

**Securing Safe Food During an Emergency:  
The Case of Hurricane Michael in the Florida Panhandle**

**Instructor's Guide**

Karla Solis Salazar, Graduate Student, Texas A&M University.  
Alejandro Castillo, Associate Professor, Texas A&M University.

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<b>Authors:</b>	Karla Solis Salazar, Graduate Student, Texas A&M University. Alejandro Castillo, Associate Professor, Texas A&M University.
<b>Key Terms:</b>	<p><b>Food Security:</b> a situation that exists when all people at all times have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life.</p> <p><b>Food Safety:</b> assurance that food will not cause harm to the consumer when it is prepared and/or eaten according to its intended use.</p> <p><b>Food Pantry:</b> a distribution center where hungry families can receive food.</p> <p><b>Food Bank:</b> a non-profit organization that collects and distributes food to hunger-relief charities. Food banks act as food storage and distribution depots for smaller front-line agencies; and usually do not give food directly to people struggling with hunger.</p>
<b>Student Learning Objectives:</b>	<p>Upon completion of this case study students will be able to:</p> <ul style="list-style-type: none"> <li>• Understand food safety and food security and how these two concepts are linked.</li> <li>• Discuss leadership issues and effective decision making related to ensuring food safety following a natural disaster.</li> <li>• Identify key elements composing effective food safety management programs and how to incorporate them in a disaster response plan.</li> </ul>
<b>Overview/Background of Case Study:</b>	<p>In October of 2018, Hurricane Michael made landfall near Tyndall Air Force Base in the Florida Panhandle as a category 5 hurricane. Michael’s winds and storm surge caused devastating structural and agricultural damage. The National Centers for Environmental Information (NOAA) estimates the total damage from Michael in the United States at approximately \$25 billion. Of this total amount, about \$18.4 billion occurred in Florida.</p> <p>Food security has been defined by the Food and Agriculture Organization (FAO) of the United Nations; <i>"Food security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food which meets their dietary needs and food preferences for an active and healthy life"</i>. In the aftermath of Hurricane Michael, volunteer organizations helped by securing food provisions for people affected during the hurricane. The need for help creates a dilemma as to whether the priority during an emergency is to provide food to the affected population even when safety cooking practices cannot be entirely implemented, as not all the volunteers are trained for food safety handling, and sometimes the access to basic conditions as potable water and power supply is limited.</p>

	This case study focuses on the application of food safety measures by two different organizations when trying to feed a massive amount of people in conditions where widespread power and communication outages were common.
<b>Estimated Time:</b>	The estimated time for completing this will be 1 week, in 3 classroom sessions (online or face-to-face), and 2 days of extra-classroom group work.
<b>Using this Case Study:</b>  (Add descriptions for each of these sections)	<b>Type of Case Study:</b> Historical The actions taken by two organizations (a food pantry, and a restaurant) prior, during, and after Hurricane Michael to ensure access to safe food for the community will be used as an example to discuss and question the decisions made during the different stages of the emergency regarding food safety and food security.
	<b>Instructional Format:</b> <ul style="list-style-type: none"> <li>• Discussion</li> <li>• Problem-Based Learning</li> </ul>
	<b>Case Study Versions:</b> The paper version may be distributed to the students in conducting the case study in a face-to-face setting. This version may also be uploaded to a virtual classroom for online classes. In these cases, the format would be similar, consisting of readings and assignments, class discussion (whether in classroom or online) with a requirement for completing a written document on an assigned topic. The electronic version may also be used in a face-to-face or online classroom setting.
	<b>Media:</b> <ul style="list-style-type: none"> <li>• Recommended readings <ul style="list-style-type: none"> <li>○ <a href="https://www.foodsafety.gov/">https://www.foodsafety.gov/</a></li> <li>○ <a href="http://www.fao.org/fileadmin/templates/faoitally/documents/pdf/pdf_Food_Security_Coecept_Note.pdf">http://www.fao.org/fileadmin/templates/faoitally/documents/pdf/pdf_Food_Security_Coecept_Note.pdf</a>.</li> <li>○ <a href="https://www.feedingthegulfcoast.org/#">https://www.feedingthegulfcoast.org/#</a></li> <li>○ <a href="https://www.feedingamerica.org/our-work/food-bank-network">https://www.feedingamerica.org/our-work/food-bank-network</a></li> </ul> </li> </ul>
	<b>Student Considerations:</b> <ul style="list-style-type: none"> <li>• The design of the case study is to be presented to the entire class, with discussion of concepts, presentation of the story, and then discussing with focus on food safety. The students will be separated in four groups, each of which will work on a specific assignment. Students will be required to seek out additional information to support their group work.</li> </ul>

	<ul style="list-style-type: none"> <li>• Pre-teaching or review sessions are not necessary. However, basic texts will be needed to review during the course of the case study</li> </ul>
<p><b>Leadership Frames:</b></p> <p>(Explain how the frames are used and how the learner should use the frames)</p>	<p>The leadership frames used in this case study are</p> <ul style="list-style-type: none"> <li>• Structural Frame: Incorporate and work with other leaders in promoting awareness of food safety to educate the populations so they will have food safety present (both leaders and the people), and apply it under all circumstances, including an emergency. Understand the resources available as well as the roles and responsibilities of individuals in the different organizations.</li> <li>• Political Frame: Discuss different networks that can be activated in response to an emergency. How the dynamic between and within organizations work in order to achieve an optimal distribution of resources between organization at the local, regional, and national level.</li> <li>• Human resources: Recognize the need of trained personnel within the organization to ensure that in case of an emergency, the entire food provision system will be under a food safety plan.</li> <li>• Symbolic Frame: Know which institutions will be available for helping people and the reason why those institutions are trusted. Understand the importance of food safety and how foodborne illnesses may impact the image of these institutions.</li> </ul>
<p><b>Suggested Teaching Outline:</b></p> <p>(For each day, specify delivery format, instructional activities, material covered, and any</p>	<p><b>Day 1</b></p> <p><b>Delivery format:</b> Face-to-face or online. In both cases, the written version and the digital version are used in combination. At the beginning of the case study, the students are given copies of the written version of the case study, which will serve as a study guide. For online format, all documents must be posted on the platform. Then, the digital version will be showed as a presentation.</p> <p>After showing the initial slides (Learning Objectives, Case Study Overview and What the Study is About) the concepts of Food Security and Food Safety should be fully understood. Next, the digital version will be viewed to understand the facts about how food safety was handled in the aftermath of the hurricane.</p> <p>Then, the students will be assigned to groups for out of classroom activities. As described in the digital and written versions of the case study, each group</p>

<p>assignments given)</p>	<p>will be assigned one of the following four food safety related aspects: education, training, safe cooking, and inspection. At this time, instructions for group work are communicated.</p> <p><b><u>Extra-classroom work</u></b> Students will be asked to answer key questions presented in the case study, and the gathered information will be used to discuss in class and will be helpful in the development of the assigned work group. Students will be asked to start envisioning a food safety plan for their assigned food safety-related aspects.</p> <p><b><u>Day 2</u></b> <b>Delivery Format:</b> Face-to-face or online, mixed digital and written versions are used. Discussion of key questions. Proposal for solutions for better preparedness regarding food safety during and after disasters. Assignments for out of classroom activities will be given.</p> <p><b><u>Extra-classroom work</u></b> Group work will continue outside the classroom. Preparation of written document (outline of food safety plan for their assigned food safety-related aspects).</p> <p><b><u>Day 3</u></b> <b>Delivery Format:</b> Discussion of concepts, questions and answers, and continuation of group work. The due day to present the group work will be assigned.</p>
<p><b>Summative Assessment:</b>  (Describe the assessment and how it should be administered and graded)</p>	<p>This case study may be applied as a learning tool in food safety and food microbiology courses. These courses provide basic knowledge for applying during this case study. Other academic programs where this case student can be applied include Community Health, Management, Political Science etc. After completion of this case study, the students will be able to:</p> <ul style="list-style-type: none"> <li>• Understand food safety and food security and how these two concepts are linked.</li> <li>• Discuss leadership issues and effective decision making related to ensuring food safety following a natural disaster.</li> <li>• Identify key elements composing effective food safety management programs and how to incorporate them in a disaster response plan.</li> </ul>

	Please consult the written case study and rubric for details on the summative assessment.
<b>Resources Needed:</b>  (List any needed resources and attach media here via links)	Links to all resources will be provided in the slides and the paper version. <ul style="list-style-type: none"><li>● Recommended readings<ul style="list-style-type: none"><li>○ <a href="https://www.foodsafety.gov/">https://www.foodsafety.gov/</a></li><li>○ <a href="http://www.fao.org/fileadmin/templates/faoitally/documents/pdf/Food_Security_Concept_Note.pdf">http://www.fao.org/fileadmin/templates/faoitally/documents/pdf/Food_Security_Concept_Note.pdf</a>.</li><li>○ <a href="https://www.feedingthegulfcoast.org/#">https://www.feedingthegulfcoast.org/#</a></li><li>○ <a href="https://www.feedingamerica.org/our-work/food-bank-network">https://www.feedingamerica.org/our-work/food-bank-network</a></li></ul></li></ul>