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A Quixotic Quest for Definition: Perceptions of “Organic” and Implications for The Environment and for Market Participants

Becky L. Jacobs & Chelsea Jacobs*

INTRODUCTION

We recently began a quest, Don Quixote-like, to determine the definition of “organic” food, or at least to assess how most consumers of organic food in the United States (“U.S.”) perceive that term to be defined. Our quest was inspired by a visit to a “sustainable”1 farm that was hosting a farm-to-table dining event. The crowd was large and enthusiastic; the meal was exceptional; and the farm setting was bucolic and impressive.

In our conversations with the very capable farm owner, we were surprised to learn that her products, mostly vegetables, were not certified organic by the U.S. Department of Agriculture (“USDA”). When we inquired further about the reasons for this, the very foundations of our “organic” world began to crack. She explained that, not only was the program administratively burdensome for many small farmers, it also was ideologically anathematic to those who farm using 100 percent natural techniques and products. This is because USDA certified organic farmers are permitted to treat their crops with synthetic substances from an approved list.2 The

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1 The adjectives “alternative,” “sustainable,” and “agroecological” are utilized interchangeably herein to describe a particular approach to farming. The term “organic” is limited to U.S. Department of Agriculture-certified organic farms, but the authors acknowledge that the term “certified organic” has become a “political, cultural, economic and social [construct] ... located within western ideologies and practices” and is laden with hegemonic overtones. See, e.g., CATHY FARNWORTH & JESSICA HUTCHINGS, INT’L FED’N OF ORGANIC AGRIC. MOVEMENTS, ORGANIC AGRICULTURE AND WOMEN’S EMPOWERMENT 4, 5 (2009).

farm hostess was discouraged by her belief that multinational food companies now disproportionately influence the USDA “organic” program, exerting constant pressure to allow the use of conventional materials preferred by industrial operators as well as the import of products from countries with “organic” standards that may not have been audited or may be weaker than those in the U.S.

This, of course, was quite disturbing to zealous organic food converts. Disillusioned, we decided to research the issue to see if our naivete was singular, or if there were, perhaps, others who had similar perceptions of the meaning of the “organic” label. If there were others suffering this cognitive dissonance, what might the impact be on the environment and on the broad spectrum of participants in the sustainable food market?

I. THE U.S. MARKET FOR SUSTAINABLE FOOD PRODUCTS

Consumer demand for organically produced food in the U.S. increased dramatically since 1997 when the U.S. Department of Agriculture first collated and analyzed retail data.\(^3\) Sales reached a historic $47.9 billion in 2018, an increase of 5.9 percent from 2017.\(^4\) Compare this gain to the 2.3 percent growth in total U.S. food sales.\(^5\)

Organic food is now available to consumers through many sale outlets. For example, one can find organic products in over 20,000 natural and specialty food retailers as well as in nearly three out of four conventional grocery stores.\(^6\) Organic products are also sold in membership clubs, so-called “big-box” stores, farmers’s

\(^3\) CAROLYN DIMITRI & LYDIA OBERHOLTZER, USDA ECON. RES. SERV., MARKETING U.S. ORGANIC FOODS: RECENT TRENDS FROM FARMS TO CONSUMERS NO. 58 (2009).
\(^5\) ORGANIC TRADE ASS’N, supra note 4.
markets, Community Supported Agriculture farms and networks, and other direct sale outlets.\(^7\)

Driven by the strength of consumer demand, the organic food segment of the market has blossomed from a small industry niche to a large, multi-billion-dollar business, with major corporate entities investing in organic food products,\(^8\) such as Frito-Lay’s Simply Lay’s® Wavy Organic Potato Chips,\(^9\) Simply TOSTITOS® Organic Black Bean and Corn Salsa, and Simply TOSTITOS® Blue Corn Tortilla Chips;\(^10\) Tyson Foods’s all natural NatureRaised Farms® chicken brand\(^11\) and Open Prairie Natural Angus® beef brand;\(^12\) as well as Coca-Cola’s Honest Tea, Honest Kids, Zico Coconut Water, Odwalla, Peace Tea, Vitamin Water, and Simply Orange.\(^13\)

Despite this interest and investment in organic foods, theoretical and practical approaches to the actual definition of the adjective “organic” widely diverge. For example, some consumers associate “organic” with terms such as “chemical-free,” “healthier/more nutritious,” and “alternative lifestyle.”\(^14\) Others believe that “organic” relates more to concepts such as sustainable

\(^7\) Dimitri & Oberholtzer, supra note 3.


\(^10\) See Products, Tortilla Chips, TOSTITOS, https://www.tostitos.com/product-category/tortilla-chips [https://perma.cc/W3F9-DUMN]; see, e.g., Renée Shaw Hughner et al., Who are Organic Food Consumers? A Compilation and Review of Why People Purchase Organic Food, 6 J. CONSUMER BEHAV. 94, 106 (2007) (stating “[s]ome have overtly created their own brands of organic foods (e.g., Frito-Lay’s Naturals product line; Tesco’s organic range in the UK and Ireland), while others have been considerably more discreet (e.g., Odwalla, makers of organic orange juice, is owned by Minute Maid, a division of Coca Cola”); Megan S. Houston, Ecolabel Programs and Green Consumerism: Preserving a Hybrid Approach to Environmental Regulation, 7 BROOK. J. CORP. FIN. & COMM. L. 226, 241 (2012).


\(^12\) See Open Prairie® Natural Meats, TYSON, https://www.tysonfreshmeats.com/our-brands/open-prairie/natural-meats [https://perma.cc/74BW-F8QS].


natural, local, free from additives/preservatives, green supply chain, GMO, and climate change. For those in the organic food business and those regulating that business, it is important to understand these differing interpretations in order to meet consumer expectations in the organic market.

A. “Organic”: History, Governance, and Standards

The organic food movement began in Britain with farmers developing alternative production methods. Between 1920 and 1940, agricultural scientists and farmers focused on cultivating healthy, fertile soil to promote human and animal health. Philosophically, organic farmers opposed the use of chemicals to replace minerals in soil, preferring instead to utilize natural systems due to their concerns regarding the impact of artificial food upon animal and human nutrition. In the early 1940s, organic farmers in the U.S. began implementing agroecological farming techniques such as composting, crop variation, and natural pest suppressants.

The publication of Rachel Carson’s *Silent Spring* in 1962 was significant for the organic and environmental movements in the U.S. The book documents the effects of pesticides on the environment and on human and livestock health, with a particular focus on the then widely-used dichlorodiphenyltrichloroethane ("DDT"). *Silent Spring* became a best seller and influenced public

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17 Id.
21 Id.; see also Eliza Griswold, *How ‘Silent Spring’ Ignited the Environmental Movement*, N.Y. TIMES MAG. (Sep. 21, 2012),
thinking and legislative activity, including the creation of the U.S. Environmental Protection Agency (“EPA”) in 1970, a governmental agency which some have called “the extended shadow of Rachel Carson.”22 “Organic” also began catching on in magazines and with proponents who emphasized their opposition to chemical fertilizers and large-scale farming.23

The popularity of organic food increased between 1960 and 1970 with a growing number of non-conformist young adults and environmentalists who created food co-ops and practiced organic farming.24 “Organic” was gaining political momentum during this era as it was associated with anti-industrialism and counterculture.25 This was met with resistance by federal officials.26 In 1974, for example, the U.S. Food and Drug Administration (“FDA”) unsuccessfully attempted to ban the term “organic” but successfully prohibited claims that natural or organic foods were more nutritious than conventionally-produced foods.27 Former U.S. Secretary of Agriculture Earl Butz even contended that there might be mass famine if society reverted to organic farming methods.28

Yet even federal resistance did not stop the growth of organic farming.29 In the 1970s and 1980s, when the cost of petroleum-based inputs for conventional agricultural farming increased,30 even some opponents of “organic” began to recognize that there might be “positive agronomic and environmental conservation characteristics” associated with low-cost input farming practices.31 During this timeframe, independent organic standards, official certification programs, and legal definitions proliferated, developed by multiple, competing independent farmers, trade associations, and


22 Lewis, supra note 20.
23 See von Sehlen, supra note 8, at 5.
24 Id.
26 Id.
27 von Sehlen, supra note 8, at 6.
28 Id.
29 See id. at 5.
30 Id. at 6.
governmental units. For example, in 1973 and 1979, respectively, the states of Oregon and California enacted legal definitions. Initially, however, California refused to enforce its own 1979 Organic Food Act by failing to include provisions for enforcement. The California legislature later instituted penalties for noncompliance in the Organic Food Act of 1990.

At the federal level, the U.S. Congress passed the Organic Food Production Act (“OFPA”) in 1990. The OFPA required the USDA, via a National Organic Standards Board (“NOSB”), to establish national standards for the marketing and production, and to facilitate interstate commerce, of organic agricultural products. Over a decade later, in 2002, the USDA promulgated the rules that implemented the Act, a draft of which generated thousands and thousands of comments claiming that the standards as proposed were contrary to the organic farming industry’s goals.

It is pursuant to the OFPA, and to the National Organic Program (“NOP”), that the USDA administers a voluntary organic certification program. The NOP is a marketing program administered by the USDA Agricultural Marketing Service (“AMS”). It establishes four tiers of certified agricultural products: Tier One products are “100% Organic;” Tier Two products are “Organic” and must have 95 percent or more organic ingredients; Tier Three products are “Made with Organic Ingredients” and contain at least 70 percent organic ingredients; and Tier Four products, with “Less than 70% Organic Ingredients,” contain organic

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32 Id. at 308-10; see also Ghokar, supra note 25, at 1-2.
33 von Sehlen, supra note 8, at 7.
34 Id.
35 Id. at 8.
37 Id. at 338: Watnick, supra note 18, at 46–47.
38 See generally Organic Research, Promotion, and Information Order, 7 C.F.R. § 1255 (2017) (depicting a summary of the proposed rule and information surrounding it); see also J.B. Ruhl, Farms, Their Environmental Harms, and Environmental Law, 27 ECOL. L.Q. 263, 266 n. 3 (2000).
40 Liu, supra note 36, at 339–41.
ingredients set forth in the ingredient list.\textsuperscript{41} Agricultural products may be USDA certified and labeled according to these organic tiers if produced, handled, and labeled in accordance with NOP standards.\textsuperscript{42}

Regulators in other geographic locations have created legal regimes based upon differing conceptions or approaches to the definition of “organic.”\textsuperscript{43} For example, Canada and many European countries, including England and Germany, prohibit the marketing or selling of food produced by hydroponic production methods as “organic.”\textsuperscript{44} However, compliant hydroponic production methods currently are eligible to be certified as “organic” in the U.S.\textsuperscript{45}

\textit{B. Definitional Issue}

In the U.S., consumers, producers, distributors, retailers, and regulators lack consensus about the definition of “organic” as it pertains to food products.\textsuperscript{46} The regulatory framework for organic food products administered by the USDA does not appear to have been designed, and has not evolved, to be consistent with what we perceived to be consumer expectations or purchasing habits when we first became interested in changing our diets to organic food. While consumers appear to be focused on the health-related, the environmental, and the locally-grown aspects of organic products,\textsuperscript{47} U.S. regulations allow products to be certified “organic” even if certain synthetic substances are used in their production, if they are not completely free of synthetic chemical residue, or if they are not produced sustainably or locally.\textsuperscript{48}

The NOP system for organic certification and labeling is complex, and consumers may not be aware of the significance of the

\begin{footnotes}
\item[41] \textit{USDA Organic} 201, supra note 39.
\item[42] Id. at 3.
\item[43] See Memorandum from Miles V. McEvoy, Deputy Adm’r Nat’l Organic Program (NOP) to the Nat’l Organics Standard Bd. (July 21, 2016), [https://perma.cc/B8TY-WPL7].
\item[44] Id.
\item[46] See Liu, supra note 36, at 338.
\item[47] Raab & Grobe, supra note 14.
\item[48] Liu, supra note 36, at 338.
\end{footnotes}
various tiers. Further, the system does not appear to reflect in any meaningful way consumer preferences or values. When drafting the OFPA, legislators acknowledged that “[m]ost consumers believe that absolutely no synthetic substances are used in organic production[,]” yet, in the final Act, they defined “organic” in a way that appears to be inconsistent with public perception. As one former Vice-Chair of the NOSB once stated, “[USDA] organic labels are not statements regarding the healthiness, nutritional value, or overall safety of consuming such products.”

Further, the USDA labeling system has been criticized by many in the organic sector as having been captured by large corporate agricultural interests that produce and distribute their certified organic products in ways that are contrary to the ideals of the organic movement and inconsistent with consumer perceptions that buying organic products supports small, local farms. It is widely reported that many of the largest international food company brand producers in the world are invested in organic food, including “Coca-Cola, Dole, General Mills, H.J. Heinz, Kellogg, Mars, Kraft, Sara Lee, and Tyson Foods.” Like us, many consumers apparently base their organic purchasing decisions at least in part upon their support for “sustainable agriculture and local food systems, and opposition to the ‘corporate’ food system.” Yet some small farmers are making the decision to opt out of organics; as one California farmer stated, “if big business kills the name … why go organic?”

Were we alone in our disillusionment? We set out to confront the truth about our Quixotry and to assess how other U.S. residents interpret and understand the term “organic”; specifically, the

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49 See Raab & Grobe, supra note 14.
50 See id.
52 Id.
55 Houston, supra note 10.
accuracy of the labeling with the production practices of USDA certified organic food products. Our quest was:

1. To identify survey data assessing U.S. residents’s perceptions of the definition of the term “organic” as it pertains to food products and their purchasing preferences for these products.

2. To gain an understanding of the relationship between the existing U.S. regulatory framework for organic food products and U.S. residents’ perceptions and their purchasing preferences regarding these products.

3. To consider the implications of the public’s perceptions and their purchasing preferences with a view to determining what, if any, impact these perceptions might have on the environment and on market participants with the possibility of offering guidance or proposals for marketing, education, and communication strategies, if appropriate.

While these questions were, of course, personally important, we also felt that they were generally significant given the level of growth in the organic food sector and the increasing level of discontent with the imprecise and inconsistent definitions and labels and with the regulatory regime that governs the sector. When the organic movement began in the first half of the twentieth century, with adherents chanting the mantra “[f]eed the soil, not the plant,” they likely did not foresee the astounding appetite that U.S. consumers would have for these products.\(^{58}\) The total volume of sustainable investments in the U.S. doubled between 2012 and 2014.\(^{59}\) This growth means that the regulatory framework pertaining to organic food is increasingly under scrutiny and is confronting numerous challenges. The growing influence and dominance of large-scale agri-businesses on the NOSB has not, however, created more regulatory transparency, but, seemingly, more opportunity for consumer confusion.\(^{60}\)

Being Quixotic, it is our hope that a review of the literature might provide valuable insights into the implications of the relationship between U.S. residents’s perceptions and their purchasing preferences regarding organic food products and the existing U.S. regulatory framework for these products as well as for

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future marketing, education, and communication strategies. This information could be significant to all stakeholders in the organic food sector. Firstly, it may clarify consumer expectations and values with regard to their motivations for purchasing organics. It may also encourage regulators to promulgate regulations that are more responsive to consumer concerns and interests. Finally, it may provide critical information for the marketing and communications strategies of producers, distributors, and retailers, as well as inform their business planning vis-à-vis the USDA’s certification process.

We recognize, however, that our research is subject to several limitations, one of which is that we limited our examination of “organic” products to food items such as fresh fruits, vegetables, beverages, etc. Other green products, including pet food, beauty products, health and wellness products, and green lifestyle products, were excluded. We also focused on the most recent iteration of the NOSB and the current laws in effect.

Just to clarify, the following terms have been operationally defined for purposes of our research:

- “Green products” are other products that consumers potentially would identify as organic but that have not been certified through the USDA process.61
- “Hydroponic” food production occurs “in nutrient solutions without soil[.]”62
- “National Organic Program (NOP)” is the program “authorized by the [OFPA] for the purpose of implementing its provisions.”63
- “National Organic Standards Board (NOSB)” is an entity “established ... to assist in the development of standards for substances to be used in organic production and to advise ... on any

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other aspects of the implementation of the National Organic Program.”

- “National List of Allowed and Prohibited Substances” is a list of approved and prohibited substances included in the standards of production and handling established under the OFPA in order for products to be sold or labeled as organically produced.

- “Organic” is “[a] labeling term that refers to an agricultural product produced in accordance with the [Organic Foods Production] Act and the [implementing] regulations.” This somewhat circular definition is one of the focal points of this article. As used in this paper, the term “organic” with quotation marks indicates the term’s use as a noun. Without quotation marks, organic is used as an adjective. Conversely, conventional farming, sometimes referred to as industrial farming, is any agricultural system which engages in practices or uses inputs that are prohibited by formal organic regulatory standards.

- An “organic food product” for purposes of this article is “any agricultural commodity or product, whether raw or processed, including any commodity or product derived from livestock, that is marketed in the [U.S.] for human… consumption.”

II. THE LITERATURE

As background for our research, we reviewed literature in a number of very different theoretical fields, such as: (1) economics, including theories pertaining to private and governmental labeling schemes; (2) psychology and sociology, including cognitive, psychosocial theories that examine consumer perceptions of organic labels; and (3) law, including academic literature that analyzes and evaluates the relevant statutory and regulatory framework, particularly in the U.S.

Armed with this background, we then sought literature that contained survey data assessing U.S. residents’s perceptions of the definition of the term “organic” as it pertains to food products and their purchasing preferences for these products.

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64 Id.
67 Id. We derived this definition from the NOP’s definition of “agricultural product.” 7 CFR § 205.2 (2011).
A. Background Literature: Theory of Asymmetric Information: An Economic Theory Pertaining to Private and Governmental Labeling Schemes

Governments; food producers and processors; private entities/firms; and consumers’s purchasing and consumption choices determine the information that appears on food labels. Profit-maximizing firms may choose to add labeling information to packaging to help consumers differentiate similar food products.

This occurred in the organic food market. In the 1970s and 1980s, U.S. organic farmers began to voluntarily label their products in order to inform consumers of specific attributes of organic food products versus similar non-organic products. Label information is a cost-effective way for farmers to distinguish their products in saturated markets. In 1997, U.S. food producers spent $48.7 billion on packaging materials, not all of which can be attributed to labeling that focused on specific product qualities. Organic producers use labeling as a way to explain the 20–30 percent price premium that consumers pay for organically-produced food compared to non-organic products: this price premium offsets the cost of organic food production.


70 See von Sehlen, supra note 8, at 6–7.


72 Golan et al., supra note 68.


74 But see Magali A. Delmas & Laura E. Grant, Eco-Labeling Strategies and Price Premium: The Wine Industry Puzzle, 53 BUS. & STRATEGY 6, 35 (2014) (stating “[o]ur results show that eco-labeling has a negative impact on prices in the wine industry, although there is a price premium associated with eco-certification. Overall, certifying wine increases the price by 13%, yet including an eco-label reduces the price by 20%, confirming the negative connotation consumers apply to ‘green wine.’”).
Firms attempt to identify a food product’s desirable attributes such as content, place of origin, organic production, and/or health benefit. Attribute identification is complex given that consumers have vastly different preferences. Attributes of organic (and conventionally produced) food products include food safety, nutrition, value, package, and production process.

Attributes can be categorized as: (1) search, (2) experience, or (3) credence. Search attributes are characteristics that are examined by the consumer prior to purchase, and they include price, size, and color. Experience attributes are evaluated by the consumer after purchasing the product. Taste, durability, and maintenance needs are examples of experience attributes. Credence attributes are unobservable and cannot be evaluated by the consumer prior to, during, or after purchase or use. “Organic” is characterized as a credence attribute because, without a label, consumers are not capable of determining if a food product was organically produced.

Consumers often infer that attributes which are not included on the label are negative or are associated with inferior quality. The “unfolding” theory posits that all positive attributes result in explicit labeling claims. For example, nutritional labeling was inconsistent prior to the 1990 implementation of the Nutrition Labeling and Education Act (“NLEA”).

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75 See GOLAN ET AL., supra note 68, at 7.
76 See id. at 10, 13.
78 LORNA ALDRICH, USDA ECON. RES. SERV., CONSUMER USE OF INFORMATION: IMPLICATIONS FOR FOOD POLICY, AGRIC. HANDBOOK NO. 715, at 1, 2 (1999).
79 Id.
80 Id.
81 See id.
83 GOLAN ET AL., supra note 68, at 7.
84 Id. at 7–8.
85 Aldrich, supra note 78, at 12: see also GOLAN ET AL., supra note 68, at 8.
displayed label information while other food products did not. The theory of asymmetric information may explain both voluntary labeling programs and the necessity for enforcement of labeling content in the organic food market segment. Asymmetric or missing information occurs when the market provides insufficient information to consumers to enable them to make choices that reflect their consumption preferences. Producers and sellers are aware of the attributes and quality of a product; consumers are not. This can result in inefficient markets. Sellers in asymmetric markets know, but may choose not to disclose, relevant information to consumers. This situation can be particularly problematic in markets in which there are foods containing negative credence attributes.

i. **The Role of Third-Party Services in Voluntary Labeling**

In the context of product labeling, third-party services include those provided by consumer groups, producer associations, governmental entities, and international organizations. Examples of third-party services include the Good Housekeeping Institute, the American National Standards Institute, the Underwriters Laboratories (“UL”), the Council of Better Business Bureaus (“BBB”), the Advertising Self-Regulatory Council (“ASRC”), and the International Organization for Standardization (“ISO”). Third-party labeling services for organic food products include the USDA’s AMS. The designation “Certified Naturally Grown” (“CNG”), discussed in more detail later, is an alternative to the USDA’s

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87 GOLAN ET AL., supra note 68.
88 Aldrich, supra note 78, at 12.
90 GOLAN ET AL., supra note 68, at 13.
91 Id.
92 Id.
93 Id.
94 GOLAN ET AL., supra note 68, at 13.
95 Id. at 9.
96 Id.
97 Id.
“organic” label. The terms “wild” and “residue free” are not regulated by the USDA or third-party labeling services and can be used by all food processors. Despite calls for clarification and proposals for regulation, these terms remain undefined by the USDA; only informal guidance exists regarding their use.

Third-party services enhance voluntary labeling claims by providing: (1) standard setting, (2) testing, (3) certification, and (4) enforcement. Standard setting establishes common terminology and quality levels for goods opting to display labels, facilitates market transactions, and may provide some consistency for consumers in the presentation of information. Testing services strengthen quality claims, particularly for credence attributes, and, when supported by a single third-party service rather than individual producers, they can increase market efficiencies. Consistent and reliably-performed certification has the potential to assure consumers that credence attributes and labeling claims are accurate.

While third-party services can increase the value of a label to consumers by providing credible and reliable information, enforcement is a critical component of labeling schemes. Not only must inaccurate and fraudulent claims be penalized, but consumer misconceptions regarding the role of third-party certifiers must be

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99 Watnick, supra note 18, at 55–56.


102 GOLAN ET AL., supra note 68, at 1, 9.

103 Id. at 9.

104 Id.

105 Id.

106 See id. at 11.
addressed. Consumer understanding about and confidence in third-party labeling services is essential for their success.

Enforcement has been problematic for private firms and third-party service providers in the context of organic labeling. As previously mentioned, most organic attributes fall into the credence category, and they cannot be observed by consumers, nor can they be evaluated prior to, during, or after purchase or use. This asymmetric information has the potential to incentivize fraudulent claims that products are organic. If credence attributes like “organic” are not monitored and/or enforced, the price premium cannot be commanded, and brand equity may be diminished.

Further, consumers and private firms often lack the resources to investigate, or the authority to enforce, credence labeling claims, and are instead dependent upon the government for enforcement. The legal framework governing fraudulent and deceptive advertising, therefore, is the ultimate regulatory mechanism for the enforcement of voluntary labeling standards.

2. Governmentally-Imposed/Mandatory Labeling

Historically, the government has proposed to intervene in food labeling in order to: (1) improve human health and safety; (2) respond to environmental hazards; (3) ensure fair competition; (4)
deflect international trade disputes; (4) support domestic food-related businesses; and (5) increase consumer awareness and knowledge.\textsuperscript{116} Table 1.1 below illustrates major U.S. food labeling laws and/or events between 1938 and 2016.\textsuperscript{117}

The government may require labeling information or enforce voluntary labeling programs when there is asymmetric, imperfect, or missing information or when private consumption decisions result in externalities.\textsuperscript{118} As previously mentioned, the organic food market is one in which asymmetric information is an issue, and consumers’s purchasing and consumption choices may not reflect their preferences.\textsuperscript{119} Some unscrupulous sellers in the organic sector know, but may not disclose, relevant information to consumers, which is a particular concern given the credence attributes associated with organic foods.\textsuperscript{120} Government intervention in these situations seeks to redress asymmetry problems and increase market efficiency vis-à-vis implementation or enforcement of labeling requirements.\textsuperscript{121} While ambiguous or imperfect information may be difficult to convey, clear and concise labels can mitigate problems for consumers associated with asymmetric information.\textsuperscript{122}

\textsuperscript{116} Id. at iv, 1.
\textsuperscript{117} See infra Table 1.1.
\textsuperscript{118} See GOLAN ET AL., supra note 68, at 13–14.
\textsuperscript{119} See generally McCluskey, supra note 89, at 8 (stating that in the market for quality-differentiated food products, consumers cannot directly observe the quality of the goods even after consumption).
\textsuperscript{120} Id. at 4–8; see also, e.g., Donna M. Byrne, Cloned Meat, Mandatory Labeling, and Organic Oreos, 8 PIERCE L. REV. 31, 48–55 (2009).
\textsuperscript{121} GOLAN ET AL., supra note 68, at 13–14.
\textsuperscript{122} Id. at 14.
Table 1.1. U.S. Food Labeling between 1938 and 2016

<table>
<thead>
<tr>
<th>Date</th>
<th>Title of the Act</th>
<th>Small Description</th>
<th>U.S. Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>1946</td>
<td>The Agricultural Marketing Act (AMA)</td>
<td>Farm Credit Administration protects and stabilizes interstate and foreign commerce in the marketing of agricultural commodities and agricultural food products and prevents and controls surpluses in agricultural commodities.</td>
<td>7 U.S.C. §§ 1621, et seq.</td>
</tr>
<tr>
<td>1990</td>
<td>The Organic Food Production Act (OFPA)</td>
<td>The USDA is required to establish standards, assure consistency, and facilitate interstate commerce of organically produced food products.</td>
<td>7 U.S.C. §§ 6501, et seq.</td>
</tr>
<tr>
<td>1990</td>
<td>The Nutrition Labeling and Education Act (NLEA)</td>
<td>This Act amended Section 301 of the FDCA. The FDA requires nutrition labeling on most food products. Nutrient content (i.e., “high fiber,” “low fat,” etc.) and health claims must satisfy agency regulations.</td>
<td>21 U.S.C. § 301</td>
</tr>
<tr>
<td>1994</td>
<td>The Dietary Supplement Health and Education Act (DSHEA)</td>
<td>This Act amended several sections of the FDCA. Under this Act, dietary supplements are not food products and are thus subject to less stringent labeling requirements.</td>
<td>21 U.S.C. §§ 301, 321, 343, 343-2, 350b, 42 U.S.C. § 287c-11</td>
</tr>
<tr>
<td>2016</td>
<td>The National Bioengineered Food Disclosure Standard (NBFDS)</td>
<td>Scannable QR codes or mandatory on-package labels are required for the bioengineering disclosure on food products.</td>
<td>7 U.S.C. § 1639b(e)(2)(B)</td>
</tr>
</tbody>
</table>

iii. The Costs and Benefits of Mandatory Labeling

Governmental mandatory food labeling and/or enforcement of voluntary labeling schemes may be an appropriate policy choice if they are able to more efficiently address market imbalances associated with asymmetric information than are alternative labeling programs provided by third-parties or private firms. It is difficult, however, to measure, then weigh, the costs and benefits of these labeling schemes in this context.

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124 See, e.g., McCluskey, supra note 89, at 48.; GOLAN ET AL., supra note 68, at 17–18.

Benefits, on the one hand, include more informed consumption, product reformulation and innovation, increased product quality, and consumer confidence.\textsuperscript{126} Product reformulation occurs if producers seek to eliminate negative product attributes rather than disclose negative attributes on the label.\textsuperscript{127} This reformulation can lead to more socially responsible food products.\textsuperscript{128} The transformation process is communicated on the label, and it could generate a competitive differential for the producer relative to firms increasing asymmetric information between producers and consumers by distributing deceptive and misleading labeling.\textsuperscript{129}

The government, however, will incur many costs to initiate, administer, and enforce mandatory labeling programs.\textsuperscript{130} Industry program costs, on the other hand, are typically passed on to the consumer.\textsuperscript{131} This can have a regressive impact on poor, less educated consumers who may pay for labeling information that they do not value.\textsuperscript{132}

Smaller industry participants may be at a competitive disadvantage if the increased price per-food-unit does not cover the additional labeling costs.\textsuperscript{133} There also may be an additional cost burden if too much information is included on the label, causing consumer confusion and inhibiting purchasing decisions.\textsuperscript{134} Standards should align with consumer preferences and capabilities.\textsuperscript{135}

\textsuperscript{126} GOLAN ET AL., supra note 68, at 16.
\textsuperscript{127} \textit{Id.:} but see Giuseppe Marotta, Mariarosaria Simeone & Concetta Nazzaro, \textit{Product Reformulation in the Food System to Improve Food Safety: Evaluation of Policy Interventions}, 74 APPETITE 107, 114 (2013).
\textsuperscript{128} GOLAN ET AL., supra note 68, at 16.
\textsuperscript{129} \textit{Cf.} Marotta, supra note 127, at 114.
\textsuperscript{130} GOLAN ET AL., supra note 68, at 16.
\textsuperscript{131} \textit{Id.}
\textsuperscript{132} \textit{Id.}
\textsuperscript{135} GOLAN ET AL., supra note 68, at 36–37.
Accordingly, it is difficult to determine if mandatory labeling is an effective, or the most effective, policy tool. Labeling may be more effective than alternate policy options, i.e., bans, quotas, taxes, production and marketing practice regulation, and educational programs, to address problems of asymmetric information, yet information-based policies such as labeling are the least responsive when externalities are involved.


If there is information asymmetry in a particular market, consumers do not have sufficient information and cannot make rational purchasing decisions. This results in limited consumer cognitive ability referred to as “bounded rationality.”

There is no scientific consensus that organic food products are “healthier” than conventionally produced food. However, many consumers infer that the USDA organic label is an endorsement of healthy, safe, and nutritious food products. Conversely, there does appear to be a scientific consensus that food that contains a genetically modified organism (“GMO”) or has been genetically modified (“GM”) is as safe as conventional food, yet consumers report that foods labeled GMO are less safe, healthy, or environmentally-friendly than foods with other labels. These results may be explained by confirmation bias.

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136 Id. at 17–18; Cf. Byrne, supra note 120, 72–79.
137 GOLAN ET AL., supra note 68, at 15.
138 Marotta et al., supra note 127, at 108–09.
140 See Guilabert & Wood, supra note 107, at 364.
141 Id. at 354.
142 Sax & Doran, supra note 15, at 631. These authors also note that “[k]housands of years of conventional breeding mean that nearly all of the food supply is genetically modified. Put differently, consumers are eating domesticated crops that are no longer genetically identical to the wild-type variety — either through conventional breeding or GMO/GE technology.” Id. at 630.
Confirmation bias is the unconscious tendency to seek out and retain evidence in support of a predetermined belief, conjecture, or hypothesis and to ignore contradictory evidence. Some consumers maintain a strong positive disposition toward organic food products. Other consumers consider “organic” food products to be expensive and potentially not “fresh” or “sanitary.”

Consumers can be motivated to defend their beliefs or to refute a particular claim. For example, in some markets, consumers associate quality labeling with quality food products. In the organic market segment, consumers’s positive or negative organic beliefs support their position and/or organic hypothesis. In the confirmatory bias phenomenon, consumers’s expectations serve as a greater confirmation than the taste rating of the organic food product.

Confirmation bias connotes a one-sided, case-building process in which consumers selectively acquire and use evidence. Consumers purchase organic foods because of their prior beliefs about these products, and they generally perceive a label such as “USDA Organic” as a guarantee that the product is consistent with their beliefs. Similarly, positive confirmation bias may explain why consumers prefer an organically-labeled food product to an identical conventional food product in a taste test.


144 See generally Dimitri & Oberholtzer, supra note 3 (explaining consumer preferences and the relationship with consumer characteristics).

145 See id.; see Guilabert & Wood, supra note 107, at 356.

146 Raymond S. Nickerson, Confirmation Bias: A Ubiquitous Phenomenon in Many Guises, 2 REV. GEN. PSYCHOL. 175, 176 (1998).

147 See, e.g., Immonen, supra note 69, at 11.

148 See Guilabert & Wood, supra note 107, at 354, 359.

149 Id. at 354.

150 Nickerson, supra note 146, at 175.

151 Yiridoe et al., supra note 77, at 195, 197.

152 See, e.g., Guilabert & Wood, supra note 107, at 354.
5. Regulatory Correction for Asymmetric Information: The Impact of Consumer Confirmation Bias

There appears to be a lack of meaningful literature to explain the disconnect between the economic theory of asymmetric information in the context of government intervention in labeling schemes and the cognitive, psychosocial theory of confirmation bias in consumer decision-making as both of these theories relate to and interact with organic food.\textsuperscript{153} If, theoretically, the purpose of government intervention is to address information asymmetry, its intervention should align with consumer expectations, understandings, preferences, and capabilities.\textsuperscript{154} Instead, in the context of organic food labeling, the USDA sought to establish national standards for marketing products, to facilitate interstate commerce, and to provide assurances of quality claims.\textsuperscript{155} The regulatory process that it produced conformed more to the practices and interests of the organic food producers and processors and private entities/firms than it aligned with consumer preferences regarding health, nutrition, and environmental protection.\textsuperscript{156}

6. Literature Review—Survey Data

With the previously summarized literature as background, we focused next on identifying survey data regarding U.S. consumer perceptions of the definition of the term “organic” with regard to food products and/or consumer motivations for purchasing “organic” food. The data reveal that consumer beliefs about organic foods fall into a number of categories: (1) organic foods contain few or no chemicals; (2) organic foods are healthier than conventionally produced foods; (3) organic foods taste better than conventionally produced foods; (4) organic foods are better for the environment than are conventionally produced foods; and, concomitantly, (5) organic foods are locally-

\textsuperscript{153} See, e.g., GOLAN ET AL., supra note 68, at 27; Lessing, supra note 57, at 442–43.
\textsuperscript{154} See generally GOLAN ET AL., supra note 68, at 27 (explaining the goals of federal intervention in food labeling).
\textsuperscript{155} Id.
\textsuperscript{156} Lessing, supra note 57, at 442–43.
Consumers also express ethical and philosophical reasons for purchasing organic food. We will discuss the data relevant to each of these perceptions and motivations and will consider how many appear to be inconsistent with the USDA’s labeling scheme.

There are a number of surveys reporting that consumers believe organic foods contain few or no chemicals. In one survey, for example, 70 percent of consumers responded that they believed that organic food is “safer” and more nutritious than conventional products. In a separate USDA study, a majority of those surveyed declared that they believed organic food contained fewer chemicals than foods produced industrially. However, while organic food products contain fewer pesticide residues than their conventionally-grown counterparts, organic fruits and vegetables do contain pesticides. Chemicals that have not been synthetically manufactured, and even a small number of synthetically-manufactured chemicals such as copper sulfate, have been approved for use in organic farming by the NOSB. In some studies, organic produce has tested positive for pesticide residues over 20 percent of the time, which clearly is inconsistent with consumer definitional expectations.

This relates to consumers’s strong convictions about their healthy lifestyles. Many consumers believe the term “organic” relates to healthier and more nutritious food products, and they buy organic food because of their perceived personal health

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157 Id. at 441–43.
158 Id. at 443–45.
160 Campbell, supra note 159.
161 Watnick, supra note 18, at 57–58.
165 Campbell, supra note 159.
concerns. A 2004 Whole Foods survey reported that 58 percent of consumers believed that organics were better for their health. They appear to be convinced, like we were, that organic foods are healthier than conventionally produced foods for themselves and for their families, and they will not let publicity regarding pesticide levels in these food products negatively affect their purchase and consumption habits. This is especially true of consumers who are millennials or younger Gen Xers, Hispanic or Latino, live in the Northeast or Pacific regions, have post-graduate academic degrees, have younger children in the household, and have an annual household income of over $100,000.

These convictions appear to have support in the literature. Reviews of multiple studies report that organic foods contain higher levels of “vitamin C, iron, phosphorus, and magnesium than do conventional foods.” Further, recent meta-analyses indicate that organic foods are higher in antioxidants, contain less cadmium, and have lower pesticide levels than conventional alternatives. In organic milk and chicken, reports have identified higher levels of total beneficial phenols and omega-3 fatty acids. Additionally, as mentioned above, consumption of organic food products may limit exposure to pesticide residue and antibiotic-resistant bacteria.

166 David Pearson et al., Organic Food: What We Know (and Do Not Know) About Consumers, 26 RENEWABLE AGRIC. & FOOD SYS. 171, 172–73 (2010).
167 Green, supra note 164, at 804–05.
168 Watnick, supra note 18, at 58.
174 Id. at 354–55.
However, while data suggest that consumption of organic food may have some health benefits, such as a reduced risk of allergic disease and obesity, researchers caution against drawing inferences regarding causation given that organic food consumers generally lead healthier lifestyles, a factor that confounds any firm conclusions.\footnote{Axel Mie et al., \textit{Human Health Implications of Organic Food and Organic Agriculture: A Comprehensive Review}, 16 ENVTL. HEALTH 111, 16 of 22 (2017).}

Other investigators note that there are little-to-no published data that quantify the extent to which organic food consumption may affect human health\footnote{Marcin Barański et al., \textit{Effects of Organic Consumption on Human Health: The Jury is Still Out!}, 61 FOOD & NUTRITION RES. 1, 4 (2017).} and that there are some reports concluding that there is no increased health benefit associated with consuming organically produced foods.\footnote{Pearson et al., supra note 166, at 173.} Organic does not always signify ‘healthy.’ For example, products can be high in saturated fats or other unhealthy compounds and still be labeled organic.\footnote{Jack Bobo & Sweta Chakraborty, \textit{Predictably Irrational Consumer Food Preferences}, 7 EUR. J. RISK REG. 604, 604–05 (2016).} Because their perceived health benefits motivate consumers to purchase organic food products,\footnote{See id. at 604.} it appears prudent to recall that the USDA organic label was designed as a marketing tool, “not a statement about food safety” or a “value judgment about nutrition or quality.”\footnote{Campbell, supra note 159.}

As for more subjective measures, consumers also believe that the “organic” or similar labels relate to tastier and higher quality food products.\footnote{FEEDSTUFFS, supra note 170.} According to a Whole Foods 2004 survey, 32 percent of those surveyed opined that organic food tastes better than other foods.\footnote{Green, supra note 164, at 805.} Others felt organic foods were of a higher quality (42 percent).\footnote{\textit{Id.}} Similarly, in response to a USDA Diet and Health Knowledge Survey measuring consumer perceptions of “organic,” 79.1 percent of men age 20 and over and 86.6 percent of women in the same age range responded that taste was very important to their purchasing decision.\footnote{\textit{Agric. Research Serv., U.S. Dep’t of Agric., NFS Report. No. 96-4, Results From USDA’s 1994-96 Diet and Health Knowledge Survey} 1, 85 (2001).} These perceptions are subjective, but sensory
research results generally have been equivocal as to whether organic food tastes better than conventional food.\(^{185}\) With regard to quality, some consumers were of the opinion that organic foods generally were of higher quality than their industrial counterparts.\(^{186}\) As with taste, research from numerous prestigious publications and institutions has not found any *significant* difference in the “quality” of organic versus conventionally grown food.\(^{187}\)

Consumers also believe that foods with the organic label are better for the environment than their unlabeled peers.\(^{188}\) In another Whole Foods study, 58 percent of the respondents reported choosing organic products because they believe these products were better for the environment.\(^{189}\) Many consumers report preferring organic farming because it is perceived as preserving soil fertility, respecting animal welfare, reducing greenhouse gas emissions, conserving ecosystem services, and generally being sustainable.\(^{190}\) Some contend that organic farming causes less damage to the environment than the conventional form.\(^{191}\) However, there is ambiguity in the scientific literature about the impact of organic farming on the environment.\(^{192}\) In a fairly recent meta-analysis of results from published comparisons of 742 organic and conventionally grown agricultural systems across a range of environmental impact categories, a life-


\(^{186}\) Green, *supra* note 164.

\(^{187}\) *Cf.* ALAN DANGOUR ET AL., NUTRITION AND PUBLIC HEALTH INTERVENTION RESEARCH UNIT LONDON SCHOOL OF HYGIENE & TROPICAL MEDICINE, REPORT FOR THE FOOD STANDARDS AGENCY, COMPARISON OF PUTATIVE HEALTH EFFECTS OF ORGANICALLY AND CONVENTIONALLY PRODUCED FOODSTUFFS: A SYSTEMATIC REVIEW 1–2 (July 2009), [https://perma.cc/LMU5-7YVV].

\(^{188}\) Green, *supra* note 164, at 805.

\(^{189}\) *Id.*

\(^{190}\) MAURIZIO CANAVARI ET AL., EU PROJECT ECROPOLIS, NO. 218477-2, SUMMARY REPORT ON SENSORY-RELATED SOCIO-ECONOMIC AND SENSORY SCIENCE LITERATURE ABOUT ORGANIC FOOD PRODUCTS 1, 6 (Nov. 2009), https://orgprints.org/17208/2/deliverable_1_2_sensory_literature.pdf [https://perma.cc/EU69-HVC3].

\(^{191}\) Pearson et al., *supra* note 166, at 173.

cycle analysis revealed that organic farming had less dramatic environmental impacts in some categories, such as energy use and biodiversity, and conventional agriculture for others, including land use and eutrophication potential.\textsuperscript{193}

Consumer perceptions, and possible misconceptions, about organic and environmental impacts correlate with their belief that organic foods are locally-grown: 57 percent of consumers in one study reported associating organic with support for small local farms.\textsuperscript{194} However, organic food purchases in large grocery stores, which often carry global brands, do not provide significant support to local organic food economies.\textsuperscript{195} Cumbersome federal organic regulations favor large, industrial farms,\textsuperscript{196} and, as large agribusinesses are consolidating their organic positions, organic food is increasingly being imported to the U.S. from around the globe.\textsuperscript{197}

Imports of organic products implicate more than the locally-grown concern. In 2013, the U.S. imported $1.3 billion worth of organic food products, including bananas, coffee, olive oil, and mangos from Mexico, Italy, Peru, Columbia, and France.\textsuperscript{198} Forty percent of U.S. organic food is imported from over 100 foreign countries.\textsuperscript{199} China is a growing exporter of its organic food to the U.S.,\textsuperscript{200} yet Chinese organic farmers are permitted to use synthetic materials.\textsuperscript{201} As is true with many countries that export organic foods to the U.S., food safety laws in China are relatively new compared to the U.S. system.\textsuperscript{202} Despite documented air and water pollution and soil contamination issues in China, the USDA lets years go by between on-site inspections of its accredited certifiers or audits of organically-labeled food products there.\textsuperscript{203}

\textsuperscript{193} Id.\textsuperscript{194} Lessing, supra note 57, at 443.\textsuperscript{195} A. Bryan Endres, \textit{An Awkward Adolescence in the Organics Industry: Coming to Terms with Big Organics and Other Legal Challenges for the Industry's Next Ten Years}, 12 \textit{DRAKE J. AGRIC. L.} 17, 26, 29–30 (2007).\textsuperscript{196} See, e.g., Lessing, supra note 57, at 444.\textsuperscript{197} Endres, supra note 195, at 29.\textsuperscript{198} Porterfield, supra note 162.\textsuperscript{199} Liu, supra note 36, at 332.\textsuperscript{200} Porterfield, supra note 162.\textsuperscript{201} Liu, supra note 36, 358.\textsuperscript{202} Id. at 363.\textsuperscript{203} See, e.g., Roger Blobaum, \textit{Inside Organics: Surprise NOP Auditor Visits to Organic Farms and Processors in China is Overdue Response to Concerns About Integrity of}
Finally, many consumers are motivated by ethical and philosophical beliefs to purchase organic food. Religious beliefs, for example, impact consumer organic food purchasing decisions. Dharma Realm Buddhists believe that GMO foods violate the Buddhist practice of taking responsibility for the welfare of all sentient beings, and they have resolved that:

[G]enetic engineering of food is not in accord with the teachings of Buddhism. Buddhism considers genetic engineering of foods to be unwarranted tampering with the natural patterns of our world at the most basic and dangerous levels. DRBA believes that the lack of labeling of genetically engineered food is a de facto violation of religious freedom.

Others have a deep commitment to living in harmony with nature, and, for them, “[o]rganic food is not just about a product; it is a philosophy in which the process of production is as important as the final result.” Ethical reasons vary and abound, including humanitarian concerns about corporatism, farm workers, and animal protection, as well as many of the concerns noted above, such as those about the environment. These beliefs often are confounded by or misaligned with the reality of the production and regulation of organic foods.
III. ANALYSIS AND PROPOSALS

While our review of the literature did reveal that we were not alone in our confusion about the organic label, that revelation did not clarify what impact, if any, this lack of definitional precision might have on the environment. Nor did it relieve our disillusionment or provide a clear path forward toward definitional clarity. Additionally, the review did not offer obvious solutions to the apparent disconnect between the theory of asymmetric information in the context of the USDA’s organic labeling scheme and the confirmation bias in organic consumer decision-making.

With regard to the environmental impact of consumer confusion regarding labeling, there appear to be little direct data that report measurements or other metrics. However, there are numerous sources documenting the benefits to the environment of organic agriculture more generally.210 Sustainable agriculture is characterized by production systems that support the health of soils and ecosystems adapted to local conditions.211 Those who practice this form of farming often do so with a conscience intent to protect land for future generations.212 In the tradition of Rachel Carson, farmers who utilize sustainable farming methods focus on ecologically-sound, nonchemical agricultural techniques and technology or those that use less persistent chemicals.213 In North America, for example, farmers engaged in sustainable agriculture apply far less inorganic fertilizer than do their counterparts who farm conventionally and who more commonly engage in chemical-intensive production.214 Further, farmers in the organic sector also

211 Tiziano Gomiero et al., supra note 210, at 96.
213 See Gomiero et al., supra note 210; see CARSON, SILENT SPRING, supra note 210; Richards, supra note 210.
only sparingly use heavy machinery, and they perform fieldwork such as planting, cultivating, and harvesting by hand.  

These practices appear to result in positive environmental outcomes. Organic agricultural systems may “reduce [greenhouse gas emissions] GHG emissions and ... enhance carbon sequestration in the soil.” Studies indicate that organic farms emit up to 20 percent less GHGs than conventional farms. Additionally, organically managed soils have higher water retention and drainage capacity, thus reducing the need for irrigation and the risk of floods or droughts, the risks of which have been predicted to increase with climate change.

The economic choices made by many of those who participate in alternative farming also appear to benefit the environment. When sustainable farmers produce for local markets or work with ecologically-responsible distributors, they are acting to reduce lengthy food chains and minimize their carbon footprints. As one example, organic farmers in the Western U.S. are able to choose Veritable Vegetable to move their food from farm to market. Veritable Vegetable is an organic produce distributor that operates a fleet of hybrid tractors and hybrid refrigeration units producing nearly zero emissions. This fleet utilizes efficient routing, trailer skirts, and sophisticated on-vehicle technologies such as tire pressure monitoring, inflation systems, and wind resistance inserts.

215 FARNWORTH & HUTCHINGS, supra note 1, at 21.
217 Id. at 159, 165. However, these authors caution that “carbon sequestration has a mitigation effect [in organic agriculture] only if the sequestration is permanent. There are scientific results showing that the carbon stored by no-tillage systems is released by a single ploughing ... .” Id. at 162.
218 Id. at 160, 162.
219 FARNWORTH & HUTCHINGS, supra note 1, at 2, 24.
221 See id. For more information about the history, operations, and business culture of Veritable Vegetable, see its website, https://www.veritablevegetable.com/ [https://perma.cc/D8NR-BH6H].
to reduce fuel consumption. As another example, local market sales not only provide alternative farmers with an opportunity to minimize their carbon footprints and decrease food chains, they also allow them to address animal welfare issues related to transportation before slaughter.

With regard to the consumer confusion surrounding organic labeling, scholars and researchers analyzing the issue have provided some thoughts on the consumer confusion issue, the lawyers in particular. We were impressed with many of the proposals. However, as will be seen in the discussion to follow, few provide comprehensive practical solutions to the asymmetry situation so as to provide clarity for consumers. Nor do most provide pragmatic educational, marketing, or other assistance for small alternative farmers who do not participate in the USDA organic program but whose practices align with organic consumer expectations and are environmentally sustainable. Before we set forth the modest suggestions that we have formulated for these particular constituents, we will briefly summarize and review a number of the proposals in the literature.

A. Existing Proposals Regarding Consumer Understanding: Legal Solutions

As one might expect, the solutions proposed by the lawyers to address consumer confusion regarding organic labeling were primarily legal ones. These solutions include proposals to strengthen existing USDA rules regarding organic products and to enact additional, more stringent end product regulations in order to improve the likelihood that labeled products more consistently meet consumer expectations. This might include, according to one suggestion, more residue testing before organic food products are sold.

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222 Straight, supra note 220.
223 FARNWORTH & HUTCHINGS, supra note 1, at 2, 24.
224 See, e.g., FARNWORTH & HUTCHINGS, supra note 1, at 2, 24; Watnick, supra note 18, at 73–77; Czarnezki et al., supra note 134, at 310.
225 Watnick, supra note 18, 73–77.
226 Id. at 76–77.
Several scholars have urged regulators to adopt new labeling regimes or to modify those currently in use. One such new regime would involve eco-labels for food based upon an environmental life-cycle analysis from production and use to distribution and disposal.\footnote{Czarnezki et al., supra note 134, at 310.} The information conveyed by these labels would exceed the scope of that required by any existing labeling scheme, pursuant to the OFPA or otherwise, in an effort to ensure transparency and credibly for consumers.\footnote{Cf. id. at 305, 310.} Another innovative suggestion involved the creation of a whole-system agriculture certification approach modeled on the Leadership in Energy & Environmental Design (“LEED”) green building certification program, an approach under which points would be awarded to farms for implementing sustainable practices.\footnote{Mary Jane Angelo & Joanna Reilly-Brown, *Whole-System Agricultural Certification: Using Lessons Learned from LEED to Build a Resilient Agricultural System to Adapt to Climate Change*, 85 U. COLO. L. REV. 689, 696–98 (2014).} These specified categories would encompass all components of agricultural resilience, including the protection of biodiversity and ecosystem services, the conservation of water and soil, the use of sustainable materials, and the responsible production and disposal of wastes, as well as categories related to landscape, location, and social and labor considerations.\footnote{Id. at 747–49.} This model of “whole-system” agricultural certification, similar to the environmental life-cycle analysis, would inform consumers that certain foods have been grown under resilient conditions and potentially could influence their purchasing habits.\footnote{Id. at 755.}

Other scholars have proposed that regulators modify the existing national labeling scheme. One such modification would allow for more nuanced organic certification by codifying a number of “Organic Plus” standards that further product differentiation.\footnote{Harrison, supra note 73, at 213, 232.} Another would create a labeling system that allows independent certifiers to create numerous labels that would supplement the USDA organic label on specific product attributes that address consumer perceptions of “organic,” such as the size or location of...
the farm of origin, the environmental sustainability of that farm’s operations, and its social and labor conditions.\textsuperscript{233}

Incentives and disincentives also have been suggested as a response to concerns regarding label messaging. One scholar recommended that the USDA expand its organic program to include incentives for supplemental labeling for value-added attributes such as locally produced, etc., for producers that exceed baseline organic standards.\textsuperscript{234} Conversely, to disincentivize misleading conduct, another author emphasized the importance of effective monitoring of labeling program requirements, whether by the government or an independent third-party.\textsuperscript{235} In the context of a governmental program, this same author also mentioned the possibility of criminal prosecution of program violators; independent program monitors can punish violators with bad publicity and/or civil lawsuits.\textsuperscript{236}

Legal experts also proffered advice pertaining to specific issues. As one example, one legal commentator advanced a novel argument that producers of organic products might successfully petition the EPA to regulate the use of synthetic nitrate fertilizer on conventional farms.\textsuperscript{237} This argument is based upon the contention that a farm using nitrate fertilizer potentially qualifies as a “stationary source” pursuant to the Clean Air Act and thus would be subject to regulation by the EPA.\textsuperscript{238}

Another novel approach extracted from the literature pertains to an individual’s potential claims pursuant to international human rights treaty language.\textsuperscript{239} For those consumers seeking to know whether their food has been genetically modified for religious or dietary reasons, one legal

\textsuperscript{233} Lessing, supra note 57, 462.
\textsuperscript{234} Gholkar supra note 25, 1–2.
\textsuperscript{235} McCluskey supra note 89, at 7–8.
\textsuperscript{236} Id.
\textsuperscript{238} Id. at 128–31. The Clean Air Act defines a stationary source as, “any building, structure, facility, or installation which emits or may emit any air pollutant.” 42 U.S.C. § 7411(a)(3) (2019).
author postulated that consumers might justify a right to know and choose what to eat based upon an inalienable human right pursuant to the 1948 Universal Declaration of Human Rights; additionally, consumers may find support in certain Articles of the United Nations International Covenant on Civil and Political Rights, in the United Nations Guidelines for Consumer Protection ("UNGCP"), or in national constitutional and legal provisions guaranteeing consumer rights.\textsuperscript{240}

At least one group of scholars approached the topic holistically, suggesting a number of realistic and practical options as well as legal and theoretical steps that might be taken to create a more sustainable food paradigm, or, in our view, a model that more closely aligns with consumer expectations.\textsuperscript{241} Legally, this group proposes improved planning for alternative agricultural distribution and production systems; theoretically, the scholars recommend increased government support for local and regional food economies, and, practically, they suggest focusing on increased consumer awareness and availability of organic options and on direct marketing such as farmers markets and CSAs.\textsuperscript{242}

1. Existing Proposals: Private Sector and Non-Profit Action

Many researchers reporting on the apparent information asymmetry situation that exists regarding organic food labeling have made little effort to craft solutions, nor do they exhort the government to intervene. Rather, they shift responsibility for implementing responses to interested third parties. For example, one study rather vaguely advised organic food “marketers” to acknowledge and devise strategies to address the ethical displacement of consumer concerns that may arise in certain organic food contexts.\textsuperscript{243} In a similar vein, one author discussed the one-on-one conversations that food sellers were having with the public at

\textsuperscript{240} Id. at 567–69.
\textsuperscript{242} Id. at 278–90.
farmer’s markets. According to the author, increase “food literacy,” as would a “Consumers’ Organic Food Literacy Packet.”

2. Existing Proposals: The “More Research” Solution

Some of the most well-documented studies suggest that more research is needed to more clearly understand the relationships between the regulatory definition of “organic,” the organic food consumers’s perceptions thereof, and their purchasing habits. As one study concludes, “there is a large body of consumers who buy organic food on a more occasional basis, but [they] lack the knowledge, financial resources, conviction, or simply the inclination to buy more regularly . . . [F]urther research . . . is required to complete our understanding.” Expressing surprise at the extremely limited available evidence, one researcher proclaimed that it “is essential that future research . . . is better designed . . .”

3. Existing Alternative Labeling and Certification Schemes

For those who already have withdrawn from the national labeling program or who never opted in, there are existing alternative domestic and international certifiers with standards exceeding those of the USDA. For example, some organic farmers have become so frustrated with the USDA program that they are advocating its total abandonment. Others are developing an “add-on organic label for organic farmers who are willing to meet the expectations of discerning consumers who are demanding real organic food.”

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244 von Sehlen, supra note 8, at 46, 68.
245 Id. at 68.
246 Pearson et al., supra note 166, at 175.
247 DANGOUR ET AL., supra note 187, at 35.
248 Lessing, supra note 57, at 471–73.
250 Id.
Other options exist for those who have become disenchanted with, or find cumbersome, the NOP standards. California Certified Organic Farmers, or CCOF, is one of the oldest and largest organic certification agents in the U.S.\textsuperscript{251} In fact, with its roots in Rodale’s *Organic Gardening and Farming* magazine and founded in 1973 by member farmers, CCOF’s organic certification standards served as a reference for the USDA’s NOP, which, as set forth above, was finalized in 2002.\textsuperscript{252} Today, CCOF’s certification represents compliance with the U.S. and many international standards, and it provides market access to numerous export markets for clients throughout the United States, Canada, and Mexico.\textsuperscript{253}

The Rodale Institute also has been involved more recently in a partnership with Patagonia and Dr. Bronner’s, the maker of Castile soaps, to create yet another new food label, the Regenerative Organic Certification (“ROC”) label, for products produced with ingredients from farms that use certified regenerative farming systems.\textsuperscript{254} Regenerative farming systems are designed to “build healthy soil, boost biodiversity, and draw carbon from the atmosphere via methods like cover cropping and minimum tillage.”\textsuperscript{255}

Certified Naturally Grown (“CNG”), a private non-profit, is another large player in the organic labeling and certification market and was founded by farmers the same year the NOP took effect, 2002.\textsuperscript{256} Although it is not affiliated with the USDA’s NOP, its produce and livestock certification standards are based on the NOP standards, but its certification model is a participatory guarantee


\textsuperscript{252} McGarry, supra note 251; CAL. CERTIFIED ORGANIC FARMERS, supra note 251.


\textsuperscript{255} Id.

system ("PGS") that relies on peer review inspections conducted by other CNG farmers.\footnote{Id.}

Other alternate certifiers include the Food Alliance, which "provides third-party certification of sustainable agricultural and food handling practices" to farmers, ranchers, food processors, and distributors.\footnote{General FAQS: What is Food Alliance?, FOOD ALLIANCE, http://foodalliance.org/general-faqs/ [https://perma.cc/3ZDZ-EULS].} Its certification system distinguishes itself from that of the USDA by addressing a much broader range of social and environmental concerns, including working conditions, animal welfare, wildlife habitat conservation, the use of hormones and antibiotics, the presence of GMOs, pesticide use, and soil and water conservation.\footnote{Info for Consumers, FOOD ALLIANCE, http://foodalliance.org/info-for-consumers/ [https://perma.cc/7WMB-9FSY].}

The International Federation of Organic Agricultural Movements ("IFOAM"), the international umbrella organization of the organic movement, is another well-established alternative certifier.\footnote{See About Us, INT'L FED'N OF ORGANIC AGRIC. MOVEMENTS, https://www.ifoam.bio/en/about-us [https://perma.cc/9CHS-X9KG].} It promotes itself as "the only international umbrella organization for the organic world, uniting a diverse range of stakeholders contributing to the organic vision."\footnote{Id.} IFOAM defines organic agriculture as:

"a production system that sustains the health of soils, ecosystems and people[, that] relies on ecological processes, biodiversity and cycles adapted to local conditions, rather than the use of inputs with adverse effects[, and that] combines tradition, innovation and science to benefit the shared environment and promote fair relationships and a good quality of life for all involved."\footnote{INT'L FED'N OF ORGANIC AGRIC. MOVEMENTS, STRATEGIC PLAN 2017-2025 OF IFOAM ORGANICS INTERNATIONAL 7 (n.d), https://www.ifoam.bio/sites/default/files/strategic_plan_v03.pdf [https://perma.cc/NCA5-8G8K].}
The organization regards systems and farmers that use organic methods as “organic,” whether certified or non-certified, and it publishes and promotes standards and regulations that have been assessed to be the equivalent of a normative reference approved by IFOAM’s membership, including group third party certifications or participatory guarantee systems such as that offered by CNG.  

Another option for those seeking alternatives to a traditional NOP-only process is the Organic Crop Improvement Association (“OCIA”), a farmer-owned and farmer-controlled non-profit organization predating the NOP that provides third-party certification of organic food at all stages of production, processing, and distribution. The OCIA is one of the world's largest organic certification agencies, accredited by numerous industries and governmental entities in the U.S. and abroad. For example, an OCIA-certified organic certification mark satisfies the U.S. NOP, the Canada Organic Regime, the International Accredited Certification Bodies Equivalent European Union Organic Production & Processing Standard for Third Countries, the Japanese Organic Agricultural Standards, and the International Organization for Standardization/International Electrotechnical Commission Guide 17065-Conformity Assessment-Requirements for Bodies Certifying Products, Processes and Services.

Demeter International, yet another certifying body, is a European-based non-profit with a network of individual certification organizations located in North America, Europe, Africa, New Zealand, and India. In order to be Demeter-certified, a farm or product must adhere to biodynamic farming and processing standards that exceed U.S. NOP regulations. Biodynamic farming methods are based upon management of a farm as a self-contained,
self-sustaining living organism, including its soil fertility, crop protection, animal welfare, and biological diversity.269 Not only are synthetic chemical fertilizers, pesticides, herbicides, and fungicides prohibited, but the biodynamic system emphasizes the generation of farm inputs from the living dynamics of the farm itself, reducing dependence on imported fertilizer and pest control with the preparation of medicinal plants, minerals, and compost.270 Demeter-certified “[f]arms are required to maintain at least 10% of total acreage as a biodiversity set-aside[,]” which preserves “riparian zones, wetlands, grasslands, and forests[]” and has the potential to conserve water.271

Even individual companies are developing sustainable food product lines to promote carefully-vetted sustainable food products satisfying independent criteria “that address environmental issues, and continue to encourage support of local food producers” beyond the USDA Organic program label.272 The outdoor clothing and gear company, Patagonia, for example, created Patagonia Provisions to promote a line of curated food products based partially on a desire to “help people gain more transparency in their food choices.”273 Focusing on producers that utilize regenerative agriculture and grazing, diversified crop development, and restorative fishing practices, the company is establishing its own supply chains to source its products and to encourage consumers to “[e]at close to the source: locally produced, minimally processed, wholesome foods.”274

While it does not address the informational asymmetry issue, some companies in the organic industry have taken steps to address consumer concerns by conducting their own product audits beyond

270 Id.
271 Id.
those required by the USDA to ensure compliance with regulatory standards.\footnote{275} For example, companies may seek to protect their own organic brands in the U.S. from problems arising from non-organic or questionable “organic” imports.\footnote{276}

\section*{C. Authors’s Suggestions}

The proposals suggested by other authors were varied and interesting, but, in sum, were not as practical or detailed as we would have hoped. The modest proposals that we will now set forth likely also can be thus criticized, but we believe they may offer a somewhat different perspective. This perspective seeks to generate new thinking on how to provide more clarity for consumers on the meaning of the USDA’s organic labeling and to support small farmers whose practices conform to consumer expectations about organic food in the broader sense to connect with, educate, and market to consumers.

As to legal solutions, we have little reason for optimism that lawmakers will intervene to address any information asymmetries that exist regarding the USDA organic food labeling program. In the absence of regulatory action, consumers and small farmers might seek relief in the courts, but litigation would entail a significant commitment of both finances and time, resources that are often in short supply and that could be utilized more effectively on other efforts.

We have a similarly pessimistic view about the prospect that additional research will significantly impact consumer behavior. In the organic food market, the confirmatory bias phenomenon reportedly has a strong impact; consumer expectations of, and preferences for, organic food products appear to be based upon consumers’s prior beliefs and perceptions about the reliability of the USDA organic seal.\footnote{277}

However, we are more optimistic about the possibilities for creative responses from interested advocates, farmers, and consumers. Educating consumers about the meaning and limitations of the USDA organic label, and about alternative “sustainable” farming models and products, as well as providing consumers access

\footnote{275 Endres, supra note 195, at 35–37.  
276 Id.  
277 Guilabert & Wood, supra note 107, at 354.}
to these options, may improve informational symmetry, consumer purchasing, and product satisfaction. While they might not have the market penetration of the USDA Organic label, or have as straightforward a path, we believe there are alternative routes to viability for farmers whose practices conform to consumer expectations regarding organic food.\footnote{E.g., Jeffrey R. Follett, Choosing a Food Future: Differentiating Among Alternative Food Options, 22 J. AGRIC. & ENVTL. ETHICS 31, 31 (2009).}

Access and education often go hand-in-hand, and we have found a number of successful models that would appear to be easy to replicate by smaller sustainable farming operations and/or their supporters. Consider, for example, the very successful Soil Sisters, formerly referred to as the Green County Area Women in Sustainable Agriculture.\footnote{Sarah McColl, Meet the Soil Sisters: Making it as Female Farmers in a Man’s World, MODERN FARMER (Mar. 8, 2018), https://modernfarmer.com/2018/03/soil-sisters-wisconsin-female-farmers-sustainable-agriculture/ [https://perma.cc/595V-JBCV].} This group is an informal collective of women farmers who jointly engage in political efforts to protect and promote independent farms in Wisconsin.\footnote{Id.} The group also organizes farm tours, educational workshops, special dining, and other events that have made their region popular among agritourists.\footnote{Id.}

The Soil Sisters offer one model for smaller sustainable operations seeking to directly market to like-minded consumers. Many of its members have diversified their farm operations, doing so by incorporating activities such as production and sale of farm-related products like knitted clothing, soap, or prepared food and agritourism operations such as cooking schools, inns, and/or restaurants into traditional crop and/or livestock production.\footnote{See, e.g., McColl, supra note 279.} Other successful farm operations that are not certified pursuant to the USDA process also have taken this approach to introduce consumers to their farms and products and to build relationships by offering a variety of “farm-adjacent” activities.\footnote{Id.: Pumpkins, Pickling & Preserving, Oh My!, PDX GREEN TEAM, http://pdxgreenteam.com/pumpkins-pickling-preserving-oh/ [https://perma.cc/T5MG-3ZE5].} These operations offer a variety of experiences to consumers in order to tempt the public to access their farms, such as farm tours, farm-to-table meals,
haunted farms, pumpkin patches, corn mazes, concerts, or other themed events.284

On a larger scale, data indicate that smaller sustainable farming operations are often unable to secure contracts with large retailers, particularly those with a regional or national presence.285 These larger retailers prefer to reduce their transaction costs by dealing with one or very few large, industrial operations, rather than negotiating with multiple smaller farms.286 These smaller sustainable operations might consider creating cooperative distribution systems that would allow them to compete with their larger counterparts.287 For example, food hubs offer a combination of aggregation, distribution, and marketing services for smaller and mid-sized farmers and ranchers that lack the capacity to gain entry into larger-volume markets and provide a more developed model of this type of system.288 Resources such as the Organic Consumers Association’s Buying Guide, which lists FarmMatch and Local Harvest, among others, also exist to connect farmers with retailers and consumers.289

Another example is PRO*ACT, or “Produce Regional Operators Advancing Cooperative Trade,” which is a national network of food distributors, the majority of which are family-owned businesses operating under third- or fourth-generation leadership.290 PRO*ACT distributors consolidated purchasing and collective marketing operations to maximize a sustainable competitive advantage for its members.291 Through its Greener Fields Together initiative, the food industry’s first comprehensive, national seed-to-fork sustainability program, PRO*ACT members engage the

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284 PDX GREEN TEAM, supra note 283; McColl, supra note 279.
286 Id.
287 Id.
291 Id.
entirety of the fresh food supply chain to provide a level of assurance that network sources deliver produce that is grown, harvested, and managed using sustainable practices.292 Smaller producers that lack access to markets or have distribution constraints can create or join these types of formal or informal collective enterprises to leverage efficiencies, contacts, and resources.

In more metropolitan settings, urban initiatives such as Farmscape offer interesting prospects.293 Based in California, Farmscape has installed urban gardens that grow organic food products in or on corporate campuses, restaurants, private residences, multifamily developments, senior centers, and schools.294 Farmscape offers community residents not only the opportunity to purchase fresh, sustainable products at their local gardens, it also welcomes their participation in gardening and community learning events.295 These sites can provide service-learning opportunities for students through partnerships with educational institutions of all levels, from grade schools to universities.296 Farmer-consumer interactions and transactions, and the enabling of “matching” platforms and distribution networks, can increase consumer knowledge about, as well as their access to, sustainably-grown food products.

CONCLUSION

To conclude, it was small comfort to discover that we were not alone in our disillusionment regarding the definition of the term “organic” as it pertains to food products.297 It was also discouraging to find that others have been seeking for some time to resolve

294 Id.
295 Id.
297 See, e.g., Watnick, supra note 18, at 58.
consumer confusion on the issue and to mitigate its impact on affected farmers, to little avail. We reluctantly now agree with one scholar who stated that “the central problem confronting the industry now is that consumers cannot rely on the USDA organic seal.” What options exist, then, for consumers like us to find and purchase local (or regional) sustainable food, a term encompassing food produced without pesticides, GMOs, or synthetic ingredients and that has been produced and delivered with as little impact on the environment as possible? We believe there are many options, particularly for consumers and other participants in the organic food chain committed to agroecology, and to those committed to the environment. Echoing one commentator, we are confident that there is a path forward for farmers who may choose to opt out of the USDA organic certification process but maintain sustainable practices that are consistent with consumer expectations about food products that are free from chemicals, pesticides, and synthetics; that contribute to good health and are of good quality; and that are produced locally or regionally with as little environmental impact as possible. This path may involve seeking alternative certifying bodies, such as CNG or CCOF, or aligning with a particular retailer, such as Patagonia.

The path may also involve connecting and educating consumers about sustainable food products via CSAs, direct farm sales, farmers markets, food and/or distribution food cooperatives or hubs, and the like. These structures will necessarily create deeper relationships between producers, distributors, and consumers, building the loyalty and commitment that sustains enduring consumer brands, whether certified by the USDA, another certifier, or no certifier at all.

Regardless of the road traveled, we hope that the food produced by alternative farmers will find its way to consumers like us, whose interest in the concept of “organic” does not align with the

298 See Craven, supra note 249.
299 See Endres, supra note 195, at 58–59.
300 Lessing, supra note 57, at 471.
301 O'Reilly, supra note 254.
302 Endres, supra note 195, at 58–59.
USDA NOP program. If the USDA’s standards remain inconsistent with our perceptions, and if it is not willing to act to correct the information asymmetries\textsuperscript{303} that create the inconsistency, we will find our own path to sustainable food products that do.

\textsuperscript{303} See Lessing, supra note 57, at 451.