

Actuaries Institute Podcast

Title: Home insurance affordability and socioeconomic equity in a changing climate

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Guests: Sharanjit Paddam, Calise Liu

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Vanessa Beenders: Hello, and welcome to this Actuaries Institute podcast. My name is Vanessa Beenders, and I am the Executive General Manager of Public Policy and Professionalism at the Institute. Today, the Institute has launched its latest Green Paper, titled *Home insurance affordability and socioeconomic equity in a changing climate*. The paper has been written by actuaries from Finity Consulting, including Sharanjit Paddam and Calise Liu, who are joining me today. Welcome to you both.

Sharanjit Paddam: Hi, Vanessa.

Calise Liu: Hi, Vanessa. Thank you for having us.

Vanessa Beenders: Thank you. First of all, congratulations to you and your fellow authors at Finity on such an impressive report. So, Sharanjit, there's an incredibly extensive amount of research in this paper. Let's begin with, why has it been done, and why is it so important that everyone engages with this now?

Sharanjit Paddam: I think, Vanessa, we've had a series of very devastating natural disasters over the last two years, starting with the big bushfires in 2020, moving on to the floods we've seen recently in Northern New South Wales and Southeast Queensland. So, this has very much pushed the issue to the top of the agenda. I think there's a realisation now that these events are getting worse, and we need to think about doing something about them.

Sharanjit Paddam: People want to know about what's insurance's role in these things, and what's insurance's role in resilience. I guess that's the question we're starting with here. Because insurance does provide financial capacity for people, particularly in recovery, but we want to also look at the affordability. How available is it?

Sharanjit Paddam: How, for Australians who're struggling to pay their insurance premiums, and building also on earlier research that the Institute has done. There was a research paper a couple of years ago looking at the affordability issue. We've got some better data that we wanted to use this time around. The other piece that we've also added to this, which is a more

prospective view about what happens under climate change, and future climate change.

Vanessa Beenders: **Thank you. Calise, I'll get you to start walking us through, then, the specifics of what's in this paper. The foundation to the report is what we've called the *Australian Actuaries Home Insurance Affordability Index*. What is that?**

Calise Liu: We've built up a measure of home insurance affordability, and we've defined that as how many weeks of gross household income it takes to pay the annual home insurance premium. We've calculated this measure for all 10 million households in Australia, to really understand where the affordability pressures are the greatest, both now and under a changing climate.

Vanessa Beenders: **Yeah. You've split this, then, into what you've called two 'populations', a based population and the vulnerable population. Can you tell us a bit more about the characteristics, in particular, of the vulnerable population?**

Calise Liu: Home insurance affordability is not just a result of exposure to extreme weather, but it's also impacted by socioeconomic disadvantage. In the reports, we focus on who are the people having the highest insurance premiums, and whether they're able to afford it. So, in a nutshell, whether the most vulnerable Australians live in the most vulnerable housing.

Calise Liu: We can see from the index that for the majority of Australians, home insurance isn't a significant financial burden. Across Australia, the median number of weeks of income used for home insurance is about one week, but there are one million households that would need to pay more than a month of their gross household income, which is a significant amount to spend on just a single expense. This is who we have defined as the 'vulnerable population', and the other 90% of Australian households form what we call the 'base population'.

Calise Liu: Compared to the base population, we see an over-representation of older individuals over age 60, single-adult households including single parents and lone persons, people who rent, households with low insurance literacy, low socio-economic status, and low savings. By identifying the most vulnerable people, it's an important step towards building resilience, and enables policymakers to focus action towards these communities.

Vanessa Beenders: **You've also managed to look at another way to analyse the data that you have here on home insurance affordability, is by local government area or 'LGA'. In this research, you've painted a picture across the whole of Australia of what affordability looks like by LGA. Can you highlight the points from that, please?**

- Calise Liu: Yeah. Perhaps unsurprisingly, LGAs with the highest affordability pressures are really concentrated in Northern Australia, so Northern Queensland and the top of the Northern Territory. In these areas, half of the population spend more than a month of income. That's mostly because of high cyclone risks in these areas, in addition to lower household incomes.
- Calise Liu: In Northern New South Wales, and Inland Queensland, and also Northern WA, these areas face what we call 'moderate' affordability pressures, on average. So, a median home insurance affordability of about two weeks, and this is from lower household incomes, and higher flood and bushfire risks for New South Wales and Queensland, and also higher cyclone risks in WA. In the metropolitan areas, they typically have lower natural-hazard risks and also higher earnings.
- Calise Liu: That means that the capital cities have lower affordability pressures, on average, although, of course, it is still present and it's generally in the outskirts of the capital cities. For example, in Greater Sydney, Greater Melbourne, Greater Perth. And of course, just a note that while an LGA may face no or low pressures on average, there are vulnerable households in every single LGA, that do face significant affordability pressures.
- Vanessa Beenders:** **To listeners, I commend that you actually do look at the report, because these maps, they contain such a rich picture of these pressures. We'll turn to the future now, and Sharanjit, this paper is an excellent demonstration of how actuaries can undertake granular, as in localised, projections of climate change and apply them to real-world problems. In this instance, insurance affordability. Can you talk us through what has been done in this research with those skills, please, and the insights?**
- Sharanjit Paddam: Thanks, Vanessa. Yes, what we've done is we've taken two climate scenarios, because we don't know which will be the outcome, whether the world will take action and we reduce emissions sufficiently to stay below 2.0 degrees or even get below 1.5 degrees, and that we've called our 'low-emission' scenario.
- Sharanjit Paddam: We've also looked at our high-emission scenario, where we continue to increase emissions over time, and effectively don't turn the tide. Yeah, compared those two analyses. We've looked at what we've predicted had happened about 2050, and compared those three. What is it today? What might have been 2050 under a low-emission scenario? What might it be under a high-emission scenario?
- Vanessa Beenders:** **Sharanjit, sorry, these scenarios, they relate to what the IPCC (Intergovernmental Panel on Climate Change) has put out in the Representative Concentration Pathways, don't they?**

- Sharanjit Paddam: Yes. The high-emission scenario is RCP8.5, which came from the IPCC. The low-emission scenario is equated to RCP2.6. We've also made use of the work done by the Climate Measurement Standards Initiative, which was a collaboration between insurers, and banks, and climate scientists in Australia from CSIRO, and Bond University, and University of New South Wales.
- Sharanjit Paddam: They provided us with interpretations of what might happen under these scenarios to extreme events, which are the ones that we are looking at in terms of cyclones, floods, bushfires, and storms. We've made use of that information to form the basis of our projections. I do want to say though, that this is not an exact science, there is a lot of reasons why there is uncertainty about this.
- Sharanjit Paddam: The biggest uncertainty, of course, is whether we go for a high scenario or a low-emission scenario. But even within that, predicting... the weather is very variable. We see massive variation, even today, and historically over insurance costs from year to year, we see... these are by definition rare events, particular locations, but when you look across the whole of Australia in a large, long time period, they happen frequently enough.
- Sharanjit Paddam: There is a lot of uncertainty here, and it's just why we've been undertaking scenario analyses. These aren't forecasts. We're not saying this is what's going to happen. I think we get some interesting results. Under our low-emission scenario, we're seeing about a 6% premium increase. Under the high-emission scenario, a 15% premium increase. Now, those numbers on their own, I don't think mean anything.
- Sharanjit Paddam: I think the issue here is what's going to happen to individual households, because those percentages seem quite tolerable. But the problem is that they won't affect everyone equally. Most people will have a much lower increase than that 6% and 15%. The last 10% of vulnerable households will see a much bigger increase from these. That's the issue, because if we are seeing 10% of Australians or a million households not being able to afford their insurance, and that getting even worse over time, that is a problem for us.
- Sharanjit Paddam: In terms of the science, what we expect to happen, it's a complicated picture and it does vary by location across Australia. Broadly, where the science is telling us, with actually low confidence, that we won't see an overall change in the frequency of cyclones, but when they do happen, they will be far worse.
- Sharanjit Paddam: So, more Cat 4s and 5s and less Cats 1, 2s, and 3s. They're also, again with low confidence, projecting some southernward expansion of cyclones, so that they move further into areas like Brisbane and Northern New South Wales, and towards Perth in the western. Actually, that has a very big impact because of the building standards there.

Sharanjit Paddam: We're seeing interesting pictures from floods, in that the events that give rise to floods, like storms, East Coast Lows, are expected to be lower frequency, that happen less often, but when they do, the warming atmosphere will carry a lot more water, and you'll get a lot more water being dumped down in each of these events. Which, overall, gives us a slight... an increase in floods across Australia.

Sharanjit Paddam: Storm, again, is very interesting, because like I said, we're expecting East Coast Lows and severe convected thunderstorms to happen less often. But again, when they do, there'll be more rain and potentially more wind associated with those. Our modeling at the moment suggests that storm costs won't increase materially. That we'll have some offsetting between those two, based on science, but like I said, there is still much more work to be done. Building the confidence in these models over time is going to be important.

Vanessa Beenders: **And bushfires, I think they're projected to get significantly worse.**

Sharanjit Paddam: Yes. That's right. Bushfires, there's a much clearer picture, in that the climate science is much more confident that bushfire, dangerous weather, so high bushfire days will increase substantially. They are projecting large increases in bushfire. Historically, it has been the case that because what tends to burn in bushfire is often uninsured, we don't have large insurance costs.

Sharanjit Paddam: So, it's at the lower end of the materiality for these events. Potentially, that might change, but we do see bushfire very concentrated on the edges of cities, rather than over large suburbs in the case of cyclones or hailstorms. So it is a less material cost for insurers, but the forecasts are pretty clear that it will increase in nearly all the scenarios they look at.

Vanessa Beenders: **Then bringing it back to the *Australian Actuaries Home Insurance Affordability Index*, how do all of those future projections play out? What are the implications in terms of affordability pressures? What do you see on the numbers there?**

Sharanjit Paddam: Yeah, so for the base population, that's the lower 90%, the cheapest 90% of households, most Australians, we are really seeing an insignificant increase from these climate effects, under both the low and the high-emission scenario. For the 10% or the one million households that are vulnerable, though, we are seeing an increase of up to nearly two weeks for that group.

Sharanjit Paddam: Now, so we're talking about that group having at least four weeks, and so we're talking about a 50% increase for them in affordability pressure. Like I said at the start, there is a very non-equal impact, uneven impact of climate change, and this generates the social risks that we talk about in

this paper. That, actually, our most vulnerable people are being most affected by climate change.

Vanessa Beenders: Then, so we are moving into solutions, or it's appropriate we move into them. The final section of this paper is a discussion of the suite of solutions that can help minimise the worst of the impact on affordability pressures. I should point out that there's nothing new in what's included in the paper. That is because everybody is well aware that there have been an extensive number of inquiries, but the value-add of this paper is really, it's set out as a comprehensive list. Sharanjit, what would you like to highlight on that list?

Sharanjit Paddam: There are a number of things. I think one of the things that we've particularly tried to do in this paper is talk about how these measures, these will affect the socioeconomic issue. We've highlighted the importance that when we are thinking about policymaking, to prioritise the resilience-building for socially disadvantaged groups, and that really should be that, in designing effective and efficient policy, we need to focus on these groups. There's a number of areas we've talked about.

Sharanjit Paddam: We've talked about infrastructure projects, nature-based solutions as well, talking about making better use of Indigenous knowledge on Australian weather. Our Indigenous peoples have been around for 50,000 years. They probably have a good view about risk from these events.

Sharanjit Paddam: Also, there are a number of economic problems. There are stamp duty and state-based taxes, do have a disproportionate impact on lower socioeconomic groups, because they are paying higher premiums, and the premiums, its percentage increase. So, they're even getting to bear the tax burden for this.

Sharanjit Paddam: So that, remove or replacing state taxes with other forms... which has been recommended, we're not the first people to come up with this idea, it's been recommended by a number of inquiries into the tax system... we think is one of the more easy-to-achieve solutions.

Sharanjit Paddam: The other thing is that we have done some work, and we've looked at cost-benefit ratios for each of these types of resilience projects. They are really good. We did an analysis for the ICA, and we showed a program of \$2 billion investment over five years would give us a 10-to-1 benefit-to-cost ratio. So, the economics adds up very well on these projects. I think that's important.

Sharanjit Paddam: The last thing I'd want to raise here would be the prospect of some homes just not being affordable to insure anymore, and that we need to think about other alternatives. Some of which may include what's called 'managed retreats', moving people somewhere else and retreating. Because, a lot of the time, the economics just doesn't make any sense,

that it would be far cheaper to build a house somewhere else, and to buy back the existing house.

Sharanjit Paddam: This is, it's obviously a very fraught area. People are very attached to their communities for good reasons. Trying to find these types of solutions is very hard. Lismore is trying, because there is a recognition that rebuilding back in the middle of the CBD is just going to set us up for another big disaster.

Sharanjit Paddam: But at the same time, the mechanics of, and the frameworks, and the policy frameworks for making these types of decision, just isn't there in Australia. So, we do recommend that that's prioritised. Our cousins across in New Zealand are having that very difficult conversation about how this might work. We need to start doing the same.

Vanessa Beenders: **Thank you. It is a very extensive list. Final thoughts from each of you?**

Sharanjit Paddam: Yeah. I guess for me, this paper has confirmed what we've all suspected for a long time, but it has confirmed it with hard numbers, the way us actuaries like to do things. That actually, climate change, we all recognise as an environmental issue, increasingly actuaries are recognising, and that it is a financial issue with financial consequences, but this paper's also outlined that it's also a social issue. It is an issue about equity, and it is an issue about who pays and how they pay. I think that's really important for influencing public policy development, which is an important area for us as actuaries. That's one thing I would say about the paper overall.

Sharanjit Paddam: I think the other thing, which goes back to the recommendations, is that many of the solutions to the problems we are in, and foresee, aren't actually within insurance. That insurance itself can't really pay cyclones to go away or stop bushfires coming across. That actually, to make the solutions that we need actually needs collaboration across scientists, policymakers, actuaries, and financial, but that the industry is in a really good place to use insurance as a risk signal, and get us moving in the right direction.

Vanessa Beenders: **Thank you. Calise?**

Calise Liu: Yeah. Similar lines to Sharanjit. What I've really taken away is that all communities are vulnerable to severe weather to some extent, but it's really the social and economic disadvantage that increases the impact of that for some communities over others. By improving access and affordability of insurance for these most vulnerable Australians, that's a really critical part of addressing these inequities, and it will help really build the nation's resilience as we continue to experience changes to our climate.

Vanessa Beenders: Thanks, Sharanjit and Calise, for joining me today to discuss this important research. It's an excellent demonstration of how actuaries use data for good.

Sharanjit Paddam: Thanks, Vanessa.

Calise Liu: Thanks, Vanessa.

Vanessa Beenders: Listeners, we hope you enjoyed the discussion. You can listen to more Actuaries Institute podcasts by visiting the podcasts section of *Actuaries Digital*, or via all mainstream podcast apps. If you'd like to continue the conversation with us on social media, please join us on Facebook and LinkedIn at @ActuariesInstitute, and our Instagram and Twitter at @ActuariesInst. Please write in with your questions and comments on the show. We'd love to hear from you. I'm Vanessa Beenders. Bye for now.

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