

MoS Rapid Response Transcript – Sara Menker

[Listen to the full Rapid Response episode with Sara Menker here.](#)

SARAH MENKER: Most people are never really worried about their food supply. And all of a sudden, it's on every headline.

There is no shortage coming. There are certainly parts of the world where that is a reality, but the United States is just not one of them.

Everybody's focused on coronavirus. For some of these emerging economies like East Africa and countries like Ethiopia, the locust devastation could be much greater than that of coronavirus. But the ability to have people pay attention to that right now is almost nonexistent.

Answers lie in the data. When you connect the dots between price and demand and supply and climate, you start to learn and pattern recognize, and you can start to ingest and create live predictive models that actually help you forecast.

BOB SAFIAN: That's Sara Menker, CEO of Gro Intelligence, an AI-fueled agricultural data firm.

By parsing literally trillions of data points around the globe each day, Sara gets real-time insights into our food supply and food security as the coronavirus rapidly alters our world.

This is Bob Safian, your host for Masters of Scale: Rapid Response.

From beef and chicken to golden delicious apples, Sara explains how the interconnected nature of our agriculture system impacts what we're seeing on shelves.

She talks about the critical importance of finding and sifting the right information, and how the parameters of that information have moved in the age of Covid-19.

Let's listen in.

[THEME MUSIC]

SAFIAN: I'm Bob Safian, and I'm here with Sara Menker, founder and CEO of Grow Intelligence, an agricultural data platform that ingests 650 trillion data points, updated daily. The firm runs thousands of predictive models off that data, following 55 million unique indicators related to global agriculture.

This gives Sara insights into the state of the food supply in the U.S. and around the world, which is a topic of intense interest as the coronavirus rapidly shifts processes and expectations. Many in food-related businesses, as well as food consumers, are unsettled and unsure.

Sara is going to share some facts to help ground us, and explain why, in many cases, we're worrying about the wrong things. Sarah's coming to us today remotely from her home in New York City, in Manhattan, as I ask my questions from my home in nearby Brooklyn. Sara, thanks for joining us.

MENKER: Thanks for having me, Bob.

SAFIAN: So I want to start by asking about the food supply here in the U.S. A lot of people are anxious that the U.S. is on the verge of some kind of a food emergency. And the information that you have is that that danger is wildly overstated.

MENKER: Yes, I think that's a good way to put it. Which is, the U.S. is certainly facing some very serious supply chain challenges, as producers of anything from milk to vegetables to meat, and packagers of it, are having to repurpose packaging so that stuff that was meant to go to food services ends up in retail shelves, et cetera. So there is all sorts of disruptions happening across the supply chain. However, this concept that the U.S. is about to run out of meat anytime soon is wildly overstated.

SAFIAN: You mentioned to me that you got a call or a text from friends at some point saying, "Should I be stocking up?"

MENKER: For a long time most people are never really worried about their food supply. And all of a sudden, it's on every headline, so everybody cares about food all of a sudden. And I happen to be one of those people that has thought about it for a long time.

And when I get asked that question, my answer is, the United States has been a net calorie, just overall. So it's in produce, it's in grains, it's in oil seeds, it's in meat. Pretty much every product has always been a net calorie exporter from the country. So it produces way more than what local demand is. And that's not about to change overnight.

What might change is, the mix of products that end up on a shelf could look different. Some products that were typically imported, could be way more seasonal in nature now, as shipping changes. But that doesn't mean that, as a result, there's going to be no food in the United States. It's just the mix of food will look different. But there is no shortage coming. There are certainly parts of the world where that is a reality, but the United States is just not one of them.

SAFIAN: And you said that there are record amounts of proteins and meat in storage, what does that mean? You mean frozen meat?

MENKER: Exactly. They're actually reported values, so these are not even numbers that we as a company are estimating, but we're scraping from reports that are being generated by the U.S. government, where there are estimates of how much chicken is in cold storage, how much beef is in cold storage, and how much pork is in cold storage. And when you look at the volumes of what is in cold storage, you're basically at all time highs almost in all three.

SAFIAN: So that if there are some facilities that are not able to process the meat right now, there's plenty of meat frozen to fill that demand.

MENKER: Yes, exactly. And that's why I say, what will happen is, you'll see shifts in cuts of meat that might be available, and the different varieties. I was born and raised in Ethiopia. And the concept of seasonality on your supermarket shelf is very normal for us. You would go and say, "I want mangoes." You don't get to say, "I want mangoes," every day of the year.

America's built on a system where you can want everything every day of the year. And what is starting to happen now is that maybe that concept is going to start to fade a little bit. But it doesn't mean you don't have food, you just have something slightly different.

SAFIAN: You mentioned this falling beef supply but abundance of chicken. Or at least being priced that way. Why is there plenty of chicken, but not enough beef, or seeming that way when you look at pricing?

MENKER: It's much more a reflection of how those supply chains work. The way that a chicken getting on your supermarket shelf works is that most chickens are owned from the time they're laid to the time they're handed to the consumer by literally a single vertically integrated company, called integrators. So it doesn't change hands multiple times. Whereas when you're looking at cattle, cattle change ownership several times from when they're born to when they're basically on your plate, or when you're buying them off a supermarket shelf. So what happens is that slaughterhouses that buy live cattle, when they start to see demand slowing down, they can actually cut back on the purchase of live cattle. And that means that they'll just process less beef.

Whereas chicken companies, they can't switch that off, because they own the chickens too. So it actually takes several weeks to stop production lines. And so in the meantime, they just have to actually continue to sell. Even in a low demand, low price market.

And so there's slightly different supply chains here. And so one of the other metrics to look at here is live animal prices. So when you look at the price of live cattle or live chickens, those prices are tumbling, right? So if you look at beef prices on the supermarket shelf, that price is increasing drastically, whereas the price of live cattle is dropping. And that's just that difference in how that supply chain works.

SAFIAN: I want to dig in a little bit more, if I can, on the supermarket data. You mentioned to me earlier that you track about 500 or 600 produce products, fruits and vegetables, and different things. And you said it's incredibly volatile, and you gave me some examples of golden apples versus Fuji apples, or iceberg lettuce versus romaine lettuce. Why is there that differentiation? I might be perfectly happy with one kind of apple or lettuce or the other.

MENKER: All right. So let's pick apples. We look at about 66 different apple products in the [market]. And some are going into retail, and then some are actually meant to go more into wholesale, or kind of in the food service category. So there's two things you need to do when you're looking at fresh produce prices.

One is take into account that there's a season. Sometimes prices move up and down just based off the fact of something is more in season or less in season. The second part is you have to strip out what is normal price movement versus what could be price movement just due to COVID-19, which is really the thing we're trying to extract here. And when you look at that, you see that Fuji apples on a volatility-adjusted basis on the year are up. Those prices are up almost 70%.

And as you rightfully said, when you look at the polar opposite of this spectrum, golden delicious apples in the same two pound bags are down 80%. And that, for example, is just as much about shipping and transportation as it is about variety and wholesale versus retail, or food service versus not. Honeycrisp apples is another example. Those that are sold in five-pound bags are down over 50%. And the reason is: Who buys five-pound bags of apples?

SAFIAN: As a consumer. Unless you're a restaurant or a food service.

MENKER: Exactly. Sometimes it's literally the packaging that makes a difference. So when you look at the per-pound or per-ounce price of the same product packaged differently, this year, you saw very different price moves. It's astounding.

SAFIAN: I'm curious what kinds of new questions, new studies, that either clients have asked you to run or you guys are running because of the coronavirus. What are the things that you're saying, "We're doing this, we have new questions today."?

MENKER: It's not that the question itself is fundamentally changing, because people ultimately care about how much supply is there, how much demand will there be, and what's the price implication? I mean, those three are going to be questions that were relevant a year ago as they are today.

However, the desire to understand the deep interactions that exist between products, these nuances of, "Oh I don't need to know just what apple prices are doing. I need to know by variety and I need to know by ..." The details start to matter, of the "why."

So what's happened is that whereas in the past people were generally kind of, "Just give me an answer, and I just want the answer to be as macro as possible," now it's much more as detailed as possible is necessary.

What we've been spending a lot more time doing is doing what I just did with you in terms of going through things like produce or meat and thinking about everything by cut and by variety and by origin and coming up with ways to very quickly literally create visual representations that make me go down this list. I can rank stuff and just get a sense of like, okay, what's off, what's on? So we've created a lot more heat maps.

So there's like a monitor we had to develop this time around, which is a relevant idea in the past, but now it just moves around a lot, which is what is the move this month versus the last 20 years, the last 20-year median? You just have every product down a list, and it highlights those that are going down too fast or going up too fast in price for you. So then you just go down that, and you identify anomalies and just quickly act upon them.

So it's much more around synthesizing to just give people alerts of what to look for, because there's so many things that are moving that the concept of alerts has become way more critical.

SAFIAN: The opportunities, I guess, if you're a food business, you might suddenly see that maybe I should contemplate shifting to a different kind of apple or a different source for a certain kind of thing, because the pricing creates opportunities in some areas and new burdens in other areas.

MENKER: Exactly. But what's also been fascinating is, as a company, we've typically worked with large food and beverage companies or companies that produce seed or fertilizer or large-scale retailers of fresh produce. We typically have not, for example, worked with restaurants or restaurant owners, because the application is much broader in terms of how a company overall operates its revenues.

But I've been spending a lot of time with restaurant owners walking them through the nuance in some of these price changes, because a lot of restaurant owners are trying to

figure out how they support the farmers that used to sell to them. So understanding some of this nuance is also helping in ways that I didn't see. It's finding applications well beyond what we originally built it for.

[AD BREAK]

SAFIAN: You told me that prosperity in the U.S. is somewhat a result of prosperity elsewhere, that the global markets are linked that way. I want to move to some global questions. I saw in one of your notes that you sent out that in early March, you urged your mother in Ethiopia to stock up on food, two year's worth of food. But even though it was early March, it was not necessarily just because of coronavirus, but because of locusts.

I know you made your data and models freely available around locusts, because you wanted to sort of speed dispersal of pesticides to blunt the locust crisis. Nobody is talking about locusts except you – or not a lot of people. I'm just curious, are there risks that are being overlooked because we're worrying about coronavirus? Is it that those risks are exacerbated because of the distractions of coronavirus?

MENKER: Yeah. I wonder if the world is this much more complicated and just going through so much more trouble, or we can see better because we have all the data now, and it's all organized, and we have all of these models that tell us stuff so I can't unsee it.

I mentioned earlier, I was born and raised in Ethiopia, but I was raised during the 1980s famine. I lived a life basically where everything was rationed, you had curfews. Toilet paper used to be rationed when I was growing up, so when I saw toilet paper selling out here, when everybody was stocking up, it was a running joke. I was like, "I would never run out of toilet paper, because I always store it." But there's this natural instinct you have of understanding what food shortages are. I do. It's kind of this natural instinct.

When you look at what's happening with locusts, locusts can literally have an impact on 200 million lives going into dire poverty this year, this year into next year, because they are impacting the growing season. This extends from Eastern Africa into Iran, Yemen, India, Pakistan, and it can keep growing. In some ways, it's like the coronavirus, because the pace at which locusts multiply is similar. So they are going in swarms, and the populations are growing in 20 to 400X multiples in months.

SAFIAN: Wow.

MENKER: It's literally exponential growth in the population. There's a lot of distraction, because everybody's focused on coronavirus. For some of these emerging countries, emerging economies like East Africa and countries like Ethiopia, the locust devastation could be much greater than that of coronavirus. But the ability to have people pay

attention to that right now is almost nonexistent. We've kind of taken it upon ourselves to be yelling and screaming about it until people listen. We've been getting some traction, but it's a lot of work.

SAFIAN: I know you've been concerned about a coming food shortage globally. You mentioned to me other risks that exist that are being exacerbated by coronavirus, other crop disease, climate change effects. You said to me at one point that some markets may be taken back 10 or 15 years. I wonder if you can explain how coronavirus might push us back 10 or 15 years in these places.

MENKER: America's prosperity is tied to the prosperity of the rest of the world, because the U.S. sells tons of product and services to many other parts of the world. The expansion of multinationals that are American companies has been tied to them setting up operations and expanding operations globally.

What has happened with coronavirus is that markets have kind of gravitated towards the U.S. dollar being the safety net currency of choice. That has meant that foreign exchange rates around the world have declined, and they've been drastically depreciated.

That means the cost of importing goes up by that percentage point. So all else being equal, if you're South Africa or you're Brazil, and the Brazilian real is down almost 28% year to date. South African rand is down 25% year to date. If the price of what you're importing didn't change, the cost of your import just went up by 25% to 30%. That means the cost of doing business goes up. So you can basically end up in these hyperinflationary modes in these countries.

So all the growth that had been experienced gets wiped out. They have debt that's outstanding through these countries, and the debt is denominated in U.S. dollars, and you have debt payments coming up. So there's just this cascading set of events. There's very big conversations that are beginning now around are debt relief programs by the IMF and World Bank going to be warranted and necessary to stave off some of this economic decline that other parts of the world will face? This is just the beginning.

SAFIAN: You talk about how there are all these interlinked factors that affects global agriculture and the food supply. One you talked about was oil prices and food prices. Oil prices are down. Obviously there are all kinds of economic implications for that. You explained to me what some of the implications are, that lower oil prices means lower sugar prices and lower corn prices, lower cooking oil prices. Can you explain how those things connect across?

MENKER: Yeah. I call it the ag energy conundrum, which is the day we decided to drive our agricultural products instead of eat them. If you look at the United States, 40% of the

corn produced in the U.S. actually goes to producing ethanol, which we drive. Ethanol competes with gasoline at the fuel stations. And so what happened was when crude oil prices basically plummeted, the gasoline prices started to obviously come off as well because gasoline is just a byproduct of crude oil. Ethanol was no longer competitive. The cost of producing ethanol was way more expensive than the cost of just buying gasoline. And so all these ethanol plants essentially shut down.

So 40% of U.S. corn production basically is driven. In Brazil, that similar relationship exists between sugarcane and ethanol because they use sugarcane for their ethanol. And then in Southeast Asia, it's palm oil that goes into biodiesel. That's basically, again, found in the fuel pump. And so when oil prices go down, these core products start to move hand in hand in prices. So the palm oil used in a chocolate bar is competing with palm oil that's put in a car. So there you go.

SAFIAN: Does this mean that the excess corn that the U.S. now has allows them to be even more of a net exporter of calories? In other words, does that corn get repurposed to go to China or other places or do the supply chains not work quickly enough to be able to make those kinds of shifts?

MENKER: The answer is it's complicated because not all corn is corn. So similar to apples having many, many different varieties, you're producing different types of corn for different use cases. So corn for human consumption versus feed versus fuel is slightly different makeup.

SAFIAN: Many people say in talking about the coronavirus that we'll never return to normal, that there's going to be some sort of a new normal. Do you have any emerging ideas about how agriculture and the food supply chain will be different?

MENKER: I think there's a couple of ways. One is supply chains and food and agriculture in general have been built on this concept of economies of scale. So you produce very large quantities, drive down the cost of production, therefore cheaper cost, more assured supply from one or two providers and cheaper cost for the consumer too, right? So that translates all the way down to the consumer. Now when you have something like coronavirus happening, you start to expose the weaknesses in your supply chain because overdependence to a single region or a couple of suppliers also means that in times like this, you don't have options.

So the quality and the value of what is called optionality will go up. That means that supply chains will start to look and have to look more diversified. I cannot imagine boardrooms that will not be asking the question: What are we doing to make sure that our supply chains are significantly more resilient and diversified? That does mean that the cost of production, the cost of procurement, all of that could go up.

So companies will have to rethink how they better manage the risk associated with that diversified supply chain through financial markets. And one of the things that comes to mind for me as somebody who used to be a trader before I started this company was thinking about the efficiencies that were brought into multiple markets just due to better information flow that created much larger amounts of liquidity.

You have to reduce the volatility and that volatility has to be passed around through multiple marketplaces, etc. So what we will see is also some more formalization of agricultural markets in ways that we haven't seen before. The reality is that food and agriculture and supply chains and food and agriculture are way more complex than energy. We call them commodities, but they're very, very different because oil is oil. The way you produce it is the same, they could be slightly different grades of it and stuff like that, but it's actually fundamentally the same product whereas we cover tens of thousands of agricultural products. Each one has a very different set of rules. Are you going to create 10,000 different markets? Rethinking how managing the risk is going to be really key to making it successful. But supply chains are going to have to be diversified.

SAFIAN: And so that means that if you're trying to plan your business you really don't have any sense about what the prices are going to be. The range is so wide because of that volatility.

MENKER: Yes, you're better off going to Vegas is what it tells you. And that's not a good thing.

SAFIAN: It is a very intricate world you're in. I mean, if I'm hearing all of this right, it's very intricate because some of the solutions you're saying are having better data, and we're starting to have better data thanks to efforts that you and others I assume are also doing, but at the same time, that data becomes more perishable itself as the conditions in the world shift around it, right?

MENKER: No, I would argue that answers lie in the data, because when you connect the dots between price and demand and supply and climate, you start to learn and pattern recognize, and you can start to ingest and create live predictive models that actually help you forecast these relationships. So what happens is you can start to build forecast models for supply that actually tell you, fundamentally, "In the early part of the season, it is temperature that matters most to this crop. In the middle part of the season, it's actually rainfall that really matters."

That is one of the beauties in all the machine learning models you can build, and you do build on top of data, and it's that concept of data to knowledge and knowledge to something even greater.

SAFIAN: If I'm hearing you right, there are reasons, maybe more reasons than there used to be, between the data and maybe openness, to be more optimistic that we can meet those challenges.

MENKER: Yeah. I don't think any of the challenges are insurmountable as long as you take, one, a holistic view, and you have to kind of take a holistic view from an agricultural system standpoint, which is think of it as an entire system, not a single crop, not a single type of product, and also holistically from a global standpoint.

Because again, this concept of a food crisis, there's many flavors to it, right? One is a version where the total aggregate supply that's produced in the world can no longer meet the total aggregate demand. You know, if you just wipe out the concept of a country and you make the world one place, that there's a mismatch between the two. Then you have another type of a food crisis, which is the inability to get food from a place where there is excess supply to where areas have import needs because they have demand that's greater than supply.

The flavor of food crisis we're seeing now is this latter type, which is, it's as much a distribution problem as it is a production problem. Whereas for the countries that are facing a crisis, so in some of the regions as I mentioned, in East Africa or Southern Asia, which can really face real crises this year, they will be not enough supply problems, but it's not going to be because there isn't supply to feed them from the rest of the world, it's because we haven't figured out how to optimize the supply chain in such a way that you don't make that happen, which is what makes it kind of a shame.

SAFIAN: This has been such an education for me, Sara, so thank you. I wanted to ask you, these are stressful times in general and I'm curious, for you personally, do you feel that stress? How do you handle that stress? And do you have any advice for other leaders who might be listening about how, and other folks who are listening, about how they might think about managing their own stress?

MENKER Like I said, I feel like I can't unsee what we see in the numbers. And when you look at agricultural data you're seeing the real world, it's not like tracking the Dow Jones or the S&P, which is, you know, it's a financial representation of the world, you're kind of looking at the physical real world and you see the stresses of it.

And so you know, we just launched this first real time monitor of drought around the world, so you can now look at duration and intensity of drought for any part of the world on a consistent basis. Nobody's ever done this before. And I was like pressing play on maps and I was like, "Oh my gosh, it does show Australia on fire. How many parts of the world are in drought right now?" And you're just like, "No, I don't want to know."

And so I will say, like in early March when I called my mom, I would literally wake up in the middle of the night because I would be seeing like locust attacks in my dreams. And so, I feel the pain that so many people are going through, and so part of how I've been handling it is by saying, "Well, we can do something about it. Let us, as a company, continue to have the commercial goals we have, but where we can actually serve a humanitarian purpose, we should 150% go on overdrive mode that way." And that has actually been very helpful because it's like you're doing something versus just like waking up with nightmares.

So that's one, which is just being actively helpful. That helps quite a bit. The second is I've been doing a lot of puzzles.

SAFIAN: A lot of puzzles?

MENKER: Yes. It's like you're putting pieces... It's kind of like what my job is in some ways, but it's a way of stepping away from the day to day job and using your brain in a similar way, but towards something beautiful. So I used to travel a lot, so I'm doing a lot of puzzles of just different parts of the world.

SAFIAN: Well, you've given us a lot of pieces of the puzzle to put together and I really appreciate it. Thank you for sharing your insights and your time with us.

MENKER: Thank you for having me.

SAFIAN: Thanks. I'm Bob Safian and thanks everyone for listening.