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Speaker 1:

Say goodbye to your burgers if you want to sign up for the Biden climate agenda.

Speaker 2:

There's a study coming out of the University of Michigan, which says that to meet the Biden Green New Deal targets America has to, get this, stop eating meat.

Speaker 3:

Americans would've to cut red meat consumption by a whopping 90%.

Speaker 4:

That's four pounds a year.

Speaker 3:

That means only one burger a month.

Speaker 2:

No burgers on July 4th, no steaks on the barbie. I'm sure middle America is just going to love that.

Jerusha Klemperer:

When the details of 2019's Green New Deal were made public, conservatives made a big deal about how politicians would be coming for your burgers. While that wasn't exactly true, it is true that the predominant way we raise cattle and the amount of industrial beef we're all eating are a big problem, and that any serious plan for cutting back on emissions recommends cutting back on meat production and the overblown uproar about the notion that we should cut back on the amount of meat we eat is itself part of the problem.

Jerusha Klemperer:

It has become increasingly hard to ignore that our factory farmed meat-centric diet is bad for us in numerous ways. Industrial meat production, especially beef, contributes 14.5% of global greenhouse gas emissions, making it a top contributor to climate change. The United Nations IPCC report on climate change identified that shifting our diets away from meat to plant-based menus has the power to help us fight climate change by drastically cutting our greenhouse gas emissions.

Jerusha Klemperer:

In this episode, we're looking at one proposed solution, plant-based meats. Products like Impossible Burger and Beyond Meat are designed to be beefy, sometimes even bloody, and the people who make them say they're better for animals and the climate and also human health. Today we ask, are these products any different from the vegan products that preceded them? Are these products actually good for us? And are they the best solution to our industrial agriculture problems? And then finally, are they capable of replacing industrially-produced meat?

Jerusha Klemperer:

I'm Jerusha Klemperer and this is What You're Eating, a project of foodprint.org. We aim to help you understand how your food gets to your plate and to see the full impact of the food system on animals, planet and people. We uncover the problems with the industrial food system and offer examples of more sustainable practices, as well as practical advice for how you can help support a better system through the food that you buy and the system changes you push for.

Anna Lappé:

Diet For a Small Planet is a book that my mother, Frances Moore Lappé, wrote 50 years ago, so it came out in 1971. The book ended up going on to sell something like three-and-a-half million copies and really sparked, kind of as I see it, a revolution in how people thought about food.

Anna Lappé:

The spark for her, for the book, was she was in her mid-20s at the time, and in the early 1970s, for those of us who weren't alive or who don't remember, there was incredible concern about impending global famine, there was headlines about how we were all on the brink of starvation. And my mother, the curious person that she is, was interested to explore the root causes of that hunger. In the process of researching, she discovered something that shocked her, which was, actually, there was enough food to feed everybody on the planet and projections that there would still in a few years and a few decades be enough food to feed everybody on the planet, that the root causes of hunger at the time were not a scarcity of food, but, as she would come to define it, a scarcity of democracy, of choices that were being made about how food was being grown, what food was being grown, who had access to it, all these very thorny political issues that really come down to voice, power and democracy.

Anna Lappé:

I'm Anna Lappé, I am an author and an advocate for justice and sustainability along the food chain. We continue, as a planet, to produce more than enough calories to make every single man, woman and child on the planet fully fed, and so that was one of the core through lines of the book, but a really critical piece of that through line was about, at the time, in the early '70s, kind of this emergent new way to produce food for human consumption. It was what we now know of as factory farming, what we can think of as industrial animal agriculture, a way of raising livestock that was really a revolution in how we raise food for human consumption, which was to disconnect animals from the land on which they would feed themselves and instead require land to be used to grow feed for livestock. And what she writes about in Diet For a Small Planet is this is a really irrational way of producing our food, that what you end up doing, as she described it, is really creating protein factories in reverse.

Anna Lappé:

So the book was both this really high level political treaties about hunger, but it was also looking at this really practical question of then what food do we put on our plates to align our diets with a more sustainable food system. And her critical message is that actually humans do not need to eat animal protein to be healthy and thrive, and that actually you can center plants on your plate, reduce or eliminate animal-based proteins in your diets, be healthy, be happy and have this really positive impact on food systems at the same time.

Jerusha Klemperer:

In the 50 years since Frances Moore Lappé wrote Diet For a Small Planet, we've learned even more about the problems with animal agriculture, including its tremendous impact on climate.

Anna Lappé:

I remember myself being really awakened to the climate impacts of animal agriculture when, about 15 years ago, the United Nations released the first analysis to attempt to look at all of the greenhouse gas emissions associated with animal agriculture production. And so, you have to keep in mind this isn't just the belching of ruminants like cattle that released methane, it's not just the emissions associated with the fertilizer and the petrochemicals used on farm fields to grow feed for cattle, it's not just the impacts of raising of tropical forests to raise cattle for human consumption, it's all of that combined and then more.

Jerusha Klemperer:

Nearly 99% of the meat sold in the US is conventionally produced, which means that most of the meat products people are eating are part of the problem. Okay, so the easy answer is we should all be eating way less meat and definitely better meat, because there is meat that comes from livestock who've been raised sustainably and regeneratively, there are farmers raising livestock on pasture and grasslands as part of bio-diverse polyculture farms. But we have another problem with meat, our cultural attachment to the idea of it and the fact, either perceived or real, that the majority of meat eaters in this country are not going to give up something that is so culturally and nutritionally essential, which is why you saw that whipped-up frenzy around the Green New Deal.

Speaker 7:

Beyond Meat is on Fast Company's list of the world's 50 most innovative companies for 2014. Ethan Brown, congratulations on that.

Ethan Brown:

Thank you very much.

Speaker 7:

So you are a vegan, so that motivates you as well as a businessman, which is great if you're a vegetarian. Why do you want to eat meat then? I mean, you're creating something that tastes like meat, why not just eat meat?

Ethan Brown:

Right, that's a great question and it's one that fascinates me. We've been having meat, as humans, for about 2.3 million years. So there's a great familiarity with it, the way it crosses across the teeth, the way it bites, et cetera, and we don't want to walk away from that, fried chicken tastes great, steak tastes great. Let's just take the amino acids, the fats, from another source and recreate those. We're taking the animal entirely out of the equation. I often think about what happened with the automotive sector, where we had horse-drawn carriages. Internal combustion came along and basically obviated the need for the horse in that equation. We're trying to do the same with animal protein.

Jerusha Klemperer:

Chinese Buddhists have been eating gluten and seitan and tofu shaped into fo meat for centuries, South Asians have had lentil fritters, Middle Eastern eaters have enjoyed falafel, and Westerners who've given up meat for ethical, spiritual or health reasons have had bean burgers, tofu dogs, fake chicken nuggets,

all that stuff, for as long as most of us can remember. So how do these new products fit into the progression of fake meat products that have existed in some cases for hundreds of years?

Jerusha Klemperer:

I talked to Alicia Kennedy, who has a widely read weekly newsletter on food, media, culture and politics, and is writing a book about ethical eating.

Alicia Kennedy:

The Buddhist mock meats obviously fulfilled a spiritual purpose. And then, in the Western world going vegetarian or vegan, adopted them as their own and divorced them, obviously, from that spiritual relevance and context with BOCA burgers and tofurkey and all of those things in the late 20th century. Though, before that, I suppose there were the Seventh-day Adventist fake meats. We still have those here in San Juan in the supermarkets, like they come in a can. A lot of fake meat has a lot of its origins in different religious cases.

Alicia Kennedy:

The difference in the late 20th century is that it becomes a pure consumer product. So the BOCA burgers, the Morningstar burgers, the Gardein burgers, they become just something you can go and get in the supermarket, you don't have to think about it too much. They didn't really taste that great, maybe, that's debatable of course. Beyond Burgers, Impossible Burgers, even now Gardein I know is moving away from ever marketing themselves as vegetarian or as vegan. Like, those words aren't used, it's just plant-based. It's completely divorced from any sort of ... that spiritual realm that was ever decreasing in the West, in terms of how we respond to fake meat, has completely gone away and been absorbed into this capitalist ethos of just eat this because we're killing the planet and don't ask questions about where this genetically modified soy came from and just replace your meat sometimes with this product that someone is making a lot of money off of.

Ryan Nebeker:

When we talk about the latest generation of meat alternatives, there's often a lot of processing involved between the plants that they come from and the product that we ultimately see, in order to get it to look and taste and smell like meat.

Jerusha Klemperer:

I spoke to my colleague, Ryan Nebeker, the research and policy analyst for FoodPrint, about these alternative protein sources and what exactly they're made of.

Ryan Nebeker:

So, a lot of the early companies that were pivotal in developing this technology, the two that stick out most prominently are Impossible Foods and Beyond Meat, which their kind of flagship products are the Impossible Burger and the Beyond Burger. Those are increasingly marketed at restaurant chains around the country. Beyond and Impossible have sort of a unique distinction. I'll talk about Impossible first. Impossible Foods gets a lot of the credit for pioneering some of the flavor and texture technology that allows things to be a dead ringer for real meat. A lot of that comes from their development of this proprietary soy leghemoglobin that they're getting from yeast. Beyond Meat uses a lot of similar processing, although a critical difference there is that instead of soy protein, which Impossible Foods

uses, Beyond uses pea protein and pea protein is the other rising star in the meat alternative, and increasingly just protein alternative, space. The fact that they're able to imitate these meats so convincingly means that they're able to be marketed to a whole different segment of consumers who traditionally were uninterested in things like the BOCA burger, the black bean burger, other familiar vegetarian products.

Ryan Nebeker:

And that's the other critical way that we can distinguish these, is that because they have so much more access to the meat-eating market, or they claim to, these products are being marketed as a solution to the problems in the meat industry and obviously, we know that the meat industry has a lot of problems and more and more people are becoming aware of that in the context of the climate crisis. And so many of these products are able to step in really easily from a marketing perspective and say, "If you buy these, you can be part of the solution by cutting back your meat intake." And there's plenty of reason to question that as a strategy, but it's an interesting role that other foods in the past haven't really been able to fulfill.

Alicia Kennedy:

BOCA Burgers never really positioned themselves as saving the world or anything. It was just like, "Here's an option. Buy these and have them in your freezer so when a vegetarian comes to the barbecue you could just put it on and it's not a big deal." What we're seeing now, I think, in this next wave of mock meat or fake meat or tech meat, or whatever you want to call it, is like a further consumer and capitalist angle. Like it's becoming such a more pure thing to make money off of.

Jerusha Klemperer:

Yeah, what are they called anyway? Mock meat, fake meat, alt meat, tech meat, plant-based meat? Does it matter what we call them?

Urvashi Rangan:

Yeah, plant-based, to me, means that a plant was actually involved in the process, or at least close to the process. In the case of these particular products that call themselves plant-based, I feel like it's almost a co-opting of that term. And I think it's very deliberate.

Urvashi Rangan:

I'm Urvashi Rangan. I'm a toxicologist and public health scientist. I've also been an advocate for good food policies for the last 20 years.

Jerusha Klemperer:

She's also the chief science advisor to FoodPrint.

Urvashi Rangan:

When you look at the ingredient list on these things, even though the first ingredient starts off with a plant like soy or pea, what's really important to look at is what comes after that and it's usually soy protein, soy isolates, pea protein. And this whole product category of vegetable proteins is a bit misnomer-ish, in that the protein didn't just fall out of the plant, you didn't just pick that part of the plant out. You actually had to take the plant and you had to process it with chemicals and in a factory in

order to isolate the actual protein. And in that sense, there's nothing with chlorophyll that went into these products. They're buying powdered ingredients, and soy protein isolate is one of them, and mixing it together.

Urvashi Rangan:

Let's call them what they are, they're alternative proteins. I mean, they are these protein products, they're meat alternatives or alternatives to meat. Yeah, let's call them that.

Jerusha Klemperer:

I mean, what I hear you saying is that words matter and what we call food matters. And it's funny because, obviously, the meat industry and the dairy industry, they've been very interested and upset about and concerned with what we call these things.

Urvashi Rangan:

Yeah. I think it's really an interesting dialogue and interesting players out there, because this particular industry actually wants to call it both things. They want to call it plant-based and they want to call it meat or dairy. So they've literally been going state by state, filing huge lawsuits in those states in order to challenge standards of identity like on beef, what is beef, and trying to wedge in this product category into that definition. It's kind of funny how they want both the plant claim and the meat claim.

Urvashi Rangan:

I hear a lot of people taking on, "Well, I like plant-based," and of course we need to be eating a plant-based diet that's actually a plant, of course we should be eating more vegetables. And so it's sort of brilliant, I guess, in terms of marketing, that they've latched onto that term, because it's used by folks and even public health officials who are actually trying to promote a lot of vegetables and produce in your diet because that's a good thing. So now, when you hear plant-based, you have to wonder what side of the spectrum they're talking about, because not all people who claim their product is plant-based are necessarily that close to the plant.

Alicia Kennedy:

There's so many things that have been described as plant-based in a more scientific academic context. When it became a thing applied to food is up for debate. It's really a murky question. It's been really useful for people in a marketing sense. To me, plant-based is like the term natural, where there's no regulations on how something can be described as natural. Whereas organic, USDA organic, has all these rules and regulations, natural has no regulations whatsoever. It means nothing if you put it on a package. Plant-based is in that vein as well, where you don't know if something is like "plant-based", whether it is vegetarian or vegan, maybe it has chicken stock, but it's mostly plants. You can say it about anything, it doesn't mean anything. I've seen people now describing, "Oh, this is a plant-based cake," and it's like, "What the hell does that mean?" A cake is always you know made from flour and oil and whatever it is. It's gotten really out of control.

Alicia Kennedy:

I think it's because people don't want to say vegan and so they found this other term that sort of means that, but doesn't always mean that. And so it has risen to popularity in the last decade because of wellness influencers who use it and now these companies that have latched onto it because they don't

want to alienate anyone by using the word vegan, because it is just associated with being disgusting. I mean, the association of the word vegetarian with being humorless goes back like centuries. So this isn't new, it's just they found new ways of capitalizing on it. They're making the terminology as fuzzy as possible so that they can use it to their benefit.

Jerusha Klemperer:

So these meat alternatives are not made from plants, but rather of plants. They have been, and I'm paraphrasing Urvashi here, processed to high hell. I asked Urvashi to dig into what it means to process food and if that's necessarily a bad thing.

Urvashi Rangan:

There is a pretty wide spectrum when it comes to processed foods. And processed foods have been around for a long time. Even the very active cooking or boiling or packaging is a process. Fermenting is probably the next level of processing. Fermentation was a way that we preserved foods for a very long time when we didn't have refrigeration. Of course, there were a lot of benefits of fermented foods in addition to that, and we're understanding that even more and more today. There are certainly ways in which we've processed foods that are quite beneficial to us, as humans, and even to our health.

Urvashi Rangan:

What's happened in the last few decades is the capitalization of very high technology, super technology put onto food. That's allowed us to extract things we've never been able to extract before and all these things need to happen in a laboratory-like setting in order to get it done. Like I say, protein doesn't fall out of a vegetable, you actually have to chemically process it out of the plant in order to isolate it and that just requires a lot of energy and a lot of resources in order to do that.

Patty Lovera:

If you can't make this at home, if you could not, even if you are like buying the molecular gastronomy kit and trying all the stuff.

Jerusha Klemperer:

This is Patty Lovera, an expert on food policy and food systems issues.

Patty Lovera:

You're not pulling this off at home, because it takes tremendously industrial procedures to make these components and do what they want to do. So you are breaking apart natural foods into their component parts, under pressure, under high heat, you are forcing them through screens and extruding things and extracting oils. You are breaking things down into their like chemical component parts and then putting them back together in ways that you just couldn't do in a home kitchen. And if that's your thing, that's great. That happens with meat. You don't really want to see what it looks like to make a hot dog or chicken nugget, like you're not doing that at home either. But to put the shine on these replacement products and act like they are straight from the earth, that's not true. You can make a veggie burger in your house with beans that you mash together, that is not what we are talking about here.

Urvashi Rangan:

There is a new classification of processed foods, I know that Canada has been using this classification, called ultra-processed. Ultra-processed really indicates an uber level of processing that is going on, where it isn't just fermentation or cooking, but it's chemical processing in a laboratory under very controlled conditions in order to render the product that you need to get out. It also means you probably use a significant amount of food additives or preservatives or colors or thickeners, things that will modify the texture of the food or the color or the feel of the food. These are generally called cosmetic things. Then you have things like preservatives that just need to keep it from spoiling and going bad over time. In general, you look at the ingredient list and if you see more than 10 ingredients you've never seen before and can't pronounce, a lot of the time that will indicate you've got some ultra-processed ingredients in that food.

Jerusha Klemperer:

Well, and public health advocates and nutritionists and doctors, they're warning about ultra-processed foods not being healthy. It's very interesting that these products are being positioned as better for our health.

Urvashi Rangan:

Because they are essentially ultra-processed foods. There has already been a tsunami of literature that basically shows, scientifically, that processed foods in the human diet are not good and lead to metabolic disease, neurodegenerative diseases, several other major health diet-related diseases. Cardiovascular disease, obesity, diabetes, all of these things have been tied to the Western diet. The Western diet is often classified as having a lot of processed food ingredients.

Urvashi Rangan:

What we don't know, or haven't known for those studies, is the biological mechanisms behind them. We are starting to get at that now, we are starting to understand why it is these processed and artificial food ingredients are problematic. Spoiler alert, it actually has to do with our gut microbiome and making sure that the biology in our gut is maintained. These food additives, artificial ingredients, artificial sweeteners, colors, anything that is actually not a natural ingredient is not very good for our biome. It turns out that these processed foods actually select for the disease-causing bacteria in your gut. This is becoming a new theory, the biological mechanism theory, for why processed foods may indeed be so bad for us and in our understanding of it. That has significant consequences across the board, but we've already known a whole diet that is minimally processed is actually the best diet for our health, and it turns out it's the best diet for our biome.

Urvashi Rangan:

These ultra-processed foods that are so reductionist take apart this whole food concept and really put it into its neat little components that can then be formulated together and put back together into what appears to be a whole food, which is marketed as a whole food, but is not a whole food.

Jerusha Klemperer:

There's also the matter of how these crops are raised. For the soy-based products, they're grown in an industrial system. That means GMO crops grown in monoculture using lots of synthetic chemicals and fertilizers.

Ryan Nebeker:



Most soy is industrially produced, and much of it is genetically modified in a way that allows it to be herbicide resistant.

Jerusha Klemperer:

The peas aren't GMO, but they're being raised in a similar system.

Ryan Nebeker:

Pea protein is interesting because it's pretty similar nutritionally and it gives you a lot of those same options when it comes to making interesting foods that can replicate other textures, but it doesn't have quite that much social baggage as soy, and so it's a little easier to slap on a label and say, "This is wholesome and nutritious. It's made from peas." Of course everybody, they hear pea protein and they think of green peas growing in a garden and it evokes all this fresh stuff, when really it's more like a yellow split pea that's been dried and then, of course, hyper processed. These companies are generally using an isolate or a concentrate of that protein rather than the whole thing that gives you the fiber.

Patty Lovera:

There's different companies doing different things, but for the most part, they are using a lot of soy, a lot of them, not all, but as they scale up, they're going to need to procure lots and lots of acres of the ingredients for these crops. I care about the methods they use and where they raise those crops. We're not getting a lot of information about that. If it is soy-based and it's GMO soy, that does not thrill me for the environment, that is a rough system of monoculture that's really herbicide-based.

Patty Lovera:

The main reason that crops were genetically engineered is so that they could spray them with herbicides and not kill the plant. An herbicide kills weeds, and Roundup is the most famous one. The idea is previously un-GMO, non engineered crops, if you sprayed a field of corn that had weeds in it, if you sprayed it with Roundup, you'd kill the weeds, but you would also kill the corn. You genetically engineer the corn to be Roundup ready, you spray the field of corn that's got weeds in it with Roundup, the weeds are supposed to die, the corn lives because you've engineered it to withstand Roundup. Not coincidentally, who sold genetically-engineered seeds? The company that made Roundup. You buy the seeds and then the herbicide together. The graphs of the particular brands of herbicide use just look like a hockey stick when you start to get into genetically engineering the crops to be affiliated with specific herbicides.

Patty Lovera:

We also saw the weeds adapt, because stunningly, that happens in nature, that the one weed that survives is going to be the weed that reproduces and then it passes on that resistance. We don't seem to ever learn this lesson. Now we have herbicide-resistant weeds, so the solution was harder hitting herbicides that shouldn't be used in that way. Now there's lots of crops that are resistant to multiple herbicides. It's a fair environmental assessment of genetically-engineered crops to look at them as herbicide promoting, and that has never gotten enough public attention because it's out of our view. It's absolutely fair to talk about is this safe to eat, and I have questions about that.

Jerusha Klemperer:

The key ingredient in Roundup is glyphosate. The company that makes Roundup, Bayer Monsanto, has been found liable in court for their product causing cancer in people who used it regularly, groundskeepers, farm workers. They recently paid \$10.9 billion to settle over 100,000 lawsuits making similar claims. There are also questions about whether the residues in our food are safe for us to eat.

Patty Lovera:

Then also it made seeds more expensive, it put patents on seeds. It really changed the business model for farmers, of how they were producing these crops and what money they got back for them. Then environmentally, it's a package deal with the herbicides. I'm not going to get excited to find another use for industrial soy. I want to see less industrial soy being grown, not finding some way to do what you think is a good thing with it.

Urvashi Rangan:

This chemical-dependent system that these GMO crops often dictate is a dangerous partnership in nature. It essentially ruins the soil biology. There's plenty of studies now looking at glyphosate and these other pesticides, which do real harm to the soil biology and therefore makes the entire system more dependent on more chemicals. It's really a race to the bottom and it is not, in the long term, going to be effective for making sure we keep our soils fertile over time, which is a huge problem, or for example, making sure that we can have nutrient-dense food. This is another issue that we're getting more and more of an understanding, that when you ruin that soil biology, you can put as much chemical nutrient onto that land as you want to, but you cannot make it get into the plant.

Anna Lappé:

I think there's still a ton of questions about the lifecycle analysis of these products. The studies that I've seen have been funded by the companies themselves, and so I think there's a lot of conflict of interest questions that come up. Not all of these alternative meat products have the same environmental footprint of course, there's variation across them, but a lot of them rely on the same industrial produced genetically-modified ingredients that those of us who've been trying to push for a more sustainable food system have been saying we need to reduce the demand for, not create a new market for them.

Patty Lovera:

I just think they have a lot more explaining to do than just saying we're here and we're the best. That is not making excuses for the way we raise animals currently, which is unacceptable, but that doesn't mean you automatically get a pass for what you're doing with possibly conventional crop inputs in a very highly-processed system.

Jerusha Klemperer:

Yeah, it seems that they are always comparing their product to industrially-raised meat, but never to meat raised in a better way.

Patty Lovera:

There's people framing the question of which would you choose, and it's like I am capable of being critical of two things at once. I can be mad at both of these systems. I'm saying there's got to be something else we can do. That's what's, I think, frustrating a lot of food systems thinkers, is this black-and-white decision point that it's being portrayed as.

Urvashi Rangan:

A majority of the grasslands in the United States are degraded now from industrial animal grazing. That's because we don't manage the grazing well, we don't manage the lands well, and they're essentially completely degraded. It's a huge problem. I'll say that nature's given us some kind of magic wand, which I find unbelievable as a scientist, which is that you can actually regenerate these lands. That's what regenerative farming is all about. The fastest way to regrade grasslands is from livestock grazing on it. We need livestock, we cannot get rid of livestock on this planet if we're really serious about regrading our lands to sequester carbon.

Urvashi Rangan:

Another claim these companies make is we don't need land to make this product, actually, we use less land. It's a red herring out there in the food debate world, about which production system to use, that if you use more land you are therefore going to damage the environment more. That is just not true. In fact, you have to use that land well and you have to manage it well in order to build soil organic matter into that land biodiversity biology that is then going to take the carbon and nitrogen out of the air where it's a greenhouse gas and turn it into nutrients for the plants that are in the ground.

Urvashi Rangan:

I'll just say, even further, monocultured crops on arable land also do not get us to building soil organic matter and sequestering carbon. These monocultured crops that provide the protein for these products do not sequester carbon as well and they come from a industrial ag model, which is really destroying soil carbon and destroying soil biology and preventing that from even occurring. These are actually destructive to the land instead of being beneficial.

Urvashi Rangan:

They make so many claims and they're trying to reel in consumers who care about animal welfare or they care about health. If we were thinking about animal welfare and we wanted to support better animal welfare systems, then we ought to support better animal welfare systems. Supporting a product that has nothing to do with an animal is not a support for animal welfare, it is a left turn from that. It is a negligence almost in not dealing with that. If you care about animal welfare and you care that animals are raised properly, then we need to actually support systems that are producing animals to make our meat, not just meat, but dairy products, of which a lot of vegetarians eat, to make that something that is done well and stewarded with animal welfare in mind.

Anna Lappé:

The million dollar question is what is the real environmental benefits of these ultra-processed products? When I've raised this to advocates of alternative meat products, they've said, "Well, Anna, look, if you put a processed alternative meat product up against, say, industrial produced items, of course it's better. It's better for water usage, it reduces inputs," all kinds of things that they say it's better, but put that up against a wholly different alternative, like a lentil burger or any other truly plant-centered products, and that would be a very different story.

Urvashi Rangan:

Do we really need this? What problem is it solving? We have plenty of vegetables to eat, we have plenty of fruit to eat, we can produce meat well. There's certainly the question of how do we deal with the

industrial meat production and all of the problems that come from these industrial animal operations, but the answer is really to address those practices. Things like regenerative agriculture actually get to the heart of that by dealing with how are animals treated, what are they fed, are they given a good diet, is the environment stewarded, are the animals healthy, are they eating garbage ingredients or are they eating really well, they have biomes too.

Urvashi Rangan:

What's interesting is that we actually need the vegan animals on the planet, which is the exact animal that they want to get off the planet. But it turns out you need cows, you need cows to steward land.

Jerusha Klemperer:

This is a central tension in the conversation about these new products. Scientists and policy experts, like Urvashi and Patty, are very concerned about the impacts of industrial animal production, but they're also not against meat production. They, and other experts like them, advocate for responsibly raised meat, regeneratively raised on grasslands and pasture, and what it can do for environmental and human health. They'd both like to see factory farms go away, to kiss the industrial meat system goodbye.

Jerusha Klemperer:

Aside from the problems with an ultra-processed product that relies on GMOs and/or monoculture crops, there's the big question, of course, is there any indication that these ultra processed meat alternatives are actually on track to replace our industrial meat system?

Anna Lappé:

Does the growth of these products actually reduce industrial animal agriculture production, because if it doesn't, then what are we really celebrating?

Jerusha Klemperer:

In our next episode on fake meat, we dig deeper into whether or not these new alternative meat products are on track to replace industrial meat.

Patty Lovera:

Acres and acres and acres of soybeans to replace factory farms is kind of a half-assed improvement.

Jerusha Klemperer:

As well as the question of who is profiting from their success.

Anna Lappé:

When you look at the words from these companies themselves that are investing in the products, what they say is this is not about replacing their animal AG streams, this is about adding to.

Jerusha Klemperer:

Finally, we look at how they taste and some alternatives to what we could be eating instead of them.

Alicia Kennedy:

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I love a veggie burger made from beans and vegetables. I'm old fashioned in that way.

Jerusha Klemperer:

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