

***Public Opinion on Agriculture and Food
Policies, Programs, and Management***

***An Analysis of Results from the
National Water-Energy-Food Nexus Survey***

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Agriculture and Food Policies and Management

This report presents some of the results from the 2015 National Water-Energy-Food (WEF) Nexus Survey, conducted under the auspices of the Bush School's Institute for Science, Technology and Public Policy (ISTPP). This report analyzes the responses to questions that measure a variety of attitudes about agriculture and food asked of a large nationally representative sample of U.S. adults. The questionnaire spanned a number of related topics, including peoples' concern about food availability, trust in different government agencies and levels of government, trust in other types of organizations, concerns about agricultural production, and public policy preferences.

The National Water-Energy-Food Nexus Public Survey

In 2015, ISTPP designed a national public opinion survey to assess the U.S. publics' attitudes and understandings of the physical interconnections among water, energy, and food and their recognition of the effect policies targeted to water, energy, and food exert on other nodes of the WEF nexus. GfK Custom Research, LLC administered this survey of adults 18 years and older from August 12, 2015 through August 29, 2015. The sample was drawn from GfK's web-enabled KnowledgePanel[®], a probability-based panel designed to be representative of the U.S. population. The online survey was offered in English, and the response rate of 61 percent yielded 1,463 completed surveys. In the survey, 48 questions targeted agricultural knowledge, concerns, and policy preferences.

Concern about Food Availability

To gain a general understanding of the public's general concern about food availability, the survey asked respondents:

On a scale from 0 to 10 with 0 indicating *Not at all Concerned* to 10 indicating *Extremely Concerned*, how concerned are you about each of the following issues: Food Availability?

The frequency distribution of survey responses is found in Figure 1. The results are skewed to the right indicating that food availability is more of a concern than non-concern for the general public. The national level of concern about food availability has a mean of 5.7, with a standard deviation of 3.0. These results suggest that people exhibit a substantial amount of concern about food availability, with

nearly 15 percent of respondents indicating they are extremely concerned, rating their level of concern as a “10”.

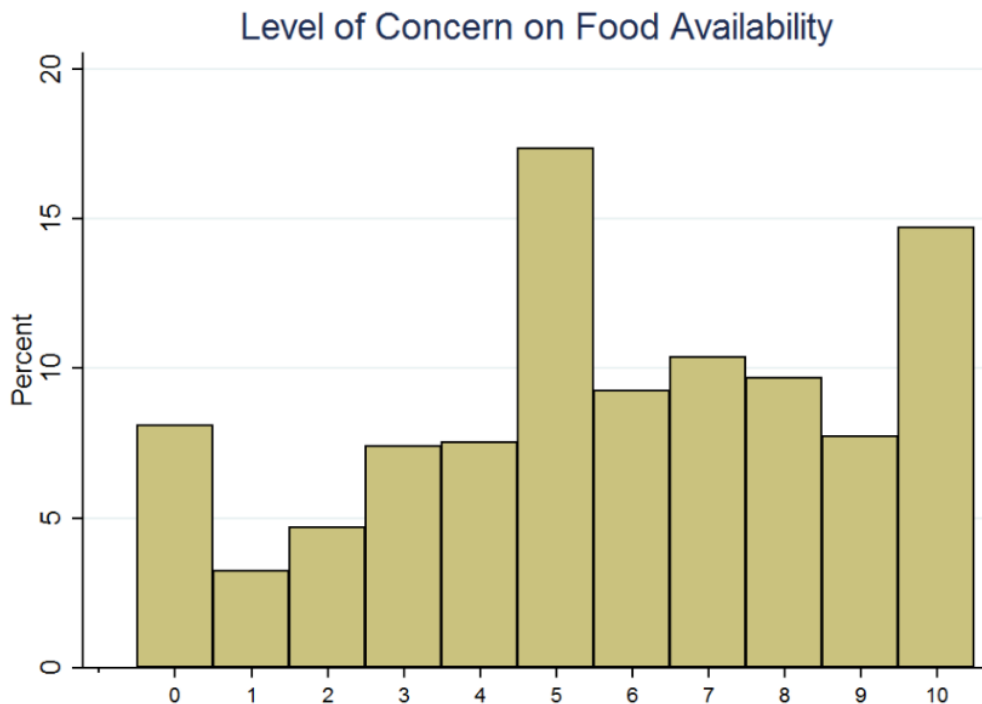


Figure 1

Trust in the United States Department of Agriculture

One of the challenges associated with enacting policies in the United States is that the public tends to be substantially distrustful of government agencies and other social and economic institutions. The nexus survey asked respondents to reveal their levels of trust or distrust for the institutions related to food and agriculture programs and policies. To assess the level of trust the public has in the federal regulatory agency with primary oversight for agriculture, the survey asked:

On a scale from 0 to 10 with 0 indicating *Not at all Trustworthy* to 10 indicating *Extremely Trustworthy*, how trustworthy are the following organizations: U.S. Department of Agriculture

The frequency distribution in Figure 2 shows these results. The results are skewed slightly to the right, indicating that the public generally trusts the U.S. Department of Agriculture. The national level of trust in the U.S. Department of Agriculture has a mean of 5.1 with a standard deviation of 2.4. Although the results are far more concentrated around the mean than those on food availability are, it is clear that more people seem to trust this federal agency than distrust it.

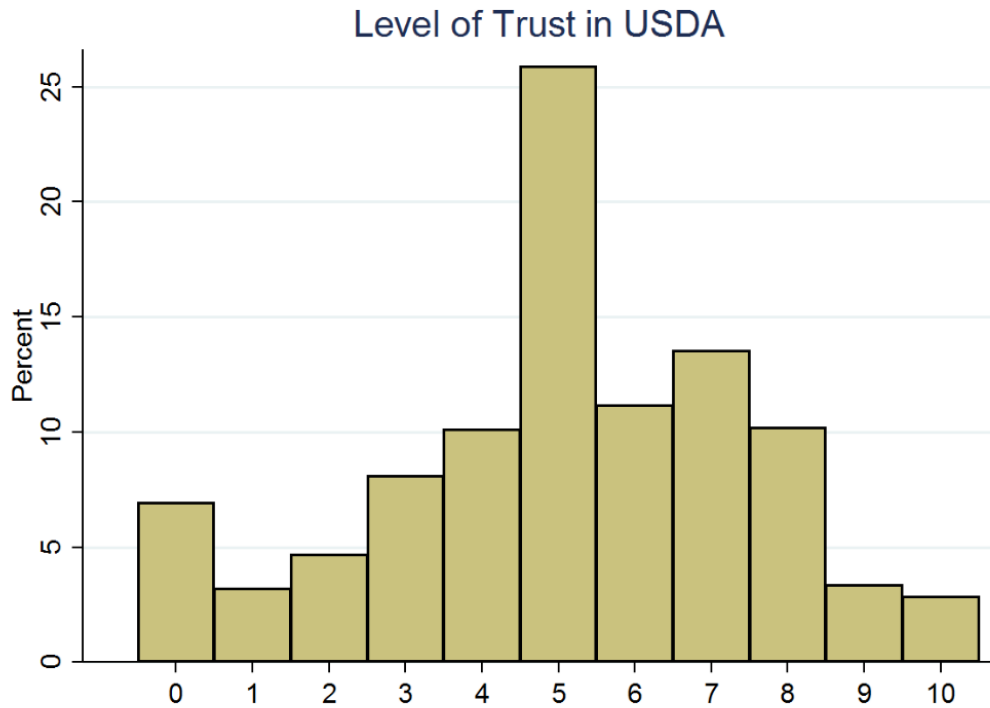


Figure 2

Who Should Manage Agricultural Resources?

A battery of six questions was used to gauge which institution or stakeholder group the public thinks should have a lead role in managing agricultural resources. The survey asked:

Indicate what you think the appropriate role, or level of involvement, should be for the following types of organizations in managing agricultural resources:

- A. Federal government / U.S. Department of Agriculture¹
- B. State Government
- C. Local Government
- D. Private industry
- E. Farmers
- F. Nonprofit organizations

Respondents rated the organizations from 1 to 4 where 1 indicates "No Role," 2 indicates a "Minor Role," 3 indicates a "Major Role," and 4 indicates a "Lead Role".

¹ For this and all of the other questions focusing on government agencies and other types of organizations and groups, a split-sample experiment was implemented so that half of the sample was asked about "the federal government" and the other half was asked about "the U.S. Department of Agriculture." The results reported here show the aggregate response for these two subsamples combined.

The national mean response for the role the public thinks each institution or stakeholder group should play in managing agricultural resources is illustrated in Figure 3. Organizations with a mean of 2.5 or greater are institutions that at least half of the respondents think should play a major or lead role in managing agricultural resources. The three organizations that meet this threshold are farmers, federal government/USDA, and state government. The institutions or types of groups the public thinks, on average, should play a minor role or no role at all are local government, private industry, and nonprofit organizations.

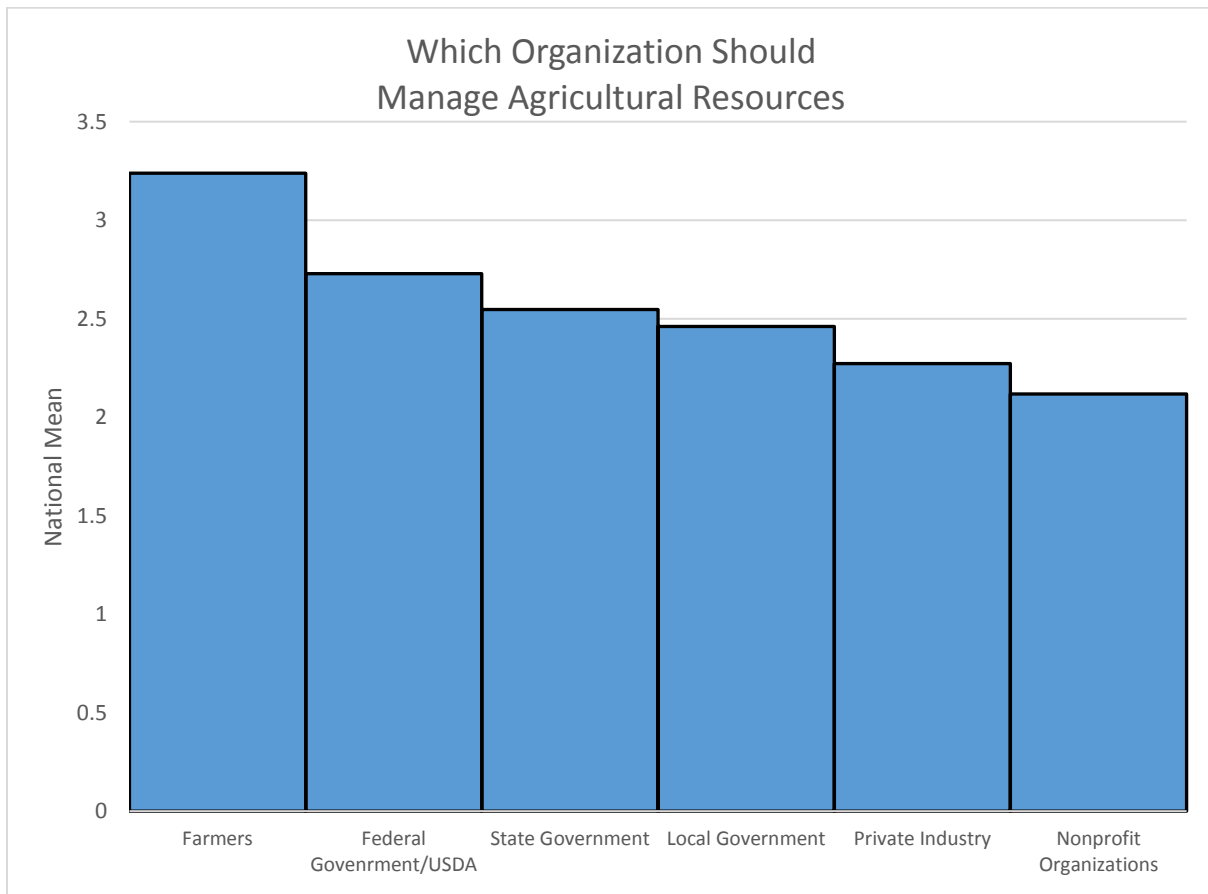


Figure 3

Who Should Fund Agricultural Programs?

An additional battery of six questions was asked to discover which institutions or stakeholder groups respondents think should fund agricultural programs. The survey asked:

Indicate what you think the appropriate role, or level of involvement, should be for the following types of organizations in funding agricultural programs.

- A. Federal Government/US Department of Agriculture
- B. State Government
- C. Local Government
- D. Private Industry
- E. Farmers
- F. Nonprofit Organizations

Respondents rated the organizations from 1 to 4 where 1 indicates “No Role,” 2 indicates a “Minor Role,” 3 indicates a “Major Role,” and 4 indicates a “Lead Role”.

Figure 4 shows the mean level of involvement respondents think each of these institutions or groups should have in funding agricultural programs. The findings are similar to the results for managing agricultural resources with the federal government/USDA, farmers, and state government being rated by respondents as appropriately playing a lead or major role.

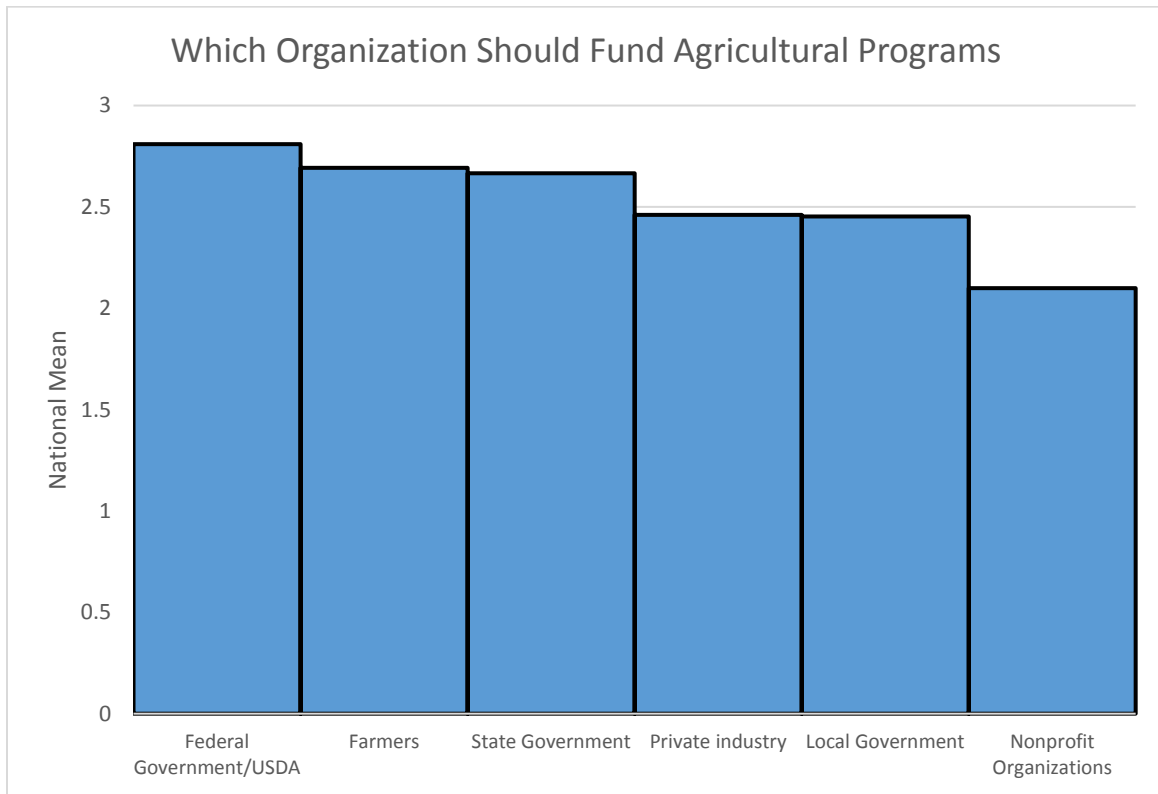


Figure 4

Clearly, the general public sees a strong role for both the federal government and for farmers. These results suggest two ideas that are not necessarily expected. First, a high level of distrust in the federal government generally and in specific federal agencies is not borne out in these data. Second, the public

accepts a strong role for farmers not just in managing agricultural resources but also in funding agricultural programs.

Concerns Related to Agriculture

To understand general public’s concern about various agricultural issues, the survey asked respondents a series of questions regarding their level of concern about agricultural production. The survey asked:

How concerned are you about each of the following issues related to agricultural production?

Respondents rated their level of concern from 1 to 5 where 1 indicates “Not Concerned,” 2 indicates “Somewhat Concerned,” 3 indicates “Concerned,” 4 indicates “Very Concerned,” and 5 indicates “Extremely Concerned”.

Table 1 contains the results for concerns related to agricultural production that respondents found most and least concerning. Respondents appear to be most concerned about issues related to food quality and food waste and least concerned about agricultural production inputs (e.g. water and energy) and plant seed variety.

Table 1. Concerns Related to Agricultural Production

	National Mean
Top 3 Concerns	
The amount of herbicides, pesticides, and fertilizers used in food production	3.59
The nutritional quality of the food produced	3.46
The amount of food wasted by grocery stores, restaurants, and cafeterias	3.31
Bottom 3 Concerns	
The diversity of plant seed varieties to preserve genetic material	2.84
The amount of water used to produce the food	2.80
The amount of energy used to produce the food	2.75

Policies Related to Agriculture

The survey also included a number of questions that focus on various public policies and programs that would affect agricultural production and resources. Respondents indicated their level of support or opposition for each of 12 policy options to manage agricultural resources better. The policy options spanned a range of approaches that can be sorted into three primary approaches: policies that appear to be mandatory or regulatory in nature, policies that appear to be voluntary or that seek to alter

behavior through outreach, and policies aimed at altering behavior through incentives. The survey asked:

A number of policy options have been proposed to manage agricultural resources. Please indicate your level of opposition or support for each of the following options.

Respondents rated their level of concern from 1 to 5 where 1 indicates “Strongly Oppose,” 2 indicates “Oppose,” 3 indicates “Neutral,” 4 indicates “Support,” and 5 indicates “Strongly Support”.

The policies that appear to be mandatory or regulatory include:

- A. Develop a comprehensive national plan for preserving our agricultural lands
- B. Require that farmers use soil conservation measures
- C. Limit the amount of land that can be used to grow crops for biofuels rather than food
- D. Charge significant impact fees to housing developers to help prevent the loss of agricultural land
- E. Charge higher licensing fees to restaurants that do not follow an approved plan to reduce food waste

The only seemingly voluntary policy is:

- A. Conduct campaigns to encourage buying locally grown foods

The policies that appear to be incentive-based include:

- A. Provide space free of charge for community gardens
- B. Give tax incentives for farmers to reduce the use of fertilizers and pesticides
- C. Give tax incentives for farmers to use more energy efficient methods of growing and transporting food
- D. Provide space free of charge for local farmers’ markets

Using these questions, three separate indexes were created to represent the average support for each policy approach category: incentives-based, voluntary, and mandatory. Only questions that were answered were counted in the index. In other words, for respondents who answered only 3 of the 5 questions in the mandatory policy category, their assigned score would be the average score of the 3 questions they answered. Average index scores for the national sample in each policy approach category are reported in Table 2. As might be expected, the results indicate that respondents viewed incentives-based policies more favorably and mandatory policies less favorably, with the voluntary policy viewed almost as favorably as the incentive-based policies. Although the mandatory or regulatory policies seem to be the least popular, the average level of support is still above the “neutral” level of 3.0. This suggests that even the mandatory programs are not greatly unpopular.

Table 2. Support for Types of Agricultural Policies

	National Mean
Support for Incentives-Based Agricultural Policies	3.69
Support for Voluntary Agricultural Policies	3.66
Support for Mandatory Agricultural Policies	3.43

Concerns Related to Agriculture and Public Policy: Is there a Connection?

The final question addressed in this analysis is whether concerns about agriculture link to support for different types of policies. Table 3 presents the bivariate correlations between respondents' levels of concern for six specific aspects of agricultural production and food consumption and the three policy approaches. All of the correlations are highly statistically significant ($p < .001$). The results begin to paint an image regarding the values people hold that contribute to their support for different approaches to agricultural policies. Respondents who are concerned about the amount of water or energy used in food production are highly likely to support mandatory agricultural regulations. Respondents who are concerned about the amount of herbicides, pesticides, and fertilizers used in food production; the nutritional quality of food produced; and the amount of food wasted by grocery stores, restaurants, and cafeterias are highly likely to support incentives-based policies.

Table 3. Correlations between Agricultural Concerns and Support for Agricultural Policies by Type

Agricultural Concerns	Support for Incentives-Based Agricultural Policies	Support for Voluntary Agricultural Policies	Support for Mandatory Agricultural Policies
The amount of herbicides, pesticides, and fertilizers used in food production	0.47 (n = 1406)	0.37 (n = 1402)	0.42 (n = 1406)
The nutritional quality of the food produced	0.42 (n = 1404)	0.38 (n = 1399)	0.39 (n = 1404)
The amount of food wasted by grocery stores, restaurants, and cafeterias	0.46 (n = 1406)	0.38 (n = 1401)	0.45 (n = 1406)
The diversity of plant seed varieties to preserve genetic material	0.35 (n = 1397)	0.34 (n = 1394)	0.38 (n = 1397)

The amount of water used to produce the food	0.30 (n = 1404)	0.27 (n = 1399)	0.41 (n = 1404)
The amount of energy used to produce the food	0.34 (n = 1408)	0.31 (n = 1403)	0.43 (n = 1408)

Acknowledgment

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The statements, findings, conclusions, and recommendations are solely those of the author.