Assessment of Green Marketing and Management in Lebanon

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ABSTRACT

The environment was used beyond its productive and assimilative capacity and business companies are not far from being blamed. Companies usually depended on the unlimited supply of resources used in and for their production, and they used the external environment to produce the by-products of their production. In addition they never thought to share in the treatment of the wastes generated by the consumers of their goods. It was until recently that some nations represented by scientist, public groups, governments' agencies, and many others, driven by social, legal, and public pressures, began to really think to putting an end to these problems. Regulations, environmental product certification programs, and environmental management standards began to emerge in one nation after the other. Thus new management and marketing concepts were introduced by integrating the environment within, giving more corporate responsibility towards the environment.

The purpose of this project is to assess where companies in Lebanon stand as far as environmental management and marketing are concerned. In addition, the project attempts to discover whether we have green consumers in Lebanon or not, or what green consumer segmentation is available in Lebanon. To achieve the objective of this research, two survey questionnaires were developed: one for public, and another set of questions for food industries. Data gathered was analyzed using ASP, a Statistical Package for Business and Economics where percentages, crosstabulations, and average percentages were calculated.

Consumers appear to be either “ungreen”: plain, don’t care about the environment, or “grousers”: rationalize their non-behavior by excuses and criticize others, or “maybe green”: express high degree of concern but act irregularly. In addition their behavior is still in the precontemplation stage and people need a lot of awareness to act accordingly. Companies, on the other hand were attracted by environmental management and marketing concepts, however they appear not excited and ready to change or re-engineer their operations to preserve the environment.
Introduction

1.1 Overview

Although ecology and economics are derived from the same Greek root -oikos, meaning household- until recently these concepts shared relatively little analytical frameworks, and their scope of analysis and investigation were considered completely separate and distinct.

Once, economists were informed that natural resources were free goods provided in unlimited quantities and qualities. However, things have changed; the new paradigm arising is based on a main view of economic activity that places much more attention to physical and biological environment within which production, operations, and consumption take place.

Inadequate input levels, inappropriate inputs, inadequate information inputs, and maladaptive operational philosophy are four major causes of system pathology. Besides, there are other macro factors such as the nonexistence of well-determined, sole, secure, transferable, and enforceable property rights over all resources, goods, and services that have played an important role in system pathology as well. In addition, the risks and uncertainties of the future were sufficient enough to deviate people's mind set from taking immediate or brave corrective actions. As a result environmental quality deterioration, a concept known as degradation was introduced because of this unbalanced formula bringing out seven major global environmental problems.

The efforts of people, institutes, and government members to regulate the performance of business entities and let them adopt environmental policy together with the emergence of private codes of environmental management principles drove the need for reorganization of corporate environmental behavior. Thus new terms were coined such as green product development, product life cycle assessment, environmental management system, and most importantly green marketing and management. All these branched from the roots of what came to be said, corporate social responsibility. It will
be important to note here that while the 1980’s was known as the era of pollution reduction, the 90’s comes to be the era of pollution prevention and environmental strategy.

But that’s not the end of the story. It appears that the trend of being environmentally sound was developed into a much more advanced and challenging business concepts for example, total quality environmental management (TQEM), a concept that integrates environment with total quality management (TQM), design for environment (DFE), Environmentally conscious manufacturing (ECM), and PLCA or product life cycle assessment. The result was perhaps the biggest opportunity an enterprise has ever seen, the thing that has reinforced a large number of companies to re-develop its plans, programs, policies, and strategies in order to capture the large number of incentives created because of this development. Among these incentives, efficiency and optimal management, gaining and maintaining market share, gaining market power through environmentalism, and much more.

After satisfying the criteria for being an environmentally friendly product, the product must be promoted to the public. However things are much more difficult in green marketing. The reason behind this, is that the green concept is not yet fully developed in the minds of people. Thus promoting a green product can be basically represented as a critical period of analyzing where the target customer falls in each of five distinct stages namely precontemplation stage, contemplation stage, preparation stage, action stage, and finally confirmation stage, and formulating the best communication strategy that satisfies the requirement of each stage.

1.2 Definition of Green Marketing

Business in modern age has been directed largely by marketers who depended on traditional concepts such as marketing research and development, quality, trade relations, promotion, technology and innovation. Today however, another factor is acting on marketing and management: the environment. More specifically, the environmental impacts on production, management, and marketing processes as
measured by scientists, regulators, environmentalists, investors, and the public. Environmental marketing or green marketing can thus be defined as “the marketing [plans, programs, practices], and activities, that recognize environmental stewardship as a business development responsibility and business growth opportunity.”

Environmental marketing is categorized under the main title social marketing. Social marketing may be viewed as the application of commercial and scientific marketing technologies to the analysis, planning, execution, and evaluation of programs designed to affect the voluntary behavior of stakeholders in order to improve their personal welfare, and that of their society and raise their living standards and quality of life.

It is worth mentioning that social marketing includes in addition to green marketing customer satisfaction issues, customer protection issues, customer information issues, and customer education issues.

1.3 The Need for the Study

According to Silverstein\(^2\), a decade ago, more than sixty percent of environmental cleanup world spending was done by USA. However approximately 60 percent of the expenditures in 1994 and on were made by non-Americans. Environmental spending growth, estimated at 5% per annum in USA is running twice as high worldwide, with fifteen to twenty five percent and more in some nations of [Europe], Asia and Latin America.

The nations of the European Union working through the European Commission, and other administrative structures, and individual member countries now set the global tone of the government environmental policies to become the environmental leader of the world. The strongest and most comprehensive recycling legislation are found in Denmark and Germany. The most successful cooperative partnerships between

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government and business on environmental matters in The Netherlands. “And when it comes to creating an industry-generated set of national environmental management standards, the honors for the first in the field went to the United Kingdom”³.

Not all the international environmental imperatives now working to shape business behavior of companies are government generated and obligatory. Some of the most important codes, principles, and charters are in fact created by private initiatives and are technically voluntary.

In addition to the legal pressures, a second pressure may come from the customers who are in some countries of the world increasingly asking for a green product, and in more complex situations will show a worry on the product life cycle, from raw material to an empty package. Moreover, relations may be developed to local and international boycotting to the companies products and services.

A third pressure may come from the employees by demanding more environmentally responsible workplaces; workers will then expect their companies to reduce waste and pollution. Smart companies will provide the means by which people will work to achieve the environmental goals of the organization thus boosting job satisfaction, and help raising environmental motivation.

How should a company operate? Should it have different managerial procedures and different types of products with one set of procedures designed to meet tough environmental requirements in some places and another set designed to less tough requirements in other places? Is it true that it has to change its managerial structures to cope with this trend and to re-structure its marketing and promotional strategies? And above all what about the cost-benefit relation? And what about the situation in Third World Countries, or countries whose severe and painful circumstances has deprived them from enjoying the pleasure of applying new technology and modern trends and discoveries?

³Ibid.
1.4 The Statement of Purpose

Rarely have we heard about green products in Lebanon or even noticed a sign on the product indicating the application of a green production policy in Lebanon. This may be attributed to a number of reasons among which are unawareness of the existence of such a new behavior, ignorance of the size of environmental problem, lack of expertise and knowledge of how to do green business, and finally lack of desire to be involved in such a job.

This research is dedicated to cover the topics of green marketing and management. It is intended to assess where the companies in Lebanon stand as far as green marketing and management are concerned. It also tries to discover whether we have green customers in Lebanon or not. To be specific, the research will focus on the food industry.

1.5 Research Construction

After the introduction (chapter one), the research opens into “Literature Review”, (chapter two). Most data and information in this chapter is secondary that is books, magazines and internet World Wide Web (WWW) home pages. Following that, the “Research Design and Methodology” (chapter three) describes how primary data is developed and the technicalities of field study. The results of the field study are explained in “Research Findings”, chapter four. Finally, “Conclusion and Recommendations”, chapter five describes the conclusion and introduces the recommendation dedicated to whom ever is looking for a better environment, better business and a better world. The research closes in appendices, and a list of the selected bibliography.
2.1 The Free Functioning Market and Perfect Competition

It has been more than 200 years since Adam Smith (1779) articulated a freely functioning market and perfect competition. If left alone, people in fully available information were able to make simple, but sound decisions for their own benefit. This resulted in a self-effective-enhancement system. He thus realized the existence of an invisible hand capable of adjusting any distortion by forcing the activity to be performed in the correct way.

If we compare the current market with Adam Smith's market, the picture becomes rather clear that the two have basically nothing in common and therefore, what might have held true in Adam Smith's market is not likely to hold true in the present day. The increase in the size and power of companies, accompanied with the expansion of the concept of competition, global marketing, information processing and decision support systems have made everything possible. Today, one can say that the system is in pathological situation. What are the causes of the Pathology?

In general, there are four major causes of system pathology: (1) Inadequate input levels, (2) Inappropriate inputs, (3) Inadequate information inputs, and (4) Maladaptive operational philosophy.

2.1.1 Inadequate Input Levels

Insufficient raw materials and energy resources, utilized in production and distribution, may produce less than satisfactory goods and services or products that are dangerous, wasteful, and dysfunctional.

Less-than-adequate levels of raw materials have caused a shortening of the product life, which can be detected in such products as soaps, light bulbs, shoes, wristwatches
and even cars. "By using less than adequate inputs, American auto tire manufacturers produced a dangerous product that forced Ralph Nader [a 1996 USA presidential candidate] to wage a war against the manufacturers [in the 1950s]." 4

2.1.2 Inappropriate Inputs

Utilizing inputs that should not be used, is likely to cause not only consumer dissatisfaction, but rather serious health hazards and life threatening diseases. Items such as lead in the drinking water, or mercury in dental filling are being criticized in the United States as being extremely dangerous. This list could go on and on. In fact, these situations, associated with malfunctioning problems in manufacturing, poor or inferior machinery and matter-energy systems, may result in unnecessary wastes, inferior, dysfunctional, and perhaps harmful products.

2.1.3 Inadequate Information Inputs

"The marketing information system consists of people, equipment, and procedures to gather, sort, analyze, and distribute needed, timely, and accurate information to marketing decision makers." 5The existence of the appropriate system elements does not mean that the system will be utilized effectively.

Incomplete information is likely to cause the processing and delivery of unneeded goods, unnecessary goods, low-quality goods, or goods that are potentially harmful to the individual consumer or the society at large. "Ford Motor Company had inadequate information about Pinto's back side being explosive, which eventually caused hundreds of fatal accidents." 6 Audi 5000 going backward car as well caused the company a profit damage and fatal accidents to customers.

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6 Samli, Social responsibility in marketing, p.16.
2.1.4 Maladaptive Operational Philosophy

In the absence of the conditions that existed in Adam Smith's era, marketing could be performing in a socially negative way. By definition, "maladaptive marketing philosophy is a deficient or defective corporate philosophy that reflects the organizational inability to respond to external [or internal] needs prevailing in the society."\(^7\) For example, the executives' beliefs that their primary and sole responsibility lies only in maximizing the profit of stockholders. They have a perception that the consumers and employees will not regard the business social efforts and translate it into loyalty and purchasing behavior. Thus, activities such as helping the surrounding communities, combat pollution and other ecological problems, and to enhance the society's quality of life are considered to be altruistic and charitable acts, that create excessive costs and have nothing to do with business and economic considerations and are outside the realm of their operational responsibilities.

Projects thus are chosen on an economically justified cost-benefit financial appraisal and social cost is too narrowly defined, unforeseen and unappreciated in place and time at the various stages of the project.

2.2 Additional (Macro) Failures and Environmental Degradation

"Well functioning markets are normally efficient mechanisms for preserving and allocating resources among uses and over time."\(^8\) To function well, the system requires that certain fundamental conditions be met where distortion and degradation will otherwise be the results.

"A fundamental condition for the efficient operation of markets is the existence of well-defined, exclusive, secure, transferable, and enforceable property rights over all resources, goods, and services."\(^9\) This right is the initial demand for all people to economize on, pay for, invest in, or conserve a resource. The second demand is to

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\(^7\) Ibid.
\(^8\) Theodore Panayotou, *Green markets* (San Francisco: Institute for Contemporary Studies, 1993), p. 33
\(^9\) Ibid., p. 35.
recover the costs through use, lease, or sale. Unless these demands have been achieved, no one will seem to have a sufficient incentive to invest. "And exploitation behavior will re-begin as the expiration date approaches unless there is a high probability that the property right will be renewed or extended." For example, a firm may protect its own plant and at the same time disposes poisonous material to any river, sea, ocean, and land outside its territory.

The problem of open access resources as "joint consumption" is the most dangerous point ever facing the progress of life. In fact, the market for public resources does not exist because there is no owner who could demand a free-access, non-benefit-excluding resources. The true value for such resources remains zero even as they are becoming increasingly scarce. The actual price for water for example, reflects only the opportunity cost of labor and capital used in production, not the opportunity cost of scarce natural resources. Thus "the price to the private sector of using the environment (water, land, and air) for waste disposal is zero, while the cost to the society is positive and rising."

Corporations' actions is represented in terms of externalities. "An externality is the effect of the firm's or individuals' actions on other firms or individuals who are not parties in those actions." Unrestricted industrial and citizen emissions that is contaminating the inner and the outer atmosphere and affecting the single individual, the group of people, the city and the country is an example of externalities.

Another failure-causing factor is manifested by the risks and uncertainties of the future. Managing and conserving natural resources tend to have much longer gestation period than investments in agriculture or industry, and the longer the time horizon, the greater the ambiguity involved. Thus it would be more attractive for an investor to be involved in secure assets investment than having to wait for a tree to grow up.

10 Ibid., p. 36.
12 Panayotou, Green markets, p. 39.
13 Ibid., p. 40.
It would be inappropriate to talk about elements of macro system failure without getting across the government, the leader of the macro system. "Ideally, government intervention aims at correcting or at least mitigating market failures through taxation, regulation, private incentives, public projects, macroeconomic management, and institutional reform."14

"Compliance is generally limited because the certainty equivalent amount of the fine (amount of the fine times the probability of detection times the probability of conviction) for noncompliance is only a fraction of the cost of compliance in terms of expensive equipment and loss of competitive position."15 "In addition, "the long latency period between exposure and manifestation, ..., will make it virtually impossible to assess liability satisfactorily in a courtroom or arbitration chamber."16

As a conclusion, it is a true fact that the environment is being used beyond its productive and assimilative capacity. It is the source of economic wealth and the receiver of the by-products of economic activity. Environmental quality deterioration, a concept known by degradation is thus the result of this unbalanced formula.

2.3 Seven Major Environmental Problems

One probably has been hearing for years about the environment and the disasters associated with it but how much one really understands the major environmental problems. Below is a summary of the biggest environmental problems of the 1990s in no particular order of importance.

2.3.1 Acid Rain

Rain was usually considered by everyone a clearing experience. A good rain is thought to freshen up the air and provide a clean smell. However the following reality can

14 Panayotou, Green markets, p. 57.
15 Ibid., p. 89.
shock everybody. Rainfall can mix with burning of high sulfur coal, and nitrogen oxides (electric utilities') as well as the engines of cars and trucks to form what is called acid rain. Such a rain damages rivers, lakes (and the aquatic life), kills trees and cause major health hazard to people. Aluminum and other materials formed in drinking water for example is associated with nervous system disorders, lung cancer, kidney damages, and heart disease.

2.3.2 Global Warming

"Once the rays of the sun reaches the earth, some of the heat bounces back into space while the rest is trapped by a layer of gases that surround the earth. This is known as the greenhouse effect because it mimics what goes on inside the greenhouse. Sunlight shines through the glass, which traps the heat from radiating back outside. So, even on a cold day, it can be very warm inside the greenhouse."17 Without the greenhouse effect, the world can not be lived in. Human activities however have increased the amount of gases in the atmosphere, causing the earth's greenhouse to trap more heat. "Carbon dioxide is responsible for 50 % of the greenhouse effect, and human activity sends some 5.5 billion tons of Carbon Dioxide (CO2) into the atmosphere each year. Chlorofluorocarbons (CFC) emissions account for 20 % of the problem and numerous of such matter is disposed into the air from refrigerators, air conditioners, plastic production. Methane, contributes 20 % and is produced by landfills when organic waste breaks down. Finally nitrous oxide accounts for 10 % and is formed from burning of fuel and the breakdown of fertilizers."18 According to the Union of Concerned Scientists, weather is expected to bring extreme abnormalities of heat, cold, drought, and flood.

2.3.3 Ozone Depletion

"Ozone layer is a thin layer of gas located between 12 and 30 miles above the earth's surface that shields the earth from most of the sun's radiation."19 A considerable list of

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18 Ibid., p. 17.
19 Ibid., p. 18.
everyday products and processes is contributing to the ineffectiveness of the sun's natural shield and resulting in severe diseases such as eye irritation, cancer and respiratory problems. The major chemicals causing this harm is the CFC’s family that enters in the production of plastic, computer, and acts as a coolants in refrigerators and air conditioners. Halon which are used in fire extinguishers contributes as well to the same problem.

2.3.4 Air Pollution

According to a 1992 study by the American Lung Association, air pollution may help to kill tens of thousands of Americans every year. The Environmental Protection Agency in the United States has identified 320 toxic chemicals in the air, 60 have been identified as causing cancer (most used in various manufacturing processes), where only 7 are regulated by the federal law (1989). Unfortunately, the major final recipient of those chemicals is the human. "Reception occurred through the skin, inhalation and ingestion." According to a report by the Committee for Economic Development ... sulfur dioxide [the emissions of plants] travels in the atmosphere for hundreds of miles, frequently across state and even national boundaries.

2.3.5 Deforestation and Biodiversity

Trees are very important. They mainly absorb CO2 and provide freshness to the air. "Forests occupy only 6% of the earth's surface. Tropical forests are being permanently destroyed at an estimated rate of 27 million acres each year, mostly through wholesale burning designed to clear land for agricultural use, killing thus majority of earth's species, insects and flowering plant." In addition to destroying the conditions of life of many species of animals. "According to Norman Myers, a consultant on the environment and development, half of the purchases in neighborhood

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22 Makower, Green Consumer, p. 23.
pharmacy derives from wild organisms, a full commercial worldwide value of $40 billion a year.23

2.3.6 Solid Waste

"The United States generates about 10 billion metric tons of nonagricultural solid waste every year... costing between $4 billion and $5 billion to dispose of each year"24 The solid wastes consists of "paper and paper products,..., yard wastes, food, metals, plastics and glass, then smaller amount of textiles, rubber and wood."25

Experts believe that about 15% of the solid waste is life threatening. The inability of the products to break down easily such as plastic is another problem. "This feature of the problem is in fact responsible for generating a large number of pollutants capable of producing suffering diseases such as mental and physical impairment."26

The United States has presented an 80% growth rate in the amount of garbage discarded annually between 1960 and 1986. where packaging has accounts for considerable share of the household trash heap: "30% by weight, 50% by volume."27 In fact, citizens generate so much garbage and we are running out of places to put it. What is contained in the trash in addition is a more serious problem.

It is worth mentioning here that the problem of solid waste is nothing but a fraction compared to the severity of the nuclear wastes. Such wastes are generated from industrial or utility plants and represent the most dangerous products ever faced the existence.

23 Ibid., p. 24.
25 Ibid., pp. 187-188.
26 Makower, Green Consumer, p. 28.
27 Edith, The Environmental Source Book, p. 188.
2.3.7 Water Pollution

Unfortunately, many of the environmental problems mentioned above end up in the drinking water supply, and even with bottled water. A considerable percent of water pollution today comes from direct industrial dumping into rivers, streams, and oceans. Groundwater pollution resulted from the fact that underground water picks up (and keeps) whatever it passes through: rain water, melted snow (that carries deadly substances), chemical fertilizers, old tires, and a variety of other materials contained in the garbage. "In fact around 700 organics have been measured in drinking water so far; many of them have never been tested for toxicity."28

In an attempt to save the Mediterranean, the receiver of operational byproducts, "The Mediterranean Environmental Technical Assistance has worked on policy studies, and institutional development activities "to curb and try to reverse trends of environmental degradation in the Mediterranean."29

2.4 The Need for Corporate Social Responsibility

"Business institutions are an integral part of the social system in a market economy. No matter how much one tries, the nature and dynamics of business institutions, and rules of the game that govern markets, profoundly influence other societal institutions and the growth and development of its individual members."30 Thus, there is no way business can walk away from the world’s pressing problems.

A 1987 report by the World Commission on Environment and Development (WCED) warns that current environmental trends threaten to radically alter the planet and many species upon it, including human species."31 Some ecologists have argued: "what we

28 Ibid., p. 31.
need is not a new ethic but instead a commitment to morally responsible behavior in our relationship with the environment."\textsuperscript{32}

"Starting well before World War II and culminating in 1960s and 1970s, the dominant approach to the moral dimension of business was a perspective that came to be known as corporate social responsibility."\textsuperscript{33}

Social marketing as well is "the application of commercial marketing technologies to the analysis, planning, execution, and evaluation of programs designed to influence the voluntary behavior of the target audience in order to improve their personal welfare and that of their society."\textsuperscript{34}

Unfortunately, this approach will be adopted whenever the activities' rearrangement gains are greater than the firm's cost of organizing them. However, some environmental groups began to recognize a positive change in corporate environmental policy, and even "described it as wrestling with how to incorporate a new and different type of criterion into business decisions-social responsibility."\textsuperscript{35}

"[Managers] must identify, evaluate, and react to the forces outside the enterprise that may affect [their] operations."\textsuperscript{36} But to have a sound green marketing approach, it is necessary to have a green organizational culture in addition; terms described by Philip Kotler as "internal marketing and external marketing."\textsuperscript{37}


\textsuperscript{34} Alan R. Andreasen, \textit{Marketing social change} (San Francisco: Jossey-Bass Publishers, 1995), p. 7


\textsuperscript{37} Kotler, \textit{Marketing Management: Analysis Planning Implementing and Control}, p. 22.
2.5 The Evolution of Environmental Management

"The role of environmental management becomes more extensive with the passage of time. Table 2.1 is a timeline for the evolution of environmental management prepared by Abt Associates, Inc.

Table 2.1
The Evolution of Environmental Management

<table>
<thead>
<tr>
<th>Year</th>
<th>1970s</th>
<th>Late 1980s</th>
<th>1990s</th>
</tr>
</thead>
<tbody>
<tr>
<td>Era</td>
<td>-Compliance</td>
<td>-Pollution</td>
<td>-Pollution</td>
</tr>
<tr>
<td></td>
<td></td>
<td>reduction</td>
<td>prevention</td>
</tr>
<tr>
<td>Key Drivers</td>
<td>-Regulation</td>
<td>-Regulation cost</td>
<td>-Regulation</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>-Cost reduction</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>-Efficiency</td>
</tr>
<tr>
<td>Focus</td>
<td>-Control effluent outside plant</td>
<td>-Manage process on plant floor</td>
<td>-Redesign process at manufacturing</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>-Competitive positioning</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>-Product &amp; package development</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>-Capture revenue</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>-Measure performance</td>
</tr>
</tbody>
</table>

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2.6 Regulations and Codes

2.6.1 Regulations

Since the recording of environmental management, regulations were considered the key drivers (as shown in Table 2.1). People, institutes, and government members were (and still) holding local and international meetings, to regulate the performance of business entities and to let them adopt environmental practices in their management. The following section will restrict the discussion on government regulations to product certification only. The organizing of management practices will be considered from the private codes’ articles.

2.6.1.1 The First Program: Germany

"Product certification program appeared for the first time in (then) West Germany in 1978. This world-leading program was called the Blue Angel. It got off to a slow start but now (1993) has certified over 3500 products. The program explicitly sets out to increase the market share of green products. The early versions of the logo included the term Umweltfreundlich (environmentally-friendly) but this term has evolved and dispersed to cover ozone friendly, ozone safe, and several variants of degradable. West Germany was the first country with a product certification program, but it is by no means the only one. Over 10 countries (1993) have product certification programs, and the number is growing rapidly."39

2.6.1.2 European Community

Baker & McKenzie, the world’s largest international law firm, provides us with this current overview of the European Community eco-label program:

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In an attempt to promote the production and purchase of products with as low an environmental cost as possible, the Council adopted in principle on December 12, 1991 a regulation to establish a European Ecological Label which would be affixed only to products meeting certain environmental standards. The proposal is concerned with the total "cradle to grave impact of the product, from its production, through its distribution, use or consumption and disposal. A product will only be permitted to bear the label if it is substantially less damaging to the environment than other products of the same category. The label will be awarded on the basis of detailed specification for each product category by a jury established at Community level and including representatives of industry, commerce, consumer and environmental protection groups, trade unions and the media. The award of the label itself will be by national bodies, but the Commission may be entitled to object.\footnote{Ibid., p. 119.}

2.6.1.3 Japan

Japan's Eco-Mark program was launched in February 1989. The Eco-Mark symbol consists of two arms embracing the world. The arms form the letter e, standing for environment, earth, or ecology. "Being worked in a simplified structure which facilitates product certification EcoMark program comes to certify 850 labels in 31 different product categories in its first year and a half in existence."\footnote{Ibid., p. 118.}

2.6.1.4 Canada

Canada's Environmental Choice program was launched in 1988, with labeled products first appearing on store shelves in March 1990. According to a 1991 study titled Environmental Labeling in OECD Countries, written by James Salzman of the OECD, four principles guide the Environmental Choice program's product-approval process:
First, favor is given to addressing significant long-term environmental issues rather than short-term issues that are likely to be addressed through regulations. Second, the entire life cycle of a product should be considered before establishing criteria, even though the guidelines can only cover a few of the product's aspects. Third, the program should serve to educate the consumer of environmental trade-offs, that even a labeled product may not be absolutely safe for the environment and that the label certifies the product, not the company. Finally, the label should promote industry leadership through identifying the environmentally superior goods. In fact, in setting high criteria, the program has set a rough target of 10% - 20% of the eligible market which can qualify for the label. Over time this percentage should increase as the product category as a whole improves its environmental norms. In 1993, some 650 products in 34 product categories have received the Environmental Choice label.\textsuperscript{42}

Environmental Choice is serving as the model for product certification programs in New Zealand and Australia.

2.6.1.5 USA

Two small, private, nonprofit organizations namely Green Seal and Scientific Certification systems (SCS), are competing to become the product certification organization of the choice. Unlike Green Seal which is headed by Denis Hayes of environmental background, SCS's roots are more scientific than environmentalist and is headed by Stanley Rhodes, a toxicologist by training. This has made the two organizations approach product certification from different viewpoints.

In 1991, SCS, supported by a British specialist, Ian Boustead, came out with a new model that examines life-cycle performance in six distinct areas though life cycle experts believe that SCS is promising the impossible. The areas are raw materials

\textsuperscript{42} Ibid.
consumption, energy consumption, emissions into air, emissions into water, solid waste generation, and collateral resource consumption. In addition to opting for a full scale Boustead scale, a company can have a specific aspects combined certification.

Green Seal’s approach to product certification is patterned after Canada’s Environmental Choice program where its evaluations do not make claims to comprehensiveness but selected aspects of a product’s life cycle performance are detected. Green Seal considers this a more realistic approach. Recently, Green Seal has partnered with well established and highly respected Underwriters Laboratories, Inc. (UL) which conducts most of Green Seal’s product evaluations and factory inspections.

All the world’s first-tier, mature economies— the United States, Japan, Western Europe— are well advanced in their greening. All the world’s current crop of fast-growing economic adolescents— the India, China, and Mexico— are beginning to move in this same direction”43 “By 1992, approximately 15 countries had developed national environmental management standards.”44

2.6.2 Codes

“Over the past years, private codes of environmental management principles have begun to emerge as an essential force in corporate environmental programs. The Chemical Manufacturers Association’s (CMA) Responsible Care program of the United States of America, the Coalition for Environmentally Responsible Economies (CERES) principles (USA), the Eco-Management and Audit Scheme (EMAS) of the European Union, the International Chamber of Commerce’s (ICC) Business Charter for Sustainable Development, and the International environmental management standard of the International Standard Organization (ISO 14000).”45

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45 Ibid.
In essence, private codes of management practice call upon firms to adopt new forms of environmental behavior that are systematic in approach and broad in scope and push directions that both reflect the emerging public concerns about corporate environmental conduct and hold the promise of safeguarding the environment more effectively. (see appendix III for more details)

2.6.2.1 The Origin and Objectives of Major Codes

2.6.2.1.1 The CERES principle

"The driving force behind this coalition is Joan Bavaria, the president of Franklin Research and Development Corporation, a firm dedicated to socially responsible investment. The goal of Bavaria were to "institutionalize the capability to generate data on corporate environmental management that investors could use in decision making." "According to Bavaria, she and the coalition felt that with environmental data publicly available, trust barriers would be lowered."  

"CERES staff members report that they are currently overwhelmed with requests from companies interested in endorsing its principles. Currently CERES is in the process of developing a protocol by which it can revoke the endorser status of companies that seriously violate the letter or spirit of its principles. GM's president and CEO John F. Smith Jr. called the agreement between GM and CERES "a successful case of two cultures coming together to find areas of agreement. We want to show that economic growth and environmental quality can be compatible."

2.6.2.1.2 GEMI & the ICC

The Global Environmental Management Initiative (GEMI) in Washington D.C., was found in 1990 when a group of about ten environmental managers in the fields of

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46 Ibid.
47 Ibid.
48 Ibid.
chemical, electronics, consumer products, and pharmaceutical industries began to meet regularly to discuss environmental management issues. “Due to the insufficiency of compliance alone, they felt they needed to initiate a forum, a diverse membership, and a targeting process (for other sectors), to share strategies, cross-fertilized thoughts, and strengthen the dialogue between themselves and interested public.”

“GEMI members worked closely with the International Chamber of Commerce to draft the business charter for Sustainable Development which contains 16 principles tailored to large multinational corporations. “In fact, one of GEMI’s initial goals was to bring the charter to life.” GEMI’s main contribution in addition was the marriage between environmental management and quality management.”

2.6.2.1.3 ISO 14000

“The international Standard Organization for standardization (ISO) was formed in 1946 and is headquartered in Geneva, Switzerland. Its purpose is to facilitate standardization as a means of promoting international trade.”

“ISO issued the 9000 series of quality standards in 1987.” It was rapidly gaining acceptance and becoming a de-facto requirement for doing business in many areas. In the fall 1992, (after aside conversation between ISO’s director and Rio De Janeiro’s conference leaders), the Strategic Advisory Group on Environment (SAGE) of ISO recommended that ISO proceed with standard, and a technical committee was created to begin negotiations and drafting.

“About 20 representatives of government and public interest groups have been involved in developing the standard where technical work is highly decentralized, carried out in a hierarchy of technical committees, subcommittees, and working

51 Ibid.
52 Coddington, Environmental Marketing, p. 16.
groups. The objective of ISO 14000 is "to enable the organization to establish, and assess the effectiveness of, procedures to set environmental policy and objectives, achieve conformance with them, and demonstrate such conformance to others. The overall aim of the standard is to support environmental protection in balance with socio-economic needs."  

"ISO 14000 is intended to apply to a wide range of organizations and accommodate diverse geographical, cultural, and social conditions."  

2.6.2.1.4 EMAS  

In 1992, the European Commission published a draft proposal, in the Official Journal of the European Communities, creating an Eco-Audit scheme"or what is now referred to as the Eco-Management and Audit Scheme"(EMAS). EMAS is generally a site based registration system with due consideration provided to off site activities that may have a bearing upon the products and services of the primary site. Registration in the scheme is site-specific, in that a company can not register on behalf of its subsidiaries. In order to register, an organization must carry-out the following steps:  

(1) Initiate a comprehensive environmental audit of its activities. (2) Establish and document an internal environmental protection system. (3) Issue a public statement in accordance to the requirements outlined in the EMAS document, (4) Validate the statement through an accredited environmental auditor "or verifier", and then submit it to a "competent body".

55 Nash and Ehrenfeld, Environment.  
57 Ibid.
Once a submission is approved, an organization can register into the EMAS scheme; although only on a company wide basis, and not for specific products or activities. Deregistration can only occur if an organization fails to submit periodically up-dated audits, and not if it fails to meet its environmental targets.

Even though EMAS was scheduled to become a regulation in the summer of 1995, there remained a number of issues to be resolved, including: how to determine the qualification of a verifier; and which Government agency, of each Member State, will fall under the purview as "competent body".

2.6.2.2 Codes Analysis

The private environmental codes have four elements: "(1) corporate environmental management system, (2) complete life cycle management, (3) sustainability and environmental protection policies, and (4) interaction with outside shareholders."

"These areas have generally not been addressed by regulations."

Each of the codes, to a varying degree, calls for a sophisticated corporate environmental management systems. The system identifies the steps by which managers identify and address environmental problems. The steps are: (1) assessing problems, (2) establishing goals, (3) measuring progress, (4) training workers, (5) auditing performance, (6) rewarding or penalizing behavior, (7) verifying through third party review. Table 2.2 provides a summary of how the codes differ regarding these issues.

The second element that the codes include is life cycle management. This involves extraction of raw material, transportation, manufacturing, distribution, use, and disposal. ICC charter seem the best regarding this topic.

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58 Nash and Ehrenfeld, Environment
59 Ibid.
The code that emphasize sustainability and environmental protection is CERES. "It states clearly that companies must use renewable resources in a sustainable manner that they conserve nonrenewable resources." ISO addresses it only in the introduction. No appearance of sustainability in Responsibility Care principles. ICC viewed in a statement that environmental management is a key to sustainable development.

Table 2.2

<table>
<thead>
<tr>
<th>(\text{Assessing Problems})</th>
<th>Responsibility Care</th>
<th>CERES</th>
<th>ICC</th>
<th>ISO</th>
<th>EMAS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Establishing goals</td>
<td>in some codes</td>
<td>in some company's report areas</td>
<td>not required</td>
<td>documented goals &amp; targets</td>
<td>in public statement, and site objectives</td>
</tr>
<tr>
<td>Measurement systems</td>
<td>CMA asks for implementation timetables</td>
<td>not addressed</td>
<td>regular basis measurement of performance</td>
<td>regular measurement of activities' key characteristics</td>
<td>evaluative quantitative data</td>
</tr>
<tr>
<td>Employee training</td>
<td>prominently</td>
<td>not addressed, though documented training programs must be submitted</td>
<td>mandatory</td>
<td>mandatory</td>
<td>vitalize work instruction, and employees communication</td>
</tr>
<tr>
<td>Self audit</td>
<td>annually in general terms</td>
<td>needed for report completion</td>
<td>regularly or periodically required</td>
<td>regularly or periodically required</td>
<td>comprehensive audit of activities</td>
</tr>
<tr>
<td>Reward &amp; Penalties</td>
<td>not required</td>
<td>to be described in reports</td>
<td>required</td>
<td>most explicitly implicitly described</td>
<td></td>
</tr>
<tr>
<td>Third party verification</td>
<td>voluntarily</td>
<td>public verifies reports</td>
<td>appropriate info. to public</td>
<td>required</td>
<td>accredited env. validator must verify the statement</td>
</tr>
</tbody>
</table>

* prepared by the author of this research project

CERES makes all company's report available to the public. ICC charter demand that only appropriate information are provided to the public. "Responsibility care’s code for community awareness and energy response requires prompt public reporting of

60 Ibid.
information on health and environmental hazards."\textsuperscript{61} Under ISO, only environmental policy must be displayed and firms should not seek dialogue with outside stakeholders.

2.7 The Incentives of Green Management

"Even without the public vigilantes, the trend toward being environmentally sound is becoming more compelling to managers."\textsuperscript{62} "It represents an extraordinary opportunity, perhaps the biggest opportunity for enterprise and invention the industrial world has ever seen. Those who spot how to make the most of this will flourish."\textsuperscript{63} "The most celebrated statements of such opportunities have come from the US Vice president Al Gore (1993) and Michael Porter (1990, 1991), who suggested that companies increase their international and national competitiveness by moving toward greener production methods and products."\textsuperscript{64} In fact, it is increasingly apparent that green management is consistent with good business. There are six kinds of management incentives: "(1) efficiency and optimal management, (2) gaining and maintaining market share, (3) interdependencies in production and distribution, (4) gaining market power, (5) finance, and (6) risk management."\textsuperscript{65}

2.7.1 Efficiency and Optimal Management

The economical interpretation of economic growth is an annual increase in the gross national product. "Environmentalists argue that growth should be reduced to preserve the environment."\textsuperscript{66}

Future generations are left an equal opportunity if the capacity of the environment to provide at the current performance levels is preserved. Such an idea of integrated picture is the basis of the ethical concept, sustainability. But how can raising welfare be made compatible with sustainability where almost all industrial entities’ practices cause

\textsuperscript{61} Ibid.
\textsuperscript{64} Gallarotti, \textit{Colombia Journal of World Business}.
\textsuperscript{65} Ibid.
some degree of environmental degradation. Here comes the formula. “Between any
given impact and the intended increase in income we can identify a chain of causes and
effects. Between each cause and its effect there is what we might call a transformation
process, and this process has a ratio of efficiency. The quantity of effect produced by a
quantity of cause. Thus, if we can increase the efficiency of any of these ratios, we can
reduce environmental impact coefficient.”

In a report on development and the environment, the Business Council for Sustainable
Development, which consists of the leaders of 50 major international corporations,
made these statements: “Business will play a vital role in the future health of this
planet. As business leaders, we are committed to sustainable development, to meeting
the needs of the present without compromising the welfare of future generations.”
“3M objectives of reducing air and water emissions by 90 % and solid waste by 50 %
from 1990 levels aim to cut the inflation-adjusted costs of most products by 10 %.”
Similarly, Gillette Company as well was able to cut the water bill $3 million per year in
just one facility by using 5 million gallons of water less than used before

In fact, environmentally sound operational practices would produce a better managed
company because they encourage managers to standardize management, acquire the
best candidates, deal more efficiently with local communities, put premium on limiting
risk and long term thinking, and reinforce performance at maximum efficiency, which
in turn promote economies of scale in the application of managerial skills.

2.7.2 Gaining and Maintaining Market Share

“...The structural shift in consumption patterns generates both an active and a reactive
dimension to business’s response to the environmental challenge. The active side is
cought up in penetrating new markets, while the reactive side has to do with
maintaining markets for existing products.”

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68 Steven Bennett and Richard Freirman and Stephen George, Corporate Realities and
69 Bennett, Freirman and George, Corporate Realities and Environmental Truths, p. 155.
70 Gallarotti, Colombia Journal of World Business.
On the active side, it can be said that managers have responded very strongly to the opportunities for creating new markets: they took into consideration the ever-changing public and private legal structure that is affecting the business in both the short and the long term. This has made the market for green products quite large and the products quite general in their functions and appeal. "Hewlett-Packard, for example, set its world-wide business machine packaging to conform to German laws, which are the strictest environmentally, so as to ensure access to all markets."\textsuperscript{71}

"On the reactive side, market surveys invariably show that consumers react negatively to poor environmental performance. In one poll of 23,000 American adults conducted by Simmons Market Research Bureau, 60% showed a disposition toward boycotting the products of polluting. Smart (1992) notes in addition that an industry's reputation tracks that of its least admired members.

2.7.3 Interdependencies in Production and Distribution

The direct environmental pressures (discussed earlier) cause green products to push nongreen out of markets because companies are responding to competitive forces oriented towards environmental consumerism. The indirect pressures on the other hand, are manifested in the trade relations between companies producing raw materials, final products, and complement products.

A survey conducted by 3M has shown that the most important concern of producers as far as their environmental soundness is concerned is related to the raw material they purchase. In the age of green, local and multinational companies are self-driven to exert pressure on suppliers to provide environmentally featured raw materials. Not only this, suppliers by themselves are taking the initiative to offer the "green" to avoid an unadulterated threat represented by losing a customer. Hoechst Celanese for example, worked intelligently to develop bottle recycling technology so it could survive as Coca Cola's main supplier.

\textsuperscript{71} Ibid.
Extending that to distribution, we find a similar process. A recent trend developed by retailers was represented by stocking environmental friendly products. Marks and Spencer for example, a large British retailer has insisted on a nondeforested pasture of beef graze cattle. McDonald follows similar approach as to grazing practices. Given these sensitivities consumption patterns, producers have increasingly felt a pressure to feature final product with a greener tastes.

Complement products’ producers as well are working hard not to lose their battle for a substitute as a result of their bad environmental performance. More products that traditionally made use of CFC for example, are now reorienting their practices away from the CFC to stay the only complement product existing at any time.

2.7.4 Gaining Market Power Through Environmentalism

Environmentalism offers companies various opportunities for imposing and extending their domination over markets and possibilities for monopolization or oligopoly in markets for specific products. The incentive to cooperate is raised by the fact (as noted earlier) that the image of the whole industry is affected.

Companies have found that introducing greener characteristics in their products have served to differentiate their products the thing that makes the demand for environmental sound products more price inelastic and makes entry into the industry more costly.

At the international level, the stricter rather than looser environmental regulations in host nations furnish multinational companies competitive power because they tend to have greener products than domestic producers, thus giving themselves the means to gain an advantage over these companies. Conversely, stricter environmental standards as a mean of excluding international competition may be supported in nations that have fairly green companies, domestic businesses groups have supported.
2.7.5 Financial Incentives

Managers have increasingly become sensitized to the environmental makeup of their investments. Their concern for environmental performance shows much more than a social concern but a link between environmental performance and profitability. Companies that do not face environmental liability find much more freedom to manage their finances unlike environmentally unsound companies that face a greater cash flow burden to tie up funds to cover legal claims and expenses and penalties of cleaning up after environmental accidents.

"This has made the desirability of assets much more a complex set of performance criteria than just simply the size of returns or dividends. Jean Morissette, vice president of Montreal's Desjardins Trust, notes that a company that effectively manages the environment is usually well managed overall and will provide superior returns on the long turn. Also, Peter Kindere of SIC tracked the performance of 400 green stocks and found that group doing better than S&P's 500 index over the period 1984 to 1989. "This new growth has even attracted aggressive investors as a result of the enormous rise in the demand [for green products]." 72

Large banks in addition are considering a greater environmental component in their lending strategies. According to a statement by Bank of America regarding its commercial credit policy, officers will "increasingly weigh the degree of environmental responsibility displayed by potential borrowers and their affiliates". 73 Thus environmentally sound borrowers will be distinguished since those marks a lower credit risks In Germany, for example, the Okobank of Frankfurt was founded for only funding environmentally sound business projects. In the United States, banks may be held accountable for financing non-environmentally sound projects.

72 Ibid.
73 Ibid.
2.7.5 Risk Management

Gus Speth, the president of World Resources Institute, described the connection between economic growth and environmental protection: "No business enterprise can be economically sound for long unless it’s also ecologically sound."

"Companies are increasingly finding that risks are increasingly generated upon insensitivity to the environmental consequences of their operations and the costs of such risks can be devastating. One attorney at the United States, James Rogers of Skadden, Arps, Slate, Meagher and Flom goes so far as to state the possibility of criminal liability for environmental violations may well be a greater danger (to relocate or experience project delays or license non-renewal) to a corporation than a possible hostile takeover. And under the citizen-suit provisions in the US law any citizen (whether he is the harmed party or not) has the ability of bringing suit against violators of environmental laws.

2.8 Costs of Green management

Although, it may seem from the very first sight that companies will bear considerable costs in the expenditure necessitated by environmentally sound operations, this in fact a sole traditional wrong thinking. Above all, these costs are nothing but short term ones responded by nearly unlimited flow of benefits and opportunities. "In fact, growing regulations of the environment will likely force such costs upon companies in any case."

First of all, the company may face a negative demand. Since it is dealing with products having new features, some customers may show hesitation to take an action. The high sensitivity of the issue being introduced is another thing. While people would be willing to be interviewed about social aspects, they are more likely to give inaccurate, self-serving, or socially desirable answers to such questions, the thing that puts the

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75 Gallarotti, Colombia Journal of World Business.
company in confusion. The intangible benefit and the benefits gained by third parties can as well be a burden to letting the customer invest in green choices; above all nothing but the self has the greatest effect to channel the behavior. The green manager may face financial burdens as well due to the fact that he has additional responsibilities in marketing social change. And when will the response come? Probably on the long run. But that's not all; in fact, research and development must permanently be in active state to achieve the best choice. Recycling plastic for example is a relatively new domain.

From the first look, it seems that we have been talking a lot about costs. But that's not true. A careful examination of the items indicates that these costs have to be incurred whenever any new product is introduced. The advantages of the green alternative however outweigh the other in much far paces.

2.9 The Environmental Quality Management

In a 1991 address to Yale University, 3M Company’s Robert P. Bringer, staff vice-president, environmental engineering and pollution control stated, "business interests have now merged with environmental interests. Forward-looking companies are now building the environmental issue into their strategies."\(^{76}\)

Quality management, a progressive long term impact management concepts (and the key element in the global success of Japanese industry), generally calls for changes in management attitude as well as behavior. It "is a comprehensive approach that involves building quality into every organizational process."\(^{77}\) Thus members in each department will provide output that serves as input for the next department and where customer satisfaction comes at the end of this internal transformation chain.

"Total Quality Management (TQM) is often seen as a way to cut waste. Now that we're coming to understand that waste lives not only in defects, but also in pollution,

\(^{76}\) Bennett, Freierman and George, Corporate Realities and Environmental Truths, p. 17.
then Total Quality must mean an ultimate goal of zero pollution whether for the individual firm, or for a cluster of companies in an industrial ecosystem.\(^78\)

Using employee involvement teams to eliminate waste is the most effective approach for most organizations for a number of reasons: “First, employee involvement successfully joins the systematic principles of TQM and waste minimization and tends to enhance the quality of approaches adopted. Second, [cross functional] teams are appropriate for the complex work involved in developing and implementing a company-wide waste minimization program. Finally, using such teams helps build employees’ commitment and pride in their work.”\(^79\) The Global Environmental Management Initiative (GEMI) in Washington D.C., is credited with having built environmental management in the concepts of total quality management coining the term total quality environmental management (TQEM).

The Classic TQM Cycle works equally well with TQEM:

Step one, plan and understand the gaps between current state and desired state, set priorities, and develop an action plan. Step two, do implement the changes, and collect data on actual performance. Step three, check, observe the results, analyze the data, and pinpoint problems. Step four, act. study the results, redesign systems, change standards, communicate broadly and retrain. And repeat the cycle continually.

The Global Environmental Management Initiative, a collaboration of several dozen major US firms, identifies four additional TQEM elements:

(1) Identify your customer - both external and internal and recognize them in virtually every interaction, and satisfy them totally. (2) Commit to continuous improvement: No matter how perfect you may be presented, you can always be better, yesterday's achievable may become tomorrow's taken for granted, especially in the fast-restructuring world of environmental quality. (3) Do the job right the first time: The


cost of quality is the cost that quality failures (your externalities) impose on your company. (4) Take a systems approach to work. Deming realized that apparent differences between people are shown up almost entirely from the action of the system that they operate in from the people themselves.

2.10 Green Product Development

Traditionally, production technologies have been oriented towards increasing the quality and quantity of products, little attention was paid to environment or social cost. This attitude has changed and the reason is the growth of environmental consciousness. "Modern technology offers the promise of dramatically changing the products we use, how we use them and how they are made."^80

"Environmentally conscious manufacturing, or ECM, involves planning, developing, and implementing manufacturing processes and technologies that minimize or eliminate hazardous wastes and reduce scrap."^91 Organizations must formulate and implement ECM strategy that can effectively help managers in making environmentally responsible decisions without necessary sacrificing the economic interest of the firm at any extent. Here, we must talk about product development life cycle assessment (PLCA).

2.10.1 Product Development Life Cycle Assessment

"Product life cycle assessment is one of the most efficient tools that enable managers to evaluate the environmental implications of any manufacturing activity. It measures the environmental impact of a product from cradle to grave."^82

The life cycle of a product is a flow chart form, of three major activities of the cycle: procurement, production and distribution. The use of system modeling can provide accurate and complete picture of the interrelated activities. It can be realized that each

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^80 Sarkis and Rasheed, Business Horizon.
^91 Ibid.
^82 Ibid.
of the major activities generate waste, the elimination of which is the goal of ECM. The main objective thus is minimize any flow into the external environment [or sub-environment] and to keep all materials within the life cycle, that is "zero waste".

The initial impetus for waste reduction came from legislative and government initiatives, for example Resource Recovery Act and Comprehensive Environmental Response in United States. The main emphasis in waste minimization is waste reduction. As defined in the Federal Pollution Prevention Act, this includes products, processes, and technologies that will reduce end-of-pipe waste. Source reduction activities include: "(1) input change, (2) operational improvement that leads to loss prevention, (3) production process change, (4) production reformation, (5) inventory control, (6) administrative and organizational activities such as training".

If the material can be used with minimal treatment, it can be reused. When the producer cleans and refills bottles, it is a case of reuse, but when glass bottles are crushed and used for making asphalt, it is recycling.

Reuse most likely takes place within the organization whereas recycling involves activities outside the organization. It is worth mentioning here that the cost of recycling could be decreased whenever products are designed specifically to enhance recyclability.

But what can be recycled? Here is the list: (1) Aluminum (representing one of the great success stories of recent years), (2) corrugated cardboard (fully recyclable); (3) glass (100 % recyclable with need to remove paper labels); (4) paper; (5) plastics (only 2 out of the 7 plastic kinds, PET and HDPE can be recycled for limited number of times, and are mainly used for detergent, cosmetic, and shampoo bottles); (6) steel cans (100 % recyclable); (7) yard wastes (leaves, cut grass, can be recycled into compost); (8) tires; (9) oil; (10) clothing; (11) batteries (but recharging, for thousand times, would be the most ideal solution).

83 Sarkis and Rasheed, Business Horizon.
Another approach is remanufacturing. "The remanufacturing process basically includes the disassembly of components, inspection and testing of the remanufacturable components, incorporation of any new improvement, and reassembly of components with newer systems."\textsuperscript{84} Remanufacturing can contribute to the reduction of both raw material and pollution resulting from discarded used components and subassemblies. In order to be remanufactured the core product must be capable of being disassembled and restored to its original condition. Remanufacturing has received however less intense analysis and attention since there is a stigma of inferiority associated in this act.

The only activity that contradicts the goal of ECM is disposal. Still this problem can be solved, even if not 100%. An excellent experiment in creating an environmentally sound disposing can be found in Kalundborg, Denmark. A power plant there sells used steam to the oil refinery, fly ash to the cement company, and pollutants from the smoke stacks (sold as raw material) to the wall-board plant. The oil refinery in turn sells the power plant treated waste water for cooling and desulpherized gas for fuel.

2.10.2 The Problem of Packaging

"[Consumers] love packaging."\textsuperscript{85} Nearly everything seems to be wrapped in something and some products have layers build in layers for no practical reason. Unfortunately, the overwhelming bulk ends up in landfills and incinerators. Less packaging material however contributes to decreasing the production costs. "P&G for example, has its production costs decreased by 20% by eliminating the outer cartons of one of its products."\textsuperscript{86} By reducing packaging, suppliers also free up valuable space and promote product appeal the thing that increases products sales.

It is worth mentioning here that the domain of green packaging includes not only product container but other forms as well. Back-room packaging (shipping containers for example) improvements have significant environmental impact and should not be

\textsuperscript{84} Ibid.
\textsuperscript{85} Makower, Green Consumer, p. 33.
\textsuperscript{86} Coddington, Environmental Marketing, p. 165.
overlooked. This may be the least that can be done for the sake of the environment in
the field of green packaging. Table 2.3 presents packaging choices:

<table>
<thead>
<tr>
<th>Rank</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Best</td>
<td>No packaging at all</td>
</tr>
<tr>
<td>Very good</td>
<td>Minimal, recyclable and recycled packages, refillable, and reusable</td>
</tr>
<tr>
<td>Good</td>
<td>Recyclable but not recycled</td>
</tr>
<tr>
<td>Fair</td>
<td>Recycled, multiple layers of recyclable packaging</td>
</tr>
<tr>
<td>Bad</td>
<td>Multiple layers of unrecyclable packaging, single serving containers, aseptic packages, aerosol cans</td>
</tr>
<tr>
<td>Worst</td>
<td>Packages made of composite materials</td>
</tr>
</tbody>
</table>

And there are the inks used in printing the packages' colorful shining and attractive
labels. “Some of the inks contain heavy metals, dyes, solders and other additives -
toxic elements such as lead, calcium, and chromium.”87 In fact some researches believe
that “heavy metals may leach into groundwater when packages are discarded in
landfills, or that they may contaminate the ash that spews from incinerators when
packages are burned.”88

To summarize, “Design for the environment (DFE)”89 is regarded as a chain of
designing concepts namely, design for resource conservation, designing for disposal,
designing for non-disposal, and design for pollution prevention. A green product is a
product that: “is not dangerous to the health of people and animals, causes minimal
damages to the environment during its manufacture, use and disposal, does not
consume a misappropriate amount of energy or other resources during its

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87 Makower, Green Consumer, p. 34.
88 Ibid.
manufacturing use or disposal, does not cause unnecessary waste, due either to excessive packaging or to short useful life, does not cause unnecessary cruelty to animals, does not use materials derived from threatened species.\footnote{Makower, \textit{Green Consumer}, p. 8.}

There is no getting around the fact that, when it comes to understanding the entities’ complete life cycle impact, we are operating in an environment of incomplete information. A car with mercury free battery for example still has severe carbon emissions. “It is not yet possible to develop green products in a context that allows us to measure environmental impact with 100% certainty. The state of scientific knowledge however is advanced enough to permit broad judgment calls about the relative merits of product offerings.”\footnote{Coddington, \textit{Environmental Marketing}, p. 152.} “It is worth mentioning finally that “green product introductions [in the United States] increased at an average annual rate of more than 100%, and sales of green product are estimated to total $8.8 billion by 1995.”\footnote{Klein, Easy, “The selling of Green” \textit{D&B Reports Sept-Oct}, 1990, pp. 30-31.}

2.11 The Green Food

The following section presents a description about some green food products namely beverages, bottled water, coffee, sodas, dairy products, fruits and vegetables, and snacks and single serving. It explains what are the main features of these products, and how they shall be produced and packaged to be considered green.

2.11.1 Beverages

Juice boxes are made of three layers of materials: “paperboard, polyethylene plastic, and aluminum foil.”\footnote{Makower, \textit{Green Consumer}, p. 127.} It's this combination that gives juice boxes their attraction and convenience. Unfortunately, these same properties make it extremely difficult to recycle juice boxes.
In this form, boxes are deemed to be landfilled. However this is not our goal. Fortunately, there are substitutes for juice boxes. Several juice and drink products now come in small aluminum or steel cans, or glass bottles, all of which are readily recyclable. Still there is an ideal choice. It is to produce juices to be bought in thermos, jars or a set of small reusable plastic beverage containers. These can be sent to school or work, picnic journeys and brought home again and again and refilled over and over.

2.11.2 Bottled Water

People in the United States drink nearly about 2 billion gallons a year. In fact, the reasons for drinking bottled water - whether the generic or the more expensive name-brand varieties - contain equal portions of fact, fantasy, and fashion.

Claims about product purity and cleanliness may not hold much credibility. Waters don't escape pollution. Rainwater collects pollutants and sends them into streams and rivers - put chemicals into the water cycle, and they never seem to leave.

Unfortunately, bottled water don't look good. The first reason is that the resources used in packaging are high enough. And there's the trash. Plastic and glass beverage bottles account for the second largest source of solid waste, and bottled water packaging contributes to that pile of nonbiodegradable trash. So bottled water is not a particularly green product.

The ideal solution thus is to package in recyclable containers such as glass and more ideally, be engaged in home delivery services that will bring refillable containers of water to houses on weekly basis.
2.11.3 Coffee

Concern over caffeine consumption has led to a rise in decaffeinated coffees, some of which use chemicals to remove caffeine from coffee beans. There is no information available on the environmental impact of such chemicals.

Coffee has grown from a simple product into a complex one involving high status and high tech items. The way coffee is packaged is really a matter. Coffee brands are made of several layers of materials and are not recyclable. An environmentally desirable alternative would be to sell coffee grounds or beans in paper pitches, a choice that is practiced by some supermarkets in United States.

2.11.4 Sodas

According to one estimate, 2.5 million bottles are thrown away in the US. Indeed soda bottles have become a symbol for throwaway society. They damage the places, litter the highways, and crowd the landfills. However one of the great stories of environmental success of the 20th century is that in just two decades technology has come to recycle the aluminum beverage cans.

2.11.5 Dairy Products

Unfortunately, the modern dairy industry is anything but natural. It's a modern advanced milk production place where cows are treated as four-legged milk machines. The paperboard cartons or plastic jugs suddenly replaced the clear glass milk bottle and home delivery of milk and dairy products. has all disappeared. Paper milk cartons are not recyclable! The are destined for landfills and incinerators. Plastic jugs, made from high density (HDPE, & PET) are being recycled in limited numbers.

Many dairy products yogurt, cottage cheese, sour cream, and other products are packaged in plastic. Cheese may be an exception. The ideal manufacturing process is
thus to produce products packaged by HDPE plastic or cardboard in the largest quantity of a given product to minimize packaging.

2.11.6 Frozen Foods

‘TV dinners’ - are far from simple when it comes to assessing their environmental impact. Most freezers - industrial, commercial or home models use chlorofluorocarbons, the ozone-destroying gas. So, foods that require cold storage contribute to ozone depletion.

The many layers of packaging are another matter. A number of products were examined to have as many as six layers of packaging. In most cases, few of those layers were made of materials that were either recycled, recyclable, or reusable.

2.11.7 Fruits and Vegetables

It is worth to begin here with a question. Does the orange, lemon, grapefruit, tomatoes and others need to be constrained inside plastic wrappers? There's simply no need for this. In fact some of these are usually made of multi-resin plastics that cannot be recycled at all. A solution may be to use aluminum, steel, hard paper or simply promote a reusable bag for holding purposes.

2.11.8 Snacks and Single Serving

Snacks and conveniences are becoming part of our way of life. Busy parents can satisfy the needs of themselves and their kids without having to sacrifice time. So convenience has a price, both at the checkout stand and trash produced through the manufacture, use, and disposal of these products. But can we make a balance between ease and environment? The answer is yes, if we produce wisely. In fact, there are many simple examples of ways to cut packaging and costs for snacks and convenience meals. It can be as simple as producing a large size packaging with recyclable products.
2.12 Green product positioning

First of all, to be able to position the green product in the market, it will be necessary to introduce the concept of purchasing considerations. "The environment is among the top five factors consumers think about when making a purchase, and from 10 to 15 percent of all new products are making some sort of environmental claim in their labeling and advertising." To purchase, customers take into consideration many criteria among which are, the availability of the product, its price, performance, convenience, and health and Safety standards.

The first critical issue of green product is its availability. Green products have suffered from a general lack of availability in mainstream distribution channels, due to four main reasons: (1) low profit margin to retailers, as low as 2%; (2) many green product manufacturers have only one product in their product arsenal and retailers preferred to deal with companies that can offer multiple stocks rather than offering volumes of single product, (3) high fees asked by retailers in return for allowing new products to be stocked on their supermarket's shelves (not always the case.), (4) uncertainty of the retailers about what actually constitutes a green product (lack of awareness); some retailers are loath to market such products even if they carry such products on their shelves.

Whenever the quality and performance are equal, consumers will usually select the cheaper brand, especially when they are strapped for funds. Price of the green product is encouraging. As the supply of recycled materials increases and the cost of recycled-content feedstocks drops below that of virgin materials and as suppliers economies of scale improve, the price of green products are expected to grow still more competitive. Over time the price will be less.

But this raises another point. Low price means low performance. This assumption is supported by the idea that the product is being developed from used materials rather

than virgin. Price sensitivity may force the green marketer to price no less than competitive ordinary products.

Performance relates to the product's primary operating characteristics. It represents what customers are seeking and the key aspects that will satisfy the needs of the consumer and solve his problems.

The uneven performance of some early green products has caused some consumers to become turned off to green products generally. However this is not the case anymore. The 1992 press release from Seventh Generation presented that recent tests conducted by Schuster Labs in Massachusetts were able to produce the first environmentally responsible brand (detergent) to work as effectively as P&G. This shows that the performance of green products is improving. "As part of its new strategy, between 1993, and 1994, Seventh Generation replaced about half the items in its category with other environmentally friendly items that were less expensive or of better quality."

Working mothers and fathers have less time to be cooks, housekeepers, or home managers, and the consequences of this is an increase in solid waste. Many green products are less convenient than their nongreen products, for example disposable diapers are easier to use and dispose than washing and storing and folding cotton diapers.

Even consumers who do shop green tend not to do so in a vacuum. They factor environmental considerations into a matrix in which price, performance, and convenience have at least equal status. The majority of Americans for example "are probably not committed to the environment at the expense of all other issues."

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2.13 Promoting Green Products

Social marketing stresses the importance of market segmentation, understanding human behavior, and customer-oriented strategies. Needless to say, target consumers are the key to success for any social marketing program or campaign. Thus one of the social marketer's major tasks is to "understand who is the target consumer, where he coming from, and what can and should be done to bring about desired change".97

2.13.1 Customer Segmentation

"Consumer reactions to marketing problems have ranged from complaints registered with offending organizations to boycotts."98 Table 2.4 outlines the most popular models of green customer segmentation.

2.13.2 Analyzing Consumer Segments

This analysis that will be discussed here is related to Roper segmentation model which was developed in 1990. Looking at percentages, we find that the number of deeply committed True-Blue Greens consumers, whose behavior is in the confirmation stage, appear to be in the 10 to 15% range; active and dedicated Greenback Greens' behavior on the other hand falls between the preparation and action stage and they comprises roughly another 10% of the population; The third segment, Sprouts, which is a large middle group of light greens, (about 60%) present have a behavior in the contemplation stage. This is the most critical group and once it begins to match its concern about the matter, green consumerism will become not a, but the dominant force in the marketplace. Finally, Grousers and Basic Browns appear at the rear in the green segmentation, their behavior is still in the precontemplation stage and they are often too poor to be able to focus on anything other than their own survival.

97 Andersen, Marketing Social Change, p. 141.
<table>
<thead>
<tr>
<th>Company</th>
<th>Segment</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>J. Walter Thompson</td>
<td>Greener than green</td>
<td>Make many sacrifices for the environment</td>
</tr>
<tr>
<td></td>
<td>(23%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Green (59%)</td>
<td>Concerned about the environment, some sacrifices</td>
</tr>
<tr>
<td></td>
<td>Light green (15%)</td>
<td>Concerned, not willing to make personal sacrifices</td>
</tr>
<tr>
<td></td>
<td>Un-green (3%)</td>
<td>Plain, don’t care about the environment</td>
</tr>
<tr>
<td>Roper/S.C. Johnson</td>
<td>True blue greens</td>
<td>Actual behavior, very strong concern</td>
</tr>
<tr>
<td></td>
<td>(11%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Greenback greens</td>
<td>Commitment, willingness to pay higher for green</td>
</tr>
<tr>
<td></td>
<td>(11%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sprouts (26%)</td>
<td>Middling levels of concern and behavioral response</td>
</tr>
<tr>
<td></td>
<td>Grousers (24%)</td>
<td>Rationalize their nonbehavior by excuses &amp; criticizing others</td>
</tr>
<tr>
<td></td>
<td>Basic browns (28%)</td>
<td>Do not believe and do not want to make a difference</td>
</tr>
<tr>
<td>Green Market Alert</td>
<td>Visionary green</td>
<td>Green is a way of life, passionately committed</td>
</tr>
<tr>
<td></td>
<td>(55-80%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Maybe green</td>
<td>Express high degree of concern but act irregularly</td>
</tr>
<tr>
<td></td>
<td>Hard core browns</td>
<td>Indifferent or implacably anti-environmentalists, have lower incomes and educational levels</td>
</tr>
<tr>
<td></td>
<td>(15-30%)</td>
<td></td>
</tr>
<tr>
<td>FIND / SVP</td>
<td>Dedicated (14%)</td>
<td>Environmental concern in most/all purchases</td>
</tr>
<tr>
<td></td>
<td>Selective (12%)</td>
<td>Environmental aware shopping on a selective basis</td>
</tr>
<tr>
<td></td>
<td>Impulsive (20%)</td>
<td>Engage in green shopping on stimulus-response basis</td>
</tr>
</tbody>
</table>

S.C. Johnson & Son and The Roper Organization released the findings of their 1992 study of green consumerism: the percentage of the True-Blue Greens almost doubled, the Greenback-Greens segment became half itself, the Sprouts grew up slightly, the Grousers decreased by a factor of 3, and the Basic Browns increased by 7%. These finding were an evidence: the society is becoming more and more green. The researchers considered that to be a consequence "of the increase in environmental education and awareness."  

2.13.3 Understanding Customer Behavior Changes

The most useful model for social marketing applications was developed by Prochaska and DiClemente in 1983 as "an integrative and comprehensive model of behavior change." The model includes five stages: (1) precontemplation, (2) contemplation, (3) preparation, (4) action, and (5) confirmation.

2.13.3.1 The Precontemplation Stage

The objective of the message developed for the precontemplation behavior is to move the behavior to the next stage. Creating awareness and interest thus will be the primary feature of the message. Thus, the marketer’s job will be to let the customers understand and learn that the old behavior is undesirable and should be replaced, and that the new behavior is superior.

Customers most often want to be educated in the following issues, (1) source reduction; (2) use of recycled materials, (3) solid waste management, (4) toxic waste management; and (6) long term commitment to the environment.

To do this, the message has to increase the perceived risks and severity of outcomes of the present behavior. But that’s not enough; Weinstein argues that providing general facts about risks will seldom move people to stage two; individuals must receive

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100 Ibid., p. 84.
101 Andreasen, Marketing social change, p. 141.
information about personal risks. For this sake, the following paragraph gives an overview of the vulnerable groups in the society. It is worth mentioning here that a direction of this message to the decision maker, or the influencer (father, mother, children, etc.) may give the desired outcome.

"It is a medical truth that there are groups of people who realize toxic effects at lower level of exposure than the general population as a result of one factor or more."\textsuperscript{102} The first group is the children. They are immature beings, and the possibility of a single exposure might permanently impair their development. The second group is the pregnant woman and this is due to the metabolic changes in her body. Third is the elderly group, and the reason goes to the decrease in the immune system power. Finally, the impaired health humans and the normal explanation for vulnerability is their weak health status. The presentation of this however does not eliminate the fact that healthy, mature, people will be affected.

2.13.3.2 The Contemplation Stage

Customers at the beginning of the contemplation stage will have limited information and will have formed only vague intentions. As in the precontemplation stage, the objective in this stage will be to move customers to the next stage. The communication strategy at the contemplation stage has four principles: (1) to increase the expected gains, (2) to decrease the expected costs, (3) increase the present social pressure, (4) improve customer's ability to act. Unless we can find where each subsegment stands, using all approaches will work.

As for benefits, the message goes in three directions: (1) increase the perceived likelihood that the benefit will occur, (2) increase the benefit's importance or desirability, (3) add new positive outcome. For example, the marketer may draw a relation between clean air, better inhalation, and improved health.

\textsuperscript{102} Hazardous Waste and Human Health, p. 87.
“Evidence form Prochaska and DiClemente’s long series of studies makes clear that “the closer consumers come to undertaking action, that is the further along they are in the contemplation Stage, the more important costs become to their decision.”\textsuperscript{103} As with the benefits, cost reducing messages involve a number of actions: (1) reduce the importance of the cost, (2) reduce the perceived likelihood.

Power and influence are among the most sensitive factors shaping individuals’ personality. Green products can benefit from these. Green product should in fact empower people to make things change, to gain control over their environmental destinies, and translate their attitudes into purchasing behavior.

Daniel Benjamin endorses the role of local communities in understanding environmental issues; he concluded three things: “individuals are much better at assessing risks than might be expected; when the reward to being right are high, people become better at it; and there is little reason to believe that the so-called experts could do much better.”\textsuperscript{104}

Behavior change however does not take place in social vacuum. In a study about how people acquire information made by Lazardsfeld, Berelson, and Gaudet and later by Rogers that most “target populations had a set of opinion leaders who are among the earliest adopters of new ideas and behaviors.”\textsuperscript{105} For a social green marketer, this mean: (1) identifying opinion leaders, (2) using them in ads, posters and the like.

2.13.3.3 The Preparation Stage

Marketers in the preparation stage have to develop a sense that customers can actually take green behavior. Action for example may not be undertaken because customers may not know where and how to obtain the product. Thus the objective in this stage will be to eliminate any barrier that will prevent the customers from taking action.

\textsuperscript{103} Andrcsen, \textit{Marketing Social Change}, p. 238.


\textsuperscript{105} Andreasen, \textit{Marketing Social Change}, p. 253.
A study in USA for example (A J. Walter Thompson) has shown that only 14 % of the people are aware of green advertised environmental claims. Another (Roper/S.C. Johnson) presented that only 26 % of the total population being surveyed read the labels on products to see if the contents are environmentally safe.

“Generally, customers' comprehension of environmental labeling is low.”106 Studies has shown that a considerable number of consumers are not aware of recycling symbols or whether the symbol refers to the product or package. In fact much more researches could reveal how customers are mixed up between environmental terms such as biodegradable, preconsumer wastes, and postconsumer wastes. The American Marketing Association referred that to dislike displayed by people for technical or legal sounding terms.

2.13.3.4 The Action Stage

After the preparation stage, a social marketer has the responsibility to let the customer translate the preparation into action. Among the features of the action message: (1) make the impossible possible, (2) make the complex simple, (3) minimize the time of inconveniences, (4) increase urgency, and (5) abolish forgetting.

2.13.3.5 The Confirmation Stage

The final stage of behavior change is confirmation. After taking the green action, the customers will go for evaluation of this decision. The outcome of this evaluation will play a very important role in influencing whether the action will be repeated or not. To reduce the possibilities of unsatisfaction, the social marketer has to avoid nebulous languages, control action expectations, “give truth the whole truth and nothing but the truth”107, and pick the numbers carefully.

106 Cockington, Environmental Marketing, p. 93.
107 Bennett, Freierman and George, Corporate Realities and Environmental Truths, p. 95.
2.13.4 Developing the Promotional Mix

A 1990 study introduced by Roper Organization found that both electronic and print media are the public's main source of information: TV (75%), newspapers (65%), TV news magazine programs (61%). Local businesses and large corporations are the only two entities which are reported by a majority as not an information source about the environment, ranking them at the bottom of the list.

But that's not all. Hartman Group has implemented a study to find the sources of trust among those who buy green and who don't, and those well educated and less educated. Environmental groups were considered the most trusted information for green buyers, magazines and newspapers are the last. For nongreen buyers, universities are the first, and environmental groups are the last. On another study, the well-educated seem to trust universities and research groups highly whereas the less educated put their faith in television and radio news.

The following section presents the promotional mix used in communicating the green message. It is media releases, newsletters and other publication materials, local cleanup campaigns and educational programs. (see appendix V for FTC environmental claims)

2.13.4.1 Media Releases

"Iyer and Benerjee (1992) inventoried 173 print ads and 95 TV ads for green products compiled over more than five years. They developed a typology which differentiates green ads based on appeal. Several of these appeals - emotional, euphoria, and management can be described as green because they emphasize the environmental attributes or ecological implications of the product." Media includes magazines, newspapers, TV, and other new electronic forms. As far as advertising is concerned, there are three basic categories: (1) public service announcements (PSA), (2) environmental image advertising, and (3) product related ads. A study by Shrum et al.,

that uses responses from 3346 heads of household “concluded that green consumers are more receptive to print than TV ads.”

2.13.4.1.1 Public Service Announcement

PSAs' perform an important educational function. Companies in addition can communicate their best concern about the environment in an intelligent way, the thing that helps in breaking the trust boundaries between the company and customers. An important notice must be mentioned here: the corporation must stay quietly in the background, with the cause in front, else a self congratulation message could be translated.

2.13.4.1.2 Environmental Image

The second technique used in advertising is environmental image. “This is considered the riskiest type of advertising.” A claim of “We Care” for example may be too general, vague, critical and misleading. Announcing an improvement or sponsoring public service for example, will be a more subtle way to enhance the corporation's image.

2.13.4.1.3 Product Related Ads

“Recent decisions by the Federal Trade Commission [in the United States] have emphasized the necessity for advertisers to disclose the specific nature of the benefits offered by their brand and the evidence that supports their claims.” As rules of thumb, green product related ads require the marketer to: (1) Treat environmental issues as a special topic, (2) only discuss substantial achievements (avoid topics as nonspecific intentions of reduction, regulatory change, green programs with not-yet final results, (3) be specific and support the claims, (4) avoid discussing the

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achievements in terms of trees saved or the like, tell it pound in pound, ton in ton and so on..

2.13.4.2 Newsletters

Besides being a strong educational tool, "a newsletter is an excellent means for conveying environmental accomplishments to employees, and stakeholders" \(^{112}\) The continuity and the commitment are essential elements of the publication, else the company's concern will die with the death of the publication. Thus it would be advisable to designate an editor and editorial board, establish a realistic publication schedule, use appropriate materials, and create a comprehensive distribution list.

Topics may be educational opportunities that the company sponsors, results of pollution and waste reduction programs, employee tips for creating greener work places, interviews with environmental specialist on your company's work, etc. Other publication may be green occasional reports that summarizes key information and project results.

2.13.4.3 Local Cleanup Campaign

Besides the direct messages, a company can communicate its environmental intentions through (one time, one day, or regular, or multiple sites) household hazardous waste collection programs. In the United States, "the number of such programs has grown dramatically in a very short period of time"\(^ {113}\) In addition to promoting the company's environmental image, such campaign can provide a perfect opportunity for the company to do community networking.

It is a true fact that engaging in a strategic alliance with environmental groups is sound decision. This will serve the promotional efforts of the organization, establish its credibility and help in educating the customer. Not only this, such an alliance in fact

\(^{112}\) Bennett, Freierman and George, *Corporate Realities and Environmental Truths*, p. 118.

\(^{113}\) Ibid., p. 122.
may enable the company to have and access to expertise and intelligence. In recent years in America, "alliance of mainstream companies, environmental companies, and government regulators have sprung up to promote better forms of regulations."\textsuperscript{114} Above all, it is worth remembering here that environmental groups are highly trusted sources of information of green buyers.

2.13.4.4 Educational Programs

It is true that "to the extent that [people] understand environmental issues, they are that much less likely to engage in emotional and environmentally counterproductive behavior."\textsuperscript{115}

The International Strategy for Action in the field of Environmental Education and Training for the 1990s prepared by the United Nations Educational, Scientific and Cultural Organizations in collaboration with the United Nations Environmental Program indicated the following education principles:

First education should be an ongoing program. Second, it should be comprehensive, that is should take into considerations all relevant economic, social and ecological realities. Third, the program has to motivate the right attitude that in turn motivate the right behavior. Fourth, even-handedness, neglecting groups for the sake of others is not allowed.

To educate, the company may be involved in sponsoring a seminar at one of the company’s site every period of time. Offering examples of environmental innovations to schools and universities may be another alternative as well. Finally, consider making donations to local and national environmental causes.

This is the end of chapter two, the literature review, the next chapter will explain the research design and methodology.

\textsuperscript{114} "How to Make Lots and Money and Save the Planet Too," The Economist, June 1995, pp. 57-58.
\textsuperscript{115} Cockdington, Environmental Marketing, p. 97.
Chapter Three
Research Design and Methodology

3.1 The Basic Research

The purpose of the research is to assess the concept of “green marketing” in Lebanon as it applies to the food industry. This argument can be divided into two sections: first studying the awareness of Lebanese industrialists as far as environmental practices in marketing and management are concerned. Second, studying the public (consumer) awareness towards their environmental concern.

3.2 Sources of Information

To reach the objective of this research, two types of questionnaires were designed: First, a one page, for-public questionnaire was developed (see Appendix I). Second, a specialized six pages questionnaire directed towards general, marketing or production managers of the food industry (see Appendix II).

The Food industry is divided into five segments: (1) canned food producers, (2) juices producers, (3) dairy products producers, (4) alcoholic products producers.

3.3 Survey Design

3.3.1 Public Questionnaire

The public questionnaire consists of two parts. Part one asks five demographic questions. Part two in turn consists of twenty five questions. The first twenty three questions are close-ended five points likert scale designed, where the respondent is supposed to give strongly agree, agree, irrelevant, disagree or strongly disagree answer. The last two questions are open ended.
Four hundred thirty questionnaires were distributed, one was canceled giving up four hundred twenty nine valid questionnaires. Therefore almost 100% response rate (99%) was registered. Distribution was carried out randomly.

3.3.2 The Specialized Questionnaire

The specialized questionnaire consists of five parts, a total of forty eight close ended questions and one open ended question. Part one asks five demographic questions. Part two consists of twenty six questions related to the manager’s operational experience allocated as follows: part A, thirteen determinant choice close-ended questions, part B, two ranking questions (one has to do with the competitive advantage of companies, and the other with the materials used), and part C, eleven likert scale questions. Part four of the questionnaire continues using a five points likert scale and asks seven questions related to the production practices of the organization. Part four as well utilizes the likert scale to ask three questions related to the customers of the organizations. The respondent’s point of view then is detected by six likert scale questions. Finally the questionnaire ended by an open ended question.

Fifteen sets of questionnaires have been distributed in different areas in Lebanon: Beirut, Mount Lebanon, The North, the South, and Bikaa Valley to cover four food industry segments namely canned food, juices, alcoholic and dairy products. Table 3.1 gives the arrangement by area.
### Tables 3.1

<table>
<thead>
<tr>
<th>No.</th>
<th>Company Name</th>
<th>Industry</th>
<th>Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Jalloul</td>
<td>juices</td>
<td>Beirut</td>
</tr>
<tr>
<td>2</td>
<td>Tripac/ Dollis</td>
<td>canned food - juices</td>
<td>Beirut</td>
</tr>
<tr>
<td>3</td>
<td>Pepsi Cola</td>
<td>soft drinks</td>
<td>Beirut</td>
</tr>
<tr>
<td>4</td>
<td>Khandour (No response)</td>
<td>confectionery</td>
<td>Beirut</td>
</tr>
<tr>
<td>5</td>
<td>Coca Cola (No response)</td>
<td>soft drinks</td>
<td>Beirut</td>
</tr>
<tr>
<td>6</td>
<td>Fantazia (No response)</td>
<td>confectionery</td>
<td>Beirut</td>
</tr>
<tr>
<td>7</td>
<td>Xtra</td>
<td>canned food - juices</td>
<td>Mount Lebanon</td>
</tr>
<tr>
<td>8</td>
<td>Libbys</td>
<td>canned food - juices</td>
<td>Mount Lebanon</td>
</tr>
<tr>
<td>9</td>
<td>Rim</td>
<td>canned food</td>
<td>Mount Lebanon</td>
</tr>
<tr>
<td>10</td>
<td>Al-Rabieh</td>
<td>canned food</td>
<td>Mount Lebanon</td>
</tr>
<tr>
<td>11</td>
<td>Almaza</td>
<td>alcoholic</td>
<td>Mount Lebanon</td>
</tr>
<tr>
<td>12</td>
<td>Kortina (No response)</td>
<td>dairy</td>
<td>Mount Lebanon</td>
</tr>
<tr>
<td>13</td>
<td>Shtoura</td>
<td>canned food</td>
<td>Bikaa</td>
</tr>
<tr>
<td>14</td>
<td>Kamal Badawi Bsat</td>
<td>canned food</td>
<td>South</td>
</tr>
<tr>
<td>15</td>
<td>Samith Yamen</td>
<td>canned food</td>
<td>South</td>
</tr>
<tr>
<td>16</td>
<td>Safa</td>
<td>canned food</td>
<td>South</td>
</tr>
<tr>
<td>17</td>
<td>Milco</td>
<td>dairy</td>
<td>South</td>
</tr>
</tbody>
</table>

### 3.4 Research Variables

#### 3.4.1 Public Questionnaire

The questionnaire is designed in a way to discover where the public, (product consumers) stand as far as the environment is concerned.
3.4.1.1 Demographic Variables

The first five questions of the questionnaire are dedicated to discover the demographic variables of the respondents which are age, gender, marital status, education and income.

3.4.1.2 General Attitudes Towards the Environment

The questionnaire attempts to discover whether the public consider themselves environmentally educated or not, and to understand what a good environment means to them. In addition, it depicts whether people are satisfied with nature and green environment in Lebanon and if they are aware of an existing environmental problem and its effect on their family members. The questionnaire closes up by an open ended question that asks for a proposed solution or ideas to be applied by the public and companies for the sake of the environment.

3.4.1.3 Who is to be Blamed

In addition to measuring the general attitudes of consumers toward the environment, the questionnaire tries to detect whom do people blame (companies, low income people, or just the whole population) for dirtiness and degradation in Lebanon. Besides, the questionnaire attempts to discover the companies’ credibility by asking respondents whether they believe and accept the companies’ claims as for the product features they declare. Finally the questionnaire asks respondents of how they perceive the solutions and how they will act to save the environment.

3.4.1.4 The Green-marketing Related Concepts

The questionnaire most importantly tries to test the respondent as a prospective green marketing-targeted member. So questions related to product features: quality, convenience, usage, price and availability, are addressed. Besides matters of packaging: size and indicative signs are presented. Waste disposal and treatment ideas
are tested as well. And finally, a last open ended question allows the respondent to express proposed activities to be adopted by companies, seeking a good marketing with environmental concern.

3.4.2 Specialized Questionnaire

The purpose behind the specialized questionnaire is to study the awareness of Lebanese food industrialist as far as environmental practices in marketing and management are concerned.

3.4.2.1 Demographic Variables

The first five questions of the questionnaire discover the demographic variables of the respondents: age, gender, education, and the number of employees operating in the company.

3.4.2.2 Operational Experience

To measure whether managers in Lebanon understand, believe, accept or have come across the concept of green marketing management in Lebanon, or have the capability to be involved in the future with such a concept, general questions related to the environmental management, environmental marketing were developed: company’s practices, polices and procedures, total quality management, economic growth, international business (standards), business strategy, promotion, resource conservation, life cycle analysis, and human resource development.

3.4.2.3 Production Practices

This section (part three) opens by a question on energy levels and what is needed to produce a good quality product. Production technology, and techniques and the manager’s point of view regarding them is detected as well. This part also tries to identify whether the managers distinguish between a green and a non-green product
design. Finally a single question that assesses the estimated possibility of a perfect green product development is presented.

3.4.2.4 Consumers

The part of the questionnaire that is related to consumers consists of three questions. The first studies the attitude of the respondent towards customer segmentation. The remaining two questions try to discover whether the customer understands in every detail the features of the company’s product, and whether the manufacturer spends extra time educating customers on any new feature introduced into the product.

3.4.2.5 Personal Point of View

The personal point of view of the respondent as far as environmental marketing management is concerned is presented in the last part of the questionnaire. A total of six questions are designed in a way to discover the respondent’s attitudes for green investment, ecological commitment, and sustainable development. The respondents future eyesight towards international standards and the characteristic of the age is studied as well in two final likert scale questions. Finally, an open ended question that identify the respondent’s point of view as far as the company’s role in environmental development closes up the specialized questionnaire.

3.5 Data Analysis

The two questionnaires are input to the computer for analysis purposes. The statistical analysis is developed utilizing ASP, a statistical package for business and economics and is intended to discuss the crosstabulation, frequencies of response, correlation matrices, and regression analysis.

This was the research design and methodology of the study. It explains the sources of information, survey design, research variables and data analysis. The next chapter,
chapter four, lists the findings and evaluates them in terms of the intended purposes of the research.
Chapter Four

Research Findings

After presenting the methods and tools used in this research, the purpose of this chapter is to study the findings and analyze them. We will start with the public questionnaire.

4.1 Public Questionnaire

4.1.1 Respondents’ Profile

Seventy nine percent of the respondents are of the age range 18-25; People aged between 26-35 are 9.1 %, between 36-45 are 6.3 % and between 46-55, 56-65, and >65 are 4%, 1.2%, and 0.5% respectively.

Fifty six percent of the respondents are males, and 44% are females. Among those, 14% are married and 85.3 are not. Twenty six percent of them have high school degree, 53% have a bachelor degree, 21% have a graduate degree.

As for the income, 5.4% claim that they have high income, 70% said they are of the middle income people, and 24.6% said they are of the low income people. Table 4.1 shows the above mentioned demographics.

<table>
<thead>
<tr>
<th>Table 4.1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respondents’ profile (%)</td>
</tr>
<tr>
<td>Gender: Males: 56</td>
</tr>
<tr>
<td>Marital Status: Married: 14</td>
</tr>
<tr>
<td>Education: High School: 26</td>
</tr>
<tr>
<td>Income: High: 5.4</td>
</tr>
</tbody>
</table>
4.1.2 General Attitudes Towards the Environment

4.1.2.1 Are People Environmentally Educated?

Question ten asks the respondents whether they consider themselves environmentally educated or not. A majority of the respondents (71%) consider themselves environmentally educated (57% A + 14% SA). Seventeen percent of respondents disagree— they are not environmentally educated. Eleven percent had no opinion regarding this question.

The other question that reflects environmental education—you may help the environment but you don’t know exactly what to do—shows that 61% of the respondents said that they may help the environment, but don’t know exactly what to do (49% A + 12% SA). Twenty four percent disagree (19% D + 5% SD): they know what to do to save the environment. Nine percent have no opinion, which means that they are confused of what should be done.

To double check the environmental education, the question - you consider yourself environmentally educated- was crossstabulated with question 22 - you may help the environment but you don’t know exactly what to do. The following table resulted with responses: Strongly agree (SA), agree (A), irrelevant (I), disagree (D), and strongly disagree (SD).
Table 4.2
Crosstabulation percentages Q10 X Q22

<table>
<thead>
<tr>
<th>Q10</th>
<th>Q22</th>
<th>You may help the env but you don’t know what to do</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>You consider yourself environmentally educated</td>
<td>SA</td>
</tr>
<tr>
<td>SA</td>
<td>7</td>
<td>25</td>
</tr>
<tr>
<td>A</td>
<td>9</td>
<td>52</td>
</tr>
<tr>
<td>I</td>
<td>18</td>
<td>51</td>
</tr>
<tr>
<td>D</td>
<td>21.5</td>
<td>63</td>
</tr>
<tr>
<td>SD</td>
<td>30</td>
<td>30</td>
</tr>
</tbody>
</table>

Table 4.2 shows that 53% of those who consider themselves environmentally educated disagree (37 D + 16S D) that they don’t know exactly what to do for the sake of the environment. The fifty-three percent here does not reflect the very high percent (71%) of the respondents who said that they are environmentally educated which means that respondents consider themselves environmentally educated only at the claim level, they really don’t know what to do as far as the environment is concerned.

To test the respondents’ environmental education, environmentally friendly question was utilized. It has to do with the best way used for garbage treatment. It is an environmental truth that the best way to get rid of wastes is to recycle them, followed by burying, and finally the choice of burning will be considered.

The respondents succeeded the test. In fact, 73% of the respondents realized that burring is not the best way. Only 15% supported this point of view (12% A + 3% SA), Eleven percent of the respondents had no opinion. These results have the following implications. It implies that respondents know the bad effect that burying wastes leave, thus they are convinced that it is not the best way of waste treatment. Probably this is
clear from the fact that respondents are aware of the Normandy and Borj-Hammoud burial sites and the dangers these are submitting to the area and the population.

Making a crosstabulation of the question -you consider yourself environmentally educated- and burying is the best way to get rid of wastes- the following results were obtained.

Table 4.2
Crosstabulation percentages Q10 X Q4

<table>
<thead>
<tr>
<th>\ Q4</th>
<th>The best way to get rid of wastes is to bury them</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SA</td>
</tr>
<tr>
<td>Q10 You consider yourself environmentally educated</td>
<td></td>
</tr>
<tr>
<td>SA</td>
<td>8</td>
</tr>
<tr>
<td>A</td>
<td>2</td>
</tr>
<tr>
<td>I</td>
<td>2</td>
</tr>
<tr>
<td>D</td>
<td>5</td>
</tr>
<tr>
<td>SD</td>
<td>0</td>
</tr>
</tbody>
</table>

The results were convincing and reflected the correct knowledge and information of those who consider themselves environmentally educated, and a wise selection of the others who confess that they lack the environmental education. It appears that 77% of those who consider themselves strongly environmentally educated disagree, (34% D + 43% SD) that burying wastes is the best way of getting rid of them. If we look at those who strongly disagree that they are environmentally educated, we discover that 60% of them disagree (20% D + 40% SD) that burying is the best way, the thing that implies that even the worst environmentally educated people have a wise estimation of what constitute acceptable wastes treatment. And this is just because of the heavy media coverage of burying sites in Beirut.
4.1.2.2 The Level of Environmental Satisfaction in Lebanon

The first likert scale question asks whether respondents are satisfied with nature and green environment in Lebanon. It was clear that the response was extremely negative. Seventy eight percent disagree (40% D + 38% SD) of any environmental satisfaction. Only 9% of the respondents seem to be environmentally satisfied, and a few of them, 5%, show a complete satisfaction. It appears that the Lebanese are environmentally unsatisfied and this is a natural reaction to what they are facing in their daily life of pollution, and health deterioration. Specifically with media following issues like Cheka, Burj-Hammoud and the mountain crackers.

Since a large number of the Lebanese are not satisfied with the environment in Lebanon, the question that comes next is: which comes first according to them, their care of the environment or their personal pleasure?

Thirty nine percent of the respondents agree (30% A + 9% SA) that their pleasure comes first, and environmental concern comes second. In other words environmental concern will not come at the expense of their pleasure. According to other 38% environmental concern is at the expense of their pleasure: environment comes first. Twenty three percent of the respondents had no opinion. These results show that respondents were divided between the two selections, personal pleasure, or environmental care.

If we refer back to chapter two, the people in Lebanon may appear to be “light green”, according to J. Walter Thompson (people who are concerned, not willing to make personal sacrifices), or ungreen (plain, don’t care about the environment) or “grousers” according to Roper/S.C. Johnson segmentation, (rationalize their non-behavior by excuses and criticize others), or “basic browns” (don’t believe and don’t want to make difference) or “maybe green” according to Green Market Alert segmentation, (Express high degree of concern but act irregularly). In addition behavior is still in the precontemplation stage.

By crosstabulating satisfaction and pleasure choice, the following table was obtained:
Table 4.3
Crosstabulation percentages Q1 X Q21

<table>
<thead>
<tr>
<th></th>
<th>Q21</th>
<th>Your environmental concern is not at the expense of your pleasure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>SA</td>
</tr>
<tr>
<td>Q1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SA</td>
<td>You are satisfied with nature and gr env in Leb.</td>
<td>17</td>
</tr>
<tr>
<td>A</td>
<td>10</td>
<td>33</td>
</tr>
<tr>
<td>I</td>
<td>7</td>
<td>17</td>
</tr>
<tr>
<td>D</td>
<td>9</td>
<td>33.5</td>
</tr>
<tr>
<td>SD</td>
<td>10</td>
<td>26</td>
</tr>
</tbody>
</table>

The analysis of the table shows that 45% of those who are highly unsatisfied agree (30% D +15% SD) that their environmental concern is not at the expense of their pleasure. Fifty two percent of those who are highly environmentally satisfied agree (43.5% A + 9% SA) that their environmental concern is not at the expense of their pleasure. Nineteen percent appear to have no opinion.

The pleasure factor did not indicate much, since people did not show remarkable and encouraging answers to have regain environmental satisfaction (for those who are unsatisfied) and to preserve satisfaction (for those who are satisfied). There was no strict answer for the sake of environment. This shows another implication: people in Lebanon have things other than the environment to care about.

To test the relation between environmental satisfaction of respondents and the act of burying wastes as a way of treatment the following table was made.
Table 4.4
Crosstabulation percentages Q1 X Q4

<table>
<thead>
<tr>
<th>Q4</th>
<th>You are satisfied with nature &amp; gr env in Leb</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SA</td>
</tr>
<tr>
<td>SA</td>
<td>4</td>
</tr>
<tr>
<td>A</td>
<td>8</td>
</tr>
<tr>
<td>I</td>
<td>3</td>
</tr>
<tr>
<td>D</td>
<td>5</td>
</tr>
<tr>
<td>SD</td>
<td>0</td>
</tr>
</tbody>
</table>

Table 4.4 shows that 83% of those who are highly environmentally unsatisfied disagree (35% D + 48% SD) that burying is the best way. Again the results came here to re-emphasize the knowledge that people have towards burying as being not the best way of garbage treatment.

To test whether people understand the road to quality life, question five asks whether good environment means a better quality of life. The following table shows the results:

Table 4.5
Environment VS Quality of life

<table>
<thead>
<tr>
<th>Good Environment means a better quality of life</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agree</td>
</tr>
<tr>
<td>Strongly agree</td>
</tr>
<tr>
<td>No opinion</td>
</tr>
</tbody>
</table>
A vast majority of respondents agree. Ninety three percent of respondents agree that good environment means a better quality of life. Of those, 68%, strongly agree. Only 4% appear to have no opinion.

To study the relation between environmental satisfaction and the quality of life, the following crosstabulation was provided.

<table>
<thead>
<tr>
<th>Q1</th>
<th>Good environment means a better quality of life</th>
<th>SA</th>
<th>A</th>
<th>I</th>
<th>D</th>
<th>SD</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>You are satisfied with nature and green env in Leb.</td>
<td>SA</td>
<td>A</td>
<td>I</td>
<td>D</td>
<td>SD</td>
<td>Total</td>
<td></td>
</tr>
<tr>
<td>SA</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>51</td>
<td>38.5</td>
<td>8</td>
<td>3</td>
<td>0</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>53</td>
<td>40</td>
<td>3</td>
<td>3</td>
<td>0</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>63</td>
<td>31</td>
<td>6</td>
<td>0</td>
<td>0</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>SD</td>
<td>5</td>
<td>1</td>
<td>0</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The results were interesting. A total of 100% of those who said that they are highly satisfied agree (9% A + 91% SA) that good environment means a better quality of life. And a sum of 93% of those who are highly dissatisfied agree (77% SA + 16% A) on this concept. It seems here that people are making a relation between life in green places (e.g. mountains in Lebanon) - a highly demanded places by a large number of Lebanese and non-Lebanese especially during summer seasons- and cities especially Beirut which has the image of noise, dust and others factors of hard life. The first place is judged to be an area of relief, whereas the second one considered to be a center of pollution.
4.1.2.3 Are People Aware of Bad Environmental Effects

The answers of - at least one of your family member will be affected by bad environmental conditions- showed that 61% of the respondents agree. The answers of this question reflects the percentage level of negative satisfaction obtained in the first question. This emphasizes the idea that people are aware of the bad environment they are living in.

To study the relation between environmental education and the effects of bad environment on the family, the following table was made.

Table 4.7
Crosstabulation percentages Q10 X Q18

<table>
<thead>
<tr>
<th>\ Q18 \ Q10</th>
<th>You consider yourself env. educated</th>
<th>SA</th>
<th>A</th>
<th>I</th>
<th>D</th>
<th>SD</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>SA</td>
<td>SA</td>
<td></td>
<td></td>
<td>11.5</td>
<td>8</td>
<td>7</td>
<td>100</td>
</tr>
<tr>
<td>A</td>
<td>18</td>
<td>42</td>
<td>18</td>
<td>17</td>
<td>4.5</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>20</td>
<td>31</td>
<td>35</td>
<td>8</td>
<td>6</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>9</td>
<td>51</td>
<td>11</td>
<td>18.5</td>
<td>11</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>SD</td>
<td></td>
<td>20</td>
<td>10</td>
<td>10</td>
<td></td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

Results show that 74% of those who consider themselves highly environmentally educated agree (33% SA + 41% A) that bad environmental conditions will affect at least one of his family members. In addition 60% of those who consider themselves environmentally uneducated agree (50A +10% SA) that at least one of their family members will be affected by bad environmental conditions. And this seems logic since all people are facing or hearing about bad environmental incidents (example the crises of Chika, in northern Lebanon ) happening in Lebanon almost daily.
To test the relation between personal pleasure and the effect of bad environmental conditions on the family, the following results were obtained.

Table 4.8
Crosstabulation percentages Q21 X Q18

<table>
<thead>
<tr>
<th>\ Q18</th>
<th>At least one of your family members will be affected by bad env conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q21</td>
<td>SA</td>
</tr>
<tr>
<td>Your environmental concern is not at the expense of your pleasure</td>
<td></td>
</tr>
<tr>
<td>SA</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>19.5</td>
</tr>
<tr>
<td>I</td>
<td>21</td>
</tr>
<tr>
<td>D</td>
<td>12.5</td>
</tr>
<tr>
<td>SD</td>
<td></td>
</tr>
</tbody>
</table>

The table shows that 65% of those who select their pleasure over the environmental concern agree (27.5% SA + 37.5% SA) that bad environmental condition will at least affect on of their family members. Fifty three percent of those who select the environment first agree (31% A + 22% SA) that bad environmental conditions will at least affect one of their family members. This indicates that people in all cases realize the effect of bad environment on their family, still they prefer not giving sacrifices for the sake of environment. This again comes to support the segmentation introduced earlier in this chapter.

4.1.2.4 How Will People Act to Save the Environment

Certain questions were supposed to answer how will people act for the sake of environment. As indicated previously question 22 -you may help the environment but
you don’t know exactly what to do- showed non satisfactory results with 61% of the respondents ignoring what is supposed to be done.

It is a true fact that the personal initiative is very important as far as the environment is concerned. Question 12 - you can do nothing for the environment if all people do not care- shows non encouraging responses. Thirty seven percent of the respondents agree that they can do nothing. Fifty four percent disagree - they will act even by themselves only. Personal initiative (the ever most important step in environmental preservation appear somehow not existing indicating that the situation in Lebanon as far as environmental preservation is concerned is something to really worry about. And these results come consistent with the high percentage that respondents show for their pleasure instead the environment. Usually such a behavior exists in places where no environmental polices are present.

It would be interesting here to crosstabulate the respondents’ attitudes to environmentally act with question 18 - the bad effects of environment on one’s family.

Table 4.9
Crosstabulation percentages Q18 X Q12

<table>
<thead>
<tr>
<th>Q18</th>
<th>You can do nothing for the environment if all people do not care</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SA</td>
</tr>
<tr>
<td>At least one of your family members will be affected by bad env. conditions</td>
<td>26</td>
</tr>
<tr>
<td>SA</td>
<td>15</td>
</tr>
<tr>
<td>A</td>
<td>13</td>
</tr>
<tr>
<td>D</td>
<td>20</td>
</tr>
<tr>
<td>SD</td>
<td>23</td>
</tr>
</tbody>
</table>
It appears that 54% of those who strongly agree that their family will be affected disagree (28.5% D + 26% SD) that they will do nothing if all other do not care, thus showing a tendency to act to save their families; however this percentage is too small to indicate optimistic view especially when the life of the family is concerned.

To assess how the respondents who realize a danger on their families act for the environment the following crosstabulation was made.

Table 4.10
Crosstabulation percentages Q18 X Q22

<table>
<thead>
<tr>
<th>\ Q22</th>
<th>You may help the env. but you don’t know exactly what to do</th>
<th>SA</th>
<th>A</th>
<th>I</th>
<th>D</th>
<th>SD</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q18</td>
<td>At least one of your family members will be affected by bad env. conditions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SA</td>
<td></td>
<td>6</td>
<td>25</td>
<td>11</td>
<td></td>
<td></td>
<td>100</td>
</tr>
<tr>
<td>A</td>
<td></td>
<td>56</td>
<td>7</td>
<td>24</td>
<td>2</td>
<td></td>
<td>100</td>
</tr>
<tr>
<td>I</td>
<td></td>
<td>37</td>
<td>18</td>
<td>28</td>
<td>4</td>
<td></td>
<td>100</td>
</tr>
<tr>
<td>D</td>
<td></td>
<td>48</td>
<td>8</td>
<td>27</td>
<td>6</td>
<td></td>
<td>100</td>
</tr>
<tr>
<td>SD</td>
<td></td>
<td>46</td>
<td>11.5</td>
<td>8</td>
<td>8</td>
<td></td>
<td>100</td>
</tr>
</tbody>
</table>

Results show that 57.5% of those who strongly agree that at least one of their family members will be affected by bad environmental conditions agree (47.5 A + 10% SA) that they may help the environment but don’t know exactly what to do. Again as the preceding table presented, this table shows results that reflect unconcerned and indifferent behavior of people: they admit the danger on their families, but they remain, don’t know what to do. Probably here is where NGO’s could participate in increasing the awareness of the Lebanese population.
4.1.3 Who is to Be Blamed

4.1.3.1 Population

Question 14 tries to discover whether respondents consider the population environmentally educated or not. The question -people lack environmental education- gained an extreme agree where 86% of respondents supported the idea that people are not environmentally educated. Upon crosstabulating the self by the population environmental education, the following results were obtained.

<table>
<thead>
<tr>
<th>\ Q14</th>
<th>People lack environmental education</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SA</td>
</tr>
<tr>
<td>You consider yourself environmentally educated</td>
<td></td>
</tr>
<tr>
<td>SA</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>43</td>
</tr>
<tr>
<td>I</td>
<td>26.5</td>
</tr>
<tr>
<td>D</td>
<td>49</td>
</tr>
<tr>
<td>SD</td>
<td></td>
</tr>
</tbody>
</table>

Eighty nine and a half percent of those who consider themselves strongly environmentally educated agree (29.5% A+ 61% SA) that people lack environmental education. Similarly 83% of those who consider themselves highly environmentally uneducated agree (38% A + 50% SA) that people lack environmental education. This shows that non of the people appear to be educated, and the responsibility for environmental degradation falls on all of them. At this stage, one can observe the impact that the civil war has left on the Lebanese.
4.1.3.2 Low Income People

The role of low income people in Lebanese environmental degradation was studied as well. Surprisingly, 73% of the respondents did not blame low income people as for the environmental degradation. Only 15% of the respondents blamed low income people and 16% had no opinion regarding the matter.

To study the effect of environmental education on the blame of low income people, the following table shows that seventy six percent of highly environmentally educated people disagree (25% D + 51% SD) that low income people should be blamed. And 50% of highly uneducated people do not blame those people (10% D + 40% SD). These results may have the following explanations: first a general tendency of respondents not to blame the poor, but we can say a tendency of the respondents to blame the environmental unfriendliness of the consumption especially of the rich who appear to have everything, and to get rid of whatever they like, any time, and in the ways that seem convenient to themselves only, thus the believe that was concluded once by Coddington that “the richer do more harm to the environment than the poorer” may be applied here as well.116

<table>
<thead>
<tr>
<th>Q13 \ Q10</th>
<th>Low income people should be blamed for making Lebanon dirty</th>
</tr>
</thead>
<tbody>
<tr>
<td>You consider yourself env. educated</td>
<td>SA</td>
</tr>
<tr>
<td>SA</td>
<td>10</td>
</tr>
<tr>
<td>A</td>
<td>2</td>
</tr>
<tr>
<td>I</td>
<td>0</td>
</tr>
<tr>
<td>D</td>
<td>5</td>
</tr>
<tr>
<td>SD</td>
<td>0</td>
</tr>
</tbody>
</table>

116 Coddington, Environmental Marketing, p85
To double check environmental education with the blame factor, table 4.13 was constructed.

Table 4.13
Crosstabulation percentages Q22 X Q13

<table>
<thead>
<tr>
<th>\ Q13</th>
<th>Low income people should be blamed for making Leb dirty</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SA</td>
</tr>
<tr>
<td>Q22</td>
<td></td>
</tr>
<tr>
<td>You may help the env. but you don’t know what to do</td>
<td></td>
</tr>
<tr>
<td>SA</td>
<td>4</td>
</tr>
<tr>
<td>A</td>
<td>2</td>
</tr>
<tr>
<td>I</td>
<td>0</td>
</tr>
<tr>
<td>D</td>
<td>3</td>
</tr>
<tr>
<td>SD</td>
<td>24</td>
</tr>
</tbody>
</table>

Results were nearly the same. Table 4.13 shows that 57% of the environmentally knowledgeable people (know exactly what to do to save the environment) disagree (9.5% D + 48% SD) that low income people should be blamed for environmental degradation. Besides 71% of strongly unknowledgeable respondents disagree (22% D + 49% SD) that low income people should be blamed. This table appears to be consistent with the preceding one.

Upon crosstabulating environmental satisfaction with the blame on low income people, the following results were obtained.
Table 4.14
Crosstabulation percentages Q1 X Q13

<table>
<thead>
<tr>
<th>Q1</th>
<th>Low income people should be blamed for making Leb dirty</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SA</td>
</tr>
<tr>
<td>You are satisfied with nature and green env. in Leb.</td>
<td></td>
</tr>
<tr>
<td>SA</td>
<td>4</td>
</tr>
<tr>
<td>A</td>
<td>2</td>
</tr>
<tr>
<td>I</td>
<td>7</td>
</tr>
<tr>
<td>D</td>
<td>2</td>
</tr>
<tr>
<td>SD</td>
<td>4</td>
</tr>
</tbody>
</table>

Results show that 78% of highly environmentally satisfied people disagree (52% D + 26% SD) that low income people should be blamed. Likewise 74% of the highly environmentally unsatisfied do not blame low income people (27% D + 47% SD). For the third time results came consistent with the preceding two tables.

Thus the above related tables show that non of the people blame low income people and this comes to ensure the high percentage (73%) of the unblame that the respondents show towards low income people.

4.1.3.3 Companies

The respondents were asked (question 8) whether they believe companies in Lebanon have good environment image or not. A majority of highly environmentally educated respondents supported (43% A + 36% SA) the idea that companies in Lebanon have bad environmental image. What draws attention in addition is that 60% of highly environmentally uneducated respondents agree (40% A + 20% SA) that the companies have bad environmental image. Thus pollution that people can see every day from the factories, in addition to the accompanying of the name of large Lebanese product
manufacturing companies with the crises of pollution in some areas, may be a reason for making respondents judge on the companies to have bad environmental image.

Upon crosstabulating environmental education with question 8 - companies in Lebanon have good environmental image, the following table was obtained.

<table>
<thead>
<tr>
<th>Q10 \ Q8</th>
<th>Companies in Lebanon have good environmental image</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SA</td>
</tr>
<tr>
<td>You consider yourself environmentally educated</td>
<td>SA</td>
</tr>
<tr>
<td>SA</td>
<td>3</td>
</tr>
<tr>
<td>A</td>
<td>2</td>
</tr>
<tr>
<td>I</td>
<td>0</td>
</tr>
<tr>
<td>D</td>
<td>5</td>
</tr>
<tr>
<td>SD</td>
<td>0</td>
</tr>
</tbody>
</table>

Results show that 79% of the highly environmentally educated people disagree (43% D + 36% SD) that companies in Lebanon have good environmental image. In addition 60% of highly uneducated respondents disagree (40% D + 20% SD) on any good environmental image companies may possess. These results indicate that all people do think of companies to have bad environmental image.

To compare, and to double check the views of the environmentally educated with those uneducated, question 22 (the other question indicating environmental education) was crosstabulated with question 8. The following results were obtained.
Table 4.16
Crosstabulation percentages Q22 X Q8

<table>
<thead>
<tr>
<th>Q22</th>
<th>Companies in Lebanon have good environmental image</th>
<th>SA</th>
<th>A</th>
<th>I</th>
<th>D</th>
<th>SD</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>You may help the env but you don’t know what to do</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SA</td>
<td>0</td>
<td>18</td>
<td>27.5</td>
<td></td>
<td></td>
<td></td>
<td>100</td>
</tr>
<tr>
<td>A</td>
<td>1</td>
<td>11</td>
<td>20</td>
<td>54</td>
<td>14</td>
<td></td>
<td>100</td>
</tr>
<tr>
<td>I</td>
<td>5</td>
<td>10</td>
<td>17.5</td>
<td>42.5</td>
<td>25</td>
<td></td>
<td>100</td>
</tr>
<tr>
<td>D</td>
<td>5</td>
<td>5</td>
<td>16</td>
<td>55</td>
<td>19</td>
<td></td>
<td>100</td>
</tr>
<tr>
<td>SD</td>
<td>5</td>
<td>14</td>
<td>14</td>
<td></td>
<td></td>
<td></td>
<td>100</td>
</tr>
</tbody>
</table>

Fifty five percent of those who may help the environment but don’t know what to do (environmentally uneducated) disagree (33% D + 22% SD) that companies in Lebanon have good environmental image. In addition Sixty seven percent of the educated disagree (29% D + 38% SD) that companies in Lebanon have good environmental image. These results came almost consistent with those obtained in preceding table.

To take the same side of the problem using different interpretations, question 2 asks what do respondents think about product manufacturers and their role in making Lebanon dirty. Seventy three percent of respondents agree (51% A + 22% SA) that product manufacturers hold responsibility in making Lebanon dirty. Sixteen percent disagree (13%D + 3% SD) on this issue.

In fact the low percentages of -companies in Lebanon have good environmental image- has nothing to bring with but high percentages of -product manufacturers are responsible for making Lebanon dirty.

Upon crosstabulating question 10 with question 2 results show that a large percentage (74%) of highly environmentally educated respondents agree (38% A + 36% SA) that
product manufacturers hold responsibility in making Lebanon dirty. Seventy percent of highly environmentally uneducated agree (50% A + 20% SA) on the same thing. Thus all people blame product manufacturers.

<table>
<thead>
<tr>
<th>\ (Q10)</th>
<th>\ (Q2)</th>
<th>Product manufacturers hold reps. for making Leb dirty</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>SA</td>
</tr>
<tr>
<td>You consider yourself environmentally educated</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SA</td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>A</td>
<td></td>
<td>19</td>
</tr>
<tr>
<td>T</td>
<td></td>
<td>18</td>
</tr>
<tr>
<td>D</td>
<td></td>
<td>23</td>
</tr>
<tr>
<td>SD</td>
<td></td>
<td>20</td>
</tr>
</tbody>
</table>

To double check question 22 was crosstabulated with question 2. It appears from the results in table 4.18 that 60.5% of the highly uneducated blame (33% A + 27.5% SA) product manufacturers for making Lebanon dirty. And a total of 81% of highly educated agree (38% A + 43% SA) blame them too. Again these results act as a reliable measure of consistency for the preceding conclusions and show the high tendency of population to blame companies for bad environmental conditions.: all respondents blame product manufacturers. This is probably due to the attitude of dumping as many new products with no consideration of the solid wastes generated all along.
Table 4.18
Crosstabulation percentages Q22 X Q2

<table>
<thead>
<tr>
<th>Q2</th>
<th>Product manufacturers hold resp. in making Leb dirty</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SA</td>
</tr>
<tr>
<td>You may help the env. but you don't know what to do</td>
<td></td>
</tr>
<tr>
<td>SA</td>
<td>18</td>
</tr>
<tr>
<td>A</td>
<td>15</td>
</tr>
<tr>
<td>I</td>
<td>26</td>
</tr>
<tr>
<td>SD</td>
<td>5</td>
</tr>
</tbody>
</table>

To discover another characteristic of Lebanese companies in the eyes of the public, respondents were asked whether they trust companies as for the claims of their product features. Only twenty five percent of respondents trust (21% A + 4% SA) companies as for the claims of their product features. Forty seven percent of respondents do not trust companies (8% D + 39% SD). A remarkable percentage was recorded in this question: twenty seven percent appear to have no opinion. Again this question comes to fit with the above 2 namely, bad companies’ environmental image, and product manufacturers should be blamed for making Lebanon dirty. So How can a trust come to companies perceived to be of bad image and hurting the society. The high -don't know- percentage obtained on the other hand may be translated as an ignorance of product features.

Upon crosstabulating environmental education with the trust factor, table 4.19 was obtained.
Table 4.19
Crosstabulation percentages Q10 X Q7

<table>
<thead>
<tr>
<th>\ Q7</th>
<th>You trust companies for the claim of their products</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SA</td>
</tr>
<tr>
<td>You consider yourself environmentally educated</td>
<td></td>
</tr>
<tr>
<td>SA</td>
<td>7</td>
</tr>
<tr>
<td>A</td>
<td>4</td>
</tr>
<tr>
<td>I</td>
<td>4</td>
</tr>
<tr>
<td>D</td>
<td>5</td>
</tr>
<tr>
<td>SD</td>
<td>0</td>
</tr>
</tbody>
</table>

Fifty seven percent of the highly environmentally educated people do not trust (44% D + 13% SD) the companies’ claimed features. Sixty percent of highly environmentally uneducated people do not trust them as well (30% D + 30% SD). And these results come to indicate that almost all people don’t support a trust decision, thus there (results) are consistent with the preceding conclusions.

To test for trust again, the following table shows that 39% of the highly environmentally uneducated people disagree with the trust (35% D +4% SD) and 59% of highly environmentally educated people appear to have the same opinion (29% D+ 33% SD).
**Table 4.20**

Crosstabulation percentages Q8 X Q7

<table>
<thead>
<tr>
<th>\ Q7</th>
<th>You trust companies for the claim of their products</th>
<th>\</th>
<th>\</th>
<th>\</th>
<th>\</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>You may help the env. but you don’t know what to do</td>
<td>SA</td>
<td>A</td>
<td>I</td>
<td>D</td>
<td>SD</td>
<td></td>
</tr>
<tr>
<td>SA</td>
<td>2</td>
<td>33</td>
<td>25.5</td>
<td></td>
<td></td>
<td>100</td>
</tr>
<tr>
<td>A</td>
<td>5</td>
<td>21</td>
<td>28</td>
<td>37</td>
<td>8.5</td>
<td>100</td>
</tr>
<tr>
<td>I</td>
<td>7.5</td>
<td>15</td>
<td>32.5</td>
<td>40</td>
<td>5</td>
<td>100</td>
</tr>
<tr>
<td>D</td>
<td>1</td>
<td>20</td>
<td>25</td>
<td>48</td>
<td>7</td>
<td>100</td>
</tr>
<tr>
<td>SD</td>
<td>14</td>
<td>5</td>
<td>19</td>
<td></td>
<td></td>
<td>100</td>
</tr>
</tbody>
</table>

To see whether there is a relation between the trust factor and the blame respondents show towards product manufacturers, the following table was made.

**Table 4.21**

Crosstabulation percentages Q22 X Q2

<table>
<thead>
<tr>
<th>\ Q2</th>
<th>Product manufacturers hold resp. in making Leb. dirty</th>
<th>\</th>
<th>\</th>
<th>\</th>
<th>\</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>You trust companies as for the claims of their product...</td>
<td>SA</td>
<td>A</td>
<td>I</td>
<td>D</td>
<td>SD</td>
<td></td>
</tr>
<tr>
<td>SA</td>
<td></td>
<td></td>
<td>5</td>
<td>10.5</td>
<td>2</td>
<td>100</td>
</tr>
<tr>
<td>A</td>
<td>19</td>
<td>48</td>
<td>14</td>
<td>17</td>
<td>2</td>
<td>100</td>
</tr>
<tr>
<td>I</td>
<td>17</td>
<td>53</td>
<td>11</td>
<td>15.5</td>
<td>3</td>
<td>100</td>
</tr>
<tr>
<td>D</td>
<td>23</td>
<td>53</td>
<td>9</td>
<td>12</td>
<td>3</td>
<td>100</td>
</tr>
<tr>
<td>SD</td>
<td></td>
<td></td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>100</td>
</tr>
</tbody>
</table>
Table 4.21 comes to support the conclusions made regarding the preceding percentages and tables. It shows that 74% of those who strongly trust companies as for the claims of its products’ feature agree (32% A + 42% SA) that product manufacturers hold responsibility in making Lebanon dirty. Similarly, 83% of those who strongly distrust companies agree (47% A + 36% SA) that the companies hold responsibility of dirtiness. Which means that there is a general agreement that companies are responsible for making Lebanon dirty.

4.1.3.4 Government

The government appears to have attracted less blame. The respondents strongly supported the idea that the government is not the only authority that should create environmental awareness. Statistics show that 75% of the respondents disagree (58% A + 17% SA) that the government is alone to be blamed for non-environmental awareness.

Putting the high agree percentage of the question - people lack environmental education - and the high disagree percentage of - only government is responsible for creating environmental awareness- it can be concluded that environmental organizations (and other social organizations) in Lebanon are not far from being blamed for not creating environmental awareness.

Upon crosstabulating environmental education with question 3 - only government should be responsible for creating environmental awareness- the following table was made.
Table 4.22
Crosstabulation percentages Q10 X Q3

<table>
<thead>
<tr>
<th>\ Q3 \ Q10</th>
<th>Only government should be resp. for creating env awareness</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SA</strong></td>
<td><strong>A</strong></td>
</tr>
<tr>
<td>You consider yourself environmentally educated</td>
<td>8</td>
</tr>
<tr>
<td><strong>A</strong></td>
<td>5</td>
</tr>
<tr>
<td><strong>I</strong></td>
<td>2</td>
</tr>
<tr>
<td><strong>D</strong></td>
<td>9</td>
</tr>
<tr>
<td><strong>SD</strong></td>
<td>0</td>
</tr>
</tbody>
</table>

It appears from the table that 76% of those who are highly environmentally educated disagree (51% D + 25% SD) that only government is responsible for creating environmental awareness. Likewise, sixty percent of highly environmentally uneducated disagree (30% D + 30% SD) that only government is responsible for creating environmental awareness.

To test again using the other signal of environmental education, the following table was provided.

Table 4.23
Crosstabulation percentages Q10 X Q3

<table>
<thead>
<tr>
<th>\ Q3 \ Q10</th>
<th>Only government should be resp. for creating env awareness</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SA</strong></td>
<td><strong>A</strong></td>
</tr>
<tr>
<td>You can help the env. but you don’t know what to do</td>
<td>10</td>
</tr>
<tr>
<td><strong>A</strong></td>
<td>6</td>
</tr>
<tr>
<td><strong>I</strong></td>
<td>0</td>
</tr>
<tr>
<td><strong>D</strong></td>
<td>4</td>
</tr>
<tr>
<td><strong>SD</strong></td>
<td>14</td>
</tr>
</tbody>
</table>
Table 4.23 shows that 61% of those who don’t know what to do, disagree (49% D + 12% SD) to lay the responsibility only on the government as far as environmental awareness is concerned. Forty eight percent of those who know what should be done, don’t blame the government, (19% D + 29% SD).

The result of the last two tables came to emphasize that all people agree on the preceding argument - neither government, nor social organization are doing their job well.

But what about the personal initiative. The following table provides a crosstabulation between the personal initiative and the blaming the government.

<table>
<thead>
<tr>
<th>\ Q3</th>
<th>Only government should be reps. for creating env. awareness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q12</td>
<td>SA</td>
</tr>
<tr>
<td>You can do nothing for the env if all people do not care</td>
<td></td>
</tr>
<tr>
<td>SA</td>
<td>10</td>
</tr>
<tr>
<td>A</td>
<td>4</td>
</tr>
<tr>
<td>I</td>
<td>9</td>
</tr>
<tr>
<td>D</td>
<td>3</td>
</tr>
<tr>
<td>SD</td>
<td>7</td>
</tr>
</tbody>
</table>

Seventy seven percent of the persons with strong initiative (do for the environment if all people do not care) do not blame the government only, (55% D + 22% SD). Similarly, 70% of highly non-initiative persons don’t blame the government only (49% D + 21% SD). Both, the initiative and the non-initiative people don’t blame government only. This re-emphasize the preceding argument: people think that neither
government, nor social organization are doing their job well as far as environmental awareness is concerned.

Thus as a conclusion for the section of “blame” it appears that all people lack environmental education, low income people are not blamed, and companies environmental image is very bad. In addition government and social organization hold the responsibility for not creating environmental awareness.

4.1.4 Green Marketing Related Concepts

4.1.4.1 Green Products’ Quality

Quality has always been a concept to be concerned about. International standards are moving forward to present codes that specify terms for good quality products. The latest trend however is the emergence of standards that not only suggest in form of codes and articles what to be done, but do oblige parties to abide by such standards. We are talking here about environmental standards.

The logic says that what comes next is more developed: it encompasses the first as a base and adds new characteristics, and functions. Thus the one step forward from quality standards to environmental standards has nothing of implications but to say that the topic of quality is incorporated in the newly born environmental standards.

It was estimated that any question about green product quality may be confusing, and it may be a “hard question” as well. However, this questionnaire tried to study what Lebanese consumers think about the quality of green products.

Sixty five percent of respondents disagree that environmentally featured products are not of good quality (37% D + 28% SD), which means that they consider green products to be of good quality. Only twelve percent agree (10% A + 2% SD) that green products are not of good quality. Twenty three percent had no opinion. It appears here that a large percentage of respondents perceive green products to be of
good quality. The following sections will try by utilizing crosstabulations to present on what basis are respondents standing as far as this judgment is concerned.

But to see first what environmental education gives regarding this matter, the following cross tabulation was made.

<table>
<thead>
<tr>
<th>\ / Q11</th>
<th>Products with env feature are not of good quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q10</td>
<td>SA</td>
</tr>
<tr>
<td>You consider yourself env. educated</td>
<td></td>
</tr>
<tr>
<td>SA</td>
<td>3</td>
</tr>
<tr>
<td>A</td>
<td>2</td>
</tr>
<tr>
<td>I</td>
<td>2</td>
</tr>
<tr>
<td>D</td>
<td>1.5</td>
</tr>
<tr>
<td>SD</td>
<td>0</td>
</tr>
</tbody>
</table>

Results of table 4.25 show that seventy one percent of highly environmentally educated respondents disagree (25% D + 46% SD) that green products are not of good quality indicating that they think of it as good. On the other hand 40% of highly environmentally uneducated respondents consider green products to be of good quality. They disagree (20% D + 20% SD) that green products are of bad quality. What was remarkable was that 50% of those who consider themselves environmentally uneducated had no opinion. The following arguments and the crosstabulations will try to discover the reason behind these results.

To see the relation between quality and the purchasing considerations of respondents, the following crosstabulation was made.
Table 4.26
Crosstabulation percentages Q19 X Q11

<table>
<thead>
<tr>
<th>\ Q11</th>
<th>Products with env feature are not of good quality</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SA</td>
</tr>
<tr>
<td>Q19</td>
<td></td>
</tr>
<tr>
<td>Your env concern affect the product you select to buy</td>
<td>14.5</td>
</tr>
<tr>
<td>SA</td>
<td>0</td>
</tr>
<tr>
<td>A</td>
<td>0</td>
</tr>
<tr>
<td>I</td>
<td>2</td>
</tr>
<tr>
<td>D</td>
<td>3</td>
</tr>
<tr>
<td>SD</td>
<td>0</td>
</tr>
</tbody>
</table>

A very high percentage (78.5%) of those who find in themselves a strong environmental concern in their purchasing decision disagree (33% D + 45.5% SD) that green products are of bad quality.

To test the credibility of respondents as for their judgment on green products, it would be essential to discover whether respondents really know what is a green product. The following table was done for this purpose. It tries to discover whether those whose environmental concern affect the product they select to buy understand what a green product really is.
Table 4.27
Crosstabulation percentages Q19 X Q16

<table>
<thead>
<tr>
<th>\ Q16</th>
<th>Small size package is environmental friendly</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SA</td>
</tr>
<tr>
<td>Your env concern affect the product you select to buy</td>
<td></td>
</tr>
<tr>
<td>SA</td>
<td>100</td>
</tr>
<tr>
<td>A</td>
<td>4</td>
</tr>
<tr>
<td>I</td>
<td>7</td>
</tr>
<tr>
<td>D</td>
<td>3</td>
</tr>
<tr>
<td>SD</td>
<td>12.5</td>
</tr>
</tbody>
</table>

Results appear to be in favor of green products. Forty percent of those who said that their environmental concern affect the product they select to buy agree that small packaging is environmentally friendly and other 40% disagree. Twenty percent had no opinion. This indicates that their judgment on green product quality was not based on full knowledge, it was just a point view and nothing else. The following table tries as well to discover whether respondents really know what is a green product.

Table 4.28
Crosstabulation percentages Q11 X Q16

<table>
<thead>
<tr>
<th>\ Q16</th>
<th>Small size package is environmentally friendly</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SA</td>
</tr>
<tr>
<td>Products with env feature are not of good quality</td>
<td></td>
</tr>
<tr>
<td>SA</td>
<td>22</td>
</tr>
<tr>
<td>A</td>
<td>7</td>
</tr>
<tr>
<td>I</td>
<td>1</td>
</tr>
<tr>
<td>D</td>
<td>6</td>
</tr>
<tr>
<td>SD</td>
<td>12.5</td>
</tr>
</tbody>
</table>
Statistics show that only 44% of those who strongly supported the idea of a bad green quality product understand what is a green product by realizing that its package is not small. Twenty two percent of them had no opinion. Similarly only 38% of those who think of green products to be of good quality understands what is green package, and 28% of them had no opinion. This is nothing but a indicator of confusion and a sign that respondents have no basis to judge on the quality of green products since neither those who judge green products to be of bad quality, nor those who answered in favor of green product quality understand what is green product.

To double check the credibility of respondents as far as green product quality is concerned, the following crosstabulation was considered.

<table>
<thead>
<tr>
<th>\ Q11</th>
<th>Q6</th>
<th>The recycle feature of product is nearly unavailable in the market</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SA</td>
<td>A</td>
</tr>
<tr>
<td>Products with env feature are not of good quality</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SA</td>
<td>11</td>
<td>22</td>
</tr>
<tr>
<td>A</td>
<td>32</td>
<td>39</td>
</tr>
<tr>
<td>I</td>
<td>16</td>
<td>48.5</td>
</tr>
<tr>
<td>D</td>
<td>11</td>
<td>48</td>
</tr>
<tr>
<td>SD</td>
<td>16</td>
<td>46</td>
</tr>
</tbody>
</table>

Results were also confusing. A majority (66%) of those who strongly regard green product to be of bad quality agree (44% A + 22% SA) that the recycle feature of products are nearly unavailable in the market. The question on what respondents are basing their judgment regarding the quality of a green products will be asked here
again. It seems strange since a large number of them admit that green products is nearly unavailable in the market.

Still a third check was conducted. Do customers care and look at product labels and indicative signs? The following crosstabulation explains.

Table 4.30
Crosstabulation percentages Q11 X Q9

<table>
<thead>
<tr>
<th>Q11</th>
<th>Q9</th>
<th>You do care and look at product symbols and indicative signs.</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SA</td>
<td>A</td>
<td>I</td>
</tr>
<tr>
<td>Products with env feature are not of good quality</td>
<td>SA</td>
<td>A</td>
<td>I</td>
</tr>
<tr>
<td>SA</td>
<td>11</td>
<td>11</td>
<td>0</td>
</tr>
<tr>
<td>A</td>
<td>29</td>
<td>58.5</td>
<td>5</td>
</tr>
<tr>
<td>I</td>
<td>27</td>
<td>48.5</td>
<td>14</td>
</tr>
<tr>
<td>D</td>
<td>24</td>
<td>61</td>
<td>8</td>
</tr>
<tr>
<td>SD</td>
<td>35</td>
<td>48</td>
<td>12.5</td>
</tr>
</tbody>
</table>

Seventy seven of the strongly supporters of the idea that green products are of bad quality agree (33% A + 44% SA) that they do care for product symbols and indicative signs. But the question that remains is: do they understand these terms and symbols. The following table gives the answers.
Table 4.31
Crosstabulation percentages Q11 X Q15

<table>
<thead>
<tr>
<th>\ Q15</th>
<th>You find difficulty understanding env. terms and symbols</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SA</td>
</tr>
<tr>
<td>Products with env feature are not of good quality</td>
<td></td>
</tr>
<tr>
<td>SA</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>2</td>
</tr>
<tr>
<td>I</td>
<td>3</td>
</tr>
<tr>
<td>D</td>
<td>1</td>
</tr>
<tr>
<td>SD</td>
<td>5</td>
</tr>
</tbody>
</table>

Results were not completely satisfying. Equal proportions of forty four percent (of the strongly supporters of the idea of bad green quality) agree and disagree regarding the difficulty they face understanding environmental symbols and terms. This shows that people are not completely sure of environmental symbols and terms.

To see whether the people who judge the green product quality to be bad know what to do to save the environment, the following table was provided.

Table 4.32
Crosstabulation percentages Q11 X Q22

<table>
<thead>
<tr>
<th>\ Q22</th>
<th>You may help the environment but you don’t know what to do</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SA</td>
</tr>
<tr>
<td>Products with env feature are not of good quality</td>
<td></td>
</tr>
<tr>
<td>SA</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>10</td>
</tr>
<tr>
<td>I</td>
<td>17</td>
</tr>
<tr>
<td>D</td>
<td>11</td>
</tr>
<tr>
<td>SD</td>
<td>9</td>
</tr>
</tbody>
</table>
Results show that the large percentage (79%) of those who strongly regard a green product quality to be bad don’t know what to do to save the environment (57% A + 22% SA). So this is another proof that their judgment on the quality was not based on strong basis.

So respondents judgment on green product quality to be bad appear to be void. They don’t know what is a green product, they don’t seem to understand environmental symbols and terms, and finally they admit that they may help the environment but don’t know what to do.

4.1.4.2 Green Products’ Price

The belief that green products are of bad quality may appear to be associated with the concept that green products are made from non-virgin raw materials, or that the energy consumed while producing them is highly restricted. So how green products are claimed to be expensive while energy and raw materials (costs) used in production are controlled and inexpensive, and being used in the most efficient way?

This suggestion is correct! In general green products are expensive but they are profitable as well, and “one indirect advantage of pricing green products at a premium has been that it has played into consumers’ assumption that if it is more expensive, it must be better”\textsuperscript{117}

Statistics show that forty one percent of the respondents disagree that green products are expensive, (33% D + 8% SD). Twenty three percent agree (20% A + 3% SA) that they are expensive. A worrying percentage of 36% have no opinion. Like the claims on green product quality were tested earlier, it is necessary to test the claims on price as well.

To see whom of the people—in terms of environmental education—dispose these claims the following table was provided.

\textsuperscript{117}Coddington, Environmental Marketing, p88
Table 4.33
Crosstabulation percentages Q10 X Q20

<table>
<thead>
<tr>
<th>Q10</th>
<th>Products with a recycle feature are expensive</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SA</td>
</tr>
<tr>
<td>You consider yourself env. educated</td>
<td></td>
</tr>
<tr>
<td>SA</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>2</td>
</tr>
<tr>
<td>I</td>
<td>2</td>
</tr>
<tr>
<td>D</td>
<td>5</td>
</tr>
<tr>
<td>SD</td>
<td>10</td>
</tr>
</tbody>
</table>

It appears that 33% of highly environmentally educated people agree (26% A + 7% SA) that green products are expensive. Similarly, 38% of those people disagree (25% D + 13% SA) that green products are expensive. This table shows that people are confused as far as the price of green products are concerned and this may be due to three reasons. First their ignorance of what a green product is (already shown in the quality section), second, customers indifference as far as green products are concerned (shown in question 12 - do nothing if all don’t care), and finally the unavailability of green products in the market (to be discussed later). This confusion is emphasized as well by the high percentage of people having no opinion which is 29.5%.

To double check, question 22 (that reflects environmental education) was crosstabulated with question 20 that asks about the price of green product. The following table resulted.
Table 4.34
Crosstabulation percentages Q19 X Q20

<table>
<thead>
<tr>
<th>\ Q20</th>
<th>Products with a recycle feature are expensive</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SA</td>
</tr>
<tr>
<td>You may help the env. but you don’t know what to do</td>
<td></td>
</tr>
<tr>
<td>SA</td>
<td>1</td>
</tr>
<tr>
<td>A</td>
<td>5</td>
</tr>
<tr>
<td>I</td>
<td>2</td>
</tr>
<tr>
<td>D</td>
<td>5</td>
</tr>
</tbody>
</table>

The results were nearly the same as the preceding table. Thirty five percent of those who strongly agree that they are highly environmentally educated (know what should be done environmentally) disagree (29% D + 6% SD) that green products are expensive. Similarly, 47% of those who are highly environmentally educated agree (37% A + 10% SA) that green products are expensive. Eighteen percent had no opinion. This again reflects the conflicted view that respondents show regarding green products’ price and brings another support for the three reasons given for this.

To discover whom of those whose purchasing consideration is affected by the environment consider green products to be expensive or inexpensive, the following crosstabulation was made.
Table 4.35
Crosstabulation percentages Q19 X Q20

<table>
<thead>
<tr>
<th>Q19</th>
<th>Products with a recycle feature are expensive</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SA</td>
</tr>
<tr>
<td>Your env. concern affect the product you select to buy</td>
<td>7</td>
</tr>
<tr>
<td>SA</td>
<td>2</td>
</tr>
<tr>
<td>A</td>
<td>1</td>
</tr>
<tr>
<td>I</td>
<td>5</td>
</tr>
<tr>
<td>D</td>
<td>12.5</td>
</tr>
</tbody>
</table>

Table 4.34 shows very important indications. A very high percentage of those whose purchasing decision is highly affected by the environment don’t know anything as far as the price is concerned. Other similar and small percentage were recorded in both sides of expensive and inexpensive indicating for the third time signs of confusion.

The following table tries to discover how the judgment on price is affected by the factor of looking on product symbols and indicative signs.

Table 4.36
Crosstabulation percentages Q9 X Q20

<table>
<thead>
<tr>
<th>Q9</th>
<th>Products with a recycle feature are expensive</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SA</td>
</tr>
<tr>
<td>You do care and look at product labels and indicative signs</td>
<td>5</td>
</tr>
<tr>
<td>SA</td>
<td>2</td>
</tr>
<tr>
<td>A</td>
<td>4</td>
</tr>
<tr>
<td>I</td>
<td>0</td>
</tr>
<tr>
<td>D</td>
<td>14</td>
</tr>
</tbody>
</table>

SD
Forty four percent of people who declare that they strongly care for symbols and indicative signs disagree (34% D + 10% SD) that green products are expensive. Thirty two percent have no opinion! The results here were somehow in favor in the green product price, however they show additional signals of the confused view of people’s opinion. It appears that even those who care for product labels and symbols were not able to strictly judge on the price. In addition they show a high percentage of ‘don’t know’ answer. Again the three reasons namely ignorance, indifference and product unavailability applies here as well.

To test whom of the respondents understand those symbols and signs, the following table was made.

Table 4.37
Crosstabulation percentages Q9 X Q20

<table>
<thead>
<tr>
<th>Q20</th>
<th>Products with a recycle feature are expensive</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SA</td>
</tr>
<tr>
<td>Q15</td>
<td></td>
</tr>
<tr>
<td>You find difficulty understanding env. terms and symbols</td>
<td></td>
</tr>
<tr>
<td>SA</td>
<td>9</td>
</tr>
<tr>
<td>A</td>
<td>2</td>
</tr>
<tr>
<td>I</td>
<td>3</td>
</tr>
<tr>
<td>D</td>
<td>4</td>
</tr>
<tr>
<td>SD</td>
<td>0</td>
</tr>
</tbody>
</table>

Forty percent of those highly knowledgeable with symbols and terms disagree (19% D +21% SD) that green products are expensive. However a high percent of them (31%) had no opinion on the price. Similarly, forty five percent of those who find very high difficulty understanding environmental symbols and terms disagree (27% D + 18% SD) that green products are expensive. Although these results were somehow in favor of
inexpensive green product price, they were not encouraging, and brings again the sign of confusion.

To test for availability of green products, in the market, the following crosstabulation was provided.

Table 4.38
Crosstabulation percentages Q20 X Q6

<table>
<thead>
<tr>
<th>\ Q6</th>
<th>The recycle feature of product is nearly unavailable in the market</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Products with a recycle feature are expensive</td>
</tr>
<tr>
<td></td>
<td>SA</td>
</tr>
<tr>
<td>Q20</td>
<td></td>
</tr>
<tr>
<td>SA</td>
<td>15.00</td>
</tr>
<tr>
<td>A</td>
<td>47.00</td>
</tr>
<tr>
<td>I</td>
<td>15.00</td>
</tr>
<tr>
<td>D</td>
<td>14.00</td>
</tr>
<tr>
<td>SD</td>
<td>12.00</td>
</tr>
</tbody>
</table>

Astonishing findings | Sixty one percent of those who strongly agree that green products are expensive admit that green product (products with recycle feature) are nearly unavailable in the market. This result comes to prove the validity of the third reason given as an interpretation for these results: the unavailability of green products in the market.

To double check, the last question provides the respondents with 2 “recycle” symbols, and asks them whether they see these at nearly all products or not. The following table provides a crosstabulation between this question and the price feature of green products.
Table 4.39
Crosstabulation percentages Q23 X Q20

<table>
<thead>
<tr>
<th>\ Q23</th>
<th>You find (recycle symbols) at nearly all products</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SA</td>
</tr>
<tr>
<td>Products with a recycle feature are expensive</td>
<td></td>
</tr>
<tr>
<td>SA</td>
<td>8</td>
</tr>
<tr>
<td>A</td>
<td>7</td>
</tr>
<tr>
<td>I</td>
<td>4</td>
</tr>
<tr>
<td>D</td>
<td>1</td>
</tr>
<tr>
<td>SD</td>
<td>0</td>
</tr>
</tbody>
</table>

The table shows that 62% of those who strongly agree that green products are expensive, disagree (31% D + 31% SD) that the “recycle” feature symbol is available at nearly all products. This means that respondents are basing their judgment on the very small amount of products in the market, or on products that are nearly unavailable in the market.

4.1.4.3 Comprehension

As indicated previously, respondents were asked whether they find difficulty understanding environmental symbols and terms. Sixty percent of respondents disagree (50% D + 10% SD) - they understand environmental symbols and terms. Twenty two percent on the other hand find difficulty understanding environmental symbols and terms. Eighteen percent have no opinion. These results indicate that on the claim Level, respondents appear to have no problem understanding environmental symbols and terms.

The following table presents the relation between environmental education and environmental comprehension.
Table 4.40
Crosstabulation percentages Q10 X Q15

<table>
<thead>
<tr>
<th>Q10</th>
<th>Q15</th>
<th>You find difficulty understanding environmental symbols and terms</th>
</tr>
</thead>
<tbody>
<tr>
<td>You consider yourself environmentally educated</td>
<td>SA</td>
<td>A</td>
</tr>
<tr>
<td>SA</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>A</td>
<td>2</td>
<td>12</td>
</tr>
<tr>
<td>I</td>
<td>0</td>
<td>35</td>
</tr>
<tr>
<td>D</td>
<td>8</td>
<td>43</td>
</tr>
<tr>
<td>SD</td>
<td>0</td>
<td>30</td>
</tr>
</tbody>
</table>

Table 4.40 shows that a large sum of 80.5% of those who are highly environmentally educated do not find difficulty understanding environmental symbols and terms (51% D + 29.5% SD). The following table is supposed to give similar results.

Table 4.41
Crosstabulation percentages Q22 X Q15

<table>
<thead>
<tr>
<th>Q22</th>
<th>Q15</th>
<th>You find difficulty understanding environmental symbols and terms</th>
</tr>
</thead>
<tbody>
<tr>
<td>You may help the env. but you don’t know what to do</td>
<td>SA</td>
<td>A</td>
</tr>
<tr>
<td>SA</td>
<td>8</td>
<td>25.5</td>
</tr>
<tr>
<td>A</td>
<td>2</td>
<td>25.5</td>
</tr>
<tr>
<td>I</td>
<td>5</td>
<td>15</td>
</tr>
<tr>
<td>D</td>
<td>1</td>
<td>9.5</td>
</tr>
<tr>
<td>SD</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
Results came here consistent with those of the preceding table. Eighty percent of highly environmentally knowledgeable people (those who strongly know what should be done to save the environment) disagree (35% D + 43% SD) that they find any difficulty understanding environmental symbols and terms.

As indicated previously question 22 supplied respondents with the recycle symbols and asks respondents whether they see these signs at products or not. Results shows that fifty nine percent say that they do not find the "recycle" symbols at nearly all products.

To check for green products availability, the following crosstabulation between question 9 and question 23 was made.

<table>
<thead>
<tr>
<th>\ Q23</th>
<th>Products with (recycle symbols) is found at nearly all products.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SA</td>
</tr>
<tr>
<td>Q9</td>
<td></td>
</tr>
<tr>
<td>You do care and look at product labels and indicative signs</td>
<td>0</td>
</tr>
<tr>
<td>SA</td>
<td>0</td>
</tr>
<tr>
<td>A</td>
<td>0</td>
</tr>
<tr>
<td>I</td>
<td>0</td>
</tr>
<tr>
<td>D</td>
<td>0</td>
</tr>
<tr>
<td>SD</td>
<td>0</td>
</tr>
</tbody>
</table>

Sixty percent of those who strongly care and look at product labels and indicative signs disagree (14 D + 46% SD) that “recycle symbols” are available at nearly all products. And this is true, since -based on a field study for a number of products in the market (15 different items) - that none of these products of Lebanese origin are found to have any “recycle” feature sign.
When asked about the effect of some products on the ozone layer of the atmosphere, 91% of respondents agree (50% A + 41% SA) that there are some products that hurt the ozone layer of the atmosphere. Of course, the direct or indirect (somehow) daily coverage of this topic on various kinds of media is responsible for creating this awareness in the minds of people.

4.1.4.4 Package

As for the packaging, thirty four percent of respondents agree (27% A + 7% SA) that small size package is an environmental choice. On the other hand 37% of them disagree (25% D + 12% SD). As mentioned earlier the correct answer for this question is no. It is the large size package that is environmentally friendly, since it is a family size, stays a lot, and it can be reused. It appears here that respondents did not succeed the test.

The crosstabulation between environmental education and the size of the package as shown in table 4.42 showed that 36% of the highly environmentally educated agree (16% A + 20% SA) and other 36% disagree (16% D + 20% SD) that small size package is environmentally friendly. Twenty eight had no opinion. So this shows that all respondents (environmentally educated and non-educated) are ignorant of this topic.

<table>
<thead>
<tr>
<th>\</th>
<th>Q16</th>
<th>Small size package is environmentally friendly</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q10</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SA</td>
<td>A</td>
</tr>
<tr>
<td>SA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SD</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4.43
Crosstabulation percentages Q10 X Q16
The crosstabulation with the other education signal question (question 22) shows the following results

<table>
<thead>
<tr>
<th>\ Q22 \ Q16</th>
<th>Small size package is environmentally friendly</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SA</td>
</tr>
<tr>
<td>You may help the env. but you don't know what to do</td>
<td></td>
</tr>
<tr>
<td>SA</td>
<td>10</td>
</tr>
<tr>
<td>A</td>
<td>7.5</td>
</tr>
<tr>
<td>I</td>
<td>2.5</td>
</tr>
<tr>
<td>D</td>
<td>6</td>
</tr>
<tr>
<td>SD</td>
<td></td>
</tr>
</tbody>
</table>

Results here were consistent with those previously presented. Thirty eight percent of highly environmentally educated respondents disagree (5% D + 33% SD) on a small package size. Similarly 28% of highly environmentally educated agree (14% A + 14% SA) on the size. Thirty three of them had no opinion.

It is a true fact that this question is hard, and the results obtained show that respondents did not succeed hard questions. Thus their claim of being environmentally educated is nothing but a tendency to show a good image of their personality.

4.1.4.5 Convenience

The questionnaire tries to discover (as indicated earlier) whether environmental concern affect the products respondents select to buy. Sixty two percent were positive,
(49% A + 13% SA): the environment affects their purchasing decision. Sixteen percent refused this idea, and 22% expressed no opinion.

To test the relation between environmental education and purchasing considerations the following table was made.

**Table 4.45**

Crosstabulation percentages Q10 X Q19

<table>
<thead>
<tr>
<th>\ Q19</th>
<th>Your env. concern affect the product you select to buy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SA</td>
</tr>
<tr>
<td>You consider yourself environmentally educated</td>
<td>SA</td>
</tr>
<tr>
<td>SA</td>
<td>11</td>
</tr>
<tr>
<td>A</td>
<td>2</td>
</tr>
<tr>
<td>I</td>
<td>12</td>
</tr>
<tr>
<td>D</td>
<td>18</td>
</tr>
</tbody>
</table>

Statistics show that 80% of the strongly environmentally educated agree (49% A + 31% SA) that their environmental concern affect the product they select to buy. Forty percent of those highly environmentally uneducated disagree (20% D + 20% SD) on any effect of the environment of the selection criteria.

But there is nothing to be proud of. As shown previously, neither the environmentally educated, nor the environmentally uneducated understand one of the most important features of a green products which is large size package. This indicates that respondents' green purchasing is false made.
The following table shows consistent results: 72% of those who know what should be done to save the environment agree (43% A + 29% SA) that their environmental concern affect the product they select to buy.

<table>
<thead>
<tr>
<th>\ Q19</th>
<th>Your env. concern affect the product you select to buy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SA</td>
</tr>
<tr>
<td>You may help the env. but you don't know what to do</td>
<td></td>
</tr>
<tr>
<td>SA</td>
<td>14</td>
</tr>
<tr>
<td>A</td>
<td>10</td>
</tr>
<tr>
<td>I</td>
<td>10</td>
</tr>
<tr>
<td>D</td>
<td>16</td>
</tr>
<tr>
<td>SD</td>
<td></td>
</tr>
</tbody>
</table>

To study the effect of personal pleasure on the purchasing consideration, the following crosstabulation was made.

<table>
<thead>
<tr>
<th>\ Q19</th>
<th>Your env concern is not at the expense of your pleasure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SA</td>
</tr>
<tr>
<td>Your environmental concern affect the product you select to buy</td>
<td></td>
</tr>
<tr>
<td>SA</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>7</td>
</tr>
<tr>
<td>I</td>
<td>4</td>
</tr>
<tr>
<td>D</td>
<td>5</td>
</tr>
<tr>
<td>SD</td>
<td>12.5</td>
</tr>
</tbody>
</table>
Table 4.47 shows that 51% of those whose environmental concern affect the product they select to buy agree (20% A + 31% SA) that their environmental concern is not at the expense of their pleasure. This shows that those whose environmental concern affect their purchasing decision will ask for, consume, and dispose of products at the most convenient way that is supposed not to cause any personal efforts. For example, buying multi-colored, multi-packaged products and in any size available.

4.1.5 Descriptive Statistics

The conducting of regression analysis to the variables of the questionnaire did not present indicative relations as far as dependent-independent relation is concerned. This fact was found to be true by the appearance of very small R square in any analysis that was conducted.

Based on this, another arrangement was designed in an attempt to specify indicative signs as far as the three groups of questions in the questionnaire are concerned namely, 1) general attitudes towards the environment, 2) who is to be blamed, and 3) green marketing related concepts.

4.1.5.1 General Attitudes Towards the Environment

The following table contains the first group (8 questions which are supposed to be answered by strongly agree, agree, irrelevant, disagree, and strongly disagree) and the associated percentage of results obtained.

Upon selecting from among the variables to reflect one nature of responses (the underlined percentages), we can discover an average percentage of 54% (433 - the total number of percentages - divided by 8 -the number of questions-) which tells that the general attitude towards the environment is not that remarkable. The average indifference percentage is 11.5%.
It must be noticed here that the high percentages are accumulated from answers we need to stop at for a moment. Among these are question 1 that tests for environmental satisfaction (a no supposed-to-be response), question 5 that relates quality of life with good environment, and finally a doubtful question 10 which shows 71% of environmentally educated people of whom 54% don’t know what to do to save the environment!!

If we cancel these three answers (1, 5, and 10) we will end up with 51%. This figure shows that people in Lebanon do not have an environmental attitude to be proud of.

Table 4.48
General Attitudes Towards the Environment

<table>
<thead>
<tr>
<th>No</th>
<th>Q No</th>
<th>Question</th>
<th>A</th>
<th>I</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>You are satisfied with nature and green environment in Leb.</td>
<td>14</td>
<td>7</td>
<td>78</td>
</tr>
<tr>
<td>2</td>
<td>4</td>
<td>The best way to get rid of wastes is to bury them</td>
<td>15</td>
<td>11</td>
<td>73</td>
</tr>
<tr>
<td>3</td>
<td>5</td>
<td>Good environment means a better quality of life</td>
<td>93</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>10</td>
<td>You consider yourself environmentally educated</td>
<td>71</td>
<td>11</td>
<td>17</td>
</tr>
<tr>
<td>5</td>
<td>12</td>
<td>You can do nothing for the environment if all people do not care</td>
<td>38</td>
<td>8</td>
<td>54</td>
</tr>
<tr>
<td>6</td>
<td>18</td>
<td>At least one of your family is affected by bad env. conditions</td>
<td>61</td>
<td>18</td>
<td>21</td>
</tr>
<tr>
<td>7</td>
<td>21</td>
<td>Your environmental concern is not at the expense of your pleasure</td>
<td>39</td>
<td>23</td>
<td>38</td>
</tr>
<tr>
<td>8</td>
<td>22</td>
<td>You may help the environment but you don’t know what to do</td>
<td>61</td>
<td>9</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total</td>
<td>392</td>
<td>92</td>
<td>311</td>
</tr>
</tbody>
</table>

4.1.5.2 Who is to be Blamed

The following table contains the second group of questions, Who is to be Blamed:
Table 4.49
Who is to be Blamed

<table>
<thead>
<tr>
<th>No</th>
<th>Q No</th>
<th>Question</th>
<th>A</th>
<th>I</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>Product manufacturers hold resp. in making Lebanon dirty</td>
<td>73</td>
<td>10</td>
<td>16</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
<td>Only government is resp. for creating environmental awareness</td>
<td>18</td>
<td>7</td>
<td><strong>75</strong></td>
</tr>
<tr>
<td>3</td>
<td>7</td>
<td>You trust companies as for the claims of their product features</td>
<td>25</td>
<td>27</td>
<td>47</td>
</tr>
<tr>
<td>4</td>
<td>8</td>
<td>Companies in Lebanon have good environmental image</td>
<td>12</td>
<td>19</td>
<td>66</td>
</tr>
<tr>
<td>5</td>
<td>13</td>
<td>Low income people should be blamed for env degradation</td>
<td>10</td>
<td>15</td>
<td>73</td>
</tr>
<tr>
<td>6</td>
<td>14</td>
<td>People lack environmental education</td>
<td>86</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Total</strong></td>
<td><strong>224</strong></td>
<td><strong>84</strong></td>
<td><strong>283</strong></td>
</tr>
</tbody>
</table>

Adding the underlined percentages to reflect one direction of responses, we discover that respondents were wise in judging their blame: 1) product manufacturers, 2) the whole population. Calculating an average percentage, we arrive at a total of 70% reflecting the answers of blame.

4.1.5.3 Green Marketing Related Concepts.

Calculating the average percentage of a number of questions in this category going in the same direction (the underlined) it was found to be 62%. This is acceptable but not much convincing to say that the respondents (customers) are environmentally friendly.

What’s remarkable here is that the indifference average percentage is the highest among the three groups- 19 %- indicating that green topics as far as the product, package, purchasing decision, and the like, is not a challenging topic to the Lebanese. The following table gives the results.
<table>
<thead>
<tr>
<th>No</th>
<th>Q</th>
<th>Question</th>
<th>A</th>
<th>I</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>6</td>
<td>The recycle feature of product is nearly unavailable in the market</td>
<td>63</td>
<td>17</td>
<td>21</td>
</tr>
<tr>
<td>2</td>
<td>9</td>
<td>You do care and look at product labels and indicative signs</td>
<td>83</td>
<td>10</td>
<td>8</td>
</tr>
<tr>
<td>3</td>
<td>11</td>
<td>Products of environmental features are not of good quality</td>
<td>12</td>
<td>23</td>
<td>65</td>
</tr>
<tr>
<td>4</td>
<td>15</td>
<td>You find difficulty understanding environmental terms and symbols</td>
<td>22</td>
<td>18</td>
<td>61</td>
</tr>
<tr>
<td>5</td>
<td>16</td>
<td>Small size package is env friendly since it leaves less wastes</td>
<td>34</td>
<td>29</td>
<td>37</td>
</tr>
<tr>
<td>6</td>
<td>17</td>
<td>There are some products that hurt the ozone layer of the atm.</td>
<td>91</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>7</td>
<td>19</td>
<td>Your environmental concern affect the product you select to buy</td>
<td>62</td>
<td>22</td>
<td>16</td>
</tr>
<tr>
<td>8</td>
<td>20</td>
<td>Products with a recycle feature are expensive</td>
<td>23</td>
<td>36</td>
<td>41</td>
</tr>
<tr>
<td>9</td>
<td>23</td>
<td>You see (recycle symbols) at nearly all products</td>
<td>25</td>
<td>15</td>
<td>59</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Total</strong></td>
<td><strong>415</strong></td>
<td><strong>174</strong></td>
<td><strong>312</strong></td>
</tr>
</tbody>
</table>

When respondents were asked what do they think they should do to save the environment in the open ended question, answers vary from concerned people who think they must buy large size products, to normally concerned who think they must not throw garbage anywhere, to a large number of non-concerned who admit: they don’t know. Similarly, the second open ended question - what do you think companies should do to save the environment- receives three points of view, concerned e.g., produce products with “recycle” feature, moderately concerned, e.g. do not litter, and finally indifferent answers, -don’t know.

4.6 Specialized Questionnaire

4.6.1 Demographic Variables

As mentioned earlier, the target population of this questionnaire was food product industry. All the marketing managers who responded the questionnaire were males.
Forty percent of them were between the age 21 and 30 and 60% were of the age range 41-55. Thirty percent of respondents have bachelor's degree, 60% have graduate degree, and 10% have other things. Forty percent of them are marketing managers of relatively very small marketing department having under their direction 1-10 employees. Twenty percent are managers of medium marketing department having under their direction 31-50 employees. Thirty percent are managers of large marketing departments managing between 51-100 employees. Finally, 10% are managers of very large marketing department managing higher numbers of employees e.g., 200+.

<table>
<thead>
<tr>
<th>Age</th>
<th>21-30: 40</th>
<th>41-55: 60</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Males: 100</td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>Bachelor's degree: 30</td>
<td>Graduate degree: 60</td>
</tr>
<tr>
<td>Mk Dpt Emp</td>
<td>1-10 employees: 40</td>
<td>31-50 employees: 20</td>
</tr>
<tr>
<td>200+ employees: 10</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4.6.2 Market Description

The first question asks the respondent to describe himself and his market. This question is divided into five parts. The first part asks about the company’s capital.

Twenty percent of the respondents answered that their company has a capital between $1000-50,000. Thirty percent said that the capital of their company is between $51,000-250,000. Twenty percent of them mentioned a capital between $251,000-1000,000. Finally, 30% replied having a capital above million dollar.
The second part of the same question aimed to inquire about the competition those food companies face. A vast majority of respondents express the high competition they face. Hundred percent of respondents said that they face strong competition, the claim that comes to be consistent with the number of food products available in the market to be made in Lebanon.

The third part of the question tries to assess the availability of market information. Sixty percent of respondents said that market information available is not enough. Thirty percent said it is enough, and only 10% said that it is very available. The answers of this question came consistent with the preceding one that indicates a strong competition in the market. This indicates two assumptions, first lack of consumer researches, and second the variety of Lebanese consumers’ tastes.

As for the number of companies available in the market, 60% of the respondents said that companies operating in the same business are too many. Thirty percent said the number is an average one, while only 10% said that it is a small number. The results here come to be consistent with the other question that showed strong competition in the market.

The last part of this question asks about the status of these companies, in other words, how the respondents view their competitors. Sixty percent of respondents said that their competitors are professional. Forty percent of them describe the competitors as normal. Again the high percentage of “professional” answer, with the large number of companies operating in the market, appear to be consistent with the answer that indicates a strong competition.

The following table summarizes the results.
Table 4.52
Market Description (%)

<table>
<thead>
<tr>
<th>Capital</th>
<th>$1000-50,000: 20</th>
<th>$51,000-250,000: 30</th>
<th>$251,000-1000,000: 20</th>
<th>&gt; million: 30</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competition</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Companies</td>
<td>Too many: 60</td>
<td>Average: 30</td>
<td>Small number 10</td>
<td></td>
</tr>
<tr>
<td>Companies Status</td>
<td>Professional: 60</td>
<td>Normal: 40</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Market Information</td>
<td>Not enough: 60</td>
<td>Enough: 30%</td>
<td>Very much: 10</td>
<td></td>
</tr>
</tbody>
</table>

When asking the respondents to rank their competitive advantages, the following results (%) were obtained.

Table 4.53
Competitive Advantage (%)

<table>
<thead>
<tr>
<th>Customer service</th>
<th>Environmental concern</th>
<th>Low prices</th>
<th>Strong promotion</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st: 40</td>
<td>3rd: 25</td>
<td>1st: 30</td>
<td>1st: 25</td>
</tr>
<tr>
<td>2nd: 40</td>
<td>4th: 62</td>
<td>2nd: 30</td>
<td>2nd: 25</td>
</tr>
<tr>
<td>4th: 10</td>
<td>NA: 12</td>
<td>3rd: 30</td>
<td>3rd: 25</td>
</tr>
<tr>
<td>Not applicable: 10</td>
<td></td>
<td>4th: 10</td>
<td>4th: 12.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NA: 10</td>
<td>NA: 12.5</td>
</tr>
</tbody>
</table>

Table 4.53 shows the carelessness that respondents have towards environmental concern. We can say that environmental concern is not of the competitive advantage that respondents consider. Instead, customer service, low prices, and strong promotion have prevailed. These results prove that business organizations (as it will be shown later) are not environmentally dedicated.
4.6.3 Attitudes Towards the Environment

4.6.3.1 Opinions on Corporate Environmental Responsibility

When asking what respondents think towards the present situation of environmental concern in business, seventy percent of respondents answered that this concern exists, but can be better. Only 20% feel that this concern does not exist yet. Ten percent don’t know. No body said it is good. This is a claim, and later the invalidity of this claim, will be proved.

Again, question seven tries to determine in another way whether business is involved in environmental preservation or not by putting five reasons for business uninvolvment, one option that refuses the issue at all - no business is involved- , and a last -don’t know- answer. Results show that all reasons for business environmental uninvolvment are applicable: ten percent said it is lack of awareness of how to do it, 20% said it is lack of awareness of the size of the problem, 10% said it is due to financial burdens, 20% said it is carelessness, and ten percent don’t know. However 30% refuse the issue : -no business is involved in environmental preservation. Thus it appears from this beginning that business are environmentally concerned only on the claim level since according to the respondents all the reasons for business uninvolvment can be applied in Lebanon.

<table>
<thead>
<tr>
<th>Reason</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of awareness of how to do it</td>
<td>10</td>
</tr>
<tr>
<td>Lack of awareness of the size of the problem</td>
<td>20</td>
</tr>
<tr>
<td>Financial burdens</td>
<td>10</td>
</tr>
<tr>
<td>Carelessness</td>
<td>20</td>
</tr>
<tr>
<td>Don’t know.</td>
<td>10</td>
</tr>
<tr>
<td>No business is involved</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>100</td>
</tr>
</tbody>
</table>
Another question was designed on five point likert scale (to be answered by strongly agree, agree, irrelevant, disagree, or strongly disagree) tries to discover what respondents prefer to invest in: production and marketing or resource conservation. Sixty percent of respondents agree (40% A + 20% SA) that investing in marketing and production is more profitable than in resource conservation. Twenty percent disagree of which ten percent strongly disagree on this issue. Twenty percent had no opinion. Thus respondents appear here to be ignoring a large sum of opportunity profit resulting from investing in efficiency and resource conservation. In other words, they do not realize what green investment mean.

Upon asking whether environmental response of companies may extend to life cycle analysis of activities or not, fifty percent agree of which 10% strongly agree. Ten percent disagree. Forty percent had no opinion. It appears that this concept is hard to be responded by the managers (though this is the easiest thing that can be done to preserve the environment). This indicates that respondents are confused, or ignore, or do not understand one of the most important green concepts.

To have a general idea on environmental attitude the following table includes the average percentage of this group of responses arranged to reflect one direction of responses.
Table 4.55
Average percentages / general attitude towards the Environment (%)

<table>
<thead>
<tr>
<th>Environmental concern in business does not exist yet</th>
<th>20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reason for business uninvolved:</td>
<td></td>
</tr>
<tr>
<td>Lack of awareness of how to do it</td>
<td>10</td>
</tr>
<tr>
<td>Lack of awareness of the size of the problem</td>
<td>20</td>
</tr>
<tr>
<td>Financial burdens</td>
<td>10</td>
</tr>
<tr>
<td>Carelessness</td>
<td>20</td>
</tr>
<tr>
<td>Don't know</td>
<td>10</td>
</tr>
<tr>
<td>Investing in resource conservation than in marketing and production is more profitable</td>
<td>20</td>
</tr>
<tr>
<td>Environmental response of companies may extend to life cycle analysis of activities</td>
<td>50</td>
</tr>
<tr>
<td>Total</td>
<td>160</td>
</tr>
<tr>
<td>Average</td>
<td>20%</td>
</tr>
</tbody>
</table>

Results appear to be very low indicating the very bad attitude that companies in Lebanon have towards environmental concern. And this seems logic, and consistent with the very high percentage that the public have shown in the public questionnaire that companies in Lebanon do not have good environmental image. Unfortunately, almost none of the companies appear to have a positive environmental attitude, and they even don’t declare, or show this concern to the public.

4.6.4 Going Green in Lebanon?

4.6.4.1 Green Management

The relation between economic growth and environmental quality was assessed. Twenty percent of respondents don’t know what is the relation between economic
growth and environmental quality. Other twenty percent said that economic growth leads to environmental degradation. Sixty percent said that we can have both economic growth and environmental quality and they meet together for the sake of society. In fact it is early to judge here that respondents understand the concept of green economy, though results appear to indicate positive answers there still other tests that should be done.

Studying again the relation between economy and ecology, sixty percent of the respondents agree (30% A + 30% SA) that no business enterprise can be economically sound unless environmentally sound. A worrying thirty percent disagree on this issue. Ten percent had no opinion. It is good to find again respondents agreeing on the soundness of green economy, however this remain to be at the claim level. No prove for credibility has been presented yet.

Another question tries to discover whether respondents understand the relation between environment and management. Forty percent said that if they meet together, the result is environmental management, and efficiency in work. Ten percent said that the result is a deviation from business work. Other ten percent said that the result is nothing but a beautiful, healthy and attractive work place. Surprisingly, forty percent don't know the relation. It is indicated here that confusion or -don't know- percentages is starting to get much more worrying. In fact environmental management is not in a good situation when 40% of managers answered that they don't know (and they really don't know - as it will be presented later ) what is environmental management.

The relation between the environment and management was addressed in another question, using a likert scale form. Sixty percent of respondents agree (40% A + 20 % SA) that environmentally sound operational practices will produce a better managed company and that competitive position of the company will be enhanced. Twenty percent disagree among which 10% strongly disagree. Twenty percent had no opinion.

It appears on the claim level once more that companies are convinced with the ability of environmentally sound operational practices to bring a better managed company and
enhance the competitive position of the company. By crosstabulating the question—environmentally sound operational practices will produce a better managed company and may enhance the competitive position of the company—with the question—investing in marketing and production is more profitable than investing in resource conservation—the following table was resulted.

Table 4.56

| An environmentally sound operational practices will produce a better managed company and may enhance the competitive position of the company | Investing in marketing and production is more profitable than investing in resource preservation |
|---|---|---|---|---|---|---|
| SA | 50 | 0 | 0 | 0 | 50 | 100 |
| A | 0 | 75 | 0 | 25 | 0 | 100 |
| I | 0 | 0 | 100 | 0 | 0 | 100 |
| D | 1 | 100 | 0 | 0 | 0 | 100 |
| SD | 0 | 0 | 0 | 0 | 0 | 100 |

Table 4.56 shows that all the respondents who disagree on environmentally sound operational practices agree that investing in marketing and production is more profitable than investing in resource preservation, thus expressing their wrong point of view, and how it can be applied. Those who agree on environmentally sound operations were confused. Fifty percent agree and other disagree on green investment. Again these results come to support the conclusion presented above that respondents ignore what green investment is.

As indicated earlier, respondents were not sure about the idea of life cycle analysis of activities: forty percent had no opinion. By crosstabulating the question of
environmental soundness and the other of life cycle analysis of activities, the following table resulted.

Table 4.57
Environmental soundness X life cycle analysis of activities

| An environmentally sound operational practices will produce a better managed company and may enhance the competitive position of the company | Environmental response of companies may even extend to life cycle analysis of activities |
|---|---|---|---|---|
|                            | SA | A  | I  | SD | Total |
| SA                         | 0  | 0  | 0  | 100|       |
| A                          | 0  | 50 | 50 | 0  | 100  |
| I                          | 0  | 50 | 50 | 0  | 100  |
| D                          | 0  | 100| 0  | 0  | 100  |
| SD                         | 0  | 0  | 100| 0  | 100  |

Fifty percent of those who agree on the power of environmental management agree and other 50% disagree on the life cycle analysis of activities. All those who strongly disagree on environmental soundness had no opinion on life cycle analysis. Confusion appears again. The concept of life cycle analysis appears to be very strange; it has not gained any remarkable positive answers till now.

Similarly by crosstabulating the question -no business enterprise can be economically sound unless environmentally sound- with the other of life cycle analysis of activities, table 4.58 was obtained.
Table 4.58
Economy-environment X life cycle analysis of activities

<table>
<thead>
<tr>
<th>Environmental response of companies may even extend to life cycle analysis of activities</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>No business enterprise can be economically sound unless environmentally sound</td>
<td>SA</td>
</tr>
<tr>
<td>SA</td>
<td>0</td>
</tr>
<tr>
<td>A</td>
<td>0</td>
</tr>
<tr>
<td>I</td>
<td>0</td>
</tr>
<tr>
<td>D</td>
<td>0</td>
</tr>
</tbody>
</table>

As the preceding table, there was a confusion as well. An equal number (33%) of those who agree of economy-environment relation, agree and disagree on life cycle analysis of activities. Again the concept of life cycle analysis appears in another place to be confusing. The following table measures the average percentage.
### Table 4.59

**Business-Environment Relation (%)**

<table>
<thead>
<tr>
<th>Description</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>We can have both economic growth and environmental quality and they meet for the sake of society</td>
<td>60</td>
</tr>
<tr>
<td>No business enterprise can be economically sound unless environmentally sound</td>
<td>60</td>
</tr>
<tr>
<td>Environment and management, if they meet together, the result is environmental management, thus efficiency in work.</td>
<td>40</td>
</tr>
<tr>
<td>Environmentally sound operational practices will produce a better managed company and competitive position of the company will be enhanced</td>
<td>60</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>220</strong></td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td><strong>55%</strong></td>
</tr>
</tbody>
</table>

The table shows a low average percentage indicating that respondents are not aware of the relation between business and environment, and they do not understand that environmental preservation affect positively the performance in the organization.

#### 4.6.4.2 Environmental Management System

To study the employees, the questionnaire asks for the level of training they need to perform their job. Forty percent of respondents correctly realize that training is a never ending process. Twenty percent said that their employees need a lot of training to do their work. Other twenty percent said that their employees need only little training. Other twenty percent of respondents weren’t able to answer this question, they simply
didn’t know. In fact respondents did not succeed; answers were diversified, and only a few realized the never-ending status of training.

A second question tries to discover what the respondents think towards the procedures, practices, and policies in their organizations. There was no strict answer for this question. Forty percent of the respondents were convinced that the best can’t be reached and procedures must be evaluated continuously. Thirty percent of the respondents on the other hand were very affirmative since they describe their procedures as the best because actually their results meets expectation. Another 30% confess that their procedures are among the best, and they need little improvement.

It is a fact that best can’t be reached in any organizational practices. There is always a place to innovate, create, and improve. It seems that Lebanese managers do not realize this fact, if we add the second two answers (procedures are the best, and among the best), we conclude that sixty percent of respondents refuse the concept of continuous improvement, one of most important basis of total quality management, TQM and total quality environmental management, TQEM.

When asked about (TQM) seventy percent of respondents realized that this can’t be achieved since improvement is a continuous process. Twenty percent of respondents said that they are working to reach TQM. However 10% of the respondents appear to be very positive: they are applying TQM.

These three analysis seem to contradict each other. In one of them, respondents said they are applying TQM, and in the others they deny one of the most important basis of TQM (continuous improvement). What does that mean? ! It means nothing but a sign of confusion, and a tendency to agree (on the claim level) with a sound management term such as total quality management without knowing its basis, or its components.

What do respondents think towards integrating environmental concern in their business strategy. Fifty percent show a positive answer: they will do so even if this action does not lead to extra profits; according to them, society comes first. Ten percent said that
they will do so only when profits exceed the costs. Only ten percent accept the idea of integration because according to them, this action leads to the generation of extra profits and societal welfare. Thirty percent have no opinion.

It appears that only 10% of respondents got the correct answer. This action leads to extra profits and societal welfare. The large sum of respondents who believe that they will integrate the environmental concern in their business strategy even if this does not lead to extra profits answer this way in a tendency to introduce themselves as a remarkable business organization that works for people as well; they did not get the correct answer, and they do not understand that this action leads to extra profits generation.

When managers were asked whether they will let their employees be environmentally concerned only forty percent of respondents accepted this idea, and show a tendency to provide training and support to the employees as well. Twenty percent of respondents refuse this issue since employees are paid to work business only. Other 10% refuse the issue as well, however they referred the reason to employees’ inexperienced in this field. Thirty percent of respondents have no opinion. Thus it appears that managers are contradicting one of the most important element of environmental management system, EMS by giving interpretation that has nothing to do with concerned behavior in general and green behavior in specific.

Respondents were asked about performance documentation, (an issue demanded by international standards). Forty percent of respondents agree that companies should document their performance and make it available to the public. Forty percent refuse this idea. Twenty percent had no opinion. This concept appears to be strange for respondents. They had no strict answer regarding it, and there was a sign of confusion indicating that there is no sufficient information on the technicalities, benefit, or use of this concept.

As for company’s externalities respondents were asked whether it should be treated by the company itself or not. Fifty percent of respondents agree (40% A +10% SA) on
this issue. Forty percent disagree (20% D + 20% SD). Ten percent had no opinion. Respondents appear to be careless as far as this issue is concerned, and they are neglecting an important EMS issue represented in the concept of “self audit”, a concept that is found to be ordered by all environmental management codes introduced in chapter 2.

Upon asking respondents to establish environmental management system fifty percent of them agree (40% A + 10% SA) on that. Forty percent of respondents disagree while thirty percent had no opinion. It can be said here that respondents do not understand what is EMS: there was no general agreement to establish EMS.

Upon crosstabulating this question with some components of EMS (environmental strategy, performance documentation, employee involvement) the following tables were obtained.

<table>
<thead>
<tr>
<th>Building EMS</th>
<th>Integrating Environment in business strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Establishing EMS</td>
<td>1</td>
</tr>
<tr>
<td>SA</td>
<td>0</td>
</tr>
<tr>
<td>A</td>
<td>0</td>
</tr>
<tr>
<td>I</td>
<td>33</td>
</tr>
<tr>
<td>D</td>
<td>0</td>
</tr>
</tbody>
</table>

The table shows that all those who strongly agree on EMS were convinced that they will integrate environmental concern in their business strategy and this act according to them does not lead to extra profit, but they will do it because society comes first. This result as indicated earlier show nothing but a tendency of respondents to agree with sound terms (on the claim and not on the act level) that appear to bring nice image of the organization, but they do not understand the real meaning of it.

By crosstabulating EMS with performance documentation, table 4.61 was obtained.
Table 4.61
Crosstabulation percentages
Building EMS X performance documentation

<table>
<thead>
<tr>
<th>Establishing EMS</th>
<th>SA</th>
<th>A</th>
<th>I</th>
<th>D</th>
<th>SD</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>SA</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td>100</td>
</tr>
<tr>
<td>A</td>
<td>0</td>
<td>50</td>
<td>25</td>
<td>25</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>I</td>
<td>33</td>
<td>33</td>
<td>33</td>
<td>0</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>D</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>100</td>
<td>0</td>
<td>100</td>
</tr>
</tbody>
</table>

Results were surprising. All respondents who agree to establish EMS refuse to document their performance and make it available to the public. And all who refuse the idea of EMS refuse documentation issue as well. Results come here to indicate that respondents do not understand what EMS really is. The following is the results of the third crosstabulation.

Table 4.62
Crosstabulation percentages
Building EMS X employee involvement

<table>
<thead>
<tr>
<th>Establishing EMS</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>SA</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>A</td>
<td>0</td>
<td>0</td>
<td>25</td>
<td>75</td>
<td>100</td>
</tr>
<tr>
<td>I</td>
<td>0</td>
<td>33</td>
<td>66</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>D</td>
<td>50</td>
<td>0</td>
<td>50</td>
<td>0</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 4.62 shows that all those who strongly agree to establish EMS refuse to let their employees be involved in any environmental concern since according to them their
employees are paid to work business. Again, nothing but ignorance of EMS is indicated.

The following table shows the average percentage with respect to EMS.

<table>
<thead>
<tr>
<th>Table 4.63</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Management System (%)</td>
<td></td>
</tr>
<tr>
<td>Best can’t be reached and procedures must be</td>
<td>40</td>
</tr>
<tr>
<td>evaluated continuously</td>
<td></td>
</tr>
<tr>
<td>Training is a never ending process.</td>
<td>40</td>
</tr>
<tr>
<td>Integrating environmental concern in business</td>
<td>10</td>
</tr>
<tr>
<td>strategy leads to the generation of extra</td>
<td></td>
</tr>
<tr>
<td>profits and societal welfare.</td>
<td></td>
</tr>
<tr>
<td>TQM can’t be achieved since improvement is a</td>
<td>70</td>
</tr>
<tr>
<td>continuous process.</td>
<td></td>
</tr>
<tr>
<td>Companies should document their performance and</td>
<td>40</td>
</tr>
<tr>
<td>make it available to the public.</td>
<td></td>
</tr>
<tr>
<td>Company’s externalities should be treated by</td>
<td>50</td>
</tr>
<tr>
<td>the company itself</td>
<td></td>
</tr>
<tr>
<td>Companies must establish environmental</td>
<td>50</td>
</tr>
<tr>
<td>management system</td>
<td></td>
</tr>
<tr>
<td>You will let your employees adopt environmental</td>
<td>40</td>
</tr>
<tr>
<td>concern in the work</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>340</td>
</tr>
<tr>
<td>Average</td>
<td>42.5</td>
</tr>
</tbody>
</table>

The average percentage is 42.5% which is not a percentage to be proud of. We can say that respondents lack to a great extent the knowledge of the EMS concept.
4.6.4.3 Green Marketing and other Related Concepts

4.6.4.3.1 Green Marketing Definition

Seventy percent of respondents said about green marketing that it is preserving the environment in every detail, even in management. Thirty percent however don't know what is green marketing. This is however not a proof that respondents understand what is green marketing. Bright things have appeared to come a lot (on the claim level) but no understanding of the real contents of the concepts was indicated.

As mentioned earlier, only forty percent of respondents supported the idea to let their employees be environmentally concerned, and show a tendency to provide training and support to the them as well. Thirty percent of respondents have no opinion. So how can those respondents preserve the environment in every detail, while preventing their employees to act environmentally. This indicates nothing but that they are confused as far as the real meaning of green marketing is concerned.

The following is the table of average percentage.

<table>
<thead>
<tr>
<th>Table 4.64</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Green Marketing Definition(%)</td>
<td></td>
</tr>
<tr>
<td>Green marketing is preserving the</td>
<td>70</td>
</tr>
<tr>
<td>environment in every detail, even in</td>
<td></td>
</tr>
<tr>
<td>management</td>
<td></td>
</tr>
<tr>
<td>Managers will let their employees be</td>
<td>40</td>
</tr>
<tr>
<td>environmentally concerned and they will provide training and support to the them as well</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>110</td>
</tr>
<tr>
<td>Average</td>
<td>55%</td>
</tr>
</tbody>
</table>
As the preceding averages, this average is low indicating nothing but a deficient understanding of green marketing definition.

4.6.4.3.2 Green Incentives

As indicated earlier the relation between environment and management was addressed and sixty percent of respondents agree (40% A + 20% SA) that environmentally sound operational practices will produce a better managed company and that competitive position of the company will be enhanced. Twenty percent disagree among which 10% strongly disagree. Twenty percent had no opinion. However this appears to be only a point of view where managers agree on, because of its soundness (as shown previously), and not to apply it in their organizations.

To study what effect respondents see business environmental performance has on the market share of the company fifty percent of respondents agree (20% A + 30% SA) that a decline in organization’s environmental performance can be translated to a loss in market share. Twenty percent disagree of which 10% strongly disagree. Thirty percent has no opinion. This results have two implications. Besides the fact that it is a low percentage, it appears to be (as indicated earlier in many cases, and shown here by the large percentage of don’t know answers ) that it is just a nice claim with which managers agree with, but do not act.

But what about the relation between the environment and product differentiation? Sixty percent of respondents agree (20% A + 40% SA) that introducing environmental features in products will differentiate the products. Forty percent had no opinion. Again, the very low percentage of -don’t know- answers reflect nothing but a sign of confusion.

As mentioned earlier upon studying the relation between economy and ecology sixty percent of the respondents agree that no business enterprise can be economically sound unless environmentally sound. Ten percent had no opinion.
The following table gives the average percentage of green incentives.

<table>
<thead>
<tr>
<th>Environmentally sound operational practices will produce a better managed company and competitive position of the company will be enhanced</th>
<th>60</th>
</tr>
</thead>
<tbody>
<tr>
<td>A decline in organization’s environmental performance can be translated to a loss in market share</td>
<td>50</td>
</tr>
<tr>
<td>No business enterprise can be economically sound unless environmentally sound. Ten percent had no opinion.</td>
<td>60</td>
</tr>
<tr>
<td>Introducing environmental features in products will differentiate the products</td>
<td>60</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>170</strong></td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td><strong>57.5%</strong></td>
</tr>
</tbody>
</table>

The average percentage of green incentives appear to be low, the thing that shows that respondents do not understand most of the incentives, and thus loosing opportunity profits that can be captured easily for the sake or the organization. By calculating the average percentage of green marketing concepts (definition and incentive together), the number 56% will be obtained which is not that much encouraging.
4.6.4.3.3 Green Production

It was mentioned earlier that sixty percent of the respondents agree (20% A + 40% SA) that introducing environmental features in products will differentiate the products. Forty percent had no opinion. The following section will discuss the production transformation process.

4.6.4.3.3.1 Green Transformation Process

What do respondents think of production technologies? Seventy percent of respondents agree (50% A + 30% SA) that production technologies are dedicated to increase the quantity and quality of products, and have nothing to show for the society. Twenty percent refuses this issue. Ten percent had no opinion. It appears here that the majority of respondents were convinced that technology was dedicated in the first place to increase the quality and quantity of products, but what is more important is whether the managers can take corrective steps. (This will be discussed later)

Respondents were asked whether decreasing the level of process input has an effect on economic growth and environmental quality. Surprising, 50% had no opinion. Twenty percent agree among which 10% strongly agree. Thirty percent disagree, among which 10% strongly disagree. It appears that respondents ignore the first side of the transformation process.

But what about decreasing the level of output? Thirty percent of the respondents did not understand the relation between the level of output and environmental preservation. Forty percent agree (30% A + 10% SA) that decreasing the level of output preserves the environment. Thirty percent disagree (10% D + 20% SD). It seems strange. There was no agreement on the positive effect of output decrease on the environment. Thus respondents seem to be convinced that output they are producing is optimal as far as environment is concerned. But what is the level of this output, the next paragraph explains.
Other question asks respondents how the company use energy to produce its products. Eighty percent of respondents agree (40% A + 60% SA) that they use energy to the maximum to produce good quality products. Ten percent strongly disagree on this issue. Other ten percent had no opinion. This has two implications, first, companies are showing negligence as far as resource conservation is concerned, (they are anti-environmentalist), second, they are convinced (and this is wrong) that good quality product must be associated with maximum energy consumption to be emitted to the environment.

As indicated earlier as far as life cycle analysis of activities is concerned, fifty percent agree. Ten percent disagree. Forty percent had no opinion.

Respondents were then asked whether they see a need to re-engineer the production process to preserve the environment. Seventy percent of respondents agree (40% A + 30% SA). Twenty percent disagree. Ten percent had no opinion. This result seems interesting, but this is not the whole story.

The following table shows a crosstabulation between the question - production technologies are oriented towards increasing the quantity and quality of products, not the societal welfare- and - companies must re-engineer the production process to preserve the environment.
Table 4.66
Crosstabulation percentages
Production technologies X Production process Re-engineering

<table>
<thead>
<tr>
<th>Production technologies are oriented towards increasing the quantity and quality of products, not the societal welfare</th>
<th>Companies must re-engineer the production process to preserve the environment.</th>
<th>SA</th>
<th>A</th>
<th>I</th>
<th>D</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>SA</td>
<td>0</td>
<td>33</td>
<td>0</td>
<td></td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>50</td>
<td>50</td>
<td>0</td>
<td>0</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>0</td>
<td>0</td>
<td>100</td>
<td>0</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>50</td>
<td>50</td>
<td>0</td>
<td>0</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

The table shows that sixty six percent of those who strongly agree that production technologies does not bring societal welfare, disagree that companies must reengineer the production process to preserve the environment. This shows bad managerial attitude. Managers understand the non-societal nature of technologies, but prefer not to act to solve the problem, i.e. not to show a care for the sake of the environment.

When asking the managers on environmental characteristics of materials in their work place, the following ranks (1,2,3) were obtained.

Table 4.67
Materials (%)

<table>
<thead>
<tr>
<th>Eliminated</th>
<th>Reused</th>
<th>Reduced</th>
<th>Recycled</th>
</tr>
</thead>
<tbody>
<tr>
<td>2nd: 50</td>
<td>1st: 22</td>
<td>1st: 11</td>
<td>1st: 40</td>
</tr>
<tr>
<td>4th: 37</td>
<td>2nd: 11</td>
<td>2nd: 11</td>
<td>2nd: 10</td>
</tr>
<tr>
<td>NA: 12</td>
<td>4th: 44</td>
<td>3rd: 44</td>
<td>3rd: 10</td>
</tr>
<tr>
<td></td>
<td>NA: 22</td>
<td>4th: 11</td>
<td>4th: 20</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NA: 22</td>
<td>NA: 20</td>
</tr>
</tbody>
</table>
It appears (though not encouraging, since not the first) that respondents were interested in the concept of elimination, (to eliminate materials in their processes). Recycling is good as well, but also not encouraging. Reduced and reused were only good when they are considered as a third choice only. In fact these results does not reflect a green thinking, and indicates that organizations are still far from applying a green transformation process. Based on an sample observation of exported materials that I have conducted, I have discovered that even materials in the office workplace can include these characteristics, example we can have a "printed on recycled paper" sales order forms, newsletters, as well as envelops and other papers.

The following table gives green transformation process average

<table>
<thead>
<tr>
<th>Table 4.68</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green Transformation Process (%)</td>
</tr>
</tbody>
</table>

| Production technologies is dedicated to increase the quantity and quality of products, and having nothing to show for the society. | 70 |
| Decreasing the level of input preserves the environment | 20 |
| decreasing the level of output | 40 |
| Energy is used to the maximum | 10 (disagree) |
| There is a need to re-engineer the production process to preserve the environment. | 70 |
| The response of companies should be extended to life cycle analysis of activities | 50 |
| Total | 260 |
| Average | 43% |
This average appear to be very low indicating that managers did not understand the green transformation process.

4.6.4.3.3.2 Design for Environment (DFE)

What is Design for environment (DFE). Eighty percent of respondents agree (40% A + 40% SA) that design for environment is design resource conservation Ten percent disagree on this issue. Other ten percent had no opinion. Respondents were able to understand that design for resource conservation, is an essential element for DFE.

In another question seventy percent of the respondents agree (60% A + 10% SA) that design for environment is design for disposal prevention. Ten percent disagree on this issue. Twenty percent had no opinion. Again respondents appear here to be knowledgeable as far as DFE is concerned.

The respondent's opinion of a perfect green product was assessed. Seventy percent of respondents agree (50% A + 20% SA) that it is impossible to produce a perfectly green product. Thirty percent disagree of which 10% strongly disagree on the issue. Twenty percent had no opinion. And this is a wise point of view, that respondents succeeded to declare.

By crosstabulating the question of DFE and the one of green product size (a question to be discussed later), the following tables were resulted.

Table 4.69
Crosstabulation percentages

<table>
<thead>
<tr>
<th>DFE is design for resource preservation</th>
<th>Small size products are environmentally friendly</th>
</tr>
</thead>
<tbody>
<tr>
<td>SA</td>
<td>A</td>
</tr>
<tr>
<td>SA</td>
<td>25</td>
</tr>
<tr>
<td>A</td>
<td>0</td>
</tr>
<tr>
<td>I</td>
<td>0</td>
</tr>
<tr>
<td>D</td>
<td>0</td>
</tr>
</tbody>
</table>
It seems strange. It appears that only 50% of those who strongly agree of DFE as being design for resource conservation, disagree that small size products are environmentally friendly. This means that there is a confusion. It appears that respondents declare that they understand DFE, but it seems that they don’t know the elements of DFE.

4.6.4.3.3 Green Product Features

As the public, (and as indicated previously) that managers were asked about the size of green product. Forty percent had no opinion. Thirty percent agree (20% A + 10% SA) that small size product is environmentally friendly. Also thirty percent disagree (20% D + 10% SD) on this issue. This brings a strict proof that respondents are non green. They appear to be ignoring one of the most important and highly publicly declared issue: the size of the green product package is supposed to be large.

Question six asks about the “recycle” feature. Eighty percent of the respondents agree (40% A + 40% SA) that the use of materials with a recycle feature is a sociable trend that saves the companies money as well. Ten percent disagree. Other ten percent had no opinion. Results seem good. However optimism will be removed by the results of the following crosstabulations. The first crosstabulation was made between -the use of recycled materials is a sociable trend that saves the companies money as well- and - a decline in environmental performance may be translated into a loss in market share.
Table 4.70
Crosstabulation percentages
Recycle X Reengineer production

<table>
<thead>
<tr>
<th>The use of recycled materials is a sociable trend that saves the companies money as well</th>
<th>SA</th>
<th>A</th>
<th>I</th>
<th>D</th>
<th>SD</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>SA</td>
<td>0</td>
<td>25</td>
<td></td>
<td></td>
<td></td>
<td>100</td>
</tr>
<tr>
<td>A</td>
<td>25</td>
<td>25</td>
<td>50</td>
<td>0</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>I</td>
<td>0</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>D</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

Respondents who strongly agree on the introduction of the recycle feature in products were not sure whether a decline in environmental feature may be explained into a loss in market share. Which means that managers are not so excited to introduce this feature in their products.

The next crosstabulation is made between the recycle question and - introducing environmental features may differentiate your products.
Table 4.71
Crosstabulation percentages
Recycle X Product differentiation

| The use of recycled materials is a sociable trend that saves the companies money as well | Introducing environmental features may differentiate your products |
|---|---|---|---|
|   | SA | A | I | Total |
| SA | 0  | 25 | 0 | 100 |
| A  |    | 75 | 0 | 100 |
| I  | 100 | 0  | 0 | 100 |
| D  | 0  | 0  | 100 | 100 |

The table shows that only twenty five percent of those who strongly agree on the recycle feature agree that introducing environmental features may differentiate the products. A surprising 75% had no opinion. Thus this is another indicator that respondents who are giving there positive judgment on the recycle feature are not intending to introduce this feature in their production.

4.6.4.3.4 Green Promotion

When asking on the size of marketing expenditure, sixty percent agree (50% A + 10% SA) that marketing comes next to production. Twenty percent disagree (10% D + 10% SD) on this issue. Twenty percent had no opinion.

Sixty percent of the respondents agree (30% A + 30% SA) when asked if customer segmentation is an essential step in promoting their products. Twenty percent disagree. Other twenty percent had no opinion. This means that respondents are able (if they wish) to segments green customers as well.
Another question asks whether the customer understands in every detail the features of the product. Sixty percent disagree. Thirty percent agree, and 10% had no opinion. This seems to bring problems as far as green product is concerned, since green products have many features (covered in this research) that must be understood by customers.

When asking whether the company spends extra time educating customers on new product features or not. Forty percent of respondents disagree (30% D + 10% SD). Thirty percent agree (20% A + 10% SA). Thirty percent had no opinion. There was no strict answer which indicates that the concept of customer education is not a familiar concept to respondent, or not that much important. This is proved by the high -don’t know- percentage as well. As the preceding factor, this factor (if not existing) may cause problems, and hinders the penetration of green products in the market, since green products need great deal of education that is supposed to be given to the consumers.

To get in the details of green promotion, respondents were asked what do they think towards sponsoring an environmental public service. Fifty percent of respondents said that it improves the companies social image and sales. Ten percent perceive an effect of this service only on company’s social image. Twenty percent said that it is a good thing but has no effect on the company’s sales. Ten percent found it useless since companies contribute nothing for the environment. Ten percent don’t know anything about the issue. It appears that the large percentage (though not much high) of respondents understands the purpose of sponsoring environmental public service which means that this idea, is not out of reach.

Table 4.72 gives the average percentage of green promotion.
Table 4.72
Average percentage of green promotion

<table>
<thead>
<tr>
<th>Question</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer segmentation is an essential step in promoting their products.</td>
<td>60</td>
</tr>
<tr>
<td>The customer understands in every detail the features of the product.</td>
<td>30</td>
</tr>
<tr>
<td>The company spends extra time educating customers on new product features.</td>
<td>40 (D)</td>
</tr>
<tr>
<td>Sponsoring an environmental public service improves the companies' social image and sales.</td>
<td>50</td>
</tr>
<tr>
<td>Total</td>
<td>180</td>
</tr>
<tr>
<td>Average</td>
<td>45</td>
</tr>
</tbody>
</table>

The result (average percentage) was low indicating that green promotion in Lebanon is not yet in an encouraging status. While customer segmentation is an essential step in green marketing, the understanding of the product features by the customers is a vital step as well. Educating the customers to accept the new green ideas and concepts thus appear to be only way to promote green products which is not an easy work to do in Lebanon.

4.6.5 Sustainable Development

As indicated earlier, upon studying the relation between economy and ecology, sixty percent of respondents agree (30% A +30% SA) that no business enterprise can be economically sound unless environmentally sound. Thirty percent disagree on this issue. Ten percent had no opinion. The results reflect a wise opinion of respondents as far as sustainable development is concerned.
The question - companies must reengineer the production process to preserve the environment- was crosstabulated with the question - no business enterprise can be economically sound unless it is environmentally sound. Table 4.72 was obtained.

Table 4.72  
Crosstabulation percentages

<table>
<thead>
<tr>
<th>Environmental soundness</th>
<th>X Production process re-engineering</th>
<th>Companies must re-engineer the production process to preserve the environment.</th>
</tr>
</thead>
<tbody>
<tr>
<td>No business enterprise can be economically sound unless it is environmentally sound</td>
<td>SA</td>
<td>A</td>
</tr>
<tr>
<td>SA</td>
<td>0</td>
<td>33</td>
</tr>
<tr>
<td>A</td>
<td>66</td>
<td>0</td>
</tr>
<tr>
<td>I</td>
<td>100</td>
<td>0</td>
</tr>
<tr>
<td>D</td>
<td>0</td>
<td>100</td>
</tr>
</tbody>
</table>

Results show that 66% of those who strongly agree that no business enterprise can be economically sound unless it is environmentally sound disagree that companies should engineer the production processes to preserve the environment. This means that the respondents are not intending to act environmentally, and their acceptance of the ecological soundness remain on the claim level.

The relation between preserving the environment and raising income was addressed as well. Fifty percent agree (40% A + 10% SA) that they can match between raising income and preserving the environment. Twenty percent disagree (10% D + 10% SD). Thirty percent had no opinion. The high percentage of -don't know- answers show that respondents do not understand clearly the positive relation between raising income and preserving the environment. The non strictly positive answer indicates this as well.
In conclusion, we can say that respondents appear to be talking about the environment from a social point of view and not from a business point of view.

By crosstabulating the relation between economic and environmental soundness versus preserving the environment and raising income the following table was obtained.

<table>
<thead>
<tr>
<th>Table 4.73</th>
<th>Crosstabulation percentages economic, environment X raising income</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>You can’t associate between raising the income and preserving the environment</td>
</tr>
<tr>
<td>No business enterprise can be economically sound unless it is environmentally sound</td>
<td>SA</td>
</tr>
<tr>
<td>SA</td>
<td>33</td>
</tr>
<tr>
<td>A</td>
<td>0</td>
</tr>
<tr>
<td>I</td>
<td>0</td>
</tr>
<tr>
<td>D</td>
<td>0</td>
</tr>
</tbody>
</table>

Statistics show that 66% of those who agree - no business enterprise can be economically sound unless it is environmentally sound agree that they can’t associate between raising the income and preserving the environment. This again comes to emphasize the conclusion presented in the preceding paragraph: environment for the society, not for business and society.

What about the future generation as far as sustainable development is concerned. Statistics show that seventy percent agree (60% A + 10% SA) that too much talk about the future generations and the concepts of preservations will not have a good effect on the present people because their needs will not be satisfied. Thirty percent had no opinion. This is in fact a wrong belief. By applying environmental management, we can preserve the environment and satisfy the current customers at the same time.
Again this is another evidence on the applicability of the preceding conclusion: environment for society, not for business.

4.6.6 Green Vision

To study what is the managers’ attitudes regarding environmental standards, respondents were asked if they think that one day they have to face international standards that call for environmental re-engineering of their operations. Fifty percent of respondents agree on this issue, and realize that this may happen in immediate or near future. Forty percent on the other hand feel that this may happen on the long term future. Ten percent don’t know anything about this topic. The results were good, and reflect that managers know that one day (immediate, near, or long term future) they will be environmentally regulated.

To discover the respondents’ attitude towards multinational businesses, and the preferences of their operations. Seventy percent of respondents agree (30% A + 40% SA) that multinational companies operate in strict rules. Forty percent had no opinion. These results come to emphasize (from the respondents point of view) the existence of hard standards whenever companies try to operate internationally.

Another question tries to discover how respondents perceive the application of green marketing. Seventy percent agree (50% A + 20% SA) that international standards will let companies respond to the green movement if companies did not respond by themselves. Twenty percent disagree on this issue. Ten percent had no opinion. It appears here that respondents have a correct estimation of how the international standards will be, or can be applied.

By crosstabulating this question with the question about environmental reengineering (that indicates environmental actions to be taken now - before being regulated) the following results were obtained.
Table 4.74
Crosstabulation percentages
Business response X environmental re-engineering

<table>
<thead>
<tr>
<th>If the business sector does not respond to green movement, international standards will let them do so</th>
<th>Companies must reengineer the production process to preserve the environment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SA</td>
</tr>
<tr>
<td>SA</td>
<td>0</td>
</tr>
<tr>
<td>A</td>
<td>20</td>
</tr>
<tr>
<td>I</td>
<td>100</td>
</tr>
<tr>
<td>D</td>
<td>50</td>
</tr>
</tbody>
</table>

Table 4.74 shows that 100% of those who strongly agree that international standards will practice its force on business enterprises disagree that businesses must reengineer its production process to preserve the environment. This again resembles the great indifference. All companies are waiting to be regulated. None appear to have the intention to act now.

When asking managers (is the last open ended question) - do you think companies have to play a role in preserving the environment? why? - answers were distinct. Some answers were very negative: no this role should be played by government and not business! (a very ignorant answer, and representing the “basic browns” segment, described by Roper / S.C. Johnson segmentation who are people who do not believe and do not want to make a difference ) Other said: yes, since this will have effect on the sales, companies can share for example by paying the taxes or participate in the capital of the waste management company (this shows that the companies are presenting no tendency to act by themselves, in other words, they are not convinced by green management, as a concept to be applied in their organizations). Still, others accepted the idea and said that this is the only world that we are living in (reflecting an
idea, environment for the environment and not for the business, analyzed earlier in this research), in addition government has to encourage companies to preserve the environment through tax reduction, other said only government has the resources to do so (and this resembles the action of indifference group, or "grousers" as described by Roper / S.C. Johnson segmentation who rationalize their nonbehavior by excuses & criticizing others. Only one said yes, and if companies want to compete worldwide, it have to follow international standards.

Finally the questionnaire closes by a question asking respondents what this age may be. Seventy percent agree that this age may be the age of cost reduction. Ten percent disagree. Twenty percent had no opinion. This remains far from the realities practiced today and which assumes that we are living in the age of environmental strategy and environmental control

This is the end of chapter four. It has presented the findings of the public questionnaire and the specialized questionnaire by introducing the percentages of every question, crosstabulations between questions and conclusions on results and statistics. The next chapter, chapter five includes conclusions of what has been presented here, and recommendations for future researches.
Chapter Five
Conclusions and Recommendations

5.1 Conclusions

After presenting the results of the public and specialized questionnaires, where the first was intended to study the public’s opinion: general attitudes towards the environment, who is to be blamed for environmental degradation, and green marketing related concepts, whereas the intent behind the specialized questionnaire was to study where food industry organizations (canned food producers, juices producers, alcoholic products producers, and dairy food producers) in Lebanon stand as green marketing and management are concerned.

As for the specialized questionnaire, having the questionnaire filled was really a suffering experience (e.g., waiting 4 weeks for a president of a company to come from abroad to sign his approval on the questionnaire, then waiting another three weeks so that the marketing manager will have some time to fill the questions). Thus, sets of questionnaire have stayed with some organizations for more than two month, and followed up by more than ten phone calls.

5.2 Site Visit Impressions

The very first impression of my visits to the companies were not encouraging at all as far as the environment is concerned. In fact, in some places I see everything except environment protection where rubbish, trash, garbage and serious wastes were spreading here and there near the entrance of some very known and respectful companies. The first idea that came to mind then was, all of them will fail an environmental site test if conducted. It appears as well that a number of firms have not reached some very early steps e.g. road engineering or asphalt planting to be ready for an environmental concern.
5.3 Managers and Departments Characteristics

The results showed highly educated, middle age, male marketing managers, and a variety of marketing department sizes (very small, medium, large and very large).

The size of marketing expenditure was considered to come next to production. As for the procedures, practices, and policies in the organizations there was a tendency to insert the best image response and to consider improvement a never ending process. However this does not seem the case as far as environmental marketing management is concerned.

Large number of managers feel strange upon hearing of such topic -green marketing-, and some of them did not hesitate to tell that they fill “don’t know” in a lot of places because they really don’t know, or have not heard about the topic.

5.4 Market Characteristics

A large number of claimed-to-be-professional companies seem to operate in the food industry - and this appear to be Lebanon’s first industry. All managers express the fact that they are facing strong competition and that market information is not enough but not available as well.

In addition to that, other questions have discovered that the customer do not understand in every detail the features of the product, companies spend time educating customers of new product features, and there is a big a tendency to segment the market.
5.5 Environmental Responsibility

5.5.1 What do Companies Think They Are

A large number of companies believe that they have environmental concern, but this concern can be better. Nobody said environmental concern is good. And this came to emphasize the finding that all the reasons given by the questionnaire for business environmental uninvolvement were considered by marketing managers, among which are carelessness, lack of awareness of the size of environmental problem, lack of awareness of how a business firm can be environmentally concerned, carelessness, financial burdens and the like.

5.5.2 What They Really Are

The claim of companies of being environmentally concerned does not seem to reflect the real spirit of other answers, that were intended to discover what food producers in Lebanon really are as far as environmental performance is concerned.

First of all, the marketing managers of the food companies in Lebanon were bold enough to declare their tendency to invest in production and marketing rather than resource conservation, since according to them the first is more profitable. By this they are ignoring (as indicated earlier) a large sum of opportunity cost, or profit which may result for their benefit upon investing in process efficiency. But that seems to be explained as ignorance and indicated by the very high percentages of -don’t know- responses they have shown especially when the matter is related to life cycle analysis of activities

On the average their general attitudes towards the environment as was shown in the average percentage was really something of embarrassment.
5.5.3 Conclusions Regarding Green Management

Food companies in Lebanon appear not to be environmentally managed. Surprisingly, a large number of marketing managers do not understand the relation between the environment and management, and simply marked -don't know- as their answer for this category.

Contradictions appear among many of the answers. Although marketing managers agree that no business enterprise can be economically sound unless environmentally sound and that environmentally sound operational practices give better management and enhance the competitive position of the company they fail to complete the real picture of this claim, and deny any effect of business environmental performance on the market share. In addition, upon making a rank of companies competitive advantage, environmental concern appear to be non-existing or the last choices to be considered by the marketing managers. Once again, the average percentage appears to be very low.

5.5.3.1 Conclusions Regarding Environmental Management System (EMS)

When asking marketing managers to establish EMS, fifty percent of them agree, forty percent disagree. Thirty percent had no opinion. And these results came to reflect the confused knowledge managers have as far as EMS is concerned. Components of EMS were inserted as questions to discover respondents' point of view regarding them.

A few percentage of respondents accepted the idea of integrating environmental concern in their business strategy and they consider this action a favor for the society. In fact almost nobody realized that this action leads to the generation of extra profits and societal welfare at the same time. Thirty percent had no opinion on any environment-business strategy integration.

Performance documentation was not of better situation. Almost all of marketing managers refused this idea and the rest had no opinion.
The call for a company’s self audit (and represented here by self externality treatment) was not welcomed from respondents.

The suggestion of employees’ environmental involvement was not encouraging, though some managers (40%) show a tendency to provide training and support to the employees to get through. Thirty percent of respondents have no opinion.

Thus it appears from the low EMS average percentage and the crosstabulation analysis of EMS, that results were not encouraging: all those who agreed to establish EMS refused to document their performance and make it available to the public; all those who agrees to establish EMS refused to let their employees be involved in any environmental concern; refused to conduct self audit; and thought that maybe on the long term (as a first opinion) future business will face international standards that call for environmental re-engineering of operations.

5.5.4 Green Marketing and other Related Concepts

Seventy percent of respondents said about green marketing that it is preserving the environment in every detail, even in management. This was proved to be on the claim level only. Thirty percent however don't know what is green marketing.

5.5.4.1 Green Incentives

Marketing managers agreed on the positive relation between environmentally sound operational practices and better management however they seem to be confused and not sure since they refuse that any decline in organization’s environmental performance can be translated to a loss in market share.

This confusion was indicated once more when talking about environment features, as ones that bring differentiation to the product, where a high percentage of -don’t know - answers were indicated.
5.5.4.2 Green Production

5.5.4.2.1 Green Transformation Process

There was a general agreement that production technologies have little to present for the sake of the society, they increase quantity and quality only, and respondents were somehow convinced that there is a need to re-engineer the production process to preserve the environment. However the negative crosstabulation between the two issues did not appear to reflect a tendency to take action to solve the problem.

The green transformation process was not clear for managers. Fifty percent had no opinion as far as the size of input is concerned and thirty percent had no opinions as for decreasing the level of output.

To move inside the process, it was found that a large number of companies operate at maximum levels of energy. According to them, this produce good quality products. And this was another proof that managers do not understand green transformation process.

The average green transformation process percentage was not encouraging as well.

5.5.4.2.2 Green Product Features

Marketing managers appear to agree of the efficiency of the “recycle” feature of products, however they seem to be confused as far as the size of green product is concerned. Forty percent had no opinion. Thirty percent agree, and thirty percent disagree. This came again to reflect nothing but ignorance of managers on the issues of green marketing.
5.5.4.3 Green Promotion

Respondents appear to accept the idea of green promotion specifically sponsoring an environmental public service. Some managers realize the effect of this activity on companies' image, and sales. Few of them, however, found it useless since companies contribute nothing to the environment. Ten percent don't know anything about the issue. However, this is not the whole story, and the following results were not encouraging and implies that all that have been said about green promotion - sponsoring an environmental public service - seem to be nothing but approval on a new suggested idea.

Respondents agree on customer segmentation as an essential step for marketing the products, however they confess that their customers do not understand the features of their products, and that they spend extra time educating customers on ordinary features. In fact, these two declarations bring no encouraging signals as far as green promotion is concerned since green features must be understood fully before any customer chooses to change his selection criteria.

5.5.5 Sustainable Development

As indicated earlier, no business enterprise can be economically sound unless environmentally sound. This was the general agreement of marketing managers. However, optimism did not last long: the crosstabulation of this question and - companies must reengineer the production process to preserve the environment - showed negative relations. Those who agree on the first disagree on the second, thus the first assumption remain void.

To move to the relation between preserving the environment and raising income, the relation was not clear, and confusion occurred again. Fifty percent agree, thirty percent had no opinion. Moreover, crosstabulation did not found consistency between - no business enterprise can be economically sound unless it is environmentally sound - and
we can meet between raising income and preserving the environment, which indicates that managers are looking at environmental preservation as a burden and not as a profit.

In addition there was a general agreement that the stress on future generations will leave the present unsatisfied, thirty percent had no opinion, and this is a wrong idea as far as sustainable development is concerned.

5.5.6 Green Vision

Marketing managers realize the fear coming from international environmental standards. A large percentage of them however feel that this will be applied on the long term future. No body have chosen the answer -no this may not happen at all. A large number of managers think also that international standards will let companies respond to the green movement if they do not abide.

But that does not bring good signals. In fact a crosstabulation has shown that all who agree on the power of international standards to make environmental change disagree that business must reengineer its production process to preserve the environment now, which means that companies are waiting to be regulated, or to be obliged to abide by rules, inspite their knowledge that multinational companies must operates under strict rules.

5.6 Customers

5.6.1 Environmental Education and Satisfaction

The majority of respondents claim environmental education however other questions and crosstabulations show that their education is not to a level to be proud of. A lot of them wish to help the environment, but don’t know what to do.
A very high percentage of respondents understand that good environment means a better quality of life and express their very high level of environmental unsatisfaction in Lebanon. It appears from the results that many of them realize the danger bad environment has at least on one of their family members, nevertheless crosstabultion shows that those don’t want to give the environment a concern at the expense of their personal pleasure.

5.6.2 Actions and Blames

As indicated earlier, a large number of educated respondents who admit the bad effect on the family, ignore what should be done to save the environment. In addition there was no general agreement that a single individual must act by himself, even if no body cares.

Blame for environmental degradation was allocated between people in general and manufacturers. Almost all respondents agree that people lack environmental education. However upon segmenting people, it was discovered that low income people were eliminated from the blame. Neither the educated, nor the uneducated seem to blame low income people.

A majority of people blame companies. They (environmentally educated and noneducated) refuse the idea that companies in Lebanon have good environmental image. Seventy three percent of respondents agree that product manufacturers hold responsibility in making Lebanon dirty.

But this is not the whole story. People do not trust companies as well. A very low percentage of environmentally educated and uneducated respondents (25%) trust companies as for the claims of their product features.

The government appear not to be the only authority responsible for the lack of environmental education. Thus it was concluded that both government and social organizations should be blamed.
5.6.3 Green Product Quality, Price, and Package

It was estimated that any question about green product quality may be confusing, and it may be a “hard question” as well. However, this questionnaire tried to study what Lebanese consumers think about the quality of green products, and whether they understand what are the factors of this quality.

It was mainly judged from environmentally educated and uneducated people that environmentally featured products are of good quality. And the same opinion applies to those who admit that they know what to do for the sake of environment. In addition to that, those who are environmentally concerned in their purchasing agree that green products are of good quality. However respondents seem not to be credible in their judgment, since analysis discovered that they don’t understand the basis of green quality.

Statistics show that a considerable number of those who strongly supported the idea of a good green quality product have a wrong idea of what is a green product by thinking of its package to be small. In addition to that, a vast majority of them admit that the recycle feature of products is nearly unavailable in the market. So on what are they basing their judgment regarding the quality of a green products. It seems strange. Still further checking was conducted. Respondents who consider the green product to be of good quality do care for product symbols and indicative signs. However it appears from other crosstabulations that those who have shown this care were not sure that they understand environmental symbols and terms. Finally other crosstabulations revealed that a very large percentage of supporters of green product quality don’t know what to do to save the environment. So this is another proof that their judgment on the quality was not made on strong basis.

As indicated in chapter four, the belief about the quality of green products may appear to be associated with the concept that green products are made from non-virgin raw materials, or that the energy consumed while producing them is so much restricted. It is a truth that green products are expensive however this very high price is due to a
fact that producers invent: if it's more expensive, it must be better. But what do Lebanese public think regarding the price.

The public appear to be confused and the claimed-environmentally educated people have both sides of answers as far the price of green products is concerned. In addition, the crosstabulation present that a very high percent of them have no opinion and don't care for product symbols and indicative signs. In addition to that they admit that green products (products with recycle feature) are nearly unavailable in the market, which means that they are basing their judgment at the price on the very small amount of products in the market. To check for this, question 22 supplied respondents with the recycle symbols and asks respondents whether they see these signs at products or not. Results shows that a large percentage of them say that they do not find the "recycle" symbols at nearly all products.

Environmentally educated and uneducated people were confused as for the package size, with equal percentages on both sides. Twenty eight had no opinion.

5.6.4 Purchasing Decision

The questionnaire tries to discover whether environmental concern affects the products respondents select to buy. A high percentage of environmentally educated respondents were positive, and 22% express no opinion. But a crosstabulation shows that those whose environmental concern affects the product they select to buy, refuse that their environmental concern is at the expense of their pleasure.

As a general conclusion, the average percentages of the three issues considered in the questionnaire namely 1) general attitudes towards the environment, 2) who is to be blamed, and 3) green marketing related concepts, were not so encouraging, and in most cases the high percentages were acquired from the easy questions rather than the hard ones. Only for the blame issue, respondents appear to be wise, and acquired a relatively high average percent.
5.7 Recommendations

Michael Jacobs in his book "Green Economy" reached a very important conclusion namely industrialism is the root of the environmental problem. The industrial world was the leader of innovative inventions, and was the leader in pollutants producing as well. But this world represented by scientists, professors, governments, public groups, and the rest of the population was smart enough to put an end to these problems by initiating new standards, rules that governed the way business should be conducted to solve the problems that it made. The transfer of technology from the industrial world to the second and third world nations was not accompanied by the move of these corrective models, besides the economic and social situations in the receiving nations was not adequate for the invention of these models. Thus protecting the environment remains in some cases (as was the case in Lebanon during the war), something that comes in the tenth and even more place of priority, where safety needs (the 1st level in Maslow’s pyramid) were the most ever prevailing needs.

The industrial world has moved steps forward in developing generally accepted ways to work business activities in industrial and service sector. The latest standards are concerned with a very important thing in our life: the environment. The European Commission, USA, Canada, and the rest of some developed nations, has developed each its suggested business-environment standards from more than ten years. This situation has made a lot of multinationals companies follow the most difficult rules and codes in order to work easily in every market.

When the situation allowed (on the side of activities of Earth Conference in Rio), it was suggested on the International Standard Organization (headquartered in Switzerland) which previously had the experience of developing a widely accepted international standard for quality, ISO 9000, to go through the development of a similar approached standard governing business activities for the sake of environment. At the end of 1996, it was ISO 14000, to combine codes of the European EMAS, the American CERES, and Responsibility Care, and ICC.
So it appears that environmental management is really the topic of the day. And nations one after another are continuously showing concern and declaring their willingness to act in this concern. In this domain it would be to the point if we could spot light on what seems to be most important concept namely green marketing. In fact, marketing starts with assessing needs and wants of customers, then working on the product idea to be developed into a real product, and here starts the journey. So what Philip Kotler described as internal and external marketing appear to be applied here. To have a green marketing means to have a green management, and to have a green management means to abide by the newly born international standards and codes, that will shape the details of business activities, which means to be environmentally concerned in every detail, to establish environmental management system, to implement life cycle analysis of activities, and the like.

But what is the result of not abiding. The answer is out of business: no exporting of the companies product will be allowed. Germany had already declared the mandating of this behavior in any public contract ever signed in the nation. What are companies in Lebanon doing to protect themselves. Nothing, but waiting the threat. Thus it would be advisable from now to take steps of work, (but even we can say) to be introduced to this topic before it is to late. And it important to note here that fully abiding by green terms takes a lot of time and is subject to multiple, but continuous site analysis when asking for green certification.

Training companies in Lebanon appear to attract a lot of blame by not offering any topic in green management of marketing. A study done at the Lebanese American University under the title “Assessment of Training Firms in Lebanon”, summer 1996, showed only the following offered training programs.
Table 5.1
Programs Offered by Training firms in Lebanon\textsuperscript{118}

<table>
<thead>
<tr>
<th>Human resources</th>
<th>ISO 9000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specialized management skills</td>
<td>Delivering winning presentations</td>
</tr>
<tr>
<td>Managing the finance department</td>
<td>Secretarial Skills</td>
</tr>
<tr>
<td>Managing the accounting department</td>
<td>Customer service</td>
</tr>
<tr>
<td>Marketing for results</td>
<td></td>
</tr>
</tbody>
</table>

Table 5.1 shows that nothing about green management or marketing was offered by the training firms as a training topic for the Lebanese industries.

In addition, there is a need to educate the customer as well. And the public questionnaire did not show encouraging results as far as the customer / public is concerned. Customers in Lebanon seem to be excited to work for the environment, but don't know what to do whereas in some nations of this world customer actions have reached high levels of boycotting the products of some companies because they has shown non-environmental responsibility in their operations.

With no doubt, the Lebanese civil war can be considered the very first factor causing the Lebanese to move steps backward. Today, the war has ended, it is time to think more steps forward to be able to compete and face the challenges of peace.

5.3.1 Recommendation for Green Training Topics

See appendix IV.

\textsuperscript{118} Mazen Danah, \textit{Assessment of Training Firms in Lebanon} (Beirut: Lebanese American University, 1996), p. 66.
5.3.2 Recommendation for Future Research

Preserving the environment in business operations is considered only one of a series of other "corporate social responsibility" needs among which are consumer satisfaction issues, consumer protection issues, consumer information issues, and finally consumer education issues. The following table gives a summary of ideas related to these issues.

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<th>Consumer satisfaction issues</th>
<th>What do customers need</th>
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<td></td>
<td>What are the specific differences among the market segments</td>
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<td>What are the key customer complaints</td>
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<td>Are the services adequately customer friendly</td>
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<td>Consumer protection issues</td>
<td>How dangerous are the products</td>
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<td></td>
<td>How could the consumers be protected</td>
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<td></td>
<td>What kind of legislation is necessary</td>
</tr>
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<td></td>
<td>What resouse do customers have</td>
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<td>Consumer information issues</td>
<td>Do manufacturers adequately explain the dangers of the product?</td>
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<td></td>
<td>Where could consumers receive info.?</td>
</tr>
<tr>
<td></td>
<td>Do the makers need persuasion to help consumers to protect themselves?</td>
</tr>
<tr>
<td></td>
<td>Is there proper labeling and other pertinent information?</td>
</tr>
<tr>
<td>Consumer education issues</td>
<td>Do consumers receive enough information to make reasonable purchase choices</td>
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<tr>
<td></td>
<td>How could the consumers be given better education to improve their decision making process</td>
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</table>

Appendix I
QUESTIONNAIRE

This questionnaire is intended to study consumer awareness towards environmental concern. The data gathered will be treated with complete confidentiality and will be used for analysis purposes. Your participation is highly appreciated.

PART 1: Please circle the correct answer
2- Gender: a- Male  b- Female
3- Married: a- Yes  b- No
4- Education: a- High school  b- Bachelor's degree  c- Graduate degree  d- Other
5- Income: a- High  b- Medium  c- Low

PART 2: Please use the following scale to circle the correct answer:
1= Strongly agree  2= Agree  3= Irrelevant  4= Disagree  5= Strongly disagree

1- You are satisfied with nature and green environment in Lebanon
2- Product manufacturers hold responsibility in making Lebanon dirty
3- Only government is responsible for creating environmental awareness
4- The best way to get rid of wastes is to bury them
5- Good environment means a better quality of life
6- The “recycle” feature of product is nearly unavailable in the market
7- You trust companies as for the claims of their product features
8- Companies in Lebanon have good environmental image
9- You do care and look at product labels and indicative signs
10- You consider yourself environmentally educated
11- Products with environmental features are not of good quality
12- You can do nothing for the environment, if all the people do not care
13- Low income people should be blamed for environmental degradation
14- People lack environmental education
15- You find difficulty understanding environmental terms and symbols
16- Small size package is environmental friendly since it leaves less wastes
17- There are some products that hurt the ozone layer of the atmosphere
18- At least one of your family is affected by bad environmental conditions
19- Your environmental concern affect the product you select to buy
20- Products with a recycle feature are expensive
21- Your environmental concern is not at the expense of your pleasure
22- You may help the environment, but you don’t know exactly what to do
23- You see this sign on or off at nearly all products
24- What shall you do to save the environment?
25- What should companies do to save the environment?

Thank You
Appendix II
PART ONE: Demographic Information

Please circle the correct answer.

1- Gender : 
   a- Male     b- Female

2- Age :a- 23-30    b- 31-40    c- 41-55    d- 56-65    e- >65

3- What is the level of education you have completed ?
   a- High school     b- Bachelor's degree    c- Graduate degree    d- Other, specify

4- Your business is
   a- Food     b- Clothing     c- Detergent     d- Furniture     e- Other, specify

5- The number of employees under your directions :
   a- 1 - 10    b- 11- 30    c-31- 50    d- 51- 100    e- Other, specify

PART TWO: This part is related to your operational experience.

SECTION A: Please circle the answer that you find appropriate to your response.

1- Please describe yourself and your market:

   Your capital  a- $1000-50,000  b- $51,000-250,000  c- $251,000-1,000,000  d- Above Million

   Competition you face  a- No Competition  b- Little  c- Average  d- Strong

   Market Information:  a- Not enough  b- Enough  c- very much  d- Don’t know

   Companies’ Number:  a- Too many  b- Average  c- Small no.  d- Don’t know

   Companies’ Status:  a- Non professional  b- Normal  c- Professional  d- Don’t know

2- The procedures, practices, policies in your organization are
   a- The best, this is proved whenever you compare actual with expected results
   b- Among the best, need little improvement
   c- Need a lot of improvement
   d- Best can’t be reached, procedures must be assessed continuously
   e- Don’t know

3- Your employees
   a- Need a lot of training to do their work     c- Need very few training
   b- Need some training to do their work     d- Training is a never ending process
   e- Don’t know
4- As for total quality management:
   a- You have already achieved it
   b- This can’t be achieved, improvement is a continuous process
   c- You are working to achieve one day in the future
   d- You don’t know if you have achieve it or not

5- Environmental concern of the business sector
   a- Does not exist yet.
   b- Exist, but can be better
   c- Is good
   d- Don’t know

6- Green marketing is
   a- Having a nice dressed sales force and clean cars
   b- Having a beautiful company site
   c- Preserving the environment in every detail, even in management
   d- Don’t know

7- The reason behind business uninvolvment in environmental preservation is
   a- Lack of awareness of how to do it
   b- Lack of awareness of the size of the problem
   c- This is wrong, Business is involved
   d- Financial burden
   e- Carelessness
   f- Don’t know

8- What is the relation between economic growth and environmental quality
   a- Economic growth leads to environmental degradation
   b- They do meet together for the sake of the society
   c- They do not meet, each is a separate topic
   d- Don’t know the relation

9- What happens if environmental concern is integrated in management
   a- This gives environmental management, thus efficiency in work
   b- Maybe some deviation from real business work
   c- The result is nothing but a beautiful healthy and attractive work place
   d- Don’t know

10- Do you believe that one day, business has to face international standards that calls
 for environmental re-engineering of operations.
   a- Yes, this may happen in the immediate / near future
   b- Maybe this will happen in the long term future
   c- This may not happen at all
   d- Don’t know

11- Will you integrate environmental concern in your business strategy ?
   a- Yes, when the financial profits ($) of such a project exceeds the costs
   b- Yes, since this may generate extra profits and societal welfare
   c- Yes, even if this does not leads to extra profits; society always comes first
   d- Don’t know
12- Sponsoring an environmental public service
   a- Is useless when a company contributes nothing for the environment
   b- Improves the company’s social image
   c- Improves the companies social image and sales
   d- Is a good thing, but has no effect on the company’s sales
   e- Don’t now

13- Will you let your employees adopt environmental concern in their work
   a- No, they are paid to work business
   b- No, because they lack experience
   c- Yes, and managers will provide training and support
   d- Don’t know

SECTION B : Please rank the following [1..4], 1 = strongest, and 4 = weakest

1- These are your competitive edges:
   a- ___ Customer service
   b- ___ Environmental concern
   c- ___ Low prices
   d- ___ Strong promotion
   e- Not applicable

2- In general, in your work place, there are materials that can be
   a- ___ Eliminated
   b- ___ Reused another time
   c- ___ Reduced in size of use
   d- ___ Recycled
   e- Not applicable

SECTION C : Please use this scale in answering the following questions
1= Strongly agree  2= Agree  3= Irrelevant  4= Disagree  5= Strongly disagree

1- An environmentally sound operational practices
   will produce a better managed company and may
   enhance the competitive position
   1  2  3  4  5

2- Introducing environmental features in products
   will differentiate your product
   1  2  3  4  5

3- Multinational companies prefer stricter rules
   to operate
   1  2  3  4  5

4- A decline in organization’s environmental
   performance can be translated to a loss in
   market share.
   1  2  3  4  5

5- Other than production, marketing expenses
   are the second (under normal conditions)
   1  2  3  4  5

6- Decreasing level of input increases growth
   and preserve the environment
   1  2  3  4  5
7- Decreasing the level of output increases growth and preserves the environment 1 2 3 4 5

8- Companies must re-engineer the production process to preserve the environment 1 2 3 4 5

9- Environmental response of companies may even extend to life cycle analysis of activities 1 2 3 4 5

10- Companies must document its performance and make it available for the public 1 2 3 4 5

11- Companies must establish an environmental management system 1 2 3 4 5

PART THREE: This part is related to your production practices

SECTION A: Please use this scale in answering the following questions
1= Strongly agree  2= Agree  3= Irrelevant  4= Disagree  5= Strongly disagree

1- You use energy at the maximum levels to have a good quality product 1 2 3 4 5

2- Externalities of the companies (wastes, empty products, etc.) must be treated by the companies themselves 1 2 3 4 5

3- Production technologies are oriented towards increasing the quantity and quality of products, not the social welfare 1 2 3 4 5

4- Design for the environment is a design for resource conservation 1 2 3 4 5

5- Design for the environment is a design for disposal prevention 1 2 3 4 5

6- The use of recycled materials is a sociable trend that saves the companies money as well 1 2 3 4 5

7- Small size products are environmentally friendly 1 2 3 4 5

8- Producing a perfect green product is impossible 1 2 3 4 5
PART FOUR: This part is related to your Customer

SECTION A: Please use this scale in answering the following questions
1= Strongly agree  2= Agree  3= Irrelevant  4= Disagree  5= Strongly disagree

1- Customer segmentation is an essential step in promoting your product
   1  2  3  4  5

2- Your customer understands in every detail the features of your product
   1  2  3  4  5

3- You spend extra time educating customers on new features
   1  2  3  4  5

PART FIVE: This part reflects your personal point of view.

SECTION A: Please use this scale in answering the following questions
1= Strongly agree  2= Agree  3= Irrelevant  4= Disagree  5= Strongly disagree

1- Investing in production and marketing, rather than resource conservation is more profitable.
   1  2  3  4  5

2- No business enterprise can be economically sound unless environmentally sound
   1  2  3  4  5

3- You can't associate between raising income and welfare and preserving the environment
   1  2  3  4  5

4- If we show strong commitment to the welfare of the future generations, the present needs may not be satisfied
   1  2  3  4  5

5- If the business sector do not respond to green movement, International standards will let them do so
   1  2  3  4  5

6- This is the age of Cost reduction
   1  2  3  4  5
Do you think companies have to play a role in preserving the environment? Why?
Appendix III
The CERES Principles

1- Introduction

By adopting these principles, we publicly affirm our belief that corporations have a responsibility for the environment, and must conduct all aspects of their business as responsible stewards of the environment by operating in a manner that protects the Earth. We believe that corporations must not compromise the ability of future generations to sustain themselves.

We will update our practices constantly in light of advances in technology and new understanding in health and environmental science. In collaborations with CERES, we will promote a dynamic process to ensure that the Principles are interpreted in a way that accommodates changing technologies and environmental realities. We intend to make consistent, measurable progress in implementing these Principles and to apply them to all aspects of our operations throughout the world.

2- Protection the Biosphere

We will reduce and make continual progress toward eliminating the release of any substance that may cause environmental damage to the air, water, or the earth or its inhabitants. We will safeguard all habitants affected by our operations and will protect open spaces and wilderness, while preserving biodiversity.

3- Sustainable Use of Natural Resources

We will make sustainable use of renewable natural resources, such as water, soils and forests. We will conserve nonrenewable natural resources through efficient use and careful planning.
4- Reduction and Disposal of Waste

We will reduce and where possible eliminate waste through source reduction and recycling. All waste will be handled and disposed of through safe and responsible methods.

5- Energy Conservation

We will conserve energy and improve the energy efficiency of our internal operations and of the goods and services we sell. We will make efforts to use environmentally safe and sustainable energy sources.

6- Risk Reduction

We will strive to minimize the environmental, health and safety risks to our employees and the communities in which we operate through safe technologies, facilities, and operating procedures, and by being prepared for emergencies.

7- Safe Products and Services

We will reduce and where possible eliminate the use, manufacture or sale of products and services that cause environmental damage or health or safety hazards. We will inform our customers of the environmental impacts of our products or services and try to correct unsafe products.

8- Environmental Restoration

We will promptly and responsibly correct conditions we have cause that endanger health, safety or the environment. To the extent feasible, we will redress injuries we have caused to persons or damage we have caused to the environment and will restore the environment.
9- Informing the Public

We will inform in a timely manner everyone who may be affected by conditions caused by our company that might endanger health, safety, or the environment. We will regularly seek advice and counseling through dialogue with persons in communities near our facilities. We will not take any action against employees for reporting dangerous incidents or conditions to management or to appropriate authorities.

10- Management Commitment

We will implement these Principles and sustain a process that ensure that the Board of Directors and Chief Executive Officer are fully informed about pertinent environmental issue and are fully responsible for environmental policy. In selecting our Board of Directors, we will consider demonstrated environmental commitment as a factor.

11- Audits and Reports

We will conduct an annual self-evaluation of our progress in implementing these Principles. We will support the timely creation of generally accepted environmental audit procedures. We will annually complete the CERES Report, which will be made available to the public.

12- Disclaimer

These Principles establish an environmental ethic with criteria by which investors and others can assess the environmental performance of companies. Companies that sign these Principles pledge to go voluntarily beyond the requirements of the law. These principles are not intended to create new legal liabilities, expand existing rights or obligations, waive legal defenses, or otherwise affect the legal position of any signatory company, and are not intended to be used against a signatory in any legal proceeding for any purposes.
This amended version of CERES Principles was adopted by CERES Board of Directors on April 28, 1992

Responsibility Care Program Guiding Principles

1- To recognize and respond to community concerns about chemicals and our operations.

2- To develop and produce chemicals that can be manufactured, transported, used and disposed safely.

3- To make health, safety, and environmental considerations a priority in our planning for all existing and new products and processes.

4- To report promptly to officials, employees, customers, and the public, information on chemicals-related health or environmental hazards and to recommend protective measures.

5- To council customers on safe use, transportation and disposal of chemical products.

6- To operate our plants and facilities in a manner that protects the environment and the health and safety of our employees and the public.

7- To extend knowledge by conducting or supporting research on the health, safety and environmental effects of our products, processes and waste material.

8- To work with others to resolve problems created by past handling and disposal of hazardous substances.

9- To participate with government and others in creating responsible laws, regulations and standards to safeguard the community, workplace and the environment.

10- To promote the principles and practices of Responsibility Care by sharing experiences and offering assistance to others who produce, use, transport of dispose of chemicals.

The European Eco Management & Audit Scheme

EMAS

from the

This page provides an introduction to the Eco-Management & Audit Scheme, and provides links to many other environmentally oriented pages.

We welcome your comments and suggestions to:
help@quality.co.uk

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EMAS Description

EMAS is generally a site based registration system with due consideration provided to off site activities that may have a bearing upon the products and services of the primary site. Within the UK an extension to the scheme has been agreed for local government operations, who may also register their Environmental Management Systems to the EMAS Regulations.

EMAS requires an Environmental Policy to be in existence within the organisation, fully supported by senior management, and outlining the policies of the company, not only to the staff but to the general public and other stake holders. The policy needs to clarify compliance with Environmental Regulations that may effect the organisation and stress a commitment to continuous improvement. Emphasis has been placed on policy as this provides the direction for the remainder of the Management System.
Those companies who have witnessed ISO9000 Assessments will know that the policy is frequently discussed during the assessment, many staff are asked if they understand or are aware of the policy, and any problems associated with the policy are seldom serious. The Environmental Policy is different, this provides the initial foundation and direction for the Management System and will be more stringently reviewed than a similar ISO9000 policy. The statement must be publicised in non-technical language so that it can be understood by the majority of readers. It should relate to the sites within the organisation encompassed by the Management System, it should provide an overview of the company’s activities on the site and a description of those activities. A clear picture of the company’s operations.

In addition to a summary of the process, the statement requires quantifiable data on current emissions and environmental effects emanating from the site, waste generated, raw materials utilised, energy and water resources consumed, and any other environmental aspect that may relate to operations on the site. The preparatory review is part of an EMAS Assessment. This is not the case for BS7750. The Environmental Review must be comprehensive in consideration of input processes and output at the site. This control process is designed to identify all relevant environmental aspects that may arise from existence on the site. These may relate to current operations, they may relate to future, perhaps even unplanned future activities, and they will certainly relate to the activities performed on site in the past (i.e. contamination of land).

The initial or preparatory review will also include a wide-ranging consideration of the legislation which may affect the site, whether it is currently being complied with, and perhaps even whether copies of the legislation are available. Many of the environmental assessments undertaken already have highlighted that companies are often unaware of ALL of the legislation that affects them, and being unaware, are often not meeting the requirements of that legislation.

The company will declare its primary environmental objectives, those that can have most environmental impact. In order to gain most benefit these will become the primary areas of consideration within the improvement process, and the company’s environmental programme. The programme will be the plan to achieve specific goals or targets along the route to a specific goal and describe the means to reach those objectives such that they are real and achievable. The Environmental Management System provides further detail on the environmental programme. The EMS establishes procedures, work instructions and controls to ensure that implementation of the policy and achievement of the targets can become a reality. Communication is a vital factor, enabling people in the organisation to be aware of their responsibilities, aware of the objectives of the scheme, and able to contribute to its success.

**The environmental audit and review cycle**

As with ISO9000 the Environmental Management System requires a planned comprehensive periodic audit of the Environmental Management System to ensure that it is effective in operation, is meeting specified goals, and the system continues to perform in accordance with relevant regulations and standards. The audits are designed to provide additional information in order to exercise effective management of the system, providing information on practices which differ to the current procedures or offer an opportunity for improvement. Under EMAS the bare minimum frequency for an audit is at least once every three years.

Most companies are used to producing an annual report and accounts describing the activities of the organisation over the previous year, and its plans for the future. EMAS generally expects a similar system for the company’s environmental performance. That there should be a periodic statement about performance during the previous period, a set of current performance data, and notice of any particular plans for the future that may have an effect upon the environmental performance of the organisation, whether detrimental or beneficial.
The peculiarity with EMAS is that the policy statement, the programme, the management system and audit cycles are reviewed and validated by an external accredited EMAS verifier. The verifier not only provides a registration service but is also required to confirm, and perhaps even sign, the company’s periodic environmental statements.

## Comparison of EMS Standards

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The Eco Management and Audit Scheme (EMAS)

In 1992, the European Commission published a draft proposal, in the Official Journal of the European Communities, creating an Eco-Audit scheme "or what is now referred to as the co-Management and Audit Scheme" (EMAS). "Through voluntary participation and publicly disclosed environmental reviews, EMAS attempts to create a framework for ensuring that organizations undertake measures to implement positive environmental management programs. The scheme is intended to complement other existing management and quality standards of practice.

Registration in the scheme is site-specific, in that a company can not register on behalf of its subsidiaries. In order to register, an organization must carry-out the following steps:

1. Initiate a comprehensive environmental audit of its activities. This could include a review
2. of its use and choice of raw materials, energy sources, transportation, methods of waste disposal and so forth.
3. Establish and document an internal environmental protection system" which, at the very least, should create a corporate environmental policy, program and environmental management system.
4. Issue a public statement in accordance to the requirements outlined in the EMAS document. The statement should include the following:
   - description of the organization's activities at the site with respect to its impact on the environment.
   - summary of quantitative data used for evaluation.
   - a set of policy goals and targets for improvement.
   - assessment of the site's compliance with regulatory requirements, company standards, and site objectives.
   - reference to when subsequent issues will be discussed, and new audits will be performed.
5. Validate the statement through an accredited environmental auditor "or verifier", and then submit it to a "competent body". This body judges the submission on the accuracy of its content, validity of its audit practice, and internal procedures for generating its information.

Once a submission is approved, an organization can register into the EMAS scheme; although only on a company wide basis, and not for specific products or activities. Deregistration can only occur if an organization fails to submit periodically up-dated audits, and not if it fails to meet its environmental targets.

Even though EMAS is scheduled to become a regulation in the summer of 1995, there still remains a number of issues to be resolved, including:
   - how to determine the qualification of a verifier; and
   - which Government agency, of each Member State, will fall under the purview as a "competent body".

Return to TC 207 home page.

INTERNATIONAL STANDARDS FOR ENVIRONMENTAL MANAGEMENT SYSTEMS: ISO 14000

By Isis Fredericks and David McCallum

1. At Last: A Consistent, Internationally Recognized Model for Environmental Management

The ISO 9000 series of Quality Management standards, with over 70,000 registrations around the world, is a model for a quality management system. Now make way for the new kid on the block - the ISO 14000 series of standards - the model for an environmental management system.

Environmental Management is a tool for an organization to keep aware of the interactions that its products and activities have with the environment and to achieve and continuously improve the desired level of environmental performance.

ISO 9000 is aimed at meeting customer requirements, control of the process and continuous improvement. ISO 14000 is aimed at these, and more: 'customer requirements' has expanded to include regulatory and other mandatory environmental requirements; and 'continuous improvement' is not only driven by customer expectations but also by priorities and objectives generated internally by the organization.

2. What is in the ISO 14000 Environmental Management System Model?

The ISO 14000 series of standards is comprised of several guideline standards and one compliance standard — ISO 14001 Environmental Management Systems. Although publication of the standards is about a year away, five standards are in Committee Draft form and the Draft International Standards will be available shortly for public comment through the International Organization of Standardization (ISO) based in Geneva. When ISO 14001 is published, organizations meeting the requirements will be able to seek registration to the standard in a process similar to ISO 9000 registration.

The ISO 14000 series is modeled after the BS 7750 (Environmental Management Systems) originally published in 1992 and updated in 1994. The BS 7750 standard has been the subject of a pilot implementation program involving nearly 500 participants from various industries.

3. How do ISO 9000 and ISO 14000 Compare?

ISO 14000 does not replace ISO 9000. A company with an ISO 9000 registration has a good foundation for ISO 14000 and both are part of an organization's overall Management System. ISO 14000 also does not replace regulations, legislation and codes of practice (such as Responsible Care) that an organization
has to comply with. Rather it provides a system for monitoring, controlling and improving performance regarding those requirements.

ISO 14000 is the package that ties the mandatory requirements into a management system which is made up of objectives and targets focusing on meeting and exceeding the mandatory requirements with a focus on prevention and continuous improvements.

ISO 14001 uses the same fundamental systems as ISO 9000 such as documentation control, management system auditing, operational control, control of records, management policies, audits, training, statistical techniques, and corrective and preventive action.

There are also some definite differences. Besides the similarities, ISO 14001 has clearer statements about communication, competence and economics than are currently found in ISO 9000. Also, ISO14001 incorporates the setting of objectives and quantified targets, emergency preparedness, considering the view of interested parties and public disclosure of the environmental policy.

An organization with an ISO 9000 registration will find that they are a long way towards an ISO 14001 registration from the outset. Even though there are differences, the management system is generally consistent in both the standards. The ISO approach to management serves as a "model" which needs to be adapted to meet the needs of the organization and integrated into existing management systems. The standards have been designed to be applied by any organization in any country regardless of the organization's size, process, economic situation and regulatory requirements.

4. Why Consider Using the ISO 14000 Environmental Management System Model?

An organization may elect to comply with ISO 14001 as a:

- model for an Environmental Management System
- format to audit the Environmental Management System against
- method of demonstrating the Environmental Management System compliance
- process for third party and/or customer recognition
- public declaration of their Environmental Management System

Benefits of implementing an ISO 14001 Environmental Management System may include:

- enhanced compliance to legislation
- facilitated financial and real estate transactions, where environmental performance is a factor
- reduced costs associated with consumer audits
- ability to bid for contracts (protection or increase of market share)
- market forces (a real or perceived 'greening' of the marketplace)
- economic return from increased efficiency of resource use; and
- increased ability to adapt to changing circumstances.

Some organizations may choose to implement an ISO 14001 program but not seek registration. Registration to ISO 14001 should be considered if it:

- is a customer or industry requirement;
- complements market strategy; or
- is perceived as a valuable motivational factor.
Registration to an ISO 9000 standard generally requires twelve to eighteen months of effort depending on the complexity of the organization and the existing systems. It is anticipated that it will take at least the same length of time to develop and implement an Environmental Management System which compiles with the ISO 14001 requirements.

**ISO 14001 Environmental Management System Elements:**

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5. **How Do You Implement ISO 14000?**

As in an ISO 9000 program, senior management commitment is required before embarking on an ISO 14000 program.

Once senior management is committed to implementing an ISO 14001 program the project planning begins. This planning includes scheduling, budgeting, assigning personnel, responsibilities and resources, and if required, retaining specialized external assistance.

Senior management needs to provide a focus for the Environmental Management System by defining the organization's environmental policy. This policy must include, among other things, a commitment to continuous improvement, prevention of pollution and compliance with legislation and regulations. It must be specific enough to form the basis for concrete actions; 'parenthood' feel-good statements are not
adequate. When documented by management, this environmental policy must be implemented, and maintained and communicated within the organization and made available to the public.

Next, an initial review the organization's existing environmental program is needed. This review includes the consideration of all applicable environmental regulations, existing processes, documentation, work practices and effects of current operations.

Once the initial review is completed, a strategic or implementation plan can be developed. Implementation planning is similar to project management and the steps, scope, time-frame, costs and responsibilities need to be defined in order to develop and implement an Environmental Management System that meets the organization's targets and objectives, and promotes continuous improvement. The strategic plan sets the framework for participation of the responsible and affected parties within the organization.

Both in the initial review and on an ongoing basis, the organization's activities, products and services require evaluation to determine their interaction with the environment. Environmental issues such as noise, emissions, environmental impact, waste reduction and energy use must be identified. The organization then needs to identify the aspects which can interact with the environment and which ones it can control or influence.

The identified impacts are then used as a basis for setting environmental objectives within the organization. Objectives also need to take into account relevant legal and regulatory requirements, financial, operational and business requirements and the views of interested parties. Interested parties may be people or groups, such as neighbours or interest groups, concerned with the organization's environmental performance.

Objectives of the organization need to be determined and specific targets set. An objective is an overall goal which may be as simple as "meeting or exceeding regulations" or "reduction in energy consumption" and the targets provide quantified measurements. Objectives and targets are set by the organization, not by the ISO 14001 standard. Identifying the impacts, judging their significance and setting reasonable objectives and targets are some of the major 'environmental' challenges presented by ISO 14000.

Once the targets and objectives are set, the organization needs to implement the strategic plan. Beyond the 'environmental' challenges, management functions will have to be adapted to meet the requirements of the Environmental Management System Standard. The level of conceptual challenge this will present to ISO 9000 firms, where the corporate culture will already be changing, will be less than for non-ISO 9000 firms, but there will be some new areas that required attention.

6. Maintaining an ISO 14000 Environmental Management System

Once the Environmental Management System is implemented, it's progress needs to be continually measured and monitored. Routine measurement and monitoring must be undertaken of the activities which have been identified as having the potential for a significant impact on the environment.

Routine auditing and review are the keys to continuous improvement. Environmental as well as management components will be required in the audit program. Audits of an organization's Environmental Management System do not replace, but rather complement, the issue specific environmental audits that may be conducted externally by regulators and consultants or internally by environmental engineers or other qualified personnel. Where issue specific audits address regulatory
compliance, site assessment or emissions, the Environmental Management System audits address effectiveness of the management system.

Periodic Environmental Management System audits are needed to determine if the Environmental Management System conforms to the requirements of ISO 14001, and that the program is implemented and is continuously improving.

The measuring and monitoring activities and the internal Environmental Management System audits will identify areas for improvement. Action must be taken immediately to mitigate any negative impact of the non-conformance and corrective action must be implemented, proportional to the non-conformance, to eliminate reoccurrence.

To ensure the continuing effectiveness of the Environmental Management System, management needs to regularly review and evaluate information such as the results of audits, corrective action, current and proposed legislation, results of monitoring, and complaints. This review allows management to look at the system and ensure that it is, and will remain, suitable and effective.

The management review may result in changes to policies or systems as the organization evolves and as technology advances. An organization's Environmental Management System is not a stagnant system but must continually evolve to meet the organization's ever changing needs.

Relationship between Management Systems

7. Integrating the ISO 14000 Environmental Management System

The Environmental Management System must be integrated with the organization's other activities. If it is seen as a separate program, it will be difficult or impossible to maintain. The objectives, targets, procedures and systems must be part of routine operations related to the on-going activities of the organization.

It is important to remember that ISO 14000 is not an add-on program. Nor is it about "environmentalism" or being "green". An effective Environmental Management System is the consistent and systematic control of procedures or operations, products or services which can have a significant impact on the environment. It is obviously concerned with environmental performance, but what it is about is effective corporate management.

An organization which has effectively integrated an ISO 14001 Environmental Management System with its other business management systems is well on its way towards managing its processes with a view towards compliance, consistency and continuous improvement, and can accrue the accompanying benefits.

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*David McCallum* is the President of M+A Environmental Consultants Inc. in Hamilton, Ontario. David is an impact assessment and environmental management specialist. Tel: (905) 529-0678 Fax: (905) 529-9136
ISO 14020s - Environmental Labeling-Marketing: Efficient and Accurate Environmental Marketing Procedures, 1/e

August, 1996

W. Lee Kuhre, Scotts Valley, California

Copyright 1997, 496 pp., Cloth Bound with Disk (0-13-252149-0)

This title is published by Prentice Hall Professional Technical Reference

Summary:
ISO 14020's Environmental Labeling guidelines from the International Organization of Standards attempts to remove much of the confusion and problems due to poorly defined environmental marketing regulations, standards, guidelines and at least 12 different and conflicting labeling programs. The ultimate goal of ISO 14020s is to improve the environment by bringing order and clarity to environmental marketing. Those companies that succeed in implementing ISO 14020s will be the most competitive and successful, because they will provide acceptable products and services to consumers.

Features:
- covers traditional forms of environmental marketing including:
  - labeling, TV and radio ads
  - technical literature
  - future possibilities such as use of computer networks, telemarketing, and holograms
- provides realistic, cost effective tools and techniques for implementing ISO 14020 that will help organizations sell their product, avoid liabilities, and help the environment.
- provides many traditional marketing tools on the included disk.

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Comments to webmaster@prenhall.com

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Upper Saddle River, New Jersey 07458
Legal Statement
Acts to help the business community to make a constructive contribution to the solution of environmental problems, and to ensure that business views are taken into account by the intergovernmental organizations concerned with the environment.

Current priorities

- Input into on-going international activities on sustainable development, especially the follow-up to the IN Conference on Environment and Development (Rio, June 1992) and the UN Conventions related to the environment.

- Promoting the Business Charter for Sustainable Development, and advising on its implementation.

- Input into key international conferences.

- Promoting the ICC Position Paper on environmental labelling schemes and code on environmental claims in advertising (with Commission on Marketing).

- Close co-operation with UN Environment Programme (UNEP) on environmental reporting, environmental management systems and training, technology assessment, and the UNEP/ICC Advisory Panel on the implementation of the ICC Business Charter for Sustainable Development.

- Organization of regional workshops on environmental management systems, on corporate environmental performance reports and technology co-operation.

- Monitoring and participation in the ISO process for the development of standards on environmental management and the development of guidelines.

- Promotion of the ICC positions on environmental auditing (Publications 468 and 483), and comments on EU and other international proposals in this area.

Chairman - Edwin Falkman
Vice-Chairmen - Takeshi Abiru, Manuel Pio Correa
Secretary - Denise O'Brien
Attaché - Oliver Kserue

Working Party - Environmental Management Systems
Chairman - Takeshi Abiru

Working Party - Sustainable Development

Chairman - Peter Bright

Joint ICC/BIAC Working Party "Basle Convention"

Chairman - John C. Bullock

Joint Working-Party - Insurance/Environment Issues

Chairman - André Hellebuyck
Co-Chairman - Jens Hennild

Working Party - Marketing and Environment on Eco-Labelling

Chairman - (to be nominated)

Quick Silk Routes ® - Direct Access to Major Destinations

- ICC - "The World Business Organization"
- IBCC-Net - "The Global Business Exchange"
- IBCC - "The World Forum of Chambers of Commerce"
- IB Magazine - "Your Passport to the Global Marketplace"
- Xilan - Gateway to "The Electronic Silk Road"

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This document is available at URL: HTTP://WWW1.USA1.COM/~IBNET/ICCENVIR.HTML
Appendix IV
ISO 14000 Training and Consulting
ISO 14000 is the Environmental Management Standard (EMS) group of documents. It encompasses a variety of information relating to the environment, including:
Environmental Management ...

100% http://www.smartersolutions.com/ssiso.htm  (Size 4.3K)

Ceem, Inc. - ISO 9000 QS9000 ISO 14000 Training
Welcome... to CEEM Training Services, a division of CEEM, Inc. For more than 17 years, CEEM has been offering seminars, workshops, conferences, and publications designed to provide ...

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ISO 9000 QS 9000 ISO 14000 Training Materials
Digital Quality Systems sells software for industry in Northern Illinois.

100% http://www.mcs.net/~lengoff/training.html  (Size 5.4K)

ISO 14000 Training
ISO 14000 Training ISO 14000 Training ISO 14000 - Informational Workshop ISO 14001 - Application and Implementation Course EARA Approved Advanced EMS Audit Course for Quality and ...

100% http://birddog.yankee.com/course1.htm  (Size 10.1K)

ISO 14000 Training Courses ************************************************** MARAD 8/3/95
Below is a list of ISO 14000 Training Programs from independent organizations: ISO TRAINING PROGRAMS Bureau Veritas Quality International 555 E. Ocean Blvd. Suite 310 Long Beach, CA. 90802 ...

100% http://marad.dot.gov/ecn2.txt  (Size 1.1K)

Welcome To K M Technologies, Inc. We Want to be Your Business Solution
A Knowledge Management Company providing, ISO-9000 ISO-14000 Training and Implementation, Internet Training. HTML. Writing and Implementation, Internet as
Subject: ISO 14000 Does anyone know what kind of training programs are being developed by private consultants and/or public sector P2 service providers? Thanks. Sean Sean P. Gabarre Environmental Programs NIST Manufacturing Extension Partnership Bldg. ...
100% http://gopher.great-lakes.net:2200/R284990-293090-1m/mailarc/p2tech/p2net96.txt (Size 7.9K)

EHS Training Research Technology Transfer EHS TRAINING CATALOG
ISO 14000
TRAINING SERIES This series of training courses from the Institute offers the attendee the opportunity to learn the basics of implementing, documenting, and auditing professional ...
100% http://www.uokhsu.edu/depts/oeh/iempg4.htm (Size 12.5K)

Gateway Communications provides comprehensive, integrated, and creative solutions to help you achieve your educational and training objectives. These solutions include writing, editing, publications ...
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Ecological Operating Systems Home Page Description of Strategic Environmental Management consulting services of Gil Friend and Associates
100% http://www.ige.apc.org/eco-ops/ (Size 5.9K)

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iso 14000 training

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Example: +"scuba diving" Hawaii, Maui

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Disclaimer
ISO 14001 - Executive Course for the Application of Environmental Management Systems

Course Description:

Acquire the tools needed to develop and implement an environmental management system which meets the requirements of ISO 14001. The course discusses key principles of an EMS and approaches for integrating the requirements of ISO 14001 into your existing management systems.

Course Dates

August 27-28, 1996   Boston, MA
September 9-10, 1996  Boston, MA
November 4-5, 1996   Dallas, TX
December 9-10, 1996  Orlando, FL
March 3-4, 1997      San Jose, CA
April 7-8, 1997      Boston, MA

Course Fee - $695.00

Course benefits

These courses are designed to provide measurable value to your company in terms of realistic, actionable "getting started" methods for developing a sound, responsible environmental management system. The comprehensive course materials are designed specifically for practical application within your company. You will become an important asset to your company in its drive towards demonstrating environmental responsibility and leadership.

Who should attend?

☐ Senior executives involved with management systems;
☐ Staff members having personal responsibility for their company's compliance with environmental, health, and safety legislation;
☐ Those chartered with the implementation of management systems;
☐ Those involved with internal or external EMS audit activities.

Course developers

Yankee Engineering Services combines environmental expertise with ISO experience to offer you a uniquely qualified group to assist your organization in preparing for ISO 14001.
EHS Training ☑ ☑ Research ☑ ☑ Technology Transfer

ABOUT THE INSTITUTE

FACULTY and INSTRUCTORS

"EPA Approved" OSHA TRAINING SERIES

HEALTHCARE ENVIRONMENTAL MANAGEMENT

EHS TRAINING CATALOG - ISO 14000 Training Series & Environmental Health Training

EHS TRAINING CATALOG - Environmental Technologies Training

REGISTRATION INFORMATION

ABOUT THE INSTITUTE

Institute for Environmental Management
Gears Up for Travel and Training in '96

Since its inception in 1992, the College of Public Health's Institute for Environmental Management has experienced tremendous growth, particularly during 1995 and 1996.

Under the direction of Director Dr. Daniel T. Boatright, training courses have filled the calendar, while considerable work has been performed to bring new programs and courses on-line. The agenda for 1996 includes development of these programs, as well as the introduction of the Institute to overseas markets.

In 1995, the Institute delivered a week-long course, entitled "Comprehensive Healthcare Environmental Management (CHEM)," to EHS professionals from all over the country. The course was held in
EHS TRAINING CATALOG

ISO 14000 TRAINING SERIES

This series of training courses from the Institute offers the attendee the opportunity to learn the basics of implementing, documenting, and auditing professional environmental management systems (EMSs) based on the new international standard ISO 14001 "Environmental Management System Specifications" and the equivalent British standard BS 7750.

Understanding the ISO 14000 Series

ISO 14001: Planning and Implementation

Environmental Management Systems Internal Auditor Course

Environmental Management Systems Advanced Auditing Course

ENVIRONMENTAL HEALTH TRAINING

Introduction to Wastewater Operations

Advanced Wastewater Operations

Introduction to Water Treatment

Advanced Water Treatment
Understanding the ISO 14000 Series

1 day

This one-day course is intended for executive and senior level manager and policy makers. It is designed to provide an understanding of how to develop and implement an effective environmental management system with a focus on cost-benefits. Topics include:

- Current expectations for requirements and strategies for adapting existing systems
- Optimization of profits, production, and quality by effective resource management
- Process Systems Design
- ISO 14000 Overview
- ISO 14001 and third-party registration
- Costs of compliance

Registration Information

ISO 14001: Planning and Implementation

3 days

This three-day course provides the student with a practical guide to help plan and implement an environmental management system. The course concentrates on policy, legislation, planning aspects, and costs. Also included is a review of documentation requirements with guidance on the preparation of necessary manuals, plans, and procedures. The course is intended for senior managers involved in setting environmental policies (environmental managers/engineers). This course is an introductory, and is not intended to provide all the technical information required for program implementation. Self-study will be required after the course. Topics include:

- Introduction to EMS
- ISO 9000 v. ISO 14000
- Assessment
- Planning, Communication, and Training
Compliance
Current Systems Integration
Integrating safety and health programming
Planning a documentation strategy
Program maintenance cost estimation
Format options and procedures
Environmental Quality System Documentation

Environmental Management Systems Internal Auditor Course

2 days

This two-day course is to provide an understanding of the internal auditing process for environmental management systems based on ISO 14001. An understanding of ISO 14000 is required prior to taking this course. This course is intended for: experienced quality auditors who want to apply EMS audit processes to internal audits; line-managers; and managers responsible for developing internal audit systems. Topics include:

Internal Audit Procedures
ISO 14001, BS 7750, ISO Standards and Other Codes
Identification and Evaluation of Environmental Effects
Objectives and Targets
Auditing Standards
Environmental Policy Assessment
Audit Planning
Non-conformities and Evaluation
Auditor Qualifications
Accreditation and Certification: Sources of Information

Registration Information
Environmental Management Systems Advanced Auditor Course

5 days

This five-day course provides the student with a recognized qualification for EMS auditors who wish to understand auditing an ISO 14001 or BS 7750 EMS. The course covers the requirements of the EMS auditing standards ISO 14010 and 14011/1, and is the equivalent of the RAB quality lead auditor course qualification. There is an examination, and a certificate will be issued, signifying satisfactory completion of the course. (Note: The course materials have been submitted to EARA for assessment: approval is pending.) Key topics include:

- An EMS and the Stakeholder Requirements
- Principles of EMS Audit Planning
- Auditing and Management Skills
- Issues Relating to Environmental Law and Compliance Auditing
- EMS Non-Compliance Evaluation and Reporting
- EMS Auditor Training and Qualifications
- Third-Party EMS Certification

Registration Information

Introduction to Wastewater Operations

5 days

This course is a 40-hour program designed to provide the participants with an overview of the fundamental aspects of biological and physical-chemical treatment of domestic and non-hazardous industrial wastewater streams. Key topics include:

- Activated Mass Treatment Systems
- Fixed Film Treatment Systems
- Primary Sludge Treatment
- Secondary Sludge Treatment
Distance Learning Associates

Corporate Training

Are You Ready For ISO 14000?

Do you know the impact ISO 14000 will have on your business?

Do you know how ISO 14000 will effect your international trade?

Participate in the National ISO 14000 Workshop and find out!

You owe it to your company to learn about the new

International Standards Organization 14000 Workshop

October 28, 1996

3:00-5:00 p.m.(EST)

Sponsored by:

The National Institute For Environmental Renewal

and

Distance Learning Associates

(the nation's largest provider of Distance Education)

Workshop Facilitators:

Joe Cascio

Ed Schoner

Continuing Education Unit (CEU) awarded for course completion from the University of Scranton.

ISO 14000 Certificates awarded to individuals and companies who participate and complete the 2 hour workshop.
Comprehensive workshop materials included with each individual or corporate enrollment providing valuable details regarding ISO 14000 Requirements and identifying the process necessary for certification.

- Regulations
- Procedures
- Auditing
- Certification
- International Trade Requirements
- Documentation
- Legislative Impacts and More

2 hour live workshop delivered by satellite to your location.

No satellite dish...no problem...complete video tape programming available.

CEU credit awarded for courses completion from the University of Scranton.

ISO 14000 Workshop

will feature:

Introduction of the ISO 14000 "Concert for Environmental Safety" and regulation standards including:

- regulations
- application
- organizational requirements
- certification procedures
- environmental issues
- legal requirements
- management responsibilities
- auditing procedures
- objectives
- target areas
- implementation
- operation issues
- training
- corporate awareness
- documentation
- communication
- emergency plans
- monitoring and measurement
- corrective action

Two ways to participate:

1. Live Interactive Participation by Satellite

If you have satellite dish at your business you can participate in the live broadcast on October 28 1996. You can contact a special 800 telephone number audio bridge which will connect you to the presenters who will answer questions during our workshop.

Live Interactive Periods include completed set of details ISO 14000 workshop materials will be delivered to you prior to the start of the workshop. You will be required to complete certain activities and submit the results to NIER in return for you CEU credit and corporate/individual ISO 14000 workshop materials will be delivered to you.
ISO 14000 workshop certificate. You may videotape the transmission and keep the copy to use in perpetuity.

2. No Satellite Dish! No Problem!

You can receive a complete 2 hour video tape of the workshop including all related support material. CEU and ISO 14000 certificate will be issued upon the completion of course work, the same as the live participants are required to do. You may not only keep the tape but you may also make unlimited copies to be used within the physical plant as listed on the enrollment form.

The workshop will make use of e-mail bulletin boards and ongoing chat rooms for direct communication between you and the instructors, you and other participants for two weeks following the broadcast date October 28, 1996.

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- Environmental Management Systems from a business standpoint
- Regulatory issues associated with ISO 14000
  - The makeup and structure of the US TAG (Technical Advisory Group) teams - which TAG groups to follow based on interest and need
- Framing ISO 14001 to gain management approval
- The details of the ISO 14001 EMS specification
- Worldwide EMSs and ISO 14000 trends
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Planning the program
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- Objectives and targets
- Non-conformities and evaluations
- Auditor qualifications
- Accreditation and certification; sources of information

Who Should Attend:

☐ Experienced Quality Auditors who want to apply EMS audit processes to internal audits
☐ Line Managers who understand the basic audit process
☐ Managers responsible for developing internal EMS audit systems
☐ Environmental Managers responsible for auditing an ISO 14001 EMS

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- Environmental Management Systems from a business standpoint
- Regulatory issues associated with ISO 14000
- The makeup and structure of the US TAG (Technical Advisory Group) teams-which TAG groups to follow based on interest and need
- Framing ISO 14001 to gain management approval
- The details of the ISO 14001 EMS specification
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- Environmental/Quality/Occupational Health & Safety Managers
- Manufacturing Managers and Engineers
- Consultants

1997 Course Schedule

January 15 • Dallas, TX
January 30 • Orlando, FL
May 8 • Chicago, IL
Fees

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☐ Assessing environmental effects
☐ Planning the program
☐ Understanding stakeholder requirements
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☐ Developing targets and objectives for your EMS program
☐ Communication and training requirements
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☐ Occupational Health & Safety Professionals
☐ Those who want to implement an EMS
☐ Those who want to learn about the requirements for ISO 14001 implementation

Course Schedule
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**Fees**

The basic fee for **Developing and implementing an ISO 14001 EMS ($995)** includes a comprehensive course notebook, the ISO/DIS 14001 standard, refreshments and lunch. A certificate of attendance and 2.1 CEUs will also be awarded. **BONUS!** If you are not already a subscriber to International Environmental Systems Update, you will receive a free three month trial subscription to this highly regarded newsletter. This independent newsletter covers the very latest on the emerging ISO 14000 series of standards. It is devoted to monitoring what companies, regulatory organizations and governments are doing to prepare for ISO 14000. **Free with registration!**

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- Types of environmental audits; auditing standards
- Environmental policy assessment
- Environmental legislation and codes of practice
- Audit planning
- Identification and evaluation of environmental effects
- Objectives and targets
- Non-conformities and evaluations
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Appendix V
GUIDES FOR THE USE OF ENVIRONMENTAL MARKETING CLAIMS

The Application of Section 5 of the Federal Trade Commission Act to Environmental Advertising and Marketing Practices

Federal Trade Commission
July 1992

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A. Statement of Purpose:

These guides represent administrative interpretations of laws administered by the Federal Trade Commission for the guidance of the public in conducting its affairs in conformity with legal requirements. These guides specifically address the application of Section 5 of the FTC Act to environmental advertising and marketing practices. They provide the basis for voluntary compliance with such laws by members of industry. Conduct inconsistent with the positions articulated in these guides may result in corrective action by the Commission under Section 5 if, after investigation, the Commission has reason to believe that the behavior falls within the scope of conduct declared unlawful by the statute.

B. Scope of Guides:
These guides apply to environmental claims included in labeling, advertising, promotional materials and all other forms of marketing, whether asserted directly or by implication, through words, symbols, emblems, logos, depictions, product brand names, or through any other means. The guides apply to any claim about the environmental attributes of a product or package in connection with the sale, offering for sale, or marketing of such product or package for personal, family or household use, or for commercial, institutional or industrial use.

Because the guides are not legislative rules under Section 18 of the FTC Act, they are not themselves enforceable regulations, nor do they have the force and effect of law. The guides themselves do not preempt regulation of other federal agencies or of state and local bodies governing the use of environmental marketing claims. Compliance with federal, state or local law and regulations concerning such claims, however, will not necessarily preclude Commission law enforcement action under Section 5.

C. Structure of the Guides:

The guides are composed of general principles and specific guidance on the use of environmental claims. These general principles and specific guidance are followed by examples that generally address a single deception concern. A given claim may raise issues that are addressed under more than one example and in more than one section of the guides.

In many of the examples, one or more options are presented for qualifying a claim. These options are intended to provide a "safe harbor" for marketers who want certainty about how to make environmental claims. They do not represent the only permissible approaches to qualifying a claim. The examples do not illustrate all possible acceptable claims or disclosures that would be permissible under Section 5. In addition, some of the illustrative disclosures may be appropriate for use on labels but not in print or broadcast advertisements and vice versa. In some instances, the guides indicate within the example in what context or contexts a particular type of disclosure should be considered.

D. Review Procedures:

Three years after the date of adoption of these guides, the Commission will seek public comment on whether and how the guides need to be modified in light of ensuing developments.

Parties may petition the Commission to alter or amend these guides in light of substantial new evidence regarding consumer interpretation of a claim or regarding substantiation of a claim. Following review of such a petition, the Commission will take such action as it deems appropriate.

E. Interpretation and Substantiation of Environmental Marketing Claims:

Section 5 of the FTC Act makes unlawful deceptive acts and practices in or affecting commerce. The Commission's criteria for determining whether an express or implied claim has been made are enunciated in the Commission's Policy Statement on Deception. In addition, any party making an express or implied claim that presents an objective assertion about the environmental attribute of a product or package must, at the time the claim is made, possess and rely upon a reasonable basis substantiating the claim. A reasonable basis consists of competent and reliable evidence. In the context of environmental marketing claims, such substantiation will often require competent and reliable scientific evidence. For any test, analysis, research, study or other evidence to be "competent and reliable" for purposes of these
guides, it must be conducted and evaluated in an objective manner by persons qualified to do so, using procedures generally accepted in the profession to yield accurate and reliable results. Further guidance on the reasonable basis standard is set forth in the Commission's 1983 Policy Statement on the Advertising Substantiation Doctrine. 49 Fed. Reg. 30,999 (1984); appended to Thompson Medical Co., 104 F.T.C. 648 (1984). These guides, therefore, attempt to preview policy in a relatively new context -- that of environmental claims.

F. General Principles:

The following general principles apply to all environmental marketing claims, including, but not limited to, those described in Part G below. In addition, Part G contains specific guidance applicable to certain environmental marketing claims. Claims should comport with all relevant provisions of these guides, not simply the provision that seems most directly applicable.

1. Qualifications and Disclosures: The Commission traditionally has held that in order to be effective, any qualifications or disclosures such as those described in these guides should be sufficiently clear and prominent to prevent deception. Clarity of language, relative type size and proximity to the claim being qualified, and an absence of contrary claims that could undercut effectiveness, will maximize the likelihood that the qualifications and disclosures are appropriately clear and prominent.

2. Distinction Between Benefits of Product and Package: An environmental marketing claim should be presented in a way that makes clear whether the environmental attribute or benefit being asserted refers to the product, the product's packaging or to a portion or component of the product or packaging. In general, if the environmental attribute or benefit applies to all but minor, incidental components of a product or package, the claim need not be qualified to identify that fact. There may be exceptions to this general principle. For example, if an unqualified "recyclable" claim is made and the presence of the incidental component significantly limits the ability to recycle the product, then the claim would be deceptive.

   Example 1: A box of aluminum foil is labeled with the claim "recyclable," without further elaboration. Unless the type of product, surrounding language, or other context of the phrase establishes whether the claim refers to the foil or the box, the claim is deceptive if any part of either the box or the foil, other than minor, incidental components, cannot be recycled.

   Example 2: A soft drink bottle is labeled "recycled." The bottle is made entirely from recycled materials, but the bottle cap is not. Because reasonable consumers are likely to consider the bottle cap to be a minor, incidental component of the package, the claim is not deceptive. Similarly, it would not be deceptive to label a shopping bag "recycled" where the bag is made entirely of recycled material but the easily detachable handle, an incidental component, is not.

3. Overstatement of Environmental Attribute: An environmental marketing claim should not be presented in a manner that overstates the environmental attribute or benefit, expressly or by implication. Marketers should avoid implications of significant environmental benefits if the benefit is in fact negligible.

   Example 1: A package is labeled, "50% more recycled content than before." The manufacturer increased the recycled content of its package from 2 percent recycled material to 3 percent recycled material. Although the claim is technically true, it is likely to convey the false impression that the advertiser has increased significantly the use of recycled material.

   Example 2: A trash bag is labeled "recyclable" without qualification. Because trash bags will ordinarily not be separated out from other trash at the landfill or incinerator for recycling,
they are highly unlikely to be used again for any purpose. Even if the bag is technically capable of being recycled, the claim is deceptive since it asserts an environmental benefit where no significant or meaningful benefit exists.

Example 3: A paper grocery sack is labeled "reusable." The sack can be brought back to the store and reused for carrying groceries but will fall apart after two or three reuses, on average. Because reasonable consumers are unlikely to assume that a paper grocery sack is durable, the unqualified claim does not overstate the environmental benefit conveyed to consumers. The claim is not deceptive and does not need to be qualified to indicate the limited reuse of the sack.

4. Comparative Claims: Environmental marketing claims that include a comparative statement should be presented in a manner that makes the basis for the comparison sufficiently clear to avoid consumer deception. In addition, the advertiser should be able to substantiate the comparison.

Example 1: An advertiser notes that its shampoo bottle contains "20% more recycled content." The claim in its context is ambiguous. Depending on contextual factors, it could be a comparison either to the advertiser's immediately preceding product or to a competitor's product. The advertiser should clarify the claim to make the basis for comparison clear, for example, by saying "20% more recycled content than our previous package." Otherwise, the advertiser should be prepared to substantiate whatever comparison is conveyed to reasonable consumers.

Example 2: An advertiser claims that "our plastic diaper liner has the most recycled content." The advertised diaper does have more recycled content, calculated as a percentage of weight, than any other on the market, although it is still well under 100% recycled. Provided the recycled content and the comparative difference between the product and those of competitors are significant and provided the specific comparison can be substantiated, the claim is not deceptive.

Example 3: An ad claims that the advertiser's packaging creates "less waste than the leading national brand." The advertiser's source reduction was implemented sometime ago and is supported by a calculation comparing the relative solid waste contributions of the two packages. The advertiser should be able to substantiate that the comparison remains accurate.

G. Environmental Marketing Claims:

Guidance about the use of environmental marketing claims is set forth below. Each guide is followed by several examples that illustrate, but do not provide an exhaustive list of, claims that do and do not comport with the guides. In each case, the general principles set forth in Part F above should also be followed.

1. General Environmental Benefit Claims: It is deceptive to misrepresent, directly or by implication, that a product or package offers a general environmental benefit. Unqualified general claims of environmental benefit are difficult to interpret, and depending on their context, may convey a wide range of meanings to consumers. In many cases, such claims may convey that the product or package has specific and far-reaching environmental benefits. As explained in the Commission's Ad Substantiation Statement, every express and material, implied claim that the general assertion conveys to reasonable consumers about an objective quality, feature or attribute
of a product must be substantiated. Unless this substantiation duty can be met, broad environmental claims should either be avoided or qualified, as necessary, to prevent deception about the specific nature of the environmental benefit being asserted.

**Example 1:** A brand name like "Eco-Safe" would be deceptive if, in the context of the product so named, it leads consumers to believe that the product has environmental benefits which cannot be substantiated by the manufacturer. The claim would not be deceptive if "Eco-Safe" were followed by clear and prominent qualifying language limiting the safety representation to a particular product attribute for which it could be substantiated, and provided that no other deceptive implications were created by the context.

**Example 2:** A product wrapper is printed with the claim "Environmentally Friendly." Textual comments on the wrapper explain that the wrapper is "Environmentally Friendly because it was not chlorine bleached, a process that has been shown to create harmful substances." The wrapper was, in fact, not bleached with chlorine. However, the production of the wrapper now creates and releases to the environment significant quantities of other harmful substances. Since consumers are likely to interpret the "Environmentally Friendly" claim, in combination with the textual explanation, to mean that no significant harmful substances are currently released to the environment, the "Environmentally Friendly" claim would be deceptive.

**Example 3:** A pump spray product is labeled "environmentally safe." Most of the product's active ingredients consist of volatile organic compounds (VOCs) that may cause smog by contributing to ground-level ozone formation. The claim is deceptive because, absent further qualification, it is likely to convey to consumers that use of the product will not result in air pollution or other harm to the environment.

2. **Degradable/Biodegradable/Photodegradable:** It is deceptive to misrepresent, directly or by implication, that a product or package is degradable, biodegradable or photodegradable. An unqualified claim that a product or package is degradable, biodegradable or photodegradable should be substantiated by competent and reliable scientific evidence that the entire product or package will completely break down and return to nature, i.e., decompose into elements found in nature within a reasonably short period of time after customary disposal.

Claims of degradability, biodegradability or photodegradability should be qualified to the extent necessary to avoid consumer deception about: (a) the product or package's ability to degrade in the environment where it is customarily disposed; and (b) the rate and extent of degradation.

**Example 1:** A trash bag is marketed as "degradable," with no qualification or other disclosure. The marketer relies on soil burial tests to show that the product will decompose in the presence of water and oxygen. The trash bags are customarily disposed of in incineration facilities or at sanitary landfills that are managed in a way that inhibits degradation by minimizing moisture and oxygen. Degradation will be irrelevant for those trash bags that are incinerated and, for those disposed of in landfills, the marketer does not possess adequate substantiation that the bags will degrade in a reasonably short period of time in a landfill. The claim is therefore deceptive.

**Example 2:** A commercial agricultural plastic mulch film is advertised as "Photodegradable" and qualified with the phrase, "Will break down into small pieces if left uncovered in sunlight." The claim is supported by competent and reliable scientific evidence that the product will break down in a reasonably short period of time after being exposed to sunlight and into sufficiently small pieces to become part of the soil. The qualified claim is not deceptive. Because the claim is qualified to indicate the limited extent of breakdown, the advertiser need not meet the elements for an unqualified photodegradable claim, i.e., that the product will not only break down, but also will decompose into elements found in nature.

**Example 3:** A soap or shampoo product is advertised as "biodegradable," with no
qualification or other disclosure. The manufacturer has competent and reliable scientific evidence demonstrating that the product, which is customarily disposed of in sewage systems, will break down and decompose into elements found in nature in a short period of time. The claim is not deceptive.

3. Compostable: It is deceptive to misrepresent, directly or by implication, that a product or package is compostable. An unqualified claim that a product or package is compostable should be substantiated by competent and reliable scientific evidence that all the materials in the product or package will break down into, or otherwise become part of, usable compost (e.g., soil-conditioning material, mulch) in a safe and timely manner in an appropriate composting program or facility, or in a home compost pile or device.

Claims of compostability should be qualified to the extent necessary to avoid consumer deception. An unqualified claim may be deceptive: (1) if municipal composting facilities are not available to a substantial majority of consumers or communities where the package is sold; (2) if the claim misleads consumers about the environmental benefit provided when the product is disposed of in a landfill; or (3) if consumers misunderstand the claim to mean that the package can be safely composted in their home compost pile or device, when in fact it cannot.

Example 1: A manufacturer indicates that its unbleached coffee filter is compostable. The unqualified claim is not deceptive provided the manufacturer can substantiate that the filter can be converted safely to usable compost in a timely manner in a home compost pile or device, as well as in an appropriate composting program or facility.

Example 2: A lawn and leaf bag is labeled "Compostable in California Municipal Yard Waste Composting Facilities." The bag contains toxic ingredients that are released into the compost material as the bag breaks down. The claim is deceptive if the presence of these toxic ingredients prevents the compost from being usable.

Example 3: A manufacturer indicates that its paper plate is suitable for home composting. If the manufacturer possesses substantiation for claiming that the paper plate can be converted safely to usable compost in a home compost pile or device, this claim is not deceptive even if no municipal composting facilities exist.

Example 4: A manufacturer makes an unqualified claim that its package is compostable. Although municipal composting facilities exist where the product is sold, the package will not break down into usable compost in a home compost pile or device. To avoid deception, the manufacturer should disclose that the package is not suitable for home composting.

Example 5: A nationally marketed lawn and leaf bag is labeled "compostable." Also printed on the bag is a disclosure that the bag is not designed for use in home compost piles. The bags are in fact composted in municipal yard waste composting programs in many communities around the country, but such programs are not available to a substantial majority of consumers where the bag is sold. The claim is deceptive since reasonable consumers living in areas not served by municipal yard waste programs may understand the reference to mean that composting facilities accepting the bags are available in their area. To avoid deception, the claim should be qualified to indicate the limited availability of such programs, for example, by stating, "Appropriate facilities may not exist in your area." Other examples of adequate qualification of the claim include providing the approximate percentage of communities or the population for which such programs are available.

Example 6: A manufacturer sells a disposable diaper that bears the legend, "This diaper can be composted where municipal solid waste composting facilities exist. There are currently [X number of] municipal solid waste composting facilities across the country." The claim is not deceptive, assuming that composting facilities are available as claimed and the manufacturer can substantiate that the diaper can be converted safely to usable compost in municipal solid waste composting facilities.
Example 7: A manufacturer markets yard waste bags only to consumers residing in particular geographic areas served by county yard waste composting programs. The bags meet specifications for these programs and are labeled, "Compostable Yard Waste Bag for County Composting Programs." The claim is not deceptive. Because the bags are compostable where they are sold, no qualification is required to indicate the limited availability of composting facilities.

4. Recyclable: It is deceptive to misrepresent, directly or by implication, that a product or package is recyclable. A product or package should not be marketed as recyclable unless it can be collected, separated or otherwise recovered from the solid waste stream for use in the form of raw materials in the manufacture or assembly of a new package or product. Unqualified claims of recyclability for a product or package may be made if the entire product or package, excluding minor incidental components, is recyclable. For products or packages that are made of both recyclable and non-recyclable components, the recyclable claim should be adequately qualified to avoid consumer deception about which portions or components of the product or package are recyclable. Claims of recyclability should be qualified to the extent necessary to avoid consumer deception about any limited availability of recycling programs and collection sites. If an incidental component significantly limits the ability to recycle the product, the claim would be deceptive. A product or package that is made from recyclable material, but, because of its shape, size or some other attribute, is not accepted in recycling programs for such material, should not be marketed as recyclable.

Example 1: A packaged product is labeled with an unqualified claim, "recyclable." It is unclear from the type of product and other context whether the claim refers to the product or its package. The unqualified claim is likely to convey to reasonable consumers that all of both the product and its packaging that remain after normal use of the product, except for minor, incidental components, can be recycled. Unless each such message can be substantiated, the claim should be qualified to indicate what portions are recyclable.

Example 2: A plastic package is labeled on the bottom with the Society of the Plastics Industry (SPI) code, consisting of a design of arrows in a triangular shape containing a number and abbreviation identifying the component plastic resin. Without more, the use of the SPI symbol (or similar industry codes) on the bottom of the package, or in a similarly inconspicuous location, does not constitute a claim of recyclability.

Example 3: A container can be burned in incinerator facilities to produce heat and power. It cannot, however, be recycled into new products or packaging. Any claim that the container is recyclable would be deceptive.

Example 4: A nationally marketed bottle bears the unqualified statement that it is "recyclable." Collection sites for recycling the material in question are not available to a substantial majority of consumers or communities, although collection sites are established in a significant percentage of communities or available to a significant percentage of the population. The unqualified claim is deceptive since, unless evidence shows otherwise, reasonable consumers living in communities not served by programs may conclude that recycling programs for the material are available in their area. To avoid deception, the claim should be qualified to indicate the limited availability of programs, for example, by stating, "Check to see if recycling facilities exist in your area." Other examples of adequate qualifications of the claim include providing the approximate percentage of communities or the population to whom programs are available.

Example 5: A soda bottle is marketed nationally and labeled, "Recyclable where facilities exist." Recycling programs for material of this type and size are available in a significant percentage of communities or to a significant percentage of the population, but are not available to a substantial majority of consumers. The claim is deceptive since, unless evidence
shows otherwise, reasonable consumers living in communities not served by programs may understand this phrase to mean that programs are available in their area. To avoid deception, the claim should be further qualified to indicate the limited availability of programs, for example, by using any of the approaches set forth in Example 4 above.

**Example 6:** A plastic detergent bottle is marketed as follows: "Recyclable in the few communities with facilities for colored HDPE bottles." Collection sites for recycling the container have been established in a half-dozen major metropolitan areas. This disclosure illustrates one approach to qualifying a claim adequately to prevent deception about the limited availability of recycling programs where collection facilities are not established in a significant percentage of communities or available to a significant percentage of the population. Other examples of adequate qualification of the claim include providing the number of communities with programs, or the percentage of communities or the population to which programs are available.

**Example 7:** A label claims that the package "includes some recyclable material." The package is composed of four layers of different materials, bonded together. One of the layers is made from the recyclable material, but the others are not. While programs for recycling this type of material are available to a substantial majority of consumers, only a few of those programs have the capability to separate out the recyclable layer. Even though it is technologically possible to separate the layers, the claim is not adequately qualified to avoid consumer deception. An appropriately qualified claim would be, "includes material recyclable in the few communities that collect multi-layer products." Other examples of adequate qualification of the claim include providing the number of communities with programs, or the percentage of communities or the population to which programs are available.

**Example 8:** A product is marketed as having a "recyclable" container. The product is distributed and advertised only in Missouri. Collection sites for recycling the container are available to a substantial majority of Missouri residents, but are not yet available nationally. Because programs are generally available where the product is marketed, the unqualified claim does not deceive consumers about the limited availability of recycling programs.

5. **Recycled Content:** A recycled content claim may be made only for materials that have been recovered or otherwise diverted from the solid waste stream, either during the manufacturing process (pre-consumer), or after consumer use (post-consumer). To the extent the source of recycled content includes pre-consumer material, the manufacturer or advertiser must have substantiation for concluding that the pre-consumer material would otherwise have entered the solid waste stream. In asserting a recycled content claim, distinctions may be made between pre-consumer and post-consumer materials. Where such distinctions are asserted, any express or implied claim about the specific pre-consumer or post-consumer content of a product or package must be substantiated.

It is deceptive to misrepresent, directly or by implication, that a product or package is made of recycled material. Unqualified claims of recycled content may be made only if the entire product or package, excluding minor, incidental components, is made from recycled material. For products or packages that are only partially made of recycled material, a recycled claim should be adequately qualified to avoid consumer deception about the amount, by weight, of recycled content in the finished product or package.

**Example 1:** A manufacturer routinely collects spilled raw material and scraps from trimming finished products. After a minimal amount of reprocessing, the manufacturer combines the spills and scraps with virgin material for use in further production of the same product. A claim that the product contains recycled material is deceptive since the spills and scraps to which the claim refers are normally reused by industry within the original manufacturing process, and would not normally have entered the waste stream.
Example 2: A manufacturer purchases material from a firm that collects discarded material from other manufacturers and resells it. All of the material was diverted from the solid waste stream and is not normally reused by industry within the original manufacturing process. The manufacturer includes the weight of this material in its calculations of the recycled content of its products. A claim of recycled content based on this calculation is not deceptive because, absent the purchase and reuse of this material, it would have entered the waste stream.

Example 3: A greeting card is composed 30% by weight of paper collected from consumers after use of a paper product, and 20% by weight of paper that was generated after completion of the paper-making process, diverted from the solid waste stream, and otherwise would not normally have been reused in the original manufacturing process. The marketer of the card may claim either that the product "contains 50% recycled material," or may identify the specific pre-consumer and/or post-consumer content by stating, for example, that the product "contains 50% total recycled material, 30% of which is post-consumer material."

Example 4: A package with 20% recycled content by weight is labeled as containing "20% recycled paper." Some of the recycled content was composed of material collected from consumers after use of the original product. The rest was composed of overrun newspaper stock never sold to customers. The claim is not deceptive.

Example 5: A product in a multi-component package, such as a cardboard box in a shrink-wrapped plastic cover, indicates that it has recycled packaging. The cardboard box is made entirely of recycled material, but the plastic cover is not. The claim is deceptive since, without qualification, it suggests that both components are recycled. A claim limited to the cardboard box would not be deceptive.

Example 6: A package is made from layers of foil, plastic, and paper laminated together, although the layers are indistinguishable to consumers. The label claims that "one of the three layers of this package is made of recycled plastic." The plastic layer is made entirely of recycled plastic. The claim is not deceptive provided the recycled plastic layer constitutes a significant component of the entire package.

Example 7: A paper product is labeled as containing "100% recycled fiber." The claim is not deceptive if the advertiser can substantiate the conclusion that 100% by weight of the fiber in the finished product is recycled.

Example 8: A frozen dinner is marketed in a package composed of a cardboard box over a plastic tray. The package bears the legend, "package made from 30% recycled material." Each packaging component amounts to one-half the weight of the total package. The box is 20% recycled content by weight, while the plastic tray is 40% recycled content by weight. The claim is not deceptive, since the average amount of recycled material is 30%.

Example 9: A paper greeting card is labeled as containing 50% by weight recycled content. The seller purchases paper stock from several sources and the amount of recycled material in the stock provided by each source varies. Because the 50% figure is based on the annual weighted average of recycled material purchased from the sources after accounting for fiber loss during the production process, the claim is permissible.

6. Source Reduction: It is deceptive to misrepresent, directly or by implication, that a product or package has been reduced or is lower in weight, volume or toxicity. Source reduction claims should be qualified to the extent necessary to avoid consumer deception about the amount of the source reduction and about the basis for any comparison asserted.

Example 1: An ad claims that solid waste created by disposal of the advertiser's packaging is "now 10% less than our previous package." The claim is not deceptive if the advertiser has substantiation that shows that disposal of the current package contributes 10% less waste by weight or volume to the solid waste stream when compared with the immediately preceding version of the package.
Example 2: An advertiser notes that disposal of its product generates "10% less waste." The claim is ambiguous. Depending on contextual factors, it could be a comparison either to the immediately preceding product or to a competitor's product. The "10% less waste" reference is deceptive unless the seller clarifies which comparison is intended and substantiates that comparison, or substantiates both possible interpretations of the claim.

7. Refillable: It is deceptive to misrepresent, directly or by implication, that a package is refillable. An unqualified refillable claim should not be asserted unless a system is provided for: (1) the collection and return of the package for refill, or (2) the later refill of the package by consumers with product subsequently sold in another package. A package should not be marketed with an unqualified refillable claim, if it is up to the consumer to find new ways to refill the package.

Example 1: A container is labeled "refillable x times." The manufacturer has the capability to refill returned containers and can show that the container will withstand being refilled at least x times. The manufacturer, however, has established no collection program. The unqualified claim is deceptive because there is no means for collection and return of the container to the manufacturer for refill.

Example 2: A bottle of fabric softener states that it is in a "handy refillable container." The manufacturer also sells a large-sized container that indicates that the consumer is expected to use it to refill the smaller container. The manufacturer sells the large-sized container in the same market areas where it sells the small container. The claim is not deceptive because there is a means for consumers to refill the smaller container from larger containers of the same product.

8. Ozone Safe and Ozone Friendly: It is deceptive to misrepresent, directly or by implication, that a product is safe for or "friendly" to the ozone layer. A claim that a product does not harm the ozone layer is deceptive if the product contains an ozone-depleting substance.

Example 1: A product is labeled "ozone friendly." The claim is deceptive if the product contains any ozone-depleting substance, including those substances listed as Class I or Class II chemicals in Title VI of the Clean Air Act Amendments of 1990, Pub. L. No. 101-549, or others subsequently designated by EPA as ozone-depleting substances. Class I chemicals currently listed in Title VI are chlorofluorocarbons (CFCs), halons, carbon tetrachloride and 1,1,1-trichloroethane. Class II chemicals currently listed in Title VI are hydrochlorofluorocarbons (HCFCs).

Example 2: The seller of an aerosol product makes an unqualified claim that its product "Contains no CFCs." Although the product does not contain CFCs, it does contain HCFC-22, another ozone-depleting ingredient. Because the claim "Contains no CFCs" may imply to reasonable consumers that the product does not harm the ozone layer, the claim is deceptive.

Example 3: A product is labeled "This product is 95% less damaging to the ozone layer than past formulations that contained CFCs." The manufacturer has substituted HCFCs for CFC-12, and can substantiate that this substitution will result in 95% less ozone depletion. The qualified comparative claim is not likely to be deceptive.

Endnotes:

2. These guides do not address claims based on a "lifecycle" theory of environmental benefit. Such analyses are still in their infancy and thus the Commission lacks sufficient information on which to base guidance at this time.

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Appendix VI
(The environment on the internet, environmental management, environmental marketing)
Sites 1 - 10 of 10

Environment Topics

Alternatives energy  Forest preservation
Animal rights  Green companies
Biodiversity  Human environment
Climate change  Innovative technologies
Earth Day  Natural disasters
Environmental health  Ocean & coastal environment
Issues  Pollution
Water  Population issues
Environmental law  Recycling
Newsletters  Soil erosion
Environmental policy  Sustainable development
Watchdog groups  Wildlife preservation

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Global Directories

Working for Common Sense Conservation for People and Nature—Because our Future is in the Balance.

- National Wildlife Productions—Nature Videos, Films and TV
- Campus Ecology—Organizing Colleges for the Environment
- For Kids!—Games, Puzzles, etc.
- Great Lakes Natural Resource Center—Water quality and biodiversity protection in the Great Lakes Basin.
- The Evolution of the Conservation Movement—Encyclopedia

Sea Shepherd Conservation Society
Organization for the protection of marine mammals.

Friends of the Earth
Extensive links to environmental information services on the Net.

Environment-L
Site to facilitate discussions on the environment.
Earth Times
Online environmental news daily.

National Library for the Environment
Online collection currently contains Congressional Research Service Reports on environmental issues and policy.

Ecomall
Fun site with info on ecology, the environment, recycling and eco-activism.

Royal Botanical Gardens, Kew
Tourist information on this lush U.K. garden devoted to better management of the earth's environment through understanding of the plant kingdom.

U.S. Environment Resources
Extensive links to organizations, guides, directories, and publications on environmental issues.

Center of Excellence for Sustainable Development
Informative site for living without exhausting the world's resources.

OneWorld Online
World news in a multimedia format. Stories with a focus on human rights and sustainable human development.

Sites 1 - 10 of 10
Hide Summaries

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Directory > Science > Environment

Tips
Search only under Environment    Search the whole Web

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Ultrasmart

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Reference and Search Tools
Biomes/Biospheres
Endangered Species
Environmental Education Programs
Lesson Plans/Classroom Activities
Water Quality
Go to Biology Page
Go to Paleontology Page - ecologies of the past

Too busy to check for new items to this page?
You can receive an automatic e-mail notice when updates occur.

Send feedback to the author - carolyn.cole@coeisme.gatech.edu

REFERENCE AND SEARCH TOOLS

Ecological Terms - Glossary
Per the authors, "this glossary is not for the faint of heart! The terms and their definitions are important to practicing biologists and paleontologists in various fields." This is Vol #5 from the UCMP Glossary (UC Berkeley).
http://ucmp1.berkeley.edu/glossary/gloss5ecol.html

Environmental Terms
Indexed alphabetically, an electronic dictionary for "Terms of Environment." Text
http://earth1.epa.gov/OCEPA/terms/

CNN Interactive News: The Environment
Current environmental news with a search feature that takes you into the news archives. Good reference tool. Text, photos, graphics, audio, movies
http://www.cnn.com/EARTH/
The search engine itself:

Life History and Ecology of.....
Use the UC Berkeley "Web Lift to Taxonomy" to select any named group of animals in the (long) list. Once you have arrived at the particular taxon (group), you can select for information on the Life History and Ecology. Lots of info here and it seems to keep growing. Text, photos, graphics
The complete listing:
http://ucmp1.berkeley.edu/taxaform.html
The quick listing of Major Taxa:
http://ucmp1.berkeley.edu/xpresslift.html

1 of 6
Radon References/Publications
Electronic publications to help understand this gas which is the 2nd leading cause of lung cancer. Consumer/citizen versions included. Text
http://earth1.epa.gov/RadonPubs/

Toxic Substances - FAQ
A series of summaries about hazardous substances being developed by the Division of Toxicology at the Agency for Toxic Substances and Disease Registry (ATSDR). Provides info by chemical and includes the known health effects of exposure. Text
If your browser handles tables:
http://atsdr1.atsdr.cdc.gov/8080/toxfaqta.html
If your browser does not support tables:
http://atsdr1.atsdr.cdc.gov/8080/toxfaq.html
For Public Health Statements/toxic substance (text search)

U.S. Environmental Protection Agency
Powerful EPA Search Tool for their vast array of information. Text
http://www.epa.gov/epahome/search.html
You might also try their Index of Title Words (Main):
http://www.epa.gov/epahome/title-index/Main.html

BIOMES/ BIOSPHERES

Biosphere Reserves - Frequently Asked Questions (FAQs)
Lots to learn here about the 200+ biosphere reserves in the world and the role they play in understanding ecology and ecosystems. Text
http://www.digimark.net/iatech/unesco/biofaq.htm

Biomes: Classroom Activities
Check here for teacher developed activities from the 1991 Woodrow Wilson Activities Collection: Natural History and Ecology of Homo Sapiens Text

ENDANGERED SPECIES

Endangered Species Act
A distillation of the Act geared to the junior high level. Information from Earth Generation. Text
http://www.nceet.nre.gov/curriculum/birdfacts.html#ESA
The actual Legislative Act:
http://www.law.indiana.edu/envdec/c.html
Endangered species in Australia
All manner of endangered species included in these electronic publications plus efforts at recovery. Includes ecological communities at risk. Text, illustrations & photos

Nesting (Endangered) Sea Turtles and Costa Rica's Tropical Rainforest
"In a personal account, Smithsonian photographer Laurie Minor-Penland describes her trip to photograph nesting endangered Green Sea Turtles and the nearby tropical rainforest." Fascinating account with wonderful photos. Text, photos.
http://photo2.si.edu/turtles/turtletop.html

ENVIRONMENTAL EDUCATION PROGRAMS

The GLOBE Program

"Global Learning and Observations to Benefit the Environment (GLOBE) is a worldwide network of students, teachers, and scientists working together to study and understand the global environment.

As a GLOBE PARTNER: "STUDENTS conduct an array of measurements and observations at their schools and share their data via the Internet with other students and scientists around the world to detail an environmental picture of the globe.

"TEACHERS instruct students on how to take measurements, help students understand the relevance of their observations, and explain the significance of the global visualizations.

"SCIENTISTS analyze the data in conjunction with information obtained from other sources to help all of us develop a better understanding of earth systems." Text

The Globe Home Page: http://www.globe.gov/

K-12 Table of Contents

LESSON PLANS / CLASSROOM ACTIVITIES

Activities-To-Go
Part of the (Genentech, Inc) Access Excellence Collection of classroom science activities from teachers across the country. You will need to sort through for the environment, but you will find applicable activities. Contribute yours! Text

Air Quality Lesson Plans
A three part format including (1) lesson plans written by Texas teachers, info and related activities,
and data files to use in the activities. Currently covers acid rain, air terms, CO, lead, ozone and particulate matter. By the Texas Natural Resource Conservation Commission (TNRCC)
http://www.tnrcc.texas.gov/air/monops/lessons/lesson_plans.html

Birds: Our Environmental Indicators
Part of a curriculum plan for junior high students investigating environmental issues relevant to the Great Lakes region. Deals with birds as an indicator species related to endangered species and environmental pollutants. Includes teacher prep and background info, student activities, and pre-/post-assessment. Lots of solid info, but only in text. Text
http://www.nceet.smre.umich.edu/Curriculum/toc.html

Classroom Activities: Natural History and Ecology of Homo Sapiens
From The 1991 The Woodrow Wilson National Leadership Program Activities Collection. Many and varied classroom activities developed by teachers on ecology, recycling, and other topics too numerous to mention. Worth your time to look through this. Text

Global Warming: An Internet Based Project
Structured activities, projects and critique. An extensive lesson plan with Internet searches on the topic already organized. Designed by P. Carlson, teacher Text
http://www.covis.nwu.edu/globalWarming/global.html

Global Warming: Greenhouse Effect Visualizer
Inspect scientific visualizations of the earth's climate according to the parameters you select. From the CoVis Project. Text, graphics
http://www.covis.nwu.edu/gev.html

A descriptive listing of science-based environmental projects using the Internet in your classroom. Many good projects to read through, even if you don't participate, but want to get some good ideas for your classroom. Text, photos
http://whale.simmons.edu/environet-stuff/monitoring/index
Preview next year's offerings --
http://whale.simmons.edu/environet-stuff/monitoring/coming_soon.html

Micro-Units for Science: Earth and Space - Grades 9-12
A number of units developed as a project of the National Science Teachers Association. Each Micro-Unit includes a descriptor, ability to examine on-line, print and/or download the Micro-Units, plus offers technique sheets applicable to each Unit. Based on Content Standards. Text, graphics.

Look at the Micro-Units via the National Science Education Standards Categories or the Subject Areas:
http://www.gsh.org/nsta_ssandc/usest_home.htm

Or view by Grade level, then Subject Area:
http://www.gsh.org/nsta_ssandc/browse.htm

Science and the Environment: A Classroom News Supplement
New bi-monthly electronic magazine from Voyager which provides 10 current news stories for each of 8 topics plus info on how to use these materials in your high school classroom. Check out Biodiversity & Wildlife Conservation; Alternative Energy & Fuels; Health, Population & Agriculture; Clean Air; Marine Ecology; Climate Change & Atmospheric Studies; Clean Water; and Waste Management & Recycling Text, graphics
View all current headlines by topic
How to use the materials in your classroom
http://www.voyagepub.com/publish/howtouse.htm

Solid Waste Classroom Activities
From Cornell University, various well-described activities for K-12 via this gopher menu which includes a glossary by grade level. Text
gopher://nceet.snre.umich.edu:7771/11/activities/cornell

Wetlands Roundtable
A middle school internet-formatted curriculum plan in which students explore the environmental impact issues involved in building a shopping mall on wetlands.
http://www.nceet.snre.umich.edu/Curriculum/wetlands_toc.html

____________________________________________________________________

WATER QUALITY

Gulf of Mexico Environmental Challenges
US EPA information with a series of Fact Sheets that include: Marine Debris, Habitat Degradation, Nutrient Enrichment, Coastal and Shoreline Erosion, Freshwater Inflow, Public Health, Living Aquatic Resources, Toxic Substances, and more. Text
http://www.epa.gov/gumo/gulf_index.html

Toxic Wastes
Whole Effluent Toxicity Policy by the US EPA. On the difficult side, but may be fine for high school students who can cull information. Text
http://earth1.epa.gov-80/WET/

US Estuaries
http://www.epa.gov/gumo/emap/module5.html

Wetlands Roundtable
See ABOVE for description of middle/junior high school curriculum.

See also Science: Oceans
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Shannon Quality Training ISO9000 And Environmental Management Training
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1. BACKGROUND A. Scope of Guides The Guides for the Use of Environmental Marketing Claims or "guides" were adopted by the Commission on July 28, 1992, and published in the Fede
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SUMMARY: The Federal Trade Commission (the "FTC" or "Commission") is requesting public comments
Environmental Marketing Guides - Official Transcripts
Transcripts of FTC Workshop on Environmental Marketing Guides. The following transcripts are being made available in WordPerfect 5.1 format. They are downloadable via anonymous ftp.

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Benefits of Membership

Representative Programs

How Do I Join?

Go to Conference Info

FIND OUT THE LATEST INFORMATION ON THE 1996 PROFESSIONAL ENVIRONMENTAL MARKETING ASSOCIATION CONFERENCE IN DENVER, COLORADO

Mission Statement

We appreciate your interest in learning more about the Professional Environmental Marketing Association and look forward to you joining our growing roster of environmental professionals. Others see the Professional Environmental Marketing Association as a valuable resource for all environmental and hazardous waste professionals who work either full-time or part-time in marketing or business development.

The Professional Environmental Marketing Association, founded in 1990 in San Francisco, CA, began with a luncheon meeting attended by 40 people. This initial meeting resulted in the formation of the San Francisco Chapter (now known as the Northern California Chapter). Since that time, several other chapters have been formed and represent all regions of the country - and even more chapters are in the process of being formed as the Professional Environmental Marketing Association's growth and presence becomes greater.

Benefits of Membership

One of the great values of membership in the Professional Environmental Marketing Association comes from the periodic meetings conducted by its chapters. Most of
these local meetings include a program and an opportunity for networking on an informal basis with others having common professional interests. These same benefits are further developed at the annual Professional Environmental Marketing Association Conference - this year being held in Denver, CO.

Specific benefits of membership include:

- **Education** - the Professional Environmental Marketing Association's goal is to provide the tools that contribute to each member's professional success, such as sales training, client feedback, and regulatory development updates.

- **Networking** - the Professional Environmental Marketing Association is a great way to meet new teaming partners by city, region, and across the country. Current members find the Annual Membership Directory extremely helpful for this purpose.

- **Tracking Industry Trends** - the Professional Environmental Marketing Association provides information on changed market segment conditions, emerging technologies, and current legislation.

- **Newsletter and Directory** - Members receive an Annual Membership Directory and quarterly newsletters from Professional Environmental Marketing Association National that provide many articles of interest and announce upcoming events across the country. Distribution is made to Professional Environmental Marketing Association membership only.

Representative Programs

Among recent programs held at various Professional Environmental Marketing Association Chapter locations were programs such as:
TYPICAL CHAPTER PROGRAMS

<table>
<thead>
<tr>
<th>Prospecting for Clients</th>
<th>Making the Bid/No Bid Decision</th>
<th>Effective Client Presentations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost-Effective Advertising Techniques</td>
<td>Successful Marketing/Business Plans</td>
<td>Strategic Teaming for Major Contracts</td>
</tr>
<tr>
<td>Regulatory Updates</td>
<td>Salary Survey Results Within the Industry</td>
<td>Effective Proposal Techniques</td>
</tr>
<tr>
<td>How to Win Government Contracts</td>
<td>Environmental Contractual &amp; Legal Issues</td>
<td>New Remediation Technologies</td>
</tr>
</tbody>
</table>

How Do I Join?

Joining the Professional Environmental Marketing Association is easy! Simply complete the attached form and submit it to us electronically. We will contact you and give you the necessary information as to who to contact locally and other details so you can start receiving the benefits of Professional Environmental Marketing Association membership immediately. If there is not a Professional Environmental Marketing Association Chapter in your locality, you will be an unaffiliated member and need only to pay the National Annual Dues of $15.00 (Chapters have an additional dues structure they collect from affiliated members).

Once your electronic application is received, you will be notified by email that your application is being processed and a membership kit will be mailed to you. It is that simple!

For Additional Information

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For additional information on the Professional Environmental Marketing Association, please send your query to:
Rob Rein,
Professional Environmental Marketing Association National Membership Chair,
611 Somerset Drive,
Golden CO 80401-4862

or send by email to:
nitenday@usa.pipeline.com

This page was created with the Hot Dog Pro Web Page Editor
Environmental Products & Catalogs

The Web can serve both as a regional tool to promote community and as a means to dissolve regional boundaries. The on-line catalogs listed below offer unique environmental products. Most companies use a portion of their profits from sales to support local, regional, and global environmental efforts.

<table>
<thead>
<tr>
<th>The Willamette Green Directory</th>
<th>Our very own directory of environmental products and services.</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Central Oregon Green Pages</td>
<td>Communities covered include Bend, Redmond and Sisters, Oregon.</td>
</tr>
<tr>
<td>The Newfoundland Environmental Industry Association</td>
<td>Organization founded to &quot;promote the growth and development of the environmental industries of Newfoundland and Labrador.&quot;</td>
</tr>
<tr>
<td>Jim Morris Environmental T-Shirt Company</td>
<td>For 18 years, the Jim Morris Environmental T-Shirt Company has been printing t-shirts that describe threats to the environment and show how you can help. The shirts also show that wildlife and nature deserve our respect and wonder. Great fundraising package for organizations.</td>
</tr>
<tr>
<td>ZAP Electric BikesNEW</td>
<td>ZAP Power Systems: A leading manufacturer of electric motor powered bicycles, and power assisted kits.</td>
</tr>
<tr>
<td>Bio-SphereNEW</td>
<td>An environmental education tool and gift idea. It is a closed aquatic eco-system.</td>
</tr>
</tbody>
</table>

We are always looking for new links to on-line environmental catalogs. Please let us know about yours!
Food - Production

De Casa Fine Foods
For those who enjoy the finest gourmet salsas, black & pinto bean dips, & our new artichoke parmesan dip! Available at all Natural Food Stores & Supermarkets.

PO Box 2324
Eugene OR 97402 (541)689-3297

Emerald Valley Kitchen Products
In fine restaurants & natural food stores, neighborhood grocers, supermarkets. 1% of sales donated to humanitarian & environmental projects. Actively supports organic farmers, sustainable agriculture & progressive small businesses.

(541)688-3297

Fiesta Foods
Makers of Dean’s Famous Salsa, Vegetarian Tamales & Heart’s Choice vegetarian jerky.

4124 Main St., Unit B
Springfield OR 97478 (541)746-6788

Genesis Juice Cooperative
325 W. 3rd Ave., Suite B
Eugene OR 97401-2524 (541)344-0967

Nature Bake
Quality Whole Grain Breads since 1956
1170 NE 63rd Ave.
Portland OR 97213 (503)335-8077

Oregon Tilth/In Good Tilth
Promoting sustainable & organic agriculture in the Pacific Northwest.
11535 SW Durham Rd., Cl
Tigard OR 97224 (503)620-2829

Rising Moon

Organic gourmet • From the cutting board to the cutting edge!
1432 Willamette St.
Eugene OR 97401 (541)342-1183
WWW http://www.risingmoon.com

Springfield Creamery

29440 Airport Rd.
Eugene OR 97404 (541)689-2911

Surata Soyfoods Cooperative

Handcrafted Tofu & Tempeh using organic whole soybeans.
PO Box 652
Eugene OR 97401 (541)485-6990

Wholesome & Hearty Foods

Savory mushrooms & onions, wholesome grains & dairy fresh cheese give the meatless Gardenburger® its unique appeal. Look for the great tasting, low-fat Gardenburgers® in the frozen foods section of your local market or natural foods store. For more information on Gardenproducts&trade; call (800)636-0109

WWW http://www.gardenburger.com
Food - Wholesale

Glorybee Foods, Inc.
Bulk Foods, Grains, Dried Fruit, Nuts, Spices.
Bee'swax Sheets for rolled candles.
120 N. Seneca St.
Eugene OR 97402 (541)689-0913

Organically Grown Co-op, Inc.
2545 Prairie Rd.
Eugene OR 97402 (541)689-5320

Royal Blue Organics
"Café Mam" Certified Organic Coffee
PO Box 21123
Eugene OR 97402 (888)CAFEMAM
Or call (541)689-1836

Food - Retail

Ashland Community Food Store
237 North 1st St.
Ashland OR 97520 (541)482-2237
Internet acfs@mind.net

Earth's Magic Natural Foods
2nd & Broadway
Veneta OR (541)935-6959

First Alternative Natural Foods
1007 SE 3rd
Corvallis OR 97333 (541)753-3115

Friendly Foods & Deli
2757 Friendly St.
Eugene OR 97405 (541)683-2079

Heliotrope Natural Foods
2060 Market St. NE
Salem OR 97301 (503)362-5487
Toll-Free (800)670-5487

The Kiva
125 W. 11th Ave.
Eugene OR 97401 (541)342-8666

Nancy's Natural Foods
266 NW 1st Ave., Suite A
Canby OR 97013 (503)266-3306

Nature Bake
Be sure to visit our Thrift Store for Great Bargains on Surplus Items!
1170 NE 63rd Ave.
Portland OR 97213 (503)335-8077

Nature's Fresh Northwest
308 SE Division
Portland OR 97202 (503)234-3008

Oasis Fine Foods Marketplace
(South) 2489 Willamette St.
Eugene OR 97405 (541)265-8285
(North) Off Coburg Rd. at Willakenzie
Eugene OR 97404 (541)334-6382
Office Products

Craftsman Rubber Stamps
Stamps of Genuine Rubber. We recycle self-inking stamps.
2650 Chuckanut St.
Eugene OR 97408 (541)345-4226
Fax (541)345-4336

Ergonomic Solutions
PO Box 826
Eugene OR 97440 (541)344-8882

Metro Recycling Information
Free guides to recycled products
for home & business.
600 NE Grand
Portland OR 97232 (503)234-3000

Printers

Peace Rose Graphics
Affordable offset printing: recycled &
non-wood papers, soy-based ink, computer typesetting, camera work and digital
scanning. (541)345-0709
Internet hrp@icrgef.org

Peacetree Environmentally Sound
Paper & Printing
123 NE 3rd, Suite 300
Portland OR 97232 (503)233-5821
Fax (503)233-0888

Paper Products

Living Tree Paper Company
1430 Willamette St., Suite 367
Eugene OR 97401 (541)342-2974
SELECTED BIBLIOGRAPHY

Books


Periodicals


"How to Make Lots and Save the Planet" *The Economist*, June 1995, pp. 57-58.