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Zoe Haseman: The urgent need for us to tackle the climate crisis.

Jens Nielsen: Yeah so it's really a crucial decay

Zoe Haseman: Impacts of climate change and the risks that these pose to our society,

Jens Nielsen: We need specific plans and actions to drive the CO2 emissions down in the short term.

Zoe Haseman: The climate crisis is the world most critical challenge right now.

Jens Nielsen: Hello and welcome to the Sparks Podcast series. I'm Jens Nielsen.

Zoe Haseman: And I'm Zoe Haseman.

Jens Nielsen: And we'll be your host throughout this special edition podcast series brought to you by the World Climate Foundation and Jacobs come with us as we take you on a journey around the world to explore how diffenph us as we take you

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Jens Nielsen: Andrea you're working on climate change impact on national security issues and geopolitical impact. Can you elaborate on those connections and what it means?

Ms Andrea Rezzo...: Sure so climate security issues for the sake of this conversation, we can break them down into three buckets. So the first is the direct impacts on people and infrastructure. The second is kind of the indirect impacts translating into risks within states themselves and then the third is indirect states between states. So the geopolitical angle is where that kind of ties in. So in that first bucket, just quite briefly, as we've seen, as recently as this month, we've had deadly flooding and widespread infrastructure damage in New York city because of a hurricane. Entire towns and inundated in Europe because of intense precipitation events, wildfires burning entire areas across Europe, Turkey, the US, Canada, Australia. Then we have those indirect risks within states. So climate impacts, as Nino mentioned on food and water resources, climate impacts intersecting with migration patterns from for example, rural to urban zones, sea level rising and more densely populated urban coastal zones in countries leading to disease outbreaks as Nino referenced.

An example I can think of right now is Nigeria, rapid rates of urbanization along the coast, particularly in Lagos and which is vulnerable to sea level rise and flooding, which can lead to health risks in the state and then climate change, desertification and instability are pushing people out of the Northern part of the country and combining with ethnic nationalist, tensions and clashes. So then when we arrived to that last bucket, which is the indirect risk between states that's, as I mentioned, where the geopolitical angle comes in.

The Arctic right now is an incredibly popular example when it comes to this bucket. You have higher temperatures melting ice at such rapid rates now that it's making a zone completely navigable when it never has been. So you have open shipping lanes now. You have access to critical mineral deposit, oil and gas reserves, permafrost melt, nuclear powered vessels, traversing this area. So essentially geopolitical competition is all converging in this one part of the globe it's high stake and it's the setting for great power rivalries. So in that sense, in the climate security arena, we frequently say that climate change is a threat multiplier. So bringing this all together as global temperatures rise, these extreme events will be increasingly layered over other vulnerabilities and as they intersect with other risk, right? So this has currently and will continue to produce cascading or simultaneous crises, or in other words, complex emergencies. This is an overlooked yet incredibly critical angle, in my opinion, and an nexus that, that we're struggling to address.

Zoe Haseman: Thanks, Andrea. So you mentioned complex events with situations as complex emergencies. How do we start to unravel them, like with all the different multiple stakeholders at government level, at an international level, how do you start to actually even think about what a solution could be with something as complex as that?

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example, to discuss a region, I don't think is given enough kudos for it's move to try to establish an early warning system, some of which incorporate disease and climate change exacerbated natural disasters is Latin America. There's growing signs of cooperation across nations in this region and indications that many of the states here, as well as in other parts of the world, seek to a build out kind of a pathogen early warning alongside systems for other types of disasters that we know are made worse by climate change impacts.

I'll give one example in Mexico, they have something that's called the Centro Virtual de Operaciones en Emergencias y Desastres in known as CVOED and they run a software system that provides real time support and communication capabilities to areas experiencing crisis, emergencies and or natural disasters. So they collect and monitor information from multiple sources in order to detect and respond to those hazards that pose public health risk and so this system is pretty ideal because it provides tools pre, during and post a crisis such as emergency documents and plans, real time notification and messaging, social network support. Because as we know, we are all so much more connected on in, in this kind of technological way kind of infrastructure blueprints and healthcare necessities for populations.

like deforestation like food shortages and looking for the alternative supplies for food and just globalization in itself is contributing to spread of zoonotic pathogens and unfortunately we knew this was coming, but I don't think anyone would imagine the massive scale that this would unfold into and I think that COVID pandemic has many negative effects, but if we can find a silver lining.

And one silver lining is the rising, the awareness, why it is important to look at the pandemic, not a standalone event, but as a complex emergency, which affects many different aspects of our lives and it's a type of the health adverse event that we need to be prepared for forecast and we need to put a lot of actions into helping the nations around the world to be a little bit more resilient, because one thing pathogens don't do, they don't have passports and they don't stay in their own countries. They travel everywhere and they affect everybody. So if one country is affected, then the other countries affected as well, same with the climate change. So those, I see that very similar.

Zoe Haseman: For sure. So another question for you, both Nina, you mentioned this in one of your earlier answers, you alluded to this a little bit, many studies are showing that climate change is disproportionately affecting disadvantaged individuals, meaning that it does actually matter where you live in your level of income, how are healthcare systems addressing health equity issues in relation to climate change?

Ms Andrea Rezzo...: I can take the first part of that question, maybe leave the second to Nino. So as we've discussed throughout this conversation is, as we all know the entire world is, and will continue to be impacted by climate change and as Nino just said, I couldn't agree more with everything she was saying about. There's no borders when it comes to pathogens or climate change impacts. It just doesn't work the like that, but these issues certainly disproportionately affect vulnerable and minority populations like indigenous BTøriy poi00000912 0 612 bor sends anwn co (ma#(y6&t)





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Jens Nielsen: Thanks. Here's another question to both of you. How can governments act in collaboration with the private sector to address climate change impact on human health?

Dr. Nino Khara...: Sure I think it's just a continuation of my previous answers, so to speak because we all have responsibilities right, as Andrea and I have been saying climate change is not the one person issue. It is not even a one country issue or problem. We are collectively in this. So climate change affects all of us, therefore collective actions are needed and I believe that all of us ranging from individuals to governments have the responsibility to reverse the outcomes of

to prepare for those events and also create the programs that are climate specific or climate informed, so to speak and as well as maybe secure the funding that will help the communities to deal with aftermaths of the natural disasters, climate events and et cetera.

Zoe Haseman: So you mentioned funding there, and I think that was one of the things that was going through my mind as you were speaking. Are we seeing governments create enough financing funding to be able to deliver some of these things, you know, critical infrastructure systems, healthcare that's needed across the globe.

Dr. Nino Khara...: So Zoe, I will answer that and maybe Andrea, you can add some thoughts as well. I have rarely seen the funding earmarked as climate resilience or climate, or rather climate change impact on health something like that. However, if you think about, there are some indirect outcomes, like for example, improving infrastructure and making them climate resilience. Improving, preparedness for different kinds of events including the natural disasters. So maybe it doesn't say in a title climate change, but the impact or the activities are linked directly and indirectly to the climate events and the other activities that can cause harm to health population.

Ms Andrea Rezzo...: So from a complex emergency perspective, and also tying back the question of how can governments act in collaboration with the private sector to address climate changes impact. Crisis response capabilities are already an integral part of maintaining security across the globe and these capabilities are beneficial to a state. They contribute to a nation's public image. They lead to stronger international alliances and just essentially the prevention of even greater instabilities and so considering the pressures that we mentioned, like climate exacerbated events and natural disasters, higher risks of diseases and pathogens, we know that nations will be increasingly required to handle these compounding crises. Right? So first I think being open to learning from past experiences, including through that kind of international partnership is incredibly important. An example that comes to mind, Japan has really stepped forward as a complex emergency leader following its catastrophic triple disaster in 2011, that had implications across all including health and economics and energy and all of these kind of implications and their triple disaster in 2011, consisted of an earthquake, a tsunami, a nuclear reactor meltdown.

And so the government's response of course includes both successes and failures. As you know, as most recently, I believe as this year, they've decided that they're going to release some of the water from those reactors, but these can serve as lessons for other countries experiencing multiple emergencies at once, including from climate and health issues and so high level disaster preparedness already form a part of key alliances and so I think bolstering that is incredibly important and directing funding to that is essential and to bring in the private sector, maybe investment to this government and private sector stakeholders could strengthen this information sharing and channels, and kind of springboard are discussions regarding complex emergencies across all

regions, especially those, again, really hammering this point home though, to include that climate aspect and how it affects human health and the risks and so ideally this would provide a blueprint of how nations could in the future prepare for these intersecting and simultaneous crises in the future.

And kind of a last part of this and echoing Nino's reference to private sector resources is a recommendation I think, and a call for more investment that relates to harnessing technology, especially the private sector's ability to collect and condense data to things like bio surveillance or kind of a global pathogen early warning system, as well as climate forecasting. So the former could detect in at the minimum be able to communicate the impact of biological threats and in terms of climate impacts, we've already seen how powerful it is to input data into visually simulating maps and charts where flooding is going to be a risk, extreme heat, forecasting what an area could look like under hot bolt temperatures, how the ecology can change. So essentially incorporating information technology into this approach. And this has already happened successfully. There has been a lot of innovation in this field. So just building off of that will just require closer collaboration, but it's incredibly possible and I think it's an incredibly powerful tool as well.

Zoe Haseman: Right and keep ice.

Jens Nielsen: So in summary and the light of the COP26 coming up, are you optimistic that the healthcare sector can meet de carbonization targets and take the necessary steps to ensure that climate mitigation takes place and reverse the course of action?

Dr. Nino Khara...: Sure. I'll start with that. Well, there are a few campaigns in roadmaps for healthcare decarbonization. We mentioned some of the tools as well in our conversation and just to remind listeners healthcare operations contribute to 4.4% of net global emissions and even if countries can meet their Paris agreement commitments, it would cut projected healthcare emissions growth by 70%, which is not enough and it's kind of ironic that healthcare systems are

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