

An Interview Guide for Assessing Change, Innovation, and Risk Management within the Food System in Response to COVID-19¹

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Abstract

Cooperative Extension professionals were, and in many cases still are, heavily involved in assessing how the COVID-19 pandemic has impacted agribusiness operations and the broader food system. This publication describes the process followed by a core project team of Cooperative Extension professionals and researchers from the University of Florida Institute of Food and Agricultural Sciences and Florida Gulf Coast University to design and implement an interview guide to harmonize the collection of information about COVID-19 pandemic impacts upon food system businesses in Florida. We discuss some benefits of the methods we used, tools that improved efficiency during implementation, and considerations for others who might want to modify and use this interview guide in their own states or regions or to explore other types of hazard events that impact the food system.

Introduction

The University of Florida Institute of Food and Agricultural Sciences (UF/IFAS) Cooperative Extension has a long history of analyzing the impacts of natural hazards, such as hurricanes, on production agriculture (Court et al. 2020). Typically, natural hazards affect physical supply structures. For instance, hurricane-driven flooding causes crop loss and damage to farming infrastructure like irrigation systems and buildings (Court et al. 2020; FAO 2021). The COVID-19 pandemic, in contrast, reduced the availability of labor because of stay-at-home orders and other policies, but it also catalyzed shifts in consumer behavior and consumer attitudes about health, online purchasing, and local produce (FAO 2021; Heng et al. 2020; Wertz 2021). Motivated by the need to document these shifts, faculty at UF/IFAS and Florida Gulf Coast University (FGCU) designed structured interview questions (see Appendix A) to collect qualitative data via interviews, with the primary goal of capturing shifts, adaptations, and innovations occurring within Florida's food system in response to pandemic-related change. A coding structure

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for qualitatively analyzing the interview data collected from food system businesses in Florida was also generated (see Appendix B).

Because we thought others might want to adapt the structured interview questions and coding structure for their own purposes, we begin by describing the process our core project team followed to design and implement these resources. We also discuss the benefits of the methods recommended in this publication, some tools that improved efficiency during their implementation, and additional considerations for others who might want to modify and use these resources in their own states or regions or to explore other types of hazard events that impact food systems. Together, this publication and its appendices are referred to as an interview guide for assessing change, innovation, and risk management within the food system in response to COVID-19.

Development of the Interview Guide

A multi-institutional, interdisciplinary group from UF/IFAS and FGCU, referred to hereafter as the *core project team*, developed question banks for structured interviews for 15 food system sectors (see Appendix A). Sector selection was based on consultations with researchers from fields such as economics, supply chain management, Cooperative Extension education, livestock, dairy, small farms, horticulture, and fisheries.

Question banks were designed for interviews with owners or operators of businesses within the following food system sectors:

1. *Agricultural input suppliers*: Fertilizer, pest control, seed, equipment, etc.
2. *Production agriculture*: Small to large farming/ranching operations.
3. *Processing/packing*: Contracts with commercial and retail companies.
4. *Food transport*: Transportation and logistics operations for food products.
5. *Wholesaling, statewide*: Private or government-provided wholesale food services for institutions.
6. *Retail distribution, statewide*: Privately/publicly accessible consumables producer.

7. *Retail distribution, local*: Selling consumable goods within a store.
8. *School and community gardens*: Food production within community gathering spaces.
9. *Cottage food operators*: Preparing/selling food products from an unlicensed home kitchen.
10. *Food-related nongovernmental operations (NGOs)*: Soup kitchens, food pantries.
11. *Restaurants*: Foodservice consumption on or near premises, drive-through, or delivery service.
12. *School food services*: Agencies preparing and distributing meals via K–12 public school systems.
13. *Financial/insurance/real estate*: Agricultural lenders and insurance and real estate brokers.
14. *Fisheries and related seafood operations*: Fishers, aquaculturists, wholesale seafood dealers.
15. *Agricultural associations*: Large professional/advocacy organizations (e.g., agriculture-focused state agencies, agriculture/food-focused industry associations [local and state level]).

The question banks are hierarchical. They begin with general, overarching subjects such as risk, impacts, labor, new partnerships, regulation, and observed market changes applied to all participants. These are followed by second-tier questions specific to a particular sector. Second-tier questions act as a linear narrative to naturally guide the conversations between participating industry stakeholders and project interviewers. Project interviewers included UF/IFAS Cooperative Extension educators as well as researchers from UF/IFAS and FGCU.

Each questionnaire includes three question styles indicated by a symbol that appears at the end of each question. 1) Open-ended questions (*) allow participants to tell their stories through elaboration while focusing on the initial question to reduce tangential discussion. 2) Percentage and discussion questions (^) capture quantitative impacts that can be used to categorize and elaborate on the qualitative changes mentioned by interviewees. 3) Geographic/location questions (~) define the geographic scope of impacts to be considered for discussion.

Implementation Guidelines

The interviewers contacted possible participants via email, with content approved by the UF and FGCU Institutional Review Boards (UF: IRB202001435, FGCU: Protocol ID #2020-49). Participants were contacted based on three criteria: 1) Group one, respondents to a quantitative study conducted by the UF/IFAS Economic Impact Analysis Program who expressed interest in further discussion (IRB202000642); 2) Group two, stakeholders with an existing relationship within their respective sectors and who were willing to be interviewed; and 3) Group three, informants the core project team thought likely to provide unique insights into the food system and COVID-19 impacts.

After interview dates were set, trained interviewers called or video-conferenced the interviewees. The interviews were recorded, and recordings were later transcribed, stripped of identifying information, and coded for data processing (see Appendix B). The tools described in the bulleted list below improved efficiency during the implementation process.

- For transcription, video conferencing software platforms offer transcription services. Digital transcription options are often free and can be provided post-interview over the phone. Digital transcription saves time but must be checked for errors, which increase when sound quality is poor or when anyone uses slang, jargon, or has an accent.
- The project team developed a code sheet and used it to code the interviews. Assigning multiple coders to each interview allows for greater consistency in implementation of the codes.
- We stored the interviews in a secure, cloud-based filing system with differing access tiers. This method allows interviewers to upload transcripts; allows coders to access interviews, code them, and store them in other locations; and allows administrators and project investigators to access and manage all filing and project management tools.
- For data analysis, we used a qualitative tool that automatically evaluated sentiment and word use frequency and evaluated coded documents based on the pre-constructed coding scheme.

This form of analysis can produce many potential outputs. The qualitative data collected via the interviews serves to document a hazard event and to provide a baseline to further investigate food system resilience, changes, and capacity. The qualitative data can also be combined with quantitative datasets for a mixed methodology approach to inform business management, funding allocation, or future

research. Advanced qualitative analysis techniques can also be employed depending on the research questions of interest.

Usefulness to US Cooperative Extension Professionals

Questionnaire design is integral for information gathering in research but especially for those trying to understand stakeholder needs, such as Cooperative Extension educators. Likewise, creating a questionnaire that both serves researcher needs and avoids leading questions is an ongoing struggle in data collection efforts. The project team's harmonized collection method for food system sector stories is a set of holistic and vetted questionnaires that assist Cooperative Extension educators in the collection of qualitative data on stakeholder reactions to the COVID-19 pandemic. Note, though, that transcription and coding are labor intensive and that the use of slang and jargon unique to particular sectors adds complexity to the research team's comparison of reactions across the entire food supply chain. Having multiple transcript coders is essential to ensure consistency in coding responses. This questionnaire can also be adapted to explore other types of hazard events that impact the food system.

Conclusions

This publication aims to provide current and future researchers and Cooperative Extension educators with a tool developed, vetted, and successfully utilized by UF/IFAS Extension and FGCU shortly after the initial phases of the COVID-19 pandemic. The qualitative research design can add valuable texture to any quantitative data collected. This harmonized data collection method or modified versions of it can assist Cooperative Extension educators in the collection of qualitative data on stakeholder reactions to a pandemic, other long-term disasters, or significant change events.

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Appendix A: Structured Interview Questions

Question Bank #1: Agricultural input suppliers

Q1.1 Briefly describe your business *pre-COVID-19*. *~

Optional Prompts:

- Where is your business located?
- What do you sell?
- Who are your customers?
- Where are your customers located?

Q1.2 How has (have) your market or markets changed because of COVID-19? *~

Optional Prompts:

- Describe how your relationships with your customers have changed because of COVID-19.
- Describe how your relationships with your suppliers have changed because of COVID-19.

Q1.3 What adjustments, if any, did you make in reaction to COVID-19? *

Optional Prompts:

- Did you adopt new innovations or form new partnerships during the pandemic?

Q1.4 Have there been any regulations or other constraints that have enabled or prevented you from making adjustments you wanted to make within your operations in response to COVID-19? *

Q1.5 How do you think COVID-19 changes the future of your business? *

Q1.6 Describe how you managed risk before COVID-19 (i.e., weather, market volatility). *

Q1.7 Has the COVID-19 pandemic changed your approach to risk management? If so, how? *

Question Bank #2: Production agriculture

Q2.1 Briefly describe your farming operation *pre-COVID-19*. *~

Optional Prompts:

- What do you grow/produce?
- Who are your customers, or how do you sell your products?
- Where are your markets or customers located?
- How many people do you directly employ in your operation?

Q2.2 How has (have) your market or markets changed because of COVID-19? *~

Optional Prompts:

- Did your operation expand or contract?
- Are you employing more or fewer people than before the pandemic?
- Describe how your relationships with your customers AND suppliers have changed because of the pandemic.

Q2.3 What adjustments did you make in your farming and/or marketing in reaction to COVID-19? *

Optional Prompt:

- Did you adopt any new innovations or form new partnerships?

Q2.4 Have there been any regulations or other constraints that have enabled or prevented you from making adjustments you wanted to make within your operations in response to COVID-19? *

Q2.5 How do you think COVID-19 will change the future of your business? *

Q2.6 Describe how you managed risk before COVID-19 (i.e., weather, market volatility). *

Q2.7 Were you able to prepare for risks associated with the COVID-19 pandemic? *

Q2.9 Has the COVID-19 pandemic changed your approach to risk management? If so, how? *

Question Bank #3: Processing/Packing

Q3.1 Briefly describe your processing or packing operations *pre-COVID-19*. *

Optional Prompts:

- What do you process or pack?
- Who are your customers, or how do you sell your products?
- Where are your markets or customers located?
- How many people did you employ prior to the pandemic?

Q3.2 How has (have) your market or markets changed because of COVID-19? *~

Optional Prompts:

- Did your sales or revenues increase or decrease?
- Are you employing more or fewer people than before the pandemic?
- Describe how your relationships with your customers AND suppliers have changed because of the pandemic.

Q3.3 What adjustments did you make in your operation and/or marketing strategy in reaction to COVID-19? *

Optional Prompts:

- Did you adopt any new innovations or form new partnerships?

Q3.4 Have there been any regulations or other constraints that have enabled or prevented you from making adjustments you wanted to make within your operations in response to COVID-19? *

Q3.5 How do you think COVID-19 will change the future of your business? *

Q3.6 Describe how you managed risk *before COVID-19*? *

Optional Prompts:

- Think about how you anticipated actions against hurricanes, drought, low prices from market volatility.

Q3.7 Were you able to prepare for risks associated with the COVID-19 pandemic? *

Q3.8 Has the COVID-19 pandemic changed your approach to risk management? If so, how? *

Question Bank #4: Transportation Logistics

Q4.1 Briefly describe your trucking operations *pre-COVID-19*.*~

Optional Prompts:

- What percentage of your trucking business was devoted to agricultural products?
- Where do you deliver the agricultural products you haul?
- How many people related to your agricultural hauling services did you employ prior to the pandemic?

Q4.2 How has (have) your business or businesses changed because of COVID-19? *~

Optional Prompts:

- Did trucking services for agricultural products increase or decrease?
- Are you employing more or fewer people than before the pandemic?
- Describe how your relationships with your customers AND suppliers changed because of the pandemic.

Q4.3 What adjustments did you make in your trucking operations in reaction to COVID-19?*

Optional Prompt:

- Did you adopt any new innovations or form new partnerships?

Q4.4 Have there been any regulations or other constraints that have enabled or prevented you from making adjustments you wanted to make within your operations in response to COVID-19?*

Q4.5 How do you think COVID-19 will change the future of your business and specifically in moving agricultural goods?*

Q4.6 Describe how you managed risk *before COVID-19*.*

Optional Prompt:

- Think about how you anticipated actions against hurricanes, drought, low prices from market volatility.

Q4.7 Were you able to prepare for risks associated with the COVID-19 pandemic?*

Q4.8 Has the COVID-19 pandemic changed your approach to risk management? If so, how?*

Question Bank #5 (and #6): Wholesaling/Retail distribution, Statewide

Q5.1 Describe your operation prior to the COVID-19 pandemic.*

Q5.2 If COVID-19 has impacted your business, when did you start experiencing these impacts (date)?*

Q5.3 How much has COVID-19 impacted your business (lost/improved sales volume, customers, revenue, product mix, cost structure)? *^

0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
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a. Describe the important areas of your operations disrupted by COVID-19.

b. What have you done to help your customers maintain their business?

c. How has the product/service mix changed?

d. Has your customer base changed? If yes, describe.

e. What products/services do you have that are facing shortages?

f. Do you have a product/service that has excess capacity at this time?

g. Have you had to lay off workers? (If yes, what percent?)

Q5.4 Did you have a contingency plan for any type of business disruption? (Y/N) *^

0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
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a. If yes, how effective was it to prevent further disruption of your operations?

b. Briefly explain any contingency plans.

c. Were there any constraints that limited your contingency plans? If yes, how did you overcome these constraints?

Q5.5 What percentage of regular hours are you currently open for business? ^

0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
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Q5.6 Describe the impacts of COVID-19 on sales: *^

a. What percent of your regular capacity is currently being utilized?

0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
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b. Did customer orders change? Select the option that best describes the scenario you are experiencing: Increasing or Decreasing

0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
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c. Are your regular customers open for business? (Y/N)

d. Briefly describe the customer issues you are experiencing.

e. What percentage of your customer operations are impacted by the shortages:

Raw materials	%
Parts/components	%
Transportation services	%
Maintenance, Repairs, Operations (MRO)	%
Storage/warehousing	%
Finished goods/package products	%
Labor	%

f. Describe major impact on your business caused by inadequate demand.

g. Have you changed any processes or strategies to adapt to this situation?

h. Have you developed any innovative solutions?

Q5.7 Describe the impacts of COVID-19 on supply. *^

a. Are your regular suppliers available for business? (Y/N)

b. Briefly describe the supplier issues you are experiencing.

c. What percentage of your operations are impacted by the shortages of:

Raw materials	%
Parts/components	%
Transportation services	%
Maintenance, Repairs, Operations (MRO)	%
Storage/warehousing	%
Finished goods/package products	%
Labor	%

a. Describe major impact on your business caused by inadequate supply.

b. Have you changed any processes or strategies to adapt to this situation?

c. Have you developed any innovative solutions?

Q5.8 Based on the impact of COVID-19 on your business: *~

a. Do you anticipate making any changes to your business model?

b. Do you anticipate making any changes to your processing, distribution channels, or customer base?

c. Do you anticipate making any changes to your supply base?

d. Do you anticipate changes in your risk mitigation strategy?

Question Bank #7: Retail Distribution, Local

Q7.1 Briefly describe your food retail operations pre-COVID-19. *~

Optional Prompts:

- What do you sell?
- Who are your customers, or how do you sell your products?
- Where are your markets or customers located?
- How many people do you directly employ on your operation?

Q7.2 How has your market changed because of COVID-19? *~

Optional Prompts:

- Did your retail operations expand or contract?
- Are you employing more or fewer people than before the pandemic?
- Describe how your relationships with your customers AND suppliers have changed because of the pandemic.

Q7.3 What adjustments did you make in your marketing approach as a reaction to COVID-19? *

Optional Prompt:

- Did you adopt any new innovations or form new partnerships?

Q7.4 Have there been any regulations or other constraints that have enabled or prevented you from making adjustments you wanted to make within your operations in response to COVID-19? *

Q7.5 How do you think COVID-19 will change the future of your business? *

Q7.6 Describe how you managed risk before COVID-19 (i.e., weather, market volatility). *

Q7.7 Were you able to prepare for risks associated with the COVID-19 pandemic? *

Q7.8 Has the COVID-19 pandemic changed your approach to risk management? If so, how?*

Question Bank #8: School and Community Gardens

Q8.1 Briefly describe your school or community garden location and operational structure *pre-COVID-19*? *~

Q8.2 Are there any changes in where community garden participants are from geographically? If so, what are they? *~

Q8.3 How have you managed the social interaction restrictions?*

Q8.4 What role have partnerships played in responding to COVID-19? Have you made new partnerships?*

Q8.5 How is produce from the garden used? How has this changed as a result of COVID-19?*

Q8.6 Are there any lasting changes that will be made as a result of COVID-19? *

Q8.7 Do you think your garden has contributed to community resilience in the face of COVID-19? If so, how? If not, why?*

Q8.8 Have there been any regulations or other constraints that have enabled or prevented you from making adjustments you wanted to make within your operations in response to COVID-19? **

Question Bank #9: Cottage Food Operators

Q9.1 Briefly describe your business, clientele, and areas of operation *pre-COVID-19*. *~

Q9.2 How has your cottage food business adapted to COVID-19? *~

Q9.3 Has demand increased, and if so, how are you delivering your products? *~

Q9.4 Have any partnerships or collaborations formed as a result of COVID-19? *

Q9.5 Have there been any regulations or other constraints that have enabled or prevented you from making adjustments you wanted to make within your operations in response to COVID-19? *

Question Bank #10: Food-Related Nongovernmental Operations (NGOs)

Q10.1 Briefly describe your non-profit *pre-COVID-19*. *~

Optional Prompts:

- What communities do you serve?
- What is the structure of organization?
- How many employees?
- How many participants?

Q10.2 What area do you serve geographically? *~

Q10.3 How and how much has demand for your services changed? *

Q10.4 Where have you seen increases in demand geographically? Has this changed the way you distribute to these areas? *~

Q10.5 How has your volunteer base changed? *^

Q10.6 Have you made changes to how and where you procure food? If so, what are they? *~

Q10.7 What funding impacts do you anticipate as a result of COVID-19? *^

Q10.8 Do you anticipate lasting operational changes as a result of COVID-19? If so, what are they? *

Q10.9 Have there been any regulations or other constraints that have enabled or prevented you from making adjustments you wanted to make within your operations in response to COVID-19? *

Q10.10 What role have partnerships played in responding to COVID-19? Have you formed new partnerships? *

Q10.11 What risks has COVID-19 highlighted for your operation? *

Question Bank #11: Restaurants

Q11.1 Briefly describe your business *pre-COVID-19*. *

Optional Prompts:

- How did you source products?
- How many employees?
- How long have you been in operation?

Q11.2 What has changed about the way you do business? *

Q11.3 How has this affected your need for labor? *^

Q11.4 Have you formed any new partnerships or collaborations due to COVID-19? *(number of collaborations)

Q11.5 What has changed in the way you source products? *

Q11.6 Where are you sourcing your products? ~

Q11.7 Has this changed the way your business functions? (yes/no) *

Q11.8 How do you feel about the new business model? (good/bad/indifferent) *

Q11.9 What aspects of your changes do you think you will keep after COVID-19? *

Q11.10 How would you manage risk in the future? *

Q11.11 Have there been any regulations or other constraints that have enabled or prevented you from making adjustments you wanted to make within your operations in response to COVID-19? *

Question Bank #12: Financial/Insurance/Real Estate:

Q12.1 What has changed about the way you do business? *

Q12.2 Briefly describe your business *pre-COVID-19*. *

Q12.3 Has the pandemic directly impacted your business, and if yes, please describe how? *

Optional Prompts:

- Have customer services changed?
- In general, how have your relationships with your agricultural customers changed as a result of the pandemic?

Q12.4 Has the pandemic changed the way your business functions? (yes/no) *

Q12.5 What changes, if any, do you think you will keep after COVID-19 abates? *

Q12.6 Have your risk-management strategies been changed by COVID-19? *

Question Bank #13: School Food Services

Q13.1 Briefly describe your school foodservice program *pre-COVID-19*. *~

Optional Prompts:

- How did you source products?
- How many employees did you have?
- How long has this program been in operation?

Q13.2 Describe the impacts of COVID-19 on demand for food from your program. *^

Optional Prompts:

- What percent of your regular capacity is currently being utilized?

- How has this affected your need for labor?
- Have there been changes in demand for different types of food or ways to receive it?

Q13.3 How did COVID-19 affect your food supply? *~

Optional Prompts:

- Were there changes in the way you source products?
- *How have the impacts of COVID-19 affected Florida-grown food procurement?*

Q13.4 Can you describe changes that your program has made in response to the pandemic? *

Optional Prompts:

- Have you changed any processes or strategies to adapt to this situation?
- Have you developed any innovative solutions?

Q13.5 What waivers, if any, have you used to adjust operations considering COVID-19? *

Optional Prompts:

- If you using waivers, when do they expire?
- Do you anticipate asking for extensions on waivers?

Q13.6 Have you formed any new partnerships or collaborations due to COVID-19? *(number of collaborations)

Q13.7 How do you feel about the changes you have made to your program considering COVID-19? *

Optional Prompt:

- What aspects of your changes do you think you will keep after COVID-19? *

Q13.8 What have you learned from this experience that will affect how you will manage risk and prepare for disruptions in the future? *

Q13.9 Have there been any regulations or other constraints that have enabled or prevented you from making adjustments you wanted to make within your operations in response to COVID-19? *

Q13.10 Is there anything else you would like to share with me about the effects of COVID-19 on your foodservice program? *

Question Bank #14: Fisheries and Related Seafood Operations ~

Part A: Aquaculture Operations

Q14a.1 Briefly describe your aquaculture operation *pre-COVID-19*. *~

Optional Prompts:

- What do you grow/produce?
- Who are your customers, or how do you sell your products?
- Where are your markets or customers located?
- How many people do you directly employ on your operation?

Q14a.2 How has (have) your market or markets changed as a result of COVID-19? *~

Optional Prompts:

- Did your operation expand or contract?
- Are you employing more or fewer people than before the pandemic?
- Describe how your relationships with your customers AND suppliers have changed because of the pandemic.

Q14a.3 What adjustments did you make to your production and/or marketing in reaction to COVID-19? *

Optional Prompt:

- Did you adopt any new innovations or form new partnerships?

Q14a.4 Have there been any regulations or other constraints that have enabled or prevented you from making adjustments you wanted to make within your operations in response to COVID-19? *

Q14a.5 How do you think COVID-19 will change the future of your business? *

Q14a.6 Describe how you managed risk before COVID-19 (i.e., weather, market volatility). *

Q14a.7 Were you able to prepare for risks associated with the COVID-19 pandemic? *

Q14a.8 Has the COVID-19 pandemic changed your approach to risk management? If so, how? *

Part B: Wholesale Distribution – Seafood Wholesale Dealers

Q14b.1 Briefly describe your seafood wholesale operations *pre-COVID-19, including procurement practices.* *~

Optional Prompts:

- What do you sell?
- Who are your customers, or how do you sell your products?
- Where are your markets or customers located?
- How many people do you directly employ on your operation?
- Do you buy directly from fishers (how many)?

Q14b.2 How has your market changed as a result of COVID-19? *~

Optional Prompts:

- Did your retail operations expand or contract?
- Are you employing more or fewer people than before the pandemic?
- Describe how your relationships with your customers AND suppliers have changed because of the pandemic.
- How have the products/services offered changed?
- What products/services do you have that are facing shortages?
- Do you have a product/service that you can't sell at this time that you usually would be?

Q14b.3 What adjustments did you make in your marketing approach as a reaction to COVID-19? *

Optional Prompt:

- Did you adopt any new innovations or form new partnerships?

Q14b.4 Have there been any regulations or other constraints that have enabled or prevented you from making adjustments you wanted to make within your operations in response to COVID-19? *

Q14b.5 How do you think COVID-19 will change the future of your business? *

Q14b.6 Describe how you managed risk before COVID-19 (i.e., weather, market volatility). *

Q14b.7 Where you able to prepare for risks associated with the COVID-19 pandemic? *

Q14b.8 Has the COVID-19 pandemic changed your approach to risk management? If so, how? *

Part C: Retail Distribution – Seafood-Centric Restaurants ~

Q14c.1 Briefly describe your seafood retail operations *pre-COVID-19.* *~

Optional Prompts:

- What do you sell?
- Who are your customers, or how do you sell your products?
- Where are your markets or customers located?
- How many people do you directly employ on your operation?

Q14c.2 How has your market changed as a result of COVID-19? *~

Optional Prompts:

- Did your retail operations expand or contract?
- Are you employing more or fewer people than before the pandemic?
- Describe how your relationships with your customers AND suppliers have changed because of the pandemic.
- Are you selling a different product/species mix than before?
- Has the pandemic had a greater impact on locally sourced seafood or seafood from other regions with regards to both supply and demand?

Q14c.3 What adjustments did you make in your marketing approach as a reaction to COVID-19? *

Optional Prompt:

- Did you adopt any new innovations or form new partnerships?

Q14c.4 Have there been any regulations or other constraints that have enabled or prevented you from making adjustments you wanted to make within your operations in response to COVID-19? *

Q14c.5 How do you think COVID-19 will change the future of your business? *

Q14c.6 Describe how you managed risk before COVID-19 (i.e., weather, market volatility). *

Q14c.7 Were you able to prepare for risks associated with the COVID-19 pandemic? *

Q14c.8 Has the COVID-19 pandemic changed your approach to risk management? If so, how? *

Question Bank #15: Agricultural Associations

Q15.1 Briefly describe your organization *pre-COVID-19*. *~

Q15.2 How has (have) your organization changed as a result of COVID-19? *~

Optional Prompts:

- Has the inability to meet in person impacted your membership/solvency at the regional/local level?
- Are you employing more or fewer people than before the pandemic.
- Describe how your relationships with your members changed due to the pandemic.
- Describe how your approach to advocacy changed due to the pandemic.

Q15.3 What adjustments did you make in your approach and/or marketing in reaction to COVID-19? *

Optional Prompt:

- Did you adopt any new innovations or form new partnerships?

Q15.4 Have there been any regulations or other constraints that have enabled or prevented you from making adjustments you wanted to make within your operations in response to COVID-19? *

Q15.5 How do you think COVID-19 will change the future of your organization? *

Q15.6 Describe how you managed risk before COVID-19 (i.e., weather, market volatility). *

Q15.7 Were you able to prepare for risks associated with the COVID-19 pandemic? *

Q15.8 Has the COVID-19 pandemic changed your approach to risk management? If so, how? *

Appendix B: Codes for Qualitative Analysis of Interviews

Metadata labels for transcripts

Location of interview (UF/IFAS Districts/County)

Date of interview

Interviewer

Major themes

Question bank

a. Sector/question bank—for categorizing questions asked

- i. Business description
- ii. Market change
- iii. Adjustments to COVID-19
- iv. Regulation constraint
- v. Future outlook
- vi. Risk perception before, during, and after
- vii. Other/added
- viii. Prompt/probe

b. Impact—evaluative statement that represents change in business practices, approach, and effects due to direct or indirect implications of COVID-19

- i. Positive (the business/individual experienced beneficial outcomes during the initial phases of COVID-19)
- ii. Negative (the business/individual experienced detrimental outcomes during the initial phases of COVID-19)
- iii. None
- iv. Both positive and negative
- v. Observed market impact

c. Partnerships—relationships between businesses, individuals, or agencies

- i. New (a partnership or relationship that was formed in reaction to COVID-19)
- ii. Improved (an existing partnership that expanded due to COVID-19)

- iii. Declined (an existing partnership that was reduced due to COVID-19)
- iv. Loss
- v. Change in relationship
- vi. No change

d. Culture (institutional/business)–the ethos and practices of a business, institution, or individual that determine approach, attitudes, and common practices

- i. Changed
- ii. Remained the same

e. Internal change–adjustments in reaction from within the business, individual(s) or institution

(Internal change could be inspired by, accelerated by, or in some other manner in direct relation to the event of COVID-19 or awareness brought about during the time of COVID-19.)

- i. Operational/process change
- ii. Physical (structural)
- iii. Future changes
- iv. Systemic change

f. External change–events or circumstances outside of the business, individual, or institution that determined shifts in practices, behavior, and operations

- i. Weather
- ii. Market output change
- iii. Market input change

g. Technology

- i. New technology adoption in operations
- ii. Re-invention of already adopted technologies

- iii. Positive remote meetings
- iv. Negative remote meetings
- v. No change

h. Risk mitigation–consists of actions, attitudes, or perceptions towards risk before, during, and after the initial phases of COVID-19

- i. During
- ii. After
- iii. Before
- iv. Approach to risk

i. Constraints–limiting factors that reduced the ability of the individual(s), institution, or business to operate

(Constraints could be related to COVID-19 or COVID-19 decisions or to extraneous circumstantial occurrences.)

- i. COVID-19-related
- ii. COVID-19 decisions
- iii. Circumstantial

j. Ongoing Concerns

k. Employees

- i. COVID-19 risk
- ii. Let go
- iii. Hired more
- iv. Stayed same

l. Geography

- i. Expanded reach/market
- ii. Reduction in reach/market
- iii. New locations

m. Legislation/regulation–regulations or restrictions introduced or highlighted as a result of COVID-19

- i. Slowed business
- ii. Supported business
- iii. Complicated
- iv. Indecisive
- v. Limited
- vi. Adapted
- vii. Loosened
- viii. Tightened
- ix. No change
- x. External to COVID-19

n. Future outlook–specific in relation to the time of the interview

(Post-COVID-19 outlook should be addressed with risk mitigation code.)

- i. Positive
- ii. Negative
- iii. Unclear
- iv. Concerned
- v. External to COVID-19

o. Implied knowledge and elaboration required

p. Business description