The Dietary Guidelines Advisory Committee Report:
Support for Sustainability in the Public Comments

This briefing presents the results of an analysis of the public comments submitted in response to the Scientific Report of the 2015 Dietary Guidelines Advisory Committee (DGAC). It finds that the body of comments overwhelmingly support the conclusions made by the Committee as to the inclusion of sustainability considerations in the 2015 Dietary Guidelines for Americans (DGA). They are:

- Compared with the average American diet, the three healthy dietary patterns identified in the report are better for both human health and the environment in relation to greenhouse gas emissions, land use, water use, and energy use. This difference is primarily due to the fact that the recommended diets include less animal products and more plant-based foods than the average American diet.

- Access to sufficient, nutritious, and safe food is an essential element of food security.

- Linking health, dietary guidance and the environment will promote human health and the sustainability of natural resources, ensuring current and long-term food security for the U.S. population.

This briefing covers three avenues of evidence extracted from the body of public comments available from the Health.gov website: keyword frequencies; a network analysis performed by data analysis firm, Quid; and select quotes from experts in policy, environmental science and medicine taken from the comments.

In Summary

- More than 29,000 people commented on the DGAC’s 2015 advisory report, which is more than 14 times the number of comments submitted in response to the 2010 report (n=1924).

- The unprecedented public response verifies significant public interest in understanding the nature of the comments made on the DGAC report.

- Analysis undertaken by U.S analytics firm, Quid, found that, based on a representative sample of the comments, at least 75% were in favor of the DGAC’s recommendations on sustainability and health.

- Word frequencies show that discussions related to animals and meat in the public comments are predominantly on issues surrounding sustainability. In addition, plant-based foods are far more frequently mentioned within the body of comments than animal-based foods, with “lean meat” and “red meat” only mentioned in about 5% of comments.

- Many notable scientists and organizations have commented, and spoken out supporting the DGAC’s recommendations on sustainability.
Quid Comments Analysis

Quid was engaged to review the dataset available from Health.gov.

Using a representative sample of the comments, Quid employed its “intelligence platform” to create a “comments network” based on shared language between the public comments. It then visualized the results, finding that 75% of the comments analyzed were in support of sustainability and nutrition recommendations of the Dietary Guidelines Advisory Committee.

The first step of this analysis involved calculating similarity measures between the comments based on a randomized sample of the public comments. Quid used natural language processing (NLP) to read through all the comments and identify key aspects of language (n-grams), then measured the co-occurrence of these across the sample of comments. The more of these “n-grams” two documents share, the higher their similarity score. This data was then used to visualize the relationship between the comments, with comments that share similar language clustering together.

In the visualization below, each node represents one entity or data source. In this case, every node is a comment made to Health.gov. The visualization of the network is based on a force-directed algorithm which involves an overall repulsive "force" between all nodes combined with an attractive "force" between linked documents. The strength of the repulsive force is uniform, while the strength of the attractive force is proportional to the weight of the edges between nodes (i.e. the amount of shared language linking the comments). The end result is that similar documents are pulled together and unrelated documents are pushed apart according to shared language.

Color-coded clusters in the graphic above represent different themes of the conversation most commonly found in the wider body of comments. Based on these clusters identified by Quid, the key in the figure above provides a synthesis of common words and themes representative of comments in each cluster.

Color-coded clusters in the graphic above represent different themes of the conversation most commonly found in the wider body of comments. Based on these clusters identified by Quid, the key in the figure above provides a synthesis of common words and themes representative of comments in each cluster.
Given the clustering of comments sharing similar language, it was simple to ascribe a "pro" or "con" stance to each grouping by reading a subsample of representative comments for each cluster. Quid looked at the top twenty of these clusters, which together comprised 83% of the total number of comments in the sample. As a result, they were able to determine that 16 of 20 of these clusters were in support of the nutrition and sustainability recommendations of the Dietary Guidelines Advisory Committee. These 16 clusters comprised 90% of the comments in the top 20 clusters in the sample.

Based on the analysis, at least 75% of public comments in the sample analyzed were in favor of including sustainability recommendations made by the Dietary Guidelines Advisory Committee.

Word Frequency Analysis

The full dataset of public comments made in response to the scientific report of the Dietary Guidelines Advisory Committee was downloaded from the Health.Gov website (June 11th, 2015). The entire 4.6 million-word corpus of comments (all comments combined chronologically in one document) was uploaded into the online textual analysis tool Voyant and the most frequent words occurring across the entire body of comments were identified. The top 50 words in terms of frequency are represented in the Wordle below, where the size of the word is representative of the word’s relative frequency.

Drawing on the 500 words most commonly used in the comments, Excel was used to calculate the number of comments in which certain words, chunks of text (e.g. “health and sustainability”), and combinations of words (e.g. “lean” and “meat”) occurred. The analysis focused specifically on foods, nutrients, diets and words related to sustainability. The bar graphs below illustrate the percentage of comments mentioning different words, and combinations of words.

The words “plant” and “environment” each occur in almost 80% of comments, and co-occur in a 73%. Although the words “animal” and “meat” are among the most frequent words appearing in comments, what is also clear is that the vast majority of such comments also contain either the word “environment” or a variant of the word “sustainable.” This shows that discussions around animals and meat in the public comments are predominantly in relation to issues surrounding sustainability.
Selected Quotes from Expert Comments

“It is crucial for the Dietary Guidelines to consider environmental impact of food production and consumption. Plant-based diets are better... for people's health and the environment...The current U.S. diet, high in animal-based foods, leads to worse health outcomes, as well as increased greenhouse gas emissions and land, water, and energy use.” - Prof. Meir Stampfer, Harvard School of Public Health.

“Optimal nutrition and environmental sustainability are simply two steps along the same chain from farm (or factory) to fork. As such, it is impossible to address dietary issues without considering the agricultural and environmental resources that support our food supply. In short, a healthy environment is a prerequisite for producing a healthy and sustainable food supply” - Dr. Lindsey Smith, Gillings School of Public Health, University of North Carolina, Chapel Hill.

“Incorporating sustainability into the 2015 guidelines can help produce important behavioral and policy impacts on how we feed ourselves going forward, and subsequently on the long-term food security of all people.” - Dr. Hugh Joseph, Gerald J. and Dorothy R. Friedman School of Nutrition Science and Policy, Tufts University.

“We (The Society for Nutrition Education and Behavior) commend the committee for their work on this report. The recommendations contained within it are informed by a solid scientific evidence base, address the most critical diet-related public health issues at present, and largely align with views of the Society of Nutrition Education and Behavior.” - Prof. Kendra Kattelmann, Society for Nutrition Education and Behavior.
“We (the Union of Concerned Scientists) support the Committee's careful consideration of sustainability. In the face of the obesity epidemic and the global danger of climate change, we must consider the long-term consequences of our food system, from production to consumption” - Dr. Lindsey Haynes-Maslow, Union of Concerned Scientists.

“It is the position of the Academy to encourage environmentally responsible practices that conserve natural resources, minimize the quantity of waste generated and support the ecological sustainability of the food system—the process of food production, transformation, distribution, access and consumption. The Academy’s review of the nutrition-related public policy areas and subsequent document recognizes the need for safe, sustainable and accessible food for the health of all Americans.” - Pat Babjak, CEO and Dr. Glenna McCollum, President, Academy of Nutrition and Dietetics.

End Notes

[1] Food security exists when all people now, and in the future, have access to sufficient, safe, and nutritious food to maintain a healthy and active life.

[2] The analysis was based on a randomized sample of 4,996 (17%) comments from a total dataset of 29,570, downloaded from Health.Gov.

[3] The dataset used for analysis only includes comments made after the publication of the DGAC’s report, and at the time of acquisition resulted in a dataset of 28,641 comments. This is slightly below the number of comments currently available on the HHS.gov website, which stands at 29,976 comments.

[4] Common “stop words” with no relevance to the analysis such as “and” were filtered at this step.

[5] This was performed using the COUNTIFS function. e.g. =COUNTIFS (RANGE, “*plant based*”)  

[6] These words were searched individually or jointly (e.g. “lean meat”) if multiple words. Where ”&” is present, this indicates that both words were present in the comment, but not adjacent to one another. Where “*” is present, this indicates that the word was truncated to capture all endings of the word.