainly on the total population. On the contrary the charges should be determined by the waste quantities produced thus resulting in lower charges for those participating in recycling programs.

As far as biodegradable wastes are concerned, Greece will postpone the attainment of the targets of diversion from the landfill set by the directive. Provision was made for biodegradable wastes going to landfill to be reduced to 75%, 50%, 35% by years 2010, 2013, 2020 respectively.

Biochemical treatment plans and/or energy recovery plants will be constructed where

economically and technically feasible. Three compost plants for commingled refuses have already been constructed. One is not operational while the other two haven't yet been set in efficient operation. Besides, it is now widely accepted that composting is only likely to succeed (in producing an acceptable compost product) where source separation of the compostable fraction has been carried out. Attempts at composting mixed waste fractions have been generally unsuccessful (given the high standards set for the necessary quality) (Campbell P.J.V, 1993).

Finally there isn't any incineration plant under elaboration or construction at the moment. Hereby it must be stressed out that if the competent authorities invest for the construction of arrangements of treatment and disposal of solid wastes they should utilize them to their full capacity otherwise all capacity that is not fully utilized is costing huge amounts of money. Once such investment has been made, any subsequent decrease in waste streams creates a deficit in the exploitation of these plants thus the reduction acts competitive (de Jong P. & Wolsink M., 1997). In the broadest interpretation of MSWM hierarchy, programs and systems should be developed in which the elements of the hierarchy are interrelated and are selected to complement each other. Ultimately something must be done with the solid waste that cannot be recycled, the residual matter remaining after solid wastes have been separated at the material recovery facilities and the residual matter remaining after the recovery of conversion products or energy. Hence the overall waste strategy should be kept in mind when deciding on the establishment of waste treatment facilities. The effect on the provision of waste management facilities should be considered so that the proposed development would not undermine more sustainable methods of waste management (Tchobanoglous G., Theisen et al, 1993).

4. GREEK OMBUDSMAN (GO) INTERVENTION

The Quality of Life is one of the five departments of the GO and in conformity with the specific requirements of the GO's founding law, poses particular importance to the environment, as the harmful effects of human activity on the environment are more and more apparent.

Complaints concerning in particular the natural environment are very strongly represented in numerical terms, adding up to approximately 30% of the total number of cases handled by the Department during its ten years of operation. This category includes an important number of cases concerning degradation of the environment caused by MSWM practices. In particular the GO undertook the investigation for over 40 complaints concerning uncontrolled disposal of wastes, deviations from the approved environmental terms, as well as systematic shortcomings in the selection process and approval of the siting of solid waste treatment works (The Greek Ombudsman, 2003, 2004).

4.1 Uncontrolled disposal of waste

The investigation of most cases revealed that the most common method of handling solid wastes is uncontrolled disposal in different parts of the country, in contravention of both national and EU legislation, off cliffs, on banks of torrents, rivers and stream beds, on coast, in the immediate vicinity of springs used for water supply purposes, abandoned quarries, forested areas, even archaeological sites. As a consequence in Greece the environment is deteriorating steadily. Beginning from ground water, soil, air and noise pollution it may be particularly emphasized the aesthetical or visual pollution associated with waste and with the larger problems of public health and ecological vulnerability of the region. Furthermore the location of the uncontrolled dumps in those sites made them incapable to be licensed for an upgraded operation.

In many cases the local authorities are aware of the poor level of service been provided; however they compromise for the sake of urgency and because of lack of resources. In addition

they claim that there aren't other places to dispose, although they may not plead internal difficulties to justify a failure to comply with obligations and time limits laid down by the law. Besides, as repeatedly stressed by the GO, a significant deterioration in the environment over a protracted period when no action has been taken by the competent authorities is in principle an indication that they have exceeded the discretion time. In addition the disposal into dumps eliminates the cost for disposal, leading to an overall cost decrease of the waste handling process, thus MSWM has a tradition of low cost. The improvements are more costly and the local elected officials will not annoy their electorate by imposing higher charges.

However, despite the obligation of the administration to systematically impose the administrative and penal sanctions foreseen to anyone who harm the environment the Prefecture or the Region avoid to impose penalties since the municipalities are in charge of the operation of the uncontrolled dumps and everyone wishes to avoid the so-called "political cost" of upsetting an important influential group. Furthermore they claim that, since the Regional Planning and the selection of the appropriate site for the solid waste treatment works are under elaboration, the problem would be confronted. However, on one hand after site selection, quite a long time would be needed to the final acceptance of the site, the landfill design study and construction and the effective operation, on the other these practices act as a disincentive to efficient MSWM.

Sometimes in an effort to overtake the penalty and to improve the situation following the GO's intervention as well as pressing public's complaints, the competent authorities took certain measures like fencing, irregular top cover, fire – protection, which neither improve the environmental conditions nor resolve the problem of MSWM.

Finally in certain cases where the dumps have been closed or abandoned, no measures were taken, in order to restore or remediate them, such as solutions about the final landscape morphology, biogas and leachate management, surface water management, top cover and environmental and physical monitoring of the landfill.

4.2 Compliance with the approved environmental terms

Case investigations have also revealed problems arising from non-complying with the approved environmental terms of legally established landfill sites. A representative example of maladministration is the failure to comply with the terms of the environmental permit in Anò Liosia landfill, the country's largest landfill site. Deviations from the approved terms contained within environmental permits creates distrust in public opinion for the technological feasibility of creating landfills with minimal environmental impacts, which in turn compounds community resistance when planning the location of new landfill sites.

4.3 Siting of new solid waste treatment works

In the siting of solid waste treatment works it is observed failure to implement the legislation properly, inconsistent and inadequate approaches to setting the thresholds used to determine when a site is appropriate for siting an arrangement for treatment or disposal, weakness in considering cumulative effects, poor quality of environmental information submitted.

A pressing issue is the fact that the criteria established according to legislation, concerning the suitability of an area are often insufficiently met, due to the particular importance attributed to ensuring public approval. Establishing the most advantageous technical solution to the environment should be the main criterion when choosing and evaluating the selection of the siting of solid waste treatment works. The meaning of public approval is on one hand vague, and on the other hand should not, according to the legislation, be a criterion when evaluating different sites. Furthermore the administration decisions issued at the regional planning stage approved only one landfill site as appropriate, despite the legal requirements for more.

Moreover the dossiers containing the Environmental Impact Assessment (EIAs), which form a part of the overall environmental permitting regime, are frequently incomplete and instead of simply being a technical method for predicting potential impacts and very useful tool for the protection of the environment, such studies often serve to support pre-determined decisions for the location of an activity. The inability of these studies is confirmed by phenomena such as reports drafted after the fact, by unqualified researchers, which fail to realize the dimensions and qualify the impact upon the environment, fail to evaluate and propose alternative development plans, fail to evaluate the cumulative impacts of the project.

Although the regulatory framework must be strictly applied when developing MSWM plans the investigation revealed that in order to accelerate the procedure, the competent authorities sometimes proceed to approve a site without prior obtaining all the necessary permits. In other cases turn out that sites in protected or archaeological areas or in vulnerable water regime areas, which should be excluded from the evaluation process were among the predominated sites for the siting of the works. Therefore the relevant administrative act should be filed with the Supreme Administrative Court and might be cancelled, causing considerable delays.

One reason why conflicts arise is that the consequences of siting –positive as well as negative– are unequally distributed. This distribution is spacial - the people who live close to a facility see themselves as assuming the consequences of the lifestyle of a considerably larger group of people and question whether this is fair. The unequal distribution can also be social – certain interests perceive a siting as constituting a cost (alternative or benefit) for them (Lidskog R., 1998). Thus it is important to be clearly defined which proposal is being advanced and why this particular proposal was chosen, by present an overall assessment of what are seem to be the most important criteria and how a siting proposal fulfils these criteria. Citizens must be treated with respect and not only informed but they should be permitted to be involved in the decision making process so that they can get information in order to be able to decide weather they want to discuss and negotiate. It is also important to elaborate alternative solutions to put forward arguments in order to delineate the opposition (Karavitis C.A, Bosdogianni A. et al, 2001).

5. RESULTS AND DISCUSSION

The Ombudsman's experience shows that in addition to these finding, the problems have been compounded due to the lack of comprehensive MSWM, which should include:

- Application of a nationwide and long term planning
- Effective and appropriate legislative and institutional framework
- Effective coordination and participation of local authorities
- Citizens mobilization in terms of awareness and public involvement and participation
- Proper training and encouragement of the use of innovative technologies

5.1 Nationwide and long term planning

Government policy and administrative practice do not systematically take into account the fact that all decisions and activities must necessarily be implemented according to the environmental protection standards as well as the principles of sustainable development, prevention, preservation and rehabilitation of environmental damage. This whole effort must be intergraded in the wider framework of EU's environmental policy as laid down in the Founding Treaty of the European Communities.

Although the primary policy objectives officially are waste reduction, in particular source

reduction, the central policy concentrates on planning policy and waste infrastructure, such as facilities that are mainly important for purposes linked to processing and disposal.

Furthermore a large number of public officials seem to be under the impression that, since they represent and therefore derive their powers from the public will, they are at liberty to overstep existing legal constraints in exercising their duties. This becomes particularly evident when it comes to local and municipal governments and to a lesser extent prefectural governments. This practice is also encouraged by the failure of the responsible authorities to effectively supervise and control the services involved.

Although quantifying solid waste flows and determining their composition is essential for establishing trends, setting policy goals and evaluating policy, severe problems in terms of availability, validity, reliability or comparability have been detected. Especially when the case is an uncontrolled landfill, the difficulty is that there are usually no data available (absence of landfill records, monitoring measurements, etc.) to make the essential calculation and evaluation.

5.2 Effective and appropriate administrative framework

The most pressing issue is the fact that regional government services are ignorant of the law and inadequately informed by the central administration.

Other important findings are the administration's failure to take the required action, delays in issuing an administrative act as well as incompetence and/or unwillingness of administration to resolve cases, even when court decisions exist. These malfunctions owe their existence to lack of appropriate staff and infrastructure (laboratory facilities, measurement equipments...), lack of financial resources, overlapping (or nonexistent) jurisdictions and, finally, intentional illegal behavior concealing private or political gains. This is particularly common with local government authorities, which, on one hand were provided with additional authorities to deal with their regional issues including the environmental ones according to the Constitution and on the other, were not provided with the necessary funds and staff. Furthermore, the fact that the administrative staff is often below the training or educational level required for the service tasks involved, made them totally incapable to evaluate and monitor the environmental conditions as well as to ensure observance of the approved environmental terms and impose penalties.

The local elected officials will not annoy their electorate by selecting sites for new units. An acceptable alternative is a regional mandated MSWM program foreseen by legislation.

5.3 Effective and appropriate legislative framework

It is observed that the relevant EU environmental legislation is often not implemented properly, thus depriving citizens of the high level environmental protection they expect. Considerable shortcomings and delays in transposing the EU directives are observed, thus when an act or regulation is issued in order to adapt a certain directive this might be amended by a new one to confront the new scientific and technological progress, setting new targets and initiatives. It is worth mentioning the recent European Parliament decision according to which combustion is no more considered as a recovery process.

It must be stressed out that thirty years were needed since the waste framework directive issued until a user friendly as well as simple legislative framework was formed. The previous was one of the main obstacles in confronting MSWM problems, amounting only to a series of ad hoc normative interventions that were incapable of constituting an organized and coordinated system for the disposal of waste.

Furthermore legislation is not codified and laws tend to be ineffective when contradictory regulations are issued and when there are delays and omissions in the issuance of relevant acts or regulations. For example an obstacle to the attainment of the targets for packaging waste

reduction consider to be the fact that although provision was made for the establishment of the National Organization for the alternative Management of Packaging and Other Wastes, it is still inactive as the relevant acts, needed to enact it, haven't been issued yet. Still remain a lot of acts or regulation that should include measures to achieve the targets concerning demolition waste and biodegradable waste to be issued, thus the attainment of the targets would be postponed.

It must be added that still remain issues to be resolved, since provision is made for public information but not public participation in decision-making process. Another important finding is the absence of systematic, uniform and enforceable pollution charges that has compounded problems and has handicapped MSWM efforts.

Finally discrepancies are repeatedly observed between the official expressed will of the state and the implementation that follows, which frequently employs specific legal instruments (e.g. Ministerial Decision) in order to legislate general planning requirements though the more specific items are legislated by a higher rank legal instruments (e.g. Laws, Presidential Decrees).

In addition to legislation directly related to waste management, the MSWM planning process should also consider a number of other relevant directives, which might influence decisions regarding the siting and operation of waste management facilities. In particular: the water framework directive 2000/60/EC, the Environmental Impact Assessment, the Strategic Environmental Impact assessment directive 2001/42/EC and the habitants Directive 2003/35/EC, which aren't fully implemented yet.

5.4 Citizens mobilization in terms of awareness and the use of innovative technologies

In general the citizens are not adequately informed of the procedures required for each case and also there is a lack of proper training and "environmental" education. However it seems that public is sometimes more aware than the local authorities, since many municipalities are still not very well informed and aware of their obligation.

In case of citizens mobilization the main finding is the absence of public participation and involvement in decision-making process despite the rules contained in EU environmental legislation. On the contrary in most cases, "participation" by the citizens consisted only of submitting objections against the MSWM plans or siting of solid waste treatment works.

Furthermore, although provision was made in law for the access of the citizens to the environmental information a number of findings indicate the unwillingness of the public services to provide the citizens with the relevant information.

As far as the use of innovative technologies is concerned the findings indicate lack of knowledge of innovative technology as well as lack of the willingness to use environmental friendly techniques, which might be more expensive.

6. CONCLUSIONS

In Dealing with the severe problem of WSWM, a comprehensive management approach should include the following:

- A shift in management not only towards waste recovery by recycling, reuse and reclamation of energy, but primarily towards reduction in the generation of waste through the development of clean technologies and through the designing and placing on the market products which contribute to minimization of waste production. Since in Greece the MSWM infrastructure is primitive, this is a big gap that country has to overstep.
- The promotion of environmental friendly technologies, even where these are most costly.
- Applicable laws should be strictly enforced and the compulsory monitoring of environmental conditions should be established on one hand, with specific methods of decontamination -

restoration on the other.

- Enforcement of measures or penalties, scaled towards and proportional to the extent of the damage caused.
- An effective and realistic institutional framework that can ensure transparency at all stages of the decision making process, access to environmental quality data, and the promotion of information and awareness of the citizens. The public should be involved in the determination of the future waste management system and a consultation phase must be included in the planning process. Participants should include a wide range of stakeholders as representatives from the political and administrative level, waste experts, representatives from the waste management sector, industry, industrial and commercial organizations, consumer councils/associations, N.G.Os. The involvement of the various stakeholders and the wider public in the planning process should aim at ensuring acceptance of the waste policy in general and contribution to the attainment of its objectives.
- Adequate staffing with specialized personnel and the provision of sufficient funds to the environmental policy supports structure, both at central and specifically at local government level.
- Given the increasing environment awareness, the obstacles to the implementation of a total environmental management program are not necessarily technological but predominantly economic. Thus practical economic solutions are needed such as the allocation of funds and the integration of cost – benefit and sustainability analyses in the management system, the implementation of the principal “the polluter pays” as well as financing schemes (especially tax incentive and subsidies).
- Finally problems encountered at municipal level in properly implementing decisions where sufficient means are not available. Policies will not be effectively implemented unless the national authorities are strongly involved.

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