

June_18_Main_Studio_002

Welcome, everyone, to this technical session on Command and Control, Emergency Preparedness and Response Systems from Around the World.

I'm so excited for this panel. My name is Mary Boyer. I'm a disastrous management specialist at the World Bank's Global Facility for Disaster Reduction and Recovery, or GFDRR. And really, the main things that our global program does at GFDRR is to support countries to strengthen their Emergency Preparedness and Response Systems, or EPNR systems.

We do this through several different ways. First, we have a toolbox of tools to support countries to understand the gaps and weaknesses within their own EPNR systems. We have one tool called Ready to Respond, which is an in -depth assessment that looks at 360 attributes of EPNR systems from facilities, equipment, personnel, information systems, and legal institutional frameworks.

And then we have another tool called the Lessons Learned Exercise that is really a robust after -action review that can help a country look forensically at an event that happened in their last few months or even years and figure out what went wrong, how can we improve our systems, but most importantly, how can we develop an investment plan to move forward, an investment plan that you could take to the World Bank for funding,

or an investment plan that you can take to any international bilateral donor. We're working closely with one of our panelist countries in Nigeria to do a Lessons Learned Exercise on recent floods in 2024 to help them understand how they can better improve, especially community preparedness and response about floods that Nigeria is facing more and more frequently.

With the EPNR program, we also offer tailored technical support on a range of topics from if you need SOPs for your emergency telecom systems. If you need training on risk communications, we're also helping one of our panelist countries in Romania to support inclusivity in emergency preparedness and response.

And finally, we really work to disseminate knowledge products, but most importantly, we work to convene countries around best practices and good practices in emergency preparedness and response. That's one of the things that we really pride ourselves in being able to do, to use our convening power to bring our client countries to the table.

For example, in the United States, we're working closely with U.S. Fire Administration to bring countries to the table to have conversations about fire safety on themes that have historically really only been covered by the global north, United States, UK, EU.

We're bringing World Bank clients to the table to have those conversations at the World Fire Congress this past year. So why are we having this panel? Emergency preparedness and response is a cornerstone of disaster risk management, maybe one of the oldest pillars of the Sendai framework.

Before hazard risk modeling, before resilient building codes, before disaster risk financing and insurance, there was probably an official state, local organization, or even an organization of volunteers that really was there to respond to fires, was there to respond to flood events, was there to help the community get organized if they saw a storm coming.

So EPNR has developed so quickly over the past few decades with advances in technology, and over the next 10, 15 years, 20 years, it will need to advance even faster to address impacts of climate that will increase the need for more robust, streamlined, and responsive EPNR systems.

So I'm so excited to hear from the panelists I'm about to invite up about how their countries and their organizations have evolved and how they plan to evolve in the next decades to come. So without further ado, I'll invite Dr.

Lori Moore -Merrill to the stage, the U .S. Fire Department, Dr. Ryan Arafat, the State Secretary at the Ministry of Internal Affairs for Mania, and Dr. Anamode Bandele, the Director of Planning, Research, and Forecasting of the National Emergency Management Agency of Nigeria.

So, before we jump into this, I'm going to share their bios to share a little bit about how established they are in this field and why we invited them to speak with us today. Dr. Lori Moore Merrill was appointed by President Joe Biden as the U .S.

Fire Administrator on October 25th, 2021. Prior to her appointment, Lori served nearly three years as the President and CEO of the International Public Safety Data Institute, which she founded after retiring from a 26 -year tenure as a senior executive in the International Association of Firefighters.

She began her fire service career in 1987 as a fire department paramedic in the city of Memphis in Tennessee in the United States. Lori is a doctor of public health and data scientist whose work has changed fire and EMS deployment throughout the world.

As the principal investigator and senior project manager, she oversaw the development of landmark reports and other tools to improve residential and high -rise fire ground operations, community risk assessments, fire and EMS resource deployment, and big data analytics.

Her work continues to influence executive decision -making across the fire service. We have Dr. Raed Arafat. He is specialized in anesthesia and critical care and has a European Master in Disaster Medicine.

Dr. Raed Arafat is the founder of the Mobile Emergency Service for Resuscitation and Extrication. It was established in 1990. Starting in 2007, he coordinated the activity of many institutional structures and strategic programs for emergency situations, among them Healthcare Systems for Emergencies and Disasters in the Ministry of Health, as well as the Department for Emergency Situations that coordinates the General Inspectorate for Emergency Situations,

the General Inspectorate for Aviation, the Emergency Medical Services, and Mountain Rescue in the Ministry of International Affairs. Dr. Arafat has a wide experience at operational coordination of emergency services and has participated in numerous trainings and seminars and courses.

He also received academic titles and distinctions conferred by prestigious national and international organizations. And finally, we have Dr. Anamodi Bandelli. He's an administrator with over 20 years of experience in EPNR.

He's currently the Director of Planning, Research, and Forecasting at the National Emergency Management Agency in Nigeria. Before this role, he held a wealth of positions in leadership, such as the zonal coordinator of the Southeast, South -South, and Southwest Zones of Nigeria.

He was Deputy Director of Search and Rescue in the agency, and he coordinated emergency operations centers for the devastating Nigerian floods in 2018. Prior to NEMA, he had various roles in the Kogi State, including economic affairs.

And Dr. Anamodi, we were discussing, he's a doctor twice. He has a doctorate of veterinary medicine, as well as a doctorate in public health. We're so excited to have him speak with us today. I'm gonna ask them a series of questions, but I wanted to preface that by sharing that I've asked them to answer the questions, but also to share a bit about the command and control environments of the countries that they're representing.

We recognize, of course, that the United States is unique. It has FEMA, under which the U.S. Fire Administration is operationalized, and then other countries have different ways of responding. So I also want to share a little bit of that, as well, in their responses.

So let's start with Dr. Lori Moore -Merrill. So Dr. Lori, fire service leaders are at the front lines of climate impacts. It's showcased by the special first responder role that fire service has in the United States.

How is the United States improving its response capacity by increasing gender equity, among other things?

Very good. Thank you, Mary. And good morning, everyone. So I'm honored to be here to be able to share with you a bit about the United States emergency response and preparedness scenarios. First of all, as Mary said, the United States Fire Administration sits within our Federal Emergency Management Agency.

Though we sit as a component of FEMA, we are not a disaster response agency. We prepare first responders to hold the front line every day in emergencies and during disasters long before our Federal agency can respond.

We also sit within the Department of Homeland Security, just underneath then the White House. And so that is our framework. But our emergency response systems throughout the United States are really deployed by our local municipalities, so within our state.

So our 50 states then break down to counties and or cities, so municipal infrastructure for our local responders. So all our firefighters, our paramedics that deploy and usually they are together. We have most of our systems that are fire department based, but we also provide emergency medical services within that infrastructure.

And so we are known as all hazards response agencies within our fire departments throughout the U .S. Everything but law enforcement is what we do. So it is whether it's hazmat, whether it is baseline disaster, emergency medical or fire, our firefighters and paramedics from their departments respond.

And so within that space, back to your question Mary about how are we considering now hazards? What does that look like? Well I think that all of us across the globe are really faced with baseline risk changing.

In other words, climate change has really changed the face of what we see as a risk. Normal risk and is any risk normal, but typical risk within the U .S. We have never before seen the number of fires that we have.

We have a lot of wildfire on the West Coast, but now we have it across our nation. We are seeing wildfire, drought driven wildfire in the Northeast, which is highly unusual. We're not prepared for that in the U.S.

today. The same applies with the hurricanes that are hitting on the West Coast now of California. They are not typical for California. And so we're watching as our very baseline risk change, which means that our responders have to adapt as well.

Their equipment, their PPE, how they're trained. If you're not trained for wildfire because you only have fought structure fire in your career, then how can you be prepared and trained to respond to now multiple structures burning because of wildfire?

And so we're looking at that. I can't answer right now, Dr. Esma. No, no, not at all. So we have to prepare and train differently. And I'll use the example of our Lahaina Maui fire. I'm sure all of you saw what happened in one of the deadliest fires in the U.S.

in over 100 years. As we saw a wildfire, drought driven by the way, coupled with a hurricane that killed 101 people just last August, so less than a year ago, as the drought on one side of Maui, the island, was overcome as well with more invasive species of vegetation that didn't belong there.

Vegetation that grew rapidly and then in the drought dried out quickly. Well, once you have an ignition, then that type of vegetation in those grasses that do not belong in that area then become fine fuels.

They burn very fast, which means the fire spreads very fast and the embers from that vegetation spread quickly. Well, this is what happened in Maui. All day on August the 8th, they had had multiple ignitions because of the drought and the wind that was already starting from the precursor from the hurricane moving into the area.

The electrical lines in Maui are all above ground. And so the wind had contributed to lines falling and sparking some vegetative fires. So the fire department had been responding all day to small vegetative fires.

But what happened in that evening at just about sundown was that an electrical line, as far as we can tell, also started another vegetative fire that sparked a home. Once we had a structure ignition, the homes are so close together and they're not built of fire resistant materials.

Once we had structural ignition and now ember movement due to hurricane force winds, now we have structured a structure fire spread very quickly. That's what happened in Maui. The fire spread so fast, the ember movement was so fast, and the fuel load from the non -fire resistant homes was so heavy, there was no way out.

We had two narrow streets to do evacuation, and on the island there were only 35 responders, and no one else coming, it's an island. So we can't put any aircraft in hurricane winds to come to the island, there's nobody coming to help.

So these firefighters responded from their stations, they did what they could. Many of them were in scenarios where the fire encircled them, they were trapped. They were removing their mask in order to help with evacuation, people couldn't hear them, people couldn't understand where to go.

Again, narrow streets, the fire's burning in structures all across the front of the island. And so what we had was a scenario with many people trapped on the roads, the first 56 people who were found in Lahaina were found in their front yards or their cars trying to escape.

We had firefighters who were trapped in the scenario, and eight of them completely surrounded by fire, one of them succumbed to the smoke from having removed the SCBA, and so they were able to commandeer vehicles to escape themselves, and then resuscitate the one firefighter who had succumbed to smoke.

So we ultimately had no firefighter deaths, they did resuscitate the one responder. But this taught us a lot about resources being available that match the potential risk in any environment. If we don't have resources, response capable resources to match a potential risk event, we will always be playing catch up.

And in a risk, especially with risk escalation in an event like we had, with structure to structure spread rapidly, you'll never catch up. There's no way to get in front of what we term horizontal fire.

And so that's what we saw in Maui, there was no way to catch up. Consequently, 101 people died of their injuries. And so how do we overcome this? How do we train in our departments that we must train to the risk event to what is potential?

Not what you've seen in the past, because we've already established that the past is the past, we are seeing a baseline risk change. We must prepare for what we have seen now. In the US, we have people on the news constantly saying, well, this has never happened here before.

This is true, but it's going to happen again. And so this is the way we must prepare as we are looking at risk and trying to understand risk events. And so your other part of your question, Mary, is how are we using gender equity to bring more women into the fire service?

Because in the US now, we have a shortage of first responders. During COVID, we had a lot of first responders retire. They no longer wanted to work in that risk environment because that was a different risk.

And so we have to figure out how do we build our ranks back? And so we are focused on gender equity and heavy recruitment of women across our nation. And once we get them on the job, it's not just recruiting them, it's keeping them on the job because we invest in the training.

How do we do that? Well, we are focused heavily on policies that match women needs. You see, we have a lot of women that come on the job, but once they have children, they don't stay. And so we want to make sure that our policies will match when women have children and they want to do childcare.

Perhaps it means changing the shifts and how we work. Perhaps it means different PPE. We need to make sure that their protective gear fits. Women not making them wear gear that fits are made for men because women are shaped differently.

And so these are things that we do in the US that we're able to make sure that we can recruit and retain our women on the job. So I'm gonna stop talking for a bit, Mary. Thank you very much for letting me open.

Thank you.

Thank you, Dr. Lorry. I appreciate your key message on train to what is the potential. I think that's really important moving forward. I know you're also a big advocate for data and understanding those risks, so that also speaks into having a better understanding of risks that feeds into the strategies and training of the fire service.

Okay. I'm going to jump to Dr. Arafat, if you don't mind, because I think this question really speaks to your last point, having the resources that are available. Dr. Arafat, serious time and energy investments are necessary in advocating for governments to allocate more resources to strengthen EPNR systems.

And sometimes big changes can be seen by small but substantive efforts and inclusion. How has Romania done it and what are recommendations for other countries?

Yes, thank you very much for the question. Good morning, everyone. And I want to echo now what was said by Dr. Laurie continue on it because without resources, we cannot deal with the risks that we are facing and the risks that we may face in the future.

We need always to be thinking of the unthinkable and to prepare for the worst case scenario. And if we don't do this and we keep on preparing for the history of cases we had without building up for what may happen in the future, we will always be running after the situation and not ahead of the situation.

So now to understand how we work in Romania. The Department for Emergency Situation was created in 2014. And at that time, the thought was that the department should integrate all emergency response for daily as well as disaster response.

For daily response as well as for daily response. So what we have under the department are over 60 ,000 people in various pieces of work coordinate by us under various structures. So we have the General Inspectorate for Emergency Situation which is the fire service of Romania and Civil Protection Force.

This is very peculiar because it's a national structure and since 1834, it has a military status. So this is of military status, it's not armed forces, it's under the Ministry of Internal Affairs and its tradition allows us to keep it like this and to use it nationally.

So we can move resources from one country to the other when we need them. We have redundancies, we have the possibility to respond better into a situation where one county cannot deal with that situation alone.

So this is one thing. Then we have the aviation resources which include forest firefight, but it includes medevac, it includes medical emergency response by air and many other issues, search and rescue and so on.

Then we coordinate resources of other ministries and this is what I want to underline. The Ministry of Health has its own though the fire services also do medical response like in the States. But the idea is that the coordination and the command and control should be single.

So we coordinate, yes, thank you. So we coordinate the operationally, the National Ambulance Service, even the emergency departments and the hospitals are under our supervision and coordination and the mountain rescue as well.

Now how did we build up our resources? There was a lot of negligence regarding emergency services. Not much investment, they were left, the fire services were left with equipment from the 80s to tell you like this.

So in 2014 when the emergency department was founded, the emergency situations department, we started analyzing the situation nationally. And then we had a chance. Those who are from the EU, they know very well that we have EU funds for every six years or five years period that we can spend them on various issues of development of our countries.

But very little was allocated to the emergency services. Until the Prime Minister once called me and he said, why is the press saying that I want to kick you out? I don't want to kick you out. I said, okay, I didn't talk to them.

I am now in a visit somewhere and he says, you cannot tell me you have everything you need. And this is exactly what I needed him to say. Said, no, I never told you we have everything we need. We don't have this, this, this.

Our vehicles are old and so on. And he says, come and tell me what you want tomorrow. No, I said, you give me three, four days. So I called all the people from our fire service and so on the headquarters and we started working.

And what they were thinking of was, okay, we need fire engines, right? We need ladders, right? We need ambulances, right? And everything was fine. And I said, no, we need things to deal with mass situations, mass casualties.

We need things to deal with big events. So we looked at sheltering. We looked at mobile morgues. I was telling Dr. Laurie before. We looked at specific equipment that was not usually within the fire service.

Robots, new technology. We looked at the seaside at the Black Sea and we said, we need to go on the sea for firefighting and search and rescue. We looked at the air and rescue and so on. So what we did was.

A full plan, and we went to the Prime Minister. I called him, and in fact he received me in five minutes. I called him, I said, I'm ready now. He said, you can't come. So I went there, and I told him, here's the bill.

It's 800 million euros. You are crazy, no. Told him, this is what we need, let's go through it. We went through it, we explained to him why every piece is needed and so on. And so then he sent me back to my office.

I thought everything is dead. And in three days, he called me back and he said, you have 550 million. And my first question was, is this with the co-funding of the Romanian government or without it?

And after a calculation, he said, okay, it's 680 million with the co-funding. At the end, we spent about one billion euros to increase our resources between 2015 and 2023. One billion euros. And still, we didn't get to our services all what they need.

The money we spent is well spent. But the politicians need to understand that this is an ongoing issue. You need to maintain. You need to keep things running. You need to go on with innovation. And when we want, and we talk a lot about being resilient, we keep on telling everyone in Romania, resilience has a big enemy.

And it's called cost efficiency. If you want to be cost efficient, which means you calculate your resources exactly to your need, then you don't have redundancies. Then you are less resilient. And when something big happens, you won't be able to respond.

I won't be able to withdraw vehicles from a county to another county if that county will remain without vehicles. So I need to have a redundancy. I need to have an extra capacity. So this is what Romania did with its resources.

We identified the source of money, which was the European funds and the state budget. And we looked at all risk approach, all hazard approach. And we looked at what we really need to deal with the unexpected and with major scenarios.

And just to end with this, two things happened after we started doing this. The pandemic. We were the first line response agency for the pandemic. We coordinated the operational response for the pandemic.

Luckily, by that time, our logistics was upgraded to a very high level, trucks, vehicles, everything we needed. And it was all deployed and used during the pandemic. And then the second thing was the Ukrainian war and the refugees.

We both sheltering for displaced people from floods. We never thought we will use them for refugees. But once the refugees started pouring in thousands per day, we deployed our sheltering capabilities and created 13 transition centers on the border.

So the preparedness, usually you prepare for one thing, but that thing, you may use it for other situations that you may face. Usually it's never only for one situation. Many times it's horizontal. You use it for several things.

So this is the way we built up the system. And one more project I talked about yesterday, we look also at our firefighter safety. So we are now running a project under the World Bank of retrofitting and or rebuilding 35 fire stations which are under huge seismic risk.

So we have about 140 million euros for this. And the first four fire stations, new fire stations were reopened after they were evacuated and rebuilt. And this is to be sure that the firefighters will get to the emergencies and will get to respond in case of an earthquake and so on.

Thank you.

Thank you, Dr. Arfat. I think that really speaks to Dr. Lowery's point about training and planning for the potential, asking for redundancies in your facilities and equipment. Two is one and one is none.

I think that's a motto we should all live by in EPNR. And that brings us to our final panelist. And I'm going to ask a question and try to do this transition and slides at the same time. Dr. Ademode, developing countries are facing the same issues that countries around the world are facing, both with less resources.

How can we be creative, lean on support from the international community, and improve EPNR governance to use community preparedness to minimize risks? And I'll pull your presentation up while you start.

Thank you very much. Good morning, all. Let me start by introducing the National Emergency Management Agency, which is a creation of the federal government of Nigeria in the year 2000, to expand the scope of disaster management.

The command and control system, the agency report directly to the vice president of the country, with the day -to -day running of the agency being managed by the director - general, we have a vertical and horizontal relationship.

The vertical relationship is we have NEMA, which is the coordinating body at the top, with our relationship with the Ministry Department Agency, including the military, international organizations, NGOs.

It trickles down to the sub -national level, where SAMAS, the State Emergency Management Agency, are supposed to perform exact function like NEMA. Then it trickles down to the local authority, which will refer to the local emergency management agency.

But I must confess that these structures are mostly functional at the federal level, still very weak at the state due to political will by leadership at the sub-national entity. And over the years, we have seen that consistently, there is one major event that brings everybody on board, and that is flooding, and we tried to look at the first major one we had was in 2012, another one was in 2018, before the massive one in 2022.

We tried to operationalize what we have at the center, which at the federal level, at least the way they are talking, I was the head of the National Security Act, we got to try it at the sub-national level, because there are no functional state emergency management agency, there were gaps in delivering response to the affected persons.

So having done that, in the process, we partnered with the World Bank, who helped us in an LLE program, and from there, we have been able to come out with some of those gaps, some of them include the LEGO institutional framework, especially at the sub-national level, we are looking at gaps like infrastructure, equipment, capacity building, etc.

And in an attempt to ensure that these things are done, we are working very closely with international partners, the UN OCHA, the UNICEF, right now in my country, UNICEF is carrying out a hazardous assessment of the whole country, to ensure that we know where these things are and how to respond to it.

Going forward, we are looking at improvement of state capabilities, to be able to cope with the dynamics of some of those hazards we have in our country. So coming to your question, how do we learn resources, how do we cope with the present situation?

We are leveraging on cooperation with international organizations, and we are really engaging with the lawmakers at the national level, because if these lawmakers don't understand the concept of disaster management, the tendency is that they are not likely to give you the necessary support to be able to deal with the situation.

There in the chambers, you are on the field, sometimes when you make proposal for budget, it is enough for them to know what you are doing, so that they can be carried along. And we need to strengthen EPRR at the state level.

Incidentally, one of the governance of my state is around what is not in this session. We are saying, because Nigeria operates a federal system, so the funds are equitably distributed, and because NEMAA cannot enforce the same as to carry out their function, all we do is mostly advocacy to ensure that funds provided for disaster management are actually given to these people.

I want to go forward and include the local entity because we believe that every disaster happens at somebody's backyard. And the first responder should be the local emergency management committee. Right now in Nigeria, I must confess to you, there are no SIRAs response plan at the local level, no SOP, no equipment.

But with what we are doing, we are trying to get everybody on board to ensure that the locas are included. And when the locas are included and you have local emergency management plan in place, you spend less in response when you get those people on board.

So in the North Shore, that is where we are in Nigeria. And we are hoping with the lesson we had with you, Mary, we will go forward to helping the state and the local government structure. Thank you.

Great, thank you. Indeed, that was a really didactic workshop we had in Abuja about a month, two months ago, that brought together government leaders, representatives of a dozen states or so, everyone that was impacted by the floods, even those that were not impacted, but have state emergency management agencies that need to be institutionalized and receive funding from the national government entities.

We talked a lot about lessons learned and what we could do for future investments. So I'm really glad that that's been helpful to you. Now I'm going to open it up for questions from the audience. Okay, go ahead.

Do we have a mic floating?

And he provided you \$500 million. What would have been your strategy B if your prime minister had asked you, I have only \$100 million?

use it, and then go and ask for more. But then we would have had to prioritize the equipment. Then we would have been going for the essential equipment and trying to get the money further for the equipment, which bring us more preparedness, let's say.

But any amount of money is welcome. I would have been smiling. I would have been saying, OK, but I will come back. And I would go back and request more. But as I told you, we got from the Prime Minister 680 or 88, and we got at the end to spend \$1 billion.

So you can imagine, I was not sitting in the office happy with the 688. I was going and asking for more and more and more. And we got what we needed for that period. Still, we need to ask for more to build up the resources.

It's not sufficient.

Thank you.

Thank you very much. My name is Srikuniwari. I'm a disaster management specialist with the World Bank. Coincidentally, I'm also in Nigeria, so I want to kind of speak with my Nigerian counterpart on the National Emergency Management Authority site and just provide a few comments or maybe a question as well, right?

Because my understanding is that the current emergency management system in Nigeria incentivizes response more than preparedness and planning, right? Because I think you've also highlighted that, you know, everything happens at the national level, right?

And at that national level, NEMA is basically structured to respond, right? At least that's my understanding. But I also understand that there are other institutions, for instance, the Nigerian Hydrological Service Agency, right?

That provides annual forecasts, right, on what should be done, but also, of course, there are lots of gaps in some of those forecasts that are provided because they are not disaggregated to the level where you can actually know what the flood, what flood levels you should expect, what is classified, high -ricks, low -ricks, and medium -ricks, which does not necessarily tell you, you know, which area within the state would be impacted by flood,

right? So I think, you know, there's a need for, you know, beyond collaboration with international institutions and also, of course, trying to do a lot of advocacy at the national level as well to be able to get the lawmakers on board in terms of budgeting and providing those resources.

There's a need for a lot of cross -institutional collaboration because the major disaster is flood, right? I have institutions that do forecasts, but also beyond that, you know, there's need for, you know, like, when you're trying to plan within, you know, a state or plan an infrastructure, you know, there's a lot of consideration that needs to be done in terms of making infrastructure resilient,

right? So I'm from Biosa State in the south, where every year the whole of the roads get flooded, right? The major road that takes all of the resources that is needed, you know, to several states in the south of Nigeria gets flooded.

The cost of everything increases, right, and people can necessarily assess all these things. So, you know, beyond, you know, responding and preparing, of course, there's a need to think a bit more about, you know, how to make infrastructures a bit more resilient as well, you know, and I think that would be a good effort for, you know, the National Emergency Management Authority to also advocate and also collaborate with technical institutions to move things forward beyond,

you know, just responding to preparedness and also mainstreaming resilience in how infrastructure is planned, you know, beyond that. So thank you very much.

Thank you, maybe I should add my voice to what you have said. Let me correct the impression NEMMA is not a response agency, it's a coordinating agency. What we do is to build the capacity of other responders, fire service, the Minister of Health, ETC, ETC.

Talking about NICE, Alana's Journal, NICE, the Nigeria Hydrological Services Agency and the Nigeria Metrological Agency, they provide a focus, but immediately after the focus, NEMMA will convey a technical expert meeting to bring out the disaster management implication of those forecasts.

And as I speak to you, the team that is going to Biasa will be there on Wednesday to talk to the people, to show them, in fact, let me add that just about two months ago, NEMMA Commission and Ultra Modern State of the IGIS facility to ensure that we don't just get to the local government, we want to mention the particular villages and communities that have been on data with flood water.

We take these campaigns to them, and we are involving them by learning their own traditional LA warning system. Some, you get to some community, they will tell you, if a particular boat comes out in the night, it means that here there will be flood.

You don't throw that away, it's additional information. So we, maybe in the past, I became the director of planning about one year ago and I think we are changing the face of how we do our things. So we are taking this information to the end users.

It's like saying you want to go to Kogisti, where I come from. You want to talk to the governor at La Koya and stop there. La Koya is usually not in on data with water. What about it, but what about either?

So we are telling ourselves, go to the local government, meet the traditional law, meet the local government chairman. Let them bring local town criers. Get these messages to them in local languages so that they can understand it.

And if they understand our preparedness message, it becomes easier for us to manage even before the water gets to them. Thank you.

We have another question.

Thank you very much. Thank you very much for the great presentations. My name is Rodrigo Gervais. I'm from Kyoto University from the Disaster Prevention Research Institute. I was very much moved about the philosophy to focus on worst -case scenarios using this change in baselines.

Actually, when we think about how to select the adequate model to prepare for, it's very difficult because the trends are changing. And also, if we try to prepare to the worst -case scenario, the infrastructure needed, it's going to be very costly.

So how do you manage to do, in a practical way, how do you manage to try to find some type of equilibrium in this base -changing situation where we do not fail to create, for example, hazard maps that fail, for example, in the Great Japan earthquake in 2011, that in Sendai, actually, the risk map failed completely.

And that has a problem. But also, if we go to the very upper part, we are going to make people lose the heart that they can do something. Because worst -case scenarios are, as you said, worst -case scenarios.

So that equilibrium, it's very important for me, at least, very interesting to hear about your experience. Thank you very much. Thank you.

Well, let's take the pandemic. It was a pandemic which was with a very low mortality, though it killed a lot of people. What I used to tell my people, this was a slap on the face, not a punch in the face.

Now, if I want to build for the next pandemic, I would never build on the history of this pandemic that passed. And I would think of something worse. And that is, what about, I mean, the coronavirus, we know that it had varieties that killed 15 percent or 30 percent.

So at least we would be thinking, let's build up for a scenario of 5 to 10 percent, maybe not 1 percent or 2 percent, you know. I mean, we always would prepare for a worst situation. The floods, we see that we prepare for floods and we are always exceeded.

So we need to start thinking of how to prepare for more devastating situations than the ones we had. So the idea is, first, don't build on the history only. Learn from the history, but build for better.

Prepare better for the future and think that you will face worse scenarios. Now, there is science also behind that. And if we can use science, that's very good. But also there are what we call and what I call the no -regret measures.

There are things that whether you have the science or not, you will still have to do them, and you will still have to have them. And you need to do this. This is where you get the issue on deciding the funds you have, how to use them.

So it depends what funds you have. If you have sufficient funds to build up better to the highest level, you do it. If you have less sufficient funds, then you have to choose the mostly necessary equipment and materials you need for the future.

So this is how we see it at this moment. If there is science and we can use it, it's okay. But never just build based on the history. I used to, there is a former administrator of FEMA, I'm sure Laurie knows him, Mr.

Figuet. He used to say to us, people plan their exercises to the level where they know they will always succeed in the exercise. They never plan their exercises to fail. And this is one of the big problems, is that when we do our exercises, we are very happy.

Wow, we did it. But when we see how we plan them, we plan them to succeed. We need to start looking where we fail. We need to start looking what are our failing points in the exercises and what we need to prepare better for the future.

This may take us towards the philosophy of worst case scenario or the unexpected or the black swan issue where you need to prepare also for the black swans. So was the pandemic we had a black swan? No.

In my opinion, it was not because we all knew, we all were warned. And in 2019, Romania ran an exercise in the EU when we had the presidency. And our conclusion of the pandemic exercise, which we ran it with the Helsinki Hybrid Threat Center, was that Europe is not prepared.

The world maybe is not prepared. And we issued a report about this in June 2019. And we said we lack stockpiles, we lack protective equipment, we lack facilities and we lack human resources. And it proved, sadly, to be right when the pandemic came.

I'm going to add to that if I may. So I love everything Dr. Arafat just said. The one thing that we are doing in the US, because I don't have someone I can go to and just say, can I have a billion dollars to fix?

So I'm very envious of Dr. Arafat and that remain. We have to use data. We have to have good data, and it has to be timely data. So we need to understand what is happening. If I can't show the risk, I can say we're having risk change in baseline.

But if I don't have people who believe that, then I must bring the evidence and show them that yes, things that we are responding to in each of our jurisdictions across the US have changed. And they are not changing back.

It is consistently a change from one year, three years, five years ago. That's how much the change is impacting. But we have to show it in data. So one of the things that we are investing in is a data system that will be a nationwide data system that every fire department will be required to input data.

So we know what they're responding to. What kind of incidents are they doing day to day to day? This is how we are tracking also our emergency medical calls. So what are the emergency medical incidents that we are seeing?

So how are people's baseline health changing based on what we're seeing in emergency response? So there's so much data that can be amassed from day to day emergency response to tell your story. And I think that's the way that we are going to get people to listen.

And I love what you said about what if we have risk maps that are wrong? I can tell you right now in the US we have risk maps that are wrong. We are leveraging maps that are so dated and we must understand the impact that we've had again from climate change, among population migration, all the other things that are impacting our risk.

And we must reevaluate what we measure as risk and not accept that something that was done five or 10 years ago is still correct. So this is where I believe data and innovation, we have to invest in that as well.

May I, I want to continue because this is very good. I will give you an example. Our Minister of Health comes out and says, emergency departments are abused. Everybody coming there except for 10% should not be in the emergency departments.

So how do we fight this with data? So we had the data and we showed him that only 15% of the patients coming to the emergency departments should not have come there maybe. And the rest of 70% by directly or indirectly they would have arrived to the emergency department.

And we went public with this data and we showed them. We said, no, this is wrong. What you're saying is wrong. We have data. So here I fully agree. If you have the data, it helps you to build up your scenarios and to build up your future preparedness plans.

Well, I saw you raise your hand the first time, so go ahead in the white shirt.

Thank you so much for the panelists. I have a question, my name is Lisa Lang from the World Bank. I have a question for Dr. Lowery. I like the fact that you talked about data and how important it is to help with your decision making and help with policy making.

I'm curious, how do you as the emergency operation center work with the technical agencies like NWS, like NOAA, to, on a day -to -day basis, to make decision? On the one way, they provide information for you to inform any early warnings at the issue, but I'm also curious, on the other side, do your data also help them to improve their forecast and help them with their modeling exercise?

Thank you.

I love that question. We may be here a while. So we are the data platform that we're building. It's a new and it's an analytics platform. So it's not a database per se. And in this analytics platform, we are leveraging today what is siloed data across the US and all the government agencies.

So the National Weather Service, everything from our ZOD to our baseline risk, the flood plains, what we believe is a fire risk index or the wild land. We don't have a fire risk index for the built environment, but we're working on that calculation.

So all of these risk profiles can be layered in a geospatial environment to really help us mine for intelligence. And so it's that kind of baseline risk. This is when you line up your typical, what we thought were typical risk.

But when you see them together, you begin to realize it's a multivariate risk profile that all of our geospatial areas have today. So you can see the changes. So this is how we're leveraging data from all of our federal partners in the US.

One of the things that we are also doing is really leaning in to help educate the public on what risk look like. I've already said that we don't have enough first responders to respond to all of the people who need help.

We just don't in a timely manner. And we must then teach people to understand risk themselves and where they live. We were talking with the Weather Channel in the US that provides 24 -7 weather. And they have done some data work, and they told us that 70% of people in the US don't know what county they live in.

So if we are putting out weather advisories by county, and you don't know where you live, this is a problem. So these are things that we are trying to do much more community engagement to help people understand where they live and that they may live in risk -prone areas or in housing that's not safe.

So we have a lot of particularly public housing or multifamily housing that is not, it's affordable, but it's not safe. And so in the US, we are really teaching people the concept of making themselves savable.

You may not be completely able to save yourself, but there are things you can do that buy you some time until the rescuers get there. If we don't have enough, then it's gonna be a delay in them getting to you perhaps.

So what can you do to keep yourself safe or safer until you may still be in a risk environment, but you buy time until they arrive, like smoke alarms if you have a house fire. So these are concepts that we are leveraging with our community engagement to help people understand.

So coupling data, mining it for intelligence, and then teaching the public about their own wellbeing.

Thank you so much. I'm from the United States and I live in Anne Arundel County. Very good. OK, one more question if we make it fast. OK, go ahead.

So, hello. My name is Yoko Okura. I'm a disastrous management specialist at the World Bank and we're supporting our counterparts who are also here at the provincial level in Pakistan on emergency services, which is very similar to the organization you lead.

And you mentioned earlier about the gender equality and equity aspect, which is a really big pillar of the work that we're supporting. And I'm curious to hear from you. You spoke a little bit about the retention part, but on the recruiting aspects, if you could speak on, you know, any specific initiatives you've done to support bringing more women into a very traditionally male -oriented workforce,

and especially in your position of leadership, what is the kind of messaging that you have been, you know, sending and conveying to kind of get buy -in on the necessity of women in these more traditional male -oriented jobs.

Thank you.

question and Pakistan was at our world for our Congress so we were very honored to have them at the table of delegates so one of the things that we are doing across the states and it's it's growing and growing more we're hosting girls camps so we bring in junior high and high school aged girls and the women firefighters in those departments are leading them they're putting them in gear we're sizing them we're putting them through evolutions on the fire ground some of these camps are they come in every day Monday through Friday some of them last for two weeks or a month and they keep coming some are they're housed and they just come and they're there for 24 -7 just like a regular shift and they get to learn and see what other women do we're also teaching a lot of our men officers our male officers how to lead women a lot of men are very uncomfortable and they think there's something so vastly different that they can't lead you the same way you're just there to be a good firefighter or a good paramedic right and it's the same just teach me to be the best at what the job is and so don't treat me differently and that's something that I have had some really good male mentors leaders in my career that have been that way they didn't treat me differently they knew I just wanted to be the best at the job and they train me the same treated me the same and that's what most women want so it's getting on trade getting girls to be interested in the job and seeing it as an option for them so they believe they can do this career and then not treating them as special or different just one of the firefighters that are there to do the best job so this is how we try to bring that concept that's great question thank you

