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Final Report

CARES Program

With FFBF and UF/IFAS Extension

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Dr. Alexa Lamm



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Executive Summary

Florida Farm Bureau Federation & the Mosaic Company/CARES Program

June 2014

Introduction

The County Alliance for Responsible Environmental Stewardship (CARES) Program seeks to connect the public to farms while enhancing people's awareness of farming and environmental management on farms. This project was funded in partnership with Florida Farm Bureau Federation and UF/IFAS Extension to expand the CARES Program and UF/IFAS environmental stewardship programming in seven southwest Florida counties: Charlotte, DeSoto, Hardee, Hillsborough, Manatee, Polk, and Sarasota. An online public opinion survey was conducted in the seven targeted counties in order to understand residents' current knowledge of the CARES Program, attitudes and perceptions of environmental stewardship and best management practices, as well as preferred communication channels among the respondents.

Findings

The key findings of the survey are as follows:

- 58% of respondents reported they prioritize the purchase of Florida grown food. Among these respondents, vegetables and fruits were reported as the most frequently purchased food categories.
- The respondents believed food produced in Florida is fresh, safe, wholesome, tasty, trustworthy, available, high quality, natural, nutritious, convenient, clean, affordable, produced from small farms, and treated with pesticides.
- 53% of respondents agreed or strongly agreed that Florida farmers practice proper pest management.
- Whereas, 80% of respondents perceived water management very or extremely important.
- 75% of respondents agreed or strongly agreed that they believe Florida farmers practicing BMPs care about the environment, and 64% of respondents agreed or strongly agreed that they trust farmers practicing BMPs more than those that do not.
- 83% of respondents agreed or strongly agreed that nutrients/fertilizers are important when growing crops. Whereas, 72% of respondents disagreed or strongly disagreed that the way nutrients/fertilizers are applied does not matter.
- 72% of respondents indicated that it is very or extremely important for Florida farmers to practice 4R nutrient stewardship and 74% of respondents agreed or strongly agreed about their trust in farmers who practice 4R nutrient stewardship.
- 90% of respondents agreed or strongly agreed that environmental stewardship is important, but 49% of the respondents indicated they agreed or strongly agreed that farmers in Florida practice environmental stewardship.
- 14% of respondents indicated they were aware of one or more environmental protection practices used by farmers in Florida.
- 18% of respondents indicated they have been impacted by an environmental issue associated with farming in Florida.
- Only 3% of respondents indicated they had seen the "This Farm CARES" logo prior to taking the survey, and 2% of respondents indicated they had heard about the CARES Program prior to taking the survey.
- 90% of respondents agreed or strongly agreed that farmers practicing environmental stewardship should be recognized for their effort, while 72% of respondents agreed or strongly agreed that they trusted farms who display a "This farm CARES" sign.

- Respondents used television most frequently to get farming information (55%), followed by newspaper (54%), and Internet (41%).
- 71% of respondents indicated they attend farmers markets, followed by local festivals/fairs (57%).

Recommendations

For FFBF

- When communicating priorities or issues that apply directly to farming, Farm Bureau should identify the impact of the priority or issue on the economy, when possible, to communicate to a common value recognized by Florida residents.
- FFBF should take advantage of the many respondents who feel farming is important to the environment and those who are unsure if farming creates environmental concerns to capitalize on the positive perceptions and unknown perceptions of the impact of farming on the environment.
- FFBF should encourage farmers to discuss with consumers the BMPs and 4R nutrient stewardship and other environmental stewardship steps they incorporate into their production practices through communication channels of farmers market, roadside stand, or other community event. Hosting a professional development session for farmers to become comfortable talking to consumers about protecting the environment may be beneficial.
- Highlighting BMPs and 4R nutrient stewardship practiced by farmers in FFBF displays, newsletters, and community events could help to increase Florida residents' awareness of and confidence that farmers are taking steps to be environmentally responsible.
- FFBF should partner with organizations such as UF/IFAS Extension and The Mosaic Company to develop a collaborative partnership aimed at increasing Florida residents' knowledge and awareness of nutrient/fertilizer use and environmental impacts.
- FFBF should identify where the largest gaps in knowledge are and position communications, programming, and community events to narrow these gaps in knowledge, such as the benefit of farming to habitat for endangered species and the return of water to the ground water source.
- FFBF should highlight current regulations, gaps in regulation, and unnecessary regulations in their communications with their members and Florida residents.
- FFBF should capitalize the value residents place on the idea of the CARES program and communicate these shared values when promoting the program via television and newspaper media coverage both locally and regionally.
- FFBF should consider having a presence at farmers markets and local festivals/fairs to promote the CARES program and also encourage producers who are part of CARES to display the CARES sign when selling at a farmers market or other appropriate local venue.

For Extension

- The Extension faculty should identify and emphasize the impact of the BMP on the economy to provide farmers with a way to communicate the value of their work in a language Florida residents can understand when developing programs for farmers.
- Extension faculty should consider integrating information into their programs for farmers that provide them an avenue and discussion points to use when working with the public. These discussion points should include ways

they can communicate the benefits farming can have on the environment and the good environmental practices of farmers.

- Extension faculty should develop educational programs that teach farmers how to engage in these practices and also consider deeper partnerships with FFBF to assist in educational outreach and training in this area.
- Extension should work collaboratively with FFBF, using the University of Florida Extension name, to market the impacts BMPs can have on the environment prior than marketing the CARES program through local efforts including press releases, a column in the local paper and/or securing a segment on the local television station.

Background

Florida has unique environments and natural resources. The prosperous agricultural industry in Florida plays an important role in Florida's economy. In order to sustain the agriculture in Florida, environmental stewardship is critical. The CARES Program was launched by the Florida Farm Bureau Federation in Suwannee River Basin in 2001. The mission of the CARES Program is "to promote environmentally sound farming practices while educating the public on agriculture's role in protecting Florida's natural resources" (This Farm CARES, 2014, para. 1). Because it is an award and recognition program, farmers and ranchers who practice environmental stewardship voluntarily are recognized and awarded with the "This Farm CARES" sign. The sign can provide potential positive impacts to the neighborhood community by promoting the importance of agriculture and the environment.

The Florida Farm Bureau Federation and UF/IFAS Extension funded this project to examine consumers' perceptions of environmental stewardship and the CARES program in Southwest Florida. An online public opinion survey was designed to identify residents' knowledge, perceptions, and attitudes toward environmental stewardship and the CARES Program and potential public communication channels for further promotion of the program.

Methods

In March 2014, an online survey was distributed to residents in seven Florida counties: Charlotte, DeSoto, Hardee, Hillsborough, Manatee, Polk, and Sarasota in collaboration with Qualtrics, a survey software company. Non-probability sampling was used to recruit respondents from the seven target counties. An equal number of respondents were targeted from each county. However, Qualtrics faced difficulty in reaching respondents from Hardee and DeSoto counties. The final respondent composition according to county was: 20.4 % of respondents respectively from Hillsborough, Polk, and Sarasota Counties, 20.0% from Manatee County, 17.1% from Charlotte County, 1.0% from Hardee County, and 0.6% from DeSoto County (Table 1). A total of 700 respondents participated in the survey. All respondents were 18 or older.

The survey instrument was developed by Pei-wen Huang, Dr. Joy Rumble, and Dr. Alexa Lamm and reviewed by a panel of experts specializing in environmental stewardship, the programs of interest, and survey design methodology prior to it being delivered to the respondents. The survey included questions about respondents' experience in agriculture, the importance of farmers to the society, purchase behavior and attitudes toward Florida grown food, perceptions and attitudes toward BMPs, 4R nutrient stewardship, and environmental stewardship, knowledge and perceptions of the CARES Program, communication channels, and demographics. Question types included multiple choice, ranking, five-point Likert-type scale, and five-point semantic differential scale. Data were analyzed using SPSS 22.0 for descriptive statistics.

Results

Description of Respondents

The demographic composition of the 700 respondents included 41% males and 59% females. Within the respondents, 4% considered themselves as Hispanic, and the majority of respondents were white (94%), followed by African American (3%). The largest percentage of respondents reported being in the 60-69 year-old category (27%), followed by 50-59 year-old (19%), and 70-79 year-old (17%). For area of residence, 45% of the respondents lived in urban or suburban area outside of city limits, 41% lived in subdivision in a town or city, 8% lived in rural area, not a farm, 4% lived in downtown

area in a city or town, and 1% lived in a farm in a rural area. A four-year college degree was reported by 30% of respondents, followed by graduate or professional degree (21%), and some college no degree (19%). Of the respondents, 25% had an annual household income more than \$100,000, followed by less than \$30,000 (13%), and \$50,000-\$59,999 (12%). Moderate political beliefs were reported by 43% of the respondents, followed by conservative (27%), and liberal (19%) (Table 1).

Table 1. Demographic Characteristics of the Respondents

Demographic Category	Frequency	Percentage (%)
Gender		
Female	412	58.9
Male	288	41.1
Race and Ethnicity		
White	657	93.9
Hispanic	28	4.0
African American	19	2.7
Native American	7	1.0
Asian	6	0.9
Other	11	1.6
Age		
19 and younger	4	0.5
20-29 years	44	6.3
30-39 years	86	12.3
40-49 years	105	15.0
50-59 years	135	19.3
60-69 years	189	27.0
70-79 years	119	17.1
80 and older	17	2.4
County of Residence		
Charlotte	120	17.1
DeSoto	4	0.6
Hardee	7	1.0
Hillsborough	143	20.4
Manatee	140	20.0
Polk	143	20.4
Sarasota	143	20.4
Area of Residence		
A farm in a rural area	6	0.9
Rural area, not a farm	58	8.3
Urban or suburban area outside of city limits	318	45.4
Subdivision in a town or city	287	41.0
Downtown area in a city or town	31	4.4
Education Level		
Less than 12 th grade	5	0.7
High school graduate	87	12.4
Some college no degree	136	19.4
2-year college degree	111	15.9
4-year college degree	211	30.1

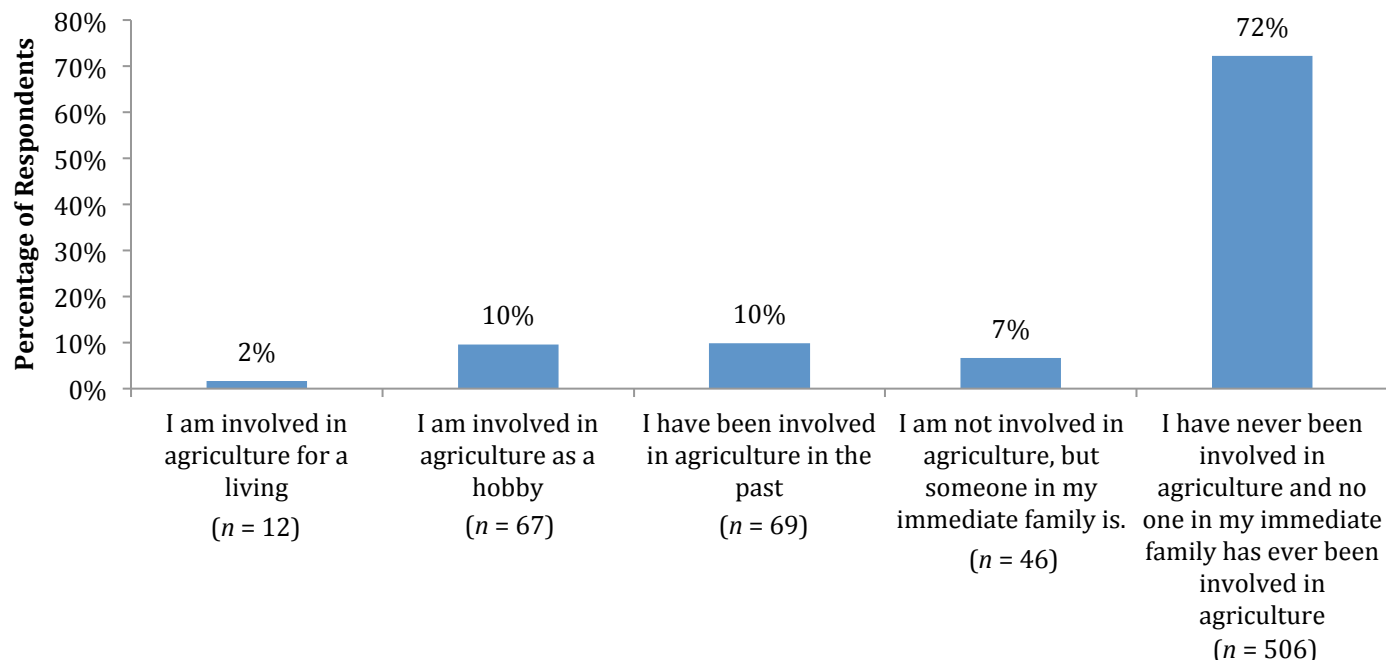
Graduate or professional degree	150	21.4
Annual Household Income		
Less than \$30,000	91	13.0
\$30,000- \$39,999	71	10.1
\$40,000- \$49,999	82	11.7
\$50,000- \$59,999	84	12.0
\$60,000- \$69,999	54	7.7
\$70,000- \$79,999	64	9.1
\$80,000- \$89,999	30	4.3
\$90,000- \$99,999	52	7.4
\$100,000 or more	172	24.6
Political Beliefs		
Very liberal	33	4.7
Liberal	136	19.4
Moderate	302	43.1
Conservative	189	27.0
Very conservative	40	5.7

General Agriculture

Experience in Agriculture

Respondents were asked to indicate their level of involvement with agriculture. The majority of respondents (72%) indicated they have never been involved with agriculture and no one in their immediate family has ever been involved with agriculture, followed by 10% of the respondents who have been involved in agriculture in the past, and 10% of the respondents were involved in agriculture as a hobby (Figure 1).

Figure 1. Experience of agriculture involvement



Perception of importance of professions

Respondents were asked to rank seven listed professions by their perceived level of importance to society. Being a doctor was perceived as the most important profession to society followed by educator, police officer, farmer, construction worker, lawyer, and finally a banker (Table 2).

Table 2. Importance of professions to society

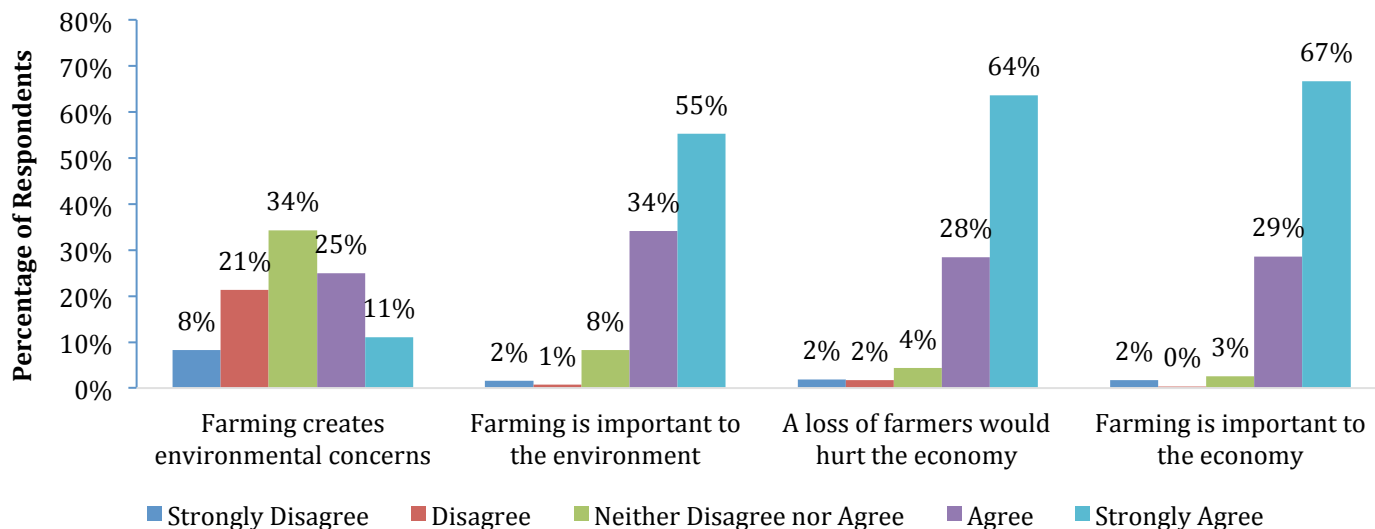
Professions	M	SD
Doctor	5.78	1.14
Educator	5.43	1.27
Police officer	5.34	1.45
Farmer	4.68	1.39
Construction worker	2.42	1.26
Lawyer	2.28	1.43
Banker	2.07	0.89

Note. Scale: Scores could range from 1 to 7, with a score closer to 7 signifying a higher level of importance

Perception of Farming

Respondents were asked their level of agreement or disagreement about their feelings toward farming in Florida. Within the respondents, 96% agreed or strongly agreed that farming is important to the economy, 92% agreed or strongly agreed that a loss of farmers would hurt the economy, 89% agreed or strongly agreed that farming is important to the environment, and 36% agreed or strongly agreed that farming creates environmental concerns (Figure 2).

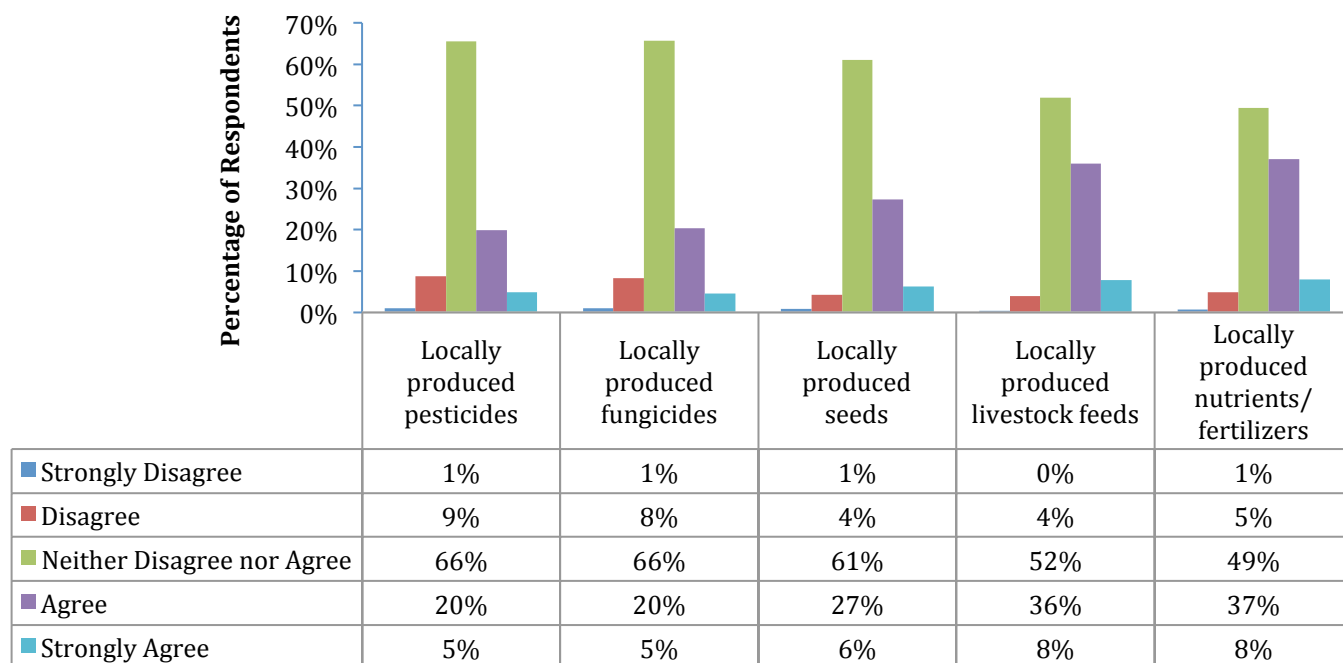
Figure 2. Perception of farming



Perception of Farmers’ Purchase

Respondents were asked their level of agreement or disagreement with statements associated with farmers’ purchasing behaviors related to locally produced resources needed for production. Mostly, the majority of the respondents were undecided regarding their agreement or disagreement of Florida farmers purchasing locally produced pesticides (66%), fungicides (66%), seeds (61%), livestock feeds (52%), and nutrients/fertilizers (49%). However, within the respondents, 45% agreed or strongly agreed that farmers in Florida purchase locally produced nutrients/fertilizers, 44% agreed or strongly agreed that farmers in Florida purchase locally produced livestock feeds, 33% agreed or strongly agreed that farmers in Florida purchase locally produced seeds, 25% agreed or strongly agreed that farmers in Florida purchase locally produced fungicides, and 25% agreed or strongly agreed that farmers in Florida purchase locally produced pesticides (Figure 3).

Figure 3. Perception of farmers' purchase



Respondents' Purchasing Behavior and Attitudes toward Florida Grown Food

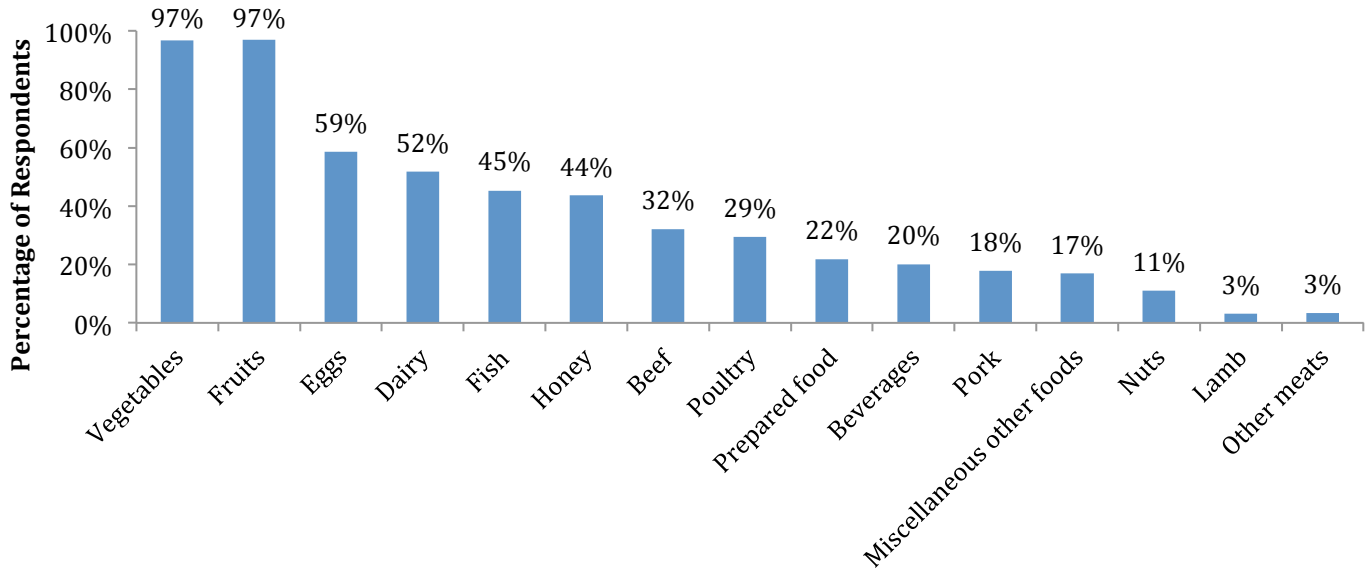
Prioritization of Purchasing Florida Grown Food

Respondents were asked whether they prioritize purchasing Florida grown food for themselves or their family. The majority of respondents (58%) reported prioritizing purchasing Florida grown food.

Categories of Florida Grown Food Purchases

Respondents who indicated they prioritized purchasing Florida grown food ($n = 408$) were also asked the type of Florida grown food they typically purchase. Vegetables and fruits were the types of food most typically purchased by the respondents (97%) (Figure 4).

Figure 4. Florida grown food categories



Note. This was a multiple choice question requesting respondents to check all that apply.

Attitudes toward Florida Grown Food

Respondents were asked what their attitudes were about the phrase: "I believe food produced in Florida is..." by marking a circle between a set of adjectives that best aligned with their attitude. The respondents held relatively high attitudes toward food grown in Florida and indicated they believed Florida grown food was fresh, safe, wholesome, tasty, trustworthy, available, high quality, natural, nutritious, convenient, clean, and affordable (Table 3). Respondents were neutral in regards to whether or not Florida grown food was produced at small farms and treated with pesticides (Table 3).

Table 3. Attitude level of Florida Grown Food

Attitude	M	SD
Not fresh: Fresh	4.46	0.81
Un-safe: Safe	4.33	0.78
Not wholesome: Wholesome	4.32	0.80
Not tasty: Tasty	4.28	0.87
Not trustworthy: Trustworthy	4.28	0.80
Unavailable: Available	4.25	0.89
Low quality: High quality	4.20	0.81
Un-natural: Natural	4.17	0.86
Not nutritious: Nutritious	4.15	0.97
Inconvenient: Convenient	4.14	0.90
Dirty: Clean	4.12	0.91
Not affordable: Affordable	3.96	0.95
Produced from small farms: Produced from large farms	2.91	0.98
Treated with pesticides: Not treated with pesticides	2.83	0.83

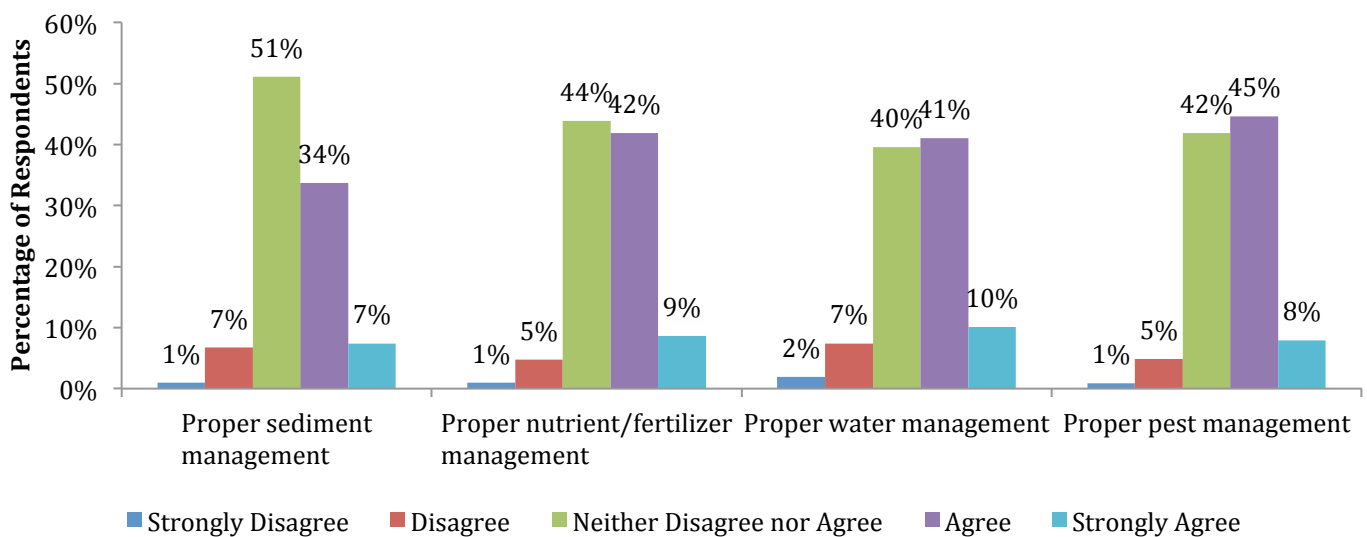
Note. Scale: 1-5; 1 = Less favorable semantic adjective, 5 = More favorable semantic adjective.

Perceptions and Attitudes toward BMPs

Perceptions of BMPs used by Florida Farmers

The description of BMPs was provided prior to the survey questions related to BMPs. Respondents then were asked their level of agreement or disagreement about the BMPs farmers in Florida practice. Within the respondents, 53% agreed or strongly agreed that Florida farmers practice proper pest management, 51% agreed or strongly agreed that Florida farmers practice proper water management, and 51% agreed or strongly agreed that Florida farmers practice proper nutrient/fertilizer management. However, 51% of the respondents were undecided if they agreed or disagreed that Florida farmers practice proper sediment management (Figure 5).

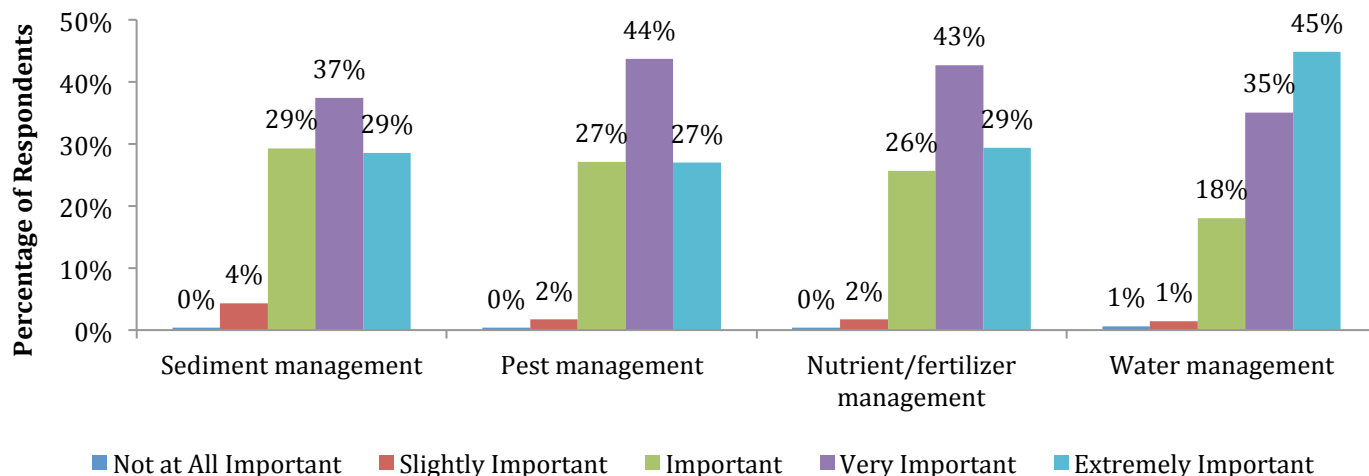
Figure 5. Level of agreement or disagreement with BMPs used by Florida farmers



Importance of Florida Farmers' Engagement in BMPs

Respondents were asked the level of importance they associated with Florida farmers' engagement in the listed BMPs. The majority of respondents (80%) perceived water management very or extremely important, 72% perceived nutrient/fertilizer management very or extremely important, 71% perceived pest management very or extremely important, and 66% perceived sediment management very or extremely important (Figure 6).

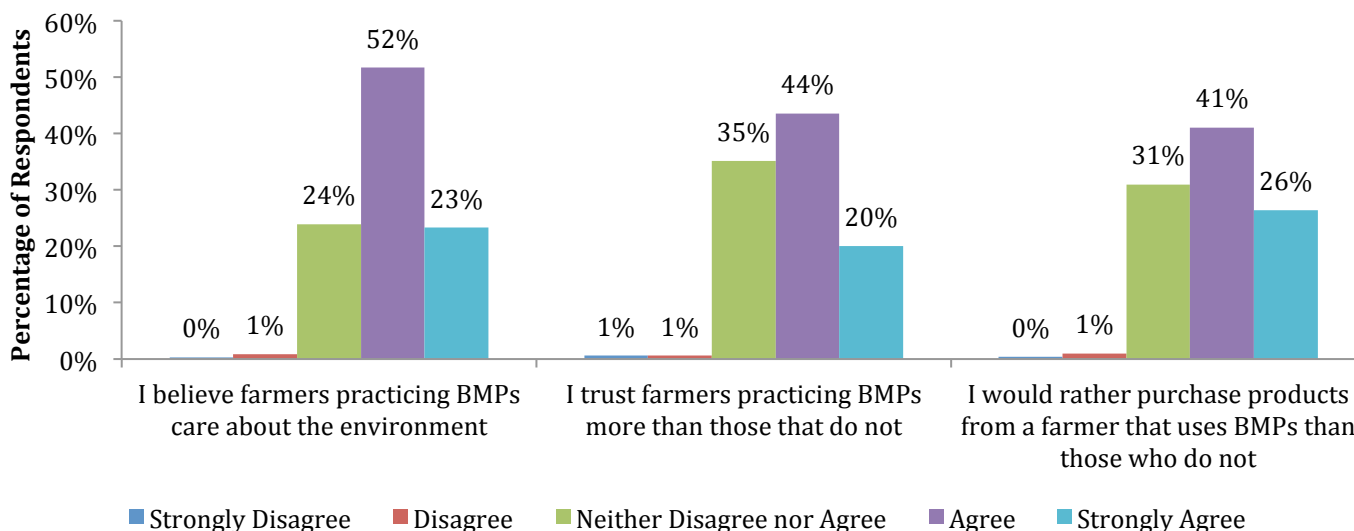
Figure 6. Importance level of Florida farmers' engagement in BMPs



Attitudes toward Florida Farmers' Engagement in BMPs

Respondents were asked their level of agreement or disagreement about Florida farmers' perceived level of engagement in BMPs. Within the respondents, 75% agreed or strongly agreed with the statement: "I believe Florida farmers practicing BMPs care about the environment", 67% agreed or strongly agreed with the statement: "I would rather purchase products from a farmer that uses BMPs than those who do not", and 64% agreed or strongly agreed with the statement: "I trust farmers practicing BMPs more than those that do not" (Figure 7).

Figure 7. Florida farmers' perceived level of engagement in BMPs

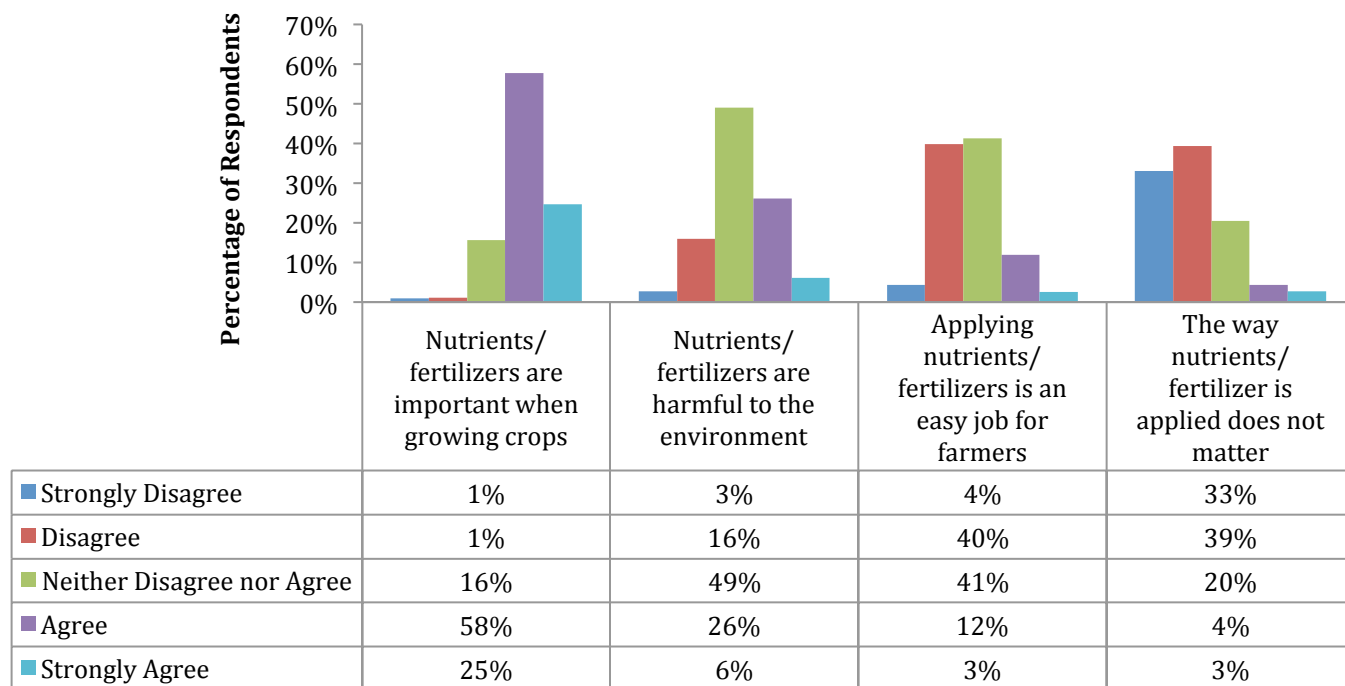


Attitudes toward BMPs

Respondents were asked their level of agreement or disagreement about their attitudes toward BMPs. The majority of respondents (83%) agreed or strongly agreed that nutrients/fertilizers are important when growing crops. Almost half of the respondents (49%) were undecided if they agreed or disagreed that nutrients/fertilizers are harmful to the environment. However, 44% of respondents disagreed or strongly disagreed that applying nutrients/fertilizers is an easy

job for farmers, and 72% of respondents disagreed or strongly disagreed that the way nutrients/fertilizers is applied does not matter (Figure 8).

Figure 8. Attitudes towards BMPs

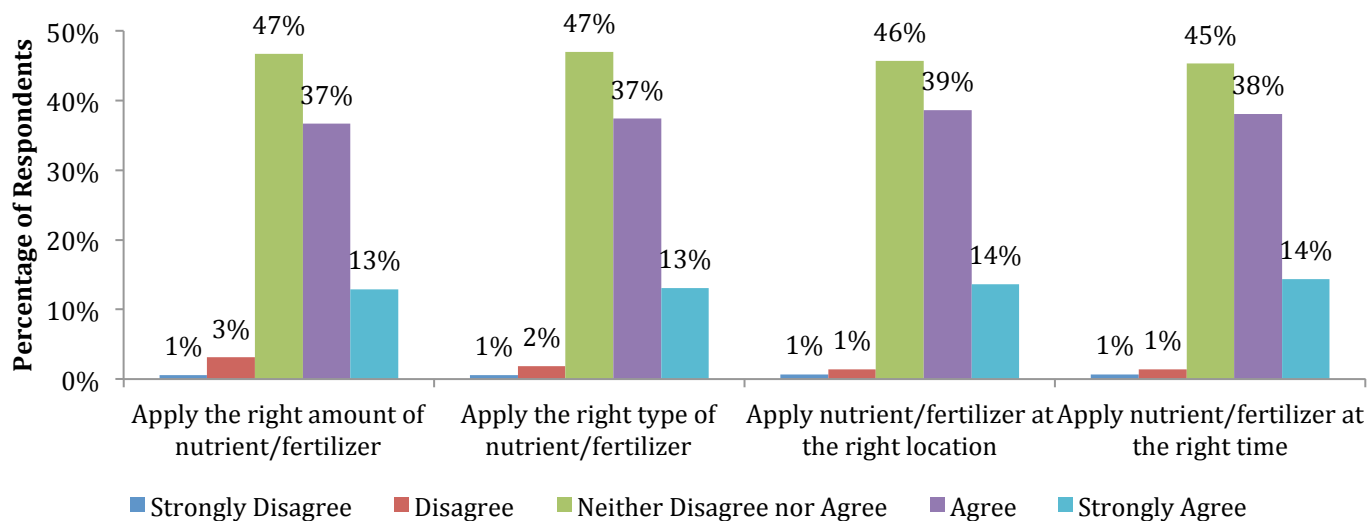


Perceptions and Attitudes toward 4R Nutrient Stewardship

Perceptions of Florida Farmers Applying 4R Nutrient Stewardship

The description of 4R nutrient stewardship was provided prior to the survey questions related to 4R nutrient stewardship. Respondents then were asked their level of agreement or disagreement about Florida farmers applying 4R nutrient stewardship. The majority of respondents (53%) agreed or strongly agreed Florida farmers apply nutrient/fertilizer at the right location, 52% of respondents agreed or strongly agreed Florida farmers apply nutrient/fertilizer at the right time, 50% of respondents agreed or strongly agreed Florida farmers apply the right type of nutrient/fertilizer, and 50% of respondents agreed or strongly agreed Florida farmers apply the right amount of nutrient/fertilizer (Figure 9).

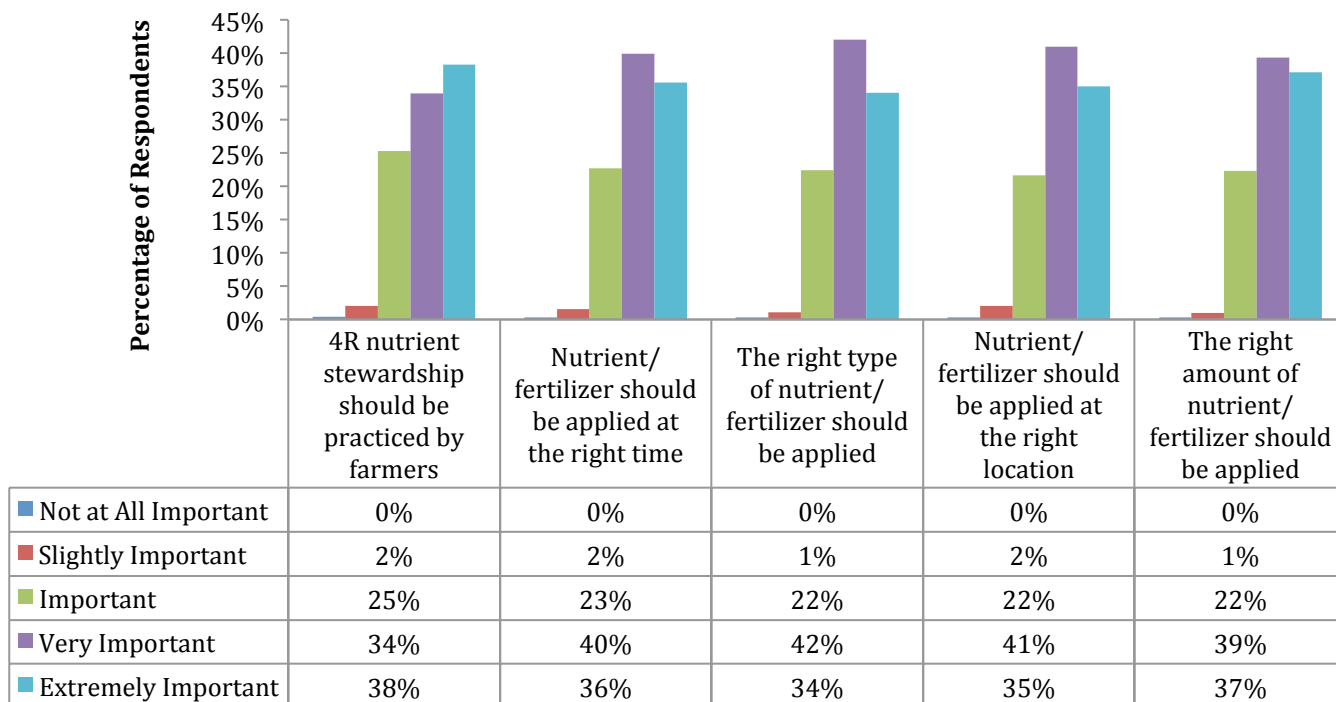
Figure 9. Perceptions of Florida farmers applying 4R nutrient stewardship



Importance of 4R Nutrient Stewardship to Florida Farmers

Respondents were asked the level of importance they associate with Florida farmers’ engagement in 4R nutrient stewardship. Within the respondents, 76% perceived it as very or extremely important for Florida farmers to apply nutrient/fertilizer with the right amount, at the right location, with the right type, and at the right time (Figure 10).

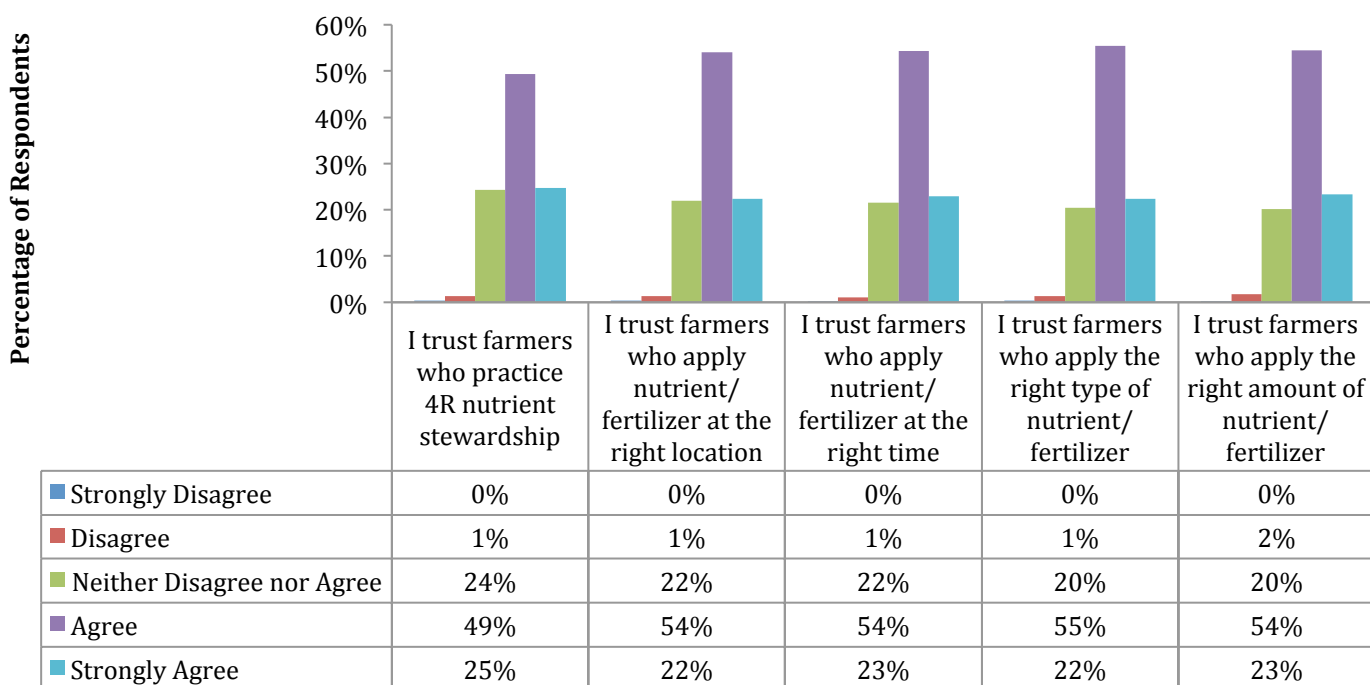
Figure 10. Perceived Importance of Florida farmers’ engagement in 4R nutrient stewardship



Trust of Florida Farmers Applying 4R Nutrient Stewardship

Respondents were asked their level of agreement or disagreement about their perceived trust of Florida farmers who apply 4R nutrient stewardship. Majority of respondents (77%) reported they agreed or strongly agreed they trust farmers who apply the right amount of nutrient/fertilizer, the right type of nutrient/fertilizer, and who apply nutrient/fertilizer at the right time, respectively, followed by 76% of respondents that reported they agreed or strongly agreed they trust farmers who apply nutrient/fertilizer at the right location, and 74% of respondents who agreed or strongly agreed that they trust farmers who practice 4R nutrient stewardship (Figure 11).

Figure 11. Perceived trust Florida farmers apply 4R nutrient stewardship

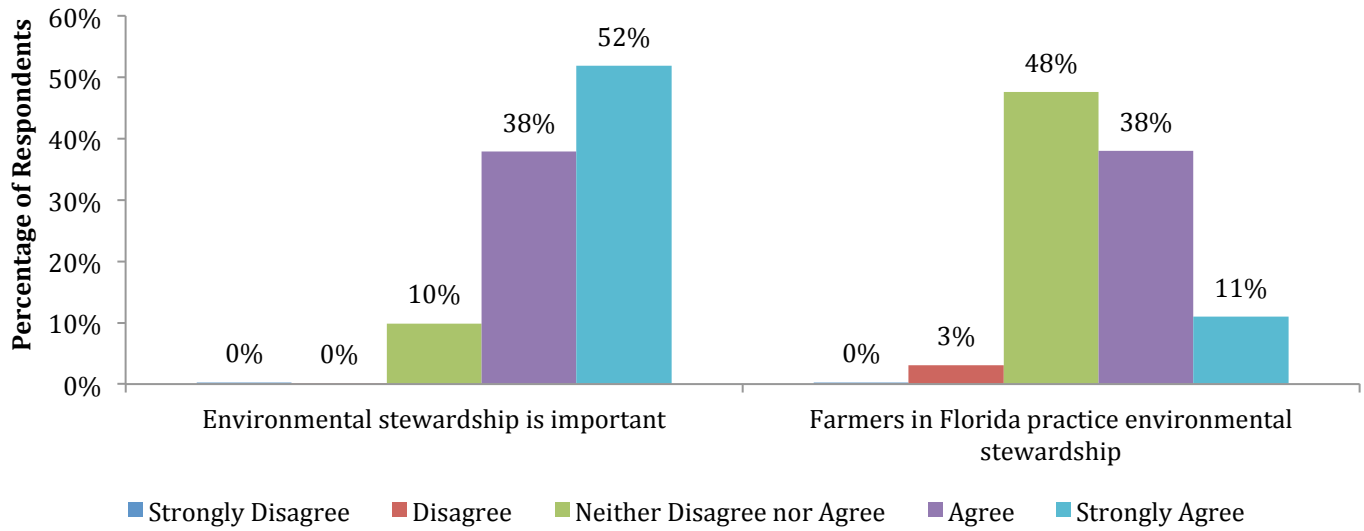


Perceptions and Attitudes toward Environmental Stewardship

Perception of Environmental Stewardship

The definition of environmental stewardship was provided prior to the survey questions related to environmental stewardship. Respondents then were asked their level of agreement or disagreement about their perception of environmental stewardship. Within the respondents, 90% indicated they agreed or strongly agreed environmental stewardship is important, and while 49% indicated they agreed or strongly agreed farmers in Florida practice environmental stewardship, 48% neither agreed nor disagreed indicating they were undecided (Figure 12).

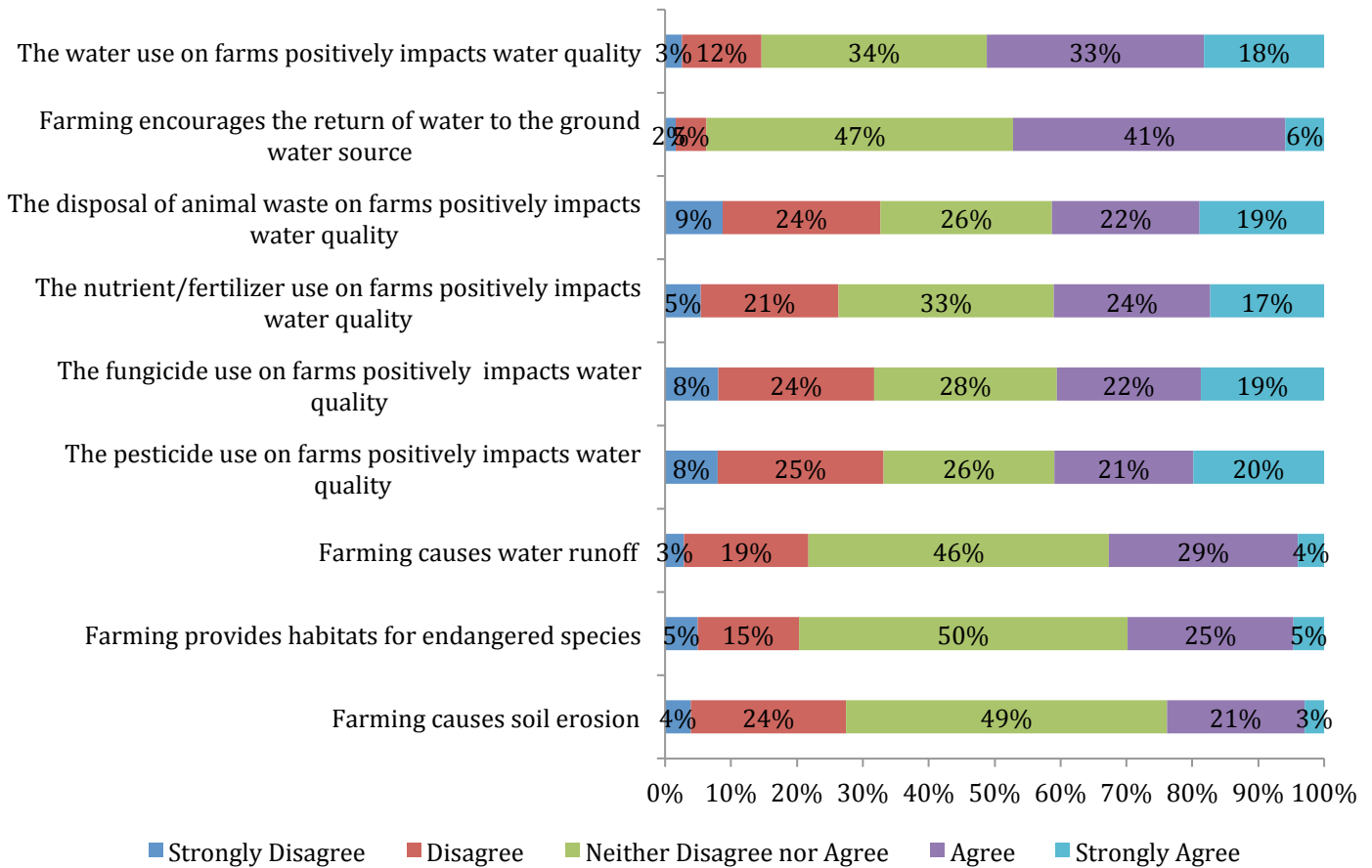
Figure 12. Perception of environmental stewardship



Perception of Farming Practices Used by Florida Farmers

Respondents were asked their level of agreement or disagreement about the perceived farming practices used by Florida farmers. Within the respondents, 41% reported they agreed or strongly agreed with the statement: “The water use on farms positively impacts water quality,” 47% reported they agreed or strongly agreed with the statement: “Farming encourages the return of water to the ground water source”, 41% reported that they agreed or strongly agreed with the statement: “The disposal of animal waste on farms positively impacts water quality”, “The nutrient/fertilizer use on farms positively impacts water quality”, “the fungicide use on farms positively impacts water quality”, and “the pesticide use on farms positively impacts water quality”, respectively. However, 46% of the respondents reported that they were undecided if they agreed or disagreed with the statement: “Farming causes water runoff”, 50% of the respondents reported that they were undecided if they agreed or disagreed with the statement: “Farming provides habitats for endangered species”, and 49% of the respondents reported that they were undecided if they agreed or disagreed with the statement: “Farming causes soil erosion” (Figure 13).

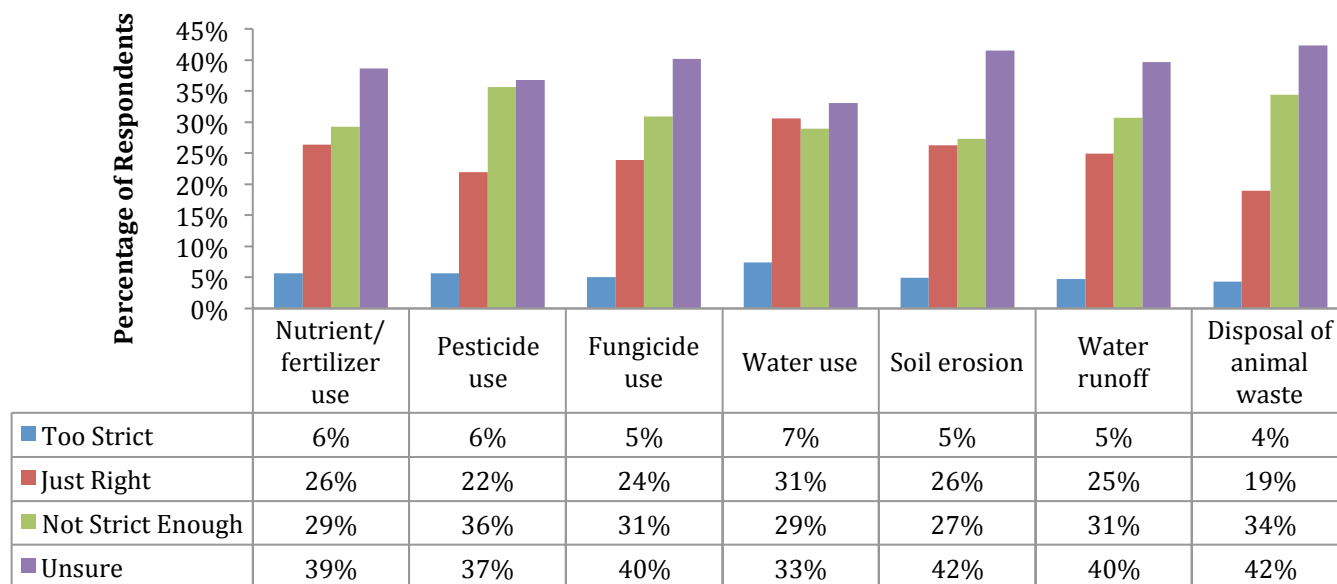
Figure 13. Perceived farming practices used by Florida farmers



Perception of Government Regulations on Farming Practices

Respondents were asked their perceptions of the current level of government regulations on different farming practices. Compared to the respondents who answered the level of government regulations were too strict, just right, or not strict enough, more respondents (33-42%) indicated they were unsure about the current level of government regulations across all the listed farming practices. The current level of government regulations on water use was the only listed practice that more respondents perceived as just right (31%) than perceived as not strict enough (29%); however, more respondents perceived the current level of government regulations on the rest listed practices as not strict enough than just right or too strict, with the highest percentage on pesticide use (36%) followed by disposal of animal waste (34%), fungicide use (31%), water runoff (31%), nutrient/fertilizer use (29%), and soil erosion (27%) (Figure 14).

Figure 14. Perception of government regulations on farming practices



Awareness of Environmental Protection Practices among Florida Farmers

Respondents were asked whether or not they were aware of any practices Florida farmers implemented to protect the environment. Within the 700 respondents, 96 respondents (14%) indicated they were aware of one or more environmental protection practices used by farmers in Florida.

Notification of Environmental Protection Practices Used by Farmers/in Florida

Respondents were asked with an open-ended question about the environmental protection practices used by farmers or used in Florida they were familiar with. Seven major categories were identified according to respondents' responses. The practices listed by the respondents are as following:

- Water management - Drip irrigation system, water conservation strategies
- Pest management - Integrated pest management, pest monitoring program
- Nutrient/fertilizer management - 4R nutrient stewardship, best management practices
- Cropping system management - Crop rotation, organic farming system
- Soil management - soil erosion protection, no-till farming system
- Environmental management - Conservation reserve program, EPA guidelines
- Animal waste management - Animal waste filtering

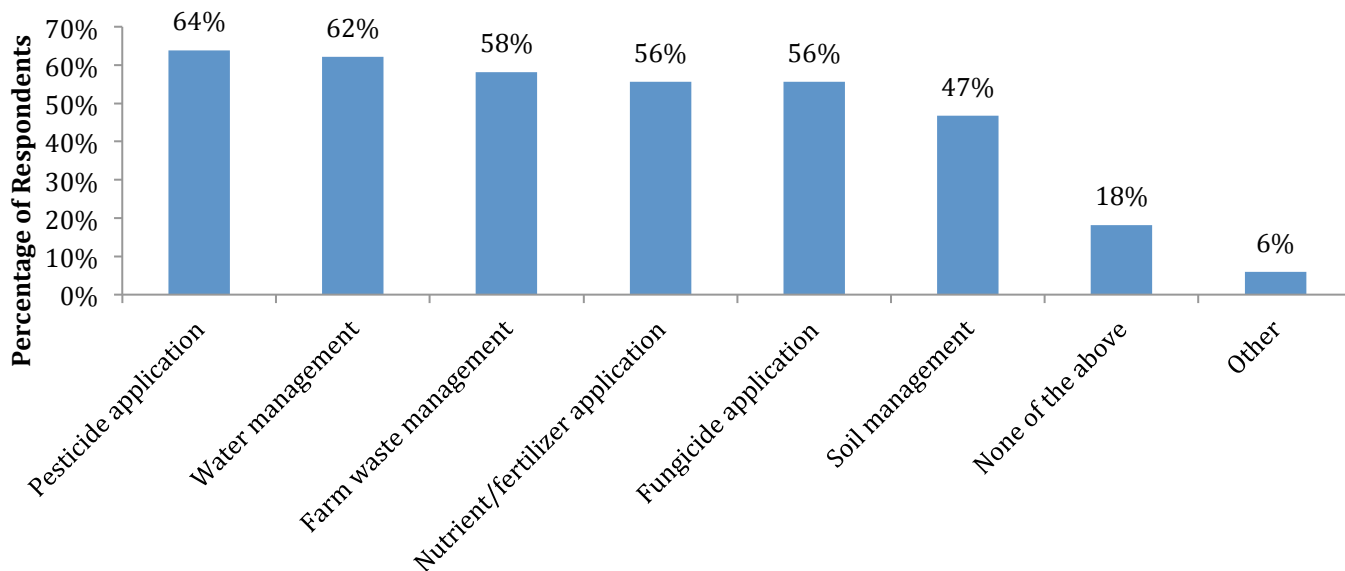
Future Assistance through Government Regulation

Respondents were asked what types of government regulation should be passed to assist farmers in Florida. Pesticide application was chosen by the most respondents (64%), followed by water management (62%), farm waste management (58%), nutrient/fertilizer application (56%), fungicide application (56%), soil management (47%), none of above (18%), and other (6%) (Figure 15). The respondents who chose other provided suggestions as follows:

- Local food promotion
- Family farming support

- Wildlife habitat preservation
- GMO seed control
- Farming job encouragement
- Farmer education

Figure 15. Categories of government regulation needed to assist Florida farmers



Note. This was a multiple choice question requesting respondents to check all that apply.

Agricultural Facilities Impacts on the Environment

Respondents were asked their level of agreement or disagreement about the types of agricultural facilities that positively impact the environment. Family farms received the highest percentage of respondents who agreed or strongly agreed their positive impact on the environment (65%), followed by vegetable production farms (63%), citrus groves (61%), fruit production farms (60%), forestry farms and wood production facilities (53%), dairy production farms (49%), cattle pastures/ranches (49%), fish hatcheries (49%), horse ranches (42%), ornamental plant production farms (41%), poultry production farms (40%), and least in commercial farms (32%). However, the respondents were undecided if they agreed or disagreed that horse ranches (51%), ornamental plant production farms (50%), poultry production farms (42%), and commercial farms (44%) positively impacted the environment. Besides, relatively higher percentage of disagreement and strongly disagreement about the positive impact on the environment was reported at commercial farms (24%), poultry production farms (18%), dairy production farms (12%), and cattle pastures/ranches (10%) (Figures 16 & 17).

Figure 16. Perceived positive impact of agricultural facilities on the environment

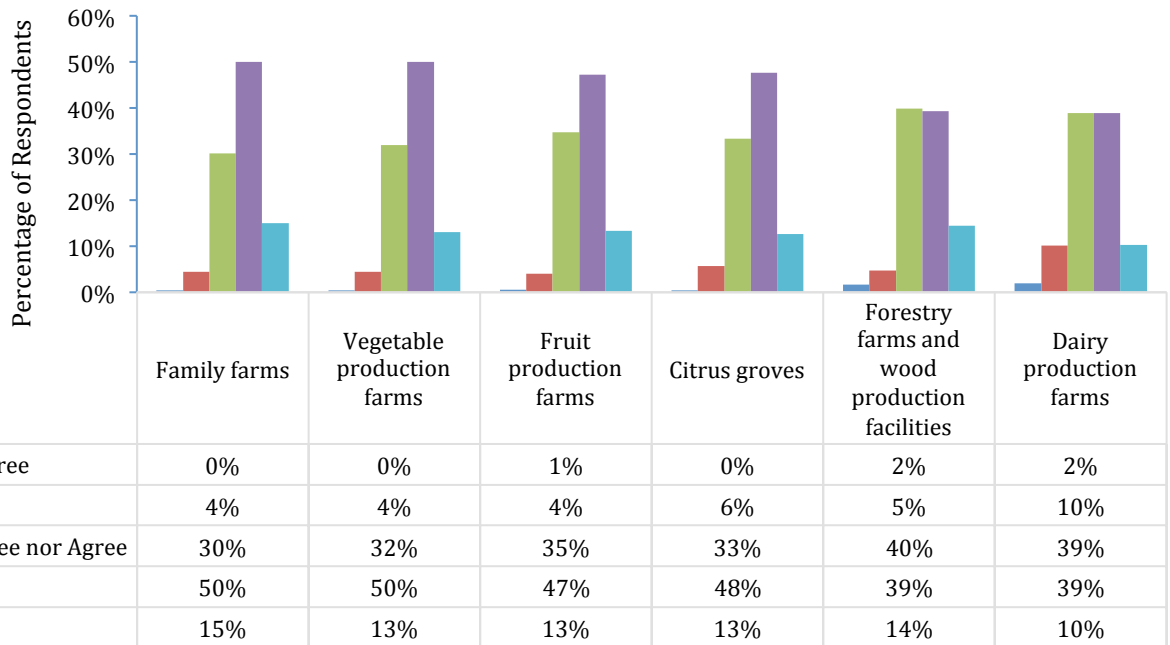
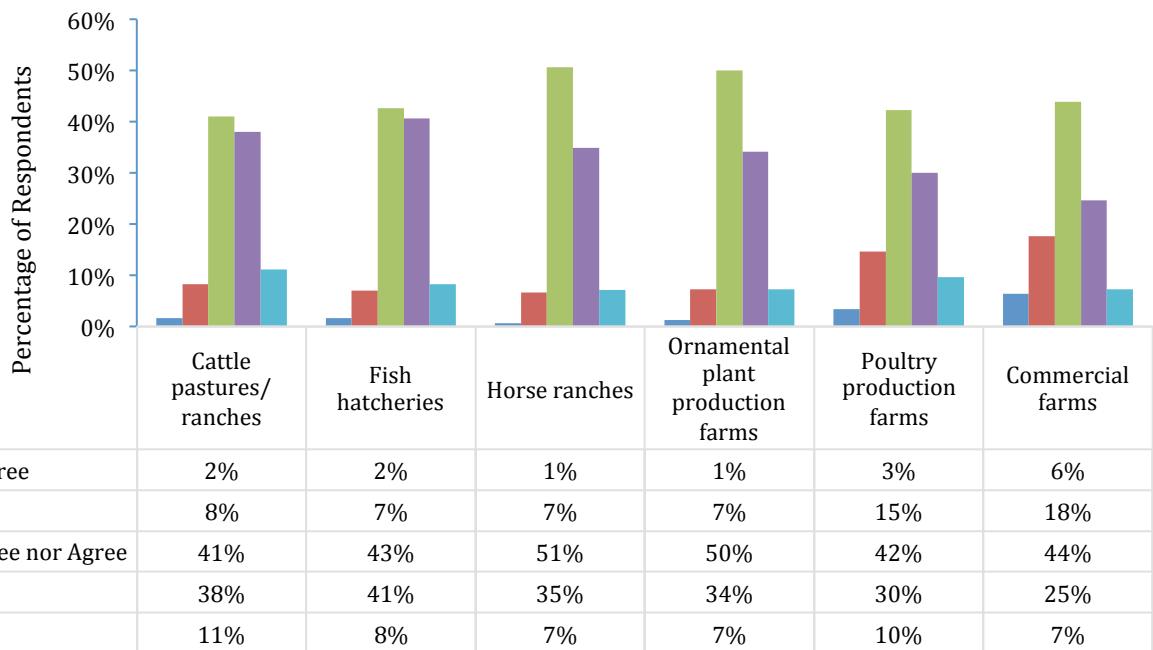


Figure 17. Perceived positive impact of agricultural facilities on the environment (continued)

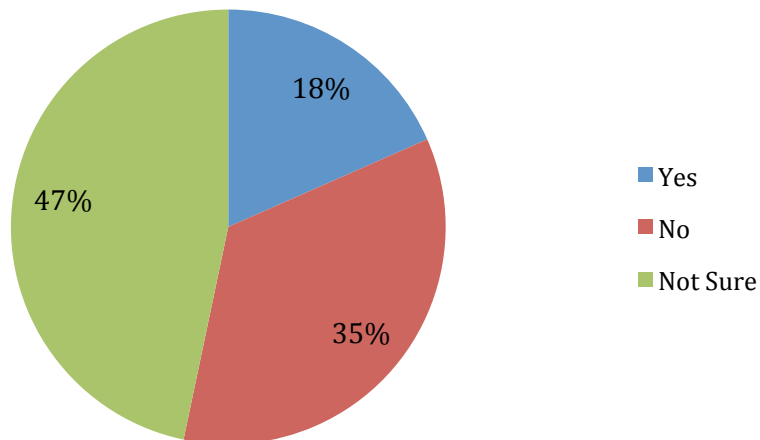


Experiences with Environmental Issues Associated with Farming

Respondents were asked whether they have been impacted by any environmental issues associated with farming in Florida. Within the respondents, 47% were not sure if they had been impacted by any environmental issues associated with farming in Florida, 35% indicated they had not been impacted by any environmental issues associated with farming

in Florida, and 18% indicated they had been impacted by environmental issues associated with farming in Florida (Figure 18).

Figure 18. Experience with environmental issues associated with farming



Environmental Issue Experience and Resolution

Respondents who indicated they did have experience with an environmental issue associated with farming ($n = 129$) were asked an open-ended question about the issue(s) and resolution of the issue(s). Water related issues were described by most of the respondents followed by nutrient/fertilizer management related issues. Some major issues were described as follows:

- Water related issues - Sinkholes caused by over-irrigation were mentioned multiple times. One respondent wrote, “The over pumping of ground water during freeze conditions lowers the water tables and creates water restrictions and in some extreme cases sink holes. Developing plants, strawberries for example, that are frost and freeze tolerant without the need for ground water pumping to protect the plant/fruit would be beneficial to all.”
- Nutrient/fertilizer management related issues - Applied amount and types of fertilizer were mentioned by respondents. One respondent wrote, “Overuse of fertilizers is indirectly responsible for red tide blooms.”
- Pest management related issues - These issues were usually mentioned with nutrient/fertilizer related issues. For example a respondent wrote, “Fertilizer and pesticide runoff into our streams and rivers causing damage to the ecosystem.”
- Ecosystem conservation issues - Respondents mentioned the worry about losing habitats for wildlife and competition between native species and invasive species. One respondent wrote, “Land misuse equaling inability to use, introduction of non-native species, loss of native Florida land/space.”
- Soil management related issues - Respondents reflected on their experience of being impacted by soil erosion. One of the respondents wrote, “Fruit, vegetable and flower farming near my condominium causes large amounts of topsoil to blow into my yard and swimming pool.”
- Animal waste management related issues - Respondents not only connected mismanagement of animal waste with run-off and water quality degradation, but also mentioned the impact of air quality as: “Uncontrolled

animal waste from dairy farms has diminished the air quality around my subdivision and lowers perceived property values.”

- Cost of Food - Unstable and increased food prices was described by multiple respondents. One of the respondents wrote, “Cost of fruit and vegetables have increased substantially due to cost of fertilizer, fungicide, water and environmental regulations.”

Knowledge and Perceptions of CARES Program

Observation of the CARES Program Logo

Respondents were asked whether they have ever seen the “This Farm CARES” logo prior to take the survey. Only 3.1% of the respondents indicated they had seen the “This Farm CARES” logo prior to taking the survey.

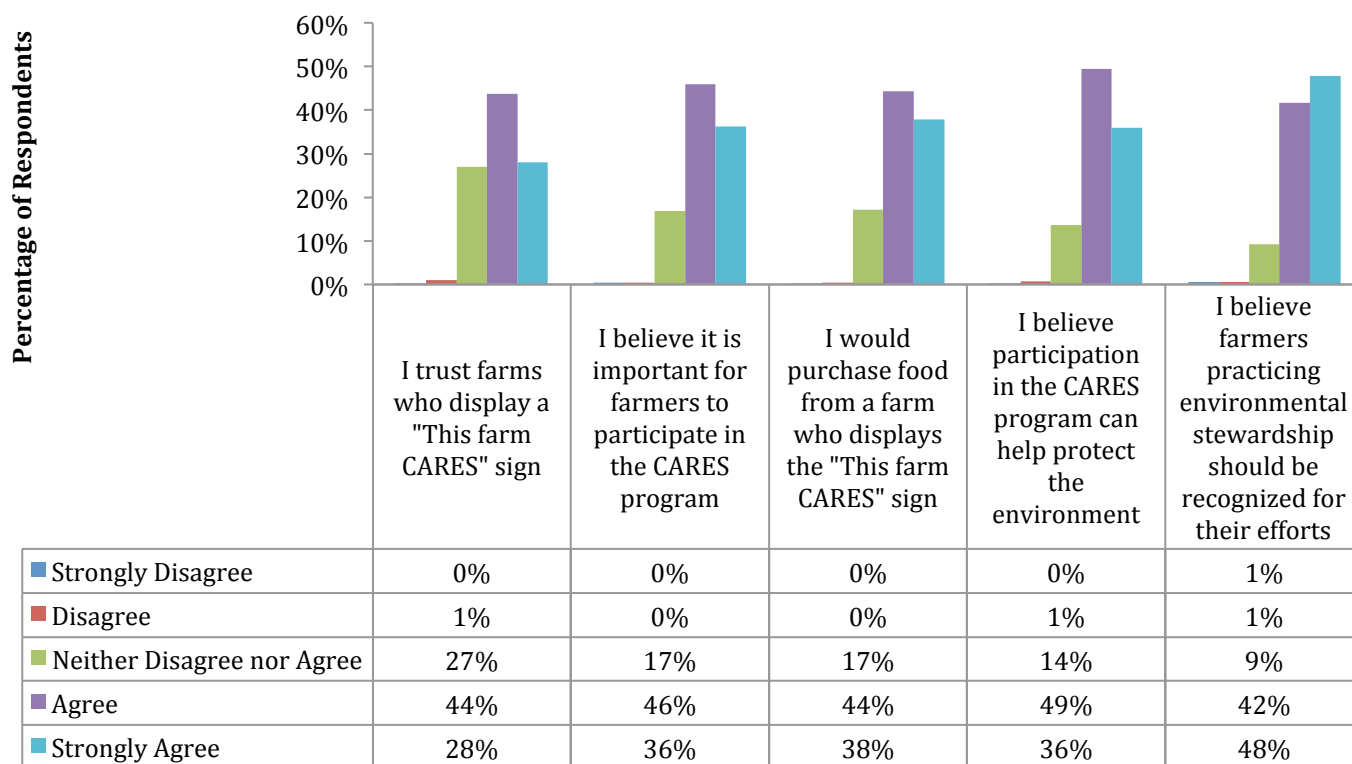
Previous Knowledge of the CARES Program

Respondents were asked whether they had ever heard of the CARES Program prior to taking the survey. Only 1.9% of the respondents indicated they had heard about the CARES Program prior to taking the survey.

Perceptions of the CARES Program

Respondents were asked their level of agreement or disagreement about how their perceptions of the CARES Program. Within the respondents, 90% agreed or strongly agreed they believed farmers practicing environmental stewardship should be recognized for their effort, 85% agreed or strongly agreed they believed participation in the CARES Program could help protect the environment, 82% agreed or strongly agreed they would purchase food from a farm who displays the “This farm CARES” sign, 82% agreed or strongly agreed they believed it is important for farmers to participate in the CARES Program, and 72% agreed or strongly agreed they trusted farms who display a “This farm CARES” sign (Figure 19).

Figure 19. Perceptions of the CARES Program

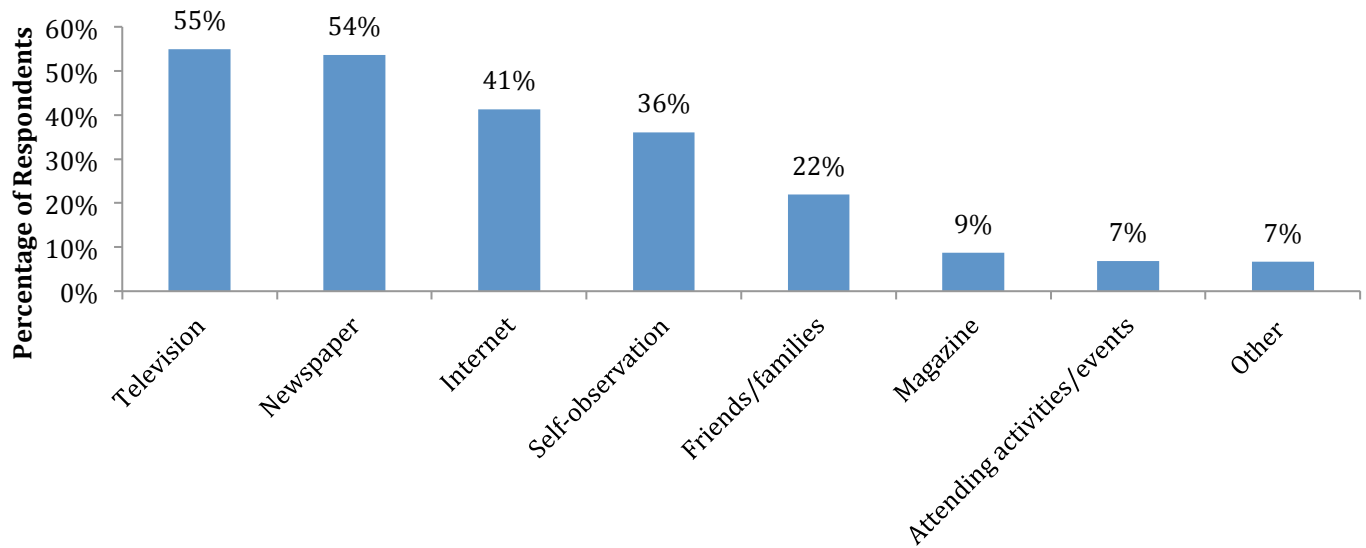


Communication Channels

Information Sources Used to Get Farming Information

Respondents were asked what kind of information sources they used to get farming information. Television was reported by the highest percentage of respondents (55%), followed by newspaper (54%), Internet (41%), self-observation (36%), friends/families (22%), magazine (9%), attending activities/events (7%), and other (7%) (Figure 20). The respondents who chose other indicated they also used books, research publications, extension services, school courses, other personal contacts, and radio as information sources to receive farming information.

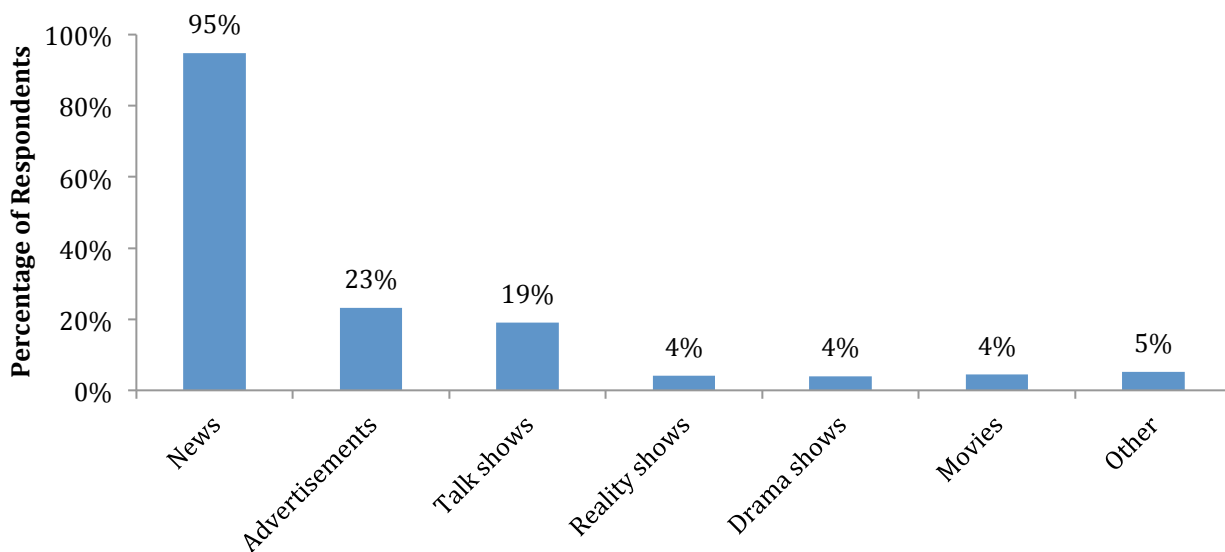
Figure 20. Information sources used to get farming information



Note. This was a multiple choice question requesting respondents to check all that apply.

Respondents who indicated they received information about farming from the television ($n = 384$) were asked to specify the type of television programming they used as information sources. News was chosen by the respondents with the highest frequency (95%), followed by advertisements (23%), talk shows (19%), other (5%), reality shows (4%), drama shows (4%), and movies (4%) (Figure 21). The respondents who chose other indicated they also used science learning/education channels, documentaries, and PBS channel as television media sources to receive farming information.

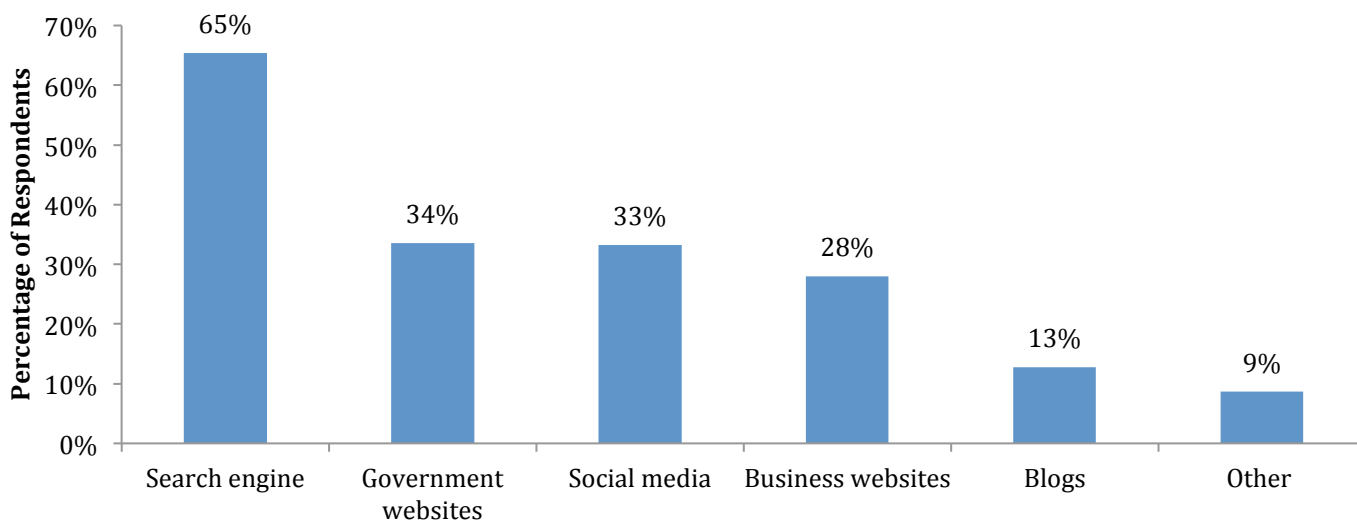
Figure 21. Television media sources used to get farming information



Note. This was a multiple choice question requesting respondents to check all that apply.

Respondents who indicated they received information about farming from the Internet ($n = 289$) were asked to specify the type of Internet outlets they used as information sources. Sixty-five percent of the respondents indicated they used a search engine as the Internet outlets source for farming information, followed by government websites (34%), social media (33%), business websites (28%), blogs (13%), and other (9%) (Figure 22). The respondents who chose other indicated they also used news websites, EDIS publications, and scholarly websites as Internet outlets sources to receive farming information.

Figure 22. Internet outlets sources used to get farming information

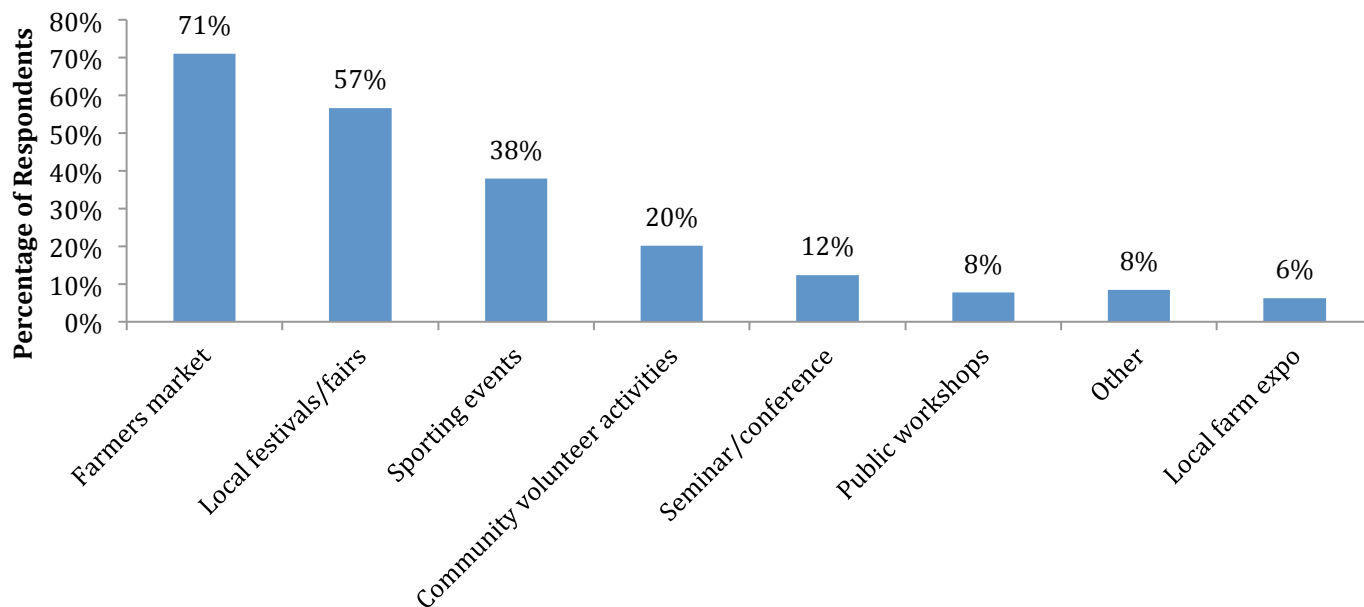


Note. This was a multiple choice question requesting respondents to check all that apply.

Public Event Participation

Respondents were asked what kind of public events they attend. Seventy-one percent of the respondents indicated they attend farmers market, followed by local festivals/fairs (57%), sporting events (38%), community volunteer activities (20%), seminar/conference (12%), public workshops (8%), other (8%), and local farm expo (6%) (Figure 23). The respondents who chose other indicated they also attend public events such as church, concerts, community meetings, and art shows.

Figure 23. Types of public events participated in



Note. This was a multiple choice question requesting respondents to check all that apply.

Recommendations for FFBF

- The majority of respondents recognized the importance of farming to the economy. When communicating priorities or issues that apply directly to farming, Farm Bureau should identify the impact of the priority or issue on the economy, when possible. By highlighting the impact on the economy, FFBF will be able to communicate to a common value recognized by Florida residents.
- The majority of respondents indicated that farming was important to the environment, while just over a third of respondents neither agreed nor disagreed that farming creates environmental concerns. FFBF should take advantage of the many respondents who feel farming is important to the environment and those who are unsure if farming creates environmental concerns. By communicating the benefits farming can have on the environment and the good environmental practices of farmers, FFBF can capitalize on the positive perceptions and unknown perceptions of the impact of farming on the environment.
- The majority of respondents were unsure if farmers purchased locally produced resources needed for farming. FFBF should encourage farmers to discuss how they support the local economy through their purchases.
- Respondents felt that it was important for farmers to engage in BMPs and 4R nutrient stewardship, and a large percentage of respondents agreed or strongly agreed that farmers practice proper BMPs and 4R nutrient stewardship. The majority of respondents also indicated that they trusted farmers practicing BMPs and 4R nutrient stewardship. However, a large percentage of respondents also neither disagreed nor agreed that farmers practice proper BMPs and 4R nutrient stewardship, indicating they may be unsure.

- FFBF should encourage producers to discuss the steps they take to protect the environment through BMPs and 4R nutrient stewardship with consumers. Producers should be encouraged to embrace these conversations whether at a farmers market, roadside stands, or other community event. Hosting a professional development session for farmers to become comfortable talking to consumers about protecting the environment may be beneficial.
- Highlighting BMPs and 4R nutrient stewardship practiced by farmers in FFBF displays, newsletters, and community events could help to increase Florida residents' awareness of and confidence that farmers are taking steps to be environmentally responsible.
- While the majority of respondents felt that nutrients/fertilizer were important when growing crops, nearly half were unsure if nutrients/fertilizer were harmful to the environment. FFBF should partner with organizations such as UF/IFAS Extension and The Mosaic Company to develop a collaborative partnership aimed at increasing Florida residents' knowledge and awareness of nutrient/fertilizer use and environmental impacts.
- Respondents had varying views on the impact of different farming practices on the environment. FFBF should identify where the largest gaps in knowledge are and position communications, programming, and community events to narrow these gaps in knowledge. Some potential gaps in knowledge to highlight include the benefit of farming to habitat for endangered species and the return of water to the ground water source.
- Respondents were asked to indicate their perceptions of government regulations on farming practices. Respondents were unsure about the current level of regulation throughout the questions asked. This finding offers FFBF an opportunity to highlight current regulations, gaps in regulation, and unnecessary regulations in their communications with their members and Florida residents.
- Respondents in this study had a very low recognition or familiarity with the CARES program. However, the respondents very much supported the purpose of the CARES program. FFBF should capitalize the value residents place on the idea of the CARES program and communicate these shared values when promoting the program. Additionally, respondents reported getting information about farming most frequently from television, newspapers, and the Internet. FFBF should consider additional ways to promote the CARES program, as many consumers may never stumble upon a farm with the CARES sign displayed or the CARES online media efforts. Developing a close relationship with news media in Southwest Florida will be beneficial in promoting the CARES program in that area. FFBF should consider submitting press releases to local media, writing a column for a local paper, or securing a segment on television news to promote the CARES program to residents in that area. Highlighting the CARES farms in the area as well as the program would be beneficial.
- Respondents most frequently reported attending farmers markets and local festivals/fairs. FFBF should consider having a presence at these types of events to promote the CARES program. In addition, any producers who are part of CARES should be encouraged to display the CARES sign and information with their products, if selling at a farmers market or other appropriate local venue.

Recommendations for Extension

- As stated previously, the majority of respondents recognized the importance of farming to the economy. When Extension faculty are developing programs for farmers, such as implementation of BMPs, they should identify and emphasize the impact of the BMP on the economy. By highlighting the impact on the economy, Extension will be providing farmers with a way to communicate the value of their work in a language Florida residents can understand.
- Extension should take advantage of the many respondents who feel farming is important to the environment or who do not know what the impacts of farming are on the environment. Extension faculty should consider integrating information into their programs for farmers that provide them an avenue and discussion points to use when working with the public. These discussion points should include ways they can communicate the benefits farming can have on the environment and the good environmental practices of farmers. This will better prepare them to capitalize on the positive perceptions of the impact of farming on the environment.
- Respondents felt that it was important for farmers to engage in BMPs and 4R nutrient stewardship. This finding only further emphasizes the need for educational programs that teach farmers how to engage in these practices. Extension faculty should also consider deeper partnerships with FFBF to assist in educational outreach and training in this area.
- Given respondents had a very low recognition or familiarity with the CARES program, marketing the connection with this program may not be advantageous for Extension. Instead, Extension should work collaboratively with FFBF, using the University of Florida Extension name, to market the impacts BMPs can have on the environment through local efforts including press releases, a column in the local paper and/or securing a segment on the local television station. Using the University of Florida Extension brand may assist the FFBF in getting out their message about environmental stewardship, the CARES program, and the use of BMPs by farmers.