The World Goes Bananas for…. Bananas?

NOON SALIH: One of the biggest questions being asked at Expo 2020 is about the future of food. As we live through a climate crisis that gets worse by the day - how can food innovations help make the way we eat and what we eat sustainable for generations to come? Well, part of that answer might come from the story of the banana.

DAN KOEPPEL: But beneath bananas is like the story of humanity and the story of modern culture. The story of industry.

NOON SALIH: This is Dan Koeppel, author of a book called Banana: the Fate of the Fruit that Changed the World.

DAN KOEPPEL: Of course the guy who wrote the banana book is going to say, bananas are the lens through which you can understand the world, but that's how I learned to understand the world. And I really believe that's true. And, I don't know if there's anything else like that. That's so simple. So ubiquitous, so basic that is also so complicated and so fascinating and so able to teach us. That's what the banana is.

NOON SALIH: Today, the tale of a fruit we all take for granted, one that actually starts with another World Expo… and how Expo 2020 Dubai is looking for answers to some of the world's food sustainability problems.

I'm Noon Salih, and this is Inside Expo, an official podcast of Expo 2020 Dubai, where history is being made.

[INTRO STING]

NOON SALIH: The story of the banana starts at the 1876 Expo in Philadelphia.

DAN KOEPPEL: Well, you know, these exhibitions, these world's fairs, they were, they were these gatherings of fantasy of the exotic, of the future, of dreams, really, whether it was, you know, model farms or flying machines or exotic fruits from other places. And so the banana at that time was really unheard of in the temperate parts of the world.

CHARLES PAPPAS: So the world was not unfamiliar with them, but they hadn't hit what you would call a tipping point until the 1876 Expo that took place in Philadelphia in the United States.

NOON SALIH: This is Charles Pappas, the author of "Flying Cars, Zombie Dogs, and Robot Overlords" who has researched and written quite extensively on the history of World Expos.

CHARLES PAPPAS: The 1876 fair had roughly 10 million people. It was a celebration of America's first hundred years - that 10 million equates to about 25% of America.

NOON SALIH: And of these people who went to the fair, tens of thousands of them likely would have tried this new, strange fruit. A banana tree was exhibited at the Horticultural Hall with other tropical plants. But visitors could also purchase, for the first time, a banana wrapped in tinfoil, for ten cents apiece, and they could eat it with a knife and a fork. After this Expo, bananas were a hit.

CHARLES PAPPAS: So it takes off relatively quickly. And in fact, 1876 was the first year a banana plantation was put into America in Florida. By 1910, we're eating 40 million bunches of bananas. That's a huge amount. They were a staple of popular culture. You saw them even in the early silent films. You had Harold Lloyd, you had Buster Keaton slipping on banana peels. They were a part of American life and they eventually spread around the world as well from something that was a bit of an oddity, something that was rare, something that was unusual, maybe a delicacy to some, to just a normal part of your diet.

NOON SALIH: Today, Americans eat about 27 pounds per person of bananas per year. India and China are the top two consumers of bananas globally. At this point, it's hard to imagine a world without them.

NOON SALIH: But back then, they were an innovation in their own way. And they became part of a solution to an increasingly deadly problem that America was going through at the time: food poisoning.

CHARLES PAPPAS: I have heard, I have read that something like one-third of people were affected by some form of it. But the point is that the American diet really depended so much on food that was bad. And again, what is a banana? Like an orange. It comes in its own safety seal pouch. So this would have been something that anybody could see the value of.

DAN KOEPPEL: I mean, the banana isn't just an innovative fruit. It also sparks innovation. I like to tell people don't think of the banana as a fruit. Think of it as a product. It was the first fast food product. It was the McDonald's hamburger before the McDonald's hamburger. Because in order to support this business model, there had to be sameness. There were over a thousand different varieties of banana, but there's only one really that's exported commercially and every

single one of these bananas is the same. And the reason for that is that all these bananas that are the same, have the same ripening characteristics. They can be shipped the same way. They can be marketed the same way. They all ripen in seven days, they all look the same. So by standardizing on one banana, the banana companies were able to get this huge economy of scale.

NOON SALIH: But because human supply chains depended on growing just one type of banana for so long, it became disastrous for the banana species itself. Because in the 1950s, a fungal disease almost entirely wiped the Gros Michel - the most popular variety - out of commercial production.

DAN KOEPPEL: And this fungus chases the Gros Michel banana around the world and makes it what I would call functionally extinct. Between 1900 and 1960. By 1960, the Gros Michel banana, which is that banana that was displayed at the world's world's exhibition at the Philadelphia exhibition is no longer viable as a commercial crop. because this fungus has wiped it out. The fungus remains in the soil basically forever.

The banana industry begins a frantic search for a replacement banana. In other words, it doesn't learn the lesson and it replaces the Gros Michel banana with today's banana, the Cavendish. And everything seems to go well, despite some warnings for about 30, 40 years, and then suddenly the very same fungus - a different version of it hits the Cavendish. And since then it has been spreading around the world inexorably. It has gone from Malaysia to Asia. It has crossed oceans to Australia. It has showed up in Africa and only in the past five years has it appeared in Latin America where it is spreading. It will continue to spread and unless some kind of cure is found, it will devastate the banana crop around the world. Now, when this will happen, I would never, ever, ever predict it because

there's no way to tell. Five years, maybe, fifty years maybe. But the point is when evil is knocking at your door, you got to do something about it.

NOON SALIH: So, what should we do about the destruction of banana crops? According to Dan, one of the ways we can tackle the fungal infection that is ravaging the Cavendish banana population - might just be more genetically modified foods.

DAN KOEPPEL: If you accept the idea that the banana is an important commodity, that there needs to be a cheap banana, because it's an important fruit for people in both Western cultures and in banana dependent cultures. Then you have to say, how do we replace the Cavendish? How do we find a Cavendish replacement that is going to be shippable that tastes good, that ripens properly, that's going to do all these things that we want our Cavendish banana to do, but that will also resist disease. And right now, one of the better ways to do that is to use genetic modification.

NOON SALIH: In Uganda, they are already trying to grow genetically modified bananas.

DAN KOEPPEL: In terms of subsistence bananas or, or plantains, which are just a form of banana that's not as sweet that are grown in Uganda.

NOON SALIH: Uganda - but also Cameroon, Ghana and Colombia.

DAN KOEPPEL: These bananas are being hit by other diseases and people are starving. So again, you could spend 20 or 30 years attempting to conventionally breed a banana that would prevent people from starving, but a lot of people will starve in those 30 years. So genetically modifying a banana will hopefully get you to that sort of miracle banana quicker.

NOON SALIH: But even if we did get to that miracle banana that was immune to fungal infection... that's just one type of food. There's a lot more work to be done before our food and their supply chains become sustainable - many of us experienced this first hand during the pandemic.

CHARLES PAPPAS: The other things that have to do with process, with serving, with distribution - those I think will be what Expo 2020 shows us is possible worldwide. Because again, according to the United Nations, about 8.9% of the world is food insecure. So the problem is how do we get food to those people? How do we make sure the food network in the era of COVID can remain stable? And we've learned one thing in the last couple of years, how easy our supply networks can be disrupted, and how vulnerable we are to those disruptions. World's Fairs could show how we might mitigate those problems. So just as we have problems today with distribution and that of food and also food safety problems still plague us, ideas like robotic distribution, robotic creation of food. I think at Expo 2020 might be what really takes off.

NOON SALIH: More specifically, something being exhibited at Expo 2020 is how robots can play a role in minimising human handling, and making the future of supply chains more stable. To hear more about this, we spoke to Simon Wright, the founder of TGP International - the food and beverage advisors to Expo 2020.

SIMON WRIGHT: The Talabat project is really a wonderful sort of mixture example, of sort of future technology, and as you said, how we can minimize human handling. And therefore from a food safety point of view, cut down on things like cross-contamination of products. Seeing that come to life has been very exciting and very interesting. And also its highlighting the sort of cloud and ghost kitchen trend which has happened, which obviously became very, very important last year during the pandemic where you know, more and more deliveries were happening.

So they brought together a really wonderful mixture of sort of cloud kitchen and the robotics.

NOON SALIH: The cloud kitchen also known as the "ghost kitchen" boomed over the past year with the rise of Covid, allowing food brands to rent out facilities to put out their food for delivery.

NOON SALIH: So what are the robots actually doing at the Talabat kitchen?

SIMON WRIGHT: So the robots are sort of statics doing the actual preparation. And then it gets put on, it's wonderful, it's almost childlike, I think any of us that sort of like train stations and train tracks is sort of this wonderful sort of tracking system where the robots put it onto onto a hook. And then it gets transported to various parts of the restaurant where you can pick up your order. So it's a mixture of sort of mechanics, as well as the robots working together.

In effect your food is produced and arrives, you know, in your own sort of little locker for you to pick it up, having not even touched human hands. So it's very exciting to see that happening.

NOON SALIH: Inside Expo is an official podcast of Expo 2020 Dubai. Connecting minds. Creating the future. Learn More by visiting virtualexpodubai.com.

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