

F.R.E. Lunch: Season 1, Episode 1 Transcript

How Hurricanes Affect Florida Agriculture: Assessing Short-Term Economic Impacts

00;00;04;28 - 00;00;19;07

Alena Poulin

Welcome to F.R.E. Lunch, the official podcast of the Food and Resource Economics department at the University of Florida. I'm Alena Poulin, the marketing and communications specialist for the department.

00;00;19;09 - 00;00;36;09

Caleb Stair

And I'm Caleb Stair, assistant instructional professor of food and resource economics and coordinator for the undergraduate Honors Research Program. From storms to supply chain issues, our food system is affected by many things. Therefore, studying how to mitigate these impacts is important.

00;00;36;11 - 00;00;49;07

Alena Poulin

That's why we made this podcast to showcase the many ways students and faculty are using economic research to understand and address the complex issues facing agricultural and natural resource industries.

00;00;49;09 - 00;01;02;16

Caleb Stair

In today's episode, I'll be interviewing Dr. Christa Court, assistant professor of regional Economics, director of the Economic Impact Analysis Program, a member of my PhD committee and FRE's resident disaster.

00;01;02;19 - 00;01;05;09

Alena Poulin

Researcher Caleb Disaster, researcher.

00;01;05;15 - 00;01;06;13

Caleb Stair

Right, right.

00;01;06;16 - 00;01;15;23

Alena Poulin

Despite being known as the Sunshine State, Florida has also had a sordid storm saga. More hurricanes and tropical storms have hit Florida than any other state.

00;01;15;25 - 00;01;30;03

Caleb Stair

Each one of these storms can have winds ranging from 70 to 150mph and can produce deadly storm surge, rain induced floods, and tornadoes. These hazards require people and industries to take protective action.

00;01;30;05 - 00;01;37;08

Alena Poulin

And so with hurricane season starting this month, some of you might be wondering what happens to the ag industry when a storm occurs.

00;01;37;11 - 00;01;43;03

Caleb Stair

And to answer that question, we're now joined by Doctor Court. Thank you so much for chatting with us about this important topic.

00;01;43;04 - 00;01;44;13

Christa Court

Thank you Caleb. Can't wait.

00;01;44;14 - 00;01;48;22

Caleb Stair

First, tell me more about what the Economic Impact Analysis Program does.

00;01;48;23 - 00;02;17;08

Christa Court

So we are a program housed within the Food and Resource Economics department. We have expertise in the areas of regional economic modeling, economic impact analysis, and economic contribution studies, of which some of those focus on disaster impacts. So we essentially study size, scope and structure of regional economies, how natural resources support those economies, and how external stressors like hurricanes or oil spills impact economic activity.

00;02;17;09 - 00;02;22;05

Caleb Stair

And can you explain your background and what led you to specialize in analyzing disasters?

00;02;22;06 - 00;02;48;00

Christa Court

So my PhD is in economics and specifically regional economics. My first four years outside of graduate school were spent as contract economist with the Department of Energy, where I focused on energy technology transitions. And then I moved to Florida, which is impacted by a lot of different disaster events. We had a ten year drought of hurricanes prior to my arrival in Florida, and then we've had a landfall of a major hurricane ever since.

00;02;48;00 - 00;02;57;14

Christa Court

So my location sort of determined this redirection of my research towards disaster impacts, because we wanted to be helpful to the state of Florida.

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Caleb Stair

So along those lines, why is estimating the economic impact of disaster events like hurricanes important?

00;03;04;05 - 00;03;28;06

Christa Court

So disaster events can have a lot of different social and economic impacts. So we might say that they have effects like economic damages, changes in stocks, so things that would need a repair or replacement because they've been impacted by a disaster. There's economic losses or changes in business activity that resulted from the disaster, and there's additional costs associated with recovering from a disaster.

00;03;28;06 - 00;03;50;26

Christa Court

It can also be longer term impacts. So changes to things like household income, unemployment rates, GDP, even fiscal balances for local, state and federal governments. So understanding all of these different things is very important to not only minimizing the effects of future disasters, but making sure that we are ready to encounter them in the future.

00;03;50;29 - 00;03;57;10

Caleb Stair

And are there any of those economic effects of these disasters you've encountered in your research that have surprised you?

00;03;57;13 - 00;04;17;12

Christa Court

I think we were all surprised that people hoarded toilet paper, when we were experiencing a pandemic, back during the COVID-19 crisis. Yes. It surprises me every time when you learn about changes in human behavior that are happening to disasters. So there is always something in every disaster that surprises you. But that's how we learn and that's how we do a better job.

00;04;17;12 - 00;04;18;26

Christa Court

Estimating impacts the next time.

00;04;18;27 - 00;04;21;09

Caleb Stair

So what was the most challenging hurricane you worked on?

00;04;21;12 - 00;04;22;26

Christa Court
Your dissertation?

00;04;22;28 - 00;04;26;00

Caleb Stair

I'm an acquired taste, so if you don't like me, acquire some tasty.

00;04;26;07 - 00;04;59;03

Christa Court

No, I think I think for us the most challenging was actually Hurricane Michael. It was a category five storm that came into the Panhandle region, and the size and intensity of that storm made it such that we didn't really have communications with the area that was directly impacted. For a few days, both phones and internet were down. So we were in very much a waiting and watching and hoping for the best, and then couldn't get in until a week or two later to start asking individuals that were involved in agriculture about what happened.

00;04;59;11 - 00;05;04;17

Caleb Stair

I also had the opportunity to to work with you on that one too. So both your answer involved me.

00;05;04;18 - 00;05;07;05

Christa Court

Now, who is the resident disaster of the department?

00;05;07;05 - 00;05;16;02

Caleb Stair

Now that's a good point. How do you use surveys in your disaster assessment work, and why are they critical to developing an accurate assessment?

00;05;16;04 - 00;05;39;19

Christa Court

Sure. So we have several data sources that we use. When we look at agricultural impacts of disasters, we have data that we collect from places like, the National Weather Service and the National Hurricane Center on the disaster event itself. And then we have information on what types of agriculture are grown in Florida and what they're worth that we can overlay to see what was impacted.

00;05;39;22 - 00;06;16;24

Christa Court

the hard part is understanding exactly what happened to which crops in which places, based on the types of hurricane characteristics that they experienced. So we do use a survey that is sent to producers. We have several industry associations and local and state government partners that help us distribute that after a disaster event, and we collect information from the growers

themselves or from observations from our, UF/IFAS Extension faculty on exactly what happened and where, so that we can put that, those more accurate percentage losses onto what has been affected.

00;06;16;26 - 00;06;22;01

Alena Poulin

Are there any ag damage and losses that are not included in your assessment survey, and why?

00;06;22;03 - 00;06;48;15

Christa Court

Yes, that's a that's a really important point actually. So we specialize in looking at acute short term production losses after the disaster. So if you think of it as the losses in sales revenues for agricultural operations in the calendar year or the marketing year that they were affected by the disaster. So there's a lot of other things that go into play that we're not yet able to place a dollar value on, so aren't included in our assessment.

00;06;48;15 - 00;07;17;14

Christa Court

We've started moving in the direction of including some of those things qualitatively, because we're not telling the whole story through those production losses. So things like repair or replacement costs to any type of infrastructure that's been damaged. So irrigation equipment, farm buildings, any other types of machinery, we also are not placing a dollar value on if there were stored inputs on property that were affected or if there were stored harvested products on property that were affected.

00;07;17;17 - 00;07;27;12

Caleb Stair

So obviously people's thoughts, feelings, opinions and priorities change over time. have you worked to improve the survey method and adapt to these changes?

00;07;27;14 - 00;08;03;00

Christa Court

Yeah. So in each disaster, we understand that we are asking individuals for information right after they have potentially been severely impacted by a hurricane event. So they've lost personal property as well as business property. And we know that emotionally they're going to be reacting to that as we're trying to ask them questions. We work a lot under what we call blue skies, to try to improve that survey tool so that our estimates are as accurate as they can be, was met with farmers, we've met with aquaculture operators, ranchers to try to see what happens

00;08;03;02 - 00;08;08;29

Christa Court

well after the event. so that we're not asking only in that immediate aftermath and we can improve it that way.

00;08;09;02 - 00;08;15;26

Caleb Stair

So you have improved the survey method. are there some examples you could give of different ways you've worked to make it better?

00;08;16;02 - 00;08;34;29

Christa Court

I think we've done that in three ways. So one is making sure that we're asking the right questions and we're using the right language, so that people understand the question and understand the type of information that we are looking for from them in that question. The second would be asking fewer questions. So we're researchers. We love data.

00;08;34;29 - 00;08;53;08

Christa Court

We would love to get as much data as possible, so that we could tell you all of the different nuanced things, but we don't need it to provide the information that we need to provide to the decision making processes that we are contributing to. So just asking exactly what we need. And then we have a question that says, would you like to give us any more information?

00;08;53;08 - 00;09;14;18

Christa Court

And only if they say yes will they see any more questions. And the third way I would say is making the survey tool more accessible. So I mentioned that Hurricane Michael was difficult because we had no communication, no internet, no power for several days and some for several weeks after that. And when we had only an online survey, we're not going to be collecting any information from those hardest hit areas.

00;09;14;18 - 00;09;36;18

Christa Court

So, we've developed a paper version of the survey, and we've worked a lot with our communications team for different ways that we can get that out so that people know that it's out and and know that it's available to submit responses. And finally, I would say, like showing up in person to make sure that people understand why we're asking what that information is being used for.

00;09;36;20 - 00;09;50;02

Christa Court

after Hurricane Idalia it was close enough to Gainesville that I could travel several times to the impacted area and speak with the individuals that we were asking to fill out the survey, so that they really understood why we were asking them what it would be used for.

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Caleb Stair

You always emphasize that getting out from behind the desk is important for economists.

00;09;54;28 - 00;09;59;18

Christa Court

I do. I was very, it's a very important lesson for my postdocs.

00;09;59;21 - 00;10;09;24

Caleb Stair

And so for your PhD students. So can you tell me a little bit about the agricultural impact of a recent major hurricane in Florida and how it affected the state, economy?

00;10;09;26 - 00;10;37;01

Christa Court

Sure. so we've been doing this since Hurricane Irma. There was a group of food and resource economics department faculty that we were largely unaffected here in Gainesville, from Hurricane Irma, at least our own personal situations. And we sat around after a faculty meeting and decided we should be doing something. So Hurricane Irma, we estimated \$1.313 billion of losses to agricultural production.

00;10;37;02 - 00;10;58;14

Christa Court

Hurricane Michael, affected a different part of the state that gross different things. \$138 million. Hurricane Ian. We estimated just over \$1 billion of losses for, agricultural production operations. And then most recently, Hurricane Idalia was, around \$276 million of agricultural losses.

00;10;58;16 - 00;11;08;03

Alena Poulin

You mentioned that you started doing these analysis impacts after Hurricane Irma. How have you been sharing these with policymakers? And has the impact of those reports changed over time?

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Christa Court

Yes, I think so. So after Hurricane Irma, we did share our assessment with FDACS, the Florida Department of Agriculture and Consumer Services, and it was helpful in it. went forward into their report that the Commissioner of Agriculture sends to the Secretary of Agriculture at the federal level. Afterwards the same process happened, with Hurricane Michael, where we sort of shared with our representatives at FDACS and informed that report that goes on to the federal level. I would say hurricane Ian is the first time where we made additional, we had additional relationships with both other state government agencies as well as federal government agencies, and they were asking for the information before we had

00;11;50;20 - 00;12;26;23

Christa Court

it ready, or they at least knew that it was coming and were waiting to make some of, but waiting for it to inform some of the decision making processes that they were going through. I mentioned working in Blue skies earlier. We've really recognized the importance of those relationships after Hurricane Ian, and worked during Blue Skies to make sure that more local government operations knew what we do, and how it can be important to them as well as, maintaining those relationships with state and federal agencies so that they knew that our reports were coming and could use them in future decision making processes.

00;12;26;26 - 00;12;34;02

Caleb Stair

What emerging trends or technologies do you believe will significantly influence disaster economy economics in the future?

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Christa Court

I do think it's in this area of the way that we collect information, in the way that we may be able to incorporate artificial intelligence to analyze that information. So we have there's a lot of data out there on, remote sensing, different types of information that's coming from satellites. And if we can look at, you know, a satellite imagery before and after the event and we can use, you know, initially humans to look at this and understand what has happened pre and post.

00;13;03;16 - 00;13;17;15

Christa Court

But afterwards train artificial intelligence to more quickly scan through all of that information. then I think that's going to be a game changer in terms of having to ask for input from operators while they've been impacted by a disaster.

00;13;17;17 - 00;13;23;14

Caleb Stair

From a public perspective, what's the most important aspect of your work that they should know about?

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Christa Court

I think, understanding that we are trying to provide this information so that we have less need for things like ad hoc disaster relief in the future, if we can really understand how agricultural operations are impacted by these events, and then we can improve things like risk management tools that are available to agricultural operators so that we don't end up in a situation where we're constantly surprised that an event has happened, or surprised that these operations are impacted by an event, and then looking to the state or the federal government for response to that and plan ahead instead.

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Caleb Stair

How important is interdisciplinary collaboration in these sort of events, and which other fields do you most often collaborate with?

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Christa Court

Yeah, so it's extremely important. I'm an economist, not a farmer. I don't, come from a farming background, so I don't always understand exactly what goes on on the farm that's been impacted by the hurricane. We do have specialists in things like agronomy that can help us understand how the plants are impacted. But getting out and speaking with extension professionals is also really important.

00;14;28;14 - 00;14;52;14

Christa Court

Some of the other disciplines that we work with, we work with geography to understand how we can better use the data on the events themselves. We work with, engineers, now that are working on things like drones to collect this information, artificial intelligence that's helping us more quickly analyze the data that's coming from drones or other types of equipment.

00;14;52;16 - 00;15;02;24

Christa Court

a lot of that is still we're still assessing how we're going to use that in the process that we go through. But I think it's going to be really important to doing these faster and more accurate in the future.

00;15;02;26 - 00;15;14;02

Alena Poulin

So you primarily are assessing the impact of these natural events in Florida. But often these storms can impact other states. Do you ever collaborate with extension professionals outside of Florida on these storms?

00;15;14;04 - 00;15;37;07

Christa Court

Yeah. so there is something called the Extension disaster Education Network. It is a nationwide network of extension professionals that work in the areas of disaster preparation and response, mitigation and recovery. We started attending those events. I say we my colleague, Dr. Angie Lindsey, is our point of contact for the state of Florida, for the EDEN Network.

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Christa Court

And she's been involved in a long time. I started attending, the EDEN meetings, 2 or 3 years ago to let that network know what we do. And we have had a lot of collaboration come out of that, network in terms of us learning how other states, assess the impacts of disasters as well as other states using the tools that we've developed, that survey instrument, or maybe some of

the ways that we process data after a disaster, they will reach out when they've been impacted by a disaster.

00;16;04;25 - 00;16;11;11

Christa Court

And so there are several states that are modifying their assessments or creating assessment processes based on this information.

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Caleb Stair

And finally, Dr. Court, is there anything that you would like to say to our interested audience out there who are preparing for this hurricane season?

00;16;18;20 - 00;16;51;03

Christa Court

I think I would say hope for the best, but prepare for the worst. Ways that agricultural producers can do that is prepare by getting to know your local extension agents. There's a lot of information that they have that comes out of the university, through that EDEN network as well as other resources to help get prepared for hurricane season. Get to know your county's USDA Farm Service Agency representative, because, that agency is also involved in, the official disaster declaration and relief process.

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Christa Court

If a disaster is to hit, documenting what you have that could be impacted by a disaster for both insurance and disaster assessment purposes. And then if the worst does happen, report it and report it not only through, our survey efforts that should be available if a hurricane should hit Florida this year, but also to that USDA FSA office, again, because they are, the official pathway to disaster declaration and relief through the federal government.

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Caleb Stair

I want to thank Doctor Court for being here with us today. And if you are interested in the work we have talked about here or any other work the Economic Impact Analysis program does, those links will be in the description. You can also find their program on the FRE website. If you've made it this far, you've finished the entire episode and we thank you for that.

00;17;38;19 - 00;17;48;02

Caleb Stair

Tune in next time for more food for thought. Thanks again for joining us on this episode of FRE Lunch. We hope you'll come back again for a seconds.