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Staff Paper

**Emerging Demands on Our Food
and Agricultural System:
Developments in Environmental Labeling**

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Abstract
(21 pages)

A growing number of consumers are demanding more environmentally benign products, and companies are meeting this demand by making environmental claims on product labels. This phenomenon has led to two policy issues. One is preventing deceptive environmental labeling. The other is whether ecolabeling should be used to achieve environmental policy goals. This paper describes national and international developments in these two policy areas and explores marketing and policy implications for the food and agricultural system.

**Emerging Demands on Our Food and Agricultural System:
Developments in Environmental Labeling**

by

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Emerging Demands on Our Food and Agricultural System: Developments in Environmental Labeling

by

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Society's demands for a more environmentally sustainable economy are increasingly coming from a new source--the market. The market is a new source because environmental demands have traditionally been expressed through the political system and communicated to industry by government regulations, taxes, subsidies, and the like. However, over the last decade, a growing number of consumers have been demanding more environmentally friendly products, and manufacturers have been meeting that demand by voluntarily including a growing number of environmental claims on their product labels.

The growing use of environmental labeling has created two controversies. One is over the potential for consumer deception. For example, a label claiming that a product is "environmentally friendly" is vague and hard to substantiate. The key issue is what types of environmental labels are or are not deceptive. The second controversy is about whether environmental labels should also serve environmental policy objectives. In other words, some people believe that environmental labels should not only be truthful, but reduce the environmental impacts of consumption.

To see how these two controversies differ, consider the following example. Labels of some agricultural plastic mulch films claim that they "will break down into small pieces if left uncovered in sunlight." This is a truthful claim, but the claim does not result in less solid waste in the environment because the small pieces of plastic do not compose into natural soil particles or humus (U.S. EPA 1993a, p.112).

Attempts to make environmental labeling serve environmental goals have given rise to the concept of ecolabeling. Ecolabels are seals of environmental approval awarded by public or private organizations. More than 20 countries and the European Community have adopted ecolabeling programs.

The objective of this paper is to describe developments in environmental labeling and ecolabeling and to explore marketing and policy implications for the food and agricultural system. The first section describes developments in environmental labeling policy in the U.S. Section two describes ecolabeling developments. The third section assesses key issues, implications for the food and agricultural system, and research needs. The final section summarizes major themes.

1. Environmental Labeling

The main issue over truth in environmental advertising concerns voluntary claims made on products, not mandatory claims. Mandatory environmental labeling on U.S. consumer products dates back to the 1970s when several laws and regulations were adopted requiring specific types of environmental labels on products. The household appliance energy guide was mandated by the 1975 Energy Policy and Conservation Act (U.S. EPA 1993b, p. 176). In 1977, the Food and Drug Administration (FDA) and the Consumer Product Safety Commission (CPSC) required products that used a CFC propellant to carry a warning that use of the product may harm public health and the environment by reducing ozone in the upper atmosphere (U.S. EPA 1993b, p.173). The Toxic Substances Control Act (TSCA) enacted in 1976 required toxic chemicals to be labeled for hazards to humans and the environment (U.S. EPA 1993a, p.160). The Federal Insecticide, Rodenticide, and Fungicide Act (FIFRA) of 1947, as amended, has long required pesticides to be labeled for hazards to humans and the environmental (U.S. EPA 1993b, p. 152).

Voluntary environmental labeling of products in the U.S. also dates back to the early 1970s, but it was a relatively rare phenomenon compared to today. For example, Ex-Cello Corporation advertised that its Pure-Pak milk cartons were biodegradable, and Standard Oil of California claimed that its gasoline additive reduced emissions (Grodsky, p.154). However, the U. S. Federal Trade Commission (FTC) found these labels to be deceptive and issued consent orders against both companies.

Voluntary environmental labeling increased substantially in the late 1980s in response to a sudden growth in “green consumerism.” By 1989, marketing surveys in both Europe and the U.S. were reporting that the majority of consumers wanted to purchase green products (U.S. EPA 1993a and 1993b; Cairncross, 1992, Ch. 9). In 1991, 13.4% of new products were classified as “green” compared to only 0.5% in 1985 (Peattie, p.171). The surge in green consumerism has been attributed to the heavy news coverage of global warming and ozone depletion, and the publication of books (e.g., Makower et al.) in the U.S. and Europe informing consumers of how to purchase green products.

A study prepared by Abt Associates for the U.S. Environmental Protection Agency (U.S. EPA 1993a) found that the percentage of new products with voluntary environmental labeling increased from 5.9% in 1989 to 11.4% in the first half of 1992. The product categories they found to have the largest number of voluntary environmental labeling claims were foods and health and beauty aids (p.29). The most frequent type of environmental claim they found on any new product was about nonuse of certain chemicals in production or product formulation (e.g., organic, no pesticides, no phosphates, no fluorocarbons).¹ The second most common claim related to solid waste (e.g., recyclable, degradable, recycled).

Most environmental labeling in the U.S. focuses on the environmental impacts associated with consumption, not production, of a product. For example, consumption of some products requires use of inputs such as energy or water. Thus, products may advertise energy or water conservation features. Similarly, consumption of some products results in emission of harmful chemicals or the creation of significant noise during product use. Thus, products may advertise the lack of certain

¹It is interesting to note that the study classified “organic” and “no pesticides” as examples of environmental labeling since they could be interpreted as health claims as well. They report that six times as many health claims as environmental claims were made for new food and beverage products over the same period, not including the “organic” and “no pesticides” claims (U.S. EPA 1993a, pp.35-36).

ingredients that cause pollution. Disposal of a product and its packaging create solid waste problems. Thus, products may advertise that they are recyclable, refillable, weigh less, or use less packaging.

However, a few voluntary environmental labels pertain to the environmental impacts of the process used to produce the product. Perhaps the most widely known is the organic label on food, beauty, and clothing products. For the last several years, some brands of canned tuna have been labeled as “dolphin safe.” Some wood products are advertised as made without chlorine or as coming from sustainably harvested forests. Production-related claims have the most potential to affect agriculture

The growth in voluntary environmental labeling has caused several types of consumer confusion (U.S. EPA 1993a, 1993b). One source of confusion is the lack of a common definition of voluntary environmental product claims. Some voluntary environmental labels are general, such as “environmentally friendly” or “eco-safe.” Some are very specific, such as “50% post-consumer recycled content” or “100% recyclable packaging.” Others are somewhere in between, including terms such as “recyclable,” “recycled,” “biodegradable,” “ozone friendly,” and “source reduced.” The more general the claim, the more likely a consumer will misunderstand its meaning. Consequently, general claims may deceive consumers about the amount or type of environmental improvement that comes from purchasing labeled rather than unlabeled products.

A second source of consumer confusion is that the environmental improvement resulting from use of a product depends on the context in which it is used or disposed. For example, recyclable products are not environmentally useful if there is no recycling collection available to a consumer. Similarly, biodegradable products are not environmentally useful if products are disposed of in incinerators or sanitary landfills. These kinds of environmental claims can deceive consumers who are unaware of the context in which they use a product.

A third source of consumer confusion is that most environmental labeling claims are not easily verified by consumers either before or after purchase. For example, the ozone friendliness or recycled content of a product cannot be directly verified by a consumer. Private enforcement of voluntary environmental claims is impractical because proving damages is difficult (Grodsky).

A fourth source of potential consumer confusion is that environmental labels may obscure other environmental harms associated with consuming or producing a product (Grodsky). The problem is that by focussing on a single environmental attribute of a product, a consumer may unintentionally do more environmental harm than good. For example, a cosmetic product may be advertised as ozone friendly because it does not contain CFC propellants, but the same product may contain harmful volatile organic compounds. Batteries may be advertised as mercury free, but contain other hazardous chemicals. Fluorescent bulbs may be advertised as energy efficient, but emit harmful mercury vapor when disposed. Cloth diapers may be advertised as reducing solid waste compared to disposables, but they also require more water and waste water treatment.

Surveys of U.S. consumers in 1990 and 1991 found that they did not know what many voluntary environmental labeling terms meant and were questioning their credibility (U.S. EPA 1993a, 1993b, 1994). For example, a marketing survey done in 1991 found that more than 40% of respondents did not believe that products labeled as environmentally friendly were actually better for the environment. However, at the same time, other surveys were reporting that almost half of U.S. consumers had recently purchased a more expensive product because of environmental concerns.

Section 5 of the U.S. Federal Trade Commission Act makes unlawful deceptive acts and practices in or affecting commerce. The FTC has brought more than 50 consent orders against companies making false or deceptive environmental marketing claims. However, this case by case approach became unwieldy as the number and type of voluntary environmental marketing claims grew. At the same time, a

number of states were developing their own environmental advertising standards and calling for the development of federal standards (Grodsky; U.S. EPA, 1993b).

In 1992, the FTC promulgated a guide for the use of voluntary environmental marketing claims (U.S. FTC 1992). The guide does not have the force of law, but provides a “safe harbor” in the sense that if a company adheres to the guide, the chance of subsequent legal action by the FTC is reduced. The guide does not address the issue of whether environmental claims should be allowed on products.

Rather, it is limited to resolving the issue of what constitutes a truthful or deceptive environmental claim.

The FTC guide lays out general principles that apply to all types of voluntary environmental claims about products. These principles state that claims must have a reasonable basis for substantiation, be clearly communicated to consumers, distinguish between a product and its packaging, not overstate environmental benefits, and provide a clear basis for comparison when a comparative claim has been made.

The substantiation principle is particularly important because it requires companies to maintain credible, objective proof supporting their claim. Such proof may include product testing or observation of production practices by a third party certifier such as Underwriters Laboratories. Note that certification services improve the credibility of the claim, but do not determine what the nature of the claim should be.

The FTC guide makes an important distinction between general and specific environmental marketing claims. General claims refer to the overall environmental benefit of a product. Specific claims refer to a particular type of environmental benefit. The meanings of seven types of specific environmental claims are discussed in the guide: (1) degradable, biodegradable, or photo degradable, (2) compostable, (3) recyclable, (4) recycled content, (5) source reduction, (6) refillable, and (7) ozone safe or ozone friendly.

The FTC guide discourages the use of general and encourages the use of specific voluntary environmental claims (Grodsky, U.S. EPA 1993b). The guide states that unqualified, general claims of environmental benefit such as “eco-safe” are “difficult to interpret” and “may convey a wide range of meanings to consumers.” The guide does not rule out such general claims if they can be adequately substantiated, but the means of doing so are not discussed. In contrast, the guide encourages the use of specific environmental claims by giving examples of several types that the FTC would or would not deem to be deceptive.

The examples of specific claims in the guide refer mainly to consumption-related environmental impacts, but not production-related claims. Thus, production-related claims do not have as safe a harbor as consumption-related claims. Moreover, general claims related to the process used to make the product are almost certain to be ruled as deceptive. For example, a label bearing the claim “sustainably harvested” would most likely be considered deceptive because it currently has no commonly accepted meaning.

Despite the fact that “organic” labels are one of the most frequent forms of environmental labeling (U.S. EPA 1993a), the “organic” claim is not addressed in the FTC guide. Presumably, the reason is that “organic” has a commonly understood meaning within the law. The 1990 Organic Foods Production Act establishes a national standard for defining and substantiating organic claims. That Act authorizes the U.S. Department of Agriculture (USDA) to develop specific organic production and handling standards and permits use of a USDA seal on products that have been certified by a federally accredited certifier to meet those standards.

The FTC guide addresses all but one of the sources of potential consumer confusion described above. It addresses the problem of unclear claims by discouraging general claims and requiring qualifications on the label to clarify the meaning of specific claims. It addresses the problem of context by

giving examples of deceptive use of specific environmental claims. It addresses the problem of verification by requiring companies to maintain evidence that may be used to reasonably substantiate the claim. It does not address the problem that specific claims may obscure other, unrelated environmental harms associated with producing, consuming or disposing of a product. It is exactly this latter source of potential consumer confusion that ecolabels seek to address.

In many respects, the FTC guide is similar to environmental labeling guidelines being developed at the international level. The International Standards Organization (ISO) has proposed and will soon adopt international standards for environmental labeling known as ISO 14020, 14021, 14022 and 14023. These labeling standards are part of the broader set of standards on environmental management systems and environmental audits known as ISO 14000 (Kuhre). These standards will probably facilitate further development of environmental labeling.

Like the FTC guide, the ISO standards state that environmental labels should not be deceptive and should be accurate, based on credible scientific evidence, and verifiable. General claims such as “environmentally friendly” are discouraged. Companies are advised to maintain information that can substantiate the environmental claim. The ISO standards go a bit further on this point of substantiation by stating that this information should be made available to any interested party upon request.

The main point of contrast is that the ISO standards encourage production-related environmental claims. The draft guidelines state as a general principle that the development of environmental labels should, wherever appropriate, take into consideration the life cycle of the product or service. The life cycle of a product is defined to range from extraction of raw material for manufacture to final disposal.

In summary, this section has distinguished mandatory versus voluntary, consumption-related versus production-related, and general versus specific environmental labeling claims. U.S. policy includes both mandatory and voluntary environmental labeling, but the voluntary claims are the main source of

controversy. Most environmental labels focus on environmental impacts of consuming a product, but a few relate to the process used to produce a product. U.S. policy on voluntary environmental labeling discourages general and encourages specific claims related to the impacts of consumption. It also provides more of a safe harbor to consumption-related than to production-related claims. The exception to this rule is organic claims, which are treated under a different legal framework. In contrast, international policy encourages production-related claims in environmental labeling.

2. Ecolabels

The growing demand for green products has given rise to the development of a new environmental policy tool. More than 20 countries and the European Community have initiated programs that award seals of environmental approval to consumer products, commonly known as “ecolabels” (U.S. EPA, 1993b, 1993c, 1994). The main objective of these ecolabeling programs is to reduce environmental impacts over the entire life cycle of a consumer product including its manufacture, consumption, and disposal. Ecolabels are believed to achieve this objective by changing consumer purchasing behavior, thus, creating incentives to producers to produce less environmentally harmful products and develop cleaner technologies. Another objective of ecolabel programs is to prevent deceptive environmental advertising by providing expert objective assessment of the environmental benefits of a product.

The U.S. federal government has not initiated a government ecolabeling program, but has proposed government procurement guidelines on the acquisition of environmentally preferable products and services using life cycle criteria similar to ecolabeling programs (U.S. EPA, 1995). Two private companies in the U.S. have launched ecolabel programs (U.S. EPA, 1993b, 1993c). However, concern about the potential for false and deceptive private ecolabels has prompted the introduction of legislation on ecolabeling in Congress (Grodsky).

Within the framework of the previous section, ecolabels would be classified as voluntary, general claims about consumption-related and production-related environmental impacts of a product. Thus, it would seem that ecolabels are discouraged by U.S. policy.

However, an ecolabel has an additional characteristic that addresses the FTC concern about unqualified general environmental claims being difficult to interpret. An ecolabel claim is defined by a set of publicly available, uniformly applied environmental standards that products must meet. The key task of the agent awarding the ecolabel is setting these standards, more commonly referred to as award criteria. It is the standard setting task that addresses the question of which environmental standards are desirable, and, thus ecolabels may be used as a policy instrument.

Ecolabeling programs also address the FTC concern that environmental claims on products are backed by reasonable evidence to substantiate the claim. This is done by either providing, contracting out for, or requiring a company to acquire certification that products meet the ecolabel award criteria.

It is crucial to distinguish the standard setting task from the certifying task of ecolabeling programs because they are confused in the existing literature. For example, a series of EPA studies on environmental labeling equates ecolabels with environmental certification programs (EPA 1993a, 1993b, 1993c, 1994). Certification does not involve standard setting. Rather, it involves product testing or observation of production practices to determine whether a product meets a given set of standards. The standards to be met could be government standards, industry standards, the company's product standards, or an ecolabeling organization's standards. Certification determines whether an environmental claim is factual, not whether it is desirable.

In contrast, standard setting determines what constitutes a desirable environmental claim, not which claims are factual. Thus, it is probably more accurate to call an ecolabel an environmental endorsement or seal of approval rather than an environmental certification program. An ecolabel is like

an endorsement or seal of approval because it is a signal of high standards as well as a signal that products meet standards.

An ecolabel organization may be a governmental agency, a quasi-governmental body, or a private entity. This organization owns its environmental endorsement symbol or trademark. It licenses the use of its mark for a specified period of time, usually two or three years.

For example, Green Seal is a private ecolabeling program operating in the U.S.. Green Seal concentrates on developing the environmental standards for products within a particular product category. The certification task is contracted out to Underwriter Laboratories. If a product is certified to meet its standards, Green Seal licenses its mark to manufacturers, subject to various contractual terms such as periodic monitoring (US. EPA 1993b, pp.72-76).²

The other private ecolabeling program in the U.S. is offered by Scientific Certifications Systems (SCS). Rather than licensing a mark or seal, SCS licenses an “Environmental Report Card” that gives a product scores on several different types of “environmental burdens” incurred over the entire life cycle of a product. These include energy use, depletion of seven types of renewable and nonrenewable resources, nine categories of air emissions, three categories of water emissions, and two categories of solid waste. The scores for each type of environmental burden are displayed in a bar chart that ranges from low to heavy burden (U.S. EPA 1993c, pp.41-44).

Unlike the U.S., ecolabeling programs in other countries are run by or on behalf of a governmental agency. Often these are independent nonprofit organizations or councils operating under guidance of the country’s environmental ministry. These organizations often involve representatives of

²Further information on Green Seal is available at their web site (<http://www.greenseal.org>).

citizen, environmental, labor, and industry groups, as well as panels of scientific experts, in the standard setting process.

The oldest ecolabeling program is Germany's Blue Angel seal which was established in 1977. As of 1993, the program certified 3,503 products in 75 categories. According to a 1988 survey, the Blue Angel is recognized by 79% of German households (U.S. EPA 1993b, p.44). Canada's Environmental Choice program was founded in 1988. During its first four years of operation it awarded its EcoLogo to over 750 products. A 1992 survey found that 42% of consumers recognized the logo (EPA 1993b, p. 50). Japan's EcoMark program was established in 1989. As of 1992, it had issued awards to 2,300 products in 49 categories. A survey in 1990 found 22% of the public was aware of the program (U.S. EPA 1993b, pp.56-57). Many other government ecolabeling programs have been established since 1989 in Europe, Scandinavia, Asia, South America, and the South Pacific region.

In most programs, private or public, the standard setting process is very lengthy and usually involves some variation of the following steps.³ First a product category is identified by the ecolabeling organization, typically through proposals from industry or environmental groups. The next step is to develop a description of the stages of a product's life cycle and the kinds of environmental impacts associated with each stage. This might include extraction of raw materials, manufacturing, distribution, product use, and disposal. The next step is to identify the kinds of environmental impact associated with each relevant life cycle stage. In practice, it is impossible to examine all impacts, so most programs try to identify those impacts which differ the most across different companies' products. Standards are then proposed for reducing these environmental impacts. These standards are made available for public review and comment. The standards are revised to reflect public comment and then finalized. A

³This description of the standard setting process is a highly condensed summary of detailed information on ecolabeling programs described in a series of four reports commissioned by the U.S. EPA (1993a, 1993b, 1993c, 1994).

scientific review panel and an appeals process may also be part of the standard setting process. Finally, periodic review may be included to ensure that standards reflect technological progress.

Most ecolabeling organizations describe their assessment process as based on the product life cycle concept, and several use a streamlined version of life cycle assessment methods (LCA). LCA is defined as involving four sets of tasks (U.S. EPA 1993c). In the context of ecolabeling, the first task is to define what constitutes the life cycle of a product. This is necessary because some relevant bounds must be put on when the life cycle begins and ends. The second step involves an inventory of environmentally significant inputs (e.g., energy, water) and outputs (emissions to air and water, solid waste) throughout the various life cycle stages. The third step is to assess the impacts of environmental inputs and outputs on ecosystems, human health, and natural resource stocks. Of all these steps, this is the most controversial because there is still great scientific uncertainty about the fate and effects of various pollutants. The final step is to evaluate options for reducing environmental impacts throughout the product's life cycle.

The LCA method reflects concerns about the piecemeal approach of current environmental policy and the desire to take more of a systems approach to environmental improvement (Arnold; Allenby and Richards). The piecemeal problem arises because most environmental regulations focus on controlling one pollutant at a time in one particular media. For example, EPA develops regulations for each type of pollutant emitted into water. The overall effects of all pollutants in all media are not considered under this approach, nor is it feasible to consider them all. As a result, it has been suggested that government should also focus on encouraging the development of "clean technologies." Ecolabeling that is based on the LCA concept is one way to provide the encouragement.

Currently, there is a great deal of variety in the award criteria of ecolabeling organizations worldwide.⁴ The main difference is the extent to which a program focusses on all the stages of a product's life cycle and which environmental impacts in each stage are actually considered (U.S. EPA 1993c). None perform a complete LCA partly because of the extremely data intensive nature of LCA, but also because there is still no scientific consensus on what constitutes a valid and reliable LCA.

Several organizations are working toward harmonizing ecolabeling programs. The Global Ecolabeling Network (GEN) is a voluntary organization of national and multinational "Ecolabel Licensing Organizations." One objective of GEN is to examine the establishment of an ecological criteria databank.⁵ The United Nations Task Force on Environmental Labeling is facilitating discussion of principles of equivalency in ecolabeling environmental criteria and potential international trade issues such as mutual recognition of ecolabeling schemes. Because the concept of LCA is central to many ecolabel programs, the U.S. EPA, the Society for Environmental Toxicology and Chemistry (SETAC), and other organizations have been working together to produce a scientifically acceptable and policy relevant version of LCA.

Economists are beginning to question the validity of LCA. Arnold argues that, aside from being extremely difficult to do, LCA cannot provide one right answer about which products are the most environmentally benign. He argues, for example, that cloth diapers are more environmentally benign if a consumer lives in an area with adequate water and energy supplies and limited landfill space, while disposables are better in the reverse case. Cairncross (1995) argues that putting bounds on the life cycle of a product is arbitrary and the method provides no way of making tradeoffs between different

⁴A detailed description of the award criteria of different organizations world-wide can be found in U.S. EPA 1993b.

⁵Further information about GEN and its ecolabeling members can be obtained at the GEN web site (<http://www.interchg.ubc.ca/ecolabel/gen.html>).

categories of pollution. For example, LCA does not provide a way to compare a product that creates less air pollution, but more water pollution than another product that has the opposite environmental impacts.

In summary, the purpose of ecolabels is to encourage consumption and production of more environmentally benign products, thus reducing environmental impacts. Unlike environmental labels, ecolabels embody environmental standards. Products must be certified to ensure that these environmental standards are being met. Thus, ecolabels are essentially an environmental endorsement or seal of approval. Because they are based on stringent environmental standards, ecolabels may be used as an environmental policy tool for encouraging the development and adoption of clean technologies. The most controversial aspect of ecolabeling is setting the environmental standards. Most programs apply the concept of a product life cycle when setting standards, so ecolabels involve standards on both production-related and consumption-related environmental impacts. Scientific and policy consensus has not occurred yet on the particulars for performing life cycle assessment, but many organizations are working to make it an acceptable analytical tool.

3. Implications for the Food and Agricultural System

Agricultural products are not currently being addressed in ecolabeling programs. This is probably partly due to the fact that there are national and international standards for organic agriculture. However, organic standards are based on a different philosophy than ecolabel standards. An ecolabel standard is expressed in terms of environmental improvement throughout a product life cycle, but production practices are not specified. A company that can demonstrate that its practices provide more overall environmental improvement than practices used by others producing the same product may qualify for the ecolabel. In contrast, organic standards specify or prohibit certain production practices and input use, but do not require proof of environmental improvement.

Ecolabels and LCA provide potential vehicles for defining sustainable agriculture. Sustainable agriculture consists of many practices that are environmentally beneficial, but are unique to the ecological conditions of a particular farm. Since ecolabels are defined in terms of potential environmental impact rather than in terms of specific production practices, they are more flexible than organic certification programs. Perhaps lessons can be drawn from the definitions of sustainable forestry that are emerging in ecolabeling programs.

It is possible that other kinds of specific environmental labels could be used in agriculture, but they would require substantial industry efforts to ensure they met the FTC guidelines. For example, it may be possible to develop labels relating to the use of integrated pest management practices. However, FTC rules would require that such labels have a common meaning and be backed by credible evidence to substantiate the claim. This would no doubt require special record keeping and product testing. However, some of this record keeping is already being practiced on farms.

While it may be possible to use ecolabeling or environmental labeling in agriculture, it is less clear whether such efforts would be worthwhile. From a marketing standpoint, the question is whether labeling would increase market share and yield price premia sufficient to cover the extra costs of labeling. The answer to this question is unknown. From a policy perspective, the question is whether such labeling is potentially deceptive and whether environmental improvements would actually result. The answer to this question is also unknown. There are also other troubling policy questions such as whether ecolabels may violate antitrust laws or become barriers to international trade (Grodsky).

From a marketing standpoint, the demand for “green” products presents potential opportunities and threats to the food and agricultural system. The opportunities may arise in at least three areas. One potential opportunity is that consumer product companies may eventually seek to enhance their market share by using ecolabeling. Since ecolabeled products favor the use of sustainably produced products,

there may be a new demand for sustainably produced agricultural outputs. Ecolabels also give preference to renewable resources over nonrenewables, so there may be new demands for using agricultural products as feedstocks or inputs in the production of more consumer products. Ecolabel programs can provide a new kind of direct marketing tool. For example, Green Seal has established an Environmental Partners Program which organizations can join by pledging to use more environmentally benign products. The program provides members with information about environmentally preferable products. This may be a potential opportunity for fresh market producers and cooperatives on the cutting edge of sustainable agriculture. Ecolabeling of agricultural inputs may also improve a firm's reputation to government regulators as well as buyers.

The threats arise from the hurdles that have to be met to qualify for a label and to ensure an environmental label is worth the cost. Markets may be too thin to generate sufficient sales volume. The costs of certifying may be too steep. The presence of ecolabeled products in the market may have negative effects on the price and sales of unlabeled products. Companies may lose control over their own production process and marketing decisions. Private ecolabeling agents and certifiers may not be stable, credible or honest. Ecolabels may be ruled as a barrier to international trade.

From a policy standpoint, it is not clear whether green consumerism helps or hinders environmental progress. While there has been much economic analysis of other environmental policy tools, there is almost none on environmental labels, ecolabels, and life cycle analysis (Arnold; Mattoo and Singh). Economic analysis of the traditional environmental policy tools has revealed many unintended consequences. No doubt the same will be true of environmental labels and ecolabels. For example, the specific environmental labeling approach advocated by the FTC may cause consumers to optimize on a single environmental attribute, leading to an increase in other types of environmental harms. Similarly, an ecolabeling program may cause consumers of less resource intensive goods (e.g., brooms) to switch to

more resource intensive goods (e.g., vacuum cleaners) because versions of the latter goods are ecolabeled. Possible unintended consequences of this sort need to be investigated.

4. Summary of Key Points

There are two key policy issues related to the growth of environmental labeling. One is how to ensure that such claims are truthful. A second is whether such claims should result in environmental improvements. U.S. policy addresses the first of these policy issues and basically considers the second question moot. The rest of the world has come to regard ecolabels as a new tool for achieving environmental policy goals.

In the U.S., policy favors the development of environmental labeling that involves specific claims related to the environmental impacts of consuming, but not producing products. In the rest of the world, policy favors ecolabels that seek to reduce the environmental impacts associated with all stages of the life cycle of a product from cradle to grave. U.S. policy does not rule out private labeling of this sort, but it does not encourage either.

Future development of ecolabeling is likely. More than 20 countries have ecolabeling programs and they have formed an international organization to facilitate harmonization across programs.

Ecolabeling presents both opportunities and threats to agriculture and the food system. Perhaps the most important opportunity is that the life cycle approach of ecolabeling provides a potential framework for clarifying the definition of sustainable agriculture and showing how it differs from organic agriculture.

From a policy perspective, it is not clear whether we are better off with either environmental labeling or ecolabeling. Economic analysis is needed to find whether there are unintended consequences of these new policy tools.

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