

TARGET: Zero Hunger

Episode 13 – Turning black charcoal green

[Sandra] Hello and welcome to Target: Zero Hunger -- a podcast by the UN's Food and Agriculture Organization. I'm your host, Sandra Ferrari.

[Hanan Darfur kitchen audio IN]

[Sandra] Today's episode focuses on charcoal, and we begin inside the kitchen of Hanan who lives in a thatched hut in Sudan's Darfur region.

Every day, Hanan buys charcoal to cook food for her family.

Around the world, 3 billion people like Hanan lack access to clean fuels and technologies for cooking. In Africa, charcoal production has doubled in the past two decades and demand is likely to keep growing as more people move to urban centres.

Charcoal is made by burning wood in a kiln at high temperatures for days at a time.

It is cleaner and easier to use than firewood, and is often cheaper and more readily available than gas or electricity.

But the surge in charcoal use is contributing to forest degradation and in some areas also to deforestation, especially around large urban centers

[Hanan Darfur kitchen audio OUT]

So, what can be done to make charcoal use more sustainable? To turn black charcoal 'green'...?

[Sandra] Joining me for this episode is a panel of experts.

In studio is Eva Muller, Director of FAO's Forestry Policy and Resources Division. Eva has an extensive background in forest policy issues across Africa, Latin America and Asia.

On the phone, we have two guests. Seema Patel from the Global Alliance for Clean Cook stoves. The Alliance is an initiative hosted by the UN Foundation that supports large-scale adoption of clean and safe household cooking solutions.

Secondly, we have Wanjira Mathai, chair of the Green Belt Movement based in Kenya. And she's also a Senior Partnership Advisor for the wPOWER Project, which is the Partnership on Women's Entrepreneurship in Renewables. Welcome everyone.

[Eva] Thank you.

[Seema] Yeah, thank you so much for having me.

[Wanjira] Thank you.

[Sandra] Eva, let's begin with you. FAO is working with partners on greening the charcoal sector. Can you describe what that involves and why it is important?

[Eva] Well, you already mentioned the importance of charcoal as a source of energy for millions and millions of people, mostly for cooking and heating. But there are a couple of problems related to charcoal as a source of energy. And the two biggest ones are that: it's not produced sustainably and it's used inefficiently. And that makes the charcoal value chain a substantial emitter of greenhouse gases and therefore contributes to climate change. Now, greening the value chain, the charcoal value chain, means that the wood used to produce charcoal comes from sustainably managed forests; that efficient kilns are used in the conversion process; and that the charcoal is burned in improved fuel saving stoves. And this can lead to substantial reductions of greenhouse gas emissions in the whole value chain, up to 80%, which is very significant.

[Sandra] So, greening the charcoal sector can be described as using wood better, rather than using more wood?

[Eva] Yes, this is correct. Currently the charcoal is mostly produced using very simple technologies with very low productivity and a low conversion rate. Similarly, the stoves used to burn the charcoal are often pretty rudimentary and inefficient. So, these two factors combined result in substantial losses of wood and energy. By improving the efficiency, less wood would be required to produce and use charcoal. In other words, more energy from wood does not mean more wood used for energy.

[Sandra] The charcoal sector is largely unregulated in many countries. How significant a barrier is this to progress?

[Eva] This is a very important barrier because, as you said, the charcoal production, marketing and trade in many countries takes place in the informal sector. And the lack of regulations means that governments forego billions of dollars in revenue every year. And it also contributes to deforestation, forest degradation do to the unsustainable and sometimes even illegal exploitation of forest resources. So, if we want to develop a sustainable charcoal sector the entire value chain should be targeted and policies have to be streamlined at national, regional, and at local levels in harmonization of broad policy processes on forests, on energy, development, urban planning, land use planning and climate change.

[Sandra] What about technological advances in charcoal alternatives, including non-wood options?

[Eva] Technological advances in renewable energy development, energy efficiency improvement in the last decades have been helping to diversify energy options in developing countries. For example, there are biogas technologies that use organic waste to produce biogas for cooking and at the same time produce bio-slurry as fertilizer. And those have been disseminated in many countries. And there is also now a significant cost reduction and performance improvement in solar heating systems that bring opportunities of clean and renewable energy solutions as alternatives to wood energy. In the long run, these technologies could help to cut down the demand for charcoal and fuel wood and thereby help release the human pressure on forest resources, by they are unlikely to substantially replace fuels in the shorter term let's say in the coming decades. So, we need to make efforts to green the charcoal and fuel wood value chains and that is very much required in the foreseeable future.

[Sandra] Wanjira was there anything that Eva was talking about that you might want to add to?

[Wanjira] Ya, you know one of the things that I have found as I advocate for this issue on behalf of the wPower hub is that we have focused inordinately around what we think communities need. So, we have come up with wonderful clean cook stoves. We've also come up with many alternatives and I agree completely with Eva that they're not likely to offset or replace charcoal mainly because there is the other side of the equation which is the preferences. You have communities that have a strong

preference for charcoal whether it is for the flavor of the food or cultural attachment, and of course for the role that it plays in a social family situation where people sit around the fire. Acknowledging the power of that is to begin to understand why adoption or a shifting away from charcoal has been so slow. And that we begin to change our narrative as well. Not so much from a complete shift but more from how we do it better and how we produce more sustainably and burn it more efficiently. And those are really important. We've also seen on the technology side innovations around, especially kilns. You know, the most common conversion of wood to charcoal produce 10% in the usual earth kilns and so we're starting to seeing innovations, very local improved kilns, in drums and others that are at least 30 % efficiency. So three times more efficient than earth kilns. And those are starting to show some promise there which is local. And I know as we look at further improvements in technology there will get even better.

[Sandra] Let's go to Seema Patel who is on the phone. As a reminder she's with the Global Alliance for Clean Cook Stoves who joins us from Washington, DC. Seema Patel thank you for joining us.

[Seema] Yes, thank you so much for having me.

[Sandra] How hard is it to encourage people to use a different type of stove than they are used to? How significant a hurdle is behavioral change?

[Seema] Well clean cooking is a really complex behavioral challenge. We're talking about three billion people living in households where daily meals are prepared over open fires and traditional cook stoves and this way of cooking has been passed on for generations and has really deep social and cultural ties. So when you talk about making a transition to a brand new cook stove or fuel, it really does require a dramatic behavioral shift away from something that is really deeply ingrained in the way that families cook and the way that communities have been cooking for generations. And then in addition to that families have to be convinced to allocated what is often a really significant portion of their already constrained household budget toward investing in a new and often unfamiliar cooking appliance for their home. So facilitating the transition to something like an improved cook stove or a new fuel like pellets or ethanol - which we're also seeing more of in the market - it's also very difficult. And then for something like LPG - liquefied petroleum gas - many of the populations that we work with they're familiar with this fuel, it's a very clean fuel, and it's often what they aspire to use, but the transition is very slow mainly in part to their being a misconception about the cost of something like LPG, that it's maybe only a fuel for the rich or because of some of the safety concerns. But in reality the ongoing costs are often comparable or even cheaper than fuel's like charcoal, especially when something like charcoal is purchased on regular basis in small quantities.

[Sandra] So, what innovations are around the corner in terms of alternative energy cook stoves?

[Seema] Ya, there are actually quite a number of different innovations - both around stoves and fuel. We are seeing a lot of research and development prototype stoves that are showing positive gains in the field in terms of performance and consumer demand. Another type of innovation we're seeing are technology platforms that incorporate innovative stoves and fuels. These are things like reusable smart fuel canisters that can actually be docked and refilled at physical cloud connected kiosks that are located inside neighborhood shops in places like east Africa. So they basically serve the same purpose as ATMs where you can get just the amount of money that you need, but they're for ethanol cooking fuels, which I think is a really interesting innovation.

[Sandra] Seema Patel thank you and Wanjira Mathai, let's talk a bit about your work. You're involved in encouraging women entrepreneurs to bring clean energy to people in parts of Africa and India.

Can you share some of the success stories you've seen so far?

[Wanjira] One of the success stories I will say is Cookswell Jikos, this is a local organization in Kenya that has been committed to the charcoal value chain in particular, that is starting to see innovating around, especially kilns. And they've seen... they have one kiln that is under development... the Kinyanjui Kiln that is starting to see 30 to 40 per cent conversion rates for charcoal. And then also, looking at opportunities for other products that come out of the charcoal - liquid smoke. And other opportunities that would even have a high value than charcoal itself. One of the things that Cookswell Jiko does is they market seeds. They look at the entire lifecycle of the charcoal value chain, of charcoal itself. So they sell you the seeds along with the kilns, along with the Jiko that you use or the stove that you'll use to burn that fuel, and also the tools that you'll need to cut small branches. So the integration of feed to fuel in one product is one of the great innovations we're seeing coming out of organizations like Cookswell.

[Sandra] And how successful have they been at this kind of work? How successful are they at this point? Is this still quite a young initiative? Would you describe it at that?

[Wanjira] I think the attitude changes are not that old, right?. I think we have a long way before we saw this policy enforcement coming through. Even those we still have some good policies now they enforcement is poor. So we still have a long way to go there. These good examples and these cases are making a very strong platform for more of this to occur. Of course, don't forget that charcoal has always been controlled for many years by large powerful cartels and so breaking through those are not easy, but we are seeing some success in organizations like wPower that is shining a spotlight on this issue and advocating for it globally. And FAO and others, I think, are creating the pathway that will give the momentum that's needed to grow it fast. And I think the momentum is growing. There are alternatives, particularly for cooking and others, but charcoal is starting to get attention. One of my favorite examples is of India, where very recently we heard Prime Minister Modi with an extremely ambitious project to get universal adoption of LPG. And what they're starting to find out is that even with that universal program, that is going extremely well, almost every household in India is going to have LPG I believe by 2030... There's still a preference for some cooking to be done on charcoal. And I think that is just such a powerful metaphor for the fact that charcoal is not going away even with such ambitious and successful programs like we had in India. So I think that is another example of showing us that we need to give charcoal its due attention.

[Sandra] My next question to you is what role does gender play in charcoal production and use and efforts to make the sector more sustainable?

[Wanjira] Well, I think it's quite central. We have women who are often the ones who are purchasing into the charcoal. They are not the producers, they are not the marketers, they are not the transporters but the users. And our goal at wPower is to encourage and to drive the engagement and leadership of women across the value chain, so how can they add to more sectors of this value chain? And perhaps even demonstrate for the evidence that is out there. That by engaging women more centrally, we actually create success. It is good for business because they know these fuels really well. Because they actually are more successful at marketing them and of course because they use them a lot more than others. So I think the role of women across the value chain is being supported more and more by the evidence that's out there.

[Sandra] Eva, do have anything to add here?

[Eva] I find it really encouraging to hear these examples from the field because what we very often hear is that the women are at the losing end. They are the ones that have to collect the firewood, and walk long distances. They're the ones who suffer the health risks and so on. But to see that the

charcoal value chain can actually be used to empower women, I think this is a very, very encouraging trend.

[Sandra] I have one final question here that I'd like to put to everyone. Wanjira, we'll start with you. One of the Global Goals that all nations have committed to is goal seven: Ensuring access to affordable, reliable, sustainable and modern energy for all by the year 2030. So, Wanjira, how achievable is that goal, from your perspective?

[Wanjira] It is achievable. If we are honest and committed to looking at all opportunities and possibilities for what communities need. And these needs are often differentiated depending on where you are, rural vs urban. And then one of my most important things, the one that we mostly mentioned is that we are cognizant of community preferences.

[Sandra] In your opinion Seema, how achievable is that goal from your perspective. It's a really good sign that energy access is seriously being considered in sustainable development efforts as it's a major enabler of development. And household energy is a good thing to include in development, it's a very positive step.

[Seema] We believe the goal is achievable, but it's not likely to happen without scaling up the adoption of clean cooking. And it's that clean cooking can directly help deliver progress across ten of the 17 SDGs, not just goal seven. Based on some estimates done by the global alliance, the trends suggest that we'll be reaching our 100 million household goal with clean and/or efficient stoves and fuels actually ahead of our 2020 goals, which is really, really positive news both for the Alliance and are partners but also for these global goals. We estimate that about 82 million cook stoves and fuels have been distributed since 2010 and of that 53 million are clean and/or efficient. So based on current trends in the sector we project that going forward, the majority of cook stoves and fuels being distributed will meet the clean and/or efficient criteria. So, this a lot of really good progress, but we want to be able to contribute beyond our 100 million goal and beyond our sort of mandate of ten years to continue to ensure access to affordable, reliable and sustainable modern energy for everybody.

[Sandra] Eva what do you think?

[Eva] I'm happy to see optimism. And I'm happy to share that optimism even though we all know that goal seven of the sustainable development goals is very ambitious, as are all of the sustainable development goals. But countries have committed themselves to achieving those goals by 2030 and if they want to do they have to become serious about changing things and changing the way of doing business. And in the area of energy that implies political will and political commitment to improve the value chain of charcoal and wood energy in general, and stop demonizing it. As Wanjira says very clearly, it's not only there to stay - we all know that - but it's also for many a cultural preference. So we cannot just say let's "let's replace all wood energy by electricity or gas to become more modern and more clean", and so on and so forth, no. What we need to do is focus on improving the production and use to make it more clean, more sustainable and more efficient of what is already there. And that will then allow us to achieve the SDG seven. That requires political will because for many, many years policy makers have absolutely ignore this issue and they cannot continue ignoring it. So, cautious optimism from my side.

[Theme music IN]

[Sandra] This has been an excellent conversation Eva Muller, Seema Patel, and Wanjira Mathai thank you so much.

[Wanjira] Thank you very much

[Eva] Thank you also, it was a pleasure

[Seema] Thank you.

This is Target: Zero Hunger, a podcast from the Food and Agriculture Organization of the United Nations. Visit us at fao.org/news/podcast where you can also find a link to the [new FAO report on greening the charcoal value chain](#).

You can email us your questions or feedback at FAO-audio@fao.org.

I'm Sandra Ferrari, thanks for listening.

[Theme music OUT]