

## FLORIDA EXTENSION INITIATIVE 1: 1: SUSTAINABILITY OF PRODUCTION SYSTEMS AND ALTERNATIVES

### STATEWIDE EDUCATIONAL PROGRAMS IN **FOOD SYSTEMS**

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#### SITUATION

“Food Systems” encompass the scope of program activities within Initiative 1 supporting the overarching goal of producing, preparing, and delivering fresh, sustainable, nutritious, affordable, and safe food to all of Florida’s citizens as well as beneficiaries beyond the state’s borders. Within the state of Florida, food systems exist at four scales: community, intrastate, interstate, and international. At each scale there are production inputs; production of specialty crops, row crops, livestock, and seafood commodities; post-harvest handling; value-added processing; and distribution of commodities to wholesale, retail, and food service markets. Florida has an estimated 21.3 million permanent residents (U.S. Census) and had an estimated 120 million visitors in 2018 (Visit Florida). 2.8 million Florida residents were food insecure, meaning “they lacked access to enough food for an active, healthy life for all household members,” including more than 800,000 children (Feeding America).

Nearly 93% of Florida’s 47,000 farms are small farms, farms reporting gross annual sales of \$250,000 or less according to the Florida Agricultural Statistics Service (2016), and these farms are not receiving the support they need. These small farms, which include most urban farms, generate most of their revenue by direct to consumer sales, which are beneficial to both farmers and consumers, but many of Florida’s citizens lack opportunities to purchase fresh, nutritious food directly from a farmer, and many more lack access from any retail outlet in their communities. Extension programming on market access and distribution strategies will facilitate success of small farms while contributing to Florida’s food needs to the fullest extent possible by providing fresh, nutritious food to food insecure populations in Florida.

Small Farms and Alternative Enterprises in Florida: Throughout the value chain, profit margins are limited, and two-thirds of small-farmers have such low profit margins that they are considered in the critical zone by the USDA Economic Research Service (Hoppe). The majority of Florida farmers implement various strategies to reduce financial risk such as: Community Supported Agriculture; farm stands; restaurants; farmers markets; producing products allowed by Florida’s Cottage Food law; offering agritourism opportunities; participating in the farm to school program; hosting community fundraisers; and offering courses and internships. Consumer demand for freshness, nutrition, locally-sourced products, and product diversity (unique cultivars, value-based labeling, and value-added products) has required innovation and diversification of products and processes within the food system. Successful small farm operators diversify into new processes, products, and/or practices, as market opportunities allow, but many small farm operators fail because they are not prepared for the realities of managing a business, lack product diversification, or are unable to locate an appropriate market. Support is needed to help clientele develop new (or innovative) and diversified food enterprises that meet existing and emerging market demands and that are consistent with IFAS’ commitment to resource conservation.

Food Safety: Food system participants from producers to processors are obligated to reduce risk of enteropathogens to ensure a trustworthy food supply. The Centers for Disease Control and Prevention (CDC) estimates 48 million cases of foodborne illness, 128,000 hospitalizations, and 3,000 deaths occur each year from foodborne microorganisms (CDC). In response to food safety risks, the federal government has enacted the 2011 Food Safety Modernization Act (FSMA), the most drastic change in food legislation since the 1936 Food, Drug, and Cosmetic Act. Compliance dates for the FSMA Preventive Controls for Human Food began in 2016 for some farms. An estimated 4,000 operations in Florida will have to comply fully with the relevant FSMA rules within one to six years (depending on size). Although many small farm operations are anticipated to be exempt from third party audits as required by FSMA, buyer-driven food safety demands are increasing pressure on all farmers to have food safety plans that exceed regulatory requirements.

How the Food Systems PWG Will Help: Most importantly, IFAS can support farmers and the state’s food systems by providing training and support for innovation and diversification of safe, nutritious and affordable products and processes. To enhance Florida’s food system, leadership from the UF-IFAS Food Systems PWG is needed to support food system participants holistically by facilitating

networking among partners; providing research-based recommendations to improve efficiency, quality and sustainability of system processes and products; increasing knowledge and awareness of food system activities among urban and environmental interests; guiding new food system business initiatives; as well as training new leaders to foster innovation from the private sector. Potential growth sectors within the state include 3 commerce networks of farm/processor to institution (farm to school, farm to hospital) and restaurant/tourism venues, value-added processing of agricultural commodities, and expanding export markets.

The target clientele include farmers, ranchers, processors, aggregators, distributors, technical service providers, county- and state-level decision makers, and allied agency and industry representatives.

This Priority Work Group's overall goals are to:

- Cultivate a robust and resilient Florida food system by strengthening food and value added industries,
- Support the development of a small farm industry that offers a diversity of commodities and utilizes innovative production and processing technologies,
- Ensure an abundant, sustainable, nutritious, safe, and affordable food supply for all,
- Assure consumer confidence in the quality, value, and consistency of Florida product, and to
- Facilitate a broader understanding, mutual respect and collaboration of urban, agricultural, and environmental interests.

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## PROGRAM OBJECTIVES

### Food Systems

Objective 1. At least 60% of program participants will report a better understanding of county, state and/or federal farm and food-related policies, and how those policies affect food systems.

- Outcome: Decision makers and food system leaders will make informed decisions based on documented evidence.
- Indicators:
  - Quantitative increases in knowledge of policies recorded in program evaluations.
  - Participant success stories of implementing programs that make use of policies in response to information from workshops and presentations at community organizations.

*Type of outcome:*      Short-term                       Medium-term                       Long-term

Workload Indicator associated with Objective: 4, 19, 23

Objective 2. At least 20% of processors, aggregators and distributor participants in Extension programming will adopt new tools, technologies and/or equipment to increase operational efficiency and effectiveness.

- Outcome: Operations increase efficiency and effectiveness.
- Indicators:
  - Quantitative measure of purchases of new materials, tools, and/or equipment.
  - Decreased cost of initial investment relative to projected return.
  - Quantitative decrease in inputs, fuel, energy, water, labor or other costs following adoption.
  - Quantitative increase in the number of value-added products for inter and intrastate trade.
  - Quantitative increase in the number/capacity of processors dedicated to alternative crops or new food/beverage products.
  - Participant success stories of entrepreneurship and innovation following demonstrations, workshops, and field days.

*Type of outcome:*      Short-term                       Medium-term                       Long-term

Workload Indicator associated with Objective: 3, 8, 9, 17, 20, 24

Objective 3. At least 3 programs/businesses from the private sector will be developed or enhanced that utilize alternative business models (food aggregation or distribution, cooperatives, or regulatory umbrella programs) for direct-to-consumer markets.

- Outcome: Synergy among food systems partners creates exemplary innovative food systems programs.
- Indicators:
  - Quantitative increase in the number of farming operations selling direct to consumer.
  - Quantitative increase in the number of consumers reached in direct-to-consumer markets.
  - Participant success stories of market penetration of FL foods.
  - Quantitative cost savings to consumers who buy Florida commodities.
  - Positive press reports highlighting collaboration and outcomes

*Type of outcome:*      Short-term               Medium-term               Long-term

Workload Indicator associated with Objective: 1, 3, 18

**Small Farms**

Objective 4. At least 65% of beginning farmer and rancher participants will report increased knowledge of strategies to reduce common mistakes of production, management, and marketing.

- Outcome: Beginning farmers and ranchers make better decisions about their operations.
- Indicators:
  - Quantitative increase in the number of operations that have adopted best practices.
  - Farm operator success stories detailing how increased knowledge gained from hands-on training, workshops, field days, and conferences reduced mistakes.
  - Quantitative increase in participant reports of self-efficacy in science and technology

*Type of outcome:*      Short-term               Medium-term               Long-term

Workload Indicator associated with Objective: 19, 23

Objective 5. At least 20% of beginning farmer and rancher participants will develop a business plan.

- Outcome: Beginning farmers and ranchers have a business plan.
- Indicators:
  - Farmer and rancher success stories of improved financial health as a result of developing a business plan based on guidance provided via traditional and non-traditional workshops.
  - Quantitative measure of number of successful loan applications reported to Extension faculty.

*Type of outcome:*      Short-term               Medium-term               Long-term

Workload Indicator associated with Objective: 20

Objective 6. At least 30% of participants will report an increase in the diversity of income-generating products and/or services offered to customers.

- Outcome: participants reduce financial risk due to a diversity of offerings
- Indicators:
  - Quantitative increase in small farm market share.
  - Quantitative increase in the percentage of farms engaged in entrepreneurial activities.

- Quantitative increase in number of new or alternative crops and new value-added products.
- Quantitative increase in the number of value-added products for inter and intrastate trade.
- Participant success stories of new market opportunities as a result of new products/services.

*Type of outcome:*            Short-term                     Medium-term                     Long-term

Workload Indicator associated with Objective: 1, 17, 18, 20, 24

**Food Safety**

Objective 7. At least 80% of the program participants will report an increase in knowledge of Food Safety Modernization Act regulations.

- Outcome: Producers, processors, packers and distributors are compliant with FSMA.
- Indicators:
  - Quantitative increase in number of current certifications and compliant exempt operations
  - Quantitative increase in the number of participants having successful third party audits.
  - Success stories from participants who make use the face to face training and web-based updates on food safety.
  - Quantitative decrease in cases of food borne illnesses, recalls of Florida products and the number of food related health risks related to Florida’s food system evidenced by CDC data

*Type of outcome:*            Short-term                     Medium-term                     Long-term

Workload Indicator associated with Objective: 19, 22

Objective 8. At least 80% of participants will complete farm food safety plans, including those who are exempt from FSMA, such as small farm/ranch operators and emerging clientele, such as and community and school gardens leaders.

- Outcome: Farm operations have adopted best practices to mitigate biological risk.
- Indicators:
  - Quantitative increase in the number of participants with a completed Farm Food Safety Manual.
  - Participant success stories of improved consumer confidence in Florida agricultural commodities especially those purchased directly from the farmer or with “buy local” labels (i.e. Fresh from Florida)

*Type of outcome:*            Short-term                     Medium-term                     Long-term

Workload Indicator associated with Objective: 20, 21

Objective 9. At least 80% of participants will complete farm food safety plans, including those who are exempt from FSMA, such as small farm/ranch operators and emerging clientele, such as and community and school gardens leaders.

- Outcome: Farm operations have adopted best practices to mitigate biological risk.
- Indicators:
  - Quantitative increase in the number of participants with a completed Farm Food Safety Manual.
  - Participant success stories of improved consumer confidence in Florida agricultural commodities especially those purchased directly from the farmer or with “buy local” labels (i.e. Fresh from Florida)

*Type of outcome:*            Short-term                     Medium-term                     Long-term

Workload Indicator associated with Objective: 20, 21

## EDUCATIONAL METHODS OR ACTIVITIES

The dynamic nature of the Florida food industry and diversity of its stakeholders require many different educational methods to reach all clientele effectively. The activities of this program are a coordinated effort by multi-disciplinary state and county faculty. Information, messages, and metrics are developed at a state level and distributed to counties. Because this is a new PWG, professional development among our own faculty is a primary goal. In addition to traditional clientele, training will also be targeted at the new generation of food system producers, processors, researchers, educators, and regulators, and is intended to integrate with current CALS curriculum. We aim to integrate extension programming with student teaching and mentoring, as well as new community leader mentorship.

Traditional extension education approaches will be used: curriculum development, EDIS/white paper publication, traditional and online educational presentations, group teaching, website and social media development, application development, webinars, hands-on training, certification programs, demonstration sites/hubs at county offices, farms, and other sites, information “kits” at all county offices, traditional and non-traditional workshops, field days, conferences and meetings, video conferencing, online training, and establishment of testing centers for certificate programs at county offices (similar to Sylvan learning centers). To ensure effective education of traditionally underserved clientele, the Food Systems PWG will also use innovative education approaches that do not require access to internet or transportation, such as informational text messaging campaigns.

### Activities Include:

- Face-to-face workshops and presentations at community organizations with clientele.
- Develop and implement a leadership training program for Extension and food systems professionals that will strengthen the skills necessary to foster food systems collaboration, innovation, and impact.
- Conduct feasibility studies, enterprise/business plans and case studies of successful/profitable local food distribution chains, and create decision tools for farmers/ranchers to expand into new markets.
- Develop new and support existing statewide teams and programs on alternative enterprises and systems.
- Partner with campus university initiatives that focus on farm and food systems to develop new models of scholarly education that integrate teaching and extension and provide new opportunities for research and development of new products and processes.
- Recognize innovative farmers and ranchers, and share those models with others.
- Advance our understanding of innovations in agriculture, and learn new and effective approaches of Extension education and evaluation.
- Offer face to face in-depth training and web-based updates on food safety.
- Develop and maintain an electronic hub for all internal and public food safety information that aggregates consumer food safety information (Solutions for Your Life website), small farm food safety information (Small Farms and Alternative Enterprises website) and farm/processor food safety information (Food Science and Human Nutrition/UF-IFAS Food Safety Extension’s website).
- Continually improve IFAS’ educational methods and evaluation strategies to ensure internal efficiencies, and to ensure that agricultural enterprises and consumers are increasing their knowledge and are changing behaviors important to food safety.

### Partners and Collaborators:

- Florida Department of Agriculture and Consumer Services (FDACS)
- USDA
- Farm Bureau
- Farm Credit
- Florida A&M University
- Local Businesses and Banks/Financial Institutions

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## PARTICIPATION

**Target audience and/or underrepresented clientele:** Farmers, ranchers, processors, aggregators, distributors, technical service providers, county- and state-level decision makers, and allied agency and industry representatives.

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## EVALUATION

**Evaluation methods used:**

- Expected outcomes or sample statewide outcome statements or tables – include actual wording and where to plug in data
- Statewide impact statement(s) – include actual wording and where to plug in data and include any multipliers, citations, etc.
- Associated Workload indicator(s) (if applicable)
- Other information related to evaluation or results

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## OUTCOMES AND IMPACTS

### Food Systems

\_\_\_ (number of) Master Gardeners volunteered at \_\_\_ school/community gardens, providing \_\_\_ hours in volunteer services, educating \_\_\_ students and teachers (or \_\_\_ seniors and staff). The school/community gardens produced over \_\_\_ lbs of food. Plantings at the gardens include \_\_\_ square feet of \_\_\_, \_\_\_ square feet of \_\_\_, etc...

According to an independent evaluation conducted by PEER Associates and funded by the Rainwater Charitable Foundation, schools have seen a 12% to 15% increase in the number of students passing standardized tests and 94% of teachers reported seeing increased engagement from students.

### Small Farms

\* \_\_\_ number of producers were assisted in finding Farmer's Market avenues to sell their produce, increasing their annual revenue by a combined total of \$\_\_\_ amount.

\* \_\_\_ number of producers were assisted in obtaining their Limited Poultry and Egg License, allowing them to increase their annual egg sales by a combined total amount of \$\_\_\_.

\* \_\_\_ number of new backyard beekeepers were assisted by this agent and saved a combine total of \$\_\_\_ on purchasing the correct equipment needed to start their beehives. Based on the annual Honey Report from the Department of Agriculture, in \_\_\_ year Florida honey sold for \$2.44 per pound. By assisting these \_\_\_ number of new beekeepers in \_\_\_ year harvest a total of \_\_\_ number of pounds of honey, they could potentially sell that honey for a total of \$\_\_\_.

### Food Safety

The impact of the food safety training programs in \_\_\_ (year) delivered directly or in part by the agent was \_\_\_ farms gained knowledge and moved forward to begin food safety compliance by developing their manuals. As a result of the programs, \_\_\_ farmers were able to further implement programs on their farm and to plan to have a third-party audit. This program was the first such training implemented by IFAS where the growers actually develop their manual. The value of developing their own food safety program is estimated at \$5,000- \$10,000, depending on farm size; resulting in an overall savings of \$\_\_\_ (total) to the \_\_\_ farms planning to need a food safety audit.

A statewide evaluation summary was developed by Dr. Amy Harder to document knowledge gained by attendees at the FSMA PSA classes in 2017. This agent was one of the instructors at \_\_\_ number of trainings. A directional dependent samples t-test was used to determine if there was a significant increase in knowledge after completion of the PSA training. For PSA training, results showed post-test scores were statistically and significantly higher than pre-test scores ( $T = \_\_\_, p < \_\_\_$ ), indicating a significant increase in knowledge after participation in the training. Out of 25 points, participants scored an average of \_\_\_ on the post-test and \_\_\_ on the pre-test.

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## NEEDS

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## REFERENCES

<https://data.ers.usda.gov/reports.aspx?StateFIPS=12&StateName=Florida&ID=17854>

[https://www.nass.usda.gov/Publications/AgCensus/2012/Full\\_Report/Volume\\_1,\\_Chapter\\_2\\_US\\_State\\_Level/](https://www.nass.usda.gov/Publications/AgCensus/2012/Full_Report/Volume_1,_Chapter_2_US_State_Level/)

<https://www.usda.gov/nass/PUBS/TODAYRPT/fnlo0217.pdf>

[https://www.ers.usda.gov/webdocs/publications/43913/50364\\_eib-132.pdf?v=0](https://www.ers.usda.gov/webdocs/publications/43913/50364_eib-132.pdf?v=0)

<https://www.cdc.gov/foodsafety/cdc-and-food-safety.html>

<https://www.visitflorida.org/resources/research/>

<https://www.census.gov/quickfacts/fl>

<https://hungerandhealth.feedingamerica.org/understand-food-insecurity/research/>

<https://www.feedingamerica.org/hunger-in-america/florida>

<https://www.fda.gov/downloads/Food/GuidanceRegulation/FSMA/UCM568798.pdf>

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## RESOURCES

<https://smallfarm.ifas.ufl.edu/>

<https://producesafetyalliance.cornell.edu/>

<http://edis.ifas.ufl.edu/>