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# Assessing The Environmental Consumer Market

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# ASSESSING THE ENVIRONMENTAL CONSUMER MARKET

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## DISCLAIMER

The purpose of this report is to discuss the fact that an increasing number of companies are focusing on consumers' environmental concerns and to document the environmental marketing of a sample list of products and services as well as the consumers' response to these marketing strategies. This list is not intended to be all-inclusive. Furthermore, the mention of commercial products and services in this report does not imply endorsement of use nor verification/testing of product claims by the U.S. Environmental Protection Agency. It is not the purpose of this report to compare the relative environmental soundness of these products and services with others nor to judge which ones are superior. Information on these products and services was collected between March 2, 1990 and November 30, 1990 from personal correspondence and published articles.

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## PREFACE

The report documents the consumer response to over 40 examples of environmentally-oriented goods and services promoting source reduction, recycling, natural resource conservation and protection, animal species preservation, etc. Consumer responses to environmentally-oriented products is especially important since a key to success in recycling is consumer demand for recycled materials in products and packaging. The report provides useful information to industry and others interested in stimulating demand for environmentally-oriented products (such as those using recycled and recyclable materials).

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# ASSESSING THE ENVIRONMENTAL CONSUMER MARKET

## I. Introduction

Since the end of World War II, American consumers have been offered an ever-expanding choice of goods and services. In the later half of the 1980s, a number of environmental issues -- such as the televised four-month odyssey of the Islip, New York garbage barge in 1987, and the debate surrounding global climate change -- have caught the American public's attention and have dramatically illustrated some of the environmental problems facing the nation. On the local level, many communities are facing dwindling landfill disposal capacity and rising disposal costs. At the same time, there is a greater consideration of regulatory and nonregulatory approaches to environmental protection and natural resource management. Some of these efforts will focus more attention on minimizing adverse environmental impacts of individual and household activities. For example, as more and more communities implement recycling programs, there will be a greater supply of recyclable materials and a greater need to purchase products and packaging that are made from recycled materials and are themselves recyclable. If these changes in product offerings and consumer purchases are not made, there will be more instances of oversupplies of collected recyclable materials and the nation's momentum to recycle will slow.

The change in Americans' attitudes towards the environment is apparent from surveys conducted by several groups over the past few years. As shown in Section II and the Appendix of this report, the American public is increasingly concerned about environmental pollution, municipal solid waste generation and disposal, and wildlife preservation. Many people believe that individual actions can help to mitigate man-made threats to public health and the global environment. The purpose of this study is to provide an assessment of the consumer response to the advertised environmental attributes of products. The report also assesses the potential for marketplace solutions to environmental problems. To that end it is important to determine if the growing environmental concern of American consumers is reflected in the marketplace performance of environmentally-oriented goods. If so, then environmental attributes will play a greater role in the marketing of goods (i.e., products and packaging) and services.

This study used marketplace performance information for a sample and variety of goods and services to characterize the environmental consumer market. Section II summarizes (and the Appendix discusses in greater detail) survey results that reveal the trend toward increasing environmental concern. Going beyond survey results, Section III presents consumer purchase information for a variety of products, packaging, and services that are marketed as environmentally beneficial when compared to conventional goods and services. Three criteria were used to select examples for inclusion in this report:

1) the company is advertising one or more environmental attributes of their good/service;
2) there is a quantifiable and reportable consumer response; and
3) the purchase response to the good/service reflects behavior of U.S. consumers.

The information contained in this report is a "snap-shot" of a rapidly evolving market. It reports on consumer purchase responses to a wide range of environmentally-oriented products -- this list is not intended to be all-inclusive. For example, many new initiatives were not included in this study because consumer responses are not yet reported. The large number of initiatives does, however, show industry's increasing attention to the environmental concerns of consumers (and government). The number of examples illustrating consumers' concern for environmental issues will grow as consumers become increasingly aware of products' environmental attributes and as new products are introduced. According to Marketing Intelligence Service Ltd., a company that gathers and analyzes new product information, products claiming to be somehow "environmentally friendly" are being introduced at a rate 20 to 30 times greater than that of other new packaged goods (The Marketer, April 1990, pp. 36, 37; Boston Globe, March 2, 1990, pp. 55, 59).

Section IV summarizes the history of the natural foods market as a comparative illustration of new product market development. If environmentally-oriented products gain a market share at least comparable to that of natural foods, annual U.S. sales to environmental consumers would exceed several billion dollars.

In conclusion, it appears that many American consumers do consider the environmental consequences of their purchase decisions. Conversations with marketing directors revealed that the profile of environmental consumers is becoming more complex. The wide range of products listed in this report indicates that selection of an environmentally-oriented product is based on a number of factors including: product availability and price; consumer awareness of specific environmental problems (and their solutions); consumer understanding of and confidence in products' environmental claims; and established buying preferences (e.g., price, quality, availability, and promotion). For example, certain consumers may avoid buying overpackaged products and select products in recycled packaging to mitigate municipal solid waste disposal problems. Other consumers may select a product that is manufactured without the use of toxic chemicals to avoid introducing toxics into the environment during manufacture, product use/reuse, and disposal. Still other consumers may select a product or service because corporate contributions or actions support a particular cause (which may be unrelated to the product's inherent attributes) that is of concern to consumers. Some companies are capitalizing on specific concerns of consumers by contributing money to environmental causes, such as tree planting programs. Other companies are taking actions to mitigate specific environmental problems. For example, after years of consumer boycott activity, H.J. Heinz's recently announced that it would change its tuna fishing practices to protect dolphins.

## II. Increased Public Awareness and Concern about Environmental Issues

Given the important role public attitudes play in shaping marketing strategies for products, recent public opinion polls offer insights into the growing environmental concerns of American consumers. Several surveys reported in the Appendix (and briefly summarized below) support the conclusion that Americans are becoming increasingly aware of, and concerned about, environmental problems on both the local and national level. Polls also indicate that Americans are expressing increased willingness to change their behavior -- such as altering their purchase decisions -- to mitigate an environmental problem of concern. Taken together, these results indicate that in the 1990s a greater number of American consumers will consider a product's environmentally-oriented attributes when making purchase decisions.

While the many surveys conducted in the months prior to Earth Day 1990 (April 22, 1990) received widespread media coverage, it is important to place these results in the context of more durable social trends. Public awareness and concern about a particular issue -- in this case, the environment -- may not translate into action on the part of consumers and industry. A basic question facing industry and government is whether or not a significant number of American consumers are changing their purchase behavior in order to solve or to avoid local, national, and global environmental problems. The remainder of this section addresses the first issue using the survey results presented in the appendix of this report. The next section of this report examines changes in consumer purchase behaviors that offer support to the survey findings summarized below.

Several recent polls found that over 80 percent of Americans were concerned about environmental problems (New York Times, April 17, 1990; USA Today, April 13, 1990; Newsweek, April 2, 1990). Almost as many people (57-75 percent) stated that they would be willing to pay more for products and services made more expensive by environmental regulation (Newsweek, April 16, 1990; USA Today, April 13, 1990). Such findings suggest that a majority of Americans are not only concerned about the state of the environment but are willing to change their behaviors and/or pay to improve environmental quality. For example, eighty-two percent of respondents to a Gallup poll conducted early in 1990 reported that they were recycling some materials (Newsweek, April 16, 1990). To some degree, the results of these recent surveys reflect the public's growing awareness of recent media coverage of environmental issues. Underlying attitudes, therefore, would be more accurately measured by surveys which are repeated over several years.

When recent polls are compared to poll results from the past several years, it is apparent that there has been a dramatic shift in Americans' understanding of, and concern about, environmental issues. In 1988, more people felt that the quality of their local environment had worsened (46 percent) rather than improved (32 percent) -- a switch from the results reported in the previous four years (The Environment: New Concerns, New Choices, Cambridge Reports, 1988). This trend complements other more current evidence of public awareness and concern. For example, a New

York Times poll conducted in April 1990 found that 74 percent of Americans wanted the environment to be protected regardless of cost -- an increase of almost 30 percentage points since 1981.

From a marketplace perspective, it is equally important to note the change in the public understanding of effective environmental management. Throughout the 1970s and the first half of the 1980s, Americans supported governmental regulation as the nation's primary environmental protection tool. Since the mid-1980s, however, there appears to be increasing awareness of individual and local actions that can help mitigate environmental problems. For example, the percentage of Americans that would prefer to buy food and beverages packaged in recyclable containers rose from 58 to 72 percent between 1988 and 1989 ("Public Attitudes Toward Recycling," The Gallup Organization, Inc. for the Glass Packaging Institute, October, 1989). Approximately half (52 percent) of the respondents to a 1990 poll said that they had stopped buying a particular product because of the poor environmental image of the manufacturing company (USA Today, April 13, 1990). Such survey results suggest that American consumer's concern for the environment is increasingly affecting how they look at products and the companies behind the products. More importantly, a September 1990 survey found that consumers report that environmental attributes play a significant role in which products they buy and which products they avoid (Abt Associates, September 1990).

From industry's perspective, increased consumer awareness of environmental issues is also leading more and more companies to make environmentally-oriented announcements. Typically, such announcements relate to a change in the company's production process (e.g., Heinz's pledge to avoid harm to dolphins during tuna fishing), packaging (e.g., McDonald's announced plans to switch from polystyrene foam containers to paper wraps, Pepsi's labeling of glass containers with a "G" indicating the recyclability of glass bottles, and Procter & Gamble's introduction of a refillable fabric softener container), or municipal solid waste management practices. In each case, the companies cited growing consumer interest in the environmental consequences of the company's operations (oftentimes stated in surveys), as well as the environmental attributes of products and packaging, as reasons for the change.

## III. Evidence of the Environmental Consumer Market

While consumer survey results are compelling to some in industry, others argue that the consumer role in establishing a strong market for environmentally-oriented products has not yet been established. This section summarizes the recent marketplace performance of products and services that make an advertising claim of environmental benefit(s). The information presented in this section demonstrates that many consumers do make purchase decisions based, in part, on their concern for a wide range of environmental issues.

Key to the marketplace performance of products promoting environmental benefits is consumer perception of these environmental benefits (e.g., the value of those benefits and the likelihood of their occurring). Awareness of environmental problems, knowledge of behavior or purchases that may help to mitigate these problems, and conventional product attributes (such as price, quality, availability, and promotion) all play a role in the purchase decisions of environmentally conscious consumers. This study did not determine what weight consumers place on environmental attributes versus other product attributes.

The environmental issues that influence American consumer purchase behavior fall into three general categories:

- Concern for environmental resources that are directly affected by consumer behavior. Such issues may include: resource/raw material conservation; minimizing generation of pollution or waste during manufacture, use, reuse, or disposal of a product/service; and the ability to reuse or recycle a product/package.

- Concern for environmental resources that are less directly affected by consumer behavior. Such issues may include: species preservation; land conservation; and wildlife protection.

- Concern for potential toxic exposure to self and family. Such issues may include: limiting exposure to pesticides and preservatives in foodstuffs; drinking water purity; and other health risks.

Interestingly, many products are, or could be, differentiated from competing products using one or more of these three characteristics. For example, products with minimal packaging can contribute less material to the municipal solid waste stream -- one of the products' potential environmentally-beneficial attributes. Another promotional strategy might link a product with an environmental cause through corporate sponsorship. This strategy, referred to as cause-related marketing, attempts to imbue the company's product with the perceived environmental benefits associated with the sponsored group or cause.

Environmental impact is one of many product attributes considered during product selection. One challenge to industry is to develop and promote environmentally-beneficial products that do not require significant tradeoffs in price, quality, availability, convenience, and other product attributes. It is also important that a product's environmental attributes be well defined to avoid the same confusion and misuse sometimes associated with "all natural" and "organic" attributes in the 1970s. In addition, environmentally-beneficial products need to be available through normal retail channels, and products' environmental attributes must be labeled understandably, accurately, and in a positive manner.

Consumers learn about product characteristics primarily through advertising. Key to the success of marketplace promotion of environmentally-oriented products is the development of credible and understandable product labeling. Only with such labeling can consumers make an informed decision that reflects their concerns about specific environmental issues. Overreaching product claims may have a profound negative impact on the longer-term growth of the environmental market. One example can be found in the recent promotion of "degradable" plastics -- disputes over advertising claims, incompatibility with recycling efforts, effect on litter, and other issues have led to a lessening of the clamor for these materials. State and federal officials recognize the general need for standardization of definitions and labeling, and independent evaluation of product claims. As a result, a consortium of ten state Attorneys General issued The Green Report: Findings and Preliminary Recommendations for Responsible Environmental Advertising in November 1990 and are pursuing lawsuits against some firms for falsely advertising the degradability of certain plastic products. Another result of the battle over product claims is that several government and private groups are currently developing different labeling programs for environmentally-oriented products. Such labeling initiatives typically focus on just one or two particular strengths (or weaknesses) of products relative to other products on the market. Few of these labeling programs consider all of a product's attributes as well as the life-cycle costs and benefits of products and thus may rarely answer the larger question of whether or not a particular product is environmentally beneficial overall.

The many environmental self-help books that are now available tell how changes in personal behavior, focusing on consumer behavior, may mitigate particular environmental problems. Only two of these guides, Shopping for a Better World and The Green Consumer, were available in the U.S. before 1989; as of mid-1990, printings of environmental self-help books exceeded three million. Therefore, consumers' evaluation and acceptance of the products listed in the section below were achieved largely without the aid of independent assessments and promotion of the products' environmental attributes. Still, the recent performance of many environmentally-oriented products demonstrates that environmentally-oriented alternatives have captured the interest and loyalty of a growing number of American consumers.

The successful introduction of alternative products, as well as consideration of the survey results presented in the previous section and in the Appendix, have caused a number of changes in the established consumer products industry. The most notable change is that increasingly manufacturers and marketers are considering the environmental attributes of their company, its

production processes, its products, and developing suitable marketing strategies. Responding to evidence of increasing consumer demand, several national brands (e.g., Lever Brothers and Procter & Gamble) are marketing new alternative products or are advertising environmental attributes of modified products/packaging. In the future, the added pressure of other initiatives, such as government procurement guidelines (e.g., for products made with recycled materials), independent product claims testing and labeling, mandated recycled content levels, and uniform definitions for environmental claims, should increase the availability and success of environmentally-oriented products and packaging.

The following summaries provide a sample of a broad range of environmentally-oriented consumer products (e.g., household cleansers, pesticides, light bulbs, and foodstuffs) and services (e.g., investment funds) that are competing successfully in the U.S. marketplace. The products listed below are manufactured and marketed both by major national companies as well as by small firms. Some products are new (e.g., fabric softener concentrate); others are well established but are now being more widely promoted for environmental attributes (e.g., reusable cloth grocery bags). Collectively, their success demonstrates that in many situations American consumers will choose an environmentally-oriented alternatives. Furthermore, some consumers are willing to pay extra for such products when appropriate.

Again, the three criteria used to select examples for inclusion in this report are:

1) the company is advertising one or more environmental attributes of their good/service;
2) there is a quantifiable and reportable consumer response; and
3) the purchase response to the good/service reflects behavior of U.S. consumers.

**Products and Packaging with Source Reduction Characteristics**

**Source Reduced/Less Toxic:**

- Melitta, Inc. introduced a line of unbleached coffee filters in their U.S. market in July 1989. After just ten months, unbleached filters now account for 15 to 20 percent of Melitta's consumer sales in the U.S. and as much as 50 percent in some West Coast markets. (Barbara Housener, Melitta, Inc., personal communication, May 9, 1990)

- Sunshine Makers, Inc. makes a cleaner that it advertises as nontoxic, noncaustic, nonpetroleum, water-based, all-purpose, and will biodegrade to its base elements in 24 hours. The cleaner was introduced in 1973 as a degreaser for coffee brewers but was then marketed to the retail market in 1980. Sales have almost doubled in the last two years; in 1988, sales were $19 million, and, in 1990, sales are expected to be $30-$36 million. (Greg Petrolpoulos, Sunshine Makers, Inc., personal communication, April 25, 1990)

- Ecover, a Belgium-based company, manufactures a line of household cleaning products which are claimed to be "ecologically safe." Ecover's products are distributed in the U.S. through direct mail and health food grocery store chains. Ecover markets all of their products as biodegradable -- i.e., Ecover claims its products break down into harmless natural substances within three to five days. Since being introduced in the U.S. market in 1987, sales have increased steadily -- 1988 sales exceeded 1987 fourfold; 1989 sales exceeded 1988 tenfold; and 1990 sales are expected to be three times higher than the same period last year. (Kate Bedworth, Mercantile Food Company, correspondence, May 8, 1990)

- Baubiologie is a distributor of building materials advertised as non-toxic, including formaldehyde-free paints and stains, asbestos-free tiles, and smoke detectors without radioactive material (manufactured by American Formulator and Manufacturers). In the last three years, Baubiologie's mail-order business has grown substantially from 1,500 to 5,000 customers. According to John Banta, owner of Baubiologie, most of the approximately 3,500 new catalogue subscribers joined in the past year. (John Banta, Baubiologie, personal communication, April 4, 1990; Marketing News, March 19, 1990)

**Source Reduced/Less Packaging:**

- Procter and Gamble packages a fabric softener in a 21.5 ounce milk carton-type container and is intended to be mixed with water to fill the product's previously-used 64 ounce rigid plastic bottle. The paperboard-based container reads, "Better for the Environment...Less packaging to throw away." The package contains 75 percent less material, and costs approximately 10 percent less than its regular size and formulation. Test marketing began less than one year ago in Annapolis (MD), Baltimore (MD), Dover (DE), Harrisburg (PA), Washington, DC, and was soon expanded to midwest markets (Iowa, Minnesota, Nebraska, North Dakota, South Dakota, and Wisconsin). The product's test marketing was so successful (e.g., accounting for 20 percent of its sales in the test markets) that as of October 1990 the product will soon be available nationwide. (Advertising Age, October 15, 1990, p. 24; Carol Boyd, Procter and Gamble Company, personal communication, May 10, 1990; Fortune, February 12, 1990)

- In December 1988, Jim Liggett introduced a new shampoo bar to the U.S. market. The product is made entirely from natural oils and is one of few shampoos sold without a rigid container. In the first two years of operation, sales have increased by more than 280 percent. Following a recent large expansion, retail distribution has

increased from three stores in the first month to over 300 stores throughout the Northeast towards the end of 1990. In 1991, sales are expected to rise further because of national distribution and line-extensions, such as a traveling version. (Jim Liggett, J.R. Liggett Limited, personal communication, March 1990 and December 1989)

**Source Reduced/Reusable:**

- The Schroeder Milk Company serves a regional market around Minneapolis/St. Paul, Minnesota. Schroeder's currently offers its customers milk in returnable/refillable heavy duty high density polyethylene (HDPE) gallon containers which are reused 50-150 times before being recycled. Even though the wholesale price of milk in returnable gallon containers is 10 to 14 cents less than milk in non-returnable containers (a deposit of 40 to 50 cents per jug is required), not all of the price differential is passed on to retail customers. While prices have not changed significantly during the past two years, the quantity of milk shipped in returnable containers has doubled since early 1989. Furthermore, Schroeder's surveyed its retailers and found grocery stores carry as much as 42 percent of their milk in returnable containers. ("The Return of Returnable Milk Jugs," Wastelines, Vol. 2, Issue 1, September 1990, p. 11; Schroeder Milk Company, correspondence, May 8, 1990; Ernie Schroeder, Schroeder Milk Company, personal communication, May 4, 1990)

- While U.S. births increased by just two percent in 1988 and two percent in 1989, the demand for cloth diaper services, as measured by the number of customers, has increased by 56 percent over the same period. While there is some dispute over the relative environmental and health benefits of reusable cloth versus disposable diapers, many diaper service customers cite a concern for reducing solid waste as an important reason for selecting cloth diapers. Another measure of the increased demand for diaper services is that in 1989, the National Association of Diaper Services grew by 57 services, of whom 19 were new services. (John A. Shiffert, National Association of Diaper Services, correspondence, March 1990)

- Treekeepers are 100-percent cotton, reusable canvas shopping bags sold through grocery store chains as an alternative to paper and plastic grocery bags. First introduced in California in December 1989, shipments have grown dramatically from 500 units in January 1990 to 10,000 units/month and sales of $50,000/month in March and April, 1990. Treekeeper bag distribution is now nationwide. (Claudia Armstrong, Treekeepers, personal communication, May 5, 1990)

- Half Priced Books, the largest used-book store chain in America, began in the early seventies. Employees receive 30 percent of the monthly net profit at each of the stores. The books that do not sell are given away to charity and literacy programs. The owner, Ken Gjemre, feels that the business' philosophy meshes with his life-long interest in the environment. The Dallas-based company regularly advertises "Books should fill our minds not our land." In the past two years, revenues from his 33 stores have doubled from $10 to $20 million. In the next year, the chain is planning to add six new stores. They target mid-sized towns for new locations such as New Haven, CT; Portland, ME; and Syracuse, NY. (Kathy Doyle-Thomas, personal communication, November 13, 1990; Newsweek, May 28, 1990, p. 50)

**Source Reduced/Other:**

- Sales of prefabricated composting bins by Ringer Corporation, a direct mail-order marketing firm, have increased dramatically since 1985. The company's backyard composting bin sales have risen from $25,000 in 1985 to over $1 million in 1990. Similarly, U.S. sales of Barclay Recycling's backyard composting bins have increased almost fourfold, from 8,500 units in 1988 to 33,000 units in 1990. Both companies' recent success is due in part to expanding beyond direct mail-order distribution and marketing products through retail outlets. (Christa Pettingill, Barclay Recycling Inc., correspondence, October 29, 1990; Fred Hundt, Ringer, September 24, 1990)

- The Toro Co. first introduced a grass mulching mower in the late 1970s but withdrew the model from the market in the early 1980s due to lack of sufficient consumer demand. In the Fall of 1989, Toro introduced an improved grass mulching mower for the 1990 season. In its first year on the market, the grass mulching mower accounted for approximately one-quarter of Toro's unit lawn mower sales. In some geographic areas where there are legislative initiatives promoting composting or where there are restrictions on the disposal of yard trimmings, most of Toro's lawn mower units were grass mulching mowers. Based on initial spring stocking orders, the grass mulching model is expected to account for well over one-half of 1991 unit lawn mower sales. (Karl Kaukis, Toro Co., personal communication, November 28, 1990)

**Products with Recycling Characteristics**

- In January 1990, Fort Howard introduced a line of tissue, towel, and napkin products made from 100 percent pre- and post-consumer recycled paper. The U.S. bathroom tissue market is worth $2.5 billion per year. Fort Howard has about two percent of that market. The paper towel market is worth $1.7 billion per year. Fort Howard has about four percent share of that market. According to Jeffrey Eves, a Fort Howard

Vice President, the positive consumer response in fifteen Midwestern states to the products in that line (bathroom tissue and paper towels) has prompted the company to accelerate the introduction of these products (and possibly paper napkins) to East and West Coast markets. (Jeffrey Eves, Fort Howard Paper, correspondence, May 25, 1990; Advertising Age, March 12, 1990, p. 66)

- Earth Care Paper, Inc. markets a wide line of paper products made from pre- and post-consumer recycled fibers to consumers through their own catalogue and other direct mail-order catalogues. The number of products that the company offers has doubled since 1987. Similarly, sales growth has exceeded 100 percent annually for each of the past three years. (Carol Moseson, Earth Care Paper, Inc., correspondence, May 14, 1990; personal communication, May 2, 1990)

**Products Claiming Other Environmental Benefits**

- The U.S. subsidiary of British-based The Body Shop International began operations in 1988. The firm originates, produces, and sells naturally-based skin and hair care products which are advertised as being developed in an environmentally- and socially-responsible manner. For example, their cosmetics are not tested on animals, and the containers can be returned for recycling (most other countries allow refilling of containers, unlike the U.S. where refilling is prohibited by FDA regulations). The Body Shop claims that every personal care product is biodegradable. The company's recent annual report states that they entered the U.S. market in late 1987, and by May 1988 eight shops had opened, all of which are selling at higher than forecast levels. As of February 1990, another seven shops had opened. Total revenues from U.S. stores are expected to be about $10 million in 1990. (Women's Wear Daily, October 6, 1989, p. 12; The Body Shop International PLC, Annual Report, June 30, 1989)

- As of September 1989, ARCO began selling a reformulated gasoline in southern California. The new fuel is for use by older-model cars that run on leaded gasoline and the company claims that it has the potential to reduce air pollution in Southern California by 20 percent. Olefin and other aromatic chemicals that react in the presence of sunlight to form smog have been lowered by one-third. Benzene has been reduced by 50 percent, and sulfur reduced up to 80 percent. ARCO's market share of the fuel market for older cars had increased from 33 percent to 35 percent in the first seven months it was available. The General Accounting Office reports that widespread use of reformulated fuels may be several years away pending the results of ongoing research and expansion of refinery capacity needed to produce reformulated fuels. (GAO, Gasoline Marketing: Uncertainties Surround Reformulated Gasoline as a Motor Fuel, GAO/RCED-90-153, June 14, 1990; New York Times,

April 18, 1990, pp. D1, D5; Best of Business Quarterly, Winter 1990, p. 93; ARCO public affairs press release, 1990)

- NaturaLawn offers organic-based lawn care services including use of organic-based fertilizers and soil conditioners, and either no pesticides or integrated pest management. Started in Fall 1987, the company had 42 customers in its first year. By 1990, its main office had 3,000 customers and over $750,000 in revenues. These customer and sales figures ranked NaturaLawn in the top eleven percent of U.S. lawn care companies in the same size range. Typically, it takes nine years for lawn care companies to reach this position. The company now operates residential service franchises in Maine, Maryland, Pennsylvania, and Virginia. During Fall 1990, they plan to add six to ten more residential franchises and will be expanding to serve commercial accounts. (Philip Catron, NaturaLawn, personal correspondence, October 9, 1990; In Business, May/June 1990, pp. 20-21)

- American Lawn Mower/Great States Corporation manufactures and markets 12 models of push-type reel mowers which account for over 95 percent of the U.S. market for push mowers. Push mowers offer a number of advantages to consumers including that they are nonpolluting. After years of declining demand, Great States has seen a 50 percent increase in the number of units sold over the past three years and expects 1990 sales to increase by 15 to 20 percent. They currently ship more than 100,000 units annually, which typically sell for under $100 per mower, and cannot meet the current demand. (Jim Hewitt, Great States Lawn Mower Company, correspondence, May 4, 1990; personal communication, April 30, 1990)

- The Gas Appliance Manufacturers' Association reports that consumer demand for more efficient home heating furnaces has increased steadily since 1986. More efficient furnaces have several advantages: they reduce fuel consumption and airborne pollution as well as lower operating costs to homeowners. The market share for warm air furnaces (both gas- and oil-fired) with annual fuel utilization efficiency ratings below 71 percent has dropped from 54 percent in 1986 to just 44 percent of all units sold in 1989. Market share for the most efficient oil furnaces has risen from 52 percent in 1986 to 66 percent of warm air oil furnaces. (Gas Appliance Manufacturers Association, press releases from March 2, 1990 and March 9, 1989)

- The number of homes that use solar energy in the United States has grown substantially in the past twenty years from 35,000 in 1970 to 1,700,000 in 1987. In 1988, the U.S. solar electric market (i.e., devices and equipment incorporating photovoltaic power cells) had $80 million in sales; consumer sales account for slightly over fifty percent of the domestic market, or $40 million. The U.S. market is projected to grow by 20 to 25 percent per year and become a multi-billion dollar market in ten years.

(Paul Maycock, PV Energy Systems, personal communication, May 10, 1990; Alliance to Save Energy as reported in USA Today, April 20, 1990, p. 15E)

- Ben Cohen (of Ben and Jerry's ice cream) has launched a new business called Community Products, Inc. with a candy made from nuts harvested in the Brazilian rainforest. One goal of the new company is to increase the demand for sustainably harvested rainforest products. Martha Broad, the general manager of Community Products, Inc., says that the company expects to turn a profit in 1990 in the tens of thousands of dollars. At this point, they are selling as much of it as they can make. The company will be donating 40 percent of its profits towards saving the rainforests. (Marketing Week, April 6, 1990, p. 49; Martha Broad, Community Products, Inc. personal communication, March 16, 1990)

- Cultural Survival, a non-profit group trying to improve the prices received by harvesters of sustainable rainforest products, sells rainforest products directly to U.S. companies. To date, the group reports $15 million in orders for nuts. (Best of Business Quarterly, Winter 1990, p. 92)

**More Healthful Products that May Lessen Environmental Damage**

- Earth's Best has introduced a line of strained baby foods (in glass jars), cereals, and juices that are organically-grown without synthetic pesticides or preservatives. Even though Earth's Best products are priced two to three times higher than conventional brands, sales have jumped from $1.2 million in 1988 to $5 million in 1989 and are expected to continue increasing in 1990. This increase is due in part to expanding their markets from direct mail-order and health food stores to include supermarkets in several metropolitan areas. By comparison, U.S. sales of all brands totals $1 billion per year. (Paul Luchsinger, Earth's Best Baby Food, correspondence March 5, 1990)

- Simply Pure Foods Inc. produces an organically grown line of baby foods that are priced 25 to 35 percent higher than conventional baby foods. The company uses glass bottles and labels are printed with vegetable inks. In 1988, when Simply Pure products were first brought to market, 2,000 cases were sold in just two states. In 1990, Simply Pure will distribute 400,000 cases of an expanded line of products nationwide. (Sara Redfield, Simply Pure, personal communication, May 7, 1990; Food & Beverage Marketing, April 1990, p. 14)

**Cause-Related Marketing of Products**

- In 1988, manufacturers, marketers, and others spent approximately $1.8 billion on a wide variety of cause-related campaigns, some of which were environmentally-oriented. This is a four-fold increase in cause-related campaigns since 1984 when the total was $450 million. Over the same time period, the number of companies participating has increased as well, from 400 companies in 1984 to 1,000 in 1989. (Children's Miracle Network, undated)

- In 1988, DeMet's Turtles candy established the "Save the Turtles Fund" to help preserve the endangered Green, Loggerhead, Hawksbill, Leatherback, and Ridley sea turtles. In addition to a donation of $50,000 from DeMet, the fund has received over $60,000 from approximately 5,000 individuals participating in DeMet's Adopt-a-Turtle program which is advertised along with the DeMet's candy. (Charles Lithin, Director of Programs, Caribbean Conservation Corporation, May 1, 1990)

- In 1989, Calistoga mineral water developed a promotional campaign to link their bottled water products with American Rivers, an environmental advocacy group dedicated to preserving the quality of U.S. waterways. Customers were challenged to support American Rivers by buying Calistoga. For each bottle sold during the promotion, Calistoga donated a portion of the proceeds to American Rivers to a maximum of $25,000. By several measures, the promotion was well received by consumers. Sales increased by 50 percent. Consumer interest was such that Calistoga obtained 2,100 in-store promotional displays instead of the 1,500 display goal. American Rivers received $25,000. (QLM Promotions, materials from The Marketing Institute Conference, January 9, 1990)

- Since 1984, Beyond Words Publishing, Inc., which produces photographic nature books, donates 10 percent of its proceeds from The Earth Song Collection to organizations that plant trees, preserve marine resources, and protect wildlife. For example, proceeds from their book of Moloka'i: An Island in Time were used to plant 60,000 Norfolk Pines to reforest the Island of Moloka'i. With their newest addition, The American Eagle, the publishing company donates proceeds to Sutton Avian Research, an eagle restoration group. The company has contributed approximately $7,000 for the eagles. In addition to direct donation to conservation groups, the company helps other environmental groups to raise funds by supplying the groups with materials near cost and allowing them to sell the books and calendars at a profit, keeping the proceeds for themselves. Beyond Words Publishing helped the Illinois Department of Conservation Non-Game Fund raise $5,000. Corporations, such as American Airlines, have also sold the book and calendars to make contributions to the eagle restoration. Beyond Words' goal is to contribute $150,000 to the above causes. (Robert Cohn, Beyond Words Publishing, Inc., personal communication, May 9, 1990)

- Global ReLeaf, a program of the American Forestry Association, has initiated several plant-a-tree programs for corporate sponsors. Some corporations use a coupon redemption program, where a customer sends in a coupon from a product, and Global ReLeaf plants a tree for each coupon redeemed. Other corporations have 1-900 telephone numbers for customers to call to have a tree planted in their name. So far, Global ReLeaf has 40 corporate sponsors, including the American Association of Nurserymen, American Horticulture Society, American Mortgage Banking, ARCO Foundation, Aveda Corporation, Barakat and Chamberlin, The Big Tree Company, Conoco, Davey Tree, Dayton Hudson, Earth Day 1990, Ernest and Julio Gallo Winery, Hull HN Information System, Inc., International Society of Arborculture, JRP International, Keep America Beautiful, Master Herbalist, McDonald's Corporation, Joyce Mertz-Gilmore Foundation, Mother Earth News, National Association of State Foresters, National Stone Association, The Nature Company, Quintessence, Ralston-Purina, the Rouse Company, and Texaco. (Melinda Lotz, Global ReLeaf, personal communications, May 2, 1990)

- Chevrolet has started a "good neighbor" program that donates money to groups such as Tree People and Trust for Public Land. All participants in the environmental program sponsored by Chevrolet and all purchasers of a new Geo will have a tree planted on their behalf. To date, 35,000 trees have been planted. (USA Today, April 20, 1990, p. 15E)

**Purchases Reflecting Environmental Concern**

- According to market researchers FIND/SVP, Americans now spend over $1.7 billion per year on residential water purification. U.S. sales are projected to double in the next five years to $3.8 billion. (In Business, March/April 1990, p. 64)

- The International Bottled Water Association reports that bottled water sales totaled $2.4 billion in 1989 -- up 15.4 percent from 1988. To date in 1990, Americans are consuming bottled water at twice the rate they did in 1988. Ninety-five percent of the bottled water is produced domestically by some 475 bottling plants. U.S. bottlers are expected to benefit from the fastest growing segment of the American beverage industry due, at least in part, to consumer concern about possible environmental threats to public water supplies. The EPA and Federal Drug Administration are expanding their minimum quality standards for bottled water (states may set stricter standards) to include volatile organic compounds. The federal standards are enforced by individual states. (Beverage World, March 1990, pp. 44-46; Garbage, January/February 1990, pp. 46-50; New York Times, November 25, 1989)

- About two million American homes have been tested for radon, most of this in the past five years. At a cost of $10 - $25 per home, the national cost for testing alone is between $20 million and $50 million dollars. This estimate does not include remediation costs for homes found to have radon problems, which for many homes far exceed testing costs. (Nancy Fairchild, AirChek, Inc., personal communication, May 9, 1990; GAO, Air Pollution Uncertainty Exists in Radon Measurements, October 1989, GAO/RCED-90-25)

- The number of environmental self-help books in the market has increased from two (The Green Consumer and Shopping for a Better World) to several dozen. The number of copies in print of 50 Simple Things You Can Do to Save the Earth now total 1.7 million. 50 Simple Things Kids Can Do to Save the Earth has 525,000 copies in print. More than 700,000 copies of Shopping for a Better World have been sold through the Council on Economic Priorities and Ballantine Books. (Earth Works Group Publishing, personal communication, October 29, 1990; Linda Shadid, Andrews and McMeel, October 29, 1990; Council on Economic Priorities, correspondence, October, 1990)

- First-year sales figures for two new magazines published for the "lay reader" show strong consumer interest in environmental issues. Sales performance of Garbage: The Practical Journal for the Environment have far exceeded the publisher's expectations. Circulation of the premier issue (September/October 1989) reached approximately 75,000 copies. As of October 1990, paid monthly circulation (75 percent subscriptions and 25 percent newsstand distribution) is over 125,000 copies and monthly circulation revenues exceed $425,000. Similarly, sales of E: The Environmental Magazine have been strong since it premiered in early 1990. Circulation of the premier issue (January/February 1990) totaled 50,000 copies and has risen to 75,000. Newsstand sales account for approximately 70 percent of E's monthly circulation and monthly circulation revenues which exceed $240,000. (Leslie Bruno, Garbage, personal communication, October 26, 1990; Doug Moss, E, personal communication, October 24, 1990)

**Financial Services Reflecting Environmental Concern**

- The Social Investment Forum represents 375 socially conscious individual investment advisors, and eight mutual funds that impose environmental screening on the companies in which they invest. From 1984 to 1990, the total assets of investment funds dedicated to sound environmental and social practices have risen from $40 billion in 1984 to $450 billion in 1990. (G. Davidson, Social Investment Forum, personal communication, April 25, 1990; Best of Business Quarterly, Winter 1990, p. 91)

- Calvert Social Investment Fund attracts individual investors concerned about the environmental responsibility of the companies in which they invest. In addition to restrictions on companies who operate in South Africa and who produce nuclear energy or manufacture weapons, the Calvert Social Investment Fund invests in companies that "deliver safe products and services in ways that sustain the natural environment." The total assets of the mutual fund increased from $20 million in 1983 to $370 million in 1989. (Calvert Social Investment Fund Prospectus, January 1, 1990)

- The Vermont National Bank has combined ethical and financial interests in its creation of a Socially Responsible Banking Fund (SRBF). The fund channels individual investors' deposits into loans and investments in five social-improvement areas: affordable housing (45 percent); small business and non-profit organizations (20 percent); environmental/conservation projects (15 percent); farming (15 percent); and education (5 percent). As of March 31, 1990, assets in SRBF (created in January 1989) total $39 million. Social awareness and concern are the only incentives for depositors to participate in the fund, as there are no distinctions between the investment insurance or interest rates of the SRBF and traditional investment funds. (Good Investor Newsletter, Spring 1990; New York Times, April 29, 1989; Vermont National Bank literature, undated)

**Retail and Direct Marketing Examples Reflecting Environmental Concern**

- Loblaw's, a major supermarket chain headquartered in Toronto, Canada, launched a line of "environmentally sensitive" products and health foods in June 1989. The line includes products advertised as phosphate-free detergents, pesticide-free produce, alar-free apples, and re-refined motor oil. After just one month, sales of the line reached $5 million. By the end of the year, sales totaled $42 million, or $350,000 per week, and accounted for a significant earnings increase for the chain in 1989. The line is currently being marketed in a number of U.S. supermarket chains including: The National in St. Louis; Bell's in Buffalo, New York; D'Agostino's in New York City; and Great Scott!!! in Detroit, Michigan. (Ursula Olsewzski, Loblaw's, personal communication, May 17, 1990; Boston Globe, March 7, 1990)

- The Direct Marketing Association (DMA) maintains a mail preference service for individuals who would like their names to be removed from mailing lists. Since 1971, when the service began, approximately one million people have used this service for environmental as well as other reasons such as privacy. In April 1990, the DMA initiated a survey of its members to determine their level of awareness of environmental issues, current environmentally-related activities, and what support is needed

to guide them in developing sound environmental practices. The survey results will be used to develop environmental guidance for DMA members. (Connie Heatly, Direct Marketing Association, personal communication, May 10, 1990 and April 24, 1990)

- Seventh Generation is a direct mail-order company which describes itself as a company that cares about the environment first and selling products second. Founded in August 1988, Seventh Generation distributed 150,000 catalogs and had sales of $80,000 during the first year of operation. By 1990, catalog distribution increased to 4.5 million (75 percent of the spring 1990 catalogs were requested by customers themselves) and sales increased to $7.5 million. Among the most popular products sold by Seventh Generation are those advertised to be: nontoxic, biodegradable household cleaners; water conservation devices; compact fluorescent light bulbs (lower energy requirements than incandescent light bulbs); and recycled paper products. (Alan Newman, Seventh Generation, personal communication, May 1990; The Marketer, April, 1990)

- The Ringer Corporation is a 27-year-old company that offers a wide variety of "environmentally sound gardening products that work as well as, or better than, conventional alternatives." Their products (offered through direct mail-order catalogues as well as through retail outlets) range from mechanical pest controls such as insect traps and biological pest controls to backyard composting equipment. Company sales have grown from $2 million in 1986 to $10 million in 1989. Sales are expected to reach $15 million in 1990. (Fred Hundt, Ringer Corporation, September 24, 1990)

- Real Goods, a retailer of alternative-energy products, began operations in 1978. They carry products such as wind-powered generators, photovoltaic power systems, and compact fluorescent light bulbs (one of their fastest growing product lines -- expanding from 20 orders a week in 1986 to 350-400 orders a week in 1990). Since expanding their mail-order business in 1986, revenues have tripled each year -- $250,000 in 1987, $750,000 in 1988, $2 million in 1989, and $6 million (projected from first quarter performance) in 1990. (John Schaeffer, Real Goods, personal communication, May 15, 1990)

**Evidence of Increased Environmental Activism**

- Just before Earth Day, Denis Hayes, the Chairman of Earth Day 1990, reported that "dues-paying" members of the 20 largest environmental organizations in the United States totaled roughly 12 million. (Peter Wright, Earth Day 1990, personal communication, April 30, 1990)

- According to the Capital Research Center in Washington, DC, the top ten environmental organizations (in order of decreasing annual budgets) in the country -- The Nature Conservancy, National Wildlife Federation, National Audubon Society, Sierra Club, Natural Resources Defense Council, Wilderness Society, Environmental Defense Fund, Friends of the Earth, Izaak Walton League, and Environmental Action -- have annual operating budgets of over $253 million and annual membership of almost eight million. Other environmental groups not listed in Capital Research's top ten that have significant membership and budgets include: Greenpeace, U.S. Public Interest Research Group, Clean Water Action, World Wildlife Fund, National Arbor Day Foundation, The Cousteau Society, Friends of Animals, and The Center for Marine Conservation. These eight organizations have approximately 6.5 million members and collect over $100 million in dues from individual members. In mid-1989, the New York Times reported a few examples of the recent dramatic growth in membership of environmental groups including: The Nature Conservancy -- up 75 percent over 1988; World Wildlife Fund -- up 46 percent over 1986; and Greenpeace -- up 50 percent over 1988. (Tom Golub, Capital Research Center, personal communication, May 10, 1990; USA Today, April 20, 1990, p. 22E; Washington Times, April 17, 1990, pp. F1, F4; New York Times, July 1989)

- The Nature Conservancy, a land and species conservation group in the U.S., was started in the 1950s. Membership has increased from 99,000 in 1980 to 275,000 in 1985 to 550,000 in 1990. During that same time, money raised by The Nature Conservancy has risen from $32,000,000 in 1980 to $44,000,000 in 1985 to $83,000,000 in 1989. (Rosalyn Tanner, The Nature Conservancy, correspondence, May 16, 1990)

- As evidence of public concern for wildlife issues, specifically species preservation, a consumer boycott of canned tuna has persuaded certain canned tuna producers to consider alternative fishing methods that do not harm dolphins. In effect since the 1970s, this boycott called attention to the incidental but widespread killing of dolphins that swim with schools of yellow-fin tuna. Greater emphasis was placed on this boycott by environmental organizations, such as the Earth Island Institute, in 1986. It is estimated that eight different environmental organizations, with membership totalling roughly two million, have been involved in the boycott. As part of their campaign, these organizations sent approximately 150,000 letters and telegrams to tuna canning companies protesting the incidental killing of dolphins.

  On April 12, 1990, H.J. Heinz is the largest producer of canned tuna in the world, agreed not to purchase any tuna caught by purse seining in waters where dolphins are sighted. Chairman of H. J. Heinz, Anthony J. F. O'Reilly, stated that the company's decision was in response to ongoing and growing consumer pressure. Since Heinz's announcement, two other major canned tuna brands have made similar promises.

These three brands account for nearly 70 percent of the canned tuna market in the United States. (Time, April 23, 1990; New York Times, April 13, 1990; Dave Phillips, Dolphin Project--Earth Island Institute, correspondence, April 1990)

- Bat Conservation International works to preserve dwindling bat habitats around the world and to educate the public about the ecological benefits of bat populations, such as insect control and plant pollination. Founded in 1985, it now has 9,500 members and annual support and contributions of more than $500,000. (Bat Conservation International Annual Report 1988-1989)

- An estimated 200 million people worldwide turned out for Earth Day 1990. Nationally, about 75 million people participated in Earth Day activities. (Peter Wright, Earth Day, personal communication, April 1990)

- Of the 300 sites for which the U.S. Park Service is responsible, fifty are national parks. These park areas are used for a variety of recreational practices which are dependent upon environmental quality, such as walking, hiking, and camping. Recreation visits have risen from 225 million visits in 1983 to 269 million in 1989 -- a twenty percent increase. National park usage averages more than one visit per capita (U.S.) per year. The rising trend in visits indicates a consistent and committed interest in these services. (Al Galipeau, National Parks Service, personal communication, June 1990; National Park Service Statistical Abstract 1989, National Park Service, 1989)

- The Wall Street Journal reports that the number of environmentally-oriented TV stories presented on network newscasts increased substantially during 1989. ABC and CBS ran four times as many such stories in the first quarter of 1989 as it ran in all of 1988. Similarly, NBC ran three times as many environmentally-oriented stories during early 1989. (Wall Street Journal, April 6, 1989, p. A1)

- According to a study conducted by Bowdoin College, the number of environmental studies majors in U.S. colleges and universities more than doubled between 1986 and 1989. (Wall Street Journal, June 15, 1989, p. A1)

- In 1970, no state had laws pertaining to recycling. By mid-1990, 26 states and the District of Columbia had recycling laws. In 1970, no state had a beverage container deposit/refund law. As of 1990, ten states (California, Connecticut, Delaware, Iowa, Maine, Massachusetts, Michigan, New York, Oregon, and Vermont) have beverage container deposit/refund laws. (USA Today, April 20, 1990, p. 15E)

- Overall membership in animal protection groups is estimated at 10 million. One of the leading animal rights groups in the U.S., People for the Ethical Treatment of Animals (PETA), was founded in 1980 with 100 individuals. It now has almost 300,000 members. The Humane Society of the United States grew from 65,000 members in 1980 to more than one million in 1990. (Environmental Action newsletter, May/June 1990)

- Wetlands Preserve, an environmental bar in New York City, opened in February of 1989. The live format club holds its Eco Saloon on Sunday nights at which a presentation (e.g., speaker or film) is made concerning a relevant environmental or social issue. The bar's Earth Station contains network information on local, state, and national environmental organizations and events and a petition table for environmental and other campaigns. In the past year, at least two environmental- and health-conscious restaurants, Nosmo King and Time Cafe, have opened in Manhattan. Noa Noa, a Beverly Hills, California restaurant, "concerns itself with ecological and environmental concerns." Ashkenaz of Berkeley, California and Gravity Bar of Seattle, Washington are just two more examples of after-hours clubs that promote environmental awareness. (New York Times, May 27, 1990, pp.1, 22; Brian Gibson, Wetlands Preserve, personal communication, May 8, 1990; E, January/February 1990, p.9)

## IV. Case History of the Natural Foods Industry

The previous sections summarized current consumer demand for environmentally-oriented products. To analyze the market's potential for continued growth, the history of the natural foods industry in the U.S. was examined because of similar market characteristics. Such a case study offers insight into the potential strength and size of the market for environmentally-oriented products. Because the natural foods industry is more mature, the case study also highlights important market constraints and other issues that could limit the emergence of the environmental market.

The parallels between the current market for environmentally-oriented products and the market for natural foods in the later half of the 1970s include:

- growing consumer interest;
- increasing variety and availability of products;
- increasing sophistication of marketers/suppliers in attracting mainstream consumers;
- poor initial product definition; and
- no initial standardization of labeling.

### Marketplace Structure

Several structural problems distinguish the early natural foods industry from the emerging market for environmentally-oriented products. Initially, many wholesalers and retailers in the natural foods industry had limited business expertise. There were also difficulties in organizing distributors and the variety of foods was not large. According to Anthony Harnett of Bread and Circus, which operates six natural foods stores throughout Massachusetts, the early natural food cooperatives were formed by individuals committed to alternative political and social views. By 1975, however, the several hundred natural food cooperatives nationally provided the industry with substantial buying power.

Environmentally-oriented products no longer face the same market entry barriers. These products are being manufactured and marketed both by established companies and by new companies. Established companies can redirect existing technical, business, and marketing expertise towards development of environmentally-oriented alternatives. Even relatively new companies have successfully introduced new products (e.g., Earth Care Paper Co., Seventh Generation, and Treekeepers) to the market because of the intense and growing demand for environmentally-oriented products.

### Product Definition

Some of the initial consumer confusion within the natural food market stemmed from poor product definition and no standardization of labeling. For example, there was no consensus definition of "organically grown." According to Harnett, consumer acceptance of such product claims has increased dramatically since states such as California and Michigan adopted definitions of their own. Government, as well as marketers and manufacturers of environmentally-oriented products, face a similar task of defining attributes of these products.

For environmentally-oriented products, however, consumers may be concerned about a greater number of product attributes (e.g., less pollution generated during manufacture, less toxic during use, and made from recyclable materials). In addition, product claims are not typically verified. The Federal Trade Commission and several state attorneys general are investigating certain claims regarding the degradability of certain plastic products. Claims about how one product is better for the environment need to be both understandable and credible.

**Standardized Labeling**

For a variety of reasons, the natural foods industry has still not standardized product labeling. Natural food producers and marketers may use any of a variety of standards -- some relate to farming practices while others relate to laboratory tested purity. One example of the variation in standards is that California permits crops to be labeled organic if no pesticides have been applied on the acreage for the previous (one) year. Other states require as much as three years without pesticide applications for crops to qualify for an organic label. Some in the industry would like to see the federal government involved in defining organically grown. Responding to the need for standardized labeling, Farm Verified Organic (FVO) is an independent enterprise that markets produce from farms that it certifies (In Business, November/December 1989, pp. 31-33). If it is accepted as credible, such a label may be simpler for shoppers because it permits them to look for a single logo or seal of approval.

Manufacturers and marketers of environmentally-oriented products face similar problems of label standardization. Consumers may be unable to choose the "best" product because each product has a number of attributes which an environmentally conscious shopper may consider but which are not readily apparent on the label. For example, a product may be made of recycled material but may be overpackaged. Several environmental seal initiatives begun in 1990 may offer consumers simpler indicators of product attributes. However, fees for labeling may deter some companies, especially smaller companies, from submitting their product(s) for approval and thereby undermine the integrity of a seal program.

**Marketplace Performance**

Despite a slow start, the natural foods industry has experienced substantial growth since the 1970s. Industry growth has been particularly strong in recent years. Annual sales of all organic foods grew by 9.9 percent in 1988 and 10.7 percent in 1989 to $3.93 billion (Natural Foods Merchandiser, June 1990, pp. 1, 34, 39-53). While annual sales approach $4 billion, this amount accounts for less than one percent of what consumers spend on U.S.-produced food. Capital investments are now being made in natural food processing and production equipment. Such investments may enable the natural foods industry to gain a greater market share (In Business, November/December 1989, pp. 31-33).

Many in the consumer products industry feel that environmentally-oriented products and natural foods are part of an expanding commitment to environmental issues at the household level. Because environmentally-oriented alternatives could be or have been developed for so many consumer products, ranging from fuel efficient cars and reformulated gasolines to concentrated detergents with reduced packaging, the potential size and breadth of the market for environmental consumers is substantial. Extrapolating the performance of the natural foods industry to environmentally-oriented products would indicate a multi-billion dollar market potential.

## APPENDIX

### Samples of Recent Public Opinion Surveys

- A recent Abt Associates nationwide survey found that 51 percent of adults purchased or avoided a product on environmental grounds. In the past six months, 36 percent of adults selected at least one product because they thought that it was better for the environment, 27 percent avoided a product because it was thought to damage the environment, and nine percent avoided buying a product because it is produced by a company that is thought by the consumer to be acting irresponsibly toward the environment. This is less than the percentage of Americans who say they are concerned about the environment (70 to 90 percent in the first half of 1990) which is so often quoted from other surveys, but still a significant share of the 185 million adult consumers in the U.S. (Consumer Purchase Behaviors and the Environment: Results of an Event-Based Study, Abt Associates Inc., September 1990)

- Packaging magazine's 1990 Consumer Survey found that packaging recyclability is increasingly important to American consumers. Approximately 65 percent of consumers now say that package recyclability "often or sometimes" affected their decision to buy a product -- an increase of about 15 percent from the previous year. Furthermore, 20 percent claimed that they would be willing to pay 6 to 10 cents more for a product in an "easy-to-recycle" package -- up from 11 percent the previous year. (Packaging, July 1990, pp. 8-10)

- According to Bruce Butterfield, Research Director for the National Gardening Association (NGA), Americans are increasingly turning to composting as a method to reduce disposal of yard trimmings. As evidence of this trend, the market for certain commercially produced compost products has also expanded. According to NGA's 1989 and 1987 surveys, the number of households using compost-derived soil amendments increased by 57 percent; the number using compost-derived topsoil increased 12 percent; and those using compost-derived potting soil increased eight percent. In the same two year period, NGA's annual survey found that fabricated backyard composting bins were used by 300,000 households in 1987 and by 700,000 households in 1989, an increase of 133 percent. (Bruce Butterfield, National Gardening Association, personal communication June 1, 1990)

- A CBS/New York Times poll conducted in late March and early April 1990 reported that 84 percent of Americans say that pollution is a serious national problem and is getting worse. Seventy-four percent said that the environment must be protected regardless of cost -- up from 45 percent in 1981. (New York Times, April 17, 1990, pp. A1, B10)

- In a Newsweek poll done by the Gallup Organization, 82 percent of those polled said that they were recycling some materials, 46 percent said that they had contributed money to an environmental organization, and almost 75 percent said that they would be willing to pay more for products and services made more expensive by environmental regulations. (Newsweek, April 16, 1990, p. 6)

- In a poll conducted for USA Today one week before Earth Day 1990, 83 percent of respondents said that they were concerned about the environment. Sixty-four percent felt that one person's effort can make a difference and 57 percent said that they would pay 15 percent more for groceries if packaged with recyclable materials. Fifty-two percent of the respondents claimed that they had stopped buying products made by companies they thought were polluting the environment. (USA Today, April 13, 1990, p. 10A)

- American adults responding to a Men's Health magazine/Louis Harris poll, ranked a clean environment (95 percent) second only to a happy family life (97 percent) as indispensable. (Newsweek, April 2, 1990, p. 5)

- An article in the April 1990 issue of American Demographics summarized the major findings of two recent polls regarding environmentalism in the U.S:

  From The Gallup Report:

  - Seventy six percent of consumers consider themselves to be "environmentalists."

  - Sixty-nine percent of people aged 18 to 29 label themselves environmentalists. Seventy-nine percent of those aged 30 to 49 label themselves as such, and 62 percent of those people over 50 call themselves environmentalists.

  - Environmentalism increases with education level. Sixty-two percent of those with no high school education call themselves environmentalists as compared to 81 percent for those with some college education.

  - In general, the percent of environmentalists increases with income from 70 percent for those with incomes below $15,000 to a high of 86 percent for those with incomes between $30,000 to $49,999. However, the percentage falls to 79 percent for those with incomes above $50,000.

From Public Pulse, a newsletter of the Roper Organization:

- Sixty-two percent of those polled consider environmental pollution a "very serious threat" which is up from 44 percent in 1984.

- Fifty-one percent favor tougher regulations on utilities even though it might cause higher costs.

(American Demographics, April 1990, pp. 40-41)

- A nationwide survey conducted by the Cambridge Energy Research Associates and Opinion Dynamics Corp. found that half of those polled were "definitely willing" to pay an extra $50 a year in taxes to protect wildlife and the wilderness, clean up water pollution, and properly dispose of hazardous chemicals and toxic wastes. (The Bureau of National Affairs' "Environment Reporter," February 16, 1990, p. 1780)

- Ninety-seven percent of Americans want natural areas preserved for future generations. (Best of Business Quarterly, Winter 1990, p. 92)

- According to a Gallup poll conducted on behalf of the Glass Packaging Institute, an overwhelming majority of Americans (72 percent) would prefer to purchase food and beverages packaged in recyclable containers -- an increase of 18 percentage points from 1988. Slightly more than half of respondents felt that recycling of glass packaging made a difference in the nation's municipal solid waste crisis, while just 21 percent felt that plastic container recycling was making headway. ("Public Attitudes Toward Recycling," The Gallup Organization, Inc. for the Glass Packaging Institute, October, 1989)

- According to the Michael Peters Group, 89 percent of U.S. consumers are concerned about the environmental impact of products they purchase, and 78 percent say they are willing to pay extra for environmentally responsible products. (Michael Peters Group, July 20, 1989)

- According to a Louis Harris poll conducted for Organic Gardening magazine, 84 percent of Americans want the food they buy to be organically grown and nearly one half of Americans said they would be willing to pay more for organic fruits and vegetables. (Organic Gardening press release, March 20, 1989)

- Thirty-nine percent of Americans strongly identify themselves as environmentalists. Environmentalists are a bigger market than some of the hottest markets of the 1980s such as Hispanics (8 percent), married couples with children (20 percent), and baby boomers (31 percent). (American Demographics, February 1989, p. 2)

- A survey done by the Gallup Organization for the American Paper Institute measured consumer attitudes towards recycled paper products. It found that:

  - Fifty-four percent of consumers are interested in buying products packaged in recycled paper containers.

  - When offered a choice between two products of comparable price and quality, one of which featured the recycled paper symbol, 37 percent of consumers reported that they would be very likely, and 33 percent said that they would be fairly likely, to purchase the product packaged in recycled paper.

  ("Public Attitudes Toward Recycled Paper Packaging," The Gallup Organization, Inc. for The American Paper Institute, January 20, 1989)

- A 1988 poll of public opinion leaders found that they believed that municipal solid waste disposal capacity had already become a national problem. When asked to compare it to other issues facing local officials, they ranked municipal solid waste disposal second only to public education, but ahead of affordable housing and expanded police and fire protection. (Public Attitudes Toward Garbage Disposal, National Solid Wastes Management Association, 1989)

- Twenty percent of Americans identify themselves as Republicans and 31 percent say they are Democrats; however, 39 percent describe themselves as environmentalists. (American Demographics, May 1988, p. 38)