THE GLOBAL IMPERATIVE FOR INVESTING IN CLIMATE ADAPTATION

Announcer 00:00

Please welcome the panel on the "Global Imperative for Investing in Climate Adaptation," moderated by Ishika Mookerjee, Asia ESG and Climate Reporter, Bloomberg.

Ishika Mookerjee 00:23

Hello, everyone. Thank you for making it to the end of the day. Someone told me yesterday that this panel will be the bridge between the Summit and dinner, and I'm excited about that, because that means you can talk about adaptation finance at dinner. And we need to talk more about that, because Asian economies have seen at least $2 trillion in losses because of climate damages over the past three decades. Investors like to talk about reward more than risk. And you know, we've had a lot of conversations about adaptation finance, but banks and investors say it's not really our responsibility a lot of it because it's infrastructure for the public good, and it should be on governments. Whereas governments would like the private sector to come in and bring in more money. There is a little change in the thinking around adaptation finance. GIC, which is Singapore's sovereign wealth fund and is on this panel today, here with us. They published a report about it, talking about a $9 trillion investment opportunity through 2050, which we'll come to in this conversation. And I'm excited to have such a great panel here today. We have the investment community, insurers and, of course, policy makers here, so looking forward to a great discussion. Ravi, let's start with you as the climate change ambassador for Singapore. What are some tips and best practices that you can share on quantifying climate risks for businesses and policymakers and really arriving at that financing number that's needed?

Ravi Menon 01:59

Yeah. Well, thanks, Ishika, thanks, and also my thanks to Milken for putting this together. I think the—that it's the right question to focus on corporates and businesses, because they are the demand drivers. I think

when we ask governments and financial institutions that question, they will say we'll have to respond to what is the demand. And so it's absolutely critical that businesses understand their climate risk exposures, because that's where then you start taking measures. So they need to think through their workforce, their exposure of their workforces to climate change. And firstly, they need to identify the risks that are being posed by climate change. And you know, you could summarize it very simply into heat waves, heat and high temperatures. Two is extreme floods and droughts, alternating. And of course, sea level rise. Those are the direct impacts. And of course, there are multiple indirect effects stemming from them. So if you're exposed to grid electricity, you have to ask whether your grid is exposed to extreme high temperature, because that can melt some of your transformers and your cables. Do you have assets that are prone—that are in flood prone zones? Do you have workers who are—does your business model depend a lot of work on workers working outdoors, and can they sustain high temperatures? So I think you need to translate the risks into what it means for your physical assets, your workforce, and your supply chains, and that can be horrendously difficult when you have multiple supply chains cross borders. So that, I think, is the first step that every corporate needs to start doing. Every large corporate, at least, having identified the risks. And then they have to start thinking of, then what are the measures, adaptation measures you will take, and that can also take a variety of forms, and they'll need, probably, some expert help here as to what is possible if their supply chains are far off and there are food supply disruptions, then they have to ask themselves, what are the measures that are likely to take place in their place? And then see what they need to complement it. The first is to build resilience. Which is, can you strengthen your assets? Can you strengthen your workforce, or insulate your workforce? Can you secure your food supplies by building up resilience in the in the farms and so on? That will be the first kind of response. And then how is that going to be financed? The second response would be diversification. That means I de-risk. This is not—this is too expensive to build resilience and adaptation. I need to de–risk and diversify. Third is, of course, insurance, and we have two insurance colleagues here who can talk more about that, which is, okay, the risk is there, but I can't quantify it well. It's also like an all risk cases, it may or may not happen to the degree that I—that warrants a sort of response. So then I would take insurance because then I hedge some of that risk. So I think these are the responses that corporates need to study very carefully as part of their transition planning, vis a vis climate risks.

Ishika Mookerjee 05:14

Great, yeah.

Ravi Menon 05:14

And that creates demand for adaptation solutions which we can come to.

Ishika Mookerjee 05:18

Yes, absolutely. And to go to De Rui. You worked on that report from GIC on—you were the lead author, if I'm not wrong. How are you integrating climate risks today into investment decisions at GIC, that's different from your peers or new?

Wong De Rui 05:37

Yeah, so, so the paper that we wrote was really focusing on opportunities but I can kind of address that later on. But answering your question about how do you integrate risk considerations into an investment portfolio. There are two broad approaches that we take. The first would be a more top down macro approach. The second is a more bottom up, more micro approach. So if the top down macro approach, what you're really doing here is trying to understand how climate change or climate risk impacts macro variables like growth and inflation, and then you channel that into your asset return models to get a sense of to what degree would asset returns be impacted by climate change. This is a very scalable approach. It allows you to estimate those impacts at a total multi-asset portfolio, but it is necessarily coarser, right? The second approach that we take, that more bottom up, more micro approach, then, is really about having a more asset level physical risk assessment, and there, as an investor, you can work together with a third party modeler to decide what damage function is applicable to the building or asset of interest. You can decide it based on the asset attributes, like building type, the use—the building use, the building age, the height, the construction materials used. And that gives you a sense of what that estimated physical risk impact is. To be clear, there is no definitive model that is good for every use case. And oftentimes with physical risk models, I always say is about choosing the cleanest dirty shirt out there. And oftentimes you might want more than one shirt, right? And but it's understanding trade offs—the trade offs between scalability across a multi-asset portfolio, as well as granularity. But after doing all that, it comes down to what do you then do to make your asset more resilient? So at GIC, our real estate department for instance, did that bottom up more micro scanning, and we found that there was a data center asset that had certain vulnerabilities to flooding risk. And what we then did was to know work together with our business partners to design the flood—flooding perimeter around that data center asset. We then work together to build the flood defense walls around this data center asset at a height that took into account the rising sea levels that will arise as a result of climate change, and to also account for the flooding risks that will be amplified because of climate change, so that the flood defenses are built in a way that is future proofed. Why did we do that? We did that not because we were bleeding heart environmentalists, but we did that because it was critical for the value preservation of our asset. Because even though our holding period might be, say, seven to 10 years for the asset, when we exit that investment, that buyer will also be thinking another seven to 10 years out. So having that long range thinking, in terms of how we think about protecting the value of assets is something that is not out of altruism, but one that is grounded in trying to preserve investment value.

Ishika Mookerjee 09:11

Yeah, that's a really good, good point. And actually, the insurance industry has been a leader of sorts in being able to model climate risks, right, and working with investors and governments. Tulsi as APAC CEO of Zurich Insurance, where do you see climate risk modeling moving to next? What is still difficult to quantify, and what are you working on right now?

Tulsi Naidu 09:37

So, maybe I start with thinking about how—and actually, Ravi's comments, opening comments, and De Rui's comments were music to my ears, really, because I think if you think about our business, we've historically been a provider of risk transfer solutions. We've been the people who take on the financial risk in the event of loss. And I think in the context of climate, the biggest thing that we all need to do, and it's a public sector problem, it's a corporate problem, it's a financial institution problem, is around resilience and building resilience and building prevention. And that's not just about people and assets, but it's also de-risking the transition, because the assets being built in transition are—have their own vulnerability. So the areas that we have been spending time on, what we're doing is taking—by nature of our business model, by nature of the fact that we've been the risk transfer provider, we have really granular information around climate. The areas that we're spending our time on is very much about using that data, using the fact that we have 1000 risk engineers across the world to help our clients, to help policymakers on with advice, so that—if I look at what we're doing in this part of the world, we are—we have a tool called Climate Spotlight, which is a really simple tool that helps clients, customers, think about their risks. And actually, if I'm honest, Ishika, we're less worrying about what we can and can't model. We're looking at what we can model right now, and how do we get awareness out there? To Ravi's comments about—we have a ton of data, you'd be amazed at how little it's used, right? How few companies are engaging to look at the data and to think about what adaptation measures they could take, you'd be amazed at the payoff. A 2 percent increase in CapEx will reduce the possibility of large loss by 50 percent, right? So, and you're talking about, really in many cases, quite simple, small changes: elevating machinery, cleaning up drainage systems, all the way through to creating movable flood barriers or flood perimeters, as De Rui just talked about. But these are, these are measures that, with some application, we could see a profound shift in the exposures that we're all—and so I think we are very much in the camp right now, certainly in this region, I'm much more in the camp of getting visibility, understanding, and analysis out there that gets our clients and customers talking about the measures they should take.

Ishika Mookerjee 12:24

Are there any new products that you're working on, because this region is so under insured?

Tulsi Naidu 12:29

So, there's certainly products. So for instance, we're doing parametric products. We're doing parametric retail. So, we've just done something for coffee plantations, for coffee farmers in Indonesia, where above a certain level of rainfall, you know, we cover their crop losses. So we're doing different products. But I think—I mean in this conversation, I think the biggest thing that we all—you know, certainly from my perspective, you hear me say it again, dull and boring, is really about building resilience and adaptation. Because without that, it's not about product, it's not about insurance. We're on a, you know, we're on a trajectory that's not pleasant.

Ishika Mookerjee 13:08

Yeah, thanks for that. Kyungsun, so South Korea has a higher penetration rate for insurance than many other countries in the world. How do you see the climate risk insurance market right now in South Korea, and how is Hyundai Marine and Fire Insurance trying to grow that?

Kyungsun Chung 13:25

So the interesting thing is, if you look into Korean insurance market, yes, for the health insurance, water insurance, we have pretty high penetration. But if you think about the housing, etc, actually— mean, the houses are insured, but lot of the Korean people are living in the apartment complexes, which is usually very fire resilient and everything. So actually the amount of they can—what is the claim they can get, is very low. And that is changing right now. Like not only due to the climate disaster, we are having more flood from the hurricane. Actually, this is the interesting point. Now, in the apartment complexes, we are having more fire due to electric car, which is another sort of—the result of this whole climate change and everything. Because the, you know, like the apartment complexes there, the garage is like very dense, like 200 something cars in there, and when there is a one electric car fire is going to be burning the entire thing. And then actually we are seeing the spike of loss in the alternative insurance because of that. So I think I agree with what everyone says. I feel like I'm learning here. And like Tulsi said, I think it's actually more about the resilience, sort of the mindset that the people need to have. Still, people think that, oh, the Korea is safe, so we don't need to do more insurance. People see this kind of Europeans insurance now we are coming up with like, different kind of the—providing different coverage for the climate related issues or a disaster kind of products. But people don't have that kind of mindset yet, so they don't do a high level of the coverage and or not, they're not getting the fire insurance sort of specified for the electric cars. So now, like, we see there is a lot of potential in there, but like, we need to start from sort of the awareness issues, and then like, probably, like, we need to work with the governments to make sure that, like people need to get this kind of coverage.

Ishika Mookerjee 15:21

So the government is expected to come out with a climate risk insurance—I don't know if it's out yet. The index based one, what is Hyundai MFI looking at for the next 12 months? Are you going to work or come to market with certain products, or it's still in development?

Kyungsun Chung 15:41

Yes, actually, we are in development right now. The—okay, this is a delicate part. So government mandates us to come up with the products, and then they want us to cover more the farmers. They want to provide more in the climate related—the insurances. But also at the same time, they want it to be affordable, as well as much as affordable. And you know, the insurance should be all about pricing. It's all about pricing and underwriting based on the risk. But basically the government is taking over the pricing capacity of us. So this something like lot of the private insurance people are struggling in Korea right now to basically play the game without having one of the most important tool.

Ishika Mookerjee 16:26

Yeah, we can come to incentives, government incentives, later in the conversation. Ravi, I wanted to come back to you. So in the US, about a third of the US Geological Survey's climate adaptation centers are expected to be closed because they're not getting the paperwork approved for funding. I mean, against this backdrop, as you had to COP in November, what are you hoping to get from countries and your peers there on adaptation? Is it perhaps alignment on metrics of what qualifies as adaptation finance or something more than that?

Ravi Menon 17:03

Well, I think yes, it is tragic that funding has been withdrawn from some of these climate modeling exercises in the US. But I think there is already a lot of data out there, thanks to the IPCC and various other bodies. And of course, the reinsurers have also developed many models, and countries and regions are doing their own because beyond a certain point, you have to contextualize most of these climate change effects. The thing about climate change effects is that it is highly localized. It's not even at the country level. You could have flooding on one side of the mountain and a drought on the other side, and so we need to translate those. And that, I think, is going to be largely an effort that countries need to start getting up to doing, and to do it in a systematic way. I think there are two types of modeling that needs to be done. One is territorial risks within the confines of the country, for which the country needs to work with the private sector, academia, research institutes and so on. And then there are the trans boundary risks, meaning risks that emanate from outside your borders, from other countries, from the oceans and the seas and so on. Now that requires a regional perspective, because you need to then find out the interlinkages for how these risks are propagated across into supply chains or food and so on, and then the exposure of your physical assets too. So I'd say there is enough data out there to work on and contextualized local, even if funding has been removed in some contexts. The bigger problem is that adaptation has not received the kind of attention that it deserves compared to mitigation. Not that mitigation is getting a lot of attention these days. But compared to mitigation, adaptation is getting a lot less, because the sense is that this is going to be quite far out in the future, and it may not be. There are some things that are going to be far out in the future. Sea level rise, perhaps, is going to be further out, and it's not going to take us by surprise. Heat, I think, is a different proposition, and can disrupt a lot of economic activity that is affecting corporates, right?

Ishika Mookerjee 19:21

Yeah, especially like coming from India, heat is going to become more and more of a risk to the—

Ravi Menon 19:26

And India is taking heat quite seriously. Many state governments are working on this problem because it is, it is a clear and present danger affecting people now. So I think, and heat is also the area where you need highly localized solutions. You can't build barriers or sea walls. You need to contextualize, to localize situations with cooling solutions. And so that, I think is an urgent need. I just end off by saying that energy demand has been rising quite rapidly beyond expectations, partly because of the demand for cooling. Especially in tropical Asia, where incomes are rising, people can afford air conditioning, but with the temperature rise, the demand for energy has increased, and this is not a good outcome for the planet, because that's more emissions. So we need to address the cooling issues quite early.

Ishika Mookerjee 20:21

Yeah, I want to turn to investments now, actually. And to your point, right, De Rui, in terms of adaptation solutions, maybe we can start with you, telling us where you see the biggest opportunities right now, and then we can talk about the adaptation versus mitigation dilemma?

Wong De Rui 20:39

Yeah, maybe before I get to that, I think I like to see adaptation and mitigation as less of a dilemma, but be more complementary to one another, right? But think one reason why we think the investment opportunity set in companies that provide climate adaptation solutions is for the following three reasons. One is that there is already a paradigm shift in climate disasters. So to Ravi's point, this is not some far away future in 2050 or 2100, it's actually very present today. And let me share some statistics to illustrate that. If you look at the US billion dollar climate disasters, if you compare the period between 1980 to 2000, and 2001 to 2024, we have seen a tripling in the frequency of these disasters. We have seen a quadrupling of the economic damages brought by these disasters. So that paradigm shift is already happening today. Under what is some might consider—what climate experts might consider, fairly mild global warming conditions already. So imagine what's going to happen when we see global warming accelerating. So the paradigm shift that we're seeing is happening today, and it's going to get worse in the future. So that's the first reason why we think that demand for climate adaptation solution is going to accelerate. The second is that it is not a niche opportunity set. If anything, our research shows that the enterprise value of a fairly select set of climate adaptation solutions. It's about 2 trillion today, and it's going to grow to 9 trillion in the future. So it is enormous, and I think it's something that even large institutional investors have to ascertain whether—how to deploy capital potentially in this theme. And beyond the enormity of that of the opportunity set is also that a substantial proportion of that revenue acceleration in these solutions is unfactored by most investment analysts. In our estimates, we think, compared to what the street is estimating, about 61 percent upside as a result of what we call the climate elasticity of demand, that is going to expand and amplify the revenue pools of companies that are providers of these climate adaptation solutions. So it's not just the size of the investment opportunity set, but it's the fact that a large proportion of that value is not factored in by business. It's not factored in by investors. So the second reason why we think this is an emerging investment theme. The third reason, is that a lot of these companies are actually profitable. And I say this because when we put together a basket of about 107 companies with more than 50 percent revenue exposure to climate adaptation solutions, we found that over the last 20 years, when compared to a globally diversified equity benchmark, it

outperformed that benchmark by about 2 percent per annum over the last 20 years. That is astounding. It's astounding because it is a basket that doesn't have your magnificent seven companies, and yet they were able to outperform that globally diversified benchmark. And a lot of these companies are what we call very old economy boring, some of the boring companies. They are your building materials companies that are involved in producing fire resistant construction materials, the impact resistant windows, right? But these are companies that have steady customer base and their revenue terms are going to just accelerate with climate change in the future. So those are the three reasons why I think we are interested in this theme, right? What we think is an emerging and growing theme, right? And I think it's something that no investors can ignore.

Ishika Mookerjee 24:57

Right. You mentioned 9 trillion and building materials. So what are you investing in today, in the climate adaptation? Are you starting to see returns already?

Wong De Rui 25:05

Yeah. So getting building materials is just one of them, and to be specific, it would be flood resilient building materials, fire resistant building materials, but also insurance is going to be in demand, water management, and also weather intelligence analytics, commercial and residential cooling solutions as well. So there is actually quite a broad spectrum of climate adaptation solutions that is going to be in demand. Well, they are already in demand today, but I am going to say—an acceleration in demand that I think we might be underestimating. And I will say this, oftentimes when we think about investment themes in climate change, we are—the refrain is always very uncertain. And I think a lot of us who have been investing in the climate mitigation space, in a way, have been whipsawed by the policy volatility in this space. Now it's not to say that policy doesn't play a role in the climate adaptation theme, but I think what's helpful for the climate adaptation theme is that rather than being very heavily reliant on the laws of the land, it is actually very much reliant on the laws of physics. And I say this because Mother Nature has no political affiliation, right? If anything, physical risk, which is going to be a demand driver for climate adaptation solutions, is going to increase because of the amount or the stock of cumulative greenhouse gas emissions in our atmosphere, and as a result, this is going to lead to a rise in physical risk. This is not a guesstimate, but this is based on the law of physics, right? So there's actually a lot more certainty in this than we actually give this space a lot of credit for.

Ravi Menon 26:58

If I could just elaborate. I totally agree with that, that mitigation efforts depend in part on politics and economics, policies, carbon pricing and so on. Adaptation doesn't depend on those things. Adaptation is driven by nature, and nature has its own timeline. We are contributing to that timeline, and so these are areas where there's clearly going to be great demand. So I think cooling solutions and climate resilient materials are going to be in great demand. One area that's going to be also in demand is climate resilient crops, because agriculture is going to be so severely affected by climate change, so you need climate

resilient crops. The only thing I would say, as if this is going to solve—it's not going to solve the problem, right? Having investment opportunities and adaptation is different from adaptation financing to solve the problem, because there are many adaptation projects which are not bankable in the commercial sense. So you could have a lot of money going into investments which address pockets of these adaptation needs. But in—say, even for agriculture, the benefits accrued to many multiple parties, it is difficult for the financier to accrue—to internalize those, those benefits, and so the project doesn't get done, right? So this is something that we need to address. World Resources Institute has done a study where dollar investment in adaptation can yield up to $10 in benefits. Now the benefits are economic, social, environmental benefits, they have costed them, but unless you internalize the benefits, it's very difficult for private capital to come in, and that's why private capital doesn't come in for many adaptation projects, because the revenue streams are dispersed. And so we got to crack that even as we develop in a solutions—we need to crack the financing of adaptation quite differently.

Ishika Mookerjee 29:06

And blended finance, of course, comes up whenever you're talking about crowding in public and private capital.

Ravi Menon 29:11

I think blended finance and carbon credits would be two key levers to unlock private capital for this.

Ishika Mookerjee 29:11

Yeah. Tulsi, I wonder if blended finance is something you're looking at for getting into the adaptation suite?

Tulsi Naidu 29:24

Before we—I was going to actually supplement, so I agree completely with Ravi's comments around adaptation and thinking about risk is highly local. And I think to supplement on—the key peril that I think—I mean, Ravi noted India as being an area where people are thinking about heat, but I think the juxtaposition of heat and water and the scarcity of water is something that I don't think has wide enough attention just—flood gets a lot of attention, and particularly in Southeast Asia, but I think on a localized basis, in the next 10 years, in the next 15 years, the combination of water and heat is going to be a real topic, and I think that will drive demand. And so I would also say, just to add to the list on energy efficient materials, all of that agree, I would also add desalination, water management. That's a whole harvesting—that whole area, I think, is another theme that will, will and should get attention.

Ishika Mookerjee 30:32

So is that a theme that you're looking at exploring?

Tulsi Naidu 30:36

Look from my perspective, right? We do three things. We're an insurer. So we take risk. As I said to you earlier, we're now much more at the front end of that, trying to advise clients, trying to create consciousness around risk. As an advisory business—because we think—to go back to the 1 in 10 ratio that was just talking about. We think this is the best business case any company could have. It's actually—there might be more prohibitive, large scale projects to be undertaken, but there's plenty of small builds and small development that actually is helpful. So that's an area we're focused on. And then, last but not least, we're clearly a large investor, and through our investment portfolio, we're thinking hard about how we invest for impact. So those are sort of three topics. I've forgotten where your question was, but I'm sure we can—

Ishika Mookerjee 31:29

I just want to push you a bit more on the investment side of it. So are you getting into any climate adaptation related investments at this point?

Tulsi Naidu 31:36

In our investment portfolio? So we obviously have a combination of—so both through two lenses, are separated both as sort of individual—we are primarily and we're primarily an allocator. And so the businesses that we work with will have will pick up the themes and move on them. In our own portfolios we're focused on, when you say adaptation, we're focused on thinking about—where we have a reasonable size position in green bonds? We have a reasonable sized position around impact. So you know those would include climate adaptation and investments within them.

Ishika Mookerjee 32:15

Kyungsun, have you started thinking about investing in the adaptation theme yet? What are the sectors that you're exploring.

Kyungsun Chung 32:22

I mean, we are very interested in this, but so far, most of the products that is more available for insurance businesses because of asset liability management, it's more of a green bond. It's more of a general concept,

not just focusing on the climate adaptation. But something we are hearing these days is that now the Korean governments, because of their like, the long term sort of the AI strategy, and then also renewable energy infrastructure for those AI. So they're coming up with very specific bonds targeting for this kind of infrastructure, and part of them will be related to the climate adaptation. So if the government can create this kind of sort of the products, the structured products, and it's going to be very easy for us to invest into the climate adaptation. I think this is going back to what Ravi mentioned. If it's just like plain private product, it's going to be difficult for us, the private investor, to go into it. But if it's this kind of public–private partnership kind of situation, then it's going to be much more easier.

Ishika Mookerjee 33:23

Okay, so how would that product work?

Kyungsun Chung 33:25

So the government will come up with the sort of plan for the entire infrastructure, from the renewable energy plans, to the electricity lines, to sort of the water infrastructure going around and all that. So they have planned for that. And then they are issuing the municipal bonds specifically targeting, like, doing this kind of projects and so. And to encourage the—this is more for Korean finance institutions, but to encourage Korean insurance companies to—comes into this, they created the bond that is more suitable for insurance company, like meaning the longer durations and all that. So, I mean, I know that the government has been talking to several finance institutions in Korea to come up with sort of tailored investment products and opportunity for the different appetites and different sort of, the duration they're looking for.

Ishika Mookerjee 34:19

I see, okay, yeah. Speaking of the government, right, what kind of incentives would you want to look for from the government to to be more interested in adaptation projects?

Kyungsun Chung 34:32

I guess this is coming from very local insurance—local and domestic insurance business, and I believe the global insurance businesses are spearheading the sort of the creating the data analysis on like, the risk analysis of the climate disaster, etc. But for local businesses like us, we need to rely on the government data to come up with the insurance products, and they will be providing the guidelines on like, how much of a risk we can write off, etc. So I think the government, what they can do is sort of the creating the standard on how we are going to sort of aggregate the data on the climate change we are having, and how, like certain kind of climate adaptation infrastructure is, what kind of role they're having, how they're going to mitigate the risk on it. So once we have that kind of consensus, then we'll be able to develop the

products like the what is it? The climate index—the insurance, like I mentioned before, if the government decided to sort of put a cap on the pricing, then it's going to be much harder for the private insurance players to move in.

Ishika Mookerjee 35:37

Understood. Tulsi, can I come back to you and ask you the same question on incentives?

Tulsi Naidu 35:41

So I think, the area that I would probably focus on is SME right? Because I think, I think, I hope that, particularly in the larger corporate space, this will become—the idea of focusing in on adaptation will become a standard. It has got to, I mean, the whether it's nature, whether it's physics, whether it's the real consequences of starting to see loss or the real consequences of the cost of insurance, if you don't have proper—so I think that large corporate space will be more sophisticated in its approach. I think where I'd like to see governments come in is in the smaller and medium enterprise space, where there's lower levels of awareness, there's lower ability to—and so creating sort of incentives in that area to think about adaptation. That would be a topic that I would, I would suggest needs some attention.

Ishika Mookerjee 36:36

Okay, De Rui what would you want to see from governments to be able to come into more adaptation projects?

Wong De Rui 36:44

Yeah, I think it really requires almost an ecosystem building across governments, across corporates and insurers. And I think there can be win–win solutions. I think first, I think governments need to have a national adaptation plan. I think it's important because there's only so much that a corporate, or a building owner can do at a very micro level, because you could have a very well protected building that's dry and free and resilient to floods, but if locally, in that area, everywhere else is flooded, it also brings to the question, how much value have you really preserved as well? So I think it is not just one single stakeholder's responsibility, but how do we get governments to do it nationally, so that it then complements and sets the foundation for how building owners or hard asset owners can also develop or implement their resilience measures. And for insurers, I think being able to work together with their policyholders to say, look, how can we find a win-win solution where they put in place the right adaptation and resilience measures, such as it reduces their risk to the climate hazard, which in turn reduces the claims ratio on the policy right? I think that's a win–win solution, where you could potentially have premium reduction alongside claims reduction. And it is something that is not theoretical. We have seen that in Hong Kong. So this case study where Link Asset Management at a property company in Hong Kong

had worked together with their insurance broker, AXA and Marsh, to be able to work out a way to recognize their adaptation resilience measures that resulted in them having a better than industry wide reduction in insurance premiums, and at the same time to be able to negotiate for a tenor of insurance that is double the average. So typically, insurance policies are done on an annual rolling basis of renewable. In that situation, with Link be able to negotiate for a two year contract, right, which is not the standard norm in the industry. But that is a case of how, if you have the right ecosystem set up in place, governments, the corporates and insurance kind of working in tandem, right, you can then catalyze and incentivize a more proactive execution and implementation of climate adaptation resilience measures.

Ravi Menon 39:29

Sorry, go ahead, please.

Tulsi Naidu 39:31

So I was going to make two comments. One, I come back to this point that I don't think the value of understanding localized risk is well enough understood by—so you know, for the investors in the room, for the lenders in the room, go talk to your go talk to the people you're lending, to the new projects being set up, and say, "are you doing the kind of risk assessment?" We had a client in Germany who worked with our risk engineers and did risk assessment last year, when the floods went down, they were spared $100 million loss, right? That's the scale of this. Is why I kind of think that one in 10 ratio, or my 2 percent of CapEx budget, is worth 50 percent on loss cost. These numbers are sort of—and it's to come back to De Rui's point—it's about all of us sharing information. It's about sort of, the understanding of where the information sits. As you know, there's deep modeling and climate risk in the reinsurers. People like us have an understanding of loss costs. Have an understanding of how risk translates into loss, and therefore the benefits of adaptation, or very practically, being able to think about adaptation over different time horizons. And the more we're able to engage in dialogue, the more everybody has an understanding of what's easily accessible. I think you start to move the needle on this. And you know, whether it's, you know, we've got governments reaching out. So for instance, we've just done some work, both in Kuala Lumpur, but also in Australia and in Madrid, where governments have asked us to look at the school system and the exposure to heat, right? So that's implications and attainment. That's implications on working hours. And if you know that, that's the kind of work you can do, and it's relatively straightforward to do, your ability to build a plan. I have a slight challenge with—the thing with national plans is they end up focusing in on aggregate, big perils. And actually some of this is pretty local, pretty atomized and—

Kyungsun Chung 41:26

You need municipal plans.

Tulsi Naidu 41:41

You need municipal plans. You need local plans. It's what's over the other side of the hill, to use the phrase. So I just think the ecosystem needs to work harder on this, and actually not purely rely on single government interventions. Governments are an incredibly important part of this, but the ecosystem needs to work.

Wong De Rui 41:59

Ishika, I was going to build on that point—is that, I think a lot of the tenor of our discussions has been very much focused on very risk management perspective—and yes, don't get me wrong, that's important, but I think it's also helpful for us to reframe that conversation for corporates in that actually investing in climate adaptation and resilience measures is actually also about secure securing competitive advantage. And what do I mean by this? Right? Is—I'm reminded of historical analog of the Kitty Hawk moment, right? The Kitty Hawk moment is in early 1900s when the Wright Brothers first took flight, right? The first man aircraft flight, right? But for good quarter of a century in that inaugural flight, flights, or aviation, could only happen on clear skies, good weather conditions, in daylight, right? But a quarter of a century later, you had what I would call the Doolittle moment, which is less well known. The Doolittle moment was the first time when a World War One veteran pilot decided to fly completely blind, so he blacked out all the windows and flew purely based on instrumentation, like flight instrumentation, right. And that really opened up the door to the modern aviation that we know today, right? Because you could then fly 24/7, night or day. You could fly under all weather conditions, right? Doesn't have a clear weather. So bringing that historical analog to today—imagine if you are a corporate that, despite hurricanes, wildfires, flooding, heat stress, extreme temperatures, is able to continue providing your goods and services to your customers. It not only preserves your existing business, but if you're able to continue doing that whilst your peers can't, it also gives you an opportunity to capture market share. So what you're doing here is then transforming what seems to be permanent disadvantage into something that could be a strategic continuing advantage. And I think if we reframe that, then adaptation results less of a cost, but more of an investment in gaining a strategic edge over your competitors.

Ishika Mookerjee 44:35

Yeah, that's a really good point. I just want to end with asking Ravi a couple of questions. So of course, under the FAST-P Initiative, there's been the blended finance fund first close 510 million. Is that going to go towards adaptation investments, or is Singapore going to come up with new vehicles to focus on adaptation?

Ravi Menon 44:57

No. FAST-P is meant really for mitigation efforts. I think we need to stay focused on the investment team. We've got three funds, and so it's quite even within the mitigation space it doesn't cover all, because we need to make sure that we understand the area we're working on. So coal phase out is a key priority, energy transition, and then green infrastructure investment, circular economy, and then industrial transformation for the hard to abate sectors. We have not even touched nature based solutions.

Adaptation will require blended finance approaches, in my view, and carbon credits, because the two problems in adaptation finance, one is the revenue stream is not strong enough, not all adaptation projects would generate a revenue stream that can be tapped on by private financiers. So that's one problem. Second, the risk problem. We've not talked very much—there are risks in adaptation projects. What if the project doesn't work? And many examples, flood walls don't work, the measures put in place don't work. So who bears that risk? I think this is where blended finance can come in. The governments in the world do not have enough money to finance all the necessary adaptation. The estimates are like $850 billion per year. Now that's not, you know not. That's not forthcoming. So you need to crowd in private and philanthropic capital and use public capital very judiciously for technical risk assessments that are localized to the context, and that I think MD, multilateral development banks and governments are well placed to do, and that gives credibility. They can take first loss risk on the project if the project doesn't succeed, and then they have to work to crowd in private and public and philanthropic capital. Philanthropic capital is keen to come in, but less than 1 percent of philanthropic capital globally goes to these projects, partly because they need a pipeline of projects which are investable or donatable, right with clear KPIs. How is the community better off now? What have you achieved? So I think we need to these are things that governments can work with the private sector to develop metrics. I'll close off with the things that governments can do. One is to provide data. I think to contextualize the macro level global data that the IPCC and others put out to regional and country contexts. And here the Singapore's Third National Climate Change study, the V3 work. It's actually available online. It's a portal. It has street level implications of heat, water, flood risk and so on. So that is a good framework for corporates. Then to do planning. The second thing that governments can do is to make climate risk disclosures mandatory. Right? If businesses have to disclose their climate risks, then they then they'll go and do their homework in understanding those risks. And this is what the ISSB framework and other sustainability reporting frameworks do, because stakeholders, investors, suppliers, customers, need to know the risks they're facing. So information disclosures and then financing, and then, I think, to invest in technologies that have a direct bearing on the climate risks faced in your country, right? I think in this part of the world, cooling solutions. And so the our national research, R&D programs, we are now taking a big focus, better, bigger focus on adaptation solutions as an area of research. And one of the areas we need to look at is cooling solutions that can be localized, that do not depend on air conditioning. So these are specific things that government money can go in, but in all cases, there's nothing that governments can do on their own without partnership with public the private sector and the philanthropic sector and the academic sector.

Ishika Mookerjee 48:59

Right. Okay, yep, so wrapping up information disclosures, financing and technologies, I guess that's a great way to wrap up this discussion. That's all the time we have, unfortunately. Please join me in giving them a big round of applause. Thank you very much for coming on stage today, and thank you all for sitting through the discussion. [Applause]