Episode 3: Seline Meijer - The human side of conservation: people's needs and planting trees in sub-Saharan Africa

Seline Meijer (SM): At some point I though, you know, we can't just think of conservation as a protected area with a fence around it and ignore the people that live around it who are very poor and often rely on those areas to meet their livelihood needs. That's when my focus shifted a little bit more, to include both people as well as conservation and try to work towards land use types and landscapes that really support both conservation as well as people.

Kaitlyn Regehr (KR): What comes to mind when you think of environmental conservation and who do you picture when you think of an environmentalist?

Selina Meijer invites us to look at conservation differently as a problem we must all share, not a mandate to be handed down by the western intellectual elite. In including the people living in the areas which we need to protect the most, she argues, we will find a workable solution that benefits everyone.

SM: My main finding that farmers do have a positive attitude toward trees shows that our efforts don't really need to be necessarily on awareness raising and convincing them that planting trees are important, because I think they already know that. They know that very well.

What's more a limiting factor is the limited resources that they have. Support with tree planting activities can be a really valuable tool here because planting trees can be a way to contribute to food security. Some of these trees have a fertiliser effect so it can actually help them address some of these most pressing needs.

If we come up with interventions that really look at what the local needs are then I think that that can really help address several of these issues at the same time.

[How Researchers Changed the World podcast introductory music]

KR: Welcome to How Researchers Changed the World. A podcast series supported by Taylor and Francis, which will demonstrate the real-world relevance, value and impact of academic research; and highlight the people and stories behind the research.

My name is Dr. Kaitlyn Regehr. I'm an academic researcher; an author and a scholar of digital and modern culture, and I'm interested in how new technologies can broaden the reach and real-world impact of academic research.

In today's episode, we will hear about the extrinsic and intrinsic factors influencing the uptake of agricultural and agroforestry innovations in sub-Saharan Africa and why this is so important in the wider context of climate change.

Agroforestry is a land use management system in which trees or shrubs are grown around or among crops or pastureland. This intentional combination of agriculture and forestry has varied benefits, including increased biodiversity and reduced erosion.

SM: My name is Seline Meijer. I am currently working for the International Union for Conservation of Nature (IUCN) in Washington DC, in the United States. My main interest is in what I call, the human-side of

conservation issues. It's really all about people, so gender issues and conservation, indigenous people, local communities and how they interact with their environments and the type of issues you need to take into consideration in local conservation efforts.

My background started more broadly in environmental sciences and then while I was doing a Master's in Conservation Science and had really specialised in Ecology, that was when I started to develop an interest to focus more on development issues and people. The research that I did in Malawi really focused on those aspects and that really further strengthened my interest in those areas.

I still work on related topics today even though they are not entirely the same as the research that I did and that I'll be speaking about today. Very broadly speaking they still fall under that same general topic of people and conservation.

IUCN is quite a unique [00:05:00] organisation. It's one of the world's largest environmental networks so it's a membership organisation. It means that we have both government as well as non-government organisations that are members of IUCN.

We work all over the world in many different countries on various topics related to the environments. We work on forest conservation, species conservation, marine dry lands, water as well as the programme that I work in. It's the global program on governance and rights and we really work on the people issues.

From a very young age I was interested in nature and the environment. As a child already I really enjoyed being outdoors. Even though I grew up in the city, I was very appreciative of any nature that I could spend time in.

Once I saw the nature that we still have in other parts of the world, I really wanted to become involved in working towards conservation and the environment. I became really interested in ecology because I wanted to understand how ecosystems function and how they work. That was something that while I started studying, that those were the types of topics I became more interested in initially.

Then at the same time, because I had spent some time abroad, that didn't only spark an interest in environmental issues but also in development issues. There's lots of issues in countries with poverty and inequality. I actually studied a Minor in Development Studies and so at some point, these two things really came together. I really wanted to work towards conservation and development efforts at the same time and really work on the intersection of those two areas.

KR: Seline was always interested in the natural world and initially imagined a career for herself in ecology.

SM: My initial travel was in South-East Asia, but I always had a really big interest in Sub-Saharan Africa. After my first year in University I decided I wanted to go and visit to see what it was like. I signed up as a volunteer and I travelled to the tiny country of Swaziland, where I participated in a Rhinoceros conservation project. I spent five weeks in a national park in Swaziland helping out with various conservation activities in the park and really getting the opportunity to live up close with wildlife and nature and understand some of the issues those parks and managers of those parks face in conservation. That really for me, was a point where I knew I wanted to work more in Africa.

Even though I was really fascinated by the beauty in the national park, that's why initially I did more ecology but at some point I thought, we can't just think about conservation as a protected area with a fence around it and ignore the people that live around it who are very poor and often rely on those areas to meet their livelihood needs. That's when my focus shifted a little bit more to include both people as well as conservation and try to work towards land use types and landscapes that really support both conservation as well as people.

KM: Seline is originally from the Netherlands, a country whose remaining natural areas are closely managed and controlled. After completing an undergraduate in Environmental Sciences at Utrecht University, she travelled to study at the University of Oxford for a MSc in Biodiversity, Conservation and Management.

This Master's was to prove pivotal as she became more familiar and interested in the social and psychological factors of conservation. This led Seline to a Doctorate PhD in Agroforestry at University College Dublin, which in turn led her to the World Agroforestry Centre in Malawi and to publish a paper entitled: 'The role of knowledge, attitudes, and perceptions in the uptake of agriculture and agroforestry innovations among smallholder farmers in Sub-Saharan Africa'.

SM: The research paper really was the starting point of my research, where I was really trying to understand, what motivates the farmers in Malawi whether or not they decide to plant trees and how they engage with trees in the landscape.

I started off by doing a big literature review around topics of decision making [00:10:00] understanding how people make decisions when it comes to agriculture and particularly tree planting. I did that for the entire Sub-Saharan Africa to really understand what literature was out there.

KR: Agroforestry is vitally important to agricultural landscapes the world over, and especially in the developing world. The benefits of planting trees include:

- Reducing soil erosion, which in turn reduces loss of water, soil, organic matter and nutrients.
- Maintaining soil's physical properties, leading to higher quantity and quality of crop yields. and...
- Providing an alternate food source between harvests.

Once Seline had read what others had written about Agroforestry in Sub-Saharan Africa, she left the library and went out into the field – literally.

SM: I did interviews with many farmers in Malawi and before I went into this research I had some ideas on what I might expect to find, which was based obviously on the literature review that I did as well as conversations that I had with colleagues and other academics. The general discourse around this topic really was that farmers aren't so interested in planting trees. They don't see the benefit and we really need to convince them to plant trees and make them understand why it's important and why it's good for them.

KR: The Republic of Malawi is a landlocked country in the South-east Africa. It's is a developing country, in fact one of the least developed countries in Africa, with an economy heavily based on agriculture, and a largely rural population. The county's developmental needs are mostly met with outside aid, meaning there is a complex relationship between Malawians and the plethora of multi-national aid workers and visitors living and working in the country.

SM: When I was talking to these farmers, I realised that they very well understand the benefits and they're very positive around tree planting. It's not that their attitudes are negative, they actually are aware of the different benefits that planting trees can offer to them. They are planting more trees that I was expecting.

I think that a lot of research takes a very black and white approach and often research papers are very binary,

and they say either farmers are planting or they're not planting trees.

KR: As we've already discussed, the benefits of Agroforestry are widely acknowledged and understood in the developed world. We will unpack the evidence supporting this claim later in the story. But, why are the farmers in Malawi planting trees?

SM: So, they were planting trees for several different reasons. There are also many different types of trees that they could plant, so often they're divided into different categories, including fruit trees, which is usually the types of trees they plant closer to their homes. It includes things like mango trees, papaya trees, avocado trees etc. Then there are trees that they plant for example to function almost as a fence around their farms or around their homes.

Then there are certain trees that can be used to provide a fertilizer effect, so these are the trees that the plant on their farms mixed in with their crops. There's a couple of different tree species in Malawi that are used for this. They help to bring additional nutrients into the soil so that the maize mainly, can grow better.

Then finally the other one that's very important is trees that are used for firewood, which is still the main source of cooking and heating in homes in Malawi. Because there's fewer forests and trees in the general landscape that farmers can rely on to collect firewood, they really also are trying to have more trees on their own farms that they can use to collect firewood and use that then for cooking.

I think the farmers they see these different benefits that trees have. They recognise that it can really benefit them in the various different ways that I've just described and so they're quite interested in having trees for those reasons.

KR: As well as uncovering and understanding the motivations behind agroforestry in the developing world, an important part of Seline's research was breaking through the preconceptions reinforced by previous research.

A vital part of this is understanding decision making from a Malawian perspective.

SM: So, initially when I started my research, I was told by my professors that I should be talking to the head of the households because they're the main decision makers and I was wondering if that's really true. I decided to make that one of my research questions to also see who in the household makes the different decisions and how does that then impact how many trees are planted. That then became a study on its own almost.

KR: This initial suggestion feels like a slightly outdated approach based on preconceived gender binaries. Thankfully Seline implemented a much more nuanced framework.

SM: Interestingly enough, it's not only the head of the households that make the decision. Often times in Africa it's the husband, the men that's the head of the household, although in Malawi, in certain parts, they have more matrilineal systems where it's the woman who's head of the household, but I found that very often there's a lot of joint decision-making. So I feel that by only talking to the head of the household you might not get a full picture of what's happening and it's really, again painting a much simpler picture than what's really happening.

So, in my research, I wanted to understand the roles of both men and women when it comes to tree planting.

KR: So, why is this important to understand?

SM: Even though tree-planting in general, in Malawi is seen as a task more for men and it is more often the men that decide, I found that interestingly enough if it's the women who decides, that actually results in more trees that are being planted.

KR: This kind of knowledge supersedes – or rather supplants - decades of research aimed at designing and developing climate change interventions and aid work in Sub-Saharan Africa.

In assuming that only the heads of the households make key decisions influencing a farm or family's livelihood, aid workers and climate change scientists might inadvertently reduce the effectiveness of their work.

What Seline discovered further to this, was that joint decision making and action was even more effective.

SM: When I was talking to farmers in focus groups that I did with groups of men and groups of woman, there they provided additional insights to understand the specific roles that men and women have. Men might be the ones to prepare the planting stations but it's the women that actually take care of the seedlings and water them. So, it's really I think, too simplistic to say it's only the men who participate in tree planting or who are making the decisions because both men and women play a role in that and really work together on that.

KR: We should note, that Seline is an incredibly humble person and without this humility and her quest for not only knowledge but truth, she might not have made the breakthroughs that she did.

SM: I think that academics, you know, we go to university and we learn all these things and we become experts in these topics or at least that's what we think we are. Even when we go to some of these places where we implement projects, we are recognised there as the experts. That was something that I grappled with in my research a little bit because I felt that as a researcher actually, I'm not the expert, I'm there to learn. What often happened was at the end of an interview with a farmer, they would thank me and would say "oh, I really learnt a lot from you." And then I thought to myself, actually I came here to learn from you.

I feel like often times, I would say especially people may be from Europe and North America, we have our university degrees and we've kind of become experts in a different topic such as conservation, then when we go to some of these places and implement things, we are seen as the ones with the understanding and the authority and the power. That's I think one of the main issues. We're the ones who have the power to implement things and sometimes we might not be aware enough of the local conditions, or we think we know but it might only be a very simplified picture that has been informed by perhaps some reading, some other work or what we've heard.

Perhaps what we really need to do is take a step back and understand truly what is happening at a local site.

KR: We asked Seline how we, as researchers, might address this imbalance of power and how this might create an 'education bias' in our own work.

SM: I think it might start with being aware of that because sometimes I think that there is a lack of awareness of the power that we do have and the imbalance of power that that can bring. At the same time when we're being more aware and perhaps a little bit more humble about what we know and what we can do, I think that the other part is really working on empowerment of local communities and other actors in those landscapes where we work, to really make sure that people have a voice and they can participate in a meaningful way in these interventions, and have their voices heard so that it's really understood what their needs, where their challenges are and making sure that these interventions are really locally driven. That there's a real need and that we address the right issues in the right place.

KR: Following a short message, we'll discuss local context and how cultural and regional bias can affect research findings. Join us after the break.

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SM: I think it's really important to understand the local context and what drives people so that when interventions are being developed and targeted to these people, who really have a good understanding of what their needs are and what it is that we need to target. I feel that often some of the projects are designed from more of a top-down perspective and people impose projects and fill in what other people might need and then they wonder, why was that intervention not that successful?

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KR: The Republic of Malawi was formerly known as Nyasaland. Between 1891 and 1964 it was under the colonial rule of the British Empire.

There are many people in Malawi who still remember British and other Europeans as the rulers, law makers and landowners. This historical and cultural perception is connected to deforestation and the subsequent need to plant new trees.

SM: Unfortunately, colonialism plays a part in that and it's created certain power dynamics and relationships that up till this day affects some of these issues. When I did my research, a lot of the farmers asked me if I could help them get money, get seedlings because they expect that they might get some development aid as part of this. It's hard sometimes because we've created almost dependent communities that sometimes they

either were told for a long time to forget things that they were used to doing. They were belittled and they're sometimes looking at foreigners who have more power and think, "oh they have more knowledge and I should be doing what they're telling me to do because that's when I get benefits." This is a generalisation and obviously not true for everyone

As a researcher sometimes I felt that I didn't want to necessarily anything and I didn't want to make people feel like they should be doing certain things, or they should be telling me certain things. I just really wanted to understand what they thought and believed and did and why. Sometimes it's really hard to separate those two issues because they feel like if they give you certain answers, they might get certain benefits. They really associate people from Europe as the ones that bring development or that bring money projects and other such things to their communities.

It makes doing research sometimes more complex but at the same time, I think that's why it's so valuable to do research before we do some of these projects. Only then can we really understand what is needed.

KR: It was often Europeans colonising Sub-Saharan Africa who cleared large areas of forestry or shrubland for mass-scale farming and introduced European methods into a landscape that had largely remained unchanged for millennia.

SM: In the context of Malawi, there is that history of tree planting where what happened was in colonial times, it was actually…big farms were opened up that were held by people coming from Europe. They were actually the ones initially, who cut down massive areas of forests to establish these big plantations. What happened was the government was blaming that on the farmers and the farmers were then told, "you need to plant trees." So, there was big government programmes shortly after Malawi became independent. The government was really saying the farmers are responsible for all this deforestation. People in Malawi don't understand realise why forests are important. You need to plant trees.

I think that did initially cause some very tricky situation where some people became angry, because they knew that initially, yes they would go to the forest sometimes to harvest a tree and use that in their home, for building materials or for firewood, but they also very well knew that the massive deforestation that had happened, wasn't because of the farmers. Yes, it was blamed on them and now they were told that they had to participate in tree planting programmes to resolve this issue. I think that did create a little bit of an environment where some people almost rebelled against that and said "no, I don't want to participate in this."

I guess my research does show that these days, there aren't…I don't think there's a lot of resentment anymore and people genuinely care about trees and forests and want to plant trees. It's still a legacy of things that have happened, I guess over the past hundred years and how that really has affected what the landscape looks like today but also how the people who live in those landscapes relate to their environment.

KR: Seline now works in a policy role and designs interventions to help local people make a positive impact on our environment. Designing these projects can be extremely challenging in balancing the needs of the climate and the people living locally.

Her suggestions for designing effective environmental interventions…

SM: I hope that the impact of this research is that it gives a better and more nuanced understanding of how, in Malawi at least, these types of decisions are made and what peoples barriers and needs really are. I really hope that we can step away from some of the more simplistic views that we have and that we still base some of our conservation work and other interventions on and really look at some of the more complex issues that

I think sometimes we want to shy away from. It's very difficult to take that all into consideration when you're designing a project. It's much easier to go off more simplistic views and assumptions.

I really hope that the research that I've done helps to show what some of these complexities are and that actually becoming aware of those and working with that will have better outcomes that if we take those simplistic views, which simply don't hold in reality. I think that's really my main hope for this.

I guess the other part of it is that we hopefully can be a little bit more humble and give a little bit more power and credit back to those communities to really know that, they're really doing a lot more than we might give them credit for. They know a lot more and they have very positive views of things. I think that's kind of the other side of that, that I really hope that my research can show, that we can give them a little bit more credit for that.

KR: Without wishing to end on a sombre note, we asked Seline what the world would look like if farmers didn't participate in agroforestry or stopped planting trees altogether.

SM: It's hard to imagine what that would look like, but I think it wouldn't be a very good situation… I think that if there were no trees, then the farmers in Malawi would have fewer food resources to rely on. For instance, right now mango trees play a really important role in what they call the hungry season, when their last years supply of maize has run out and their waiting for their current maize crops to mature so they can harvest. They use different fruits trees, especially mangoes, to really provide an important part of their diet and feed their families. If there was no trees and only crops, there would be parts of the year when they're waiting for their crops to mature when they would have a lot less food.

In general, the environmental benefits of trees are so important. If there's no trees at all, I think that there would be a lot of problems such as flooding, soil erosion and the local impacts of climate change might even be worse because there's no trees to help mitigate that. I think that the farmers would be really suffering in a double way. That the environmental consequences of that are very severe and at the same time helping them get enough food would be a challenge as well.

KR: Food security may not be a major issue for those of us who live in developed parts of the globe such as Europe and the United States, but climate change is something that is affecting us all. We have changed our planet so drastically that unless we act immediately, the consequences will be unimaginable. The responsibility for that change belongs to all of us, from academics and policy makers to farmers and fishermen.

To find out more about this podcast and today's topic, visit howresearchers.com/agroforestry.

On next week's episode of How Researchers Change the World, we're speaking with Steve Omohundro about the ethical considerations of artificial intelligence, past, present and future.

We'd love to hear your feedback so please join us on Twitter, Facebook, or LinkedIn and share your thoughts using the hashtag #howresearchers.

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I'm Dr Kaitlyn Regehr. Join us next time for How Researchers Change the World. Thanks for listening.