

Laura Young:

Welcome to the SAGES Climate Science podcast. I'm your host, Laura Young, environmental scientist and science communicator. And today we are not necessarily talking about the physical world, but actually about people, which is an integral part of this planet. I'm absolutely thrilled to be joined by two fantastic guests on the podcast. The first is Dr Jennifer Rao-Williams. You are a design fellow in knowledge exchange and impact at the University of Dundee with the project design hopes and that stands for healthy organisations in a place based ecosystem and that's in Scotland. They have over 12 years experience in policy related research, predominantly centred around social justice, creating more liveable, healthy cities and resilient communities. And they are particularly interested in fostering regenerative practises that can enable pathways towards transformative futures, particularly around aspects of resilience and learning. Your key interests are in knowledge systems, practise and learning culture, and you've worked across third, private and public sector to Co develop socially engaged action research to support delivery of innovative projects that address entrenched social challenges in the context of the climate crisis, you hold a PhD in human geography from the University of Dundee, which was collaboratively funded by the Scottish Graduate School of Social sciences and the Scottish Government Resilient Communities division. Welcome to the podcast. We also have Dr Mary Abed al Ahad, who is an associate lecturer in population, health and geography at the University of St Andrews. She is leading on environment and health and the quality of analysis for social scientist modules, and you possessed an interdisciplinary knowledge covering the topics of population health, epidemiology, environmental, health, geography, sustainable development, migration, family housing and many other things surrounding social inequality. And interestingly, you communicated your research on air pollution and health in Scotland to members of the Scottish Parliament in February 2023 as part of Scotland at the Heart event, and you actually won a grant for that research project as well. So it's fantastic to have you on the podcast. We are going to be discussing how climate change interacts with people, and so Jennifer, maybe if I can start with you, how do environmental issues, maybe climate change in particular impact people and not just the physical environment?

Jennifer Rao-Williams:

Yeah, I think in Scotland we can certainly already see very, very wet summers and increasingly wet winters too. We also have in some parts drier, drier parts of Scotland too, which will mean if we are experiencing, you know, wetter conditions, people in certain housing and in Scotland, like in many parts of the UK we have, we have populations, households, I think around 90,000 households in Scotland that

experience mould in their home. So if we could imagine, you know what, what better conditions will do to people in terms of living in not great quality housing. That's one which is environmental but also connected to some of the social issues that we have. There are there other impacts look like when we have like increased heat stress in our communities, thinking about some of our urban communities, Edinburgh, Glasgow in particular, they'll experience high urban heat island effect which is where in urban areas it's much warmer than in the sections around the cities, and so that will have also a health related impact. As well, having the wetter season. And so yeah, those are some some issues I think that we could expect some impacts to happen to to people because of environmental challenges.

Laura Young:

I think that is important because often when we think about climate change, maybe with the wet weather, we think about flooding, which is a huge impact, but sometimes that can just be a one off, you know as then it happens and people are impacted for a long time, but actually the event can be quite. But as you say, there's almost the top approach, which is water seeping through walls and roofs and. Yeah, damp and mould and you know, places that don't have the infrastructure and we do have, you know, housing stock in buildings that are getting older, maybe for you what are some of the people impacts that that you see when it comes to environmental issues?

MARY ABED AL AHAD:

Yeah, I would like to reiterate what Jennifer mentioned about like experiencing water conditions and like for example in Scotland people have seen like, even in the summer, like in June and July, it was really raining so heavily like we had like tropical type of rain in Scotland like, just raining, raining so heavily for short periods of time and we didn't see that in the previous years. And this is like a big example about the impacts of climate change and how it's impacting us. And to reiterate also about the flooding issues. So we had in Scotland also in the winter several storms, big storms coming and this like also especially like communities who live near the coasts in Scotland and they had like their houses, for example, on severely damaged and the rooftops like literally blown away and then this costs so much money. Also financially for some families, and especially like the poorer families, they might not afford to fix those houses, and this might impact on their health as well in the long term. So yes. So like for example, I've heard many stories like about like colleagues who lost the rooftops and then they had like to replace them. So this is one of the impacts of climate change to draw about my research about climate change, I mainly research about air pollution impacts on health. I guess like it's similar story also to climate

change impacts. For example when you have like heat waves in Scotland or like floods or like losing like rooftops of houses and flooding. So for air pollution exposure is usually not equal across the communities. So you can see people who live in more deprived areas. Also, my research has been showing a tight connection between deprivation and ethnic inequalities as well, because usually based on my research about air pollution exposure. Ethnic minorities usually live in more deprived areas and those more deprived areas are usually have higher concentrations of air pollution. So with respect like to climate change impacts, for example, the impacts of let's say like very cold winter or very damp winter they will be the communities who will be exposed mostly to the health impacts from dampness and from like severe cold impacts because also they cannot for example to get some heating which will like reduce the impacts of climate change. So all of these things we have to take them into consideration as well.

Laura Young:

Think with air pollution as well, Scotland and the UK has a history of where areas of deprivation have built up around pockets of poor air quality. And that's because the industrial revolution we had intense industry and fumes and the winds blow from West to east and so it kind of took the dirty air.

MARY ABED AL AHAD:

Exactly. This is also what my research has shown, so in some of the articles which I've managed to publish. I've shown like in the maps that air pollution is usually blown toward the East Coast, so people were telling me in the conferences or we shouldn't live the east. Then, because everything is blown there by the wind. So I totally agree with that, Laura.

Laura Young:

Jennifer, thinking about these impacts you were mentioning, whether it's flooding or heat, are there particular areas in Scotland that people are more at risk from health impacts, but because of climate ?

Jennifer Rao-Williams:

I think it's all building on Mary's comment there about the geography and the air quality. When you look at the Scottish index of multiple deprivation, we can see in the it's quite prevalent in cities like Dundee, Glasgow, Edinburgh is really high levels

of deprivation. And I think linked to that, then this compounding inequalities, which have been sometimes generational, which will mean that not only are people at risk of environmental issues such as like likelihood of being flooded, but there's also like the social impacts which are long lasting, which I think contribute and increase severe to the climate crisis, to environmental issues. So paying attention to those in in parts of Scotland. So I wouldn't say that there are certain specific areas. There's certainly communities in Scotland that are well practised when it comes to responding to crises. So we see that in our flood communities. Maybe in the borders or in parts of the East Coast, Storm Babet was very strong in Angus and many people lost their homes. But I think there's something about paying really close attention to the quality of the communities and how able they are to respond to crisis and that links to like their long standing levels of inequality and I think when they're when we see these communities in these areas of deprivation, it's things like existing levels of poor health. It's poverty. Like long standing poverty, it's poor housing. All these things contribute to, I think, their experience. But on a global scale, when we look at those are most disadvantaged, it's typically women and girls, who are disproportionately affected by any kinds of environmental and or stress, whether that's a cyber security issue or whether it's to do with financial stress. I would say that that's a quite a clear category women, girls disproportionately more affected. But in thinking about the UK context, it will be the most vulnerable. Our elderly population, those that maybe don't have access to digital resources because so much of our guidance and support is now digital. And indeed it's become like a basic human right to have access to digital resources. And also minority groups so those that are like less representative have seldom heard voices I think are going to be the ones that will really have the most acute experience when it comes to the climate.

Laura Young:

Jennifer mentioned SIMD, which is Scottish index of multiple deprivation, Mary, could you just maybe explain a little bit of what that is and why we use it?

MARY ABED AL AHAD:

Yeah, yeah, sure. So the Scottish multiple deprivation Index it's usually an index which tries to measure the level of deprivation in a neighbourhood or an area, and it's usually composed of seven domains, so it relies the seven domains include education indicators about education, indicators about income employment time and accessibility geographic accessibility to services in the community. Also accessibility to training and opportunities, and also health indicators and all of these indicators they are measured at an area level for example census output areas, levels or even

municipality level. To try to see how, like the communities, whether they have access to these domains or not. And then based on that they create a score which is formed between 0 and 10. And the more you go toward the 10, the more deprived is the community and the more you go toward the zero, the less deprived is the community. So it's just a way to quantify level of deprivation in a specific community in Scotland.

Laura Young:

And Mary your research was looking at that as well, inequalities? What? What did you find through your research when it came to how different people are impacted differently?

MARY ABED AL AHAD:

Yeah, so my research was mainly about air pollution exposure and health and how this is different by ethnic groups in the UK. So I have found in general that people who belong to an ethnic minority, for example Pakistani and Bangladeshi communities, Indian communities, they were on average 5 to 10% more likely to experience poor health, with increased exposure to air pollution, and this include like increased exposure to nitrogen dioxide pollution, sulphur dioxide and also particulate matter pollution. They were like, on average 5 to 10% more likely compared to the British White ethnicity and this shows like the inequalities with respect to air pollution exposure, which impacts in turn on badly on the health of these communities. And also like there was a case study from London, it's not like from Scotland like it's from more England towards South London and then that but that like took really a huge media attention about a girl who was like six or seven years old, I guess. And then, like her death from severe asthma was later linked to a huge exposure to air pollution beyond The WHO guidelines. And then she was also, she belonged to an ethnic minority. And this, like, shocked the media attention regarding on the environmental impact. And how like there is inequalities in environmental impacts and how this impacts the health in turn. So yeah.

Laura Young:

And I think actually, I remember that case study because I think the little girls name was Ella. And I remember when you think about air pollution or environmental issues, it can feel quite abstract. Something you can't see often you can't see. But I think. I think it was such a tragic incident, but actually hearing about a person, a little girl called Ella and almost getting to know her, it just it makes it real actually. But you mentioned a few kind of chemicals, where does air pollution come from? Because in I

guess industrial revolution, we know a lot of was coal, dirty, black smoke that was coming up. But today what are the sources of air pollution?

MARY ABED AL AHAD:

Yeah, so, so mostly air pollution. If this includes like nitrogen dioxide and particulate matter, they mostly come from the traffic. They are more prevalent in busy cities. For example, if we take Scotland you can see like the high concentration of those pollutants are along the central belt of Scotland. So in major cities like Glasgow, Edinburgh, Dundee, Aberdeen as well. Also in Aberdeen they have some fuel industry there and this contributes also too much pollution and the other source of pollution other than traffic exhaust include construction, for example, and this is a major source for particulate matter pollution, and then of course you have some industries as well. We still have some industries in certain parts of Scotland and this mainly contributes the sulphur dioxide pollutant and also particulate matter pollution. And regarding the industries on the maps, which I showed in one of the conference. There was a really like a red spot, like near the Highlands in Scotland and then people oh why? Like there is their high level of air pollution. And apparently that was like an energy facility that was closed now. So now it's closed. But like, I was plotting the air pollution concentrations from 2009 up to most recently. And then like in that time that industry was there and this also contributed so much sulphur dioxide pollution. So these are the sources mainly.

Laura Young:

And when you talk about particulate matter, what is that? Is that kind of larger things that are floating about in the air?

MARY ABED AL AHAD:

Yes, they are like a really small particles that are liberated, for example like dust, really like small particles and like you have mainly 2 sizes, mainly those are the most researched ones and the first one is PM10 and this is particularly to mattered with diameters of less than 10 micrometres, so it's really small.

Laura Young:

Teeny tiny, tiny.

MARY ABED AL AHAD:

Yeah, but there's also a tinier one, which is more research, and this is actually the most dangerous one. It's called PM 2.5, and this is particulate matter with diameters of less than 2.5 micrometre. And this really is dangerous because it can really penetrate deeply their respiratory system and reach the lungs which are like the small sacks inside. And this would cause respiratory diseases and even cardiovascular diseases on the long term.

Laura Young:

And I think you can, I mean getting flashbacks. I'm picturing, you know, when you do stand next to, you know, queues of traffic, you can smell different things. If you walk past a construction site, you can sometimes see the dust that's coming.

MARY ABED AL AHAD:

Yeah, exactly. Yeah.

Laura Young:

I guess yeah, these are small enough to get into us. And Jennifer, I guess that leads us on to so thinking about our health in particular. How do environmental issues like air pollution, damp, mould, flooding? How do they, how do they impact our health?

Jennifer Rao-Williams:

So many ways and it's some very interesting research that's come out recently. I say recently probably the past two years, but looked at for instance both those that experience a flood have increased likelihood of then going on to experience a cardiovascular or respiratory disease. And that's like in a window of like three to six weeks. Our susceptibility to these diseases is really heightened as a consequence of flooding, and this was a piece of research from Monash University an Australian researcher and the reasons for that is partly to do with like the pathogens that are more prevalent in the environment, but also to do with like the reduction in accessing healthcare. The limitations on transportation just because of environments being flooded, thinking about the home and a similar case to Ella, who experienced report air quality. But there was a young child also who lived in really poor quality housing who also as a consequence of that, and I think that was linked to like a respiratory disease. So we're seeing, you know, many people have effects such as lung

disease, it can create neurological challenges leading in the most severe cases to like premature death. So imagining in Shelter Scotland gave evidence not so long ago about the scale of this being around 90,000 households. And that is going to put a big strain on the NHS if you think about having wetter, wetter winters and already an underfunded NHS system, imagining people that may already be experiencing levels of inequality. Then you can just imagine the baseline levels of health of people thinking then about the cost of living crisis and fuel poverty. Then I able to ventilate their property well and all these other things. So it's a compound effect of many things which I think only widens the inequality gap and does health inequalities for people. So I can, I can imagine those links there with what you were talking about with particulate matter and being exposed to these environments in really high urban areas.

Laura Young:

And I think that's the key is to understand that and you mentioned you know these have impacts on cardiovascular and respiratory. So that's our hearts and breathing, isn't it?

Jennifer Rao-Williams:

Yeah. The cardiovascular heart health respiratory is our lung health, neurological. So people experiencing depression, as you might if you live in really. You know, unhappy surroundings where you know, day by day you're having to buy new clothes because your clothes are is are growing, mould and all these other things and all that lack of agency that you might have as a, as a social housing tenant or as a private tenant because of maybe not great standards or of or legislation that we might have in the UK that could maybe do with some improvement.

Laura Young:

And I think you know, this is by far not the worst example, but during Storm Babet, the roof of the tenement building I live in came well, everybody experienced leaking. And it's interesting because it's been almost a year since that happened, and we've been on a journey collectively fixing the roof and getting redecorating and, you know, dealing with it. But there was a time where I had this paddling pool out and was of my living room, right collecting all the water that was coming through and once it got fixed I still had that thing in the back of my mind every time it was raining really heavily. I thought it's my living room ceiling going to come down again. Am I going to see that? And of course there's that knock on kind of chronic effects as well where

you do begin to see water damage had mould, and actually that's not something that happens in an instant. That's something that can gradually happen over time, and I guess maybe, you know. The mental health side and well-being. I mean that that's probably. Almost just as important as the physical stuff.

MARY ABED AL AHAD:

Yeah, I agree with that. And as Jennifer mentioned, so climate change impacts, for example, drought and heat stresses or damp can also impact the mental health of people. And to link that to my research about air pollution, I've also, like, done research about how air pollution might impact mental health of individuals. And then I found through reading throughout the literature and brainstorming about the topic that actually air pollution and other environmental factors, they can have an impact on the mental health, either directly or indirectly, and the direct impact could be through like the physiological impacts of, for example. If we take the air pollutants the same way, they can reach deeply the lungs and then from the lungs they can go to our bloodstream and this blood will circulate throughout our organs, reaching the blood brain barrier, and then they can cross from there to the brain and do some neurological damage there. So this is like the direct biological impact of air pollution. On the mental health. Once you get some neurological damage, you might experience, for example, some of the mental health impacts like poor cognitive abilities on children. For example, many research has been pointing out that children who live in communities which are highly polluted, they usually struggle academically in their schools. And so this could be due to the direct biological impact. However, also like air pollution and also other environmental factors related to climate change can impact our mental health indirectly. So for example, some of the air pollutants and also like dampness and some of the climate change impacts they are visible. So you can see them for air pollution sometimes as you mentioned if you are passing next to a busy road, you can smell all of these fumes, so this is like something sensed and then this will create worrying feelings for the individuals and then the individuals will start thinking, oh, I'm living in a really polluted dream. And this stress and anxiety can lead to mental health issues and to anxiety and depression symptoms as well on the long run. So this is the indirect impact of air pollution and climate change impacts on individuals mental well-being.

Laura Young:

Think it's hard because there is so much out there now that tells us getting outside getting active, even if it's just for a short walk, is so beneficial. It gives you fresh air, maybe. But you know, fresh air. You know, you get to see greenery. You get to have

some breathing space, get some exercise. But as you say, Mary, then you step outside and you think, well, I'm surrounded by cars or there's lots of industry actually. You know, there is other impacts, whether it's even just things like litter or, you know, pockets of flooding or, you know, areas that have been vandalised, parks that don't feel safe. Actually it makes you then retreat and say I don't want to go outside anymore. And Jennifer, I guess when we think about on this podcast we've talked a lot about mitigation and adaptation and so mitigation meaning how do we try and stop climate change going as fast as it is and try and reduce our carbon emissions, but also adapt to the changing world that's around us, whether that's flooding, sea level rise. And other things and countries obviously trying to mitigate, but are there any policies that are particularly being put in place that are also helping communities along with this?

Jennifer Rao-Williams:

There's a lot of great resources I think geared towards a community level and Adaptation Scotland is a really wonderful place to start with. And the platform that they have is great for different kinds of users, whether you're a Community Council or whether you're an individual interested in how you might go about creating adaptive change in your community or business. So that's probably a really good resource to go to. We have kind of like route maps and templates and downloadable resources. I think it's making it accessible and also giving the showcase in the case studies to show what can be achieved in communities. And I think that's one thing Climate Ready Scotland, the Scottish Flood Forum Adaptation Scotland, they do a really good job at showcasing how adaptation works in different communities, different spaces because I think it is about taking a place based approach and paying attention to those social dynamics that are happening in a space in addition to what might be some of the kind of physical hazards, potential for flooding and or maybe you live in a in a power of Scotland which gets cut off because of a landslide like the area, the rest and be thankful which is often cut off. I think looking at great case studies which are available is probably a really good starting point.

Laura Young:

So thinking about that difference between mitigation and adaptation in terms of the landscape in Scotland, have we got any sort of policies addressing these?

Jennifer Rao-Williams:

Yeah. So the newest policy is the Scottish National Adaptation Plan 2024 to 2029, which sets out a suite of 200 actions that we can take from managing current and future climate crisis. Which includes how different sectors like the agriculture and how even our NHS might be working together to support some of the risks that we will see. One of the focuses is in ensuring the NHS is Scotland estate can be prepared and equipped to deal with things like the heat and floods because we know about the health implications for both of these things and interestingly, one of the projects I'm currently working on design hopes works in collaboration with the NHS Scotland and that's all about supporting the net zero and beyond transition for our health and social care system. And the reason for that is because if you looked at the health sector globally it would be considered one of the 5th largest emitters if it was a country. So in terms of we were just talking about waste and the NHS is the biggest user of single use plastic and it's one of the biggest employers. There's lots of opportunities to be thinking about how we can improve sustainability from a livelihood. And then in our communities as well, because the NHS Scotland is such a huge estate and I think that place based approach is so important because there is no template that that we can just put on to any place because of the geography, the social aspects, everything that you were talking about.

Laura Young:

Mary, when it comes to air pollution, have there been any policies implemented either you know around the world or here that are trying to help?

MARY ABED AL AHAD:

So if I want to talk about Scotland and specifically for air pollution, they have been implementing in big cities, low emission zones, or zero emission zones, for example in Glasgow and in Dundee now. Also they have some zero emission zones and this means that like in those zones like you're not allowed like to contribute so much air pollutants. So like for example not use car, things that emit air pollution, to the atmosphere and these low emission zones have proven actually to be effective. So you can like now they are collecting data about the air pollution in these zones and it has been shown that the level of air pollution really is reduced in these zones. And there was a study actually conducted by colleagues at the University of Dundee about the impact of no emission zones on the health of children and they found that it's really helping on improving the health of children and also the physical and mental health of children. In Dundee, so it's really effective way one of the effective governmental ways to control air pollution. And also like I'd like to emphasise about the role of not only policy level but also the non governmental organisations, and this

is with respect also to the inequalities faced with respect to environmental exposures and their impact on health. So I have been interviewed recently by an NGO called Enact Inequality. And they are working on a campaign now which is targeting toward the inequalities in exposure to air pollution by ethnic minorities, and they are trying to emphasise the importance of this topic and to put pressure on the government to establish some of the some policies regarding this. So we see like how the campaign proceeds as well, I think.

Laura Young:

That's great to hear by these different groups working together and you know, the low emissions on so I'm from Glasgow and I now live in Dundee, so the low emission zones I'm really familiar with because I know the spaces. And I think you know, as you said, it's trying to take out the most polluting vehicles and you can even go and put your registration plate in and see it. And I mean I think it's important to mention that culturally or you know society these maybe haven't gone down that well. I think there was maybe a bit of confusion, a bit of controversy and also people had questions about the usefulness. I think they're also not perfect. You know, there's still people that we need to look out for. You know, there's many people who weren't able to afford a new car if they needed to get a new car or some people that will have been impacted adversely. But I think the key thing is that we do talk about why it's so important to be doing something about air pollution, and I think we're quite lucky because actually there's pockets around the world where air pollution, it's almost like a runaway train. It's so bad. And I was at one of the COP conferences and they had an air pollution exhibition and they had these plastic pods that you sort of walked through, and then each one they'd simulated air pollution in different cities. So, you know, one of them was London, Dehli, one was maybe I think it was Hong Kong and then there was one that was fresh air. It was just simulating good clean air. And I think as you walked around it, it was so powerful to go from one to one and actually feel yourself trying not to breathe, actually, because you could see and feel it. And I think for us here in Scotland, you know, we don't go into Glasgow and Dundee and maybe think and feel any different, but actually knowing that we're kind of helping mitigate. You know, getting on that runaway train of air pollution, I think is really important. And Jennifer, thinking about, you know, we're trying to put in policies. We're trying to make changes. Thinking about communities, we talk about resilience. Maybe you could give a definition of like what do we mean when we talk about resilience, but also then thinking about communities, how resilient our communities to some of these environmental.

Jennifer Rao-Williams:

So maybe just a way of explaining community resilience. Resilience comes from kind of ecology in terms of language and description, and it's the way to give a description to a system and the system's ability to withstand a shock. How able is it to absorb that shock and maintain a function? So if you imagine as an individual. If I was experiencing a stress, how capable could I be as an individual to deal with that stress and maintain my day-to-day kind of habits and all the things that make me, me and then? That as a bigger scale up to thinking about community, if a community experiences distress. How able is that community in functioning and maintaining some level of like equilibrium before it goes into a state of not being able to function? So that's a kind of a really kind of general explanation of what community resilience might be so in and answer your questions about examples of resilience in communities in Scotland. I think there's so many wonderful examples. The Scottish Government has done a really tremendous job in the past 10 plus years of rolling out community emergency plans. Which has seen communities kind of get formalised around how they think and approach stresses in their environment, and a lot of that comes from preparing for the unknown. So not necessarily targeting communities that might be at risk of flooding or might be those communities that are in remote rural areas, but also communities that are in urban areas too. And this is probably thinking about being responding to a crisis, but also thinking about prevention as well. So thinking about some really well evidenced and some communities that get showcased, probably quite a lot examples could be from the Scottish Borders. So when I was a PhD researcher, I did a project funded by the Joseph Rowntree Foundation, which looked at changes that were at risk and during this research project they actually experienced, I think it was a one in 100 year flood which meant that they were evacuated. And said that these communities who where they live in these environments are quite well practised. They they're well exercised and this is to think an important feature of resiliency. It's not a state or a destination to get to, it's about it's a practise. So our community will never be fully resilient because it's a constant learning and preparing and updating for any kind of risk that comes our way. So examples of really showcasing communities could look like Peebles, and these are kind the kinds of communities that are quite rural. They are maybe not as accessible as more urban areas. Similarly, communities like in Moray are, if you go on ready, it's got the website. You'll see case studies of these communities. So these have really well established resilience groups. Maybe sometimes connecting to existing community councils as well, so I wouldn't like to say that there are any particular more resilient community and that I've learnt from doing research in the space that it's sometimes unhelpful to classify communities as being, for instance, climate disadvantage. But I think there's lots of really good examples of communities that are well connected. And have a level of trust and awareness, and there's been things in Scotland that have really helped to support community resiliency. One thing has been community asset registers that have

meant that communities get even more formalised and they know about what resources are available to them during a crisis. There's also funding available for communities to kind of get stock, like the things that they might need in case of, for instance, intense snowfall. There's also increased funding available and lots of other kinds of resources that help communities become resilient. One such example is, for instance, a Red Cross. They do some wonderful work with community councils around things like scenario planning or they might run a tabletop exercise. So there's lots of communities that are going through these kind of preparedness activities to help them become more resilient. So I think there's, there's, there's probably so many great examples happening in Scotland.

Laura Young:

And I think that that's so helpful actually to picture it in an example, because sometimes these topics can be hard to understand and even in my own research that I'm doing, I'm interested in different communities that often get missed out. And one group that I'm looking at just now is groups that are kind of transient move around quite a lot. And one example of that is actually students. I'm a PhD student, so I guess I fall into that category. But it tends to move around quite a bit maybe, or at least perceived to be, but definitely one barrier is for people who maybe aren't quite rooted into their community, maybe because they've just moved somewhere and that's not just students who do that. That's people who are seasonal workers. That's people who have come here from elsewhere. Moving around. Where would you advise people to maybe? Looking if they're thinking actually. I don't, feel embedded into my community. I don't feel part of it yet. For whatever reason, where would you maybe sign post people to look at? In terms of just helping to find information about things like flooding or any of these other environmental issues.

Jennifer Rao-Williams:

Certainly, I think if you are perhaps living in a rural community near water and even surface water creates flooding, so it might not necessarily be a community near a river looking at the Scottish Flood Forum, they have a map. They will show you contact details all the resources, there's a real emphasis on connectivity. I think with these kind of these platforms, so Scottish Flood Forum is a great place to look, looking at your Community Council, finding out who and when they meet. So it's really about finding out who's your who. Even going to some of the large or even the smaller like third sector organisations in your Community in Dundee, we have the International Woman Centre, and they are very well interconnected. They act as a kind of an interface organisation so. I think looking at charities and looking at maybe

Community councils and those kinds of groups are really helpful. Facebook is a great place to sort of get information from, I would say also and just becoming aware, probably still has an X or Twitter, but having the ability to sign up to alerts if you are feeling like you are you would maybe benefit from that information. So yeah, certainly the digital side, but being paying attention to the digital divide for those that don't have access to those resources, it's going along to you know, looking at your community hall, if you have, if you have that or if you're a student, maybe going to your inquiry centre, I think. The students experience probably much better pastoral care then maybe we did like 10 plus years ago and probably have better well-being focus which extends to the whole life. So I imagine that information should also hopefully come from the university setting as well, that's.

Laura Young:

Really helpful and Mary, thinking about these issues, you know, would you have any other suggestions for where public information?

MARY ABED AL AHAD:

Yeah, I wanted to expand on the students and the community because I live in St Andrews, which is mostly like a student community there and so clubs, for example, environmental club, we have one at the University of St Andrews and this is really a great source of information. I would like resilience to environmental disasters, for example, or environmental shocks, but also about to get tips more about sustainability. Like how to be sustainable in our lives, in turn like would lead to the mitigation of the impacts of climate change on the long run. So, for example, in St Andrews we have one of the like we have an environmental club, but we have also a great initiative in this regard. It's called the transition and it works like it has several projects aiming towards reducing the impacts of climate change and one of these projects, for example, is reusing stuff and recycling. So when students like leave the university and the town, they usually leave so many stuff that they don't want, so they drop them in the transition and then this stuff will be reused by new students coming into the town. So all of this will reduce the waste and reducing the waste to. Also mean like less pollution on the long term and then this would reduce the impacts of climate change. So this is one way also of mitigation.

Laura Young:

And I think that is actually helpful because with all these conversations, we can sometimes get either lost or excited in the adaptation. You know, we think about,

well, how do we change the way we live. But actually that mitigation piece is massive, which is we still need to remember that we need to be getting better at not putting so many greenhouse gases in the atmosphere and actually stuff is a huge part of that. Because you might think, well, what you know, what's the big deal about buying a new chair? Well, actually, that that chair has been this, you know, it's got wood. So it's a tree that had to grow somewhere. It has to get cut down. It had to be manufactured, made, shipped, packaged. And then of course delivered. There is so much involved in it and actually small things like buying secondhand reusing can make a huge difference globally, but even sustainable initiative locally, things like just encouraging people to be cycling more than taking the car helps with local air pollution. There's so much stuff, and I guess maybe that's a great place to end actually by asking have you got some takeaways that that people and people are not people are not the only ones that need to do changes right? We need business. We need government. But actually I love a take away at the end of anything. But have you got any takeaways of things people can either do to help with that? Or actually be protecting themselves and being more resilient to some of these things that that we've heard.

MARY ABED AL AHAD:

I would say like one take away message is that people need to understand that they are like changing engines. So even like really small action like for example buying a second hand chair or a second hand clovers rather than buying new ones or like encouraging small businesses for example to reduce the waste and all the pollution associated. Would have an impact in the future on the climate change and it would lead also to more healthy cities and communities, even like very small actions that we take as individuals and we shouldn't, like always blame the government. And other stakeholders, I mean, of course, like the government's have like a huge responsibility as well to take like to put policies in place that will mitigate on the climate change impacts, but also as individuals we can change things even like at a small scale for the future.

Jennifer Rao-Williams:

A growing realisation that it's not down to one agency, like a government to protect civil society. But it's many agencies to respond to crises and in order to like help Civic Society, households, communities. It's down to supporting their skill development strength, strengthening their awareness through giving templates, sharing practise sharing stories, but also resourcing people. So if you are somebody that's in fuel poverty, food poverty. You're not going to have the contingency for three

days of food. And that's that was pre COVID and that's like generational poverty and all these things that are compounding. So I think paying attention to where you are in your context and imagining what would the scenario be like if I couldn't go shopping for three days. And just paying attention to how you are currently living and connecting earlier with resources being prepared in the what if having a Oh no bag if you should need it knowing who to contact, who's your who's your who in your community. All these things. And I think I really, it's really helpful.

Laura Young:

To have those were both really helpful actually. And I think it's just good because with all of what we're talking about on this whole podcast series, it's going to take a lot of people working together to do it. And communities are a part of that. I loved what you said there about who's your who? Find your who. I guess yeah, what role does that play in terms of thinking of community collectively?

Jennifer Rao-Williams:

I think we saw in the pandemic all kinds of individuals probably created new relationships, whether that was with new platforms or digital. It just it was a whole paradigm. You know the way we were, the way we learn. How we connected how we bought our food all changed and the connectivity all those things kind of changed. So I think it's about knowing who's in your who in terms of the local and maybe what other support services there might be, maybe digitally as well. So finding new ways of just new support systems I imagine. So in communities, perhaps these are in your immediate circle, but I think it really does help if you can be proactive in finding out and building those relationships. And in Dundee, you are really lucky. We have these community food hubs. It's a university town, so there's already lots of capacity in there and it's those social connections, but also the resources in those connections. But perhaps if you are somebody in a in a quieter, maybe more remote rural space. It's finding what's available to you in your immediate space, and if you see a gap, then it's going to platforms like really Scotland or like adaptation Scotland or Scottish Flood Forum and finding out what resources could, could complement and support you as an individual and or as part of a community. So I guess it's finding the gaps.

Laura Young:

That connects with circular community Scotland, who are sort of network of circular economy organisations who do things like bike share and repair or furniture upcycling. But the thing that I love about it is, you know, when I went to use the Dundee Tool Library, which is you know, a place to go and borrows tools. You're not just going because it's good to borrow things instead of buying them. You're actually

going to get conversation to meet new people and for me when I just moved to the city that was so beneficial. And so I think finding organisations who might not be a flooding organisation or you know, but actually our community group, that you can help get plugged into is really helpful.

Jennifer Rao-Williams:

Absolutely. And it's also great just for endorphins and yeah, that has an impact on our quality of life and our mental health.

Laura Young:

And so I think that was a really helpful place to finish our conversation, but thank you so much to Dr Jennifer Rao-Williams and Dr Mary Abed Al Ahad for being on this episode of The SAGES podcast.