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My name is Rashmin Ganesekar. I'm a senior disastrous management specialist at the World Bank. And I lead two different global programs on one on disaster risk analytics and another one related to disastrous financing and resilience at the global capacity for disaster action and recovery.

One of the most frustrating things that I normally get is when questions related to disaster risk assessments, how do you actually scope a risk assessment? How much does it actually cost? Who are the expertise?

How do you actually interpret the results? A lot of the time when we are working with stakeholders and decision makers, these are a constant questions that we actually have. But up till now we have not had some definitive answers, but I'm so proud to say now we do.

So this particular session is really going to talk about some of those different aspects. One of the key things that we actually are going to talk about is a particular publication that has been led by Arup, which kind of really guides all kind of risk practitioners in relation to some of the decisions that have been able to make in terms of decision of stakeholders, in terms of what it actually means to conduct a risk assessment.

And that's where kind of this particular session on how help or how do you actually price a risk assessment kind of really came about. One of the key things about this is to also look at the particular framework.

It actually provides all the different stakeholders that we actually are talking about a particularly universal language, because I'm sure you know, depending on your particular needs, it's very, very different.

But what happens is that you might scope a risk assessment for your particular needs, but then it's actually being used by some other group for completely different things. So if we don't actually outline what that is, and if we don't actually specify, okay, what it's actually being used for, et cetera, then we are missing a big trick.

One of the key things that we actually are going to be able to do is also talk about the consistency and the transparency of that particular thing. And I'm so glad my colleagues who can actually introduce themselves are here because we'll go through some of the key studies.

And but one of the key things is that I don't want this to be a one way street. It should not be saying, Oh, here's another great, a great risk assessment and evaluation. What we would like to see is how this type of risk assessment could be used by you guys as risk practitioners to take it forward, particularly with the context of the public sector.

Right. And that's where we want to make this a much more interactive exercise. On that note, I will hand over to my colleagues.

Good morning everyone, it's very nice to meet you. My name is Daniela Sulwara and I work at a company called Arabware Global Engineering Firm. Go ahead, next slide. So I want to first frame what is the problem or what are we trying to resolve today.

So we know that there's increased need to achieve resilience in developed environments. And we have a tool which is a risk assessment to do so. But we know that doing that is highly technical and sometimes we find that we're not talking the same language and that really causes just misalignments and unmet expectations from people who are asking for a risk assessment, people who are providing the risk assessments and everywhere in between.

Because as Rashmin said, there's really no framework that differentiates between the different levels of a risk assessment, how to conduct one, what are minimum requirements. And so really that's why we're trying to address.

So we're proposing kind of this framework to allow us to better undertake this. Now I want to frame this in the context of the resilience journey. So we all embark on a resilience journey for our clients, our borrowers, any other entity that we're serving.

And really everything stems from decision makers across different sectors, from different levels, from country level to local level. They're just trying really to provide essential services to the population, whether it be you're building a hospital, schools, infrastructure, you're building your own organization, you can be from the private sector.

And so it is through those services that resilience should be delivered or built. And so to do that, and again I'm showing at the top there, kind of there are different also scales at which you can do that.

So we can assess this at a global scale, portfolio level to very specific detail level as well. And to do that again, if we're talking about the risk assessment, there is a whole many of options to do that.

There are different approaches that are better suited to address different needs, different questions that need to be answered. So what we're proposing is a taxonomy. So a taxonomy really is going to provide this universal language for everyone to understand what are we talking about.

So you can better communicate and align expectations. So with that, I'm gonna hand it over to James for a little ice breaker.

Okay, so my name's James Daniel. I work with Rushmin at GFDRR. And I work on a lot of the risk assessments that we're gonna be talking about. And so, yeah, we'd like to do a quick icebreaker. So if you can get your phones out and either use the QR code there or get onto Menti.

So I'll leave that up for a second. Thank you. Okay, so, let's see if this works. Perfect. So, on your screen you'll see five options. Now you'll need to press skip until you find the option that best fits you.

Now quite a few people in the room obviously have multiple roles. So some work in government, but also academics. Or some are consultants, but they also work in the public sector. But you need, so if you have got more than one role, then click across and choose the ones.

And skip until the end. If you've only got one role, there should only be one that shows up. And so then at the end, then press enter and we're already getting some results coming in. So, we've got academics coming in, obviously.

Here, this is a low risk assessment expertise. And then on this side, it's in terms of the importance of assessing risk for yourself. So, obviously not everybody uses risk assessments as well. And so it's important to obviously see who's in the room and if we all are speaking the same language.

It's interesting that we're grouping together. I wasn't expecting that as much, but it's working for everybody. Very good. Interesting.

The idea is that we just get to know each other. So again, and also that you get familiar with menzies, because we will use it throughout the session as well.

Exactly. All right, so everybody had a chance to do that? Excellent. Very good. Okay, and what do you use a risk assessment for? So in your work, what do you use it for? Is it more to inform investment decisions or for due diligence or is it just awareness and screening?

So we just like to get to know, you know, why do you use a risk assessment if you do use risk assessments? Interesting.

Okay, this is, I like this because this is showing exactly what we're talking about. There are so many different needs and users and we all need to use a risk assessment, but it's not the same for each case.

So we really need to identify what are the different needs, the different users, and then how we can make sure that everyone is getting what they need out of it.

Okay, perfect, all right, so we'll just flip across. So, we're now going to go into a few case studies. And so you'll need to use Menti again, so keep your phones out. But let's start exploring the different needs for a risk assessment and how this shapes how we build one and also what case studies that we're going to actually be doing.

So we want to illustrate why a framework is actually important in doing this and what are the key tools within it and what are the minimums to make resilience related decisions or take those actions with sufficient confidence.

Now, here we see the risk class taxonomy from basic hazard screening through to advanced risk modeling. But also then what are the applications, what's the level of effort, what accuracy and confidence levels.

So we're gonna take you through a few different case studies where we'll put you in the place of somebody and then we can see how this framework is useful and we want to get your feedback as well. So there'll be, later on as well, there'll be the chance for feedback.

But we want to take you through a couple of these case studies. So case study number one. So imagine that you're a social infrastructure and health specialist at a multilateral development bank. So essentially an international institution that informs socioeconomic development.

So I'm leading an operation to build a new level one hospital in a mid -sized town in an island nation in the Pacific. Could be any island nation. And during due diligence, a screening analysis flagged flooding risk as a concern.

So it's a single building and obviously flooding risk is an issue. And I need to assess this flooding risk for a new hospital so that I can achieve a resilient design to protect and ensure continuous operation of this essential facility.

So what would you do? And so we're now going to flip back to Menti. And so what type of hazard data do you think that you would need in this case? So putting yourself in the shoes of that social infrastructure health specialist for that hospital.

Exactly. A lot of site -specific data. Yep. Very, very good. So absolutely right. City scale maps could inform things as well, but site -specific data is probably one of the most useful tools. What type of exposure and vulnerability data do you think that you would need for that hospital?

Would you need global gridded exposure data? So big pixels? Okay. So of course it's a single building. So as you can imagine, we probably need that type. Of course you could, again, argue that it could be close to city -level grouped assets as well.

But for a single asset, of course, you really want that sort of specificity. What risk metrics do you need? So exposure, qualitative risk ratings. Do you think you need quantitative ranges? So magnitude of loss or downtime affect the people or quantitative probabilistic estimates of loss?

Now remember that the metrics really should be aimed at what is the question you're trying to answer. So which one of these metrics could give you the answers that you're looking for?

Thank you.

So, in this case, of course, there are a few different options as well, so it's never completely clear cut. From our side, we saw more sort of on the quantitative probabilistic estimates, but again, the qualitative ranges could be sort of the quantitative ranges could also be.

And what type of resilience measures do you expect to be able to obtain? So, high -level strategies or prioritization of actions, types of potential interventions, or planning design parameters with costs.

So again, putting yourself in those shoes again for that particular task of a flood assessment for a single hospital, exactly, so in terms of planning and design parameters. So hopefully you see how that's useful, and we'll now take you through another case study.

So, I think Danielle is going to take you through the next one, but I'll just go through as well. So here we see the case study, and I suppose, Danielle, do you want to take them through essentially where that sits?

Okay, so this is supposed to be kind of the answer to the question. So this is your hospital. And really because you're designing a single asset at a very detailed level, it's a critical facility. You're trying to inform design.

So that's a very specific, that's tied to the engineering of it. You really are going to look for an advanced risk modeling approach. And so the table on the left that you see there, it kind of just summarizes high level concepts of what should be the minimum requirements that you're looking for in terms of what's the application.

So yes, I'm informing really high stakes decisions because I'm designing a hospital. If I wanted to implement receiving space design, then this is the application. Now in terms of the assessment approach and resolution, then again, because it's a hospital, we may want to go into the details of not only the building but the components inside and the contents.

So where am I putting the generators for the backup power of the hospital? Are there in the basement that could be flooded or in the roof if I'm exposed to wind? So that's where you need to go into the details.

In terms of the level of accuracy and confidence level, this is where I want to have the highest level possible. And of course, this is commensurate with the highest level of effort as well in the risk assessments.

But again, in the end, the outputs, because they're quantitative metrics, they will allow me to get to those answers of costing the measures, costing the risk, what are my losses, my damages, my disruption times.

And so this is kind of what it looks like conceptually to do that risk assessment where, again, we're using the highest resolution of hazard data possible at the neighborhood level, at my site level.

I'm using the most detailed level of exposure again where my components and then vulnerabilities same. So I'm really assessing or quantifying how my components could be damaged. So this is one end of the spectrum.

This is one specific use case.

So we'll now take you through a different case study.

Okay now let's try a different one. Go ahead. So now imagine you're a finance specialist in the Ministry of Finance of Chile and what you're doing is you're developing a new overarching just fiscal plan for the country.

We know that Chile is exposed to multiple hazards, both your physical and hetero - monetological hazards including earthquakes, landslides, bushfires and others and you really need to assess risk from all of these hazards so that you can develop a strategy to manage and finance lines of priorities and actions for risk prevention, mitigation, risk transfer, preparedness and response.

So this is an overarching ask. Again what would you do? So let's walk through the same set of questions that we had before. So let's start with thinking about the hazard as well. Okay so again remember you are doing this for for Chile.

So again what scale are you looking for? In this case, yes. Then of course you're going to look at the country specific maps. In this case for example if even if you had data it's not practical to use the site specific data.

So again you're doing a one neighborhood you're covering the whole country. So this is where again you need to balance their trade -offs for everything. So because you're informing this country level strategy it's okay to use country level even global scale to inform certain things.

Now let's think about again exposure of vulnerability. So here again it's okay to use global created aggregate typology vulnerability, country level, city level or asset specific. So remember because you are the finance specialist you're trying to assess strategy for multiple sectors.

So this because it's multi -hazard as well you could be informing infrastructure, cities, built environment, population, agriculture. So again yes that would be kind of the level of resolution of data that you would typically use.

Next one. Now let's think about same the metrics. So now again you're designing this strategy. One metrics would be most useful. So again ranging from just exposure yes or no all the way to quantitative or in the middle it could be qualitative, semi quantitative, different ratings could be used.

So again yes you could do a little bit more quantitative but even because this is high level you could do qualitative ratings. If you're just trying to understand what are the you know the early flags, the things the sectors you need to prioritize then qualitative ratings could also work in this case.

Next one. And in terms of resilience measures or recommendations again do you are you looking for high level strategies? Do you still want to prioritize actions? Maybe find some potential interventions or planning and design.

So again because we're at the broader end of the spectrum we may not get to design parameters yet. We're not designing anything specific. We're trying to understand priorities. So maybe yeah the first couple of ones could be most applicable.

And so now let's see kind of the solution to this case as well. So this one is a bit different. So this one you could just do a basic risk screening. So with this again because you're doing this could be used as a preliminary risk assessments for screening, low stakes decisions.

In case in this case the global hazard maps for example could be used or country level of course. In terms of exposure because you have a country you can get into each individual building. So you can just use a proxy, use aggregation of state level, city level, just assess the networks of buildings, of infrastructure networks.

Of course here the accuracy confidence level would be a little bit lower than the level of effort could also be similar. And then you would also obtain qualitative risk ratings. But that will still allow you to identify priorities, maybe disaggregate results by territory, by sector, by hazard.

Because again remember that you're trying to just develop an overarching strategy. If this is going to this is going to give you an overview of the situation in the country. Okay hand over to James.

So now case study three. So imagine that you're a re-insurance manager of an insurance company. So we've got a number of people in insurance here at the event. And so I'm an officer managing the portfolio of existing public schools in the Philippines.

So seismic risk was flagged as one of the top concerns for the portfolio. I need to assess the seismic risk so that I can better manage the portfolio, set premiums, prioritize actions and incentive programs to manage these risks.

So what would you do? So case study three. So what type of hazard data do you think that you would need in this case in terms of insurance? City scale maps. So again, for Philippines, you've got public schools.

So again, site-specific data is often quite useful as well. It's difficult as well quite often for portfolios. You often don't have data in all different types of situations. Or the portfolio might be too big to get site-specific data.

You may be able to infer things. But it could be that you've only got city scale maps and data. And so it is often quite difficult in these cases. What type of exposure data would you need? So would global exposure data suffice for those schools?

Or do you think that you may need asset-specific data or city-level grouped assets? Again, the public schools, often you can get locations, at least xy locations, through either the education management services, websites, and things like this.

So often you do know where these are located. Again, those city-level grouped assets are then often the only way that you can do it in certain countries. So again, for the Philippines, you'd have to check these things.

And so both of the two can often be the case. Depends on the country, depends on the context. In this case, probably we could get asset-specific data. What risk metrics do you think you would need? Again, for that insurance work, what would just general exposure suffice?

Just knowing, is the exposure there? No, exactly. You need quantitative ranges. You need probabilistic estimates. You need, essentially, those economic estimates to be able to get that premium. And that's the most important thing.

So that quantitative probabilistic estimate is what you would need in this case. There are a number of different models, obviously, that insurance companies use to do this, to get their premiums set.

And obviously, it's often quite difficult. But in this case, that would be what you would need. And what type of resilience measures do you think you would be able to obtain through this? Would you just be able to get high -level strategies through this quantitative estimate?

Or would you be able to prioritise actions, use potential interventions? Or would you be able to have the planning and design parameters with the costs and benefits? In my eyes, both of the two at the end, essentially, you would be able to do through it.

And again, I think in this case, it really does depend. So we'll zoom back to the answer. So this is enhanced risk assessment class two. It's not as detailed as that single class three that you saw in the first example, where you're really looking at every single component of the building.

It's a group of buildings with a lot of unknowns. So the application is really for risk assessment for material decisions. Now, building specific risk assessment, you can definitely do, but you've got to make inferences, you've got probabilistic distributions on certain parameters of that building.

So we'd call this accuracy and confidence level medium. And the level of effort is medium to high. I mean, you can create a cap model very quickly within a day, but it doesn't mean it's going to be really, really good.

And so in this case, then you do need to put in quite a lot of effort. And depending on, again, the building vulnerability types, depending on the data there that we could draw on, then you get a certain detailed values.

For Philippines, there has been a lot of previous assessments done. And so in these cases, you can draw on these to create the vulnerability functions, but it's not asset specific. Generally, it's a group of assets.

And so it comes into this class too. Okay, so I'll hand it back to Danielle.

So thanks everyone for being with us for those exercises. The ideas that we wanted to really get you thinking of, what would you do? Now, because we know it's not always black and white, that is why we're trying to introduce the taxonomy.

So I'm going to share a little bit of that. I'm not gonna go into the details, but the taxonomy has been published. You can all download it, read it in detail. This is the publication. Please scan the QR code.

You can access the document online. This is documents that we developed in the story of how I was born. So where I work in our company, we just were finding that it was hard to communicate with clients, with people in other teams in our same firm, trying to understand what someone wanted when they asked for a risk assessment.

And so we started developing this taxonomy just for internal purposes. And so we built this small table just for ourselves to understand, okay, this is what I would call a level one or a class one, two, three, or four.

But then we realized that it was really useful in talking to people. And so that's when we decided to share it with a wider audience. We published it with the GFDR and Rashmin and James. So this is why we're presenting to you today.

Next slide. Yeah, a little bit. This is a simplified version of the taxonomy. So remember that we saw at the beginning the same table that had just question marks in the middle. This is now just a quick summary of what it means.

So we know we have four levels, starting from a class zero to a class three. We also have a class four that could be just, it's very detailed for specific hazards, like seismic modeling, you could do very specific modeling.

But these are kind of the classes that we've defined. So if you look at the columns, the first one here is the class zero. We didn't do a case study for that one, but that one is really just a basic hazard screening or just an exposure assessment.

So that's technically not a risk assessment, but sometimes you need to do it first to screen out things. So if you know you're not, you know, you're up in the mountains, you're not exposed to coastal flooding, you can screen that out.

If you're not near a volcano, you can screen that out. So sometimes you need to do that. Then as you go, of course, to the right, you increase the complexity level, the level of effort that you need to, and then that's where we go to the class one, which is the second case that I presented today.

Class two, which is the last one that we just saw, and class three, which was the first one, the hospital. So those were the first, the five kind of attributes that we discussed at the beginning. So what is it applicable to?

So again, if you're designing the hospital, it's not enough to do a hazard screening, right? If you're designing a hospital, you can't just know, yes or no, am I exposed? You need to do something more, and vice versa.

Same with the assessment approach. So what's the approach that I'm using for hazard, vulnerability, and exposure? What's the confidence level that I'm gonna get out of it? What's the level of effort that I need?

So this is where it's critical for us and everyone that's writing down an RFP in terms of reference. If you're asking for something, know that that's the level of effort that's required, and what are the outputs that you can get.

Next slide. I'm gonna flash really quick the full taxonomy, because this is the level of detail that we have, but I'm not gonna explain this. You can read it yourselves. But as you'll see, we have a bunch more attributes.

So this is really supposed to help you out in saying, what's the scale? How many buildings could apply this to? What am I looking for in the hazard, exposure, the consequence, the rest metrics, the application, again?

So these are the things that are a lot more detailed. One other thing that I wanted to mention is that we have this taxonomy that's hazard agnostic. So again, this could apply to any hazard. But as an example, we also, in the poll location, you'll see that we have the same version of the table for core hazards.

So we did the same for earthquakes, floods, winds, and extreme heat. So it's basically, you're gonna see just a small nuances in what it means in terms of how do you quantify hazard for heat, you're gonna see those details there.

And we also had, we have an overlay of climate change. So for hydrometallurgical hazards, how do you consider climate change in the hazard modeling? So it's a similar table for climate change that is supposed to work together as a modifier of the hazard.

And if you go to the next slide, remember that we were asking you about the measures. So again, why do you do our risk assessments? It's to inform decisions. And those decisions are supposed to be resilience measures, recommendations.

So we have the similar resilience class taxonomy. So it's a simplified table as well, where again, we're saying, if you're looking to get measures that are just conceptual level, we call them a class zero.

If you're looking for schematic measures, class two, or implementable kind of ready to implement measures, that's more for class three. So similar to the risk assessment taxonomy, this one just tells you what level of maturity could you expect from these measures?

So are you just doing for awareness and scoping at the class zero, or are you ready to do final costings and come just build out the measures? Same, what are the actions or the level of detail that you can get out of it?

And note that we've highlighted kind of, you can propose both physical measures, it could be structural measures, for example, retrofit, enhance the design, build a levy, but also operational measures.

So again, if it's just planning, organizational measures as well. You will also have the confidence level, and we have the link to the risk class. So depending on what risk assessment you did, then you should be able to map to this or that.

Again, if you did a class zero risk assessment, you cannot get to an implementable measure, and the other way around. And one thing that is very important with measures is of course we also want to quantify the cost and benefits so that we know how applicable it is.

So again, there are different consideration of how the cost benefit would be applicable to these measures and the metrics that we get out of it. So with this, I invite you to take a look at the documents.

You'll find a little bit more detail of these taxonomies of these tables. And one other thing, if you go to the next slide, that we have in the documents is, and Rashmin alluded to this. So again, when should we use this taxonomy and how can we use it?

So for, again, if you're a user of risk information, including you could be a private organization, public government organization, and MDB. Again, this is a really useful reference of how to, where to include risk assessments in the project cycle in your organization.

If you're writing a request for proposals, if you're writing terms of reference, this could be really helpful. And also for evaluating proposals to compare, making sure that proposals are meeting the minimum requirements.

If you're a risk practitioner and offer a vendor of hazard data, for example, you can also use it simply to describe your offering, to communicate with your clients, your counterparts. And also, of course, use it as a tool for setting expectations of the work that you're going to deliver.

So hopefully this is a good translation tool for both parties. And the last thing is that, so the exercise that we did today of the use cases and personas, we also have a section called user personas in the taxonomy, where we highlighted just eight.

So today we went through three, we have eight in total, but there's, of course, a lot more. So you'll see the resilience journey for each one of these user personas and use cases that we just put there as an example, so that each person can see themselves reflected in the document and say, you know what, yes, this is me.

This is my case. This is what I need it for. This is what my journey typically looks like. What are the things that I could, the steps that I could take? You know, do I do a class one or a class two?

Do I do it first? And so we have these examples yet, so we'll refer to if, you know, aside from the ones that we went through today. Next slide, please. And so with that, kind of just to close a little bit and tie it back to the exercise, today we went through the three different use cases.

So we saw, you know, when it's applicable to use a class three, the more detailed specialized one, class one, more high-level screening type, and a class two kind of in the middle. So remember, this could be you.

Your own different use case. But please, you know, take a look, see what you think. And with that, maybe just I'm going to open up for a little bit of feedback from everyone. Go ahead. Okay, Rashmin, go ahead.

Thanks, thanks everyone. I really hope this was actually useful for certainly

Good.

Thanks. So, as I said, one of the key challenges then becomes, okay, what is it that we really want to be doing? If you have all these different challenges, we have limited budgets, what do we prioritize?

And that's one of the key challenges that we're actually going to talk about now. Because one thing is for the private sector, for the insurance and reinsurance side, but even for the public sector, we all need to report up.

We need to tell our managers, okay, with certain degree of confidence, this is the quality of the risk assessment, this is why we are commissioning this, and the result, we actually get this. There's another facet to this as well.

It's about the interpretation of the results. The framework could also be used in terms as a guide, in terms of interpretation of the results, because what we normally see is sometimes there are turnovers.

You might be working on a project and you might be handing over to someone else. And this framework could actually be used also as a guide for that particular site. But one of the key things that I would like to now open it up is to say, okay, what would you like to see from this particular one?

What is it that we could actually make better? Maybe for the public sector, maybe for the private sector, there are different needs. Are there specific gaps? So my first question to all of you, and we could have it as an interactive discussion, is what do you actually see as the specific gaps or what we could actually do?

Go ahead. Anyone wants to go?

And we can also take general questions, yeah. Exactly.

Is it useful?

Thanks very much. I don't have a comment on the gaps. The question is more about does this taxonomy, at least in the way you use it, involve a time attached to the different levels or budget as well required for the different levels?

Thanks.

Yeah, so in the publication, we don't have the level of detail because it's very variable. But the attribute that we have, that's called level of effort, that's a proxy for that. So that includes both budget and time constraints.

Because we're deciding if we should include numbers, but that's too prescriptive and depends on the location and the context on everything. So we just left it qualitative like level of effort, but yeah, you're totally right.

It really depends.

Co-related question to that one, and thank you so much. This risk assessment taxonomy, as you said, to develop the terms of reference is very helpful. And I fully agree that if we're trying to make very detailed decisions about a project, it needs to be the highest assessment.

However, are you, have you considered doing a taxonomy as well as best practice? Meaning like sometimes, and I'm sure that my colleague here who made the question about cost and time, is sometimes at MDBs we have a short moment of action and having like a very detailed and lengthy study could just not fit the life cycle of the project.

So if we, if Arab or other consultancies have done a lot of analysis of different sub sectors, how can we translate that into best practice? Like if you're gonna do a project of a hospital, what are the key resilient components that you need to do and for different regions?

Yeah, I think that's a great comment because this first, and so this is version one. So we, of course, expect to improve it and enhance it over time. This is called the building submission. So to start, it's universal four types of buildings, but doing it sector-wise, I think it's a really good idea.

And that tie it to best practices, what could be expected for one versus the other. And we also want to do it for infrastructure. So we have a buildings version, infrastructure version, and so there's definitely things that we want to do in the future to consider that because, yeah, I agree.

I think it's going to be really useful.

Yeah, I think the lessons learned also vary significantly, right, and sometimes you would get a significant strong pattern, but on the lessons learned, it could actually, depending on the audience, it can actually vary significantly.

One of the key things actually is too, so in the audience, and what we actually did at GFDRR was actually developed a publication quite a few years back now on looking at the risk of an evolving world where actually some of these things were actually addressed, but also we tried to look in terms of broad ranges what the dollar value associated with a class one, class two, or class three actually might be.

No, so one class one might be less than 50K, class two might be 50K to all the way up to 500, or class three, four actually would be much more than that. One other point, Daniela, I think it will be important to highlight that as decision makers, we are also now increasingly asked to look, or at least incorporate climate projections, and that's something that you guys will also be looking into, actually class five in a sense goes in that direction.

Yeah, exactly. So I'll just point you to the there's a taxonomy on climate change, and that has all the details on how the, when do you need to do downscaling? What do you, can you do just average projections for what hazards that, so that's all aligned.

So you don't have, if you're doing a class three and you're just doing, you know, it's, it's not, you should also do a class three climate change of doing downscaling and not just doing, it's going to increase 10% all throughout.

Um, so that's also included there.

I think I should also, my bad, I think if you could, when you have a question, if you could actually introduce yourself, that would be great as well. There's also some on the screen as well.

as well, so, okay, quick.

Hi, I'm Lisa Bricknell from Central Queensland University in Australia. My expertise of risk assessment is normally around human health rather than financial. And I wanted to piggyback on the uncertainty issue.

So your class three risk assessment implies that there is a much higher level of confidence. However, when there's areas of high uncertainty, that obviously downgrades the confidence that you have. And perhaps a lower class, say a class two, might actually be a better option rather than implying certainty that you don't have.

Yes, that's absolutely correct. And you see in the climate change table, you'll see we have a footnote, I think, somewhere that says. When we say that the class three climate change has the higher confidence level, it's not, it's just on how it matches or how it should map to the hazard assessment, but not the data.

We know the data is highly uncertain, so no matter what class you're taking for the climate change projection is gonna be uncertain. So I think that's correct. And that's really key when you're making that decision on what risk assessment you need.

If you know you have such high uncertainty, then going back one would be just, you know, it could be just a better decision overall. But yeah, that's a good point.

I think one of the other key things is increasingly we are getting to a space where you could actually merge the qualitative with the quantitative. So, for example, some of the work that we have been doing is now including not just the structure of vulnerability, but the social vulnerability.

So, for example, think of a house. The house, the vulnerability is associated with the structure. It doesn't say anything about the people living in it and the well-being and the consequences of it.

But we are getting to a point where they actually can actually be integrated together. So, that perhaps what I want to answer to your question. Sorry, permission.

Thanks.

Yeah, good morning. Once again, I'm Ramesh from Nepal. So I mean, it's perfect. The taxonomy is a compliment. When we are developing the national risk assessment framework objective, the best risk assessment framework, we have almost similar in Nepal.

Just one point is we thought of adding a set of recommendations. For example, if the output of the risk assessment is used for this one, then you may go to this level. Otherwise, people spend a lot of money just for going to the higher level.

Everybody wants to do the level three. Nobody wants to do one or two, but they never use that risk assessment results for the risk reductions ultimately. So a set of recommendations may help the countries and cities or the decision makers to develop the right TOR.

Just comment. Thank you. Thank you.

I absolutely agree though on this point because that uncertainty point before, you can spend a huge amount of money and it doesn't mean that you've got historical data that can back up your vulnerability functions, it doesn't mean that you've got enough information from the past to actually have that right in terms of your modelling.

And so you might spend \$500,000 on going and collecting every single building around and getting all the roof types and everything, but if you've never had a historical event where you know how that roof type applies, then there's no point in doing that, you may as well take that step back to Class 2, so totally agree.

Hi, Josh Hayes from GNS Science in New Zealand. Thank you for this, I've found it really useful, I really look forward to reading the report in detail. I'm wondering, have you got any sort of considerations around the mode of delivery of the risk assessment?

Whether it's a big 100 page report, providing the data, a GIS viewer, or just a slide deck or something like that. Yeah, there's multiple different modes that it can be, so I'll just adjust it if you've got anything on that.

That's, I can start. Yeah, I think that's really important and because that varies so much. We've seen a trend, which is, you know, before everyone was just delivering a report and that report was just set in a drawer somewhere and no one read it again, so it's just a one-time thing.

But now, of course, recently with digitalization, now everyone is trying to build their own digital platforms to deliver results. So for instance, we are, we develop our own. So we have our platform that's called Iris.

And Iris is really the platform that we use to calculate risk internally, but then we give access to our clients externally so they can see the reports live in the web and they have a profile. If you're, you know, if you're the bank, you have your program, if you're the country, whatever, you have your own profile and you can see your results live and that's also easier to maintain updates and to take action on it.

But again, that's a little bit, everyone is doing something different in terms of, but I think it's important to maybe tie it, you know, we could tie it to that mode of delivery as in the next version.

I'm gonna tie it also to one more session that we have this afternoon with still here at the bottom. That's also linked to, if we're trying to standardize, not that we're trying to be prescriptive and say this is, you know, a recipe A to B, but at least you have some framework of, this is a framework or a standard for risk assessments.

The session this afternoon is focusing on standards for the risk data. So if you can apply those standards for the risk data, you're applying this standard for a risk assessment, you're starting to build a package that could be easily delivered then.

If it's digital or written, I think it's fine, but at least if you have those standards for the different parts of it, I think that could be easier.

a really good point on the RDL, but also how we can increasingly make it interactive. Because one of the reasons that the reports actually get shelved and no one actually reads it because they don't understand it.

You give it to a permanent secretary of a particular country or you give it to someone and that's kind of where the next stage in the capacity building also gets to come into play. And this framework goes a long way to kind of addressing that.

I'm gonna piggyback on this question here, asking if there's a mechanism to update on the basis of usage. I think we have a mechanism yet, but we will definitely implement one because I think the idea for this decision is to gather this feedback so we can improve it and have that mechanism to update it as we go.

So I think that's really important for us working on this. So we'll be sure to collect all of this feedback so that we can then update it.

I think just on the point of risk visualization as well, it's extremely important to learn from each other as well. So there's heaps of sessions this week on risk communication and risk visualization.

It should definitely come in the next version of this as well. But just, you know, there's insurance companies, how insurance companies are now supporting clients or how the brokers are actually showing the data there has changed so much in the last 10 years.

And then you've got so much more sort of ability to get across what you're trying to show in terms of a premium change. Or we use video as ways to explain a risk assessment for different countries. And that works very, very well.

So hopefully through a few of the sessions this week we can get ideas for the next one as well.

Actually, if I can echo on that point, one of the key things is if you do this risk assessment, you could also show the different applications of it. So some of the things of do's and the don'ts. That's actually key point because sometimes we have been asked, okay, this risk assessment and Ramesh should kind of echo this point.

Can we use this data to do something completely different? And this framework would actually go there, but also they actually want to know whether the data sets, it's not just the results, but the data sets that were being invested actually could be really be used.

One of the other challenges, and Stine, I'm glad you're actually here because I know we have been having this discussion recently with quite a few projects where is the data sufficiently good enough to actually do this type of work?

And at the moment, because we don't have this type of framework, it's done backwards. So you could cost out and you do something first and then you do the scoping and then you say, oh, whether actually the project can actually go ahead.

That should not really be happening. At least we have a framework now to work with.

I'm Tachiana from São Paulo, Brazil, and just to make a contribution, this is very important because for us in public service, most difficult challenge is show how much costs do not the right thing, do not the research, don't know the data, and it's very

difficult to show that it costs much less to do instead not doing, so congratulations for your servicing.

Thank you for all.

Thank you so much, yeah.

Thank you very much. And that's actually super important as well. For example, particularly in Brazil at the moment, because the floods in Rio Grande Salud so, right? So, for example, we actually, the World Bank is actually supporting some of the rapid damage estimation.

And it's a direct result of the availability of the information that's available. For example, the exposure data. But it's also then a testament of how and how appropriate are they to actually be used for rapid damage estimations as well.

So, but really take your point.

Hello, I'm Ali from Oman. Thank you very much for the presentation, and as well for the taxonomy, I think it's well overdue, so well done, and if there's anything we can do to support, please let us know.

My question being, you know, risk management, everyone wants to do, as one of my colleagues here said, the top high -level risk assessment. For my institution, I have to do a couple of them. So like they say, the business continuity planning risk assessment, the compliance assessment, and all that.

But can I do this at one stage using your taxonomy? Would you advise it be done using the taxonomy? Have you done it before? So I don't have to go over it again and again doing it for different things.

Yeah, I think that's a good example of another use case. You just have to, when you see it, when you read in detail, you're going to map what's your level, if it's strategic, you're saying response planning or operation planning, then yes, you can definitely do that.

And also because we're not prescribing metrics, you can define your own metric. If for you, for example, losses are not gonna be important for you, but downtime is. So if your risk metric is downtime, that still applies.

So everything will still apply to your use case, and so your measures will be maybe not physical, but then operational strategic measures. So yes, you can definitely use it. And you can find where your specific nuances for your risk metrics, for use case, for your hazards.

But yes, that's definitely applicable.

Excellent, I think we really need to kind of start wrapping up. One of the final things, maybe like a show of hands or something, how would you like this to kind of be more taken forward? For example, would workshops or capacity building seminars, for example, even if it's done virtually, would that be useful?

Any, yes? Okay, great. Okay, great to know. Cool, that's certainly something that we could actually look in, because the idea is that it should not be residing just with Arup or just with the World Bank or GFDRR, this should be open.

And the idea is, as a community, we can actually come together to take it forward. Anything, any final comments?

No, I think that's it.

