

June_18_Small_Hall_002

Thanks for coming to this risk informed land use planning for livable and resilient city session. We're going to start on time because we're going to be very tight on the agenda and we have a very exciting panel that is going to discuss about the different advances and experience related with risk sensitive land use planning.

But let's start first, why are we here? With 68% of the population by 2050 living in urban cities and with the climate change increasing the different impacts the natural hazards are generated in cities, this has become one of the most hot topics in urban development.

So we are now going to discuss the different elements to promote risk sensitive land use planning from the policy perspective and from the practitioner point of view. So we have today four presentations that are going to talk about the different experiences and we're going to start with Ross Eisenberg from the World Bank who is going to work about the risk informed urban planning for livable and resilient cities approach and some elements of the guidance note that the World Bank is developing.

Second, we will have a presentation from Dr. Teresito Bacolco from Philippines. He is going to talk about the georysk in Philippines and how they are incorporated in land use planning. After we have Ignacio Rutia who is going to talk about the experience in DACA.

And fourth, we have Professor Masato Akashi who is going to talk about the three key challenges in risk informed land use planning. So let's go very quickly to the different content that we are going to discuss today.

So Ross is a urban specialist working in GFDRR. He leads the city resilience program who is providing technical assistance to many cities across the world in developing different tools for planning purposes.

So he's going to talk about the conceptual framework and some of the experiences that we are implementing through the World Bank. Welcome Ross.

Thanks very much, Anna. Thank you all for coming to the session. As Anna mentioned, my name is Ross Eisenberg, Disaster Risk Management Specialist, with the City Resilience Program at the World Bank.

At the City Resilience Program, we are a global program. We don't focus on any one particular region. So therefore, I'm going to share with you a bit of global guidance that we are in the process of developing.

So you can consider this session, this presentation, to be a bit of a sneak preview before we get into some key case study examples from particular countries. So let's start off right with the challenge.

As Anna mentioned, 70% of the world's population will live in cities by 2050. 3.1 billion people are projected to live in slums, including one and a half billion children. At the same time, we see an increasing climate challenge and increasing disaster risk, in which 70% of greenhouse gas emissions and energy consumption is occurring in cities.

We expect that there to be an 11% loss in GDP for the worst affected cities by the Urban Heat Island effect by 2100. Currently, 314 billion dollars is annually lost in cities due to weather related and other disasters expected to rise to 415 billion by 2030.

And we also anticipate 77 million urban residents being pushed into poverty due to the impacts of disaster risk and climate change. Put these together, and what do you get? A new challenge in which risky growth is outpacing safe growth.

Now, what do we mean by risky growth? To illustrate this, the World Bank has done a study showing that from 1985 to 2015, there was an increase in the settlement extent exposed to the highest flood hazard.

And what this means is that as cities have expanded over time, over that 30 -year period, they've done so into areas that are in higher exposure to flood risk as opposed to areas that were already in lower exposure to flood risk.

This is not limited to developing countries. It's been even higher in upper and middle - income countries at 184%. And then another example, we see a tenfold sensitivity to variations in precipitation observed in urban landslide hazards as opposed to rural landslide hazards.

We can illustrate some of this by looking at the photos on the right. This is the city of Katumbela in Angola, showing two photos of the same area about 20 years apart. And you can see quite clearly how the city has expanded and densified.

Now, the expansion is not the only phenomenon at play here. This area is in fact a dry riverbed, as we see in the photos. But it's not dry all year round. And when it floods, it does so very, very intensely, bringing with it significant and fast -moving water, mud flows, significant destruction, and loss of life as well.

However, we feel it's important to recognize urbanization not only as a driver of risk, but as a driver of capacity as well. So on the left, we have the classic disastrous management framework, hazard exposure and vulnerability, adding up to risk.

Urbanization as a driver of increased hazards is exemplified through phenomena such as biodiversity loss and deforestation as cities expand. Urbanization is a driver of increased exposure, recognized through phenomena such as cities expanding into high - risk areas.

And urbanization as a driver of vulnerability, for example, through the high vulnerability populations living in the risky areas and their higher dependence on critical infrastructure that is more likely to fail in the event of a disaster.

At the other hand, on the other side of the coin, urbanization can be a driver of capacity. It brings access to infrastructure, services, and improved communications. It enables

greater diverse, more diverse economy, greater access to resources and insurance, and a higher concentration of expertise and resources, stronger governance structures, better social networks and community organizations, and enhanced emergency services.

So overall, we find that there is a heightened susceptibility of cities to disaster risks and climate -related shocks and stresses. Of course, we are not the first people to identify and discuss this issue.

There's been a lot of work on this topic already, as we can see with the titles and examples on the right side of the page. One key aspect, though, that we find missing in a lot of these publications so far is really the practical guidance.

And when we're talking about the urban planning practice, how do we take some of these tools that are already out there and really bring them into day -to -day tools, day -to -day guidance, day -to -day strategies and techniques that urban planners and other folks working in cities can bring to help mitigate their risk as they conduct urban planning?

So with some of the guidance that we're working on, we're hoping to do just that. We can start with a little bit of theory. So when we think about some of our goals for a livable and resilient city, we've organized it into four key topics.

We have green growth, social inclusion, shared prosperity, and resilient built infrastructure. Now these goals do not exist in a vacuum on their own. They are of course overlapping and impact one another.

And this is illustrated through some of the examples that we see here within this map. So just as one example, clean air and waste can be considered to be a goal, a sub -goal for both the dimensions of social inclusion and green growth.

And we like to show this through this sort of schematic of a city's metro map in a way to illustrate the positive impacts, the positive effects of redundancy that such a system can have in the event of a failure of one line where another goal can pick up the slack.

So taking this bit of theory, let's try to bring it down to some more practical and in - practice implementation when we think about urban planning processes. So we have the goals at the top, and so how do they inform the urban planning operational process that actually takes place in the city?

We don't have enough time today to go through each one of these steps in detail, but this is a bit of a schematic for those of us who aren't urban planners in terms of how some of this work gets done in cities.

So the overall steps would be the preparation step, the context assessment and diagnosis step. Then we get into the actual risk -informed formulation. So we have the appraisal of the different intervention options alongside a city visioning exercise before step four, which I'll come back to, on the actual risk -informed plan formulation.

And finally, there's the design of different instruments and their implementation before monitoring and evaluation. So returning to step four, this is where we actually set the livability and resilience goals and apply different measures, so really concrete measures for actual conducting risk -informed urban planning.

And when we talk about these measures, it helps to break them down into another bit of a framework to organize how we might act to mitigate them. So we have our restricting measures, our conditioning measures and our promoting measures, and I'll come back to these in just a moment.

In order to figure out how to apply the different measures, we want to first lay out how all the different types of hazards and risks that can affect cities. So we've broken this down into another bit of a schematic framework, two kinds of hazards and risks.

They're the hydrometeorological and climatological hazards, and there's the geological hazards as well. So we can disaggregate each one of these buckets until we get to specific hazards and risk. Of course, important to mention that there are interdependencies between these as well.

They don't exist in vacuums either. So for example, the geological hazard of earthquake can result in tsunamis, as you can see on the right, and tsunamis of course can impact and affect and cause coastal flooding, which is of course on the other side of the schematic.

So there are overlapping phenomena here, but we can start to complicate this by looking at one at a time. So let's take the example of flash flood risk, which I mentioned at the start of this talk in the case of Cattombella and Angola.

What are flash floods? Well, they are high velocity, powerful currents with high destructive potential. They often carry debris and mud, uprooting trees, and devastating structures. Overall, urbanization results in more water faster, really increasing the destructive potential.

And this is especially exacerbating due to changing rainfall patterns and more intense precipitation due to the urban heat island effect and climate change. I'm gonna skip ahead, just in the interest of time.

So returning to our three overarching categories of measures, let's consider how we might implement them in order to address and combat the risk of flash flooding in our cities. Well, we can think about restricting, conditioning, and promoting.

So we would want to restrict urban growth and expansion in areas that have a high risk of the impact of flash floods. For example, avoiding urban development in areas that are prone to flash flood impacts.

We would also, at the same time, want to condition our urban growth and expansion where risks can be reduced to acceptable levels and adhere to resilience standards. For

example, by implementing flood control measures and by improving stormwater management.

Meanwhile, we would want to actually promote green growth, eco, disaster risk reduction, and nature -based solutions and access to different services where possible. So as an example of this, might be promoting insurance, livelihood protection, and economic diversification.

Now we can also take these three categories of measures for combating flash flood risk and outlay them on a bit of a geographical or map based schematic and get even a bit more specific with how, with the actions that we might want to take to address these.

So for example, we would want to restrict the occupation of key ecosystems and buffer areas. And examples of some actions would be forest restoration and protection and vegetative buffer restoration around cities.

In the meantime, we would want to condition our infrastructure and housing development on compliance with resilience standards. So this could involve taking specific actions, such as implementing infrastructure, such as flow deflectors and channel modifications.

And we could also promote using urban ecosystem protection and green cover improvement, for example, by implementing the actions of green roofs and in public spaces adding pervious surfaces that absorb flash flood waters.

The World Bank has been doing some of this work very recently. For example, in the case of Bujumbura in Burundi, which has been recently experiencing some very intense rainfall, which has resulted in flash floods and landslides, alongside rising lake levels and Lake Tanganica, which involves a unique phenomenon of coastal flooding.

And the example on the map here is just one, one small example in the larger land use plan for how one neighborhood is taking the different approaches to restrict, condition, and adapt in different areas of the city based on the risks that are at play.

Very quickly, just want to mention that we can also do this similar kind of exercise as we did with the flash flood risk with extreme heat and the urban heat island effect. So we would want to restrict the occupation of critical green spaces.

We want to condition growth and expansion to guarantee appropriate ventilation, shade, and cooling in cities, and to promote urban greening at the building, site, and landscape level. So these measures, again, are restricting, conditioning, and promoting in order to combat extreme heat in cities.

And what you may notice is that they also have benefits for flash flood risk as well. So there's really a lot of interrelationships between the measures that we can take and how they can address different hazards that we find in cities.

I think I'll wrap up now. So just to say that this is a bit of a paradigm shift that we're hoping to share with you in written form very soon in terms of recognizing the role that urbanization plays not only in creating, but also reducing risks.

We promote a holistic approach and bring together, we aim to bring together urban planners and DRM practitioners to turn urbanization as a driver of risk into a driver of capacity. So as I mentioned at the start, this is a bit of a sneak preview for some of the knowledge work that we're going to be publishing in a few months.

Please look out for that. This will be in the form of a guidebook on risk -informed urban planning for livable and resilient cities. And it's intended to be used by any kind of stakeholder who's interested in an urban planning process that's informed by risks, and especially to help urban planners and DRM practitioners get on the same page and share the same language as we plan for the more resilient future for our cities.

Thanks very much.

Thanks very much, Ros. I think that has it up the stage and the conceptual framework of what we want to develop. So let's move now to some of the examples. And let me invite Dr. Teresito Bacocco. He's the director and officer in charge of the Department of Science and Technology in the Philippines Institute of Volcanology and Seismology.

He's a geologist by formation and a PhD in geoscience and natural resources. And he will talk about the experience in Philippines.

Thank you. Okay, good morning. I am Teresito Siba -Kol of the Philippine Institute of Volcanology and Seismology, or which is a service institute of the Department of Science and Technology. Given the Philippines geographic location, it is prone to earthquakes, tsunamis, volcanic eruptions, floods, landslides, and storm surges.

And that is why, unfortunately, we are ranked first in the World Risk Index report in 2022 and 2023. Here are some of the devastations brought about by eruptions through the years. This picture shows how a single event could impact land use and the lives of people living around the volcanoes.

Large magnitude earthquakes have also affected many Filipinos and have economically impacted the country. The latest of which happened early December last year when among the 7.4 earthquake struck the southern part of the Philippines.

Now, using the Philippine Catastrophe Risk Model, direct loss from typhoons and earthquakes alone is estimated at 177 billion pesos every year. This is based on the 2020 World Bank report. Now, between 2015 and 2018, the average yearly spending on disaster -related response, recovery, and reconstruction activities amounted to approximately 92 billion pesos.

Again, this is based on World Bank's public expenditure review on disaster response and rehabilitation in 2020. Effects of natural events are inevitable for a country like the Philippines. But it all is not doom and doom for us.

Part of becoming resilient is not limited to our response to natural disasters. One of the disaster resilience goals of the Philippine government is wealth protection. That is to focus on reducing vice losses by proactively mitigating the risk before the hazard will take place.

And this includes proper land use planning. Basically, it involves strategically locating land resource to specific use with mitigating measures in place. And in the Philippines, we are doing a multi -sectoral, especially based land use planning approach where science information and hazard and risk algorithms are currently being mainstream.

We are also involving the local government units, or LGUs, and the national government agencies in the development of the system where they can easily contribute and access information, calculation algorithms, as well as generate reports and planning documents in one platform.

Our institute and the Department of Human Settlements and Orban Development together with World Bank is developing the plan smart for sustainable human settlements. But before going further, let me introduce first, Jiris Philippines Initiative.

So through the Jiris Philippines Initiative, which is spearheaded by the USF EVOX, through the government agencies and local government units, are contributing data in the government's Jiris -Pedes Central Database for access by plan smart application.

So the central database is accessed by plan smart and the plan smart application utilizes standardized database and allows users to automatically create plans and reports using a predetermined digital template.

We initially developed the plan smart ready to rebuild application. It is an automated planning tool for disaster, for faster disaster rehabilitation and recovery. And again, this was developed by the USF EVOX in collaboration with National Disaster Risk Reduction and Management Council, the Office of the Civil Defense and with the support of the World Bank.

Right now, over 2,000 local chief executives and technical staff from almost 500 LGUs have already been trained on the use of Plan Smart for disaster recovery preparation through the development of local recovery plans and local disaster risk financing strategies before disaster happens.

Back then we already knew that other Plansmart applications will be developed as derivatives of this Plansmart 3D Trilobid platform and rightly so. So right now we are developing several Plansmart applications for different government agencies.

We are revolutionizing comprehensive planning and development planning through the application which is being co-developed by the Department of Human Settlements and Urban Development. We are also helping streamline contingency and investment planning for the Department of Education and also we are planning this on the pipeline so Plansmart 3D to respond, which is a DRR response mechanism for the Office of the Civil Defense.

Okay, so for my presentation I will talk about the Plansmart for Sustainable Human Settlements. We all know that land is a primary need and it is a requirement for human settlements. Proper planning ensures sustainable development and mitigate various environmental and societal issues.

Therefore effective land use planning can address multiple problems as public safety, environmental degradation, inadequate infrastructure among others. So in the Philippines, LGUs are required to submit a comprehensive land use plan every five years.

This involves the generation of a climate and disaster assessment or what we call CIDRA, which is a necessary step to mainstream natural hazards and climate information. Currently the LGUs need to do several of these processes for land use planning manually.

So they need to collect data from different government agents individually and at the same time, high consultants. So with the Plansmart application, we can reduce the steps in this CIDRA process. The LGUs can access climate and hazard information.

They can also scope potential impacts of hazards and climate. For instance, an LG in the Philippines needs to gather flood risk and seismic data, as well as climate projections from different agencies.

But with Plansmart, data collection could be centralized and this would provide the LGUs with a single platform to access all the necessary information, which means streamlining the whole process. And then the LGUs can also develop their own exposure database.

They can conduct climate vulnerability and also conduct, and at the same time, summarize findings in the Plansmart application. And since the system is geospatial, the LGUs and the NGAs may visualize everything on maps with analytics for specific assessments.

So through the platform, users may evaluate land use, land -zoning, critical facilities, programs, projects, and other LG resources and activities, especially as can be seen on the screen. Relevant graphs and charts shown on the board can also be downloaded and comprehensive digital reports, and this is the most important, are automatically generated once all components are filled out.

So to sustain Plansmart, we are already doing suitability models to prepare the Plansmart applications to do predictive analysis, so that insights will be translated to four sites in planning. And then artificial intelligence will also be utilized to increase process efficiency.

So in this slide, we see that when an LGU utilizes Plansmart, recommendations may be derived to help the LGU identify the most suitable site for housing project. These recommendations are embedded in the plan that will be generated eventually by the Plansmart.

So by using suitability maps with multi -criteria parameters, approval or disapproval of projects may be done efficiently, that's saving time and money and lives in the long run. So right now, in the Philippines, we are helping the LGUs and the Department of Human Settlements and Urban Development to streamline process in developing the CLU piece.

And land use plan is being revolutionized in the Philippines, not just by making it recent for, but by ensuring that decision making, is easy, data -driven, and relevant to the needs of the stakeholders.

Okay, so before I end, I would like to thank the government of Japan, the global facility for disaster reduction and recovery, as well as the World Bank for their unwavering support and commitment to the Philippine government as we strive to build the resilience of our communities against natural disasters.

Arigatou gozaimasu.

Thank you very much, Dr. Bakokon. I would like to invite now Ignacio Runtia. He's a senior disaster risk management specialist working for the World Bank in South Asia. And he is going to talk about experience in that.

Thank you, Anna. So my name is Ignacio Rutia and I'm going to talk on behalf of the Urban Development Authority of DACA. So the representative from the government, unfortunately, couldn't come, but he presented this presentation.

And I've been working with them on this project and with the team over the past eight years. So I can provide some some some insights. So Bangladesh, it's highly exposed to natural hazards, except volcanoes.

I think they have pretty much everything. And of course, it's seismically active and on top of it is very much exposed to floods, which are the most recurrent and the most devastating type of disasters.

The addressing urban risk in Bangladesh is particularly important because of the density of Bangladesh as a country and the rapid pace of urbanization. And as it was discussed at the beginning by Ross, there is an expectation that about 60% of the country, 100 million people by 2050 will be moving to cities in Bangladesh from a 66 million today.

Urban areas, of course, are exposed to multiple hazards and it's also urbanization as it's happening right now. It's very rapid and very unplanned. DACA in particular is one of the world's mega cities.

It's around 15 million people growing very very rapidly, very densely populated. And as I said before, from exposed to floods and also seismically active. So there was a lot of work for over the years by professionals within Bangladesh, government and other institutions, but there was not a lot of traction and a lot of action.

And in April and 24, 2013, the Rana Plaza building, which collapsed, and this was a real wake -up call. This was not related to a seismic event. It was mostly about construction, but it really woke up authorities and the public in general about the urgency to do some action on urban resilience.

so this is just a schematic about some of the analysis that was done even previous to that. There were many years of technical assistance and work to identify where were the drivers of lack of resilience in DACA.

So leveraging on all of this work, a project was put together very quickly. There was one project by the World Bank and then one project by JICA concurrently at the same time, trying to address urban resilience.

So one of the aspects was emergency response, emergency preparedness and response. Another aspect was analytical foundations for long -term planning investments. And then another aspect was what I'm going to talk about today, which is the resilient, resensitive land use planning.

So this is a schematic of the project. Basically, it was a five and a half million dollar consultancy that had to do a lot of the technical work also on geotechnical analysis to determine the sonation of risk in DACA.

And then he had a very big component on capacity building and institutional building, which is what's being completed right now. So I'm going to give you like a very quick sort of overview with some of the work done and some of the results.

I'm going to go a little bit quick through some of these slides, but just to give you an idea of the work that was done. And then I'm going to conclude with some of the results and some of the next steps.

So this is an schematic of the work done. So it's a resensitive land use planning. So there were four hazards that were considered, floods, earthquakes, and then separately, subsidence and liquefaction.

So based on this, the risk maps were prepared and then they were overlapped with the population and density maps and considerations to produce the development maps. So again, this is one of the examples for seismic risk, what was done.

So there was a there was a micro -sonation with all of the technical work and then on top of that the models were built to determine deaths and injuries and valuating the monetary values, their economic losses of potential events in DACA.

This is a river flood hydrodynamic modeling. So it has a 20 year, 100 year and 200 years. So again, similar maps were produced for the other hazards as well. This was for rainfall flood modeling. This is the composite, so this is the vulnerability assessment to the floods.

So as you can see, it was separated by residential, non -residential for different return periods. This is a liquefaction hazard analysis. And then this is sort of the overall framework that was done.

And then as we were discussing before on the building code, so how do you integrate the multi -hazard aspect into a single development directive? So again, this is basically like the schematic of the work that was done and the models that were done.

And of course, at the end of the day, these maps not only included all of these technical aspects, but they were basically also discussed with the development authority, with constructors, and with the public.

Some of these titles are not appearing, but all of these documents were prepared. So there were around seven or eight very detailed, not only the resensitive land use planning guide, the very detailed result of everything that was done, and then also some sort of all the analysis.

Everything is disclosed on the website. So if you can go into URU, which is the Urban Resilience Unit .gov .bd, and then you can see there not only the work on resensically land use planning, but also the work on the other parts of what we were discussing, also on enforcement, on ePermission system and in capacity building, and certification of engineers, planners, and architects.

So yeah, so the title of this is not appearing, but this is basically the training component. So it was very much important since the beginning, since the design of the project. That the idea was that this was going to be co -created by the Urban Resilience Unit.

So the capacity building was not just sort of like a lecture type of activity, but they were actually co -developing these resensitive land use planning with the international experts and the local people that were going to be part of the Urban Resilience Unit.

So they not only own it, but the capacity building is built through the process. This is again some of the laboratory tests. This is some of the aspects of the capacity building program on geotechnics, on the micro -sonation, resensitive land use planning.

And then yeah, so these are just some of the final maps created. And again, linking back to the beginning, the idea at the end of the day is that these maps would give instruments to say, where are you going to restrict development?

Where are you going to condition development? And where are you going to promote development? So just on my last two slides, I mean, I'm not gonna go through all the details. So I took some of the main lessons and challenges and way forwards that were presented by the Urban Development Authority.

I think that one of the ones that was very much important at the beginning was that you do the work and then you really take advantage of the opportunities and the political economy openings that you have to push forward some of these agendas because it's very much important to have political support and then public support.

So you use these opportunities not only to move the agenda, but also to educate both the political leaders and the community. The second part, as I said before, is the capacity building. Capacity building has to be embedded since the beginning of the process.

It's not like a separate work or something that happens at the end. And at the end, the final sort of takeaway, which is again similar to what was said at the beginning, is that recently land use planning is not about avoiding losses.

Is recent city land use planning is about supporting the development and growth. So this is very much something that in the work that we've been doing in DACA, is very much central and the authorities understand it very well and then this is how it's been presented because sometimes even it's just about talking about avoiding the losses or avoiding the negative outcomes.

This is not really necessarily a catalyst in the situations of rapidly growing countries like Bangladesh where the growing the economy and improving the livability of the cities is really at the center of the political agenda.

Thank you.

Thank you very much Ignacio. And now we will move forward with Dr. Masato Akashi, he's a development planning expert with more than 20 years of experience. He works with Pacific consultants in urban, regional and transport planning.

So he will talk about the experience from his company perspective.

Thank you very much. My name is Masato Akashi. I'm working for Pacific Consultants and I'm basically urban planner. I have been working for different countries, not only in Japan, and also Nepal, Indonesia, Thailand, Jordan, Mozambique, etc.

So based on my experience, today I'd like to highlight the three key challenges on risk -informed land risk planning based on my experience, and also I'd like to share some examples from Japan and other countries.

So this is the contents I will present. So first I will raise up some key challenges on risk -informed land risk planning and I will discuss about each challenges, and also I will share some examples, and I will conclude.

So in this presentation I'd like to highlight three key challenges on risk -informed land risk planning. So first one is about the risk -informed land risk planning with integrated DRL approach. So key question is also RILUP, Risk -Informed Land Risk Planning, will be one of the significant solutions to make resident city, but how should we tackle this land risk planning with other countermeasures to disaster risk?

So this is the key challenge. And second point is about regulation and mainstreaming. So how should we activate the risk -informed land risk planning on the ground and maximize the effect of the plan?

So we have to consider this point also. And third point is about the participatory planning process. So how should we address the issues on vulnerable people and gender -informed settlement, land tenure and so on, which might be left behind by rational planning?

So I'd like to discuss these three key challenges on risk -informed land risk planning. So this picture showing some Japanese situation of the Japanese cities. So in Japan there are many rivers. I think when we count only about the major river, like the first class river or class A river, we have more than 14 ,000 rivers in Japan.

And also we have many cities along the river. So we have the flood management is a key challenge for many cities in Japan. So firstly I'd like to share some examples in Japan how we consider the risk -informed land risk planning.

So this picture showing the left side showing the hazards and the risk analysis. So based on this, basically Japanese government or local government is working for many different aspect countermeasures, not only about the land use planning, so including the physical infrastructure development, like development of dam or check dam or developing the retention point, and also of course the river embankment.

And also then we have to consider about how to manage urban planning or residential area, including the risk -informed land risk planning. So we have to consider not only about the risk -informed land risk planning.

So we have to think about this kind of integrated approach, strategically thinking is really important. And also I'd like to share some example in Japan. So Japanese government developed the guideline for resident city planning or water -related disaster risks.

So this is summary of the contents of the guideline. So according to the guidelines, first step is hazard analysis. So as you may know, we identify which area has a high hazard or high risk, high hazard based on the historical disaster or a situation or climate or something.

And then we analyze the risk situation. So maybe as we have already discussed, we analyze the risk. So based on the distribution of the population or buildings and also the asset and infrastructure, we identify which area has a high risk.

And we have to prevent the disaster like that. So we consider this kind of risk analysis. And then according to this guideline, so we develop the vision or how to develop this area based on the risk and hazard analysis and third point.

And then after that, so we also consider the land use directions for this area. And then we consider some countermeasures, different countermeasures like a structural measure and non -structural measure, and also the early warning system or DRRN plan.

So this kind of package or integrated approach should be considered. And also we have to consider which countermeasures effect or can be realized when. So we have to consider the time period also. So such a strategic planning will be very important.

And also we have to consider when we talk about the risk informed land use planning, we have to consider the measure for buildings and also the evocation facilities or such things also should be considered.

Then we consider the collaboration with actors, how to implement these measures. And so based on this Japanese experience, so JICA, Japan International Cooperation Agency, developed this kind of the eight steps for all local disaster risk reduction planning.

So actually so the contents or concept is quite similar that I showed through the guideline. And also maybe so this is a kind of basic, but so maybe first step and concept will be the hazard and risk analysis.

And the step three showing the disaster risk confirming the existing countermeasures. And then we can identify the risks there. And based on that, so we identify what kind of the countermeasures should be implemented including the risk informed land use plan.

And then we consider how to implement. So JICA developed this kind of the eight steps and now we are working for disseminate these activities for other countries, developing countries. So this is one example in Baylor city in Mozambique.

So in Mozambique, so 2019, there was a huge cyclone, cyclone Eli affected. And so there are more than 600 people were killed by the cyclone. So after that, so JICA initiated this project to implement, to realize the thinking more resilient city in Baylor.

So first, JICA and we supported to implement the hazard analysis and risk analysis. And then based on the result of the analysis, we created the recommendations to their land use planning and also the development planning.

But as I mentioned, so we have to also consider about integrated approach. So land use plan is very important, but we have to also consider infrastructure. For example, coastal protection for storm surge or drainage systems, such things and evacuation planning.

So this kind of systematic approach should be considered. So this is a kind of one-on-one topic. And next topic is about the regulation and mainstreaming. So this picture showing the examples in Japan.

Actually, so recently in Japan also we have many floods and also, so based on such kind of experience, Japanese government recently amended, revised Japanese laws related to urban development. And this picture showing the summary of which point we updated the regulations.

For example, first we identify the risk area or disaster red zone. So in such area, Japanese government now introducing the regulations to prohibit the new development or introducing the permission system for new development like that.

So this kind of the regulations should be also considered to maximize the effect of the risk in foreign land use planning. And also sometimes we also have to consider the relocation of the people from the dangerous or high risk area.

At the time also local government may support some subsidies or some infrastructure development. So such a new system in Japanese government is working for. And about

the regulation and mainstreaming, so this is a picture showing the relationship of land use plan and other policies in, example in Kiribati.

So actually land use plan is a plan, but so we have to also consider about the related plans, how to, how to connect or how to reflect the land use plan for the other policies and plans and also the regulations.

So that will be the very important thing to realize the contents of the land use planning. And third point is about the participatory planning process. So this is a kind of picture based on my example working for the JICAAS project in Nepal.

So left side showing the, without community participation and engagement situation. And right side showing the, when we consider the participatory process in the land use planning, how the situation can be changed.

So left side, so people can be easily vulnerable. So if we don't consider about the participatory process, so most of people can be isolated. But so when we consider, encourage the participatory process and engagement of the people, so we can improve somehow the kind of the environment.

So they can make more social cohesion or mutual assistance and public assistance or call on the system where multiple action can be also considered. So actually I think land use planning has some limitations.

So we have to also consider about how to, how to go over the such kind of a barrier. And so this is an example in Japan. So Higashi Matsushima city in Tohoku region. So in 2011, it's the Japan earthquake.

So Higashi Matsushima city is heavily affected especially by tsunami. So the people consider the reconstruction plan through the participatory process. So the municipality implemented many discussion with local people and evolves many different people like elderly people, disability people, young people, children.

And so they repeatedly discussed. And then they created the reconstruction plan including the land use plan. So this kind of a process I think will be also important to implement the risk informed land use planning.

So this is my conclusion. So I highlighted three aspects for the disaster relief show and the risk of land use planning. So first point, so LIP, the solution to make resident city, it needs to be addressed as a part of integrated disaster relief show.

And second point is about the regulation and mainstreaming. So legal framework and regulation like a building code would be very important to activate the land use planning. And third point is the participatory process.

So actually there are some limitations about the land use planning. So we have to, when we want to tackle with informal settlement or vulnerable people, so we have to encourage the involvement of the people, especially vulnerable people for the planning process.

So thank you very much.

Thank you very much. I think that was an excellent example to conclude some of our presentations. We have seen not only the conceptual framework, but the different steps that need to be taken, how important is to have very good information about the hazard and the different type of risk that we are going to assess in the land use plan process, but also how we have the different measures to control the regulations, how we have some different measures also through mitigation works and complement with other disaster risk management initiatives and promote some of the implementation of these actions through economic incentives of tax exemptions or other type of measures.

So with this, I would like to open the floor for some questions and we will receive quickly three, four first questions and we will pass it to the panel. So over to you now.

Hi, excellent presentations, congratulations. My name is Taiza and I work for an international hub called Tomorrow Cities and we experience some of the similar challenges that you have shown today. And what we have found in many of the cities where we worked is this difficulty to move from one-off engagements that are aimed at risking foreign land use planning to something that really changes the decision-making cultures of those institutional environments.

So I would just like to hear some reflections about two topics that in my opinion are kind of long-standing challenges to implement this kind of work. The first one is something that many of you mentioned which is this balancing the needs of current generations with this process of long-term thinking and accommodating different timeframes when we are trying to incorporate disastrous production into urban planning.

So urban planning is by nature future-oriented but then we know that cities are often constrained by these political cycles and the changes that are often both political and normative. So how do you deal with this?

And these multiple timeframes that are required for disastrous production and what tends to be prioritized, what tends to be forgotten or left on the side. So this is the first question, so it's like a future thinking and trying to incorporate different timeframes.

And the second is a point about informality. Because I guess we often tend to be very optimistic in the way that we engage with land use planning and we try to think of informality as something that is to be avoided rather than recognize and incorporate into our thinking and in the way that we make decisions.

So I just wanted to hear a reflection also from the team about how do you deal with informality in your everyday work and in the way that you engage with institutions. Thank you.

We will take one more question and we will go to the panelists because we have the next session waiting for us here. So very short please.

Good afternoon. My name is Ypresona from Caribbean Development Bank. My question is kind of a little bit an extension of what she mentioned just to be very brief. the methodology is quite sound. But in one of the presentation when you spoke about DACA in Bangladesh, I see that the projection in terms of urban planning, I think it was 60% of the population.

And when you look at it, that they made is that you presented for DECA. I was wondering how really remove with more people in a city like Dhaka, based on all the hazards that we mentioned, should we consider, for example, extension in other areas in terms of urban development.

Just curious to know how the methodology presented in the political will. in terms of addressing the issue that we see in here.

Thank you. Don't we start from here? If you want to provide a response to the further questions. First question.

Yeah, so about the first question, so maybe we have to consider about the long term or maybe time series countermeasures. So actually I didn't talk about so much detail, but for example actually we have to encourage the understanding of the governmental people, because they are different kind of the countermeasures.

Also each countermeasures has a different effect including also the times, what time each countermeasures effect actually can decrease the disaster risk. For example as you mentioned, so land use planning will take time actually, so especially it's difficult to regulate the existing buildings for example.

But so the new buildings can be relatively easily controlled, so such kind of things can be considered. But so we have to also consider about the physical infrastructure and also the disaster risk or a rewinding system or other disaster emergency response activities.

Such kind of the rewinding system can be applied easily and also it will affect very soon. We have to also consider about the kind of time series. So maybe firstly we can

introduce the rewinding system or we can develop the disaster risk management planning.

But we also have to encourage investment for the physical infrastructure. So we have to encourage the understanding of the governmental people to have such a long term vision. So in Japan also we developed the many physical infrastructure for disaster risk reduction, but it takes very long time years, long years, many years.

So we have to also consider about such long term years.

Thank you. Sorry for rushing, but we are running out of time. So very quickly, Nasioth.

Super quickly, super easy question. So how do you balance present and future, formality and formality? Some of these things, I mean, because I don't have time, we can talk about it later, but I think that one principle and one way of thinking about it is that you have to, there is no perfect enforcement anywhere.

And there's no, so we need to, the same way that resilience is a continuum, enforcement is a continuum. So we need to basically start from acknowledging the reality in which we are in and really deal with that reality instead of having a plan or having a strategy or having something that pretends that there is more capacity or more, so I think that the issue with me, the thing in that I've been working there for 10 years, I mean, the things that they're doing today were unthinkable 10 years ago, and probably the things that they're going to be doing that are unthinkable.

So basically you plan and then when you're thinking about implementation, when you're thinking about dealing from a little bit, the informality is like you really need to push to deal with the actual reality of the place.

And then on the growth of DACA, of course, when you're looking at just DACA and we're working with the DACA, the government authority, you're thinking about DACA, but when you're thinking about Bangladesh, more of a national development strategy, they are thinking about spatial transformation and how they manage the density and what are the

push and pull factors that are bringing people to cities and how to develop economic opportunity and others to relieve some of the pressure that is going to come into DACA.

So from a government perspective, they're not just thinking, okay, we're gonna have 100 million people in DACA and this is just the reality. They are thinking, how do we manage this in a more like national strategic way?

So, but we can also talk later.

Thank you. I was going to pass the floor to the other panelists, but we are running out of time. It has been a very interesting discussion. I think we have matter to discuss it for hours, but unfortunately, we are short of time.