Greece faces up to the EU packaging regulation

Businesses reveal their plans to meet the new legislative environment

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Abstract Since the 1980s, packaging has been increasingly included in the environmental agenda. Worries about packaging waste have led governments to introduce packaging legislation and formulate waste policies. Since 1994, the Regulation 94/62/20.12.94 on Packaging and Packaging Waste provides a framework for measures to be taken in every country of the European Union to diminish the volume of packaging waste. Reports on a survey of Greek manufacturing aiming at the registration of the recent changes and trends in packaging materials used by consumer goods industries and the investigation of the main problems and prerequisites to meet the new legislative environment.

Introduction
During the last decade, in the framework of the globalization of production and trade under the pressure of intense competition, the traditional function of packaging, that is the containment and protection of a product from the moment of its production through storage, distribution and sale and for a certain period thereafter, has been greatly differentiated. Packaging has emerged as a very important marketing and promotional tool, especially for consumer goods, related to a shift in the purchasing criteria, mainly from the price to the quality of a product. The easy to use and appropriately designed packaging is considered a basic component of the product quality.

The new and upgraded role of packaging has had a positive impact on the development of manufacturing, as well as of the services sector, and of international trade. However, the extended use of packaging, resulting from its multiple technical and economic functions, has not been free of negative impacts.

Since the middle of the last decade, packaging is increasingly included in the environmental agenda. It is well known that packaging materials (paper, glass, plastics and metals) account for about 40 per cent of domestic waste and for a large and increasing percentage of the total solid waste (Feates and Barrat, 1994), in Greece – the country specifically under study here – (Greek Society of Recovery and Recycling, 1997) as well as in OECD countries (Vogas, 1995). The environmental scrutiny of packaging further includes its consumption of raw materials and energy for the production of such a “temporary” product.

On the other hand, the remarkable change in consumers’ attitude towards the environment has already had a strong effect on their attitudes towards
purchased products. There is considerable support for the use of more environmentally friendly or recyclable packaging, while the use of excess packaging could be a good reason for not buying a product (Lox, 1992). Besides, packaging is the main target for environmental groups to criticise a company’s environmental performance (Wasik, 1996). The growing consumer awareness regarding the environment has started to exercise a stronger pressure on enterprises to carefully plan their packaging strategies aiming at the improvement of their environmental performance. In practice, this means that they should try to balance three competing objectives:

(1) a reliable utility value in protecting products and consumers;
(2) a positive marketing value; and
(3) the avoidance of negative impact on sales if packaging is seen as excessive or environmentally harmful (Welford and Gouldson, 1993).

In parallel, worries across many European countries about packaging waste have led some governments to take direct action. Germany has been the first to introduce (in 1991) a packaging legislation, which has become the baseline model for the establishment of the European Union packaging waste policy (Duales System Deutschland, 1992). Since 1994, the Regulation 94/62/20.12.94 on Packaging and Packaging Waste establishes the framework for measures to be taken in every country of the EU to diminish the volume of packaging waste. The above objective has to be accomplished by: the use of less and lighter packaging; the promotion of reusable packaging; and the establishment of an effective recycling system. In addition to the above measures: suitable packaging labelling has to be promoted to help the discrimination and sorting of different materials; and new production processes to save and recycle raw materials and energy have to be developed.

The packaging legislation

*The European Union packaging legislation*

The European Council Regulation 94/62/E.C. of 20 December 1994 has established the EU common policy on packaging and packaging waste. The regulation intends, through the creation of effective management systems, to diminish the negative impacts of packaging and packaging waste on the environment, ensuring at the same time the normal function of the internal market.

The above legislative framework includes measures for the prevention of packaging waste, while a complete “cradle to the grave” life-cycle assessment of all packaging materials is recommended. The commission’s proposals are broad enough to include packaging waste created by materials used for the distribution of goods, industrial packaging, agricultural products, retail and office waste, and consumer products packaging. The commission has insisted on:

- at least 60 per cent of all packaging waste being recycled within five years of the directive ratification (compared with only 19 per cent in 1992);
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- no more than 30 per cent being incinerated within the same time period;
- no more than 10 per cent of packaging waste being placed in landfills.

Greece, Ireland and Portugal have been excluded from accomplishing the above goals, for a variety of reasons, including the presence of many islands and the generally low level of packaging consumed. Lower levels than those dictated by the regulation for the first five years are allowed, but with a minimum of 25 per cent of recovery, with an obligation to meet the goals by 31 December 2005.

A significant priority has also been placed on the reduction of packaging waste, on the refill and the reuse of containers, on recycling, and on energy conversion. In addition, through the “polluter pays” principle, the legislation provides a strong incentive to reduce the general levels of packaging while ensuring that the packaging which is used is more environmentally friendly.

Consequently, it is very important for companies to understand the framework of the above environmental policy so that they can positively respond to the new challenges. The pressure imposed by the regulation and the environmental laws obligates many companies to realize the fundamental implications of the environmental issue on their survival and success.

The Greek legislation

Up to now, packaging waste management in Greece has mostly been a responsibility and initiative of local authorities in co-operation with organizations of packaging materials producers, manufacturers and retailers (Vogas, 1995; Greek Society of Recovery and Recycling, 1997). However, attempts to collect and recycle packaging have not operated on a regular basis, neither have they been part of an integrated environmental management system.

The Greek Ministry of Urban Planning, Environment and Public Works has drafted a law on packaging, packaging waste and the recycling of materials in general, in order to be in accordance with the European Regulation 94/62/E.C. The basic principles of the above draft are the following:

- suppliers of raw materials, producers and retailers, as well as packaging materials importers, should be responsible for dealing with packaging and packaging waste and they should also prove the fulfilment of this obligation;
- the participation of local authorities, as responsible bodies in packaging waste management is being ensured. Consequently, the suppliers of raw materials, producers and retailers can cooperate with local authorities and set up companies, partnerships, etc. in order to fulfil their obligations;
- the above systems in order to be established and continue to exist, should be approved and controlled by a suitable state organization;
- the development of “guarantee systems” for the reuse of packaging and the return of “one use” packaging will be promoted, to assist with the collection of “cleaner” materials and their subsequent effective recycling.
Environmental management of packaging and packaging waste

In the above context, concern for the environment, pressure by legislation, suppliers and customers, creating an environmental management system for packaging waste is very important. Nowadays, dealing with packaging waste means paying great attention to the source of waste. Any reliable and efficient environmental protection system must focus on preventing rather than on alleviating environmental damage (Welford and Gouldson, 1993).

Consequently, one responsible strategy for dealing with packaging waste must primarily include the avoidance of waste at the earliest stage possible, which is in accordance with the legislative framework. Of course, other methods of reducing packaging waste such as: reuse, recycling and recovery without environmental impacts should also be included. As far as the final disposal of packaging waste is concerned, the safe landfill is one recommended way of dealing with that part of waste which cannot be avoided or recycled (Greek Ecological Company of Recycling, 1995).

Avoidance of packaging waste presupposes technical and legislative measures as well as economic regulations, strengthened by the participation of citizens, which mainly aim at the drastic decrease of packaging waste’s weight and bulk, at the earliest stage possible.

There have been significant attempts in the field of packaging avoidance at source, during the last decade, mainly motivated by the achievement of lower cost and not by environmental concern (Feates and Barrat, 1994; Welford and Gouldson, 1993). More generally, avoidance of packaging waste has been promoted by lightweight packaging and by the production and application of refillable or recyclable packaging.

Reducing packaging waste at source

Reducing packaging waste at source – meaning the avoidance of packaging waste – may be either qualitative or quantitative. According to the definition of Environmental Protection Agency (EPA), reducing at source may also include the reuse of packaging.

The qualitative reduction of packaging waste at source means reducing, or totally avoiding, the use of dangerous and toxic substances, such as heavy metals (lead, cadmium, mercury) or chromium. The reduction of polymers used in packaging – which are not environmentally friendly – also comes under the heading of qualitative reduction.

The quantitative reduction of packaging waste means producing a smaller quantity of packaging waste by using, for example, lightweight packaging, by avoiding over-packing, by finding substitutes for packaging materials which cannot be recycled, etc. The production of long lasting products and products of many uses, also comes under the heading of quantitative reduction.

In any case, selecting the best packaging is a very complicated task because there are a number of parameters which have to be considered such as the cost, the security, the best performance, the functionality, the preference of
consumers, as well as business factors. For instance, there is a limited choice as far as the introduction of lightweight packaging is concerned, because the safety of the goods being protected has to be taken into consideration.

It should also be noted that quantitative packaging waste reduction presupposes the active participation of consumers who influence the market by their environmentally friendly choices. Reducing waste at source means that the consumer is willing to accept a change even with the loss of some measure of accustomed convenience.

Reusing packaging
Reusing packaging, another very important way to reduce packaging waste, means returning packaging to the place of its production, where it is cleaned and then refilled. The success of this method presupposes that the cost of return, of washing and of refill should be less than that of the accustomed way of using new packaging. A very important key element in this procedure is that the bottles or other containers must be returned by the consumer (Vogas, 1995).

The benefits of packaging reuse include the reduction of both volume and weight of waste, savings in raw materials, a reduction in energy consumption and in the cost incurred in the collection and disposal of waste.

The technological evolution has made possible the improvement of packaging materials so that they can be reused. Until recently, plastics could not be reused in food packaging because of the risk of the content’s infection, according to the Food and Drug Administration (FDA). Coca-Cola has now successfully introduced the reuse of PET bottles in Germany, Switzerland, Holland and Norway and at the same time, a percentage of recyclable PET has been used in the production of “new” bottles (Greek Ecological Company for Recycling, 1995).

In Greece, packaging of beverages used to be 90 per cent returnable in 1981 but today the percentage of returnable packaging is less than 10 per cent (Tsaiousooglou, 1997). Aluminium cans and plastic bottles have replaced, to a great extent, the glass bottle which is returnable. For instance, the majority of companies use one-time-use plastic bottles for mineral water. In most cases, these bottles are made of PVC but recently some companies have introduced PET. Only a small number of companies use glass bottles and even fewer companies use glass returnable bottles.

Recycling
Reducing packaging at source is not always a viable solution for the manufacturer. Alternatively, a very effective method is the increase of recycled material in packaging and/or the production of recyclable packaging. The recyclability in the design, production and application of packaging can greatly reduce the packaging waste.

Table I presents the percentage of packaging recycled in Greece according to data of different organizations. (It should be noted that there is a lack of official data concerning recycling in Greece).
Looking at this analytically, there are great possibilities for increasing the recycling of paper. It is estimated (Greek Company of Recovery and Recycling, 1997) that the percentage of recycled paper could rise beyond 65 per cent, which means that it can exceed 420,000 tonnes per year. Nowadays, the recycling of paper in Greece is mostly the concern of local authorities, of schools or of various merchandisers. The problem is that these attempts have not operated under any central guidance or motivation by the state, resulting in ineffectiveness and in a lack of citizens’ trust towards the local authorities and towards the recycling itself.

The environmental benefits from glass recycling, beyond the energy saving, are raw materials saving and reduction of packaging waste. It is estimated that for every tonne of recycled glass, 1.2 tonnes of raw materials and 180-200 kilos of fuel are saved. The recycled glass, however, is barely recognised by the industry in Greece. There are only two large units for glass recycling and few smaller ones.

In the field of plastics recycling, Greece is a member of the Association of Plastics Manufacturers (APME), which has overseen the initiative of recycling plastic bottles of domestic use in Europe. The plastic bottles made of PET are the most important recyclable plastic material (Arcelli and Castiglione, 1992). In Greece, however, returnable plastic packaging has not yet been introduced to the market, because recycling of plastics is implemented only in the framework of experimental or small scale recycling programmes. The plastics recycling in Greece is shown in Table II.

**Empirical research objectives and methodology**

**Research objectives**

In the second half of 1997, a piece of empirical research was performed by the Laboratory of Industrial and Energy Economics (LIEE – NTUA), using structured questionnaires, in a cross-industrial sample of 141 Greek enterprises, aiming at:

- pointing out the recent trends in ecological packaging development in Greek manufacturing;
- investigating the degree of awareness about new legislative environment; and

<table>
<thead>
<tr>
<th>Packaging material</th>
<th>Percentage of recycling</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper</td>
<td>48</td>
</tr>
<tr>
<td>Glass</td>
<td>30</td>
</tr>
<tr>
<td>Aluminium</td>
<td>26</td>
</tr>
<tr>
<td>Tin</td>
<td>17</td>
</tr>
<tr>
<td>Plastic</td>
<td>5</td>
</tr>
</tbody>
</table>

**Table I.** Percentage of packaging recycled in Greece (1997)

**Source:** Greek Society of Recovery and Recycling (1997)
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...the possibilities as well as the problems of companies’ harmonization to the above framework.

The processing of the answers received has led to interesting findings which are presented in the following paragraphs.

Sample selection and rate of response

The research took place primarily in the manufacturing industry and, more precisely, within enterprises coming from consumer goods sectors which mainly use packaging materials, for example the food and beverages industry, the drugs, cosmetics and detergents industry, the chemicals and paints industry.

The companies within the sample have been selected from the ICAP (The Greek Financial Directory) database, available at the LIEE/NTUA, according to two main criteria:

1. the average annual rate of sales increase per company, was to be greater than the average annual rate of sales increase for the total manufacturing sector in the period 1988-1993; and

2. the average rate of return on equity (net profit/net worth) was to be greater than the same index for the total manufacturing sector in the period 1988-1993.

An additional criterion imposed on the above sample, in order to be more coherent to the research objectives, was that the number of employees per company should be over 20. Finally, random sampling was used to enhance the sample size. The final sample comprised 141 businesses within the manufacturing sectors mentioned above.

From the initial sample of 141 enterprises, 49 firms responded. This means a response rate of 34.7 per cent in total, which is considered to be satisfactory for this type of empirical research. The response rate varied by sector (see Table III) between 14 per cent and 47 per cent.

The main characteristics of the respondents were as follows:

- The great majority of the respondents are private enterprises of Greek Capital, while more than half of them are independent firms.
- The enterprises can be characterized as medium-large for the Greek manufacturing environment, although they are, in fact, small or

<table>
<thead>
<tr>
<th>Plastic material</th>
<th>Quantities collected (in thousand tonnes)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1995</td>
</tr>
<tr>
<td>PET bottles</td>
<td>29</td>
</tr>
<tr>
<td>PVC bottles</td>
<td>21</td>
</tr>
<tr>
<td>PE bottles</td>
<td>33</td>
</tr>
<tr>
<td>PP/PS</td>
<td>7</td>
</tr>
</tbody>
</table>

Source: Greek Society of Recovery and Recycling, 1997
medium-small according to the EU classification (51-250 employees per company at 44 per cent of the respondents).

- Companies have a long lasting presence in Greece (more than 20 years for 76 per cent) and their products are directed mainly to the Greek market although up to 30 per cent of their production (for 92 per cent of the sample firms) is exported to the European Union’s market.
- The majority of the firms have not been certified according to ISO 9000 yet, but they have expressed their intention to be so certified in the near future. On the contrary, they do not intend to be certified according to ISO 14000 or EMAS, mainly because they seem not convinced about the competitive advantage that an EMS could offer to their business.

Structure of the questionnaire

The questionnaire covered questions regarding the main characteristics of the enterprises (see above), recent trends in their products’ packaging, expected changes for the future, packaging and packaging waste management, prerequisites for the introduction of a successful management system and the main problems incurred, etc.

The questionnaire was structured in five units, as follows:

1. **Main characteristics of the company**
   In this unit, questions referring to the type and legal status of the company, its size (number of employees and annual revenues), its basic activities, the main markets of its products, etc. were included.

2. **Information about the products’ packaging**
   In this part of the questionnaire, questions about the basic packaging materials used, their origin, the percentage of products packaged by the company, the percentage of recycled or recyclable packaging materials used, etc. were included.

3. **Recent changes in the packaging of company’s products**
   This part of the questionnaire aimed at investigating the most significant changes in the packaging of the company’s products in the last five years, as well as the main reasons for the changes.

4. **Expected changes in the field of packaging**
   In this unit, questions referring to the most significant expected changes in the packaging of the companies’ products, particularly changes in packaging materials, production, etc.

<table>
<thead>
<tr>
<th>Manufacturing sectors</th>
<th>Initial sample</th>
<th>Survey respondents</th>
<th>Rate of response (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food</td>
<td>74</td>
<td>26</td>
<td>35.1</td>
</tr>
<tr>
<td>Beverages</td>
<td>17</td>
<td>8</td>
<td>47.0</td>
</tr>
<tr>
<td>Pharmaceuticals/cosmetics/detergents</td>
<td>28</td>
<td>12</td>
<td>42.8</td>
</tr>
<tr>
<td>Chemicals/paints</td>
<td>22</td>
<td>3</td>
<td>13.6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>141</strong></td>
<td><strong>49</strong></td>
<td><strong>34.7</strong></td>
</tr>
</tbody>
</table>

**Table III.**

Response to the survey
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(5) Packaging and packaging waste management
In this last part of the questionnaire, the companies were asked to express their willingness and intention to take part in an integrated management system for packaging and packaging waste, as well as the prerequisites for the successful implementation and performance of such a management system.

Main results of the empirical research
Information about the products’ packaging
The main findings about the products’ packaging, according to the answers received, have been:

- the basic packaging materials used for sales packaging (direct packaging) are plastics (32 per cent) and paper (21 per cent) but in the distributive (indirect) packaging and in the transport packaging, cardboard is mainly used (38 per cent and 41 per cent respectively).
- for the majority of the companies packaging of products is implemented by themselves (more than 70 per cent for 78 per cent of the companies).
- packaging materials are purchased from packaging materials producers (for the 82 per cent of the companies) who are in the majority Greek enterprises (more than 70 per cent for 62 per cent of the companies).
- packaging materials used are primary materials for the majority of respondents (more than 70 per cent for 45 per cent of the companies), while only 39 per cent of the companies use recycled materials at a percentage up to 30 per cent.
- packaging materials used are recyclable at a percentage more than 70 per cent according to 33 per cent of the companies.
- the companies affect the design and the selection of their packaging materials to a considerable degree.
- in 39 per cent of the companies, the average percentage of the packaging contribution to the total production cost is 10-20 per cent.

Recent changes in the company’s products’ packaging
Recent changes in products’ packaging have included the following:

- most companies (80 per cent) have introduced changes in their products’ packaging during the last five years.
- the majority of the companies declared that the main causes of those changes, in order of decreasing importance, have been: the appearance of the products, consumers’ demands, the decrease of product cost, the safer/easier transportation, the availability and cost of raw materials and the environmental concern.
The three most important changes in products’ packaging for most companies have been the change in the design and in the packaging material and the decrease of the volume/weight of packaging.

Table IV presents the most important changes (percentage of companies which acknowledge the same changes as most important).

**Expected changes in the field of packaging**

The expected changes in the field of their products’ packaging, for the majority of the companies, were as follows:

- there is a great possibility for a future decrease in packaging weight and volume (49 per cent of the companies), under the restrictions imposed by the products’ safety, the production cost and the marketing function.

- the use of returnable, recyclable and recycled packaging is not expected to increase for the products of the great majority of the respondents companies (94 per cent, 80 per cent and 80 per cent respectively). Only 20 per cent of the companies have declared that they expect an increase of 5-10 per cent in the use of recyclable and recycled packaging.

- many companies are going to proceed in changes towards packaging optimization from the environmental point of view. The three most important of these changes are: avoidance of over-packing, replacement of composite packaging and simplification of packaging material.

**Packaging and packaging waste management**

The main findings of the survey regarding the principles, the prerequisites and the main features of an integrated packaging and packaging waste management system have been the following:

1. The majority of companies consider the prevention, the reusability and the recycling, as the most important principles in packaging and packaging waste management. Table V presents the most important

<table>
<thead>
<tr>
<th>Important changes</th>
<th>1 (%)</th>
<th>2 (%)</th>
<th>3 (%)</th>
<th>It does not belong to the three most important changes (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change in the packaging material</td>
<td>26</td>
<td>30</td>
<td>13</td>
<td>31</td>
</tr>
<tr>
<td>Change in packaging design</td>
<td>64</td>
<td>26</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Decrease of the volume/weight</td>
<td>3</td>
<td>15</td>
<td>28</td>
<td>54</td>
</tr>
<tr>
<td>Use of recycled material</td>
<td>5</td>
<td>0</td>
<td>3</td>
<td>92</td>
</tr>
<tr>
<td>Use of recyclable material</td>
<td>0</td>
<td>3</td>
<td>10</td>
<td>87</td>
</tr>
<tr>
<td>Reusable packaging</td>
<td>0</td>
<td>5</td>
<td>3</td>
<td>92</td>
</tr>
<tr>
<td>Use of refillable packaging</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>97</td>
</tr>
</tbody>
</table>
principles (percentage of companies which mention the same principles as the most important ones).

(2) The most important activities or initiatives for the companies’ adjustment to the packaging legislation framework are the participation in a collectively organized system responsible for packaging return and packaging management (43 per cent of the companies), the collaboration with the suppliers (39 per cent of the companies) and with the producers of similar products (14 per cent of the companies).

(3) Regarding the main features of a collective system for packaging and packaging waste management, they have been described as follows:

- the participants in a management system should be the packaging materials producers, the products manufacturers and the retailers, that is all the members of the packaging supply chain, as well as local authorities and the state, at a lesser degree.
- financing of the system should mainly be the responsibility of the supply chain members, as well as of local authorities and the state.
- responsibilities should be delegated according to the place of each member in the packaging supply chain and the management system.
- the control of the management system should be implemented mainly by the state, but all the members should also contribute.
- a collective management system should be organized by regions to be effective.

(4) Regarding the most important prerequisites for the successful development and performance of a Packaging and Waste Packaging Management System, they are presented in Table VI.

**Discussion and conclusions**

The empirical research has contributed to the registration of recent changes and trends towards ecological packaging in a sample of Greek industrial enterprises of consumer goods and to the investigation of the prerequisites and main problems for their harmonization to the new legislative framework.

<table>
<thead>
<tr>
<th>Important principles</th>
<th>1 (%)</th>
<th>2 (%)</th>
<th>3 (%)</th>
<th>4 (%)</th>
<th>5 (%)</th>
<th>6 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prevention</td>
<td>76</td>
<td>8</td>
<td>6</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Reuse, return with a “guarantee system”</td>
<td>0</td>
<td>34</td>
<td>12</td>
<td>18</td>
<td>4</td>
<td>14</td>
</tr>
<tr>
<td>Recycling</td>
<td>12</td>
<td>31</td>
<td>49</td>
<td>0</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Energy recovery without any environmental impact</td>
<td>6</td>
<td>12</td>
<td>18</td>
<td>48</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Sanitary landfill</td>
<td>0</td>
<td>8</td>
<td>4</td>
<td>4</td>
<td>66</td>
<td>4</td>
</tr>
<tr>
<td>Combustion without any environmental damage</td>
<td>0</td>
<td>2</td>
<td>2</td>
<td>13</td>
<td>6</td>
<td>66</td>
</tr>
</tbody>
</table>

**Table V.** Assessment of the most important principles in packaging and packaging waste management (I: the most important principle)
The survey respondents are rather large companies with a long presence in the Greek market, greatly affecting the design of the packaging and the selection of the packaging materials for their products.

According to their answers, plastics and paper are the most commonly used materials because of their properties and availability. It should be noted that price has not been included among the main criteria of materials’ selection. The majority of the above materials are primary and the companies have declared that they do not expect an increase in the use of recycled packaging material in the near future. A lack of confidence in the quality of the recycled materials as well as availability problems (mainly for plastics) appear to be the reasons for this situation, which results in a negative attitude towards the technological changes and the investments necessary for the adoption of recycled packaging materials.

The majority of the sample companies have already proceeded in important changes towards the optimization of their products’ packaging – mainly changes in the materials used and in the design of packaging as well as a reduction of weight and volume – in order to improve the appearance of the products, to respond to their customers’ needs, to reduce the cost and to make transportation of the products safer and easier. Besides, they have started to be sensible in environmental policy issues under the pressure of the legislative framework, of the customers’ environmental concern and of the new competitive conditions.

However, the main reasons for the above changes have revealed that the majority of the companies continue to consider packaging mainly as a promotional tool for their products, under the restriction of an accepted production cost. This attitude rather explains the estimations of the companies regarding the expected changes in the field of packaging for their business. According to the answers received, they foresee the reduction of packaging weight and volume as the most important future change, while they consider attempts towards more ecological packaging as probable changes. In fact, they have demonstrated a positive attitude towards the decrease in over-packing, the replacement of composite packaging and the simplification of packaging materials.

On the contrary, they do not consider the increase of returnable, recycled and recyclable packaging feasible for their companies. This seems to be in contradiction to their assessment that prevention, reuse and recycling are the most important principles of an integrated packaging and packaging waste

<table>
<thead>
<tr>
<th>Prerequisites</th>
<th>Percentage of answers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information and sensitization of consumers</td>
<td>30</td>
</tr>
<tr>
<td>Formulation of outlines and other necessary terms</td>
<td>26</td>
</tr>
<tr>
<td>Information and training of manufacturers, suppliers, transporters and users</td>
<td>22</td>
</tr>
<tr>
<td>Open and public dialogue for the harmonization of the Greek legislation to the EU regulation</td>
<td>15</td>
</tr>
<tr>
<td>Continuous study and evaluation of management systems and recycling programs</td>
<td>13</td>
</tr>
</tbody>
</table>
management system. This could be partly justified, however, by the fact that such systems have operated, up to now, partially and on a temporary base in Greece and that their development and successful performance depends on the fulfilment of a series of prerequisites which have been stated by the companies.

It is true that environmental performance regarding packaging has just started to become a concern of Greek manufacturing companies. It is, however, encouraging that companies seem to be aware of the new legislative framework as well as the new conditions imposed and they have expressed their willingness to actively participate in a collective packaging and packaging waste management system.

References and further reading


Greenpeace (1996), Landfill or Recycling?, Athens.


