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Eating for the Environment: The Potential of Dietary Guidelines to Achieve Better Human and Environmental Health Outcomes

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EATING FOR THE ENVIRONMENT: THE POTENTIAL OF DIETARY GUIDELINES TO ACHIEVE BETTER HUMAN AND ENVIRONMENTAL HEALTH OUTCOMES

BY
MARGARET SOVA MCCABE*

Agriculture and food production contribute significantly to greenhouse gas emissions and environmental pollution. Shifting human dietary patterns has the potential to reduce such environmental harms while also promoting human health. Government policy, in the form of the United States Dietary Guidelines (USDG), recommends what Americans should eat and could play an important role in shifting the food system to one that is more sustainable. However, the USDG are an overlooked aspect of U.S. food policy. While many countries have moved to synthesize environmental goals with dietary guidance, the United States has taken the opposite approach. In 2015, despite recommendations from the expert panel appointed under the Federal Advisory Committee Act (the Dietary Guidelines Advisory Committee), which recommended including sustainability considerations in the 2015 USDG, the Secretaries of Health and Human Services and Agriculture rejected those recommendations reasoning that the sustainability perspective was beyond the scope of the USDG-enabling statute. This Article examines why that decision was wrong and how, based on international examples and sound science, the federal government should see the USDG as a powerful food system policy tool that can be used to promote human and environmental health in the 21st century.

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I. OVERVIEW

What if U.S. food policy recommended dietary patterns that promoted not only individual and public health but also environmental health and food system sustainability? This idea is not far fetched and indeed is the trend in many countries today. However, in 2015, the recommendation of the Dietary Guidelines Advisory Committee (the Advisory Committee) to include sustainability considerations was not only rejected by the Secretaries of Agriculture and Health and Human Services, the inclusion of the topic prompted Congressional hearings.¹ Despite this turn of events, this Article asserts that the United States Dietary Guidelines (USDG) are the unsung heroes of American food policy, in that they have the potential to improve individual, public, and environmental health outcomes in the 21st century.² Realizing their potential requires stakeholders to view the USDG's purpose more holistically so that they influence both individual eating and food production patterns. Such a shift will also require the USDG to incorporate clinical studies, population science, *and* environmental science so that they suggest eating patterns designed for nutrition, public health, and production and manufacturing of foods that contribute to a sustainable food system.

As an opening and critical premise, this Article presumes that sustainability is a fundamental value that should be encoded in American law and policy, if it is not already.³ Without valuing sustainability,

¹ See *infra* notes 59–64 and accompanying text.

² See National Nutrition Monitoring and Related Research Act of 1990, 7 U.S.C. § 5341(a)(1) (2012) (requiring promulgation of the USDG).

³ The issue of whether sustainability is already an implicit American value, particularly following the environmental activism of the late 1960s and 1970s is an important one. As this Article will explain, the Secretaries of the Departments of Health and Human Services and Agriculture rejected this view when they refused to include sustainability recommendations in the 2015 USDG despite having the discretion to do so under delegation doctrine principles. See *infra* notes 81–83 and accompanying text. A complete analysis of the nuances of that administrative decision is beyond the scope of this Article, but readers are encouraged to reason through whether sustainability principles are arguably implicit in federal exercises of power because core American values compel policy making that maximizes near term well-

particularly in food law and policy, the American political system is ill-equipped to address the near- and long-term needs of its citizens. The U.S. food system is underpinned by an incredibly complex portfolio of law, regulation, and policy that largely overlooks one particular lever—the appropriate role of government in shaping eaters’ (consumers’) demand for certain products. This crucial issue—the way in which government policy might alter dietary patterns—involves a potent mix of government power and economic interests (not to mention that of individual citizens) that can be marked by hostile political battles that increasingly pit science against special interests.

Science plays a critical role in developing dietary guidelines (DG). As this Article explains, a preponderance of science and medical knowledge is required to inform DG. Scientific validation is a critical part of the process, but so too is understanding how that science is conducted and defined. Important questions include how science is funded, and even more fundamentally, what type of science appropriately informs DG. It is fair to state that DG have evolved from relying principally on clinical scientific recommendations for nutrient intake in humans to including population science for metadata analysis relating diet to public health outcomes.⁴ The next important step is the acceptance and inclusion of science that addresses the environmental impact of food consumption patterns.

For example, Life Cycle Assessment (LCA)—a specific scientific methodology designed to evaluate the environmental, social, and economic impacts of particular products⁵—was questioned as a valid scientific consideration appropriate to inform the USDG in 2015, even though the expert report relied on it.⁶ Though LCA is an emerging field, this Article takes the position that when combined with clinical and population science, it has the potential to add powerful insight into the consequences of different dietary patterns for human and environmental health and is therefore, a valuable component of DG development.

Certainly, there are legitimate concerns about the focus of clinical research as it informs dietary and nutritional advice. The most recent, and perhaps best, illustration comes from the 2016 discovery that in 1967 the

being while preserving resources for future generations (though perhaps these values are not labeled as “sustainability”).

⁴ U.S. DEP’T OF AGRIC. & U.S. DEP’T OF HEALTH & HUMAN SERVS., SCIENTIFIC REPORT OF THE 2015 DIETARY GUIDELINES ADVISORY COMMITTEE pt. D, ch. 5, p. 6 (2015), <https://perma.cc/WU34-BRXJ> [hereinafter 2015 DGAC REPORT].

⁵ LIFE CYCLE INITIATIVE, TOWARDS A LIFE CYCLE SUSTAINABILITY ASSESSMENT: MAKING INFORMED CHOICES ON PRODUCTS 5 (2011), <https://perma.cc/ZA6Q-GLNX>. There are a variety of LCA techniques, and readers are encouraged to explore this interesting methodology. While LCA techniques are admittedly imprecise, they may also be a powerful tool in evaluating dietary choices. *See generally id.* (describing different types of LCA techniques).

⁶ *See* 2015 DGAC REPORT, *supra* note 4, at pt. D, ch. 5, p. 6 (“[T]he relationship between population-level dietary patterns and long-term food sustainability] is new for a[n Advisory Committee] review and involves an emerging area of scientific investigation that is not readily addressed by traditional study designs such as randomized controlled trials and prospective cohort studies.”).

sugar industry shifted the focus of nutrition research to the role of saturated fats in chronic disease while squelching the question how sugar might contribute to the same chronic diseases. The unfortunate result of influenced research—such as in the case of sugar—is two-fold: it discredits science generally when industry influence is revealed, and perhaps more importantly, it misdirects nutrition research (and its funding) by discounting the role of certain substances, such as sugar.⁷ As a result of cases like this, the integrity of nutritional science can more easily be challenged when any industry funding flows to the researchers.

Perhaps equally important is the legitimate concern that relying on new fields of scientific research may be risky when there is uncertainty because the field is emerging. Whether the question of scientific findings' credibility is one of integrity or methodology, for the purposes of this Article, it is sufficient for readers to understand that science *is* critical to meaningful DG. Unfortunately, the current state of science has the public and Congress concerned about its reliability. As a consequence, there is a significant perception that the USDG are untrustworthy.⁸

In the case of DG, the issue of expert credibility and reliability is further compounded by the fact that the USDG are not reviewable under the Administrative Procedure Act,⁹ nor are specific challenges to advisory committee members on the basis of bias or conflict of interest likely to be successful under the Federal Advisory Committee Act¹⁰ (FACA). Therefore, challenging the USDG will not likely occur in the courts but instead will require Congressional action. This mix of science, politics, and process poses two important questions: Can American law and policy encourage eating for the environment? Should it?

This Article first explains briefly the scope of the USDG and their role in U.S. food policy. It then provides an overview of global trends in dietary guidance, including creating explicit linkages between DG, sustainable food systems, and the reasons some nations have chosen to take this approach. Finally, it begins to tell the story of how dairy and meat recommendations illustrate the potential impact of DG that consider public and environmental health, in addition to individual nutritional goals.

⁷ See Anahad O'Connor, *Sugar Backers Paid to Shift Blame to Fat*, N.Y. TIMES, Sept. 13, 2016, at A1 ("At the time, studies had begun pointing to a relationship between high-sugar diets and the country's high rates of heart disease. At the same time, other scientists . . . were investigating a competing theory that it was saturated fat and dietary cholesterol that posed the biggest risk for heart disease. . . . [A sugar industry funded researcher] reassured the sugar executives. 'We are well aware of your particular interest . . . and will cover this as well as we can.'").

⁸ NAT'L ACAD. OF SCIS. ET AL., OPTIMIZING THE PROCESS FOR ESTABLISHING THE *DIETARY GUIDELINES FOR AMERICANS* THE SELECTION PROCESS S-4 (2017) [hereinafter NAS REPORT].

⁹ 5 U.S.C. §§ 551–559, 701–706, 1305, 3105, 3344, 4301, 5335, 5372, 7521 (2012). See *infra* note 34 and accompanying text.

¹⁰ 5 U.S.C. app. §§ 1–15 (2012); see, e.g., *infra* note 36 and accompanying text.

A. The United States Dietary Guidelines

Several good sources retell the story of the modern era of the USDG, which began in the late 1960s under the leadership of Senator George McGovern—though the most comprehensive, and perhaps discouraging, is *Food Politics* by Marion Nestle.¹¹ Her book captures the process and content flaws often attributed to the USDG—first, the USDG are unduly influenced by industry, and second, partly as a function of the first, the USDG encourage “eating more” rather than providing advice about what to eat *and* what to avoid.¹² Despite these flaws, the USDG are powerful components of the U.S. food system. For example, the USDG influence billions of dollars of federal feeding program spending. For example, the National School Lunch Program’s \$12 billion expenditure in 2016 was for school meals compliant with the USDG.¹³ Additionally, their content is distributed widely through United States Department of Agriculture (USDA) publications and marketing, including through federal feeding programs like the Supplemental Nutrition Assistance Program (SNAP) and the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC).¹⁴ Given their influence on the spending of federal food dollars and their role in the food economy,¹⁵ understanding the process by which they are created is important to understanding how they can be recalibrated in 2020 and beyond to promote a sustainable food system.

The National Nutrition Monitoring and Related Research Act of 1990¹⁶ provides that:

- (1) . . . At least every five years the Secretaries [of Health and Human Services and Agriculture] shall publish a report entitled “Dietary Guidelines for Americans”. Each such report shall contain nutritional and dietary information and guidelines for the general public, and shall be promoted by each Federal agency in carrying out any Federal food, nutrition, or health program.

- (2) . . . The information and guidelines contained in each report required under paragraph (1) shall be based on the preponderance of the scientific and medical knowledge which is current at the time the report is prepared.¹⁷

¹¹ MARION NESTLE, *FOOD POLITICS: HOW THE FOOD INDUSTRY INFLUENCES NUTRITION AND HEALTH* 38–42 (2002) (providing an overview from 1900 through 1990 of U.S. nutritional guidance and policy).

¹² See generally *id.*

¹³ FOOD & NUTRITION SERV., U.S. DEP’T OF AGRIC., *FEDERAL COST OF SCHOOL FOOD PROGRAMS* 1 (2017), <https://perma.cc/RC6A-AMKZ>.

¹⁴ See *Food and Nutrition*, U.S. DEP’T AGRIC., <https://perma.cc/X69U-CPW8> (last visited July 22, 2017). Among the federal food programs that require compliance with the USDG are the Richard B. Russell National School Lunch Act, 42 U.S.C. §§ 1751–1769j (2012) (nutritional requirements for school lunches are located at *id.* § 1758(a)) and the Nutrition Education and Obesity Prevention Grant Program, 7 U.S.C. § 2036a(b) (2012).

¹⁵ See, e.g., *infra* notes 69–70 and accompanying text.

¹⁶ 7 U.S.C. §§ 5301–5342.

¹⁷ *Id.* § 5341(a).

By requiring the USDG to be based on the preponderance of the scientific and medical knowledge that is current at the time the report is prepared, the statute allows guidance to evolve with advances in understanding the complex relationship between diet and health.¹⁸

How does the government recommend what should people eat? Given the scientific complexity of this question, the USDG are developed by the Dietary Guidelines Advisory Committee.¹⁹ The Advisory Committee is appointed through a consultative process between the Department of Health and Human Services (HHS) and the Government Services Administration (GSA), which first determines that HHS is best served by a federal advisory committee.²⁰ The FACA then governs the formation and activities of the Committee.²¹

In 2015, the Advisory Committee members were selected based on their expertise in areas including cardiovascular disease, type 2 diabetes, overweight and obesity, cancer, general medicine, epidemiology, and public health, as well as nutrition education and behavior change.²² While these selection criteria are certainly appropriate given the USDG's statutory purpose, the popular press has identified serious concerns about whether those who serve are adequately free of corporate and special interests.²³ Additionally, based on its own hearings²⁴ and possibly concern over a FACA challenge to the cholesterol recommendation,²⁵ Congress has mandated that the National Academy of Sciences (NAS) review the appointment process and make recommendations for its improvement;²⁶ the first report on this

¹⁸ *Evolution*, OFF. DISEASE PREVENTION & HEALTH PROMOTION, <https://perma.cc/CKW9-PTAE> (last updated July 22, 2017).

¹⁹ U.S. DEP'T OF AGRIC. & U.S. DEP'T OF HEALTH & HUMAN SERVS., 2015–2020 DIETARY GUIDELINES FOR AMERICANS, at viii (8th ed. 2015), <https://perma.cc/AE8N-QXST> [hereinafter 2015–2020 DIETARY GUIDELINES].

²⁰ Establishment of the 2015 Dietary Guidelines Advisory Committee, 78 Fed. Reg. 8147, 8147 (Feb. 5, 2013).

²¹ U.S. DEP'T OF HEALTH & HUMAN SERVS., CHARTER FOR 2015 DIETARY GUIDELINES ADVISORY COMMITTEE 1 (2013), <https://perma.cc/E276-MR4R> [hereinafter 2015 ADVISORY COMMITTEE CHARTER].

²² Establishment of the 2015 Dietary Guidelines Advisory Committee, 78 Fed. Reg. 8147, 8147 (Feb. 5, 2013).

²³ Helena Bottemiller Evich, *Meat Industry Wins Round in War over Federal Nutrition Advice*, POLITICO (Jan. 7, 2016), <https://perma.cc/GY9H-YJ7P> (“The congressional effort to thwart some of the advice was unsuccessful. But the omnibus spending package did contain \$1 million for an independent review of the integrity of the entire Dietary Guidelines process—a win for a growing circle of interests who believe it’s been hijacked by politics.”).

²⁴ *Hearing to Review the Development of the 2015 Dietary Guidelines for Americans: Hearing Before the H. Comm. on Agric.*, 114th Cong. 151–53 (2015) [hereinafter *USDG Congressional Hearing*].

²⁵ Physicians Comm. for Responsible Med. v. Vilsack, No. 16-cv-00069-LB, 2016 WL 5930585, at *2 (N.D. Cal. Oct. 12, 2016); *see also infra* Part I.C (providing a more in-depth discussion of the case).

²⁶ Consolidated Appropriations Act, 2016, Pub. L. No. 114-133, § 735, 129 Stat. 2242, 2280–81 (2015).

topic was issued in February 2017 and is discussed below.²⁷ Once a committee is appointed, it must next begin to develop its analysis and the evidentiary basis for its recommendations.

B. The Nutrition Evidence Library

The Advisory Committee's work is guided by its charge, which is generic in its language and does not provide further direction beyond its broad statutory mandate.²⁸ However, once established, Committee members must follow the process requirements of FACA, while the USDA Nutrition Evidence Library (NEL) supports their substantive work.²⁹ The particular role of NEL, as described in the charge, is to "assist the Committee in conducting and creating a transparent database of systematic reviews . . . on a wide range of food and nutrition-related topics to inform its recommendations."³⁰

More specifically, NEL supports the Advisory Committee by identifying evidence portfolios for the Committee's systematic reviews. In 2015, there were four categories of systematic review: 1) Dietary Patterns, Foods and Nutrients, and Health Outcomes; 2) Individual Diet and Physical Activity Behavior Change; (3) Food and Physical Activity Environments; and 4) Cross-Cutting Topics of Public Health Importance.³¹ For each category, there is an extensive evidence portfolio that not only captures the research questions, but also the specific plan for identifying, grading, and interpreting scientific literature relied upon to guide the Committee's work.³² This method of capturing the Committee's work adds a level of transparency and clarity that permits later analysis of the USDG's scope of work. It also allows later analysis of whether the Committee and NEL (unintentionally) limited the scope, depth, and breadth of science relied upon when forming the USDG in any given cycle.

²⁷ See *infra* Part I.C for a discussion of the NAS report recommendations with respect to the Advisory Committee membership.

²⁸ National Nutrition Monitoring and Related Research Act of 1990, 7 U.S.C. § 5341(a)(1) (2012) ("Each . . . report [by the Secretaries] shall contain nutritional and dietary information and guidelines for the general public, and shall be promoted by each Federal agency in carrying out any Federal food, nutrition, or health program."); see 2015 ADVISORY COMMITTEE CHARTER, *supra* note 20, at 1.

²⁹ *Nutrition Evidence Library—2015 Dietary Guidelines Advisory Committee Systematic Reviews*, U.S. DEP'T AGRIC., <https://perma.cc/5DWR-VVEE> (last visited July 22, 2017) [hereinafter *2015 DGAC Systematic Reviews*].

³⁰ Establishment of the 2015 Dietary Guidelines Advisory Committee, 78 Fed. Reg. 8147, 8147 (Feb. 5, 2013); 2015 ADVISORY COMMITTEE CHARTER, *supra* note 20.

³¹ *Advisory Report: Report Index*, OFF. DISEASE PREVENTION & HEALTH PROMOTION, <https://perma.cc/9YYX-WNAN> (last updated July 22, 2017).

³² See *generally* NUTRITION EVIDENCE LIBRARY, U.S. DEP'T OF AGRIC., 2015 DIETARY GUIDELINES ADVISORY COMMITTEE: SYSTEMATIC REVIEWS OF DIETARY PATTERNS, FOOD AND NUTRIENTS, AND HEALTH OUTCOMES SUBCOMMITTEE (2017), <https://perma.cc/J69N-QT4R> (providing an example of the comprehensive and transparent nature of documenting scientific evidence supporting DGAC recommendations).

C. The Federal Advisory Committee Act

Given that the United States District Court for the District of Columbia, in *Physicians Committee for Responsible Medicine v. Vilsack*,³³ held that the USDG are not reviewable under the Administrative Procedure Act,³⁴ FACA is critical to ensuring that the process by which they are created is accountable to the public—in fact, it is likely the *only* mechanism for court challenges of USDG recommendations. As recently as 2016, FACA formed the basis for a complaint that a member of the Advisory Committee lacked independent judgment with respect to cholesterol because the member had indirectly received research funding from the egg industry. The petitioner argued that the relationship between the egg industry and an advisory committee member impermissibly contributed to softened USDG language with respect to cholesterol and eggs.³⁵ Finding the complaint non-justiciable because there was a “lack of meaningful standard” to determine whether there was any inappropriate influence on the Advisory Committee, the case was dismissed.³⁶ However, the role of FACA, transparency, bias, and conflict of interest remain very live issues in the quest to address the question of what constitutes inappropriate influence of special interests in the USDG.

Since 1972, FACA has served to mediate how experts provide input into U.S. policy making in a consistent but limited manner.³⁷ Accountability to the public is ensured by requiring that the Advisory Committee: 1) provide timely notice of meetings;³⁸ 2) subject documents to the Freedom of Information Act³⁹ (FOIA);⁴⁰ 3) keep detailed minutes;⁴¹ 4) hold meetings chaired by a federal office or employee who also has the authority to adjourn meetings if it is in the “public interest” to do so;⁴² and 5) approval of convening and agendas by the federal officer or employee.⁴³ The law also has specific provisions concerning FOIA requests and record keeping that, again, are designed to ensure that an advisory committee works openly and transparently and does not usurp any executive power.⁴⁴

³³ 867 F. Supp. 2d. 24 (D.D.C. 2011).

³⁴ See *id.* at 30 (finding dietary guidelines are not agency action subject to the judicial review provisions of the Administrative Procedure Act).

³⁵ *Physicians Comm. for Responsible Med.*, No. 16-cv-00069-LB, 2016 WL 5930585, at *2 (N.D. Cal. Oct. 12, 2016).

³⁶ *Id.* at *1, *3, *8.

³⁷ Federal Advisory Committee Act, 5 U.S.C. app. § 2(a) (2012).

³⁸ *Id.* app. § 10(a)(2).

³⁹ *Id.* § 552.

⁴⁰ *Id.* app. § 10(b).

⁴¹ *Id.* app. § 10(c).

⁴² *Id.* app. § 10(e).

⁴³ *Id.* app. § 10(f).

⁴⁴ See Steven P. Croley & William F. Funk, *The Federal Advisory Committee Act and Good Government*, 14 YALE J. ON REG. 451, 527 (1997) (“The Act, however, is not only an economic bargain. It also seems to promote openness, participation, and accountability in regulatory decisionmaking, thus enhancing the political legitimacy of the administrative state. Additionally, the Act helps to ensure that such participation is unbiased and evenhanded, thereby minimizing

Despite FACA, an outgrowth of the controversy over the 2015 Advisory Committee's recommendation to consider the environmental impact of eating patterns was the Senate mandated review of the Advisory Committee's process by NAS.⁴⁵ In its first report, NAS framed the Congressional concerns as "whether the processes whereby the [USDG] is developed, interpreted, and disseminated are optimal and balanced."⁴⁶ NAS makes four recommendations to "provide more transparency, eliminate bias, and include . . . members with a range of viewpoints."⁴⁷ The first is for the Secretaries of USDA and HHS to employ neutral third-party reviewers at the selection stage to identify, based on screening criteria developed by the Secretaries, a candidate pool of primary and alternative nominees.⁴⁸ This recommendation is intended to address the Congressional concern that "some subsets of the public do not trust the [USDG]" and that greater transparency around the appointment process can avoid concerns about serious conflicts of interest and lack of expertise.⁴⁹

In the report, conflicts of interest are defined as financial and substantive. The latter requiring inquiry into statements made in publications, service as unpaid advisors, and memberships/affiliations with organizations (presumably with vested interests in the USDG).⁵⁰ To the extent possible, Advisory Committee members must avoid serious conflicts of interests. But, the recommended vetting process may raise concerns in the current political climate, particularly if nominees have a record of urging government policy to address climate change or other similarly charged issues (such as reducing meat or dairy intake).

The second NAS recommendation builds on the first by suggesting that once the proposed Advisory Committee appointees are identified with short

the danger of illicit influence on agency decisionmaking. These virtues are interdependent. Because self-serving advice, however cheap, is no bargain, it is crucial that balance, evenhandedness, and openness continue to be promoted in advisory-committee activities. While the interpretation, implementation, and administration of the Act have for the most part contributed to the success of the FACA, it is also true that a review of the case law and the results of the agency survey suggest several innovations that could improve the Act's effectiveness while advancing its underlying goals. Although some imaginable innovations would require difficult trade-offs between administrative-efficiency values, on one hand, and participation and openness values, on the other, certain improvements would largely further both sets of values simultaneously. Such innovations warrant serious consideration—by Congress, the GSA, the White House, the courts, and by agencies themselves."); *see generally* Jennifer Shkabatur, *Transparency With(out) Accountability: Open Government in the United States*, 31 YALE L. & POL'Y REV. 79 (2012) (providing a current and thorough review of tools for government transparency).

⁴⁵ NAS REPORT, *supra* note 8, at ix, S-1 ("When the 2015 [Advisory Committee] released its report, some of the content received criticism from different stakeholders leading to questions about the [A]dvisory [C]ommittee's composition and membership selection processes. Further questions were raised about the breadth of the [Advisory Committee's] scope, the processes [it] used to evaluate the evidence, and the completeness of [its] work.").

⁴⁶ *Id.* at ix.

⁴⁷ *Id.*

⁴⁸ *Id.* at S-5, 4-7 to 4-9.

⁴⁹ *Id.* at S-5.

⁵⁰ *Id.* at S-3.

biographies and identification of known conflicts, the provisional list should be open for public comment.⁵¹ To avoid the risk of potential reputational harm from public attack, the comments on the provisional nominees would not be available for public review.⁵² The third NAS recommendation suggests that the Secretaries should manage potential biases and conflicts by “[c]reating and publicly posting a policy and form to explicitly disclose financial and nonfinancial biases and conflicts,” as well as other conflict and bias management techniques.⁵³ Finally, NAS suggests the Secretaries “adopt a system” to regularly review the Advisory Committee selection process and make improvements based on feedback within that system.⁵⁴

Creating a better process is critical given that “[c]omposing and overseeing the [Advisory Committee] must be deemed a matter that is ‘absolutely “committed” to the agency’s judgment’ . . . and closed to judicial review.”⁵⁵ The NAS recommendations are informative because, if implemented, they will add a greater degree of transparency to the process. Yet, the NAS report should also be examined carefully for unintended consequences. For example, what is the distinction between expertise and bias, and is it truly distinguishable? Is a scientist who has spent her whole career carefully studying the impact of animal agriculture on climate and who has evidence that the animals have a greater impact on emissions than plants “biased” or “expert” when she recommends a plant-based diet?

In sum, examining the Advisory Committee process is helpful in that it raises critical questions concerning conflict, bias, science, evidence, and values. Care must be taken to avoid adding opportunities in the process to cloud the distinction between conflict/bias and expertise, as well as to minimize the opportunities for the selection process to become an avenue for special interests to further politicize the Advisory Committee and the USDG.

As the brief overview of the USDG statute, NEL, FACA, and the NAS study illustrate, layers of process exist that are designed to ensure that the Secretaries of HHS and USDA receive objective advice from the Committee to achieve the statutory purpose. However, this also raises an important question concerning the Committee’s work: What happens when the Secretaries disagree? As discussed below, the 2015 USDG Advisory Committee report (the 2015 Report) provides a clear example of the limits of the process and more importantly, how the process may be reframed in the future to provide a broader range of considerations by the Advisory Committee.

⁵¹ *Id.* at S-7.

⁵² *Id.*

⁵³ *Id.* at S-8.

⁵⁴ *Id.*

⁵⁵ *Physicians Comm. for Responsible Med.*, No. 16-cv-00069-LB, 2016 WL 5930585, at *3 (N.D. Cal. Oct. 12, 2016) (citations omitted).

II. EATING FOR THE ENVIRONMENT 2015

A. The United States Dietary Guidelines Advisory Committee's 2015 Report

The 2010 USDG identified sustainability as a relevant topic but did not make a specific inquiry into it with a systematic review by NEL.⁵⁶ Advancing the 2010 theme, the 2015 Advisory Committee took the bold step of framing the question in this way: “What is the relationship between population-level dietary patterns and long-term food sustainability?”⁵⁷

The manner of framing highlights a challenging shift in the process of DG development—making near-term dietary pattern recommendations while also considering the long-term impact of such choices for individual and environmental health. This is precisely the way a sustainability framework would permit a USDG to incorporate an approach that addresses near- and long-term sustainability goals and, in particular, the guiding principal of providing for today’s food security while at the same time planning for resource availability for future generations. Similarly, by adopting temporal thinking, sustainability positions the USDG to become a helpful point of reference for other food laws and regulations including the farm bill.⁵⁸ However, for now, the inclusion of sustainability in the USDG is “off the table.”⁵⁹

On October 7, 2015, the House Agriculture Committee convened to review the status of the Advisory Committee’s work and the anticipated USDG with two witnesses: HHS Secretary Burwell and USDA Secretary Vilsack.⁶⁰ Its concerns were three-fold: Rumors of new advice concerning 1) red meat, 2) sustainability, and 3) a tax on foods high in sugar.⁶¹ Vilsack and Burwell largely confirmed that the Advisory Committee was indeed considering these issues and immediately clarified that while the Advisory Committee’s work would inform the guidelines, it would not dictate them.⁶² For additional context, the importance of these USDG to the American people was illustrated by a record 29,000 public comments on the Advisory

⁵⁶ See U.S. DEP’T OF AGRIC. & U.S. DEP’T OF HEALTH & HUMAN SERVS., DIETARY GUIDELINES FOR AMERICANS: 2010, at 57 (7th ed. 2010), <https://perma.cc/H98K-53KD>.

⁵⁷ 2015 DGAC REPORT, *supra* note 4, at pt. D, ch. 5, p. 9.

⁵⁸ See William S. Eubanks II, *The Future of Federal Farm Policy: Steps for Achieving a More Sustainable Food System*, 37 VT. L. REV. 957, 960, 986 (2013) (advocating for incremental inclusion of sustainable food system production incentives in the farm bill).

⁵⁹ *USDG Congressional Hearing*, *supra* note 24, at 15.

⁶⁰ *See generally id.*

⁶¹ *Id.* at 11, 14–15, 17–18.

⁶² *Id.* at 8 (statement of Thomas J. Vilsack, Secretary, U.S. Dep’t of Agric.); *id.* at 5 (statement of Sylvia M. Burwell, Secretary, U.S. Dep’t of Health & Human Servs.) (“It is important to note that the Advisory Committee report is one input into the [USDG].”); *see also* Spencer Chase, *Cabinet Secretaries Assure Congress Dietary Guidelines Will Stay on Track*, AGRIPULSE (Oct. 8, 2015), <https://perma.cc/FPC6-7S5A>.

Committee's work.⁶³ Of those, 19,000 addressed sustainability and 97% supported sustainability's inclusion in the USDG.⁶⁴

Committee Chairman Mike Conaway remarked after the hearing that "he was 'tickled to death' that Burwell and Vilsack 'laid (the sustainability conversation) to rest. It was important that those issues not cloud the guidelines If they did, then it would lessen public acceptance and trust . . . because it would seem like there was an agenda attached to them and neither secretary wants that.'"⁶⁵ Indeed, the USDG have a statutorily declared agenda—the health of the American people.⁶⁶ And, sustainability is critical to population health not only today but also well into the future.

Unfortunately, framing the inclusion of sustainability considerations as representing an "agenda" sells short the potential of the USDG to play an important role in holistic food production policy. For example, the farm bill focuses on incentivizing commodity crops and specifying which foods must be included in national feeding programs without much connection to the USDG and seemingly without any recognition that there is a way for government to align demand with production through the USDG.⁶⁷ Environmental Law Professor Eubanks offers, succinctly and correctly, that "farmers will farm wherever the money is."⁶⁸ Given that the USDG influence \$18 billion in federal spending,⁶⁹ they could be as powerful as farm bill policies (whether crop subsidies or public feeding program requirements) at putting the money, in the form of consumer demand for more plant-based foods and products, in the hands of farmers and the food industry. In turn, this empowers farmers to remain truer to their values, which Professor Eubanks suggests farm bill policies undermine, particularly when the choice must be made between subsidies and sustainability.⁷⁰ Of course, the first step is for food law and policy to come closer to aligning agricultural production with sustainable dietary patterns.

Aligning production and demand through policy is not yet a prevailing consideration of the USDG. However, the Advisory Committee has introduced the kernels of a systems approach. The Advisory Committee identified four elements of sustainable diets—values, supply-chain

⁶³ *USDG Congressional Hearing*, *supra* note 24, at 2, 5.

⁶⁴ *Id.* at 20 (statement of Sylvia M. Burwell, Secretary, U.S. Dep't of Health & Human Servs.).

⁶⁵ Chase, *supra* note 62.

⁶⁶ See National Nutrition Monitoring and Related Research Act of 1990, 7 U.S.C. § 5341(a)(1) (2012).

⁶⁷ See RENÉE JOHNSON & JIM MONKE, CONG. RESEARCH SERV., RS22131, WHAT IS THE FARM BILL? 1 (2014) ("Since the 1930s, farm bills traditionally have focused on farm commodity program support for a handful of staple commodities—corn, soybeans, wheat, cotton, rice, dairy, and sugar.").

⁶⁸ Eubanks II, *supra* note 58, at 968.

⁶⁹ FEDERAL COST OF SCHOOL FOOD PROGRAMS, *supra* note 13.

⁷⁰ Eubanks II, *supra* note 58, 968 ("[A]ll available data indicates that many farmers genuinely want to grow healthier foods, maintain their communities, and conserve their natural ecosystems, but they are pressured to farm corn and other commodity crops at the expense of those values because that is where the profits are garnered under the existing subsidy framework.").

participants, consumers, and policies.⁷¹ This paradigm captures a food systems approach, yet it also highlights the conceptual and policy distance the Advisory Committee attempted to travel when it introduced systems thinking. And, in a very subtle way, it hints at the power of the USDG to change consumer behavior in ways that likely scare stakeholders vested in the status quo. For example, a 65-year-old who enjoys the outdoors and has grandchildren but is moderately overweight and flirting with diabetes may not be motivated to reduce meat intake by his own health, but he may be likely to do so if it has implications for the natural environment and/or his grandchildren's health. Explicitly encoding values such as this is a departure from past practice. For this reason alone, it may have formed the basis for some stakeholders' strong resistance to such a paradigm and the Secretaries' explicit rejection of it as beyond the scope of the statute.

On the other hand, there is no clear statement that considering sustainability would be beyond the scope of congressionally delegated authority. In fact, the inclusion of sustainability could simply represent an evolution in the Secretaries' interpretation of the scope of the USDG's guidance. Most importantly, the Secretaries could conclude that because science has clearly linked environmental health to human health, a sustainability framework will allow the USDG to more fully achieve their purpose. This is particularly so given that the Secretaries, when rejecting the Advisory Committee's sustainability recommendations, began their reasoning in this way:

One of our government's most important responsibilities is protecting the health of the American public, and that includes empowering them with the tools they need to make educated decisions. Since 1980, families . . . across the nation have looked to the Departments of Health and Human Services and Agriculture for science-based dietary guidelines to serve as a framework for nutritious eating.⁷²

In some respects, the question of whether to include sustainability can be framed as purely political and not subject to change, especially given the United States District Court for the District of Columbia's and Court of Appeals for the Ninth Circuit's clear rulings that the Administrative Procedure Act is inapplicable to the USDG—leaving eaters little recourse should the USDG take direction with which they disagree. However, without reviewability, it is important to think carefully about where accountability rests. For example, the statute requires a preponderance of scientific and medical knowledge to inform recommendations.⁷³ If this is the touchstone for USDG decision making, then what might a citizen do if she wishes to challenge the Secretaries' refusal to include sustainability because she

⁷¹ 2015 DGAC REPORT, *supra* note 4, at pt. D, ch. 5, p. 3 fig.D5.1.

⁷² Tom Vilsack & Sylvia Burwell, *2015 Dietary Guidelines: Giving You the Tools You Need to Make Healthy Choices*, USDA: BLOG (Oct. 6, 2015), <https://perma.cc/SZY8-CWHW>.

⁷³ National Nutrition Monitoring and Related Research Act of 1990, 7 U.S.C. § 5341(a)(2) (2012).

believes that there is, in fact, a clear nexus between planetary health, human health, and dietary patterns? Similarly, how do citizens compel review of NEL's inclusion of LCA or any other emergent science?⁷⁴ These are classic questions posed by the "expert" agency model and deserve further attention before the 2020 Advisory Committee is appointed (and indeed are slated to be examined by NAS).⁷⁵

In Chapter 5 of the 2015 Report, the Advisory Committee anticipated the questions LCA and sustainability recommendations would raise when they framed the NEL process to identify science that supported considering sustainability as an important part of the USDG. Chapter 5 acknowledges that investigating the link between population-level eating patterns and a long-term food system is an "emerging area of scientific investigation that is not readily addressed by traditional study designs such as randomized controlled trials."⁷⁶ However, with modifications detailed in the 2015 Report, NEL was able to review and identify authoritative sources that helped the Committee understand the relationship between dietary pattern and food system sustainability.⁷⁷ In fact, the Advisory Committee ultimately concluded:

Consistent evidence indicates that, in general, a dietary pattern that is higher in plant-based foods, such as vegetables, fruits, whole grains, legumes, nuts, and seeds, and lower in animal-based foods is more health promoting and is associated with lesser environmental impact (GHG emissions and energy, land, and water use) than is the current average U.S. diet. A diet that is more environmentally sustainable than the average U.S. diet can be achieved without excluding any food groups. The evidence consists primarily of Life Cycle Assessment (LCA) modeling studies or land-use studies from highly developed countries, including the United States.⁷⁸

The Advisory Committee went on to recommend incorporating sustainability because it can also serve as a motivator to better eating.⁷⁹ Further, the Advisory Committee identified that the overlap between health and environmental outcomes data was mutually reinforcing,⁸⁰ thus arguably

⁷⁴ 2015 DGAC Report, *supra* note 4, at pt. D, ch. 5, p. 6 (defining Life Cycle Assessment as "a standardized methodological framework for assessing the environmental impact (or load) attributable to the life cycle of a food product").

⁷⁵ NAS REPORT, *supra* note 8, at S-2 (The specific questions addressed in the next report are: "2. How the Nutrition Evidence Library (NEL) is compiled and utilized, including whether NEL reviews and other systematic reviews and data analysis are conducted according to rigorous and objective scientific standards; 3. How systematic reviews are conducted on long-standing *DGA* recommendations, including whether scientific studies are included from scientists with a range of viewpoints; and 4. How the *DGA* can better prevent chronic disease, ensure nutritional sufficiency for all Americans, and accommodate a range of individual factors, including age, gender, and metabolic health.").

⁷⁶ 2015 DGAC Report, *supra* note 4, at pt. D, ch. 5, p. 6.

⁷⁷ *Id.*

⁷⁸ *Id.* at pt. D, ch. 5, p. 9.

⁷⁹ *Id.* at pt. D, ch. 4, p. 1.

⁸⁰ *See id.* at pt. D, ch. 5, p. 10.

creating a preponderance of scientific knowledge compelling USDG recommendations based, in part, on sustainability.

However, sustainability was *not* included in the 2015 USDG. But, the Secretaries specifically identified it as an important topic and one that is being addressed through sustainability programs for food production, renewable energy, water systems, and resource preservation funded by USDA.⁸¹ These programs are laudable and essential. Given the resistance to including sustainability considerations in the USDG, it is challenging to understand why the federal government invests billions in sustainability programs but refuses to reflect the importance of the investments in the USDG—a powerful tool to not only educate citizens about the linkages between diet, health, and environment but also to align consumer demand with the sustainability infrastructure the billions invested create.

While the Secretaries' position is certainly debatable, it is also not subject to judicial review.⁸² Even if it were, established delegation doctrine would likely dictate courts' deference to the agencies' interpretation.⁸³ Thus, if the Secretaries' position is accepted, the next step for those who support the USDG becoming more holistic guidance—influencing production patterns by changing dietary patterns—is to focus on effectively advocating for sustainability to fall within the scope of the next Advisory Committee and the NEL that supports its recommendations. There are excellent global examples of countries that have pursued this path, as well as national examples of changing dietary patterns to improve health and the environment. They are discussed below. Finally, it is worth considering whether the USDG should be scrapped in their current form if they are not expanded to consider the environmental impact of dietary patterns. This radical proposal is also discussed below.

B. Global Examples: China, Brazil, and Sweden

Though global nutrition may seem irrelevant to the USDG, understanding the USDG in a global context provides a helpful perspective. First, this Article accepts the premise that science has established climate change is occurring and that agriculture, particularly industrialized agriculture, contributes to it.⁸⁴ Further, this Article accepts that changed agriculture production patterns, including the types of crops farmed and animals raised, have the potential to reduce emissions while also benefitting

⁸¹ See Vilsack & Burwell, *supra* note 72.

⁸² See *Physicians Comm. for Responsible Med.*, 867 F. Supp. 2d 24, 30 (D.D.C. 2011).

⁸³ See *Chevron, U.S.A., Inc. v. Nat. Res. Def. Council, Inc.*, 467 U.S. 837, 844 (1984).

⁸⁴ See, e.g., INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2001: MITIGATION 222 (2001), <https://perma.cc/T9GT-D7LF> (“Agriculture contributes to over 20% of global anthropogenic greenhouse gas emissions” from three primary sources: (1) farm use of fossil fuels, primarily for deforestation and changing cultivation methods; (2) “rice paddies, land use change, biomass burning, enteric fermentation, animal wastes”; and (3) “nitrogenous fertilizers [used] on cultivated soils and animal wastes.”).

human health as eaters adopt a healthier plant-based diet.⁸⁵ Next, this Article rests on the premise that dietary guidance from government is useful to citizens and can influence consumption patterns, though this premise is revisited below.

Finally, because of the interconnected nature of the global economy, U.S. behaviors, whether those of the government, corporations, or consumers have a meaningful impact around the world. That noted, it is fair to say the U.S. policymakers have, thus far, ignored the power of the USDG to set a global model for government food policy that integrates human and environmental health. However, many countries have adopted such an approach, including China, Brazil, and Sweden, among others.⁸⁶ The approaches vary but can provide examples for how the USDG process might evolve to include the sustainability considerations outlined in Chapter 5 of the 2015 Report.

In early 2016, China released an update to its 2007 DG.⁸⁷ The western press largely focused on recommended reductions in meat consumption and linked the advice to environmental outcomes, though this is not precisely the case.⁸⁸ A closer examination of the Chinese DG highlights that they are based primarily on clinical nutrition research, rather than science related to the environment.⁸⁹ This is important because—though the guidelines may recommend consuming less meat than the 2007 DG—they do so with a focus on individual health outcomes rather than an explicit attempt to include environmental outcomes.⁹⁰ However, the Chinese DG did address food waste and its avoidance. This is a compelling example of how cultural values relevant to the food system, though not solely supported by traditional clinical evidence, may have an important role in DG.⁹¹ Thus, the Chinese model represents a primarily traditional focus on individual health advice that, given the size of the Chinese population, will have an environmental impact if followed, even if the environmental outcome was not explicitly included as a reason for the advice.

Brazil's 2015 *Dietary Guidelines for the Brazilian Population* is perhaps the world's best example of explicitly declaring links between individual, public, and environmental health outcomes.⁹² The DG incorporate five core

⁸⁵ Anthony J. McMichael et al., *Food, Livestock Production, Energy, Climate Change, and Health*, 370 LANCET 1253, 1253–54 (2007), <https://perma.cc/8YWJ-B2V9>.

⁸⁶ See *id.* at 15–55 (providing a comprehensive overview of countries that are adopting a more progressive approach).

⁸⁷ Chelsea Harvey, *China Is Encouraging Its Citizens to Eat Less Meat – and That Could Be a Big Win for the Climate*, WASH. POST (May 27, 2016), <https://perma.cc/5ERN-NF4U>.

⁸⁸ See, e.g., *id.*

⁸⁹ See *Chinese Dietary Guidelines*, CHINESE NUTRITION SOC'Y, <https://perma.cc/SMN2-NSND> (last visited July 22, 2017) (“The Chinese Dietary Guidelines (CDG) is an evidence-based guidance in defining healthy dietary choices and adequate physical activities. It applies the scientific studies to daily life.”).

⁹⁰ Food Indus. Asia Comm'ns, *New Chinese Dietary Guidelines a Reference for Industry*, FOOD INDUSTRY ASIA (June 7, 2016), <https://perma.cc/53T6-3HE9>.

⁹¹ *Id.*

⁹² MINISTRY OF HEALTH OF BRAZ., *DIETARY GUIDELINES FOR THE BRAZILIAN POPULATION 19* (2015), <https://perma.cc/MYZ4-Z5WC> [hereinafter BRAZIL'S DG].

principles, two of which are notably progressive. First, “[h]ealthy diets derive from socially and environmentally sustainable food systems,” and second, “[d]ifferent sources of knowledge inform sound dietary advice.”⁹³ Additionally, the DG explicitly recognize social justice issues concerning economic and environmental equity, particularly for farmers (but also consumers). These social justice principles are then applied to expand the DG’s focus to not just what people eat, but “the means by which food is produced, distributed and sold,” and explicitly favor “those which are socially and environmentally sustainable.”⁹⁴ Similar to the Chinese DG’s inclusion of food waste, social justice considerations are examples of how food policy can (and does) encode social values. A critical question, of course, is whose values are included and how? The democratic process should answer this question, but as global politics illustrate, deep divisions over human values mark our times. Sadly, this phenomenon may undermine the democratic process’s ability to produce law and policy that is reflective of common core values.

Unlike social values, scientific evidence is more straightforward in terms of how it is used to inform DG. As noted above, the U.S. statute specifically requires preponderance of scientific and medical knowledge to inform the USDG,⁹⁵ and NEL transparently catalogs precisely what knowledge the committee has reviewed. In Brazil, there is a decidedly broader definition of knowledge—the DG state “the recommendations of these Guidelines are based on the evidence generated by a whole range of experimental, clinical, population, and social studies, and also on the knowledge implicit in the creation and development of traditional dietary patterns.”⁹⁶

The outcome of the inclusive Brazilian approach is a comprehensive document that includes ten steps to healthy diets and provides advice not only on specific nutrient intake but also on related topics such as limiting processed food intake, the importance of eating as a cultural act, preferring food retailers that offer natural/minimally processed foods, the importance of cooking skills, the importance of planning meals and food preparation, consuming fresh foods away from home, and becoming marketing/advertising savvy.⁹⁷ Additionally, the DG suggest specific eating patterns, in part, because “[c]hoosing diets based on a variety of foods of plant origin with sparing amounts of foods of animal origin implies the choice of a food system that is relatively equitable, and less stressful to the physical environment, for animals and biodiversity in general.”⁹⁸ The Brazilian approach is clearly holistic and inclusive, particularly with respect to social justice issues, but one must wonder whether that approach would

⁹³ *Id.* at 18, 20.

⁹⁴ *Id.* at 19.

⁹⁵ National Nutrition Monitoring and Related Research Act of 1990, 7 U.S.C. § 5341(a)(2) (2012).

⁹⁶ BRAZIL’S DG, *supra* note 92, at 21.

⁹⁷ *Id.* at 125–28.

⁹⁸ *Id.* at 31.

be politically viable in the United States. The Secretaries' narrow reading of the statute in 2015 is clear evidence that it would not be.⁹⁹

Sweden provides an example of how a government agency, tasked with providing nutritional guidance to its people, can coordinate that task with environmental quality goals.¹⁰⁰ Like the United States, China, and Brazil, Sweden's DG are grounded in nutritional science—meaning specific guidance for nutrient intake based on clinical studies.¹⁰¹ Prior to 2015, the Nordic Nutritional Recommendations (NNR) were the primary basis for dietary guidance in Sweden.¹⁰² However, since the last DG were released in 2005, the Swedish National Food Agency was one of many agencies specifically tasked with responsibility for meeting the country's environmental objectives.¹⁰³ Thus, the 2015 DG are designed to provide Swedes with advice about “how to eat healthily and at the same time take into account environmental aspects. To integrate health and environment in the work regarding nutritional advice is a new and important step for a sustainable future [of] food consumption.”¹⁰⁴

Compared to Brazil, China, and the United States, Sweden's DG outline both the human and environmental health impacts of certain recommendations. For example, they provide advice to eat 500 grams of vegetables and fruits per day (which is common) and then specifically identify brassicas, onions, legumes, and root vegetables as choices that are more beneficial for the environment.¹⁰⁵ Following that advice are the specific nutritional benefits of these choices, including that they are good sources of certain vitamins, minerals, and proteins, and scientific evidence has shown they may decrease certain cancer risks and obesity.¹⁰⁶ Next, the DG list the specific environmental reasons why choosing plant-based foods have a smaller environmental impact when compared to animal products.¹⁰⁷ More importantly, the DG go on to advise selection of root vegetables over fruits or vegetables grown in greenhouses that require fossil fuel.¹⁰⁸ Similarly, consumers are advised to consider the transport impact of their choices (e.g., berries may need to use high-emissions transports such as planes because of their short shelf-life), as well as the cultivation method

⁹⁹ See Vilsack & Burwell, *supra* note 72 (citing scope of authority issues with including sustainability in the USDG).

¹⁰⁰ ÅSA BRUGÅRD KONDE ET AL., SWEDISH NAT'L FOOD AGENCY (LIVSMEDELSVERKET), SWEDISH DIETARY GUIDELINES – RISK AND BENEFIT MANAGEMENT REPORT 2 (2015).

¹⁰¹ *Id.* at 4–5.

¹⁰² *Id.* at 2.

¹⁰³ *Id.* at 4.

¹⁰⁴ *Id.* at 2.

¹⁰⁵ *Id.* at 12.

¹⁰⁶ *Id.*

¹⁰⁷ *Id.* at 14.

¹⁰⁸ CHARLOTTE LAGERBERG FOGELBERG, TOWARDS ENVIRONMENTALLY SOUND DIETARY GUIDELINES – SCIENTIFIC BASIS FOR ENVIRONMENTAL ASSESSMENT OF THE SWEDISH NATIONAL FOOD AGENCY'S DIETARY GUIDELINES 70–75 (2013), <https://perma.cc/4K36-5QTK>; KONDE ET AL., *supra* note 100, at 14.

(organically/ecologically produced crops preserve biodiversity).¹⁰⁹ Most importantly, in terms of knowledge/evidence-based recommendations, the Swedish government has adopted LCA as an important scientific approach to environmentally based nutrition advice.¹¹⁰

The examples of China, Brazil, and Sweden illustrate the promise of DG as core components of national food policy, though with distinctive differences that can be instructive for the United States in the future. China has the most traditional approach because it is based almost solely on science-based evidence concerning individual health—though any reduction in meat consumption in that country is lauded as advancing food system sustainability.¹¹¹ As noted above, China’s food-waste approach does, however, open the door to including cultural values as a driver of dietary advice.¹¹² By contrast, Brazil has thrown wide-open the door to including evidence from many different disciplines to create holistic and forward-looking DG designed to incorporate food-choice impact throughout the food chain.¹¹³ Finally, Sweden provides an approach somewhere between China’s and Brazil’s because the Swedish National Food Agency has specific authority and responsibility for reaching environmental quality goals.¹¹⁴ While there are not yet studies of which approach may yield the most respect and adherence from consumers and producers, these models illustrate a trend to broaden the base of scientific knowledge to provide dietary advice designed to promote both human *and* environmental health while also encoding human values in DG (e.g., reduced waste, careful consumption, and understanding of marketing).

III. EATING FOR THE ENVIRONMENT: THE FUTURE

The 2015 USDG process, its aftermath, and the three examples of international trends in DG above provide a sense of the current state of DG as policy support for sustainable food systems. This Part focuses on the future and begins with the inspiring story of how California’s Oakland Unified School District (OUSD) embraced sustainable diets in its school lunch program. OUSD—and many other entities embracing, adopting, and promoting sustainable diets—accepts scientific evidence indicating that the impact of food and agriculture generates a quarter of all greenhouse gas

¹⁰⁹ KONDE, *supra* note 100, at 14–15 (providing specific recommendations on green vegetables, root vegetables, legumes, fruits, and berries).

¹¹⁰ *Id.* at 6. See also HANNA BROLINSON ET AL., SWEDISH ENVTL. PROT. AGENCY, METHODS TO ASSESS GLOBAL ENVIRONMENTAL IMPACTS FROM SWEDISH CONSUMPTION 18–20, 24–25 (2010), <https://perma.cc/XTR9-8D3A> (discussing LCA both generally and its importance).

¹¹¹ See Harvey, *supra* note 87.

¹¹² See *supra* notes 90–91 and accompanying text.

¹¹³ CARLOS GONZALES FISCHER & TARA GARNETT, PLATES, PYRAMIDS AND PLANETS—DEVELOPMENTS IN NATIONAL HEALTHY AND SUSTAINABLE DIETARY GUIDELINES: A STATE OF PLAY ASSESSMENT 59 (2016), <https://perma.cc/2UQE-BB4B>.

¹¹⁴ *Id.*; KONDE, *supra* note 100, at 4–5.

emissions and is responsible for 70% of fresh water use globally.¹¹⁵ These data and science-based facts provide motivation for decision makers, such as those in OUSD, to make food system alterations that have positive environmental outcomes, reduce costs, and provide the same or higher consumer satisfaction.¹¹⁶

In February 2017, Friends of the Earth issued a report that analyzed OUSD's reduced purchase of meat for school lunches in favor of more plant-based products, referred to as "plant-forward meals."¹¹⁷ The report concluded that over the two-year study period, OUSD's 30% reduction in animal product purchasing reduced the food service's carbon footprint by 14%; reduced water use by 6% (i.e., achieved a seven gallon reduction per meal or forty-two million gallons per year); saved OUSD \$42,000; and increased purchases of fruits, vegetables, and legumes by 10%. These metrics were achieved while increasing student satisfaction with school lunch meals that had less meat or were plant-based and still met or exceeded USDA school lunch meal requirements.¹¹⁸ OUSD relied, in part, on the reasoning of the Menus of Change project,¹¹⁹ which encourages food services to switch to plant-based meals for better human and environmental health.¹²⁰ Imagine the impact of such an approach if America's approximately 300 million eaters adopted similar patterns, particularly if that pattern shift had the endorsement of the federal government. That endorsement could in turn direct the billions spent on federal feeding programs to incentivize grower and producer behavior to meet demand for healthier foods.

A closer review of OUSD's project reveals that the first step towards adopting sustainable dietary patterns comes by accepting the impact eating has on the climate. OUSD framed it in this manner:

Overconsumption of animal foods is unhealthy for us and unsustainable for our planet. Animal products are the most resource-intensive foods in our diet, requiring massive water and energy inputs. Studies show that we cannot avert the worst impacts of climate change or protect future water supplies unless we

¹¹⁵ See, e.g., KARI HAMERSCHLAG & JULIAN KRAUS-POLK, FRIENDS OF THE EARTH, SHRINKING THE CARBON AND WATER FOOTPRINT OF SCHOOL FOOD: A RECIPE FOR COMBATING CLIMATE CHANGE 6 (2017), <https://perma.cc/B2XD-XTWN>.

¹¹⁶ See, e.g., *id.*; INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, *supra* note 84 (cataloging emissions outputs related to fossil fuels, farming methods, and fertilizer of agricultural production in a variety of sectors).

¹¹⁷ HAMERSCHLAG & KRAUS-POLK, *supra* note 115, at 6.

¹¹⁸ *Id.* at 3.

¹¹⁹ A well-known resource for food outlets to create healthy, sustainable menus, it is a joint project of the Culinary Institute of America and Harvard's T.H. Chan School of Public Health. *Principles of Healthy, Sustainable Menus*, MENUS CHANGE, <https://perma.cc/ZJS3-Y5GP> (last visited July 22, 2017).

¹²⁰ See, e.g., *Chefs' Influence on Consumer Attitudes*, MENUS CHANGE (June 14, 2016), <https://perma.cc/JT44-6KD5> (advising chefs and food-service providers to promote understanding of healthy food—including more plant-based meals—by sharing scientifically validated recommendations with their customers).

make food production for sustainable, waste less food, and reduce meat and dairy consumption in favor of plant-forward meals.¹²¹

The report documents very concrete information about “plant-forward meals.” For example, in OUSD, the carbon footprint of purchased “animal products . . . was three times higher than all of the other food categories combined.”¹²² The menus did not eliminate meat but did serve smaller amounts and created plant-based protein meals that still met the National School Lunch Program (NSLP) standards.¹²³ Using LCA, data analysis revealed that a beef hot dog recipe has a carbon footprint seven times higher than a plant-based recipe for Indian spiced tofu and vegetable rice stir-fry.¹²⁴ Similarly, the animal products contributed nearly 60% to OUSD’s food-water consumption.¹²⁵ Finally, the plant-forward menu pattern allowed OUSD to save a relatively small amount—\$42,000 over three fiscal years.¹²⁶ However, this cost savings occurs in a system that subsidizes meat production costs rather than plant-based ones—so the cost savings is, in fact, notable. It also raises an important question concerning what the financial impact might be if dietary patterns were more closely aligned with agricultural production, particularly when the federal government has been estimated to reimburse over \$500 million in meat purchases in the NSLP per year.¹²⁷

The question remains why the Secretaries declined to take a similar approach, despite the strong recommendation of the Advisory Committee that it do so. Interestingly, OUSD cites the 2015 Advisory Committee Report as an important source of information and motivation for change, not the USDG.¹²⁸ As noted earlier, the Secretaries concluded that recommending dietary patterns based on sustainability analysis is beyond the scope of the statute, but as examples such as Oakland illustrate, changing dietary patterns can have beneficial impacts on the environment, while at the same time providing nutritious food at a lower cost.

¹²¹ HAMERSCHLAG & KRAUS-POLK, *supra* note 115, at 3 (citing BRENT KIM ET AL., JOHNS HOPKINS CTR. FOR A LIVABLE FUTURE, THE IMPORTANCE OF REDUCING ANIMAL PRODUCT CONSUMPTION AND WASTED FOOD IN MITIGATING CATASTROPHIC CLIMATE CHANGE (2015), <https://perma.cc/9M3L-CC25>).

¹²² *Id.* at 10 (emphasis omitted).

¹²³ *Id.* at 10–11.

¹²⁴ *Id.* at 11 (citing Martin C. Heller & Gregory A. Keoleian, *Greenhouse Gas Emission Estimates of U.S. Dietary Choices and Food Loss*, 19 J. INDUS. ECOLOGY 391, 391–401 (2014)). An additional note for readers: the nutritional profile of the hot dog and stir fry are not compared in the report, and though both are NSLP/Healthy Hunger Free Kids Act compliant, the stir fry includes whole grains, proteins, and vegetables. *Id.* at 8, 11.

¹²⁵ HAMERSCHLAG & KRAUS-POLK, *supra* note 115, at 12. Agricultural water consumption is beyond the scope of this Article and not addressed in the USDG. However, as the OUSD data illustrates, there are additional environmental benefits to reduced water inputs—though different plant-based crops have dramatically different water use impacts. *Id.*

¹²⁶ *Id.* at 13.

¹²⁷ *Id.* (citing Physician’s Comm., *Who’s Making Money from Overweight Kids?*, GOOD MED., Summer 2015, at 6, 7 (“In 2013, the USDA paid more than \$500 to . . . [producers whose] beef, chicken, turkey, pork fish, dairy, eggs, or lamb” products ultimately ended up in in school meals.)).

¹²⁸ *Id.* at 15.

The OUSD example highlights key reasons why DG should include sustainability considerations. First, data supports that plant-based food consumption reduces both greenhouse gas emissions and water inputs compared to animal-based food consumption, presumably due to the different agricultural impacts of farming plants versus animals.¹²⁹ Second, plant-based foods can be cheaper for the consumer (whether measured institutionally or in health-care costs).¹³⁰ Finally, nutritional studies and recommendations have consistently identified that diets higher in plant-based proteins and lower in animal products have beneficial health outcomes, including reduced incidence of heart disease, diabetes, and obesity.¹³¹

The question for the USDG in 2020 and beyond is whether the U.S. government can take steps to influence dietary patterns in ways that improve human and environmental health. There are two paths: 1) stay the course and work to improve the USDG's process, reliability, and holism; or 2) consider jettisoning the USDG in favor of simple dietary guidance from the National Institutes of Health and Centers for Disease Control and Prevention, and leave HHS and USDA to provide block grants to state or local government agencies that meet nutrition and environmental outcomes specified in other governmental programs.

By 2020, science will likely advance to provide deeper understanding of the nexus between dietary patterns, agricultural production, and health outcomes. It is indisputable that scientific evidence must remain the foundation of all DG around the world, though how values are encoded in that science remains to be seen. For example, the focus of nutritional science directly correlates with the amount and source of funding available for it. Some policymakers have criticized nutritional science as recommending one thing as healthy following one study only to reverse such findings in the future.¹³² Such is the nature of science, and in fact, this

¹²⁹ See KIM ET AL, *supra* note 121, at 3 (“Studies suggest that substantial global reductions in meat intake by 2050 could reduce agriculture-related emissions on the order of 55 to 72 percent, with greater reductions from also reducing dairy and eggs.” (footnotes omitted)); Heller & Keoleian, *supra* note 124, at 396 (noting that a shift to a vegetarian diet “show[s] a considerably lower [carbon footprint]”).

¹³⁰ See HAMERSHCHLAG & KRAUS-POLK, *supra* note 115, at 12–13 (noting that in three recorded fiscal years, as a consumer, OUSD saved \$42,000); Marco Springmann et al., *Analysis and Valuation of the Health and Climate Change Cobenefits of Dietary Change*, 113 PROCEEDINGS NAT'L ACAD. SCI. 4146, 4148–49 (2016) (detailing economic value of overall health benefits flowing from dietary change); Lauren Cassani Davis, *The Economic Case for Worldwide Vegetarianism*, ATLANTIC (Mar. 28, 2016), <https://perma.cc/749A-QENE> (discussing a variety of economic benefits to plant-based diets).

¹³¹ See generally Philip J. Tuso et al., *Nutrition Update for Physicians: Plant-Based Diets*, PERMANENTE J., Spring 2013, at 61, <https://perma.cc/5Z8M-W3ML> (summarizing the literature on plant-based diet and beneficial impact on obesity, diabetes, and heart disease).

¹³² See generally Lenard I. Lesser et al., *Relationship Between Funding Source and Conclusion Among Nutrition-Related Scientific Articles*, 41 PLOS MED. 41, 44–46 (2007) (finding that industry-funded nutrition-related studies of soft drinks overwhelmingly generated results deemed favorable to the corporations funding the research); Joanne L. Slavin, *The Challenges*

phenomenon is actually one strong argument for broadening the focus of the USDG, allowing for linkages between clinical studies, epidemiological studies, and environmental science.

Finally, the topic left largely unaddressed in this Article is the profound role that special interests and politics play in the USDG. Food is political because it is often profitable, whether in subsidies for farmers, revenue for advertising agencies, or income for corporate food giants.¹³³ Until this issue is addressed squarely by policymakers, the USDG will be mired in complaints of bias/conflict of interest and a drive to construe the USDG as a vehicle for driving consumption higher rather than providing legitimately objective dietary advice designed to insure individual human health during life and an environment healthy enough to sustain the population well into the future. By rejecting sustainability considerations in 2015 as beyond the scope of the statute, the Secretaries essentially ignored the important link between dietary patterns and environmental health, thereby weakening U.S. food policy to the detriment of its citizens. Though a more rigorous Advisory Committee process may create opportunities for an improved USDG, unless sustainability is included, U.S. food policy will continue to miss the valuable opportunity to align its consumption patterns with its production patterns for increased human and environmental health.

IV. CONCLUSION

In the 21st century, the USDG should be recognized as an essential part of U.S. food policy. The USDG should be broadly viewed as a vehicle for aligning production with consumption, and the recommendations should rest on sound science from a variety of disciplines that inform human health outcomes (again, keeping in mind that environmental health has a profound influence on human health). However, for now, there are significant hurdles to overcome in order for the USDG to find a prominent place in U.S. food policy. Politics, science, and values are all relevant to developing adequate USDG, and unless the national dialogue turns to transparently addressing how these components of the USDG relate to sustainability, the opportunity for inclusion in the 2020 USDG will likely be lost.

of Nutrition Policymaking, NUTRITION J., Feb. 7, 2015, at 1, 2, 4–5 (discussing the tendency of nutritional studies to vary in methodology and findings).

¹³³ See generally Sylvia Rowe et al., *Funding Food Science and Nutrition Research: Financial Conflicts and Scientific Integrity*, 89 AM J. CLINICAL NUTRITION 1285, 1286–89 (2009) (studying the effects of industry funding in the science of nutrition research).