

JFAC S4 Ep 1: What does a mosquito have to do with climate change?

Katusha de Villiers: [00:00:00] Climate change is the greatest global health crisis that we're currently facing, because we know that the health impacts of climate change don't fall equally on global populations. Rather, they exacerbate existing inequities.

Ntombini Marrengane: As the global climate crisis escalates, its impact on human health and, naturally, well being will follow.

In addition to causing extreme weather events and disruptions in food systems, Changing climate conditions are critical for the social determinants of health. These include safe shelter, nutritious food, and stable ecological systems. According to the World Bank, a warmer climate could lead to at least 21 million additional deaths by the year 2050 from just five health risks, including extreme heat, stunting, diarrhoea, malaria, and dengue.

The UN has found that despite contributing minimally to global emissions, low income countries and [00:01:00] small island developing states endure the harshest health impacts. How can we limit the damage of climate change and safeguard communities? What we've always done come together, innovate and adapt, increasing funding, improving access to tech, and harnessing our collaborative spirit to build climate resilient health systems

Dr Tafadzwa Munzwa: what excites me the most is that it's not only here in Zambia where healthcare solutions are addressing critical health challenges. In the last decade or so, brilliant healthcare services and products have been sprouting across the low and middle income countries. Innovators with solutions addressing critical health challenges like communicable and non communicable diseases to streamlining healthcare solutions.

These are brilliant healthcare solutions that innovators are creating to address and strengthen their communities.

Ntombini Marrengane: That was Dr. Tafadzwa Munzwa, an award winning innovator, medical doctor, and [00:02:00] researcher based in Zambia. Further north in Rwanda, digital health and technology innovations are also improving outcomes in that country and across the continent.

Belise Kanimba Niwemwar YT Clip: The Health Tech Hub Africa is a pan African health technology accelerator with co-working space here in Kigali. The Hub helps develop health technologies across the continent and fast track the best innovations into public health systems. The innovations the Health Tech Hub Africa has driven forward include Vula Mobile, a telehealth platform that connects health workers and people with HIV, TB, and malaria.

All the innovations are data driven and strive to improve health equity while strengthening the private sector and creating jobs. The value of innovations coming from Africa is simply because the innovators are here. Understand their communities and best

Ntombini Marrengane: Welcome to season four of the Just For Change podcast powered by the Bertha Center for Social [00:03:00] Innovation and Entrepreneurship. I'm your host Ntombini Marrengane. This season, we're looking at unexpected connections, surprising overlaps and unusual alignments in the workplace. being done locally and globally that's moving our society forward in positive ways.

Just a reminder that the views shared by our guests may not necessarily reflect the views of the Bertha Center. As we heard earlier, changes in our climate also mean changes in the way diseases are transmitted. We need to keep pace with prevention and treatment. The composition and behaviour of malaria is one major concern as it is making current interventions less effective.

Later on, I'll speak with Dr Don Matanga, Director of the Social Innovation in Health Initiative Hub in Malawi, about what is being done to address this. But before we get to that, let's hear from Katusha de Villiers, Senior Project Manager at the Bertha Center.

Katusha de Villiers: My name is Katusha de Villiers and [00:04:00] I work for the Bertha Center for Social Innovation and Entrepreneurship.

Ntombini Marrengane: Katusha leads the health innovation portfolio while also supporting project work within the education, youth development, systems innovation, and innovative finance areas at the Bertha Center. This is what Katusha told us about what new things are on the horizon in the health space that might help us as our climate becomes more unstable.

Katusha de Villiers: One way in which climate change has been responded to using a social innovation in health is for people who work outside in extreme heat. Um, rising global temperatures not only cause an epidemic of kidney diseases, especially in rural parts of countries in Central America, Africa and India. And a way in which that this has been addressed is through a study by the London School of Hygiene and Tropical Medicine.

They studied subsistence farmers in the Gambia And this was the [00:05:00] first to measure the impact of heat stress on the foetuses of manual workers and found that every degree for every degree Celsius increase in heat stress exposure, there was a 17 percent increase in foetal strain. And because of this study, there has been a project developed called the high horizons project, which centres on pregnant and postpartum women. Infants and health workers, all groups which are heavily affected by climate change. This project works to quantify and monitor the direct and indirect health impacts of extreme heat and to test a personalised early warning system that is through a smartphone app that is aimed at developing a prototype that will deliver.

Uh, notifications and setting specific messages not only to [00:06:00] mothers, pregnant and postpartum women and mothers of infants, but also to the health systems in which they are seeking care. And this smartphone app was co designed locally and is currently being evaluated amongst 600 mothers and infants in Sweden, South Africa, Zimbabwe and other countries.

Which will helpfully document the impact of heat exposure on these populations and support the co design of modifications to health facilities and to the services offered to pregnant and postpartum women to prevent and protect vulnerable populations and ensure that pregnant women, infants and health workers are not as impacted.

Ntombini Marrengane: As Katusha's work highlights, health should be one of our main focus areas as we work against climate change in our communities, especially in countries that [00:07:00] are most vulnerable to its effects. Just a reminder to subscribe to this podcast so you don't miss other episodes and be sure to spread the word about this important series.

Joining me today Matanga, Director at the Social Innovation and Health Initiative Hub in Malawi. The Sci Hi is a vibrant global network dedicated to accelerating universal health coverage through social innovation, community engagement, and social justice in low and middle income countries. Don is a physician and epidemiologist with research interests in infectious diseases.

He is an associate professor in public health at the College of Medicine, University of Malawi. He is also director at the Malaria Alert Center, a regional resource centre specialising in building capacity through research for scaling up effective health interventions. Welcome Dr. Matanga. Thank you so much for joining me today.

It's a privilege to have you share your time with us.

Dr Don Matanga: Thank you very much, Ntombini. It's a [00:08:00] pleasure to be here with you this morning.

Ntombini Marrengane: How is climate change linked to malaria transmission?

Dr Don Matanga: They definitely have to be linked. The issue is mosquitoes are the ones that transmit the parasites that cause Malaria. And, uh, usually you will find that, uh, where you have got a lot of water, maybe as a result of flooding, heavy rainfalls and stuff like that, you're going to have more mosquitoes as well. So definitely with more mosquitoes, what you end up with is a lot of malaria being out there. But it doesn't have to be only that, uh, sometimes even when you have drought, because there is population movement, uh, with drought, people moving from areas maybe which has BT water to areas which are where you have got a little bit of water, that itself might actually increase transmission in, in groups that may be naturally, uh, you don't get a lot of transmission of malaria in.[00:09:00]

Ntombini Marrengane: With so many factors at play, who is most vulnerable to malaria transmission and what can be done to protect the most vulnerable?

Dr Don Matanga: Usually the most vulnerable groups, uh, traditionally for malaria are going to be, uh, children and, uh, pregnant women. These are the people that are most at, uh, at risk from malaria.

Children, because they die from the disease, pregnant women, because it can lead to miscarriages and, uh, low birth weight for the unborn child and, uh, and, and all that, but, uh, with climate change, what we are seeing is, uh, Is that, uh, you get almost all populations being very vulnerable now, not only pregnant women and under five children, because, uh, let's take an example flooding.

If you've got a lot of flooding, it means that all that population, because of the increase in mosquitoes, everyone is going to be now at risk of [00:10:00] contracting malaria because of the intensity of, uh, the biting of mosquitoes, they become. More at risk of getting malaria, almost everyone, or maybe if the population is displaced from an area where usually you don't get transmission and now they are forced to go into an area where transmission is taking place because of the fact that they did not have any immunity. Who was malaria from the area where they were now that they moved into an area where transmission is taking place. All of them would be at risk. How do we protect these people? I think the first thing that we need to do as a society is maybe to enhance the interventions that are

already there. How do we get these interventions to people, for example, that are displaced and those interventions include things like bed nets.

including things like making sure that drugs are available for those that have already contracted the disease. Now we [00:11:00] also have vaccines that are coming out for malaria is maybe ensuring that these populations are actually very well protected.

Ntombini Marrengane: You mentioned the availability of vaccines. What other new treatments or interventions can be used to address malaria transmission?

Dr Don Matanga: Vaccines are now becoming available, but I just want to make this very clear that the only vaccine for malaria was actually recommended only a couple of years ago. So this is the first vaccine for malaria. Another one has just come on the market. Now we have two vaccines that are available, but even with those vaccines, we don't have those in so many countries.

Drugs are available for treatment of malaria. Again, it depends on which country you are in, because every country is going to have its own policies regarding the kind of drugs that they're going to provide. But these, uh, drugs are readily available in most countries.

Ntombini Marrengane: And [00:12:00] given the different regimes in place in different countries, what should governments in the regions that are vulnerable to malaria be doing?

Dr Don Matanga: I think two components really, for me, one is making sure that the interventions that are there are readily available for communities, both that are traditionally at risk, or those that are displaced because of climate change and all that. These interventions need to be readily available for them so that they can access the interventions and use them.

But the second thing I think is to think of. How best do we reach out, uh, to communities that, for example, might not have really access to these interventions? I think a social innovation is one aspect of thinking about is how do we innovate to increase access to interventions that are available, whether we're talking [00:13:00] about people that have got traditional, the way there's traditional transmission intervention.

Or whether we are talking about the, uh, displaced populations where traditionally maybe you might not be able to, you might not get malaria transmission in those communities. How do you get these interventions? I think to those communities. I think that's the that's the issue. Already there are a number of groups that are working with governments to increase access to make sure that treatment is readily available in the community.

I'll talk about, for example, the Malawi scene where you have issues to do with the village clinics to ensure that the treatment is actually out there in

the community being provided by people that live within the community to children that might have malaria. We're talking about maybe taking treatment to areas that traditionally would not be providing diagnostic and treatment services like schools in our setup.[00:14:00]

Those are being used as well to train teachers so that they are able to make diagnosis of malaria and actually treat malaria. These are all innovations, I think, that are being put in place. Pushed to ensure that people have access to treatment, people have access to the interventions that are needed for malaria.

Ntombini Marrengane: If I could just take you back to your mention earlier of vaccines, that seems like it would be a game changer in the treatment of malaria. What are some of the barriers to making that more widely available in a developing world context?

Dr Don Matanga: Availability still remains a big, big issue in a sense that they are not all available in large quantities to go all around in all countries where Malaria transmission is a big issue, so I think the success is going to be limited now because of availability and the logistical issues in trying to make sure [00:15:00] that those vaccines are available elsewhere.

Once the vaccines are available, even within countries, there are also issues there. As you know, these two vaccines have just come, uh, immediately after the COVID vaccines, and we all know the issues that surround it, the myth and the, you know, misinformation that surrounded COVID vaccines.

So we see quite a lot of pushback as well in communities where we are working, uh, here in Malawi, where the malaria vaccine is available.

People pushing back because they kind of associate the malaria vaccine with the COVID vaccine, which had a lot of misinformation.

Ntombini Marrengane: I think you raise a really important point there in that it isn't just about production levels or logistical access, but it's also about the willingness of communities to accept new and innovative interventions in tackling, um, malaria.

Can I also [00:16:00] ask, aside from malaria, which we know is a global health issue, what other health issues do you anticipate becoming worse due to climate change?

Dr Don Matanga: I will limit myself to infectious diseases. You know already, diarrheal diseases are going to be a big issue where flooding is. And here in Southern Africa, in the Sadiq area, Almost all the countries recently have been affected by the cholera pandemic that has come mainly because of climate change as well.

We're seeing places and times when cholera was not an issue now becoming an issue. Um, issues, uh, infectious diseases as well. Climate change as well is affecting malnutrition, uh, hugely. As I mentioned, uh, earlier on, uh, we have a drought in Southern Malawi. There is a drought going on in Zambia. Zimbabwe has got a drought.

[00:17:00] These are all countries that, uh, eventually will have limited sources of food. For the children leading to malnutrition in those areas, beyond maybe infectious diseases and malnutrition. Now you're talking about the whole mental health issues because of climate change race that is associated with people losing their loved ones, losing their homes and living, losing their livelihoods.

These are all issues, mental health issues, that I think we will have to deal with going forward when it comes to climate change.

Ntombini Marrengane: You've mentioned a number of issues that have become obstacles to communities in terms of preserving and promoting their health due to climate change. May I ask, is there anything that's changed in a positive way?

Way that you didn't expect because of climate change. You've already given us a number of examples of negative impacts of climate change. Is there another side to it at all?

Dr Don Matanga: I think there is a positive aspect as well. I think for me, [00:18:00] is, uh, is the question about innovation. We are facing the biggest threat, I think, to mankind.

And mankind also is reacting in a very positive way in terms of How do we evade the disaster that is forthcoming? So we are seeing already changes

in the way people actually are growing their plants. For example, we're seeing a lot of that both from the technological companies in terms of coming up with the plants that are resistant to climate change issues or will be able to grow in areas where there is limited amounts of water in the future.

We are seeing people actually growing their own foods in places like the veranda or the gardens that they have. Again, these are all positive changes when it comes to climate change. But we're also seeing communities thinking very well, how do we deal with [00:19:00] issues like this? If you have, for example, An area that is completely been cut off from the rest of the country, maybe because of flooding.

How do we make sure that we take care of ourselves? So this is where issues to do with village clinics, for example, that are being run within the clinic by people that are tested within the community. How do you make sure that these are resilient and are able to provide at least a treatment to children, especially for diseases like malaria?

Ntombini Marrengane: Just if we could, we could take a step back because you mentioned a really interesting point about the mental health impacts of climate change. And I think it's an issue that's certainly gaining more currency. In the period since COVID when mental health really became a focus point. Can you talk to us a bit about how mental health and climate change are being tackled in Malawi?

Dr Don Matanga: So I will, although I have to admit from the way it [00:20:00] go that I'm not an expert in mental health issues, but for the first time we are seeing actually mental health services being provided. either within the communities where there has been a major disaster. So those services are readily available to people that have been affected.

And also people being innovative enough to set up places where someone can just ring in order for them to Uh, to talk to someone to help to be helped, uh, especially to do with the catastrophe itself. This in itself was not available a few years ago. That it is here, it's quite welcome, especially since we know that we will have to face climate change in the long term.

Ntombini Marrengane: I think what you've said is really significant, uh, Dr. Matanga, that we're not just thinking about health narrowly in terms of physiological or biological terms. But also thinking about it holistically, the wellbeing of the entire person, [00:21:00] mind and body. Um, and I think that's really an amazing innovation.

Can I ask you what important message or takeaway would you like to share with our listeners about climate change and health?

Dr Don Matanga: The most important thing that I can say is, uh, climate change is real. Climate change is here. Those of us that live in countries like Malawi, we are seeing more droughts, we are seeing more floods, flooding, we are seeing mudslides.

The person like me, uh, has never seen Lake Malawi actually flooding. Uh, we've seen it happen, uh, especially two years ago and this year as well. It's also flooding because although Southern Malawi has got a drought, there is a heavy rain is going on up north, which are leading actually to the lake itself flooding.

So it's here. Um, [00:22:00] it's changing. The disease patterns within those countries. We're seeing an increase in malaria. We're seeing an increase in the real diseases. We're seeing an increase in Bay has here. We're seeing an increase increase in mental health issues. These are all out there and we will have to become innovative because the climate change is here.

We'll have to find ways of making sure that we deal with these things as the, as they increase. How do we deal with malaria? How do we deal with the other health changes that I just mentioned?

Ntombini Marrengane: It's clear that our political and community leaders need to take note and make changes, but is there anything the average person can do to contribute or even protect themselves a bit better from the impacts of climate change?

Dr Don Matanga: I think there is plenty that at individual level we need to be able to do and it's just to think about what are the risks that are associated with climate [00:23:00] change that might affect me directly and my household directly. So, let's take an example of malaria. If you know that you live in an area that is prone to flooding and what have you, it's

important for you to make sure that you have, you know, All the interventions that are required, uh, to prevent malaria readily available.

If you are living in these areas, it's important for you to make sure that you're making sure your water is boiled, well boiled, or you're having only water from sources that are going to be protected and you are sure that the water has been treated. It's important for you, if you are using that kind of water, to make sure that You're using chlorine and stuff to kill the bacteria that might cause cholera, for example, it's important for you and your household to ensure that you've got the proper waste disposals and all that.

So I think at individual level, there is actually quite a lot that is, we should be able to do as individuals in order [00:24:00] to prevent various diseases and just making sure that even we refer. Uh, those within our own set up to the necessary expertise, especially when it comes to issues to do with mental health.

Ntombini Marrengane: Absolutely. Absolutely. I'm struck by, by your pointing to basic public health practices and lessons that we've been taught at community level about protecting our health that are now more important than ever in the context of climate change. Now I'd just like to ask you a question that we are going to ask all of our guests this season.

And the first one is, what does social innovation mean to you?

Dr Don Matanga: So social innovation means to me, you, you, you, you, there's no, there's no single answer. You can say it means to me, people taking care of themselves. Uh, yes, we, we, we have governments. Uh, but the, uh, [00:25:00] communities need to start thinking about how do we improve our own self thinking through that, I think is a social innovation for me, uh, coming up with the remedies or I should say systems that allow them to flourish using their own indigenous knowledge within the communities using their own resources and what have you that's social innovation to me.

Ntombini Marrengane: I think you raise a really good point there because we tend to think of words like social innovation means something scientific and technological and we would expect those types of resources or interventions to come down from the top government giving to the people. But what you've just explained is that social innovation actually starts within the community and it starts with valuing community knowledge, valuing community skills, And empowering communities [00:26:00] to actually prioritise for their own wellbeing.

Um, I think, I think that's a really interesting take on it. Last question, Dr. Matanga. Why do you do what you do?

Dr Don Matanga: Um, driven by two things. I should have said earlier on that I'm mostly a malaria doctor doing a lot of research around that. I do that because that's the biggest killer in Malawi, but also within the region.

That's our biggest killer for under five Children. If we reduce malaria to very low levels, we're going to reduce a lot of the infant mortality and necessary child mortality that we're seeing within the region. So I do that for that particular reason. I also am very much interested in the social innovation because Of the frustration again that he sometimes you can have all the innovations, the technological innovations that you can think of.

And we have plenty of those, uh, but they are not being used within the [00:27:00] communities. Why? Because again, we jumped the rope somehow. We thought, well, you can have this innovation and then just impose it within the communities. We're seeing a lot of the communities themselves coming up with, uh, interventions that eventually you say this is going to help in reducing malaria.

So I do social innovation lane from communities to understand from them. What would work within their own community or how I could do work with what I have now, the innovations I have, how I could get them into the community, uh, in such a way, uh, that they would be accepted, they would be used and people would be quite happy to have them.

Ntombini Marrengane: I think you've really, you've really hit the nail on the head, Dr. Matanga. The realisation that technology alone will not solve many of the problems that our communities face and that we must place equal value [00:28:00] on the knowledge that community members hold about the way that societal changes. affect them and what they find are useful ways to address them.

So co producing, um, solutions rather than just someone with scientific knowledge coming and saying, this will fix all of your problems, but actually exchanging ideas and tailoring it for that specific community, um, so that. The people on the ground actually get what they need. I think that's really important.

Thank you so much, Dr. Matanga, for sharing your insights with us. You and your colleagues and countless others across our continent and beyond are doing such valuable work in health. With increased support, their interventions and innovations can help us move towards a more just and equitable future.

Dr Don Matanga: Thank you very much for having me.

Ntombini Marrengane: As everything changes around us from temperatures to rainfall patterns, We become increasingly aware of how [00:29:00] those least responsible for climate change are going to bear the brunt of the damage. But one thing won't change. Our determination to work together to build a more resilient, sustainable future for generations to come.

Thank you for tuning into season four of the Just4Change podcast. Powered by the Bertha Center for Social Innovation and Entrepreneurship. If you're interested in hearing more about Unexpected Connections, then

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