Matt Eastland:
Hi everyone, I'm Matt Eastland Welcome to one of our special docu-episodes. In these explorative deep dives, we tackle the big questions within the food system, uncovering fascinating stories of innovation and change. Time to further explore the groundbreaking ideas and incredible people driving the future of food.

Connor Morrin:
Every day, over 2 billion cups of coffee are brewed, poured and savoured around the world. It's a ritual that fuels our mornings, sparks creativity and connects communities. But what happens to all those coffee grounds once the last drop is gone? The environmental impact of coffee waste is enormous. For decades, coffee waste has been tossed out, sent to landfills or burnt, releasing potent greenhouse gases and wasting on tap potential.

Kacper Kossowski:
We are currently valorising only as much as 6% of the coffee food, actually.

Connor Morrin:
But what if that waste could be transformed into something valuable? What if your morning coffee could power a sustainable future? One innovator decided to find out.

Kacper Kossowski:
Hello, I'm Kacper Kossowski I am co-founder and board member at EcoBean, where we transform coffee waste into super valuable, sustainable ingredients, creating a billion-dollar market opportunity. I spend the last almost two decades in the coffee industry. Majority of this time I spent running a coffee roastery that was at that time a leading specialty coffee back there in Poland. We eventually were acquired by a global coffee brand I was running a company for a couple of years. I left to pursue the dream of giving coffee a second chance. So in a way, I left the industry, but at the same time, I'm still there on a, let's say, back end. And sometimes, you know, struggling to make it more circular. We are currently facing a huge coffee crisis. The prices actually are, you know, skyrocketing. This is, of course, mainly due to climate crisis and all sorts of droughts, frost, for instance. Of course, the deforestation also plays a role in it. And basically, it is much harder to grow a coffee here. So if we would not do something about it. There are quite serious prognosis that by 2050, up to 50% of the coffee could simply disappear from the cultivation because the land will not be viable for cultivation no more. So this is actually something quite serious, I would say. But of course, on the other hand, also wasting super valuable resources. Just to give you the context, we are currently valorizing only as much as 6% of the coffee fruit actually. Whereas if you look at the, for instance, the

meat business, let's consider cows here. So it's like 99% of the cow is actually being utilized here. And in coffee is only as much as 6%. What is happening right now is currently most of it ends up in the landfills or is being incinerated. If you lit the spent coffee grounds on the landfill, it releases huge amounts of methane. The gas is not so popular as CO2, but still it's actually much more potent than carbon dioxide. On the other hand, when the spent coffee grounds is being incinerated, it is just, let's say, undervalorized because it's actually being valorized only to the value of the energy. Whereas the potential that we see in coffee is huge. We can actually multiply the value of coffee by valorizing this using our technology. Basically, we have developed the technology to fully valorize the spent coffee grounds. So from the very beginning in our DNA mission statement was not to leave any waste behind. So we are actually valorizing coffee fully into five different ingredients. raw material being coffee oils. So coffee oils can be actually applied in a beauty industry, but also in a food and beverage, so all sorts of creams or as a functional add-on to beverage products. Antioxidants, they are also ideal for functional food applications. We have also proteins. So we are currently testing those protein additives as animal feed. And then we are moving to lactate acids. So all the packaging industry. And we end up with linen. which can also be a versatile filler for all kinds of soaps, beauty products, but also packaging materials. So we are actually addressing industries such as petrochemical, food and beverage. We also aim, we are not there yet, but of course there is a huge opportunity on the side of the pharmaceutical industry. basically to produce currently one ton of arabica it will cost you more or less 10 euro for one kilo. Given that you have energy for free and you know and you don't have to pay for the lodges just to take the current stock prices and what coffee weight was lost during the roasting process. So we are at the level of 10,000 euro for one ton of coffee. We are already valorizing one ton of spent coffee grounds through our technology to the level of 8, 9,000 euro from one ton of spent coffee grounds. So I'm not even mentioning about what will happen if we will achieve the medical clarity, pharmaceutical. But for the time being, you can roughly say You can roughly say that by valorizing what was until now just incinerated or ended up at the landfill, we are actually doubling the price of coffee. So we are currently collecting spent coffee grounds from Horeca locations, so all the hospitality plus offices basically in Warsaw. The way it works, it is fully supported with our dedicated application, which is not only enabling to manage the process, but it also collects and aggregates all the tangible data such as the volume of the collections, but most importantly, the CO2 savings that were being achieved through our process. If we managed to scale it up, we would be avoiding millions of tons of CO2 emissions and obviously creating also a lot of new jobs, basically, because we are moving into a totally new industry. From the very beginning, to achieve this high level of technology, we have partnered with one of the leading technological universities, academia in Poland. It's called Warsaw University of Technology. And today we have an R&D, almost 12 people there working. It's a diverse group of young innovation leaders, PhDs, but also professors specialising in chemistry and biochemistry. Just to give you the

idea about the effort they have done, for over five years, we have conducted almost 8,000 experiments. But as a result, we have developed a circular process of fully valorizing the spent coffee grounds. So a great credit to our amazing R&D team. We are receiving feedback from some of the industrial leaders that we have done a really great job and we have actually, in some cases, achieved already much better results than they did in their laboratories. So, given the financial muscle behind them, and sometimes over 100 years history behind. I think it's super big credit for us and for our R&D team. I have one message for the industry and one for the consumers. So in terms of industry, I would say Don't be afraid to embrace the sustainability and just simply stop perceiving coffee as a linear resource, but rather as a circular asset, yes? Built on a solid business case also, not only environmental impact. And in regards to consumer, well, next time that you will enjoy a coffee, you definitely should think beyond the cup. You can also start asking your local café about their waste practices and politics. Look forward for the answer because sometimes probably you take something for granted and actually you will not get a positive answer. However, the recycled practices towards spent coffee grants are gaining on popularity. It does not always have to be so, let's say, advanced solution that we are granting, but each action counts. We have this saying in the coffee, enjoy your cup of coffee and we will take care of the rest.

Matt Eastland:
This has been the Food Fight Podcast. As ever, if you'd like to find out more about what we do, head over to the EIT Food website at www.eitfood.eu. And if you haven't already, please hit the subscribe button so you never miss an episode.