*Welcome to today's podcast focusing on sustainability issues within the fashion industry. Our hosts today are Benjamin Palmroos and Sofia Pyykkö.*

*Today, we're delving into the various challenges facing the textile industry, known for its significant environmental impact. From water pollution to excessive chemical usage and alarming greenhouse gas emissions, the environmental toll of textile production is undeniable.*

*But it's not just about the environment.*

*Labor rights violations persist, with workers enduring substandard conditions and inadequate wages. This ethical dilemma has sparked calls for improved labor standards and closer scrutiny of industry practices.*

*Adding to the mix is the phenomenon of fast fashion. The relentless pursuit of cheap, quickly produced clothing has led to overproduction, massive waste generation, and unsustainable practices that harm both product quality and worker well-being.*

*As awareness about the issues has become more widely spread, there is a push for the fashion and textile industry to adopt more sustainable practices.*

*Clearly, there's a lot to unpack here. Fortunately, there are researchers like Anna Härri from Aalto University who are investigating sustainable transitions in the textile industry.*

**All right. So, would you like to tell us a little bit about yourself first?**

Yes. So, my name is Anna Härri and I'm at the moment still doing my Ph.D. on just transition to sustainable textile systems. I am just about to finish my Ph.D., hopefully, and started actually today already a postdoc position at Aalto University continuing with sustainability issues, but mainly related to the forest sector, whereas for the past ten years or so, I've been looking at sustainability issues in the textile industry. I’ve mainly been interested in social sustainability of textile industry, and especially of the transition to a circular economy and the social sustainability aspects of that. But I'm also interested in the environmental issues related to the textile industry.

**All right, interesting. Well, then let's get started with the questions for the interview then. The first one: Anna, you looked into questions of just transition and the social impacts of circular economy and the textile industry. Can you tell us how you became interested in these topics?**

Hmm. That's a very good question. I guess it all started many, many years ago I think when I was doing an exchange from high school in Brazil, and I was from a very small city, small agricultural, actually, a village where there is no sort of, there's not many at least, issues with social inequality or environmental pollution, etc. And going to Brazil for one year when I was 17 really sort of opened my eyes to the injustices there are in the world and the social and economic inequality and environmental pollution there is because these things are very visible in Brazil. And that's sort of how I knew that I want to spend my career somehow trying to make the world a better place, because I felt very sort of strongly after that year. And then I went to university to study development studies to understand sort of how we could decrease inequality and actually in doing university learned about several sort of negative effects and negatives that companies do in the world and started to sort of to be more interested in companies and in how through companies we could change the world for better.

**That it's quite a journey to your interest in the topic. It is very interesting to learn about. Well, the second question then: The fashion industry has doubled its production in the last 15 years and 73% of the 53 million tons of clothing created each year are incinerated or landfilled. Based on a research conducted by the British Fashion Council we already have enough clothes in existence to dress the world for the next six generations or 100 years. Considering this, can the clothes industry be considered sustainable in any way?**

Oh, this is a very good and a very difficult question and I would say it all depends on how you define sort of what is sustainable and what it is not like. If we look at this question from an environmental viewpoint, I guess one could say that no the textile industry is it's not very sustainable as it does quite a lot of harm at the moment. It creates a lot of pollution, I guess depending on the research, it's about 6 to 10% of global emissions comes from the textile industry. It creates a lot of sort of waste and pollution and water issues, etc. So, thinking that we already have so many clothes at the moment that are produced, that are ready, if we could circulate them for all and just got to stop the industry altogether.

Of course, that could be like this utopian dream of a sustainable, more sustainable world and a sustainable textile industry where the textile industry actually wouldn't exist. So, I guess the most successful textile industry in the environmental sense would be one where it doesn't exist. But then we could, for example, all the cotton fields, we could turn into forests full of wildlife, or we could stop using oil for polyester clothes, etc. so there would be huge, huge benefits if we would just use the clothes we already have. But I guess this is sort of a very utopian vision, and I don't think this is going to happen in the short term at least, but also that would have huge effects if you think socially.

At the moment, the textile industry creates millions and hundreds of millions of jobs for people from cotton fields to textile factories to retail sales. So, this would have a huge effect, and these at least would entail a lot of social harm in the short term at least. But that being said, I guess if you think about if textile industry can be sustainable at all, I think this is a very, very interesting philosophical question, I guess. Yeah, it all boils down to a sort of think, what is sustainable.

If we think any industry will always have an effect on the environment and on people if it uses any materials or any industry. I can't think of any industry at the moment that wouldn’t do some harm for the environment. So, I guess it's just a question of how much harm it does and what's going on at the moment in the textile industries is this: It is very much trying to minimize the harm it does, but of course it will do harm also in the future. Unless we sort of would be able to, yeah, as long as we buy clothes, be they recycled or second hand, it will always have some sort of impact. There are like more sustainable elements and less sustainable elements in it. Completely sustainable, I don't know if any industry can ever be, at least it depends on what how you define sustainable. Of course. I don't know if that makes sense, it is a difficult question.

**No, no, I it did. I think it did at least. Off to the next one then: In your research “From simplistic to systemic sustainability in the textile fashion industry”, which was one of your papers, you looked into different fibres and their use in the textile industry. There's a Finnish fibre innovation called Ioncell that was developed at Aalto University in collaboration with the University of Helsinki. It uses a technology in which cellulose is dissolved in ionic liquids and spun into fibres. It can also be used with cotton waste fabric, cotton/polyester blend fabrics, cardboard and old newsprint to produce long lasting fabrics. Does this technique have any downsides?**

That is actually one of your only questions that I'm not very sure about because I haven't really looked into Ioncell that much. In general, there is a lot of innovations going around new textile fibres in the textile industry and I would be very critical sort of towards them. They can have many, many good sides and indeed can provide many environmental and even social benefits, but not sort of all new innovation that's claimed sustainable is actually sustainable.

Like, as an example there's some new textile fibres for example, use cellulose from forests in Brazil for, I don't remember which tree it is, but they're importing their trees from Brazil, which of course can be a good thing but, also it depends very much on how the process of cultivation is done in Brazil. Whether it's, of course if it's a virgin Amazon forest and that's a bad thing or if it's like huge plantations where the workers’ rights are not very good, then that can also be another very bad thing. So not all fibre that's termed or sort of claimed as to be sustainable is sustainable, so we should be very critical to these new fibres. They can provide a lot of benefits, but ultimately by default they might have also negative sides.

**Okay. Right. Yeah. My point with the question was that it sounded a little bit like idealistic in a way, and I didn't quite get if there were any like downsides to it and I tried checking it out on the websites, on the Ioncell website, but I couldn't really understand the whole thing, but we'll leave that question to further research to someone else.**

Yeah, I think it should be research. I think it's still a very novel innovation, so there's not maybe much research on it. There's probably some life cycle analysis assessment, but maybe it should be more researched and later on, maybe I can say a bit about recycling in general and about its benefits and downsides so we can sort of get back into that question.

**Okay, perfect. Okay and the next one then: The circular economy, which has gained a lot of interest lately. Does using post-consumer textile waste have a potential in making the clothing industry more sustainable in the future? What would be required to increase the use of post-consumer textile waste in the production of new clothes?**

Yes, I think definitely using post-consumer waste to produce new textiles has the potential to make the industry more sustainable. Now we should, on a broader scale, move towards using as little virgin materials as possible and using more and more materials that are made from recycled sources. For example, recycling our old clothes instead of throwing them to the garbage sites or burning them for energy use is much more beneficial if we recycle them into new clothing. Even though I would say recycling is very needed and in the future I would like to see a future where all of all clothes, after they have, after the consumers have used them and they can't be reused anymore or they can't be recycled anymore, they're recycled like everything and I hope that the industry is going towards that, but slowly. But that being said recycling should be only the last step.

If we think about circular economy it's much more than recycling, and it should be about much more than recycling. Circular economy as a broader term sort of can include and should include also other processes for textiles. It should include using textiles, using quality textiles for longer. When one person can't use them anymore, if it doesn't fit, or something that could be resold and reused by someone else. And then when the textile item, for example, your T-shirt reaches the very end of its life, when it really can't be used anymore, it has holes everywhere only then should it be put into the recycling bin and recycled for new virgin materials. This is because also recycling processes that we use at the moment; they also use a lot of energy and they also generate quite a bit of emissions depending a bit on the process of recycling. But recycling it's not emission free, it's not completely environmentally sustainable because it also produces waste and takes up energy and produces emissions.

So, for example, we did like this life cycle, an assessment on jeans, looking at like how the circular economy affects CO2 emissions. And we looked at jeans and sort of compared different scenarios of change. One scenario was where you just use your jeans and then you throw them to the garbage, and it's burned for energy. One scenario was where you use the jeans you had for a long time, you don't need to buy, you just use them for longer or as long as you can. The other scenario was you sell your jeans and someone else buys them so it's a second time to use and then recycling and then we actually have rental also there. And what we noticed in that in that study was that recycling actually when it comes to CO2 emissions, is not much better than throwing your jeans in the garbage and burning them to gain energy. So, it was only slightly better in terms of CO2 emissions to recycle them. Now, this was due to the fact that in our study, the places where we looked at it, it takes up quite a bit of a bit of energy to recycle. But then again, these jeans were made of cotton and cotton cultivation doesn't produce very much CO2 emissions. So then if you replace cotton cultivation with recycling, it doesn't save up sort of so much emissions in essence. So, you don't save so much emissions by recycling because the virgin material production doesn't produce so much emissions in the first place.

The benefits of recycling really depend on what you're substituting. So, for example, if we would have looked at in that study water footprint, water consumption. Cotton uses a lot of water so if we recycle, cotton cultivation uses up a lot of water, so if we recycle those jeans and use up that recycled material for nutrients and that means we don't have to cultivate more cotton, then recycling process uses very little water. But cotton cultivation uses a lot of water, so when we replace virgin cotton cultivation, we save a lot of water. So, of course, the benefits of recycling really depends on what you look at. Do you look at emissions? Do you look at water consumption? Do you look at biodiversity impacts? What do you look at and what are you substituting? What is the sort of fibre and the virgin material you are substituting and what were the impacts of that virgin fibre and how do you make the recycling? Do you make it with fossil fuels? Is the energy you use, I mean does it come from coal plant, does it come from renewable energy, etc. so it all sort of depends what are the benefits of recycling.

Okay, so summarising we also noticed that it's always better to, first of all, reduce or use your clothing as long as you can, not do anything with it, absolutely nothing, just use the ones you already have. A second best is if you need to, let's say if you need to get new jeans buy second hand. That doesn't involve so much processing because it's different kinds of processing and logistics always takes energy and produces some sort of pollution. We should sort of use the clothing in their original form as much as possible as long as possible and then at the end we can recycle.

**Thank you for an interesting answer. Yeah, that was very insightful. Maybe focusing more on the second-hand clothes part, as you already mentioned in your previous answer. Second-hand clothing is also something that has been gaining popularity recently. Are there any proven environmental implications of the growing popularity of second-hand clothing? Or is it just contributing to an overall increase of clothing consumption?**

Yes, this is a very good question. Like second hand, as I said, second-hand should be preferred first over recycling but, of course, the environmental benefits of second-hand also, it depends. It depends mainly on whether you are buying second-hand, if you are substituting buying new clothes. Often when people buy second-hand, it's just sort of for fun shopping and people buy maybe things that they might not even need and then they go and buy new stuff anyways. So, there buying the second time, it doesn't really replace buying new, then you're just buying second-hand in addition to new clothing and then the environmental benefits of second-hand clothing become much less. And unfortunately, research has noted that oftentimes people do not substitute buying virgin products with buying second-hand. So, they still buy virgin products even though they buy second-hand also, and this is just increased consumption then and will not have such environmental benefits.

So definitely, what we should aim for in the best-case scenario is that the second-hand that first of all, when we produce in the first place, we produce quality clothing that can last for a long, long time and can be used by multiple owners. For example, it stays good and states good quality so when people go and buy second hand, it's comparable to virgin product quality. Sort of so it's not just some, I don't know, bad smelling hippie stuff, but actually quality good clothes even when bought second hand. But this means that all our clothing needs to be a really good quality in the first place. Yeah, I guess that would be my answer.

**I completely agree with you. Then let's move on to some of the more like social sustainability issues in the textile and fashion industry. So, the textile production is by nature global, and many of the factories that produce clothes are in countries like Vietnam, Bangladesh and Ethiopia, where workers face issues such as insufficient workers’ rights. Can we make textile production more sustainable by moving the production to Finland, or at least to Europe? Or what would be the consequences for the Global South for textile industry workers?**

Yeah, this is a very, very good question. I think in some ways, yes, we can make the industry more sustainable if we move moved production to Europe or to Finland. Once again, in some ways it can be more sustainable. Now, in Europe, in the European Union, for example, we have legislation that can better protect workers and that better protect the environment, even though even inside Europe especially in southern countries such as Italy and Eastern European countries research has noted that there are workers’ rights violations also within Europe. So, it's not it's not completely assured that if you buy a product made in Europe that it would be made ethically, but the chances of it being made in a more sustainable way are higher.

But of course, this rings the question, if we were to move all production to Finland or Europe, then what happens to the production countries? Now, one could argue that it's not very fair that first we produce massive amounts of clothing in production countries. They have their industry set up, it's a huge employer in the country, it has cost so many environmental negativities and the wages have been quite low for many workers, meaning that the societies where the production happens haven't been able to maybe build better futures for them for the society there. If the workers don't get enough wages, they maybe are not able to save, maybe they can't send their kids to school, etc. So, the sort of benefits have not maybe trickled down to the society enough to these production countries societies.

So, okay, but we have been producing clothes there for a long, long time, causing also negatives and then if we would relocate sort of all of a sudden into Europe and leave them in a very vulnerable position. I don't think that's very fair. At the very minimum, I think if companies think about relocation to Europe, they should do it in a very sort of planned way and let the production partners in the countries know well in advance, pay living wages and good prices for the producers and the workers now, so they can be ready for future changes. Maybe they can put some in savings or something if they're unemployed. If we just cut production, you know, they are completely, I would argue millions of workers will be left hanging or how do you say it in English, sort of “tyhjän päälle”. Yeah, they would be left in a very vulnerable position because in many times also these production countries do not have social security. They might not have unemployment benefits, they might not have opportunities for the workers to re-educate themselves for other professions. So, it's the countries where majority of our clothing are made are very vulnerable and not very resilient countries so when changes happen abruptly, the security networks don't really work.

I'm not saying we shouldn't bring any production back to Europe, but if it's done, it should be done with good planning ahead, not abruptly, communicating with the production partners, perhaps even compensating somehow. I don't know, having a fund for re-education for the workers or something. But I guess this is a rather radical proposition because often, you know, of course, in capitalist societies, when brands do something, they don't really consult the product producing partners in supply chains because they're not officially connected, because it's often a different company, you know, and they're not officially responsible for the changes happening in the supply chain. But I think the industry should work towards sort of more responsibility for your production partners and for your workers and more sort of ahead planning and doing it together.

**Yeah, I think that's really good advices and recommendations and then the next question would be that it would seem that third party verification is more reliable than in-house and a good case example would be H&M and their “Conscious Choice” products, which is their own verification of sustainability. So, should there be stricter standards that have to come from third party actors and be verified by them as well, and would this come with its own problems?**

Yes, I think that's a very, very good question. I guess, like in essence, I think there are many, many problems with standards and certificates, be they in-house or by third parties, unfortunately. But of course, it's always better that you have some sort of neutral third party looking into the supply chain instead of just doing it to yourself, even though I think that's needed also. It's very needed that the companies and the brands who buy from, let's say, countries like India and Bangladesh also do go there and visit themselves to see the factories and see what it's like to just get an understanding of the issues there.

You do need some third-party verification mechanisms but unfortunately researchers noted that even if it's third party verification mechanisms, certifications, there's a lot of fraud involved and the monitoring it's just not good enough quality. Even if it's third party, it's often then so that the buyer company pays the third party and then the third party is sort of in a business relationship with the buyer company and at the same time they should be monitoring their rights. So, the business relationships may be askew and lower the credibility of this certification schemes somehow but then of course there are completely like third party certification schemes that maybe don't get their money from the buyers, but even they suffer from problems.

I guess of one of the main issues then I would say that it's not necessarily how strict the criteria is, although the criteria should be stricter, for example, that often oftentimes they don't demand a living wage and only demands like a minimum wage or something which is often inadequate for a decent living in many of these production countries. But it's still not all in all, only about the stricter standards, but somehow about, hmm I would say here also doing it together with the producers. Because often the producers I talk to, also in India, the issues they faced was that they weren't really being asked or they weren't really being, you know, these certifications and all these standards and everything, they aren’t done in cooperation with them. So, it's just the brands or the buyers who come in, they say, do this, do that, do this, do that, or otherwise we'll stop buying from you and by the way, we're not paying you anymore to do this.

So, they what they were saying, and this was what the producers were saying themselves, is that “We don't have the money to do this. Okay? You come in with all these huge requests, but we don't have money to do this. It doesn't really fit our culture at all. You're just coming here and telling us what to do”. So, they were quite upset about the whole monitoring certification, scheme and mechanism of CSR, so to speak. And here then also I would say one of the key issues is to talk to the producers, maybe plan some of these criteria together with them, even make some compromises and critically to pay more for certified products, make sure the purchasing practices are such that they allow for improving workers’ rights or the environment.

If at the same time as buyers are demanding stricter standards and less this and that, they're not willing to pay more for the products, then the changes will most likely not happen because the producers might not have the incentive to change or they don't just have the means to pay more. If the buyers say pay more for their workers, but they are not willing to pay more, then it just won't work. Now, this is of course not all, there are some really good brands out there who are for working with the producers, and paying more, etc. I guess the big picture still, unfortunately, is that the producers feel that they just get told but not actually given help or listened to how they would like to do it or what they would like to do. So, there's this whole sort of power imbalance, I guess. And I guess before we also take seriously the demands from the producers, stricter standards or stricter criteria won't solve that problem.

**Yeah, thank you. And then it's time for the final question. So maybe this is a summary. So based on your research, what are issues that would need to change at the very minimum, to make textile industry more sustainable?**

It's clothing, but more money for workers. I guess that that would be, yeah, that would be my, less all in all, less production and more money for those who make the clothes. Yeah, as a short sentence that would be it.

**I think that's a good like a clear conclusion for that. So, thank you so much for participating in the podcast and taking your time. And we're so happy and glad that you shared your insights and knowledge about the topic and yeah, thank you.**

**Thank you. This was really insightful, really interesting to learn about. It was really interesting to learn from someone who actually does this. I mean, ourselves, we have studied, but to actually do the research is really interesting to learn about.**