THE BROOKINGS INSTITUTION

MITIGATING NATURAL DISASTERS, PROMOTING DEVELOPMENT: THE SENDAI DIALOGUE AND DISASTER RISK MANAGEMENT IN ASIA

Washington, D.C.

Friday, May 10, 2013

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PANEL 1: LESSONS FROM 3/11

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PANEL 2: CHALLENGES OF DISASTER RISK MANAGEMENT IN ASIA AND THE TRANSFERABILITY OF JAPAN'S BEST PRACTICES

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PANEL 3: STRATEGIES FOR MAINSTREAMING DISASTER RISK MANAGEMENT IN DEVELOPMENT ASSISTANCE

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P R O C E E D I N G S

MS. SOLIS: (in progress) think about building resilience against natural disasters. And I think this was the spirit of the Sendai Dialogue, that the Government of Japan, a the World Bank launched last October, where they're really trying to extrapolate the lessons from Japan's experience, and then try to bring these lessons into how we think about development strategies, how we put together these economic assistance packages in a way in which they can mainstream disaster risk management. And that is the central focus of this conference.

I should note that this is a collaboration, a very happy collaboration, between the Center for Northeast Asian Policy Studies and the Brookings-LSE Project on Internal Displacement. And what we decided to do is, we have for this conference three panels. And we told our panelists that we would have one central question running as a theme in each of these panels.

So let me tell you what we told them, so you understand where they're coming from in their presentations.

For the first panel, the central question is: What are the lessons from how Japan dealt with 3/11 on how a country can prevent, respond, and reconstruct after a mega-natural disaster. And we should be quite candid in assessing what worked, but also what didn't work, from Japan's experience.

For the second question, we're interested in what are some of the specific challenges that developing countries in Asia face when they're dealing with natural disasters? And in which ways could development assistance programs that have a focus on disaster risk management complement well what the countries in the region are already doing in trying to respond to these natural calamities.

And lastly, for the third panel, I should note that there is an exciting opportunity out there. In 2015, many of the leading development initiatives are going to go through a process of renovating their mandates, rethinking, re-conceptualizing where should they take the development agenda next. And this is true for the Millennium Goals. This is true, also, for the Hyogo Framework for Action.

And I think that, then, this brings an opportunity for us to think about concerted action. And if we proceed in a strategic manner, what kind of synergies are out there if we're going to pursue disaster risk management in many levels, and across different platforms? And, therefore, we want to make a small contribution with this event in keeping the eye on this one very important issue, continuing the discussion as to how we can think about making Japan's tragedy an opportunity for learning how to deal with disasters, how to build resilience.

Now, I should note that we are indeed very pleased, very honored, to have a terrific group of panelists. I think that you'll see, throughout the day, the range of expertise that all these speakers are bringing today. We have people, government officials, we have development experts, we have academics, we have practitioners from the NGO community -- we really have a very rich set of experiences for us today.

And many of them reflect local talent -- and we're very pleased that Washington is a city where all this expertise is to be found. But many of them actually came from very far away -- from Japan, and not so far away, from New York, but other places in Asia, as well. And we really, really appreciate the fact that they have made these long trips and they're willing to share their insights with us.

I also would to thank CGP for always their support in making our making our activities possible, and for many of the institutions that sent their experts to us, like

JICA, like Japan Development Bank, like the Ministry of Foreign Affairs in Japan. And if I'm forgetting anyone, please forgive me -- we thank you, as well.

All right, so now we're going to move to the first panel. We have a very full agenda. I want to introduce Jim Gannon, who is Executive Director of the Japan Center for International Exchanging in the United States. Jim has kindly agreed to moderate this panel. I should note that JCI has played a very important role in the fund-raising efforts in the United States in trying to gather the funds to assist the victims in Japan in the aftermath of 3/11. They have also been very much involved in thinking creatively about what kind of responses really work when you deal with this kind of disaster. And anyone that knows Jim knows the energy, the creativity, and especially the dedication that he has put into these efforts of assisting the victims in Japan.

So I cannot think of a better person for moderating this panel.

Jim, the floor is yours.

XXXX Panel 1: Lessons from 3/11

MR. GANNON: Thank you very much. It's an honor to be up here. I'm blushing after Mireya's introduction -- but it's quite something to have this lineup of some of the most prominent experts and practitioners who've responded to the disaster in Japan, both from Japan and overseas.

This is a very important conference. And it's very important that it's being held at Brookings today. In Japan, in the political sphere, in the media after the disaster, the one word you kept hearing was "soteigai" -- unimaginable, nobody could conceive of this happening. But the fact is that preparation and planning for these types of complex emergencies is very critical, and there are a lot of lessons to be drawn from Japan.

In the Japanese case, you heard two story lines -- that everything that the societal -- that the society had a heroic response, and people came together, or, afterwards, a story line that nothing seems to work, and everything was wrong.

But it's a very much more complicated, complex picture. And I believe today's speakers are really going to get to the heart of this, and try to draw out some of these themes that we want to think about for disasters like this, both in developed countries like Japan, and around the world in developing countries.

Today, we have a lot of speakers packed into a short time here. What I'm going to try to do is go down the list of the five speakers here, and the general order that we're going to proceed in, is first have two presentations that deal basically with disaster planning preparedness, and then really get into the nitty-gritty of the relief and recovery efforts -- and a particular focus on NGOs and NPOs, which played a very prominent role, basically for the first time in Japan, in this effort, and are going to be critical in the future, and then dealing with this very unique case of Fukushima, that shows the complex and almost the "soteigai," the unimaginable nature of disaster, or this particular disaster.

You should have, in packets that were handed to you, the bios of all of today's presenters, so I won't go into depth -- just quickly to name off the order. We'll start out with Professor Kawata, Yoshiaki Kawata. He's one of the most prominent experts in Japan on disaster preparedness, and we works at Kansai University.

From then, we'll go to Mr. Leo Bosner, and he can talk from his 30-year experience, or three-decade experience at FEMA, but also he has a long connection with Japan.

After him, Mr. Naoki Shiratsuchi, who has been playing a key role at the Red Cross, which was naturally at the center of the response.

Randy Martin, from Mercy Corps -- Randy has been, in addition to his long history of working around the world on major emergencies, he's been playing, quietly, a key role in the community of sort of overseas NGO responders in Japan over the past two years.

And then, finally, we'll end up with Daniel Aldrich, a professor Purdue University. He may be the most prolific writer, commentator, on the disaster in the U.S. And he has, in addition to being an expert on the nuclear issue, he's done a great deal of research into social resilience, and the NGO response.

What we're going to do is first have everybody speak from the podium here, and then all gather up here when that's all done, because I believe there are going to be a number of PowerPoints. Somebody whispered to me that there is going to be a timekeeper here who waves their hands when you have to try to end things, because we do have to keep this in line right here. So, please keep your eye on her.

With that, I will ask Professor Kawata to step up and lead us off. Thank you very much

MR. KAWATA: Good morning, ladies and gentlemen. I am first speaker. As a baseball player, Mr. Ichiro saw, it is necessary to have a very successful presentation.

So, first of all, I would like to explain about earthquakes and tsunamis countermeasures in Japan.

So, first, I would like to introduce the outline of the disasters. We lost about 19,000 people. Now missing is 2,700. And the injured is 6,100. The death rate is about 2 percent.

In 1995 we the Kobe earthquake, this rate is 0.1 percent -- so 20 times the very large death rate. Only 125 people were killed by earthquakes, not tsunami. So

every people in area believed firmly that earthquakes with magnitude of around 7.5. So that we call that conclusive evidence bias.

Therefore, people believed every countermeasure, such as tsunami breakwater, coastal dike, watergate hazard map tsunami (inaudible), and also, local government building are effective against tsunami. So the construction process would continue more than 10 years.

So, our central government efforts to do the committee activities of disaster reduction, the first one, two important committees, C-1, Disaster Lessons, and C-2, Reconstruction principally started in May 2011. And after the committees, new comprehensible committee, C-3, started in November 2011, the final report was proposed in July 2012. C-3 includes two special working groups, G-1, (inaudible) troughs, gigantic earthquakes, and G-2, total metropolitan earthquakes that will be a national catastrophe. So, G-1 and G-2 is now final stage to propose recommendations to our government. And May 2013, we have another C-4, to promote resilient society against natural disasters.

So, this one example of the coming the tsunami saw this -- okay, saw, in this time 17.7 meter tsunami came, and we lost 43 people in this residential area. The population is 650. So we have enough evacuation time, but most people couldn't escape.

So, response of the Japanese government after the great East Japan earthquakes, we have so active discussions about how to reduce damage from the next gigantic earthquakes and tsunami programs. So these are typical two important committees established by the Japanese government after the great East Japan earthquakes.

So, first one is the Reconstruction Design Council, in response to the great East Japan earthquakes. And other one, Center of Disaster Management Council, Committee for Technical Investigation on countermeasures for earthquakes and tsunami, based on the lessons learned from the 2011, of the passive cost of (inaudible) earthquakes.

So the left one is "observe the seismic intensity." So, in Japan, the seismic intensity, 7 is the most severe seismic intensity. And, also, right one is "seismic zone" generated by the earthquakes. So, the 200 kilometers multiply 400 kilometers.

So, why we have such a gigantic tsunami? First of all, the first one, plate-boundary earthquakes. These are very typical examples of the plate-boundary earthquake tsunami. And, simultaneously, in the off-shore, the tsunami earthquakes we had, the maximum displacement of the sediment in bottom, horizontally, 57-meter displacement, and vertically, 10 meters. So we had two kinds of tsunami. So, the first one is about 1.8 meter, and the second one is about 3 meters -- that's observed in water depth 1,500 meters, we had dips, pressure-type wave gauges on the bottom. So these are typical wave form.

So, the first tsunami is a longer wave length, and the second one is a shorter wave length. So, combined each other, so we had more than 20-meter tsunami.

So this is distribution of tsunami height. So, the round one is the inundation height, and the triangular one is run-up height so severe -- so, more than 30 meters.

So, we have very nice coastal dikes, but about 190 kilometers such coastal dikes were broken by the tsunami overtopping them. So, the yellow one is actual tsunami height, and the red one is new design level after the 3/11 earthquake-tsunami event.

So, we have so many recommendations to our government, and so we analyzed the tsunamis' and the earthquakes' characteristics. So the characteristics and the verification, and enormous earthquakes, with a magnitude of 9.0, a size that could not be (inaudible). So, right one is typical examples. This upper one is hazard map. So the blue-colored area was announced by the hit of the tsunami inundation, but actually, red-colored zone was inundated. So, the people in red-colored zone didn't escape, because hazard map showed this was safer.

And the lower one shows how do announced the tsunami warning by our medical agency. They misunderstood. First of all, they believed (inaudible) earthquakes with a magnitude of 7.5 studied. But, this earthquake was 9.0 earthquake magnitude. So, the very small tsunami height at first, Fukushima and Iwate Prefecture, only 3 meter. And Miyagi Prefecture, it's 6 meter. But 30 minutes arrived intervals, they devised this announcement. But at that time, people lost electric power supply, so they couldn't understand such a devisement of the announcement.

So, based on reflections and lessons learned, the disaster management measures against earthquakes and tsunamis must be rebuilt in their entirety. So, selection of earthquakes and tsunamis for hazard assumption and disaster management measures -- so, selection of earthquakes and tsunami for assumptions, according to research based on scientific perception, the largest possible mega-earthquakes and tsunamis should be considered from every possible angle, even in case in which it will be practically difficult to develop the facilities needed as disaster-management measures against the earthquakes and tsunamis, based on the hazard assumption. Such assumption must be adopted without hesitation.

So, our (inaudible) report shows such writings. So, principle to future tsunami hazard assumption and tsunami countermeasures will use the two levels of

assumption -- first-level tsunami, and the second-level tsunami. The fist-level tsunami is usually comes several, decades, 10 years, more 100 years. Level-two tsunamis come, the time period is more than 1,000 years.

So, countermeasures for mitigating tsunami, basic principles, we have so many. So, the disaster reduction philosophy that focuses on minimizing damage, and structural measures such as coastal protection facilities, but also through structural measures centering on evacuation. And community development should allow evacuation with shortest possible timeframe, around five minutes, in the case of communities where tsunamis arrive quickly. In communities where topographical conditions or the state of land-use make such responses difficult, it is essential measures for tsunami evacuation are thoroughly examined with consideration to factors such as tsunami arrival time.

So, countermeasures for mitigating tsunami damage, the photograph shows GPS wave-gauge at (inaudible) offshore Iwate Prefecture. We have about 10 with GPS wage-gauge now. And tsunami evacuation building, we now pointed out for local governments.

And so the development of communities resilient to earthquakes and tsunamis -- so, we have so many watergates to prevent the storm surges and tsunamis, but the height is not enough. And so, rising disaster awareness on tsunamis, so the quick evacuation, we recommended. But people don't obey such a recommendation.

So, measures to reduce damage caused by shaking -- of course, we had so many (inaudible) accidents in Tokyo Bay area -- so, far from epicenter of the disaster. So, huge damage scenario reviewed the method and content of damage scenario in response to the colossal damage cause by the great East Japan earthquakes, examined

(inaudible) damage scenarios, and the different seasonal conditions, or different time of day, or under different meteorological circumstances.

So, preparations for large-scale earthquakes -- so, we are much anxious about the next gigantic earthquakes and tsunamis, (inaudible) earthquakes. And another one is Tokyo-metropolitan earthquakes. We have to prepare to reduce the damage. So, now is two committees are now very actively.

So, expectation to the proposal documents -- the bitter experience and tough lessons must be permanently passed on other testaments linking the past, the present, and the future, and the wisdom for the building of disaster-resilient nation and communities -- based on the report of the Committee, does national government expected to perform necessary revisions of Japan's overall earthquake and tsunami countermeasures, and pull every effort into enhancing disaster management measures for the future, just fulfilling the fundamental role of the government to protect the lives and property of the nation.

Thank you very much. (Applause)

MR. BOSNER: So, how do I get this to the next --

(Pause)

MR. GANNON: Bosner?

MR. BOSNER: Great. Thank you very much. And, hello to everybody. I'm Leo Bosner, retired from FEMA. I've worked with Japan for awhile. I'll be talking today about the immediate-response phase immediately following the disaster.

The slides, by the way, will be on the Brookings website following this conference. So, if you can't copy down every little bit of information, please don't worry about it.

Very briefly, this was a pretty horrendous disaster. I was standing there in Tokyo, in front of my hotel, on the day of the quake, 200 miles away from the epicenter, and I was sure hoping the building wouldn't fall on me, because it was shaking pretty hard. Three months later, I got to the disaster area -- you can see here, the *Asia Symphony*, the good ship up on the dock there, parked next to the station wagon. The devastation was severe.

The following January, almost a year after the disaster, this is the fourth floor of a hospital in Iwate Prefecture. This is also the fourth floor, where uprooted trees definitely don't belong. It was a completely devastating, huge event.

I was there for six weeks. We had a fellowship from the Japan Society for the Promotion of Science, looking into disaster response -- not the nuclear part, but primarily the earthquake-tsunami aspects.

I was very fortunate, I got to crisscross the country. I got to speak to every Japanese specialist, expert, academician, fire-service people, doctor I could get hold of to ask them what they thought. I got to visit various disaster sites.

By the way, that damaged hospital -- that's the hospital you saw the pictures of the interior a few minutes ago -- the Japanese construction is excellent. The buildings mostly withstood the tsunami, but when the waters crashed through the interior of the buildings, they trashed everything.

I wrote a detailed report on that, which you can online, either in English or Japanese, on what happened inside Japan. And also, this fellow David Rubens, I never met him, but he also, from England, wrote a report on this topic.

But today I want to move right away into the business of foreign assistance. I'm not a foreign aid specialist. I've worked in disaster response. My remarks today are not as if I was addressing you folks, but as if I were addressing the

recipient-nations, the ones who might receive you aid, as to what they might do to strengthen disaster management in their country. And I basically came up with about eight ideas.

First off, I'd say, in the time of the disaster, be truthful and accurate in communicating with the public. They did not do this in Japan. They had serious problems about this, and they lost the trust and the cooperation of the people pretty quickly. There's a field called "risk communication." If you're interested in this topic, just Google up "risk communication," and there are all kinds of good articles on that.

Lesson number two is that very simple, old-fashioned warning systems can work great. Sirens, technology out of the 1930s -- the people on the coast heard those sirens and they headed for the high ground. Thousands of lives were saved by these things. So, by all means, go for high-tech, but don't forget the low-tech, because old-fashioned things can work pretty good, too.

Communication and damage assessment, key factors in response -- Japan had real problems here. They were not able to communicate with the field. They were not able to assess damages. And so the Japan government, as they'll admit, was dependent upon television news crews to decide where to send help. So, if your village had a TV news crew show up, well, you got help. If you didn't, you were kind of out of luck. You have to have a plan for this.

Fourth point I'd make is outreach ahead of time -- ahead of time -- to non-profit groups and to the private sector, the volunteer sector. These people can make a tremendous, tremendous contribution in the disaster. Unfortunately, in Japan, this was kind of a negative. The Japan government did not have an outreach program, or much of one, to reach out and plan ahead with the many volunteers, the many private groups that could help in the disaster. As a result, when the disaster hit, it was too late. The

volunteers and the volunteer groups either were used ineffectively, or not used at all, and many life-saving donations were actually turned away simply because it didn't have a plan for how to use them.

The fifth lesson I'd point out -- and this one, Japan worked pretty well -- is be ready to coordinate with outside groups. If a big disaster happens in your country, down there in Southeast Asia someplace, Japan, the U.S., other advanced countries are going to be quick to want to offer aid. It's probably going to military, because they can get there quickly. They can bring stuff in quickly. Be ready ahead of time -- how are you going to work with these outside, foreign countries when they offer to bring in all this help? Because they can do great work.

And, in fact, speaking of military-type people, this was a real plus in Japan. A country's military can do fantastic, fantastic work in disasters. The Japan self-defense force were heroic and hardworking. It was the largest deployment of Japan military since World War II. They worked with the American military and others. They did great work -- search and rescue, transportation logistics, feeding-up stations for the disaster survivor. It was excellent.

However, the military people are probably not thinking about things like planning ahead for what kinds of food to keep people alive after they've been through a disaster. Shelter management, volunteer coordination, managing cash donations -- the military's probably not going to do those things, and military planners are thinking about this -- and this is important. But somebody's also got to think about these other things, as well. "Send in the troops" is not going to be a full answer to the disaster.

Meaning -- lesson number seven -- you need to have a realistic disaster response plan. In this area, I'm sad to say, the Japan government, in my view, fell pretty much flat on its face, did not -- and still, as far as I know -- does not have any such thing

as a national disaster response plan, or a national disaster agency like FEMA, or a national disaster director. So, if you're looking for guidance for foreign countries, I have to say, apologetically, do not look at the Japan model for how to do a national disaster response plan, because it doesn't work. I'd look at various countries -- the U.S. one works pretty well when we have a real FEMA going.

The old Federal Response Plan from the 1990s is a good one, as is the National Response Framework. The National Response Framework is newer and more comprehensive. The old Federal Response Plan is probably a little easier for novices, people getting new into the field to understand. I'd look at either one of these documents online at FEMA.

And, basically, what they really come down to is: ahead of time, ahead of the disaster, think about what kinds of things the government might have to do, and who's going to do them? I mean, this is not rocket science. We came up with a list of 15 at FEMA -- what kinds of things might the Federal government have to do after a large disaster in the U.S.? Transportation, communications, medical teams, search and rescue teams -- then we assign these tasks to different agencies and say, please, within your expertise, come up with a plan for this.

But, all these things have to come together in one, solid plan.

In Japan, they did this to some extent, but all these groups were working in isolation from each other. I was there in January, and the ministries still were not talking with each other, so there was no connection among these agencies. This is what FEMA does in the U.S. FEMA's number five there, "Emergency Management," they pull these groups together to make sure that the plans all fit together, and everybody knows how it works.

Now, by now, you're thinking, gee, Leo, this sounds great, but where are these poor little countries going to get the money to do all this stuff?

Well, I would say, in the final lesson, is they ought to use existing training resources that can be available either for no cost or for low cost. Nowadays -- and there's a lot of this stuff out here. My old agency -- I retired five years ago -- my old agency, FEMA, has something called the "Independent Study Program." These are online courses. They're in English -- which is pretty widely spoken in a lot of Asian countries. And they're free. And there are -- guess what -- there's 160 of these things. These range from 1-hour courses to 10-hour courses: "Radiological Emergency Management," "Animals in Disasters" -- this is the University of Emergency Management, and it's no cost. Any U.S. citizen can go on line -- just go online to FEMA. If you even just Google "FEMA training" you're going to find this. Any U.S. citizen can take these courses for free. Non-U.S. citizens can also take these courses. All they need to have, according to the website, is a letter from a sponsoring U.S. agency -- either a government agency or a university -- saying, hi, could you please allow so-and-so to take these FEMA courses? And it's going to get okayed. You can find out how to do this on here.

So, countries that really want to do this, want to have the political will to build a good system, have the ability to get this information for free. You can also find information on the websites of IIGR, the little International Institute of Global Resilience -- all three of us over there -- or the larger group, more established, IAEM, also has good stuff on their website.

And then I also want to mention, as far as future prospects go, the U.S. Department of Energy is developing some ideas for the future. I love this slide -- thank you, Monterey. They're looking at fuel cells, for example. In Hurricane Sandy, in the U.S., fuel cells provided electric power when the grid was down. The Department of

Energy is also thinking about maybe having a student contest to develop things like two-way radios that can operate on solar power, or 3-D printers that can make water filters to purify water, that can work when there's no electricity because they have fuel cells, or solar power, or whatever. And Monterey Gardiner -- come on, Monterey, wave your hand -- Monterey Gardiner of the Energy Department, right there, former Mansfield Fellow, fluent in Japanese, been there. He can tell you about this today. You can email him at this address.

And then, finally, I just wanted to mention -- I know I'm beating up on the Japan government for their total lack of disaster management system -- but the Japan people are the most fantastic people I've met in my life. I was there in June of 2011, three months after the event, in a shelter in Miyagi Prefecture, where people were living. They'd lost their homes, family members, pets, everything, and they were keeping their spirits up, and they had a little, various events going on. And the children were making posters. And I had to take a picture of this one, here. You've got the globe of the world, with some starts around it, the little Japanese flag up top, and up above, in big old letters, it says, "Let's go Eastern Japan."

And the personal resilience of the Japanese people is something I just cannot exaggerate. It's fantastic. And that kind of spirit, I think, we should all admire and try to emulate.

You know, I hope this has been helpful to you. Please talk to me during the breaks today, or send me an email. I'll answer any questions.

Thank you. (Applause)

MR. SHIRATSUCHI: Okay, good morning, everyone. I'm Naoki Shiratsuchi, and I'm very honored to be here today. And, first of all, I have to apologize that I'm not so fluent in English, but please excuse -- let me excuse, this is not my fault,

my personal fault. But this is Japanese educational system's failure. (Laughter) Which is already proved by numbers of prime ministers, like I show you one good example, Mr. M -- I'm not going to say his full name, though -- Mr. M was not good at English, as well, also, but he has to participate in the G-8 Summit. He was very nervous, because he was not good at English, and his assistant advised him, just say "Hello, how are you?" and you will be answered, "Fine, thank you, and you?" And just you answer, "Me, too." And he tried to remember, "How are you?", "Me, too", “How are you?", "Me, too", “How are you?", "Me, too" -- okay, he remembered.

Then the G-8 Summit commenced, and he met Mr. Bill Clinton, at the time, and Mr. M was very nervous. And he made a small mistake. He should have said, "How are you?" Instead, he said, "Who are you?" And then Mr. Clinton thought it was a kind of joke, so he answered, "I'm the husband of Hillary Clinton." You know the consequence: Mr. M definitely answered, "Me, too."

Well, anyway, as my presentation time is quite limited, I'm going to skip some of the slides which are talking about Red Cross, and the Japanese Red Cross. But I think most of you already know what Red Cross is. But I just want to stress that the Red Cross is the biggest worldwide network, which provides humanitarian support to people in need. And, about Japanese Red Cross, according to the national Disaster Countermeasure Basic Act, Japanese Red Cross is obliged to cooperate with the national, prefecture, and municipal government for relief activities for disaster, in terms of in the areas shown in the slide, namely, medical relief and storage, and the distribution of relief goods, and supply of blood products, fund-raising in Japan, and the distribution which is called "giyenking" in Japanese, and responding to various needs such as psycho-social support program, or distributing food by volunteers.

And for March 11, Japanese Red Cross provided not only the relief activities in regulations, but also various other activities, by making maximum use of the resources as shown in this slide. And, furthermore, after emergency relief activities, Japanese Red Cross has provided recovery assistance with the financial support from sister national Red Cross societies. Such long-term support activities were almost the first experience in Japanese Red Cross history.

Now, I'd like to introduce to you what are the lessons learned from March 11. I'm going to speak about what worked and what did not, from five viewpoints shown on these slides: number one, unexpected situation, local government lost their capacity to respond to the situation; and then, number two, emergency medical relief; and number three, response to nuclear accident; and number four, assistance from overseas; and then, number five, cash grant program -- "giyenking"

And number one, unexpected situation, local government lost their capacity to respond to the situation. The March 11th tsunami brought enormous damage to the municipalities, government, along the seashore of T∩hoku region. A number of municipal officers were dead, and many municipal offices were destroyed. The municipal government, which has the primary responsibility, by law, for emergency relief activities, did not function, and needs assessment was not conducted sufficiently. And, as a result, the whole Japanese response system fell into confusion.

And since the Japanese Red Cross is designed to respond to the requests coming from the affected municipalities, as well, we could not give the first response immediately and properly. And, from this lesson, we recognize that backup system by prefecture and central government for providing such capacity in case of affected municipalities their response capacity is necessary. At the Japanese Red Cross, we have also begun planning to strengthen our own needs assessment capacity.

But, there were some exceptional successful cases. I'd like to show one example, which was performed by one Japanese Red Cross hospital. Ishinomaki Red Cross Hospital in Ishinomaki City, of Miyagi Prefecture, which one of the most affected areas, could survive as one of the important sites. And not only injured persons, but also many evacuees packed into the hospital. There was one medical doctor in Ishinomaki Red Cross Hospital who has a very strong leadership, and also had authority delegated from the prefecture government to coordinate the medical activities in Ishinomaki region. The hospital, led by him, provided not only the treatment with the injured, but also conducted needs assessment, and improvement of hygienic environment of the evacuation center on behalf of the municipality.

And, number two, talking about urgent medical relief activities, we could quickly and successfully dispatch our medical teams, even in a difficult situation where local government and municipalities were still disordered. It was thanks to our past experience in Kobe earthquake, in 1995. At that time, about 500 victims of preventable deaths came out due to delayed medical actions.

Learning from this lesson, the government, leading Japanese DMAT -- Disaster Medical Action Team -- was later created for emergencies. Since then, rules and procedures have been changed so that the medical teams can be dispatched without request from the affected authorities.

Japanese Red Cross acted as a player in DMAT, and also organized its own medical teams at the time of March 11th. As a result, Japanese Red Cross dispatched 55 medical teams to the stricken areas on the very first day. This number is nearly three times more, compared with 19 in the case of Kobe earthquake. And, overall, I can say that Japanese medical task forces, including Japanese Red Cross, made a fairly prompt action at March 11th, thus saved lives there.

On the other hand, we had other problems. We quickly sent our medical teams into the suffered area, but could treat far less patients at an early stage than in the past cases. The numbers of patients treated per Japanese Red Cross team for the first two days was only 13 per day -- much less, when compared to 63 in the Kobe earthquake case.

In case of tsunami, alive-or-dead situation usually exists, and some can run away, while others are hit and dead immediately. As a result, there are not so many patients at the stricken area. As a matter of fact, in the case of March 11th, a survey shows 92 percent of the victims were killed immediately by the tsunami, not the earthquake. In Japan, after the experiences of Kobe earthquake, the disaster medical system has been developed particularly for injuries, traumas, or crush-syndromes caused by earthquakes. This time, at March 11th, however, we suddenly faced a gap between our expectation and the social needs in the suffered area.

What was clearly found is that in early stage of tsunami disaster, a role of task forces for emergency is quite limited. In that situation, no medical teams could save the groups of life. Rather, residents should always be prepared for such disasters, and must protect themselves by early evacuation when they are actually hit. And constant preparation, training, drills, exercises, education are most important. So Japanese Red Cross is now developing education program for protection against disaster, in schools and local communities.

Thirdly, I would like to address our actions against nuclear disaster in Japan. Most people had a belief in the safety of the nuclear power plant. This was what was called the "safety myth." The protection, including mitigation measures against natural disasters such as earthquakes or tsunamis, were believed almost perfect.

Since there was no assumption of severe accident on the nuclear power plant, serious training on preparation weren't there, accordingly. And, although the circumstances, a level 7 several accident occurred, how to deal with such an unexpected situation, Japan fell into a big confusion.

At the Japanese Red Cross side, we were also in a difficult situation in Fukushima: Keep our medical teams working there, or have them retreat? That was a very difficult issue to judge. Finally, we decided to have all our medical teams temporarily stay away from Fukushima for safety. Some Fukushima residents felt abandoned, and criticized us for our actions.

From that experience in confused situation in Fukushima, Japanese Red Cross urgently set up new criteria on activities in Fukushima area to cope with the situation. New criteria were made, with help from expert groups consisting of special doctors and radiation experts working in the Japanese Red Cross Atomic Bomb Hospital in Hiroshima and Nagasaki. In addition, International Red Cross shipped us radiation-measure instruments. With the help of criteria, and the radiation equipment, we could resume our operation in Fukushima in a week after temporary evacuation.

I'd like to talk about the support from the world. Japanese Red Cross had a general policy that we do not accept in-kind assistance domestically or internationally. At this time, March 11th, lots of individuals, and firms, and institutions from the world various kinds of relief supplies. And we really appreciated such offers, as they are good will, and showing their solidarity or spirit of togetherness. However, it was very difficult to handle, because of the limited logistics in the stricken areas, and different standards, and/or too small, too large quantities -- especially unsolicited relief goods, we called "donor oriented goods," and non-standardized goods, poor quality goods. And the relief personnel, without prior arrangements, were extremely difficult to handle.

But, we also received a lot of great help and support from the world. And I should address that specialists with ample experience in disaster cases, sent from International Red Cross, they conducted needs assessment. Together with Japanese Red Cross, they contributed a lot to formulate the Japanese Red Cross relief plans. And another office from the International Red Cross also helped for the information delivery to the world. And, more importantly, I should remark the great amount of donations sent from the many sister societies. And, total, about $601 million U.S. were donated, as many as 100 sister societies in the world. And we could continue our support from response through the recovery process.

And, finally, I'd like to explain Japan's unique traditional donation system, called "giyenking." When a disaster occurs, a lot of individual corporations and institutions made monetary donations to the victims. The money from a number of donors, firstly gathered through the various organizations, and the Japanese Red Cross is the largest amount received among the organizations. Once received by the organization, including Japanese Red Cross, the money is then transferred to a third-party committee set in each prefecture, called a "Cash Disbursement Committee." The committee finally decided the distribution amount of the money to each victim, by considering the total amount gathered, and the degree of damages.

And this time, total about $3.6 billion U.S. were donated from individuals and institutions. And those monies were surely used for the house rebuilding daily living expenses.

Japanese Red Cross incurred costs, about $10 million U.S. on its own budget, related to administrative work for the donations. All the money was distributed to the victims, without any deduction of fees or expenses.

But there are some issues and criticism caused by misunderstanding on the donations. Donations are finally distributed to the victims by municipalities, but the municipality itself was also damaged. And this was what caused the delay of the donation distribution to the victims.

Learning from this lesson, to cope with an urgent and confusing situation in the future like this, we have to come p with more systematic and established distribution procedures under the limited administrative capacity of municipalities. In addition, a large amount of money influx into the Japanese Red Cross drew criticism from some media, saying that Japanese Red Cross used the money from the donations to compensate the administrative costs, or get income gain from the donations -- which is not true, and those rumors and criticisms were all groundless. However, we have to admit that those situations arose partly because of insufficient public information for the social media, and to the victims. So now we are now correcting, and improving our information system by using the internet and providing information through the newspapers.

And, as a conclusion, there have been lots of myths in Japan, in terms of disaster preventions, as shown in this slide.

Myth one: Preparedness should be based on the disaster scenario made by the central and the local government -- well, which is right, but which is not sufficient enough.

Myth two: Disaster preparedness measures in the developed countries like Japan should have been well developed, so that no assistance overseas will be required. No. It was really needed.

And myth three: Nuclear power plants are absolutely safe. No.

And myth four: Experience, and minimum standards developed through response to major disasters in the developing countries would not apply to high-income countries. Actually, those were useful, such as procedures of needs assessment.

While those myths were instantly disappeared when March 11th occurred, new environment has been now created since then to discuss the disaster risk-reduction measures at all levels of society in Japan, including the central government, municipalities, and humanitarian organizations, and citizens. I hope such discussions at all levels will continue growing further, both domestically and internationally, so that over the estimation would no more be used as excuse.

Thank you very much. (Applause)

MR. MARTIN: Good morning. I'm thrilled to be here. And I want to thank the conveners for the invitation. I'm looking forward to the day.

I'm not going to use PowerPoint. I hope I don't disappoint anyone. But if we could have the lights back up, I'd appreciate it.

I'll give you a bit of a spoiler-alert: I'm going to talk about what I think is a very substantial contribution of the NGO community to the response in Japan. And the lesson learned, I think, is that needs to be far better integrated and recognized, to be more effective in disaster response in Japan.

I am with Mercy Corps. I arrived in T∩hoku just about three or four days after 3/11. I was helicoptered into Kesennuma by Peace Winds Japan, which is a top-shelf Japanese NGO that Mercy Corps has been fortunate to work with in a number of countries around the world over a 10-year period. So, a well established partner -- that took me into the disaster area right away.

And what I saw was really quite impressive. I had been involved in international disaster response for about 30 years. It's -- you know, you always hear

superlatives, but it's really hard to describe the scene on the ground without using superlatives.

But I want to focus on a couple of superlatives about what worked really well, first, because I was really impressed. In fact, I think it was the most impressive response I've seen in my career. And I think, really, at the risk of sounding glib about human tragedy, the fact that 18,000, 19,000 people lost their lives, and it was only that amount, was really, really impressive. If you recall, a year earlier in Haiti, about a quarter of a million people lost their lives in about three minutes in their earthquake, which was of a smaller magnitude. About 130,000 people in Sumatra alone lost their lives from the tsunami, Indian Ocean tsunami a few years ago. So, the death toll in Japan was tragic, but it could have been much, much, much worse.

And the reason it wasn't worse is Japan knows what to do. And there was just an understanding of the citizenry, the government. There was lots of preparedness that people were able to apply.

So you had, within 48 hours, half a million people were displaced. And I'm guessing, within 48 hours, every single one of them was in some kind of shelter -- which is remarkable. It's really remarkable.

You had pre-positioned goods in a lot of the evacuation centers, to give them the first things they might need in those first 48 hours. You had a search-and-rescue effort, which really -- I mean, you hear complaint about what was slow, and what didn't quite work right. But the bottom line is, it actually got off the ground pretty well, compared to what I've seen in other places. You had really quick work clearing out arterial roads, getting electricity working again, setting up temporary bridges, those kinds of efforts.

Six months later, you had all of those displaced by the disaster in what Japan calls "temporary shelter," which in any other context around the world would be seen as pretty permanent. It's housing that people can live in for two to five years. But it's individual units that families can live in. And in six months, to provide that for some 300,000 people is really, truly remarkable. So it sort of gets to Mr. Bosner's comments about the capacity of the self-defense forces, of central government, to do sort of the heavy lifting of the initial response. I've never seen anything like it.

So, I want to say that sometimes I get raised eyebrows about commending the government for its work, but I think that needs to be said.

There was another really remarkable story that doesn't get said, and that's about what Japanese NGOs did. And I think it was really remarkable. I remember, when the tsunami hit, I was actually at our headquarters in Portland. And, you know, we were watching on CNN, and I was talking to my colleagues, you know, "They're not going to need anything." I mean, Japan has so much capacity. It's a wealthy country. They don't need us. But, nevertheless, I called up some of my colleagues at some other NGOs that we work in partnership with here in the States, and kind of got the same -- "Nah, they're not going to need us."

But then we called Peace Winds, and they said, oh, emphatically, "Yes, yes, yes. We need help." And so, okay, I was on the next plane, and went out with them to have a look, and to see what was needed.

And what I found over the following days and weeks and months was that NGOs were actually ubiquitous, they were everywhere. They were doing all kinds of things. They had mobilized hundreds, thousands of volunteers to serve hot meals. They were procuring and distributing relief items that were sort of niche items, that weren't in the mass distributions that were being done by the government and by the Red Cross.

They were operating psycho-social programs for children, for elderly, in particular. They had set up call centers using satellite phones, so that people -- because the cell phone networks were not very reliable at first -- so that people could contact their relatives and tell them they were okay. Or they set up centers to help trace people that were missing. They even had some mobile medical units among some of the NGOs.

So there were some really very interesting and useful things that the NGOs were doing right away.

As time progressed, sort of in the second phase, you found legions of volunteers from the NGO world doing cleanup work, helping families whose houses were washed through but not destroyed clear out that awful mess, help them clean up their houses, help them make them livable again. Some of them were actually getting into reconstructing houses so that they could be inhabited again.

There were many, many people that were doing some kind of interesting projects to sift through the rubble and pull out personal mementos. And, you know, that seems kind of trite, but if your family has lost everything, and some NGO sets up a center where you can go in and find, "Hey, there's my wedding picture," one of the few things that you have from your life before, it means a huge -- it's a hugely welcome thing to happen. And, really, only an NGO, I think, can do that.

They did a lot of things that complemented what the government would do. For example, when these temporary houses were set up, they weren't fully furnished. And so the NGOs went out and did a lot of the procurement to help supply these homes so that people could move into them. Similarly, the government was providing some temporary buildings for small businesses to reoccupy, but nothing to go inside them. So NGOs were helping on procurement on how to fit out those small stores and restaurants, which are now in temporary prefabricated buildings all up and down the coast.

The temporary housing that was built, much of it in Japan has been built on the playgrounds of schools, because this was a flat place that wasn't occupied, in an otherwise -- either it was the flood plain, and you don't want to build there, or mountains, which would take a long time. So, all these playgrounds have been occupied by houses that are going to be there for a couple years. So, a lot of what the NGOs have gone out and done is trying to find new kinds of playgrounds that children can use -- and even working on programs to engage kids in sports activities outside of school.

So, the other thing I think, when you're getting into a little bit more technical kinds of programming, is NGOs were working a lot on economic recovery. The coastal area is highly dependent on the fishing industry. The fishing industry is very seasonal, very cyclical. Skipjack tuna was in seasons shortly after the tsunami. The government programs to get fisheries going were going to take a long, long time. NGOs went in and helped get dockside preparations set up so that tuna could be brought in and processed -- similarly, with wakame, the seaweed that has to be planted in the fall or you miss the season, huge income generator for the coast, they were able to do that. Same with processing of salmon, which everyone knows is seasonal.

So these were seasonal things that had to happen quickly, that needed support quickly. And the NGOs worked quite extensively to get that part of the economy going.

Just in terms of the overall scale, it's been a little hard for me to get data, but drawing a lot from JCIE's report on giving from the United States, there's over $700 million went from private giving from the United States to Japan. If you back out about $300 million that went from a Red Cross to Red Cross, basically, $400 million left from U.S. alone to Japanese NGOs, $400 million.

Okay, there was also significant private giving from Taiwan, South Korea, from Europe. I don't know those figures.

In Japan, if you backup the Yenkin contributions, I'm guessing about a billion dollars went from Japanese citizens to Japanese NGOs.

So I'm guessing that at least $1.5 billion went to Japanese NGOs for earthquake response and recovery work. This is really a significant amount of resources that I think most people don't know about. It excludes gifts in kind, it excludes hundreds of thousands of hours of volunteer time -- so, clearly, a massive capacity there.

The problem is, there's very little connection between the formal mitigation response mechanisms in Japan and NGOs. They're just not recognized. There's not a role established for them ahead of time -- as was noted earlier. They're seen as peripheral actors, they're seen as volunteers, they're seen as uncoordinated and unprofessional. They had a very hard time getting a seat at the table. They had to introduce themselves individually at the municipal level, something that took a lot of effort and time to do.

I went out there with a CSIS delegation in June, working on their Partnership for Recovery and a Stronger Future report that came out in November 2011. I was supposed to report on civil society involvement in the recovery. And the delegation was led by Richard Armitage. We got some pretty high level attention. We met with leaders in the DPJ and the LDP. We met with senior government officials. We met with provincial and municipal officials. We met with self-defense forces.

And each time, when I would ask, "What about the NGOs?" I'd get kind of this blank stare. Sometimes I'd get a derogatory comment, sometimes I'd get sort of a polite but modest recognition that the NGOs were involved, but there just was not

recognition of what NGOs were doing, and the need to connect them in with disaster response and recovery.

I think there's an upward trajectory. I think if you look at Japanese NGOs since the Kobe earthquake in 1995, there's been improved legislation that's allowed them to register as NGOs in the late '90s. Japan Platform was created in the year 2000, which helps Japanese NGOs get money from Kadenren, which is a sort of a business lobby consortium, from the Ministry of Foreign Affairs, and channel it into international assistance. Japan Platform became a player in the response to the tsunami, as well. By the year that ended in March 2011, about 80 million in Japanese Ministry of Foreign Affairs money had gone to Japanese NGOs for international assistance. The Japanese NGOs that do international assistance were the strongest responders to the domestic situation, so I think there's a clear synergy between those two roles.

So, sort of in closing, and in conclusion, I hope -- I hope -- that one of the lessons learned from the T∩hoku disaster is that NGOs have a very important and substantial role, that needs to be recognized ahead of time. It needs to be a part of the disaster management plan for the country. It needs to be integrated into the disaster response, both nationally and globally, for a whole bunch of reasons.

So, I'll leave it there. Thank you very much. (Applause)

MR. ALDRICH: Thank you very much. I was asked to talk about the nuclear response in Japan -- or perhaps the broader societal response to nuclear power, and the failures, that we heard earlier, about the nuclear myths here.

This is a hard topic to talk about in a few minutes, a lot of complications here. But I hope we can cover some of the broader questions that many of us have about this issue.

The first, of course, is before the disaster, there were 54 operating nuclear power plants in Japan, producing roughly one-third of the power in Japan. And, of course, the earthquake, as you know, knocked out the power and the backup power supplies at Fukushima Daiichi, marked here in red. And, as a result, we saw a large amount of contamination in the area -- both into airborne and, of course, into the ocean, as well.

Some of my colleagues call plans like Japan's nuclear response "fantasy documents," fantasy documents in the sense that it's almost impossible to, ahead of time, provide an accurate estimate of what's going to happen at a time of crisis. These circles drawn around the reactor are the official evacuation zone areas, at 10, and 20, and 30 kilometers.

If you notice, the village of Iitate, there to the northwest of the area, was well beyond the official "safe zone" around the reactor. But, unfortunately, citizens there were outside for two-and-a-half days -- children were outside on playgrounds, people were outside working -- before they were finally told to evacuate. The data that had shown exposure was not officially released by the Japanese government or by TEPCO in time. And, therefore, now Iitate's residents will not be returning to their city probably for decades.

I want to talk a little bit more about these unintended consequences, I think, that are important for us to think about.

One of the immediate responses in Fukushima was to evacuate as quickly as possible local residents within that official 20-kilometer area. We know, as of this point, radiation has not killed anyone in the area. The long-term consequences, though, are not so clear. But, unfortunately, the decision to evacuate all of the residents in Fukushima, including those aged 65 and over, within six hours, for permanent

evacuation, resulted in a spike in the number of deaths that we see. And this data comes from a colleague Nomura Sensei, and was published less than two weeks ago.

We've tracked, if you notice, the number of deaths per 100-person-years over the last roughly five years, in March through September. And if you notice this spike in March among the elderly victims, those were evacuated from Minamisoma, especially, and other areas, is roughly 13-1/2 times previous rates; that is, because of the evacuation, the elderly population in Fukushima suffered death, not because of radiation, not because of tsunami or crush-injuries, not because of pneumonia or exposure, but rather the shock to their systems of being forced, in most cases, to at least three different shelters in the first day, and then oftentimes the minimum number was five evacuations before they found permanent housing. That series of forced evacuations, we believe caused this spike in deaths. This is public data, by the way, available online, in Nomura's paper.

We also know the other consequences in Fukushima, beyond the immediate spike in deaths, has been the rise in chronic diseases, especially obesity and high blood pressure -- again, data from my colleagues Tisubokura Sensei, at Tokyo University -- are now more than the Japanese public, Fukushima residents are suffering from diseases like obesity and high blood pressure in much larger numbers. Roughly one-third of the people that we've been tracking have now obesity, because of lack of going outside -- playgrounds are shut, people don't go outside anymore -- and high blood pressure because of anxiety, PTSD, and sleeplessness.

So these are some unintended consequences in Japan as a result of the Fukushima disaster -- again, not based on radiation, but based on human response.

We also know, from projects that we're doing in Fukushima City, the hospital there, one-third of all consults since 2011 now, have been on issues of radiation.

Even though, as I mentioned, radiation itself, to our knowledge, has not had an effect, one-third of all requests -- and this is usually, by the way, asking about children, are now questions of, for example, "My son has a lump. What does that mean?" "I've got a new scar tissue forming, what does that mean?" "I don't feel well, what does that mean?" So, one-third of all visits to doctors that we've been measuring in Fukushima City are now on direct radiation consequences. Before March 11, there were zero, on average.

We also know that the decision by the government to not release publically data on speed in other cases has shifted opinion on nuclear power, and shifted opinion on the government.

We've tracked public opinion on nuclear power since 2005. Before the disaster, roughly one-half or two-thirds, depending on your polls, supported either maintaining the status quo or increasing the number of nuclear power plants in Japan. That peaked in 2009. Right now, we have roughly 5 percent supporting increasing nuclear power. More than half of the Japanese residents -- some may estimate 65 percent -- want to just end nuclear power in Japan permanently, as a source of energy in Japan.

We also know several other big changes have happened in the Japanese civil society. If you follow Japanese history, since the 1960s, there have really been four major waves of mass protest. The U.S.-Japan Security Treaty was among them, in the 1960s. The anti-U.S. base protests in the 1990s -- that we've now had a number of large-scale, 100,000-plus demonstrations in Tokyo and elsewhere against nuclear power. This is the newest wave of broad scale public mobilization -- again, directly coming out of this issue of nuclear power use in Japan.

We've also seen a change in the number of citizens getting involved in anti-nuclear protests, and in new ways. So, for example, the *jumin tohyo*, the citizens

referenda -- we've had now a number of them in Osaka and Tokyo, among other places -- where citizens have asked to have direct voting rights over nuclear power, like in Italy and in Switzerland, for example, asking to have citizens as a whole be able to decide Japan's nuclear energy future.

We've also seen movement now away from public trust in authorities. Where, before, Japan had one of the highest levels of trust in central government authorities, it's dropped now to 6 percent, which is one of the lowest among industrialized nations. There are a number of videos online now, like this one I got from YouTube, where publicly citizens are now criticizing Japanese government efforts. If you know Japan, that's a pretty rare thing. Speaking out publically against authorities is relatively rare until now. A number of public backlash against government authorities, a lack of trust as a whole in the authorities has also come out of this.

And, also, we've seen a rise in what we call "citizen science." Because so much information was not released on time, some citizen groups would call this a deliberate lack of disclosure. A number of citizen groups like Safecast, for example, have taken on themselves the responsibility of collecting and analyzing data. Safecast is a website you can access on your portable phones, or whatever. It has roughly 8.2 million pieces of data uploaded from citizens around Japan. These are Geiger counter and radiation-detector measurements. It's matched up with Google Maps, and this allows citizens around Japan to not only record changes in radiation in their backyard, but also to make broader maps. This map, as you can see, is of the major highways in Japan. Each of those green circles is one measurement -- going all the way from Tokyo, where I'm staying, living currently, all the way, far to the edge of Minamisoma. I was there two weeks ago, where those red dots are -- the edge of the "forbidden zone," so to speak.

We also know from past research that nuclear accidents like the one at Fukushima broadly change energy policies, especially in democratized countries. This axis on the bottom here measures the level of democratization. Zero would be North Korea, 20 would be Switzerland. Japan falls around 16, right now, by the way, if you're curious.

And we've estimated the outcome in nuclear disasters -- this is Chernobyl, we have other data, as well -- what happens when you have a disaster? What happens to the broader ability to build nuclear power plants? The more democratic your country is, the less likely you are to pursue nuclear power afterwards. This measures roughly five years post-Chernobyl.

So we know that, in Japan, the next debates will be -- and they are currently starting -- on questions of what will the citizens of Japan choose as the energy sources?

Okay, I'm going to wrap up.

So, first of all, so far, beyond the immediate tsunami deaths that we saw, the biggest deaths spike has been caused by, we believe, the evacuations, the forced evacuations, of the elderly, especially, in Fukushima, around those fantasy documents, those 20- and 40-kilometer radii drawn by policy-planners beforehand. We also know that confinement and anxiety have also created the PTSD, high blood pressure, questions of anxiety, and obesity now. Children in Fukushima also have the highest rates of obesity in the country.

We've seen a massive loss of trust in the central, a drop from in the high 80s to a low of 8 percent, along with broader-scale anger about, basically, authority decisions, with lawsuits, referenda, and so forth.

I think one of the broader lessons -- and I would agree with our last speaker -- that we need to see in the future is more engagement with citizens, an attempt to bring them into the policy-planning process. Japan's future rests in the hands of its citizens and, unfortunately, the government's responses initially did not reinforce that.

I think the job for all of us is to think for ways in the future for bottom-up citizen response.

Thank you very much. (Applause)

MR. GANNON: All right. I think that was an excellent way to start. I really want to commend our speakers here for giving us a tour de force.

I was asked to -- we're going to go to the floor right now, but before doing that, I was asked to sum up a few of the common themes that I heard recurring here.

One -- and I'll just list off five quick ones -- one, I believe, that some preparations were excellent; they saved a lot of lives. There were really heroic individual personal efforts here. Systemically, things did not work as well as they should have, and that comes down to disaster planning being insufficient, uncohesive.

Second, one of the major challenges is the issue of silos -- that planning really needs to account what different agencies are doing, but not just within the government, but different sectors of society, different groups outside of government.

Third -- as Randy spoke, but I heard the chorus from everybody -- "NGOs, NGOs, NGOs." They're a great asset. They did a great job, but they're not being incorporated the way that they should, into coordination mechanisms, at this point, and into planning.

Fourth, coordination -- again, that there's really a need for some body to be facilitating, both within different agencies in government, but, more broadly, with society, somewhat in the way that FEMA does in the United States.

And fifth -- I think Dan hit this point, but -- trust. This is really essential, and this points to the need for better disaster communications, and more thinking about that.

So, with those five points here, I believe we're going to go to the floor.

There's a gentleman with a microphone in the back there. And if I could have a show of hands -- and please, the gentleman right here.

And I'd ask you to state your name and affiliation first.

MR. CHAPMAN: Max Chapman, *Software Technology Magazine*.

Why did TEPCO adapt the dangerous American reactor design, instead of the much safer German pebble-bed design?

Does anyone know?

MR. GANNON: I think Daniel may be the best.

MR. ALDRICH: The pebble-bed reactor is not commercialized at this point. It's still under design. South Africa and Germany are the two countries right now on the cutting edge of pebble-bed reactors.

The Mark 1 reactor at GE was built in the 1960s, and U.S.-Japan relationships in the 1950s obligated Japan to basically use U.S. technology at the time. So that was a geopolitical decision made.

If your question is why was it located in the vulnerable area, that was a combination of U.S. engineering choices and Fukushima's local area, as well -- that is, the local residents in the area didn't protest as much as other areas, so that area was chosen because it was, in a sense, more acquiescent for a nuclear power plant than areas nearby where there was more protest.

But, in terms of the reactor-design question, that pebble-bed reactor really has not, even in 2013, reached a broader audience at this point.

MR. CHAPMAN: But it is said that China is building 300 by 2038. Is there any truth to this?

MR. ALDRICH: I think that number is high. We estimate closer to 40 or 45 will actually be completed.

MR. CHAPMAN: But that activity is going on.

MR. ALDRICH: Yes, that's right -- currently, that's correct. There is talk, for the next generation in Japan, that there will be upgrades in technology -- if new reactors are built, and this is a political question I can't answer. If new reactors are built, there is a discussion of either ATM or pebble-bed as the next generation in Japan, as well.

MR. SHIN: Hi. Richard Shin, with Economists Incorporated. It's a very interesting and -- I don't know how to describe it, it's just an amazing discussion.

I have a very, you know, unique question, in the sense that this is not really one disaster occurring, it's actually two disasters merged into one. And that must have created more of a problem than, say, just having a tsunami problem, or just having a nuclear disaster.

And I was wondering how, having this multiple disaster at the same time, work into your preparedness or your response? And, you know, people mentioned tsunami versus nuclear, but no one really delved into how these two interactions made it more difficult -- you know. That's one.

And second is, having had this kind of, you know, two emergencies, two disasters, happening at the same time, what's the likelihood that this will happen again? You know, are you preparing for a tsunami? Are you preparing for nuclear, separately? Are you planning now for multiple disasters at the same time?

And I was wondering, you know, what's the future on those?

MR. GANNON: Yes. Leo, that's --

MR. BOSNER: Yes, thanks very much. This question has come up in my discussions with the Japanese government-type people.

The U.S. has gone a very different way than Japan has on the disaster planning. Japan, they're doing it disaster by disaster: "Let's do an earthquake plan, let's do a tsunami plan..." -- et cetera.

In the U.S. we kind of abandoned that back in about the 1970s, and we've gone to what I briefly mentioned there, the "all hazards" approach, which is we start with the basics, first the basics, to say how can you plan for getting medical relief of some type to some disaster area? Get those basics worked out, then you start breaking it down into the different types of events that might occur. But you've got a wide range of preparedness.

And, for example, as you heard Mr. Shiratsuchi mention, after the '95 quake in Kobe, an urban major earthquake, in a major city area, the medical teams in Japan then did tons of training for an urban earthquake. But -- oh, sorry, this was a tsunami. Now I'm hearing them say, "Well, we're going to get ready for a big tsunami," and my question is, well, what if it's a North Korean rocket? Or what if it's a volcano, or a sarin gas attack?

My advice, or, I think -- I can't speak from FEMA anymore, I'm retired -- would be to go for a basic kind of a plan first, and then spread out into the different types of unforeseen incidents that, quite frankly, can happen pretty easily.

MR. GANNON: Professor Kawata?

MR. KAWATA: So, this disaster is unexpected disasters. So, usually, our engineers and scientists use the how to reduce the damage. So, our effort make a safer society under the disaster.

But in this time, this (inaudible) over our assumptions. So we have need to do the how to restore our society, how to restore the nuclear power plant, it is necessary to do the research work.

So every time our effort hooks on the more safer, more safe, more safer -- so we lack of such a situation, how to restore our society by the disaster. We have never, deep down, such a research activities.

So, after the East Japan earthquakes, we have promoted such research work, how to restore our society with very mega-scale earthquakes and tsunami? Of course, the nuclear power plant will be researched such situations -- okay?

MR. GANNON: Thank you. And I believe my colleague Daniel had something to add.

MR. ALDRICH: Just one big thing -- I would agree that there's an interactive effect. For example, there are plans in place for taking care of debris -- concrete, glass, even bodies -- but no plans in place for radioactive debris. So, right now, we know only one-third or so of the debris in Fukushima is off the ground, because other communities had to agree on the radiation standards, becquerels per kilogram, of contaminated debris. So there was no planning for that kind of interactive effect, and I think that's slowing down the process of recovery.

MR. GANNON: Thank you.

And I believe the gentleman over here, and then we'll move to the back.

MR. LLOYD: Hi. I'm Mr. Lloyd, from the University of Maryland.

I have two questions -- first, on language, and, number two, on garbage.

On language, in the event of the next, whatever disaster might come in the future, how prepared is Japan to communicate to its local people within Japan, in the matter of minutes or hours?

And next, on how would Japan communicate to the outside world? We understand that sharing of information is very important, especially that we are given -- time is of the essence.

And number two question is: Given the limited land area of Japan, how do you manage this garbage disposal, especially dead people and dead animals -- not to mention the huge damage on buildings and vehicles?

Thank you.

MR. GANNON: And on the language issue, if I could go to one of my Japanese colleagues, Mr. Shiratsuchi, Mr. Kawata? Do you --

MR. SHIRATSUCHI: Okay, thank you for your question. About language problem, for the March 11th, we asked the International Federation of the Red Cross to come and help our Society to distribute our news or information to the worldwide media. And those assistance were very helpful for us. And, you know, those kind of international cooperation system will be helpful.

MR. GANNON: And there was also the point about rubble disposal, garbage, as well, brought up. And I believe there's 23-years worth of rubble created? Is that correct?

MR. KAWATA: So, we had 26 million, 700,000 tons, the garbage. So, about 70 percent is garbage. And so some garbage includes some radiation problems. So, our country people don't -- hesitate such a dispose in urban area disposal factory. So this treatment is now very slowly moving, because it is very difficult to agree with such a disposal in every urban area.

So, fortunately, our government decided to promote such a radiation programs in Fukushima Prefecture. So, very, very slowly, movement we had, so our people don't enjoy such a situation, same situations.

MR. GANNON: Thank you.

The gentleman with the purple tie.

MR. GARDINER: Good morning. Thank you very much for the presentations this morning. It was very interesting.

My name is Monterey Gardiner, from the Department of Energy.

Recently, myself and a colleague have been exploring the intersection of energy policy, and kind of disaster recovery, with a focus on comparing and contrasting communities in the U.S. -- for example, Sandy, or in T∩hoku, and how they rebuild.

From the panel, are there any thoughts on what direction things are going, in terms of rebuilding infrastructure as is, versus looking to new green technologies, or other issues?

MR. GANNON: Danny, do you want to --

MR. ALDRICH: Actually, several NGOs right now are trying to get both the temporary shelters and the community shelters rebuilt with solar panels. They're subsidizing that process, to a large degree -- actually, Habitat for Humanity, among them, has put in several million dollars so far.

Many Fukushima communities now are refusing to back on the grid of nuclear power. And there are plans, at least, for an offshore, one of Japan's largest offshore wind turbine programs -- those of you who know the energy sector well know there are challenges to the base-load versus full-time need issues. And that, right now, is being solved by basically coal-fired LNG as a gap measure, which is not great if you're concerned about carbon dioxide emissions and global warming, nor broader pollution questions.

So, I don't think there's a great agreement right now, but many communities are very wary of going back on the grid, nuclear power, especially

Fukushima. T∩hoku and Miyagi have some towns now that are trying solar cells and local gas turbines, actually, small-cell gas turbines. But, again, those are more individual communities, as opposed to a broader national scale.

MR. GANNON: The gentleman there, sitting right in the --

MR. KADRIDU: Sumar Kadridu from Safe Foundation.

I hate to ask this question, since many of my fellow Americans won't like it. Now, I was at University of North Carolina in 1971, when I was doing a Ph.D. with a fellow Japanese candidate. His name was Takiuchi. And it was a Pearl Harbor Day, and there was a lot of discussion about Second World War, and America dropped the nuclear bomb, and all that kind of stuff, and the tragedy of Pearl Harbor. And I, coming from India, I got up and I condemned the American activity, but my Japanese friend, I told him that "You should be condemning it." But he said, "My government wouldn't like that." And he kept quiet.

Now, Dan, you pointed out that it's hard to speak out in Japan against the government. And, given that, my question is: I still consider Japan to be an occupied country by United States. And, given that, to what effect, to what aspect the U.S. influence, and those pro-U.S. politicians who run Japan, had to do with this tragedy? Would you like to -- because --

And, the second part of that question is: Is this a bigger tragedy than the Second World War dropping of the nuclear bomb?

MR. GANNON: Who wants to take that one, up there on the -- but I think there is a very interesting dynamic. I don't agree with the assumptions there -- but between the U.S. response, emergency, and particularly on the nuclear issue, and trying to coordinate with the Japanese Prime Minister's office, as well.

Danny, you know a little bit about this.

MR. ALDRICH: Sure. It's an interesting question.

I would say, for the second part -- no, not as big a tragedy, in the sense that, certainly, many communities in Japan, on the coasts, wanted these nuclear power plants. They advocated for them, actually -- Futaba and Okuma, the cities that I visited before the disaster, oftentimes fought over the next nuclear power plant being built in their backyard. So this was a choice that they made as a community. This was not part of a wartime decision, like Hiroshima and Nagasaki were.

Do pro-U.S. politicians influence Japanese policy? To some degree, sure. The LDP certainly is pro-U.S. But DPJ won the elections a year-and-a-half ago. They lost again in December last year. I think there's more of a mix now, of a democracy, that we have parties alternating in power, LDP, DPJ. And I think, even among the LDP, there's no agreement on the future plans. Certainly, if you ask us, there is no agreement here on Japan's future -- whether it's energy questions or rebuilding. So I'm not too worried that pro-U.S. politicians are influencing the overall recovery.

MR. GANNON: (Inaudible) this side, then the woman right in the back.

MS. THOMAS: Hi, thank you. I'm Alice Thomas, from Refugees International. I head up a program on climate-related displacement.

My question relates to displacement following the disaster. Randy, you addressed the, you know, the short-term and the protracted displacement was handled very well.

I'm curious if there were lessons that you think could be applied elsewhere that haven't been? Because in so many disasters, countries do not handle displacement well following a disaster.

And then, also, if you could address issues -- any of the panelists -- around relocation, and whether communities are going to be relocated, and how you're managing that?

Thank you.

MR. MARTIN: That's a good question. I'm not sure I can answer it very well.

I think, in the short term, the displacement was handled remarkably well, as I said in my comments. It was just incredible that you could put half a million people in shelter in 48 hours, and then get them into a more reasonable, family kind of accommodation for the intermediate term, all within six months. That was just incredible.

That said, I don't think there is a very clear long-term vision on what is going to happen with this displacement. There is still a very vigorous debate, argument, lack of decisions on where people should live. And I don't know when that's going to get resolved. It seems like it could take a long, long time.

Even the movement into temporary shelters, there were just some very unusual decisions. Of course, hindsight is 20-20, but, for example, they had a lotto system for deciding who would get moved into temporary shelters first, to make it seem fair. But what that did was really split up communities, because communities didn't go together. And so, people are living next to strangers. And these are communities that have lived, prior to this disaster, they'd lived together for hundreds of years, and they don't go out and meet new people that easily. So there's a lot of social isolation in these temporary communities.

The temporary communities were placed where it's convenient. As I said, some are in schoolyards, some of them are off on a flat piece of field somewhere. So they're not near markets, they're not near community centers, they're not -- there's a

real destruction of community life that came with the rapid decisions that were made on where to put people.

So, I think those issues -- some of them have been sort of addressed a bit late, but -- I mean, they gave up the lotto system, lottery system for putting people in housing, pretty quickly. But still, there are huge issues.

So, I would say there's a lot to be learned, and there is not really a model there for, you know, for the rest of the world, except for learning from what didn't work.

MR. GANNON: And the Japanese Red Cross played a key role, obviously, in the first initial shelters -- often school gymnasiums, but also in providing supplies for people to move into, when they were moving into the so-called "temporary housing."

So, Shiratsuchi, if you have some lessons you would pull out of that?

MR. SHIRATSUCHI: Yes. In the case of Kobe earthquake in 1995, the displaced people were picked up randomly and put into the temporary housing. As a result, the community was collapsed. This caused the sort of a problem that they didn't have any communications within the groups of temporary evacuation homes. And from these lessons, now Japanese government is trying to keep the community when we relocate the people into the other places, to try to keep the community is very important to keep the lives back faster.

MR. GANNON: And, I -- we're at the time to end, but I was given absolution to go a few minutes longer here -- so, five minutes longer.

I believe there was one right over here.

MR. TONO: My name is Tamoyuki Tono. I'm a visiting fellow at the Center for A New American Security.

I think some of Japan's local governments have shown remarkable effort to prepare for disasters after 3/11. For example, I think that some local governments of the western part of Japan, (inaudible), were trying to prepare for, trying to make a more valid, more effective plan for natural disasters. That content was to help themselves if the disaster occurred, a plan to invite help from outside if they themselves are damaged, and a plan to send help for other areas, if they were safe and other areas are damaged.

I think this idea is really excellent.

So, I'd like to ask you, Professor Kawata, because I think Professor Kawata was one of the leaders of that discussion -- if that meeting has reached some kind of a fruitful, productive conclusion, or make some, achieved some accomplishments?

Would you please explain the outline of that trial?

MR. KAWATA: Oh, your situation is very effective in middle-size natural disasters -- "middle-size," saying the Eastern Japan earthquake-tsunami problems, because only 20,000 people were killed by the disaster.

But next gigantic earthquake-tsunami, in the case of Nankai Trough aspects, we will lose about 300,000 people. And in the case of a metropolitan earthquake in Tokyo, more than 100,000 people will be killed by the disaster.

So, in this case, this counterpart system is not so effective. So we need the international effort of the survivors. So it is impossible to promote, by ourselves in these cases. So, another, different kind of effort to reduce damage is important.

MR. GANNON: Okay, we've got -- I know there are a lot of questions here, but to move on to lunch, I'm going to have to stop right here.

I want to -- I have a quick announcement, but first I want to thank the speakers. I thought this was extraordinary. (Applause)

Now, I hope you can catch them, I hope you can catch them over lunch here and follow up with your questions.

Two housecleaning points: One, I was told to let you know that there's going to be lunch served, and it's going to be right-hand side in the hallway off of here. And, second, the speakers need energy for this lunch session in the afternoon, I was asked to ask you to give them priority in getting in that line.

So, with that, thank you very much.

(Recess)

MS. FERRIS: Okay, everybody, can we have your attention, please? Okay, we're going to go ahead and start if you could take your seat. My name is Beth Ferris, and as Mireya said this morning, I work on internal displacement issues, and it's been a joy to

work in preparing this conference, and even better to be here and hear the variety of perspectives. I hope you all enjoyed this morning's session.

We've got two other panels this afternoon that will build on what we discussed this morning. But now over our lunch break we're delighted to have Nancy Lindborg who's the assistant administrator for Democracy, Conflict, and Humanitarian Assistance at USAID. And those of you who follow the news, and I know everyone in this room follows the news, knows how full her plate is these days between Syria and Mali and hundreds of crises that never make it to the headlines.

Nancy has worked with USAID in this position since 2010 and before that worked for almost 15 years with Mercy Corps where she was a real leader in the international humanitarian community, often raising the issues around resilience, human rights, response preparedness, talking with groups like this with people in governments and with many of those affected by disasters.

Nancy, we're glad you're here. She'll speak for 15 or 20 minutes and then we'll take questions, so be thinking of your questions as you continue to enjoy your lunch. Thanks. Nancy. (Applause)

MS. LINDBORG: Good afternoon, everybody. It's great to be here and, Beth, thank you so much for the introduction, for all the work that you do here at this project and for organizing us today, and also thanks to the Center for Northeast Asian Policy Studies.

I feel like there's the spirit of Madame Ogata hovering over the room. When I first arrived in Washington in 1996, one of the very first things that I came to was actually here in Brookings. It may have been this room; an event organized by Brookings and Madame Ogata to look at how to close this gap between relief and development.

And that just underscores, I think, how long we have all been working on these issues of how to prevent, how to respond, how to recover, how to connect to our development activities.

So, it's a great pleasure to be here with all of you today, and I know there are a lot of folks in this room who have put much time, much energy, and have a lot of expertise on disaster risk reduction issues. So, it's an honor to be here with everyone today.

And I had the great privilege of traveling to Japan last fall for the World Bank Sendai Dialogue, and this was on the margins of the World Bank meetings that were happening in Tokyo. But we gathered in advance up in Sendai to talk specifically about disaster risk reduction, and our Japanese hosts put together what, because of the setting, it was far from an academic exercise, but we were very much in the heart of still the raw aftermath of the very devastating triple-impact of the tsunami, the earthquake, and Fukushima.

And we had an opportunity to meet with high school students and local officials, and they shared their stories. I don't know, some of you may have been at that event as well. And I remember I was particularly moved by one of the local Sendai officials who, in the spirit of great sharing noted in one of the discussions that, in fact, in their preparedness -- and Japan is one of the most prepared nations, I think, on the planet -- but he said in their particular community they had really forgotten, or had not appropriately brought in women, in the preparedness conversations. And so, as a result, after the disaster hit they had not fully prepared to meet the needs of women because women hadn't been in the dialogue up front.

And it only underscores for me that in a country that has that level of capacity and such a great attention to preparedness, it underscores the challenges of getting this right in the many countries around the world that have far less capacity and far less abilities. And it was also, I thought, a wonderful reminder for all of us in the spirit of sharing that that was brought forth.

And then, two to three weeks later, of course, we had Hurricane Sandy hit the east coast of the United States, and I think that kind of one-two punch really brought home the fact that this is truly a shared global enterprise of grabbling with disaster preparedness and disaster risk mitigation, and suddenly resilience, at least here in this country, has become very much a household word that you see in the newspapers. And we in the relief and development world often get inside a little bit of our internal world of acronyms and words, and so I actually find it extraordinarily powerful and reassuring that the word “resilience” has entered the general vocabulary, and I think that’s a testimony to the power and the importance of working with that word as we think about what it is that we’re all trying to do.

And it also, that Hurricane Sandy, what happened in Sendai, underscores that this is, in fact, a global problem in that weather extremes are becoming the new normal as we look at the impacts of climate change. And you move from the devastation that happened in Japan and in the east coast of the United States, and I know that for many people in this room, you don’t have to imagine because it’s what we spend a lot of our time doing, thinking about the results of that extreme kind of event in a country that doesn’t have a FEMA or the government capacity. There isn’t a social safety net system. There’s no insurance. And so, this is truly the challenge as we look at the drum beat of increased disasters and greater cost.

And when we look at the impacts of this and the fact that only 9 percent of disasters over the past 30 years have occurred in low-income countries, but they had 48 percent of the fatalities, it really underscores the challenge that we have, especially knowing that it's women and children that suffer the most.

And we're seeing increased displacement as a result of climate-related disasters. The estimates wildly vary. Beth you may know better, but the data that I see is about 10- to 40,000 people per year are displaced because of disaster.

So, this begins to outline the challenge for us, and so I'd like to really look at four key issues. And the first is that we simply cannot afford to not get ahead of these disasters. We cannot, through the cost in human suffering or pure economic terms, continue to not address these disasters with greater preparedness.

Secondly, we absolutely cannot afford to have this happen outside of our development efforts. We need to seize this opportunity to create a more comprehensive whole of looking at these issues.

Thirdly, we really, with 2015 upon us, need to grab the opportunity to take some of the critical elements related to climate-change adaptation, disaster risk reduction resilience, and make sure that gets into the post-2015 agenda as we look at post Tōhoku, post MDGs.

And finally, I want to say a few words about how, at the heart of all this, is democratic inclusive and accountable governments, and that's really where we're going to get the kind of gains that we need.

So, first of all, just looking at the cost, I'm sure everybody in this room has seen a lot of the same data that I have, and that is the trends are going up. We're seeing a faster pace of natural disasters. In the Asia and the Pacific the number of

disasters has really spiked. In the past four decades from '93 to 2012, it doubled relative to the previous 20 years, and we're seeing world-wide the damages from disasters are 15 times higher than they were in the 1950s. And this is, of course, not only because of the rise in disasters, but increased populations, increased concentrations of folks. But the cost of these trends are hitting not only our developed economies, but they are really, really taking the toll on our development efforts.

In Kenya, as a result of the 2011 drought, in addition to the billion dollars that just the United States put into that drought response, in 2011 and 2012 that drought cost the Kenyan economy $12.2 billion. So, these costs are not sustainable as we look ahead.

In Thailand, those floods in 2011, 13.6 million people were affected and about $40 million of damages in Thailand. We've seen $500 billion of economic damages in the last decade in the Asian Pacific region where, of course, you've got a concentration of the world's hydro-met disasters. So, I don't think there's any opportunity to walk away from this as a development challenge because it's undermining the gains that we make with our development approaches.

And at the World Bank last month there was a panel on resilience, and I sat next to the finance minister from Peru who made the comment that Peru, as a newly-emerging middle-income country is one disaster away from being a lower-income country again. And this is something that he really grapples with as he thinks about the preparedness in his country. He also made the interesting note, and I would just flag it that he previously was the deputy finance minister, and it's only by happy circumstance that he's now the finance minister that he has that continuity of perspective on what it takes to be thinking about disaster risk reduction and preparedness. And it speaks to

how quickly we all transition and how often we lose some of the good work that has gone on.

And in the face of all of that, increased trends of disasters, increasing costs, increased fatalities, donors still are only spending about 3.6 percent of our disaster- related assistance on preparedness compared to 70 percent for emergency response. And this isn't even getting into, because I don't have those statistics, of how much of our development budgets, collectively, globally, we spend on disaster risk reduction. And I think I don't have those statistics because it's probably very small.

So, that leads me to, "Okay, what do we need to do about this?"And I believe that we have -- and Beth and I were just chatting about this at lunch -- we really have an enormous opportunity right now. We have a convergence of interests and a convergence of opportunity to bring these issues of risk, of how to manage risk, how to better prepare for it, and bring it more fully into the development agenda and look at how we bring these streams together. We have done a lot of good work on disaster risk reduction, and I know that a lot of people here in this room have been a big part of that.

At USAID, through our Office of Foreign Disaster Assistance, and I think you'll hear from my wonderful colleague, James Fleming, who may be in the room, on one of the panels later today. James has been a big part of that. The OFDA team has, through the years, put a lot of energy and emphasis on disaster risk reduction and worked on increasing early warning systems, helping to prepare first responders, working to set up national disaster management authorities with various governments, and I think we've had a lot of big progress.

And after the deadly tsunami in Indonesia in 2004, a lot of investment went into creating better preparedness and better early warning systems, and so when

there was the April 2012 earthquake of 8.6 off the coast of Sumatra we saw the immediate impact of having that warning immediately available. People knew to go to higher ground, and we saw hundreds of thousands of residents take action that saved their lives, or would have saved their lives if that, in fact, had resulted in a more deadly tsunami.

So, we know that a lot of this work is making a difference, and we know that we can do more of that. We also see the opportunity to connect that with our development work. USAID has put forward a global climate change policy in the last 12 months. We released our first ever resilience policy, and we are about to release a new disaster risk reduction strategy. And we really see these all of a piece, and we see the word "resilience" as an opportunity to put out there a shared goal for both our relief and our development activities.

And in our policy -- and I commend you to look at it -- I'm sure everyone has a copy, but it's on our website, and it really builds on the lessons and the activities and what we've learned from our good DRR work, our global climate change adaptation. We acknowledge the opportunity to build food security and also the need to always remember governance. And so, we are seeing through that work and the way in which we've connected that to our development partners and worked in support of country plans that this really provides some wonderful momentum that we need to continue to keep focused on well past the disasters and move it forward.

We were galvanized, in particular, by the droughts in the Horn of Africa in 2011, followed by the droughts in the Sahel. We're seeing these coming at an ever faster pace. The cycles that used to be 10 years are now every 3 years, so we have put together joint planning cells that bring together our relief and our development teams to

do a joint analysis of what are the problems that we need to solve, and to bring into the development planning the thinking that you've got to be addressing the vulnerabilities because if you don't address the vulnerabilities, we will see a roll back of all of the good gains that we've had in our development work.

Some of you have heard us talk about this, but as the drought took hold in Kenya we mapped where had the U.S. put our investments, and we saw that year after year we were pouring significant money into the dry lands in the northeast, and all of our development money was in the productive south.

And so, we've changed that and instead brought out teams together and come up with a plan that integrates, it layers, and it sequences our relief and our development funding so that we don't lose the good work that's done, whether it's the disaster risk reduction or it's a response, we don't lose that basis that we can pull it forward with our development funding.

And we're seeing this happening with many of our donor colleagues as well, and being picked up by our governments like Kenya, like Ethiopia. We're now working in Neshair and Burkina Faso to do the same thing, and we're looking ahead this year at focusing on Asia. We particularly identified Nepal, Southeast Asia, to look at bringing this method of working within AID, this resilience approach, into our development strategies so that this doesn't remain in the province of just the humanitarian community. And we see this as one of the most important ways forward. The challenge is that we all stay focused on it. I invite all of you to help be a part of maintaining that focus and holding us collectively accountable for doing that.

Going forward, in his State of the Union Address this year, President Obama talked about the commitment to eliminating extreme poverty world-wide in the

next two decades, and I would submit that the only way we can do this is by understanding this issue of addressing vulnerabilities, and understanding that our development is pulled back, undermined, if we aren't thinking about preparedness, we aren't thinking about managing the risks, and we aren't thinking about how to get the most vulnerable communities out of these chronic cycles of poverty.

We have this opportunity, as I mentioned, about as the Tōhoku framework and the MDGs come to a close, to think about how to embed some of these critical concepts of vulnerability, of preparedness, into those frameworks. We don't have the luxury of thinking of the SDGs and the MDGs as addressing totally different issues, especially when you look at the connections of the impacts of increased climate change, increased disasters, and how that keeps people in poverty.

I want to just say one word about urban context because we're seeing, especially in Asia where you've got the emergence of so many of the global megacities coupled with, I think, it's 60 percent of the world's hydro-met disasters. We have got to be thinking about putting additional focus on how to address DRR and resilience in an urban context.

I would note that USAID has circulated, and it's the first time we've done it this way, so I hope people are engaged with us, a new draft policy on working in urban environments, and this is very much a part of that policy as well. And we usually cook the policy and then share it. This time we're sharing it for comments, so we invite you to comment, and then use everybody's collective good wisdom to make sure we have the strongest policy possible. But we've already done a fair amount of work in urban areas with our DRR. James may talk more about it in places like Katmandu where we're very, very concerned about the possibilities of earthquake. We've worked at the community

level and the local governance level to try to strengthen how buildings are built, and awareness of having to have more earthquake-proof homes and schools, et cetera, but so much more work needs to be done and at such a higher scale. This will take the concerted efforts of the donor community and the countries where these megacities are emerging.

I also want to just note, and I think you'll be talking about this as well, the importance of pulling in the private sector; that we see a huge role for the private sector. It's in their interest, obviously, to ensure that communities and countries aren't over and over again devastated by natural disasters. Again, through our OFDA team, we are currently looking for public/private proposals for disaster risk reduction programs in Burma, Thailand, and Vietnam, and we really see this as way to bring those emerging private sectors into being a part of the solution.

So, let me just close with something that is -- I feel like I've got the great privilege to have a bureau within USAID that brings democracy, conflict, and humanitarian assistance together. And this is really an acknowledgement of how all these forces work together, and that when you don't have accountable democratic governments, you are far more susceptible to the ravages of natural disaster impacts and less likely to be able to manage conflict. Conflict will always be there. It's how you manage it.

And so as we drive forward with this agenda, and we're looking at half of the world's poorest in 2015 will reside in fragile states like Nigeria, the DRC, Pakistan, Bangladesh, Nepal, it is imperative that we think about the relationship between these disasters and the lack of governments and the lack of accountable governments to address that. And the extent to which these fragile states are also more prone to conflict,

and the fact that no conflict-affected state is on the pathway to reach the millennium development goals.

So, we have set up for ourselves the challenge of bringing the resilience agenda and coupling that with those countries that are the most fragile: the Yemens, the Somalias, the Nepals, and looking at how we can bring the best tools and programming approaches from our DRR portfolio, from our global climate change portfolio, and couple that with what we know about mitigating and managing conflict and helping to promote more accountable democratic governance.

The convergence of these factors creates an overlapping problem set that we need to be thinking about how they all work together, and the fundamental potential that I see with the resilience approach is overcoming some of the stovepipes that keep us from doing better work. I see this very keenly within USAID, and I know that a lot of institutions grapple with this. It's inevitable at one point, but I'm confident that the urgency of these issues is helping to propel us to think differently about how we do this work and how we can bring together the best of a lot of different parts of our global efforts to tackle these problems over the next decade.

This year has this extraordinary momentum. I think the conversation today is a part of that, and that there's a great opportunity for us to take this forward, so I commend the conversations that are happening today, and I look forward to hearing what other great ideas this every expert group has come up with. Thanks so much.

(Applause)

MS. FERRIS: Thank you so much, Nancy. We have time now for some questions. I believe there's somebody with a microphone? Yes, there is. But maybe to get things started, I could pick up where you left off on this resilience concept. What

does resilience offer that disaster risk reduction, local coping strategies, what does it offer that's new that would bring humanitarians and development actors together?

MS. LINDBORG: So, the way that we're thinking about it at AID is we're defining resilience as really looking at, from the household to the community to the national to the regional level, that you enable these actors and systems to have the ability to withstand shocks. We've added in our definition not just withstand shocks, but to stay on a pathway to greater development and growth. What we've seen with a lot of the excellent work that happens through our humanitarian action where I think the humanitarian community over the last decade has made remarkable progress in how, not just to save lives, but how to include disaster risk reduction and build resilience, but we're seeing that it's not connecting up to our development approaches.

And so, it's necessarily limited because a lot of times the programs are short term. They end. We see often they end, and then there's a pause that keeps going before the development programs come on stream, or they may come on stream in a very different place and not build on all that momentum.

So, the resilience agenda is an opportunity to bring that together and to think about how the household relates to the system or to the regional level. How the marketplaces that operate regionally have impact on the ability of a pastoralist to be more resilient, for example.

OFDA currently already has -- James, you can correct me -- but a little over 10 percent of its budget is dedicated to disaster risk reduction, and I'm very, very proud of the fact that we have that much invested in disaster risk reduction. And I will say it's not enough. It's not enough because it can't be a humanitarian-only enterprise, and we can't afford not to get ahead of these disasters.

MS. FERRIS: Okay, we have time for questions until about half an hour or a little bit longer. Yes, this woman over here. And if you could please introduce yourself and if you can stand up so we can all see you.

MS. MAXWELL: Hi, Julie Maxwell of Triple A-S (AAAS). My question is there are a lot of criteria and indices out there for measuring development progress, so when you're talking about incorporating resilience, how are you going to measure progress in resilience, both from a humanitarian perspective and from an (inaudible) perspective?

MS. FERRIS: Well, that's an easy question for you, Nancy.

MS. LINDBORG: Yeah. First of all, I want to give a shout out to the Triple A-S (AAAS) program. I learned about this when I entered government, and at AID we've become avid consumers. It's a way to bring social scientists into the government in a way that helps us be smarter, so I commend you for your being in that program.

This is the critical issue and, if you look at our policy, we make it very clear that the resilience policy is a starting point for a continued effort on how to implement it in a way that is smarter, better, and monitored. It's a conversation that we're having as part of the larger partnerships that we're involved with.

In the Horn of Africa, we are the secretariat for a group of donors called The Global Alliance for Drought Resilience in the Horn. And we have collectively funded a technical group that is connected with the inter-governmental -- it's IGAD. I always forget the acronym. Inter-governmental Authority for Development, which is an African regional platform for action. This technical group is working with all of the governments and with the donors to develop common criteria that will enable us to measure success

and progress. There's also a group called the Political Champions for Resilience that meets twice or three times a year, and that's top of that agenda as well.

What we've all agreed on is that it cannot be measured only by humanitarian criteria. It has to have a development dimension to it as well, and there's a lot of thinking and work that has been done that I won't go into, but it is very much still a work in progress.

MS. FERRIS: Other questions? Yes, up here.

MS. NOE: Hi. My name is Nancy Noe. I'm from Synergy International Systems. My company is the company that built the database for the recovery (inaudible) for the tsunami 2004, and also coordinated some of the management information systems for the Maldives, Sri Lanka, and Thailand. My question is, and in reference to your comment about the importance of the private sector in DRR, in your opinion what exactly can the private sector provide that other organizations may not be as competitive in? Can you be more specific on how you see the private sector playing a role in DRR increasingly?

MS. LINDBORG: Let me take that in two pieces. The first is that one of our observations is that the private sector mobilizes often in a very wonderful and generous way after a disaster hits. And we've increasingly seen corporations moving in significant amounts of supplies or donations, and wouldn't it be great if we could harness that upstream, so that instead of just being as is our challenge as donors overall, but instead of just doing the response, they were able to understand that in these areas of historic risk, if you get ahead of it then there's a self-interest for them of not having markets as disrupted or populations as affected by helping to do investments, particularly in urban environments in improved infrastructure or better early warning systems.

I mean, we're seeing in a lot of urban environments just clearing up the gutters or having better sewage systems can have a huge impact on mitigating flooding potential. So, in listing them in a way that is both in their business interest as well as from a preparedness and a risk-management perspective.

Secondly, there's clearly a specific role for the whole world of insurance, and some of the insurance businesses have been very, very forward leaning on this. And there's a lot of good work happening on insurance at all levels, from sovereign risk down to household-risk insurance.

And then finally, I think that there's a role for the private sector in helping to innovate a whole variety of solutions, and we're seeing this not just for disaster risk reduction but across the development spectrum that bringing in civil society, bringing in business, is critical for ensuring that we're creatively thinking of the best solutions and also for scaling and distributing ideas and good solutions.

MS. FERRIS: Okay, other questions, comments? Maybe we'll take two in a row. This gentleman here, and then the woman behind.

MR. KIRKENDALE: Hi. I'm Fred Kirkendale from Virginia Tech and tying a few things together, what we've seen today is that disaster risk reduction and climate change adaptation both depend a great deal on exposure of built environment, and particularly, as you mentioned, urban issues and concentration of population. It seems that regulation of construction and land use are fairly fundamental to any hope for risk reduction. Does AID envision taking any kind of active role in supporting the development of regulatory capacity, maybe innovative, technically, assistance-based regulatory capacity in disaster prone urban areas?

MS. LINDBORG: Good question. And the woman behind? Yes? Alice. Sorry.

MS. THOMAS: Hi. Yes, it's Alice Thomas from Refugees International. Speaking about resilience and DRR, I'm wondering if you could talk a little bit about funding streams. And I was happy to hear you say that we actually have 10 percent of our budget goes to DRR.

MS. LINDBORG: Off to budget.

MS. THOMAS: Off to budget. I'm still surprised to hear that because of the reports I've look at in the past; it's been a much smaller amount. I'm wondering in the many, many years, Nancy, that you've worked on this issue, XXXI can't make sense of this next phrase 00:34:55 XXX the problem is that t**he** way they were within **O**FDA competes humanitarian response dollars compete against DRR investments. What is your idea of a better model of this going forward? And how can we convince appropriators to appropriate money for this?

MS. LINDBORG: Okay, both great questions. Let me take the funding one first. What we've done in the inaugural year of our resilience policy in both the Horn and the Sahel is that we pushed very hard for the development of a joint plan that was the result of our humanitarian and our development multi-sector development folks sitting together and identifying what is the problem that we're trying to solve, and come up with a plan that really took a more comprehensive view of how to manage the risks, what are the risks that we need to be paying attention to, and where are the opportunities. It sounds kind of fundamental, but that's not what was happening.

And what we've learned is we can do far more creative blending of our resources, and as I mentioned, integrating layering and sequencing, so that we have our

OFDA or our Food for Peace emergency funds connected up with or sequenced with our development money.

And so, I do not advocate for a new resilience pipeline because I think creating a new stovepipe is not a good solution, but rather use this as an opportunity for looking at how, depending on the situation, it's going to look really different in Vietnam than it will in the Horn of Africa about what pipes you need to bring forward. But in the Sahel we've done the same things in terms of the importance that the health plays in the Sahel, and the importance of our agriculture investments.

So, I think it's about being smarter in terms of bringing all those together. They are not resources that have ever in the past been tagged as DRR or resilience, but it's understanding that all of those pipes are important for feeding into a solution set.

That's, to me, the beauty of the word resilience is that it takes a set of the three letter acronyms that we all live in and know and understand so if you're not a part of that world, and it creates a vision of the possible that we're aiming towards. And so, we have a lot more ability with our funds than we sometimes understand to do good work.

On the land use and regulations, and by the way, it's also elongating some of the work that we do with our emergency funds in trying to speed up some of the work that we do with our development and bringing a little bit of a shared tempo to both sides, and doing so in a way that doesn't compromise that really important, fast, emergency life-saving response that we absolutely must protect.

And then, the final point on that is that we tie down huge amounts of our OFDA budget year after year in the same crisis that never goes away, and it never gets better, year after year. And what we basically are doing is we're treating chronic poverty with our humanitarian money, and it's chronic poverty where people are buffeted by a

constant set of shocks, and they can never get above it. And so, that's a development problem. That's why we have to bring the development actors to be fully focused on the most vulnerable communities, and the Kenya example really, really underscores that. That was a set of shocks in the most vulnerable parts of the country, and even if you don't care about that marginalized population, it still had a $12 billion impact on the Kenyan economy. So, if you're not moved by the moral argument, we got an economic one for you.

On the other question about land use and regulations, yes, absolutely something that through our democracy rights and governance problem, we're very focused on looking at how to help governments create these greater regulations. But more importantly because, as I'm sure you're well aware, Katmandu has fantastic laws. It's the implementation. And part of what we've looked at is helping to set up things like disaster management authorities, often which have this dimension to it of bringing forward the application of some really good laws including environmental laws. The former Soviet Union had fantastic environmental laws, all of which were egregiously ignored. But you're absolutely right. Those are fundamental to the solution set.

MS. FERRIS: Nancy, as we look for other questions, I really don't know the answer to this. I come from a humanitarian background, and I don't really understand the opposition or the difficulty of some in the development community not to jump on board with DRR. I mean, what's holding that back from being accepted as part of a mainstream development response?

MS. LINDBORG: Well, I think we are, not to be overly optimistic, but I think you don't do this work if you're not kind of inherently a little bit optimistic. But I think that -- two responses. First is I think that opposition is dropping, and that there's a new

appreciation broadly for how important it is to understand the vulnerabilities and the risk and to include that analysis in your development strategies. The World Bank, and in Sendai last fall, committed that within the next 5 years every single one of their development strategies will include a risk analysis, which is huge. And this is what's we're doing with our resilience agenda is ensuring that our development portfolios are fully looking at the risk and the vulnerabilities.

I think historically the resistance has been if you've got scarce development dollars, and I mean at the heart of all of this is that there hasn't been enough development dollars globally ever. But if you have to make trade-offs, do you invest in the areas where you're going to get high productive results? Right? So, you invest in the part of the country -- let's take Kenya, for example -- in the productive south where you're going to really get economic returns and stoke an economic engine that can drive the full country forward. The problem is (a) it's often not inclusive development, and we know longer term how that can lead to conflict and pockets of communities who are completely outside the growth, and (b), what we saw with the drought is that that's great, but $12 billion losses from your marginalized dry lands are going to overwhelm the impact that you've got from those productive investments. So, that's why I think we're turning the tide and having a different conversation now.

MS. FERRIS: That's great. Okay. Yes, please. This gentleman, and you're one, two. Is there anybody in the very back, I don't want to leave you out. Yes, please.

MR. GOLDMAN: Thank you. Justin Goldman, Pacific Forum. I wonder if you could talk about your link in DRR and development to the Philippines where you've seen good progress with growth with equity and (inaudible) program, but then 2011,

(inaudible) and then Typhoon Pablo, and especially with this year with such a focus on supporting the Framework Agreement, how that convergence goes to a country team approach. Thank you.

MS. FERRIS: Okay. And there's another one. Who's next? Yes, you, sir.

MR. BROWN: Good afternoon. Gregory Brown with the U.S. Department of Transportation, and I'm in the Office of International Preparedness. You had mentioned something that is kind of near and dear to me in that 70 percent of the spending is going towards emergency response, whereas 30 percent is going towards preparedness. So, in this economy how do you envision being able to change that from 70/30 to maybe 50/50?

MS. FERRIS: Did you all hear the question in the back? The question was about changing the balance as being 70 percent of funding on emergencies and only 30 percent on preparedness to something more like 50/50.

MS. LINDBORG: The bad news on that is it's actually more like 3 percent on disaster preparedness, and there's pieces of that equation that are left out. I was just pulling out an emergency response and --

SPEAKER: (off mic)

MS. LINDBORG: -- and yeah. (Laughter) So, how can we change that equation? I think we have the growing momentum coming out of the dialogues in places like Sendai with the Japanese and the Hurricane Sandy events bring it home, so this doesn't feel so much like an issue that's happening out there that we don't understand. I mean, I just say this from the perspective of U.S. policy makers and probably Japanese

policy makers and New Zealand policy makers, for that matter, who also had the horrible Christ Church earthquake.

I think preparedness -- look, in the U.S. context, I think there's keen awareness that we need to put more investment into our infrastructure and our transportation systems that are so easily overwhelmed. I mean, we shut down for a heavy rain not too long ago here in Washington, D.C., right? As a Minnesotan, I'm appalled, but okay. So, I think that it's just continuing to put the evidence basis on the table, and when you put the evidence on the table it becomes very compelling.

And also, and I won't say it again, but I'll say it one more time. I think resilience gives us a way to make it a more immediate idea. There's something about DRR as a label that I don't think it just captures imagination, and sometimes it's about how you put the ideas out there.

MS. FERRIS: Do you want to say anything about resilience in the Philippines?

MS. LINDBORG: Oh, absolutely. Our country team has as one of its core strategic objectives building resilience in the Philippines. Understanding how buffeted that island nation is by continual shocks. So, I think I may have left it out, but as we look ahead to our work plan within AID for resilience in the year ahead has two main pieces. One is building resilience in fragile states, and the second is really a focus on Asia. And that's singling out Nepal, the area in Southeast Asia, and the Philippines as places where we want to bring that kind of focus to joint planning between relief and development, pulling forward climate change adaptation, and disaster risk reduction.

MS. FERRIS: And we'll talk more about that in our afternoon sessions. Other questions for Nancy Lindborg? Well, okay. All right. (Laughter) You two up here, and then we'll --

MS. LINDBORG: Warming up for their panel.

MS. FERRIS: Yeah.

MR. MARTIN: I'm Randy Martin from Mercy Corps. Real simple question. What is the role of NGOs inresilience?

MS. FERRIS: And Jim Gannon.

MR. GANNON: Jim Gannon with JSIE, and I'm going to have a similar question here, but I hear you talk about the resilience approach, and all I can think of is the human security concept that Japan has been pushing for 15 years. And you name check Madame Ogata, the head of JICA, former head and grandmother of that. And so, you go back 20 years or so, there's a lot of cooperation between JICA and USAID. Now I think it's mostly on global health, and it seems to be at a slower pace. But as you move to resilience approach, is there room for greater cooperation on joint efforts with JICA? What do you see going forward, and what are the obstacles to that and as well as other ODA agencies?

MS. LINDBORG: Great. Both good questions, and truth in advertising from my -- Randy's an old colleague, and when I was still with Mercy Corps there as a lot of focus put on building partnerships and relationships with Japan.

I had excellent meetings when I was in Tokyo last fall with our friends and colleagues at both JICA and Ministry of Foreign Affairs, and I think that where we find areas of important cooperation is particularly on thought leadership and on joining together as part of the donor community on driving this agenda forward. And I started

invoking Madame Ogata in 1996. She also re-energized what is now the resilience dialogues at the Bank. Was that two years ago?

MS. FERRIS: Mm-hmm.

MS. LINDBORG: Two years ago, and that's now become, I think, a pretty important feature of the Bank spring and fall meetings is that there's a resilience dialogue and JICA and USAID, along with our EU and World Bank colleagues, co-host that. I think Japan has and remains a really important leader on these issues, certainly with their championship of their Tōhoku framework, and so it's a combination of looking very specifically at some opportunities around thought leadership, working very closely asdevelopment partners on keeping this agenda in the spotlight.

And then on the role of civil society, as I mentioned earlier, I'm a huge believer in the importance of governments partnering with civil society and businesses. And civil society, both as NGOs, going to other countries or civil societies in their own countries, they are a huge part of the solution set. And we at AID work very closely with both, and we know that a lot of community preparedness is driven by local civil society with the way in which you see communities as the first responders, and the ways in which civil society is a critical part of creating that organization. So, OFDA and our Food for Peach offices work very closely with both local and international civil society on this and other key issues.

MS. FERRIS: Okay, any final question? Yes, last question here?

SPEAKER: You're talking about disaster relief and resilience, I had a very funny --

MS. FERRIS: Would you please stand up and introduce yourself?

MR. CHATTERJEE: Yeah, my name is Samar Chatterjee from SAFE Foundation. I had a funny feeling that next time United States is planning to invade a country, it must develop first resilience in that country because that's very important. So, how would you go about doing that since resilience is such an important? And the second part of the question is would you give us some figures from USAID's expenditure? How much money you spent assisting natural disasters like Sendai vis-à-vis how much money you spend in wars of Iraq and Afghanistan which are man-made disasters?

MS. FERRIS: You might want to pick and choose which aspects of that question to respond to.

MS. LINDBORG: Yeah, I appreciate the place that the questioner is coming from. I don't have that data, but what I will say is that a significant amount of our OFDA budget goes for enduring complex crises in places like the DRC, South Sudan, the Horn of Africa, the Sahel. I mean, these places where you have that convergence of a poor or missing government with extreme poverty, with continued conflict, does eat up a significant amount of our budget. It's on our website with our commitment to transparent government. There's a "for instance" dashboard that anybody can go and see exactly how much funding goes to any particular country for any type of assistance, so please go there.

MS. FERRIS: Listen, Nancy, I want to thank you very much for joining us and for (Applause), and also for all the hard work that you and your colleagues are doing at USAID. I think you're doing terrific work, and we look forward in a few years to having even more optimistic presentations from you.

MS. LINDBORG: Excellent. Thank you, Beth. And thanks to all of you for the work that you do on these issues.

MS. FERRIS: And we'll reconvene in about 15 minutes across the hall for some other exciting panels.

(Recess)

MS. FERRIS: Okay, everybody, welcome back. If you want to find your seats. Traditionally, the session after lunch is a little bit difficult after you've eaten. It's a little slower pace, and so we've prepared a particularly dynamic set of speakers for you, to keep you engaged, awake, enthusiastic, and certainly excited to discuss the subject.

The topic this afternoon is Challenges of Disaster Risk Management in Asia and the Transferability of Japan's Best Practices. You know, if you look back to the 1995 Kobe earthquake that several people mentioned this morning, there has been a lot of good learning that's come out of that. The whole development of strategies, the disaster-risk reduction, and the Hyogo Framework. Discussions are taking place about these issues now, in a way that they weren't before the earthquake. I think sometimes it's good for us to remember that we do learn. I mean we can learn from terrible experiences. Things and systems and people can get better. And so this afternoon we're going to talk about some of the advances and challenges in disaster-risk management, particularly in Asia, to see the extent to which some of Japan's experiences might be useful. The format will be similar to this morning. I'm going to introduce, very briefly, each of the four speakers. You have their bio's in your pack. Then they'll one at a time come to the podium and speak for the amazing limitation of 10 to 12 minutes each. This is a tremendous burden on you folks, but I know that you're up to the challenge in this post-lunch period. Then we'll come up here and have a

discussion and time for questions. So without further ado, I'll say that we'll begin with James Fleming, who's the division chief for Asia, Latin America and Eurasia Response Division. Think about that for a minute. Asia, Latin America, Eurasia -- that's Europe and Asia. It's everything except Sub-Saharan Africa -- so tremendous responsibility at USAID. He's worked with USAID for a number of years, also with the International Organization of Migration.

Then we'll turn to Megumi Muto, who is deputy director general for Southeast Asia, and the Pacific Department of JICA. She's done a lot of work on Latin America, the Philippines, finance, and so on.

Then we'll turn to the ambassador from Indonesia to the United States, who's been with the foreign ministry since 1986, posted in places as diverse as New York, Geneva, and Aceh.

And then we'll turn to Rebecca Scheurer, who's director of the Red Cross/Red Crescent Global Disaster Preparedness Center. Long years of experience with many different disasters. I think you said more than 20, from Haiti to Pakistan, working mainly with the American Red Cross and others.

So James, we'll begin with you. Please come up. Thank you.

MR. FLEMING: Afternoon, everyone. Let me start by just saying thank you to Brookings for hosting this event, and for inviting me as well. I'm glad to be here. As you heard from Nancy Lindborg over lunch, USAID is strongly committed to disaster-risk reduction and disaster-risk management. It's also an honor to be here on a personal level. When I think of the big disasters like Japan, the Asian tsunami of 2004/2005, I feel that how we honor the people who have been killed in a disaster, or who -- families who have been affected by a disaster -- I think the way that we honor them is to take lessons

learned from that disaster, and then apply those lessons learned, so that that disaster does not happen again. So I think this is a really good opportunity to discuss some of the lessons learned going forward from Japan, and a variety of other disasters.

So clearly there are a lot of lessons from the disaster in Japan. And I will discuss how USAID's Office of Foreign Disaster Assistance or OFDA, is applying those lessons from Japan in other countries. As well as lessons from, you know, 50 years of responding to other disasters around the world.

I'm going to focus my comments upfront this morning -- or this afternoon, on Indonesia, Philippines, and Thailand. And then during the discussion, I'd be happy to answer questions on any other country or topic.

So these three countries have similar disaster-risk profiles to Japan in certain ways. Maybe not nuclear power plants, but certainly in the areas of seismic risk and hydro-meteorological hazards.

Another common thread between Japan and Indonesia, the Philippines, and Thailand, is that all countries have made very strong political and financial commitments to disaster-risk management.

So to start, just a brief bit of background on USAID's Office of Foreign Disaster Assistance. So essentially, we use the same definition for disaster-risk reduction as the UN's International Strategy for Disaster Reduction, ISDR.

Second, we support the ISDR Hyogo Framework for Action, through essentially three things, that's policy, it's global engagement, and it's funding. Most of you are familiar with our funding, and that's what I'll concentrate on. Our funding focuses on, you know, three basic areas in DRR: that's enhancing resilience, reducing vulnerability, and increasing capacity. So this funding includes both stand-alone DRR

programs, as well as mainstreaming DRR into both response and recovery programs. And you heard Nancy Lindborg talk about the percentage of our funding that goes to DRR. And in the last fiscal year the funding total was actually 12 percent went to DRR, and this is both mainstreaming and stand-alone projects. And that varies between 10 percent and 20 percent on any given year. So of course DRR activities are tailored for the specific context in which we're working. So turning to Indonesia, our office supports a number of disaster-risk-reduction programs -- a country that's affected by a variety and frequent number of natural disasters.

So our DRR activities focus on prioritizing and strengthening early warning, disaster preparedness, mitigation, and prevention. Among the specific DRR programs that USAID/OFDA supports -- one example through the American Red Cross, we are assisting vulnerable communities living in coastal areas to harness local eco-systems to mitigate the impact of storms by -- for example, rehabilitating coastal mangrove forests, as well as greenbelts. As Indonesia is one of the world's most volcanically-active nations, USAID provides technical assistance and monitoring to the government of Indonesia in partnership with the U.S. Geological Survey.

Since 2004, we have also supported training in seismic monitoring and eruption forecasting. We support programs that address the psychosocial effects of disasters by training first responders to provide care after a disaster strikes. In another example, we build capacity of local micro-finance institutions for disaster-affected populations. And we form programs that educate communities and local officials on climate-change adaptation, that improves provincial and district-level linkages.

So when it comes to disaster-risk reduction, OFDA has a very strong partner in the government of Indonesia. Between 2006 and 2012, the government of

Indonesia has nearly doubled its investment in disaster-risk reduction. And currently funds about one percent of its budget on DRR locally. The Indonesian government is also working on a tsunami master plan. This plan is an ambitious multi-year program to improve early warning and preparedness for tsunamis.

But not all the DRR is structural and highly technical. A lot of these examples of DRR are simple and pretty straightforward. In West Timor for example, USAID/OFDA supports a program that promotes the use of radio-early-warning systems, and the preparation of basic water and food storage facilities to ensure that necessities are available following a disaster.

So in April, 2012, there was the large earthquake off the coast of Indonesia. And the alerts that had been set up after 2004/2005 tsunami, actually worked very well. And as you heard Nancy Lindborg say, we had hundreds of thousands of people that were moved away from coastal areas after that earthquake happened. There wasn't a tsunami generated, but what we saw is the effectiveness of these early warning and notification systems.

Another particular item I'd like to mention with respect to Indonesia is, a partner -- a local partner called Ambulan 118. Ambulan 118 was a small Indonesian-medical-disaster-response organization, and with international support, it has grown into a premier response entity in the country. So when a disaster strikes, they have staff that are ready to respond rapidly and effectively should the occasion warrant.

So I will turn to the Philippines. Between 1990 and 2012, USAID responded to more than 40 disasters in the Philippines, including volcanic eruptions, drought, typhoons, and flooding. Our DRR investments in the Philippines focus on the most vulnerable. Examples of DRR programs in the Philippines include providing

technical support to enhance the government's response capability, improve vulnerability assessment and mapping, mainstreaming DRR into public schools, and through fire and earthquake drills. We also support capacity building for the Philippine Red Cross. The government of the Philippines, through lots of practice, has been responsive, efficient, and effective in responding to disasters. This is a civilian led, but includes inputs from assets from the national government, the military, and the private sector. The government has demonstrated a strong commitment to DRR, through a number of key mechanisms, including progressive DRR laws through which the government has established the policy framework for effective DRR, and has provided funding at all levels to undertake DRR activities. With support from USAID, over the past four years the government has instituted the Incident Command System as a standing-response framework for all hazards in the Philippines. The Philippines is also assessing the challenge of global-climate change with agra-forestry practices included in local and national development plans.

So an example in the Philippines -- since 1998, USAID has helped train professional emergency responders in the Philippines. This program has been instrumental in staffing Philippine search and rescue first responders. And groups like the Philippine's National Red Cross, The Bureau for Fire Protection, The Office of Civilian Defense, and even the armed forces.

At a national level, USAID has enabled the world-food program specialists to assist Philippine governments with mapping hazard-prone areas, and improving warehouse management of relief items.

Third, the USAID and U.S. Forest Service has worked together to train the Philippine's emergency personnel in what is known as the Incident Command

System, ICS, and we'll talk more about that.

Last, in Thailand -- Thailand is a country, as we discussed, prone to typhoons, floods, tsunamis, and USAID funds a number of DRR initiatives in close coordination with the Thai government. This includes distribution of primary school education materials that teach children ways to prepare and respond to disasters. And this information is flowing from the children to the families in Thailand. And it's been a very successful endeavor.

USAID's also helping strengthen the capacity of the Thai government's Department Disaster Prevention and Mitigation, and related national and local institutions to develop and implement flood mitigation and preparedness projects. In Thailand as well, we are helping institute the Incident Command System for the government as well.

So following the unusually severe flooding of 2011, the Thai government dramatically increased its investment in flood mitigation, including the allocation of approximately 11 billion dollars for flood prevention, including forest restoration and conservation, and the construction of dikes, reservoirs, and water retainers. And they have invested in flood-early-warning systems and information-management as well.

So these three countries have all made laudable strides in disaster preparedness and response to address the significant natural hazards they face. These countries rich disaster-risk management experience at all levels, can also be leveraged to build regional capacity. To further strengthen DRM, it is crucial that governments and international donors mainstream DRM into development programs, as Nancy Lindborg reiterated at lunch. By working closely with our development partners, we will help maximize the continuity and depth of DRM initiatives, thereby reducing the economic and human toll of natural disasters. Thank you. (Applause)

MS. MUTO: Thank you very much ladies and gentlemen. My name is Megumi Muto from Japan International Corporation Agency, JICA. While my fellow speakers focus on people, I will cover the issue of planning on hot structures. In fall 2010, I was also in D.C. to launch a joint study with the ADB and the World Bank titled Climate Change and Adaptation in Asian Megacities. There, we did some initial attempts to downscale global circulation models to call attention to the potential magnitude of floods in 2050 under climate change, and then suggested to apply that methodology to planning. I then moved on to manage JICA's portfolio to the Philippines for two years. And the presentation today is to share my, I would say, struggle to apply science, not just in very nice studies to be kept on the bookshelf, but to the real world setting of Metro Manila.

Climate change is a real challenge for planning. First, in terms of planning horizon. The life cycle of flood-control structures is up to 40 to 50 years, and the current decision will be locked in for decades. In order to do no-regret planning, we have to be accountable for future generations, making use of the best of our knowledge.

Then, how can we assist partner countries for no-regret planning? I think that we need to make sure that they are well informed by rigorous science, and assist in broad-based decision making. I underlined rigorous science because this is the area my team in JICA is really focusing on at this moment.

What science can tell us -- the challenge of climate change on planning: (1) effective climate change is not linear, but it affects the peak events. Flood-control structures are intended to protect people, assets, and activities from peak-flood events. So the extent of increasing peak precipitation directly affects structured design of flood control. So we need to downscale global circulation models to calculate the increase in

peak precipitation. In the next few slides that I borrowed from Professor Kyoke of the University of Toyko and IPCC, who is working on the analysis of Metro Manila at this moment, I'll try to share with you a snapshot of what we do in downscaling global circulation models.

First, what are global circulation models? There are 20-something global circulation models used for the future scenario analysis of the IPCC. These models are developed by institutions worldwide, including in the U.S., Europe, and Japan. Some of you have heard about the earth simulator, which is one of these models that were developed in Japan. They are models with mega amounts of data, and even the fastest, super computers cannot accommodate all the necessary simulation. Examples of major variables in the global circulation models are shown in this slide depicting the dynamics of global energy and water cycle. But please don't ask me questions on this slide, I cannot answer. Okay, all right.

Taken individually, these global circulation models from number 1 to 24, have their own strengths and weaknesses. Some are very good in precipitation; some are very good in winds. So at IPCC they choose some sub-set of models that perform well in the context of the analysis that they are conducting, and do what they call multi-model analysis.

At the global level, as you may have heard many times -- the global circulation models project that there will be changes in extreme events. It is very likely that precipitation events will continue to become more frequent. And also, it is likely that the area affected by drought increases.

Now we turn to the local level. This is an example of multi-model analysis for peak precipitation in Indonesia. Here, daily rainfall of 5, 10, 100-year return

periods are analyzed. In one scenario, A1BB, almost all the models show that the same trend and probable rainfall of 5, 10, and 100 years, will increase by around 20 to 30 percent. Well, the same analysis based on B1 scenario, shows relatively less severe results. A1B or B1 refers to the scenario IPCC sets, assuming varieties in socio-economic growth.

Then, how do we apply such results from science to the real-world-structure planning? When applied to hydrological model, the discharge of water at peak will increase, meaning more flooding. Then the designed rainfall, which is the assumption on peak precipitation when designing a flood-control structure, will change. In designing structures on the climate change, we would wish to do this right, well-informed by science, but I don't think we can ever be completely right. Just as a footnote, we do not intend to prevent all the flood. We assume a mixture of structural, and also non-structural measures.

The second challenge of planning and the climate change, is spatial distribution. The coverage and depth of flood, the 3D, depend critically on the spatial distribution of peak precipitation. Just as a simple example, where the flood occurs depend critically on which side of the mountain you're talking about. Therefore, we need to downscale global circulation models, not just in terms of increase of peak precipitation, but also in terms of the spatial location of peak precipitation. This is the upper watershed of Metro Manila, and in an ideal case, we might wish to simulate locally on a scale; for example, close to several square kilometers.

Then, how we get there. An ensemble of global circulation models like these slides shown in the neighborhood of the Philippines can usually be downscaled up to 100 square kilometers. Even under the fifth IPCC report now in process, scientists are

arguing if the scale can be narrowed to 60 square kilometers. But to predict flood, we need to know if the rain falls on the right-hand side of the mountain or the left-hand side. So we need to go another round of analysis, this time using the historical data of rain gauges in the localities of Metro Manila. The 100 kilometer wide peak precipitation data is spatially allotted to localities with some weight, driven from historical data. And here you see examples of global circulation model peak precipitation data, corrected in terms of spatial distribution.

After getting the spatial distribution of peak precipitation, then we move on to hydrodynamic models. I have just inserted this slide to show you that the model that Professor Kyoke is using for Metro Manila now is not only on water, but takes into consideration the dynamics between the soil and the atmosphere, thus improving the fit of the calibration quite substantially.

And combining the downscale piece, peak precipitation and hydrodynamics, we clearly see the increase in peak-flood volume in red that leads to flood maps, such as the ones shown in the next slide.

As Professor Kyoke and his team is working on the latest flood simulation right now, this flood analysis is taken from the 2010 study that I have done. My version in 2010, as it is commented from A to B, has many lessons learned. So my colleagues, including Professor Kyoke, are correcting all my errors in the past.

One remaining challenge -- policy makers have to agree on likely future scenario, even though we inform them with all these scientific results. Spatial pattern of flood varies depending on the downscaling results, but policy makers tend to center decision on one recent historical event. For example, in the case of Metro Manila, they intend to focus on the story of typhoon Ondoy Pepeng in 09. This is, I think, -- this occurs

because it is easier to convince constituencies and stakeholders. So maybe in this setting, political consensus is favored over science. But can this be no-regret planning? That is the question that I pose to myself. I don't know the answer because it is public choice, but the one who has to decide on certain projects that we do in the Philippines -- I just couldn't say yes to the political choice and stop there. Rather, I offered some additional work to correct the data, and that's why we have engaged Professor Kyoke.

This slide shows what happened with the flood control master planning Metro Manila, historically. In 1990, JICA did a master plan of flood control in Metro Manila, without any consideration of climate change. 2010, ADB, JICA, and the World Bank -- we did joint study on climate change and adaptation in Asia mega-cities, as I have mentioned. This was a study, so it was easy to do. No responsibility at all. But then a 2011 master plan -- The World Bank assisted the government of the Philippines to come up with a master plan with certain assumptions and precipitation peak increase. I'm not blaming the World Bank, it was the government of Philippines who made the political decision that this master plan has to be built on a single event of typhoon Ondoy Pepeng in 09. I thought that this has the potential to be regret planning, so we offered a complimentary work that we are doing at this moment.

Way forward -- assisting partner countries in long-term planning and the climate change, is an emerging case of cutting-edge, science-based ODA from Japan. We want to be more capacitated to do this. Informing on choices through science can be done, but challenges remain in the communication strategy and decision-making mechanism within the partner country. This is very, very important, but I don't have the answer to this at this moment. Donor coordination on the shared platform of science is becoming increasingly important, and JICA is willing to take the lead on this. Thank you

very much. (Applause)

MR. PERCAYA: A very good afternoon to you all. Let me begin by thanking the Brookings Institution for inviting me to come to this event. Just a small correction, Elizabeth. I'm not the Indonesian ambassador to the United States, but I am ambassador of Indonesia to the United Nations. Slightly different, but the implication is very wide. So I'm based in New York.

It is certainly a distinct pleasure for me to be given the opportunity to share with you of all Indonesia's experience to strengthen resilience, preparedness, and capacities in dealing with disaster. I'm just wondering how many of you have been to Indonesia? Thank you very much. Quite a lot. But if you look at the map, the shape is the size of the United States. But you never imagine how big Indonesia is in terms of island, lands, and territorial water. And what is more important, we are also -- what do you call it -- inhabiting what we call it -- the Pacific ring of fire and the Alpide Belt at the same time. So direct recourse and the defects will strike us such as Indonesia is the 12th ranked among countries which are definitely high risk because of disaster. Number 12, it is quite amazing. You name it -- earthquake, volcanoes, flood -- what else, Jim? Name it, we have it. But I'm proud to say that Indonesians are resilient. We are resilient, and also now at the UN we are now trying to measure happiness index. It is not there yet, but I truly believe that Indonesia will not be one of the lowest, because in terms of resilience, we are very strong.

What strike us? What really trigger Indonesia then suddenly become the mainstream in our policy, become everybody's issues -- certainly tsunami -- tsunami 2004. Along with many other natural disasters, there is also for us a need then to strengthen and increase our capacity to minimize the vulnerabilities and disaster risk. In

the case of Indonesia, this is really a critical step to help us sustain our development effort.

Luckily, we do also have at international level the Hyogo Framework for action 2005 - 2015. So it really help us how to implement it, how to put priorities, and how also for promoting the program. We have made DRRS a priority in our disaster-management strategy. We include the strategy schemes to increase again resilience and partnership at national, regional, as well as global levels. Many have been certain that the establishment of national agency for disaster management and also the participation of local government, so again not only that, I think the participation of civil society, parliamentarians, nearly everyone in Indonesia.

For that reason, we do also believe there is a need to have a strong, legal basis on DRR through the establishment of law 2000, law 24 in 2007. We also recognize the importance of coherence and coordination in the implementing of this law, especially within the central government, as well as the local government.

We believe again DRR is very important to sustain our development, and it also helps save and preserve the achievements of our development effort. And luckily, because of the mainstreaming of DRR, we have been able to integrate DRR into our mid-term, national development plan 2010 and 2014. In this regard, DRR is very critical to our efforts in realizing the vision towards Indonesia's resilience to disaster. The threat of natural disaster again very constant. I think Jim says, "Agree with me that you name it, we have it." Again then, when the disaster struck, who suffered the most? I think you would agree with me, certainly people -- our local people.

For that reason, we pay attention to the local governments that have to first tackle challenges in the aftermath of disaster, and local governments, certainly, they

have to respond first in this particular regard. That's why capacity building of local governments are very, very important. We also begin to establish -- what we call it, Indonesia Disaster Risk Index, in which we develop (inaudible) of hazards, vulnerabilities, and capacities of all local governments. And in this regard, there are 494 district. We ended the fight which considers areas that could easily fall into medium, high-medium, and low-risk zones. And also it is disheartening to know that 396 district are situated in high-risk zones, and are highly vulnerable to various type of disaster. Allow me now to share with you a few thoughts on how we can strengthen capacity for DRR. I'm a bit nervous because you are showing me the timing, right? Thank you.

First, strengthen local resilience through the development of disaster-resilient villages. It is in these villages that we mostly witness the devastating effects of natural disasters: earthquake, tsunami, landslide, volcano, volcanic eruption, floods, have often took place in rural areas. In this hardship project, either you will be also struck to know that Indonesia has around 17,000 islands. I think can you imagine the number itself cannot be fixed, depending on the tide up and down. If it is high-tide then we have less island. But more or less we agree, and it has become a national consensus -- more than 17,000 island. Very rich, very challenging.

In the hardship project area, we adjust our DRR initiatives to the geographical characteristic of our villages we call it (inaudible) for inland areas and (inaudible) or resilient coastal villages for coastal areas. They are trying to serve, and they are established to serve the objective of creating community-based DRR at the local level. I still have five minutes. These villages can be part of wider networks for the implementation of DRR plans and strategies. Second, participation and collaboration of multi-stakeholders is very critical to build capacity for DRR. Academics, religious leaders

of our society, professional Parliamentarians, youth, especially, they are all involved in this process as well. I'm not going to go through all.

And third, human capacity and technical capacity need to be developed. This is also one of our great challenges. But we also tried our best to maintain and apply -- what do you call it -- local wisdom because through generation in each of the culture we also have -- what we call it -- local wisdom, as well as indigenous knowledge.

And fourth, financing is very critical, certainly, and one of the way to obtain financing support is through -- what we call it -- it is very popular now at the UN -- public, private partnership. You can also bring in philanthropists, private sector business, et cetera.

And lastly, there must also be coherence between national and local capacity. I think Jim has said quite on this as well. There is a need. There is also a challenge to make it a coherent synergy between the central and local government. The thing with participants -- in view of the above, the Indonesian government established the vision and priorities on building the resilience of the nation at all levels. Currently, there are four approaches being implemented to enhance the resilience, preparedness measures and capacities in disaster-risk reduction. First -- what we call it -- the anticipative approach. This is taken by conducting further research studies and a vision that can be used to enhance the creation of early-warning systems.

And second -- what we call it -- the aversion approach. Aversion approach is to avert the emerging risks through various means, both structural and non-structural. For example, rebuilding the several dams in Jakarta because of the Merapi eruption, to contain massive volcanic eruption, law enforcement to eliminate the practice of burning peatlands and clearing methods, and intensive effort for the plantation of

mangrove trees.

Third -- it is the adaptive approach by taking anticipative and risk aversion approaches then the people must also be willing to adapt, in order to enhance their resilience to the disaster.

Fourth -- the resilience approach. It is important to raise the awareness on resilience and aiming for it with the given geographic condition of the country, which to certain extent has been affected by climate change and variations in climate. The Indonesian have no other choice but to live with disasters, and this is the point, the crux of the resilience.

In conclusion, Indonesia is always -- it always attaches the utmost importance to international corporation and support and particularly to address the remaining challenges in promoting disaster risk and improving the capacity of Indonesia to share its experience and knowledge to others as well. It is in fact the strong partnership between the government of Indonesia and international partners. I think Jim's again has made it very clear in one of the example. This kind of partnership has made significant progress possible in the efforts of building preparedness and resilience in the country. Once again, thank you very much. (Applause)

MS. SCHEURER: Thank you very much for having us at Brookings here today. It's a real pleasure for me to have a chance to talk to all of you a little bit, and share some perspective from the Red Cross and Red Crescent side of this equation. I think we've heard there are a lot of different ways to broach disaster, risk reduction, and resilience, risk management, however you want to call it. It's a big endeavor, and it requires all of us playing a role. So I will take the next ten minutes or so to try to encapsulate some of the work that we're doing, and a different perspective.

In particular, I'd like to really concentrate on urban -- just a second here, from the beginning, here we go -- on urban resilience, and what it means for the Red Cross network. I've selected a few questions here to just get us started, so I'll try to address these as best I can as we go forward. And I'll try to talk slowly. I have a tendency to talk quickly.

I really want to talk about how is urban disaster management -- risk management, different from the rural setting from a Red Cross perspective? And how is it impacting us? What are we seeing as some of the positive aspects of the urban trends that you're hearing about? You've heard a lot of statistics. Nancy Lindborg shared a bunch over the lunch hour. We're really grappling with a massive migration of population globally to urban centers. Obviously, I think you're all pretty well aware that roughly half the world right now -- half lives in urban areas, and we're looking at a projection of that possibly reaching 70 percent in, you know, 2050. These are estimations, but it really drives home the point that this is a critical time for us to gear up, and be more effective with our preparedness.

And then I just want to talk a little bit about the Red Cross network. You know, how can we really advance these efforts? We're not the only game in town, but we certainly have some considerable reach, so --

When we're looking at urban settings, you know, traditionally the Red Cross has really focused more on rural areas. We have a pretty good sense of how to do vulnerability and capacity assessments that take weeks. We get to know the community. They're easy to identify. We can quickly go in to a small area, a town, and understand who the community elders are and have them advise us. They trust us. It's an easy mechanism for us to access for delivering humanitarian assistance.

When we get into an urban setting, we're faced with huge challenges around accessing populations, targeting the right people -- the most vulnerable, and really reaching the scale, hitting the density of need that we see there. It's a whole different ballgame when we have that kind of congestion. Sandy drove home the whole challenge around vertical assistance. When you come up to a high-rise, and you have 10 stories, 12, 20, 30, 40, whatever it is, it posed huge challenges for us, especially when there's no electricity and you have elevators and elderly and disabled on these floors. One truck with 10,000 meals doesn't go very far when you hit a high-rise.

So we're looking at the Jakarta's and Dhaka's and other places in the world and realize this is a whole different ballgame, and we need to really change our thinking. Also, this issue of fluid-dispersed communities -- they're not easy to define in urban settings. We know their neighborhoods according to zip codes or blocks and such, and that helps us target. But really you have different communities, whether they're, you know, schools, or your work setting, then your commuting, but very fluid populations in urban settings. There's also a lot of obvious unplanned growth in illegal settlements. So people that are invisible, you know, and they're the ones we really want to help and reach.

So these are some compounded vulnerabilities. Also, there's economic migration, which I think you're all aware of, as well as this interplay between the rural and urban centers. And a lot of times we're seeing, for example, unaccompanied minors that go to the city to earn money for their families and come back. Well, these are very vulnerable people that we're trying to reach.

Catch up with my slide here. So it's not all bad. I think that's one thing we have to remember, is that we really have opportunities in front of us as well, when

we're looking at urban settings, and how we can do a better job. When you have this concentrated wealth, you oftentimes find an urban center as economic engines of societies. That also comes with greater education opportunities, and more people with assets. So there's more of an interest to protect those assets.

We have more engagement oftentimes with local government, and this is a real opportunity for us to strengthen the ties with communities, and make sure that the government is engaged with the simple society groups, and do what we can to reinforce those relationships.

Technology's more readily available. That's obvious, and I think that there are ways to capture that. I very much appreciate Mr. Bosner's comments about, you know, relying on the low-tech that's out there -- the megaphones and, you know, just communicating with your neighbors is critical. And I think that will remain to be the case, but there are certainly opportunities in front of us that we need to capitalize on.

The private sector -- I look at that as a, you know, a whole different swath of capacity that's really concentrated in urban areas, as a different range of professional services that we could tap. So it's just to demonstrate that, you know, there's some assets there for us to explore.

Oops. Sorry, I always do that. Okay. So then what are we really aiming for? I just wanted to throw this up. This doesn't encapsulate everything. Obviously, resilience is a big term and there are a lot of different approaches to it. Let me start by saying, when you hit a community, they don't care if you're coming at it from a humanitarian angle, or you're coming from development. It doesn't matter to them. But what we're looking for, is how do we safeguard people and their families and their assets? And obviously, education really helps us achieve a more resilient community,

more skills, emergency response systems with access to timely, accurate information.

And then this last point, I think, is really important. We've learned over the years that we really need to focus on diversifying livelihoods. How do people earn a living, and buffer it with different ways for income generation. And also then looking at our response options, and looking at these -- how do we jump-start local economies, and with local procurement cash, other options, which I'll get into in a minute here.

So now we're getting to the Red Cross network. How much time do I have? So I'm doing okay? This is a huge, huge network, and it's actually interesting that many of the NGO's out there also tap the volunteer base that we have. We've been operating now for 150 years. There are 187 countries that comprise -- that make up this network. The International Federation for Red Cross and Red Crescent Society IFRC, sorry for the acronym, is sort of our coordinating umbrella. And ICRC the International Committee for Red Cross oftentimes focuses on the conflict zones. So together we have a pretty, I don't know, an impressive reach I would say, with thousands of branches. And so just about every community around the world has some access to Red Cross services. And another point I want to drive home, is that the communities that we're serving and those volunteers, are actually coming from government, from the private sector -- so it's a real mish mash of society. And I think that's a real asset for us to keep in mind.

I'm particularly involved right now in a global disaster preparedness center, one of 12, or 13, I guess, now. Centers that are affiliated with the Red Cross, but we really are an extension of their services to help build capacity of those Red Cross national societies as first responders. And then by extension, the communities that they're servicing, which I'll get into as well in a minute. How we work similar to what James was talking about with OFDA. I think we've been influenced largely by other

actors, OFDA included, and taking a more holistic, multi-hazard approach. FEMA certainly plays into this. I mean there's a lot of advancement, I think, in this sector in general that's helped us come to the point where we're making a concerted effort to try to have much more integration in how we do business. For examples here, I just threw in like climate-change adaptation. It's a huge theme for us right now. So we're looking at how putting on these different lenses helps us be more effective with our resources. And again, at the community level, they're not making the distinction if you're talking about livelihoods, or you're talking about climate change. It doesn't matter, you know, what they're interested in, is how do they stay safe and really progress in terms of economic development and other education, and other investments that they care about.

We also concentrate a lot on organizing people. We mobilize people all the time, and we get very heavily involved in contingency planning. I think we need to do a better job at connecting with local government, which I'll talk about, and other actors in country. And we're a platform for a lot of shared learning. We bring people together all over the world. So oftentimes you think of Red Cross as a convener, you know, and then we want to have that space for a lot of dialogue, so that we can share experiences.

So I'll get to a few examples of what we're doing in urban areas. The top -- the first point in just looking at exploring different techniques that seem to be more effective and appropriate in urban settings -- one is cash, cash transfers. I think this isn't a new concept; in fact, OFDA's been doing this for well over 15 years, but the rest of -- the Red Cross is sort of like an ocean liner. We go a little slower than other people, but once you're on board, we're solid and we'll stick around, right? And I think that we're really seeing more and more Red Cross societies -- Red Cross and Red Crescent societies take on this challenge of looking at how we can distribute cash in urban settings

-- not just urban, but this is a quick way for us to get scale, which I talked about earlier. Apps -- the smart phone applications -- I'll talk to you about it in a minute, as well as SMS messaging.

In terms of school disaster preparedness, we do a lot with both OFDA support and other donors -- other contributions to the Red Cross network, where we are trying to streamline disaster preparedness into curriculum all over the world -- Nepal, Vietnam, Indonesia. It's been a real focal area for the Red Cross because we realized that it's an effective way to influence how -- at the household level, families prepare, if their children come home, they have a very positive influence on the family thinking around disaster preparedness.

This next program is one dear to my heart. It's the Community Action and Disaster Response. Again, with the very generous support from OFDA, we've been able to build off of a ten-country program to bring in the Red Cross network, And in complementing a longer-term investment -- since 1998 I believe, where OFDA was really targeting first-response institutions and authorities in building their capacities around disaster management. And we're bringing in at community level, and teaching, you know, teams in all the communities with considerable reach. You know, skills like light search and rescue, first-aid, other critical skills. Government engagement -- we've -- through this program and others we've really been seeing some progress around ownership. In the Philippines, for example, several mayors have taken on the (inaudible) program, and invested their own resources to roll that out. In Jakarta -- I can't remember exactly the district, but there's a mayor that has also set aside land for solid-waste management. So we're seeing some progress around government buy-in.

And expanding partnerships -- I mean, this is key to us having an impact.

You know, we can't do everything ourselves, and I think we have a greater input packed together. So even within the Red Cross network, we're being less insular, and we're looking outward for different partnerships.

So just a couple sentences, since I'm at my one-minute marker. A couple words on what we're doing within the global disaster preparedness center. We're looking at scale. What can we do to reach more people? We want to capitalize on new technology. The app's are -- everybody in the world is going app crazy, and surprisingly, in places that you might not expect. People are able to afford smart phones. In Kathmandu for example, I was astounded by how affordable those phones are becoming. So we're looking at reaching millions of people, instead of a few thousand here and there. We're starting out with the first-aid app that has been tried and tested with British Red Cross and American Red Cross. It had more than a million downloads in about two months here. And we're rolling that out. Right now we've got 16 countries in a pilot, we have another 35 national societies lined up to try this. We're using that same platform with additional funding from OFDA to target Indonesia, the Philippines, Vietnam, Myanmar in Thailand -- those national societies have all been eager to get on board and try out the flood preparedness app, as well as an SMS component, where we will push out preparedness messaging in working with those national societies. And that's also in Nepal. So it's just to give you a little flavor of what we're doing there.

And lastly, I'd just say on research, that's a big part of what the global disaster preparedness center is focused on. We want to really marry the science with practical application. We understand what the practitioner needs are at the field level, but there's always been this disconnect. So part of our effort is to combine these pilots with research and really promulgate the learning wherever we can. In doing so, we've teamed

up with the federation IFRC on a community resilience research project that's taking us into all corners of the world. Really looking at the key determinants around community resilience, and how we define that, and what fosters resilience so that we can replicate good practices. In terms of practitioner needs assessments, just really keeping our finger on the pulse, like through social media and other mechanisms so that we understand where people are going to for information -- what influences people's thinking? So we can target our support accordingly.

And then lastly, we have a small grants program where we've teamed with our Response to Resilience Institute at Tulane University. And they have a network of universities around the world. We are providing funding for students to do research that matches with national society interests. So where they -- in Indonesia for example, they would have a say in saying we want to really investigate flood preparedness, flood risk reduction, or solid-waste management. So we're just getting started. Here's our website. It's a new site. The full site will be up in October, but it's not a plug about the center. This is really a plug about how do we work together? And I just really welcome all of you to explore making connections with your local Red Cross and whatever country you're in. I think in Japan they did a fantastic job. Where is my colleague here? I don't know if he's still in the room. But I have to say that we were very impressed with their response, and I think we're going to learn a lot from that experience. There's a lot to draw from this whole unfortunate event. Thank you so much. (Applause)

MS. FERRIS: Okay, maybe someone can turn some lights on? Well, thank you all very much. Thanks to the speakers. I thought it was a nice blend of different perspectives from -- coming from an office perspective, how to support DRR efforts. Then we heard from Megumi about the efforts of JICA and long-term

infrastructure. Then from the Indonesian ambassador, and I'm sorry I got your designation wrong, but will never do it again. From the view of the government on how to reduce risk, and then finally, from the Red Cross about the efforts of civil society, and taking disaster-risk reduction forward.

The floor is now open. We have about 25 minutes. If it's okay with you, we'll maybe group a couple of the questions to give more people time to ask questions, and if they don't have questions, I always do. One, two, say in the very back first.

SPEAKER: For the gentleman from Indonesia -- are the private homeowners in your country -- are they digging underground shelters to avoid, you know, the tsunami?

MS. FERRIS: Okay, underground shelters and tsunami; we'll come back to that. Next question.

MR. MERCANTE: Yes, Jarod Mercante, currently working with Habitat for Humanity. I just wanted to follow up on Rebecca's presentation, and just inquire further that recognizing that urban issues and urban disaster reduction is becoming a growing issue. How is the Red Cross investing in themselves to increase their internal capacities to effectively advise in these environments? So are they increasing capacities through staffing, through change management, through training? So just more insight on that.

MS. FERRIS: Okay, anybody else who'd like to ask a question this round? Why don't we start with this, ambassador. The question was whether people in Indonesia are building underground shelters, or maybe taking other preventive measures to protect against eventual tsunamis?

MR. PERCAYA: Thank you very much for the question. We do certainly

have the plan and program in which the cooperation within central and local government, especially the coastal areas, certainly to avoid this kind of building underground, which we call it adaptive, meaning that in order to avoid similar disaster or similar fatalities, for example, in Jakarta now people are building houses which is smaller for earthquake resistance. So in the coastal area, we the government -- both central and local government, so persuade and inform the local people who are living in the coastal area not to have -- not to build underground in their house because it will be very fatal to them. So indeed, we are working on it, yes.

MS. FERRIS: Rebecca, question to the Red Cross on how you're preparing for urban disasters?

MS. SCHEURER: Okay, thank you. I can't speak for all the Red Cross/Red Crescent Societies, but I can tell you at the secretariat level, and within the regions of the different hubs, urban issues are becoming a real priority. And they're looking at incorporating these -- the complexities and latest thinking and techniques, into all of our strategies. So that will have a ripple effect. It's going to take some time.

And I would also say too, that there are already existing Red Cross and Red Crescent Societies that have good urban skills. And we just need a means to pull people together to learn from past experience. The Iranian Red Crescent, for example, they're very adept -- Turkish Red Cross. I mean, we've got a lot of capacity already that exists in Chile and other places where they've had earthquakes and, you know, really tremendous challenges.

So part of what we're doing is also creating space for more dialogue. An example of that is last February we brought 15 national societies together from different parts of Africa, around at a UNISDR event, and we had people really talking about what's

working well in urban settings and slums, and, you know, trying to share those experiences so that we can come up with a better list of good practices that we can promote. And then of course, we're investing in research, and that's where we come into play a little bit.

So I'm sorry I don't have more concrete examples, but it is on our radar. It's a very pressing priority, and for obvious reasons. It's just becoming more relevant.

MS. FERRIS: Yeah, I was going to actually ask both James and Megumi, you know, a lot of development agencies started or worked mainly in rural areas, and to adapt to urban environments means a change in staffing as well. I talked to somebody from an agency -- not either one of yours, who said, "Oh, it got a 100 experts in rural development, and one urban planner." But hiring -- but shifting that around becomes an HR question, a little bit political -- where are our priorities? I mean to what extent are both USAID and JICA prepared to deal with urban threats?

MR. FLEMING: So I think this is a good question. I think we are at USAID seeing a real shift from rural to our urban, especially in disaster risk reduction. I think that's not just in the humanitarian side, but you're seeing this in the development side as well, bringing back the engineers and urban planners that, you know, had left the agency.

But I think that this is not just USAID. I see this in the partner organizations that we work with all over the world -- the NGO's, the UN and so forth. I think of an example in Haiti where we were looking at transitional shelter. And because in an urban environment the space was so limited, you couldn't meet the sphere standards for shelters with the regular shelters that we were used to using. So you saw people coming in, and coming up with transitional shelters that were multi-level, in order

to meet the sphere standards. And this was a really interesting innovation that we saw as well.

So not only personnel, but I think what you're also seeing -- is you're also seeing resources going toward our urban DRR. And in fact, this year we have two annual program statements out, and essentially this is a request for proposals from the NGO and UN community on urban DRR in Latin American, the Caribbean, and as well as Asia. And the idea is to get innovative ideas on how to do DRR and response in an urban setting.

And this is where we get some of our best ideas, and some of these requests for proposals. So that's a couple of ideas I had.

MS. FERRIS: Thanks. Megumi?

MS. MUTO: Okay, thank you very much. From JICA's perspective, not only from a humanitarian development perspective, we think that the evident issues are very important from the point of view of supply network in Asia. You see the flood in Thailand really destroyed the supply network in Asia in some instance. Well, they proved to be resilient, but we were shocked by that event. So we shifted a lot of resources from Dullah, ADIAS to ABAN particularly in Thailand. And there was one point in time where -- when we wanted to do some work in ABAN Philippines, engineers were not available, because they all went to Thailand. Okay, well, that situation is getting better at this moment, but just to tell you in the Asian -- especially in the Asian context what's happening with regard to the shift of priorities.

MS. FERRIS: Thank you. Are there questions? Oh, my goodness. How about one, two, three, and then we'll move over here. We'll start with you, Mariah and then two, then three.

MS. SOLISE: Thank you very much. Mariah Solise from Brookings. I have two questions for Ambassador Percaya, but they really are about trying to make the panelists talk to one another, picking up some of the points from your presentations.

And I think it was really striking from Mutosan's presentation, when she made the point that policymakers are going to be responding when they are planning ahead to the past disaster, right? Because this is a proven vulnerability because there's public demand that that will never need to be addressed. And that they may be more hesitant to go into the uncharted areas of where the future disasters will be based on scientific evidence.

And I was wondering, Mr. Percaya, if that kind of issue has come up in Indonesia? And you have confronted this difficulty of convincing policymakers that they should be actually making allowances and devoting scarce resources to those scenarios that are just backed up, if you will, by science, but where there has not yet been such an occurrence. So that's one first point that I wanted to raise.

The second one is, Mr. Percaya, I was very impressed when you discussed all the steps that Indonesia has taken, and how the national plan for responding to disasters was built up. And you mentioned that when Indonesia did this that the HYOGO framework for action was very useful. But I wonder now if you were going to address -- you know, here that we have the Red Cross and development agencies, and so forth. Building from the bottom up -- thinking about the Indonesian experience. If you could identify perhaps gaps -- areas that are not covered in what international donors are putting forward, and what the humanitarian relief efforts are doing that could be the value added of the Indonesian expertise. What would you point towards? Thank you.

MS. FERRIS: Thank you, and the gentleman over here..

MR. SUZUKI: Thank you for the presentation. My name is Kohei Suzuki. I'm doing the community building support in devastated area, and I have one question. In Japan -- Japan is now confronting huge issues with the community after the earthquake, so I want to know that -- is there any good practice for community building after the disaster? Thank you.

MS. FERRIS: Thanks, and there was another one on this side? Yes.

MS. ELISPEDE: Hi, thank you. My name is Sara Elispede. I'm with the Department of Homeland Security. I had a couple of questions specifically for the JICA presenter, which I appreciated your presentation. Thank you for that.

So you had mentioned you do not have the answer for how to relay complex, scientific climatological data to stakeholders, but I would still be interested in hearing what you have tried, and how that has worked for you? That's an issue that we have here in the United States as well.

And then second, I wondered if you could speak more about the no-regrets planning, and how you balance that with cost-benefit analysis, and what the actual cost and impact on the community would be for some of the mitigation efforts that could be most successful, but ultimately are quite expensive?

MS. FERRIS: Thank you. Why don't we take the woman up here in front, and then we'll ask the panelists to respond.

MS. WANG-IVERSON: Patsy Wang-Iverson, Rosenbaum Foundation, and this question is for Mr. Fleming. If you could speak about the incident-command system, and how you worked with the U.S. Forestry Service? Thank you.

MS. FERRIS: Okay, who would like to respond first? The first one gets

to pick which questions to answer. James?

MR. FLEMING: Well, since I -- the Incident Command System, I'll go with that. We'll go in reverse order perhaps. So the Incident Command System -- it was an interesting system that was developed by the U.S. Forest Service in the 60's or the 70's. It evolved out of a wildland fire that occurred in California. And it was such a magnitude that a number of different entities responded to that fire -- local and state and federal. And there were a number of firefighters that were killed in that disaster. And what they realized is, the reason that -- one of the primary reasons that -- two primary reasons that those fatalities happened was that one, the different agencies couldn't communicate with each other because of radios and so forth.

The second thing is that there wasn't a unified command and control structure between these different agencies. So what Congress did, is it mandated that the U.S. Forest Service develop a system that could take in multiple agencies under one command and control structure. And so they developed the Incident Command System. The principles of this Incident Command System are that, it is one of the principles -- it's flexible. It can expand and contract based on the size and magnitude of the disaster. That's one of the principles. Another principle is that there is unity of command. You know, you only report to one person. You don't have multiple bosses. So those are a couple of the principles.

The Incident Command System has been adopted by the United States. Its fundamental principles for our response structure in the United States. And OFDA has used that system ourselves to develop our own response teams overseas. You've probably heard of disaster-systems-response teams that USAID sends to the field. It's based on these incident-command systems.

What we've realized is that a great way to help build capacity overseas is to impart these principles to governments that want to develop an incident-command system. So what we do is, we have an inter-agency agreement with the Forest Service, that brings in these experts, and we send them to the field to help those governments develop an ICS-like system.

An example is Indonesia, and this has been terrific. We've already seen remarkable results from the government of Indonesia in responding to crises. And there are a number of other examples as well. But that's a short brief on the Incident Command System.

MS. FERRIS: Well, thank you very much, and Megumi, there are a couple of questions to you about how you translate hard science to normal people.

And secondly, the issue of what is no-regrets planning?

MS. MUTO: Okay, thank you very much. First, I think there was one question on the experience of Japan being mainly relevant to the developing countries. Let me just quote one recent example. There was a typhoon in the southern area of the Philippines, in Mindanao. Usually they don't have typhoon at all, but they were hit. And the island of Mindanao is known by having Muslim communities.

Okay, and there were people from JICA going there after the -- right after the disaster and really collecting information on what spots of vulnerability are there. They were like major relief efforts by the government, but we tried to figure out if there is any like, weakness in the operation. Maybe we communicate with government.

And it just so happens that there was a colleague of mine who was a member of the -- I would say, peacekeeping operations there after the conflict -- I mean another conflict -- this is a political conflict. And he was there, and he was very used to

listening to the voices of the many Muslim minorities.

And after that typhoon in Mindanao, he really went into these communities and tried to collect the voices and communicate to the central government agencies working in the relief operation. And when I talked to him after all that, he said that he instantaneously did that because he learned from the disaster experience in Japan that there are really, I mean pockets of vulnerabilities around, and there is a lot of return in really hearing to them. So it is just one example, but you see that some of the people in JICA for example, learn a lot from the experience in our country, and really tried to do the same thing in our partner countries.

Okay, now if we got to the two questions -- communication and no-regret planning with regard to communication -- we did one round of communications within the government of the Philippines, but the one that -- the only one that really responded was Pagasa, which is the meteorological agency over there. So that was the result of the first round. It was only the meteorological people. Okay, now with the climate change commission of the government of the Philippines, we are on the second round. Last April 23, we were in Manila with the people of the University of Tokyo, and we did half-day seminar with not only the government agencies, but with the climate-related NGO's. And then they were on board. The university professors also came. (Inaudible) came into the picture as well. So I think it's coming, step by step.

With regard to no-regret planning -- thank you for the very important question. I still don't have the direct answer, but it's an ongoing endeavor. Okay, one very important point -- very important point that we have to bear in mind is -- as developing practitioners we really know that it has to be owned by the partner countries. Whatever the outsiders or scientists say, it has to be owned. That is the first thing that

we really have to bear in mind.

And with that in mind, we could communicate very extensively with our counterparts -- with our counterparts, particularly climate-change commission, Department of Public Works and Highways, local governments, all these stakeholders. And when we communicate with them -- the first issue is -- especially with the -- especially because it really affects the cost. We talk about whether to go for structural measures or no structural measures.

I mean one can make a choice of going 100 percent non-structural measures without big infrastructure. And then there is another choice of really investing for the infrastructure and doing less on the social side. I think the right choice would be somewhere in between, and where to choose is their choice, but we make sure that they know that big spectrum with cost calculations in mind.

And with regard to the real designing of that structure -- if ever they decide on a structure, we sit down with them and show the evidence from science, helping them in how to design on the real minute levels of design. And the presentation I made was one kind of story along that line. And we were successful in convincing that we need another round of minute (inaudible) in order to get to better level of no regret. Thank you.

MS. FERRIS: Okay, thanks. There are a couple of questions for Indonesia, and then I'll give you the community participation question. And I know the time is limited so -- Yes please.

MR. PERCAYA: Thank you very much, Mariah, for your question. I do not think that public demand is a problem in Indonesia, because we are one of the most democratic country. In fact, the incidence of Law 24 in 2007, it was also as a result of

public demand, public need, as well as public (inaudible). The problem is not all on the policy making, but how we could also inform all the stakeholders. I think this is more important. Only government, civil society, parliamentarians -- they are also very important, because when it comes to budgeting on the DRR, they play a very important role.

Before responding to your second question, I think DRR in Indonesia is not perfect yet. It is in the making. It is in place. We also facing challenges; for example, finance. Between the Department of Education and also the DRR, which one is more important? I think this is a problem within -- or between various departments. Capacity building -- we are also in need to increase capacity. The problem of autonomy -- the challenge of autonomy, coordination with the local and central government -- now the local government they have more money. I think this is also a challenge. The mindset of the people -- we have to mainstream DRR in the mindset of the people as well. Legal framework plan of action programs are there, but there is also a problem of implementation.

The other challenge is the unpredictability of the occurrence of disaster. We cannot predict. For example, we have 100 million now. We are (inaudible) for example, if there is any earthquake next week. But one week, following week there will be increasing occurrence of earthquakes. So this is also a big challenge. So for us, I think what is important -- partnership with international actors. At CRC we are thankful for the informant at CRC. ROM, UNICEF, you name it -- UNDP, but there is one also a challenge among themselves, which is coordination among the international actor. They have to act together; they have to sit together; and they have to talk together.

And what is also important -- the assistance, the help, the relief -- it has

to be need-driven instead of supply-driven. One of the funny examples In Aceh when the earthquake happened -- you know what happened? Blankets came to Aceh; this is a tropical country. We don't need blankets. What we need is food, certainly, tents, and water. So not a blanket -- so again what is important -- international actors, they have to talk to each other. They have to coordinate, and it has to be also need-driven, and it should also involve the local people. Ownership is also very important in this. Thank you.

MS. FERRIS: Rebecca.

MS. SCHEURER: Sure, I'll just speak quickly. I know you're in a time crunch here. You know, just to give a couple examples maybe of how to engage communities falling in disaster -- from a Red Cross perspective, I think, you know, there are two things that come to mind. One is really informing people about what happened, what transpired, and what could they do better next time? There's a window of opportunity after a disaster. We always talk about it in the response field and say people are alert. They want to know how to avoid this situation next time. So you can really make some advancements in terms of investments in preparedness. An example of this actually, not in the immediate aftermath, so maybe it's not the best example, but in the Philippines the Red Cross was working very closely with Pagasa and Hydro-Met Services, and we, Red Cross, supported a training program where the Hydro-Met Services trained the local Red Cross as first responders. And what services they provided -- the tools, what were the limitations, what could they accurately predict? And what could they not do, as well.

And then those Red Cross actors went down to the Buranga , the local levels, and you had a ripple effect. But then at the end, the farmers knew, okay -- if

they're going to plant their seeds two weeks earlier, how likely is a disaster? How safe is that decision? So we're looking for more informed decision making. How do we give communities the tools for that?

One way to do this is the second point -- engaging them. Engaging them more in the project development cycle. So when authorities come to a community, and they want to invest resources, talk to the community about cost-benefit analysis, weigh the options. Sometimes there are assumptions where maybe a local authority wants to invest in a bridge. Assuming these people were flooded, and they want access to the markets. But the community -- this is a good example because the community might come back and say, "No, we want you to invest in making our river beds stronger. Protect the crops, because if the crops get washed away with the flood, we have nothing to bring over the bridge." So, you know, you have to have this dialogue. And also, you know, maybe the mothers want to be with their children. I mean there's a whole social component too, that I think would really help authorities make better decisions around what to do with scarce resources.

MS. FERRIS: Well, thanks to the panelists, and thanks to all of you for a good session after lunch. We have coffee and refreshments. We'll re-convene in 15 minutes, but join me in thanking the panelists. (Applause)

MS. SOLIS: Thank you very much. So we're now going to talk about the strategies for mainstreaming disaster risk management into developmental assistance programs, and I think that we've had a very full and rich and insightful discussion all day. I think that we have heard from a range of different national experiences, we have talked about how a large industrialized country has

dealt with a mega disaster, we have talked about how we can extrapolate lessons that could be useful for developing countries in Asia.

We have also talked about shifting trends and how you plan about from rural disaster management to urban settings, and I think, in this session, not to put any pressure on the panelists, we want to put it altogether and think proactively and think forward in the next agenda. And I think that one of the most interesting issues that has come up, and I think that Nancy Lindborg really talk about this very persuasively is that we should not think about the humanitarian and the development tracks as separate alternative tracks, but actually that that boundary is artificial, that divide does not exist.

And that, therefore, when we think about the next mandate for many development programs, disaster risk management and the concept of resilience should be front and center. And I think that's part of the discussion that we're going to have today. We feel very fortunate that we have really terrific speakers for this panel. Again, the full bios are available outside. We also have some very interesting materials for your to read, we have copies of the Sendai report, we also have some of the work that my colleague, Beth Ferris, has written on disaster relief, as well.

Now, let me introduce our panelists. We have Mr. Stewart James,

who is the Alternate Executive Director from the United Kingdom at the World Bank; then we also have Mr. Hiroshi Minami, Deputy Director General for Global Issues at the Ministry of Foreign Affairs in Japan; Mr. Yoshiki Hiruma, the Director of the Development Bank of Japan's Enterprise Resilience Rated Loan Program, and a partner in the World Economic Forum's Risk Response Network; we also have Mr. Francis Ghesquiere, Manager for the World Bank's Disaster Risk Management Practice Group, and head of the Global Facility for Disaster Reduction and Recovery, I think I've got that right; and Ms. Angela Planitz, Disaster and Governance Adviser for the Bureau for Crisis Prevention and Recovery at the United Nations Development Program.

So we're going to do what we have been doing all day, each speaker will first come to the podium, and then we'll all come together for the Q&A at the table. Thank you very much, Mr. James, the floor is yours.

MR. JAMES: All right, thanks very much. It's a pleasure to be with you today, and if you'll just bear with me two minutes, I shall try and show that I have some technical competence. It's a pleasure to be with you today, I noticed that the conference notes said that 2015 is a year of reviews and targets, which it certainly is. So, from my point of view, when I think the UK government had a role with that, we see it very much as an opportunity to sort of move this agenda center stage.

Once of the interesting things that I find situated where I am in the World Bank at the moment is that there, but not just there, other academic work is increasingly looking ahead and it's thinking what's going to be happening with poverty. A lot of people think global growth will continue to lift significant numbers of people out of poverty, which is great, but what it leaves you with is that a lot of the remaining poverty will be concentrated in fragile and conflict states, and in places that are very vulnerable to natural disasters, et cetera.

And so I think, as an international community, we're actually getting to a position where we all have to rethink or sort of instrument an approach, the specialisms we need, because we will increasingly be operating in many of the places that are impacted by these issues that we're talking about today. So these ladies that you see in front of you, they are in Bangladesh, and the interesting thing about that, the eggs that they have, they're duck eggs, and they used to breed chickens, but in the monsoons, the chickens got kaput, so they've moved to ducks.

And although it's an extremely simple thing, that is one sort of form of resilience that has worked for them. So very modest, but if you're one of these ladies, they're very important. So I wanted to start off just to talk about where DfT is going in this area and how our approach has evolved. A number of, I won't go through all the slides, but a number of things informed our approach. Obviously, the

Hyogo framework for action, which I'm sure you've been talking about today. We updated our own policy in 2006 on disaster risk reduction, and then we had to review our humanitarian emergency response review carried out by Patty Ashtown, who some of you may know, has done a lot of work in the UN framework, as well.

And he recommended really that we needed to get much better at anticipation, at innovation and instruments and technologies that we use to address problems, and at working with vulnerable countries to help them build resilience. So I guess that backdrop, we went away as a department and decided what we're going to do with these recommendations -- I'll mist out this one, because I think you've probably seen lots of it today. And the key thing for us was that we were going to embed our mainstream disaster resilience in all our country programs. And I think when you see that you're going to mainstream something, everyone's eyes usually glaze over and you think, well, that's the end of that, then, we'll never really hear about it.

Because unless you have a budget line that's actually going to something, then it doesn't happen. But, actually, we were very serious about this, and we essentially anybody that's putting together a strategy in DFID for a particular country needs to look through their program and think how they can think about resilience, as they do their planning. So it's a lot more than lip service. So that's an

operational thing that we're doing, but we're also trying to show a bit of be intellectual and policy leadership on the global stage in this.

And my Secretary of State, Justine Greening, Andrew Mitchell before her, courtiers, political champions and disaster risk management, which brings together a lot of key people who are involved in institutions; Helen Clark is the other Cochair. But Kristilina Georgieva from Europe, Bradshaw from here, and they've tried to sort of coordinate and make sure that there's a political momentum behind this work. Because in all our political ministries, unless you've got the buy in from the top, it tends not to happen.

Practically, what we're trying to do is just to pick up the linkages and the coherence between traditional work streams that we're already engaged in, humanitarian relief climate, and our food security, and really look at what you can do with these, how you should program them, what you should aim for to maximize the resilience, which usually means a change in the structure to the program and what you're doing. One interesting thing is, I think it's less clear, it's certainly less clear to me, anyway, how you plan for resilience on conflict and political instability.

Obviously, the issue of sensitivity of these issues is difficult, and I know that we are thinking as a department, and the specialists are thinking about how they should do that in the countries for which it's relevant, but I'd love to hear

from you in the audience, or, rather, panelists, how you think you can apply resilience to these particular situations be you're talking about impending or likely conflict or general political instability. That's one that I must admit I don't really quite think we've got knocked in the head yet.

Now, the first thing we did, of course, because we're good civil servants, is we made a definition. So if we're going to deal with disaster resilience, we have to define our terms. So we did that, and you can see it there, it's pretty comprehensive, and we did it for three reasons. One, to make sure that internally, we all knew what we were talking about when we tried to tackle this; two, so that when we come and we talk to others, we can communicate clearly and people understand what it is that we're trying to do; and then, three, at some point, lots of additional agencies and institutions will probably have their own definition. So we got this down early, and we've got skin in the game when we come to the big turf war over how to define disaster resilience.

But we did that, and that's, as I say, it's pretty comprehensive and gives a very clear meaning of what we're trying to do. Now, the other thing that civil servants like is frameworks and bright colored diagrams, and this is essentially the methodology through which any country manager and DFID would try and apply resilience, or try and analyze resilience of what to do about it in terms of their

country. And the key thing to take away from this rather crowded diagram is that context is everything. So if you put a country through this methodology, obviously, what you come out with at the end will be particularly tailored to that country's own situation.

Some may be more vulnerable to shocks, some may have ongoing stresses through political instability, whatever it may be, so you want to push it through this sort of sausage machine, and what you hope will come out the other end is some pretty tailored policies that really make sense for the environment that you're trying to work in.

Now, digging a little bit deeper on the linkages, we have a number of work streams ongoing, and in all of these, what we've tried to do is to amend them, if you like, or look at them through the prism of resilience and ask the question, well, what will we do differently. And, in some cases, there's already a very high degree of resilience thinking built into them; climate change adaptation, for example. But just to go through it, there's a structured way we've tried to sort of line out and work through these things and see what changes we would want to make.

That is an even more complicated and colorful diagram which tries to all fit together, which, if anybody really wants to see it, I will give you it after. So, coming to a much more sort of a level of detail, if you like, about what it is we're

trying to do, for all our countries, you can see that the connectivical countries that we're operating in, we have this approach. In some cases, we also think it makes much more sense to look at these issues in a regional basis, as with a lot of development work, actually, infrastructure, et cetera.

If you really want to make a difference and transform somewhere, you can't do it by just looking at an individual country itself, you have to try and get political buy in in the region. And I think that's true for many of the challenges that countries face for which we wish to make them resilient. And we produced this multi hazard disaster risk assessment, which is a bit of a mouthful, but I'll say what that means in a minute, and there's a minimum standard for each official who is carrying out one of these processes to meet, and they will be appraised against that. So, in any organization, you also need to make sure you've got the incentives right to make sure that people are not just paying lip service to it, but are really doing something.

So we have a defined minimum standard and anybody not meeting that would suffer for it when they come around to their annual appraisal at the end of the year. Each office must designate a champion. I mentioned the review, I'll come to that in a second. This is really just a list of, I wouldn't say it was outcomes, because that's a long way down the road, but it's almost like inputs of things that you need to have done that at least put you in a good position to get outcomes at the

end. And they're all about, essentially, accountability within the department, and making sure that this actually happens.

Now, I just want to come to Ethiopia to give a practical example. Obviously, there's been historical issues in Ethiopia, which you would all be aware of, of drought and food insecurity. So a lot of the international community's work, and our work already had a degree of resilience built in. So what do we do differently? We have the safety net program, and one of the things I think we need is, we talk about the link to humanitarian, and we do need to break down that border.

But rather than waiting until you know you've got a crisis, and the crisis is really imminent and on your hands, we put in the safety net program, which is funded, and it's funded over a multiyear basis, so you know you can predictably get funding, it will be a section of the population that suffers from food insecurity issues on a very regular basis, and so we could expect them to have regular access to this. But what this safety net program tries to do that's different is, it says that when a different sector of the population comes under threat, then it can expand its scope of geographical scope and meet that, and then shrink back again.

Or, for the existing population that normally has access to it, if the problem is particularly acute or severe, you can extend the amount of time that they will have access to it. So we're trying to provide flexibility in two ways with a

standing instrument which can sort of flex to meet the particular challenge as it comes. It performed pretty well in 2011 in Ethiopia, but there are still quite a lot of technical issues and deep political issues which we need to sort of learn from these in order to optimize this instrument. But I think we think there's -- well, we do think that there's a great hope for it.

Beyond that sort of safety net program, we have, again, a multiyear humanitarian program, and the key difference here from perhaps the way we would have been do this ten years ago is trigger an early warning, not when the crisis has actually arrived. But when you can see it coming down the tracks, that's when you actually begin to trigger this program into action. And that means that there's no making off-budget claims, there's no unreliability from the donor point of view of funding, you know it's there and you can access it.

And we also, I think, have programs in the security area, but I'm a little bit less confident on these, so, again, I'd be interested to hear other speakers if they speak a bit more about them. So that's what we've been trying to do. In addition, we have a bit of a plan in the Ethiopia office of DfT to look at things that we can do better and we need to change in order to build in resilience. And there's a list of them there, I'll just talk about one. We had an experience in the last drought in the Somali region where 400,000 children dropped out of school, and that was a

DFID funded education program.

So you have the classic sort of situation there where you've got an ongoing study development program which is interrupted and essentially made useless by a crisis. So what we're trying to do now, in looking at that, is say, well, why did they drop out of school? There could be a whole host of reasons, it's not just, obviously, there was a drought, therefore, they dropped out of school. There could be a problem with teachers, it could be the location of the school, it could be that people are just staying home because they're having to help family members, a whole lot of things.

And, by analyzing that, what we're trying to do is to be able to put add ons to the education program itself which make it resilient to the type of problems that it faces, which obviously helps in terms of just increasing the resilience, but the important thing is that it also protects the investment in children's education so that it doesn't get interrupted by crises that are really quite predictable. So that's an example of what we're trying to do.

And, finally, one last slide, which hasn't come up quite the way it's meant to do. But, actually, this is a lot more simple, it's a much more complicated slide than that, I promise you. Maybe if I do this -- oh, yes, there we are. Well, I'll just going to get it all out there, if that's all right. (Laughter) So, here we are. Now,

what this is actually trying to tell you, although you'd never know it, is that, up the vertical scale, we have essentially wealth and the sort of interventions that you have to make to different sections of the population, a range of instruments that will be very different depending on the community concerned.

And, speaking very loosely, if we can build resilience into these programs in the way that I just talked about in the example of the education and the schools, then you stand a chance of actually allowing people to climb from sort of one level of wealth to another, benefitting from different programs and engagement as they go. And what our thought process is, if you don't have resilience, though, then you tend to just get trapped. Now, this is all sort of a very abstract concept, I'm sure you can see it, it's like a ladder.

And resilience and adapting these various interventions in normal developmental policy terms to make them as resilient as possible is the key to actually being able to get up the ladder, essentially. And if you don't have resilience, then you're just going to stay where you are or fall back. So that's the kind of picture I just wanted to give you, that's what we're trying to do. This is all in thoughts, no one's an expert, if you like, in this area, nobody knows everything. So that's the way we're going about it, and I look forward to hearing others today. Thank you.

(Applause)

MR. MINAMI: Good afternoon, and thank you very much, my name is Hiroshi Minami, I am working for the Ministry of Foreign Affairs. And, today, I'm supposed to speak the mainstreaming disaster reduction, Japan's commitment and efforts. But I am afraid that my slide show is a bit less colorful than Mr. James' is, so I will try to keep awake on this beautiful Friday afternoon. Let's start.

As you know, Japan is sometimes called the department store of natural disasters. Indeed, we have earthquakes, tsunamis, typhoons, tornadoes sometimes, and, of course, volcano eruptions as well, so I think that we have got a lot of experience in that sense. So this is the data from the UNISTR, and I think that some of you are very familiar with this data. The top line shows the damage in terms of the U.S. dollars, and as you can see, in the year 2011, it's a huge month of loss.

And the second line shows the number of the people affected, and the third line shows the number of the people killed, and especially you can notice in the year 2010 and 2004. In 2004, of course, you remember that many people, more than 200,000 people were killed by the tsunami in Indonesia, and the year 2010, the Haiti earthquake killed more than 300,000 people. So that is the orchestration of natural disasters in the world.

So, in terms of the relation to the development, why this disaster risk

reduction is important? Because 90 percent of the victims, 90 percent of the victims are citizens of developing countries, especially the most vulnerable people will be hit, severely hit by the natural disasters. And you can see the economic loss in the Haiti earthquake, which is 1.2 times of the GDP of Haiti, $7.8 billion U.S. And especially in the case of Japan, in the year 2011, the economic loss by the earthquake and tsunami was about $170 billion U.S., which is a huge amount of money.

But, on the other hand, if you look at the investment in disaster risk reduction, one study shows that a $1.00 investment in disaster risk reduction saves $7.00 in recovery efforts, so this investment pays quite a lot. So, in the case of Japan, and this is rather domestic demonstration of Japan, and we have been steadily increasing the amount of the budget for the disaster management until the mid '90s. Then, unfortunately, the percentage in the general account budget for the appropriation management has been decreasing, but we have invested quite a lot for the disaster management.

So the result of that, this is the diagram of the casualties by natural disasters in modern Japan after the second World War. Until the 1960s, most of the casualties were caused by the typhoons and the flood. You can see the data in 1959, which is the year when I was born, and almost 6,000 people were killed by

one typhoon, which was a very powerful one. So, after that, there was a significant decrease of casualties by the natural disasters in Japan, but in 1995 and in the year 2011, we have big earthquakes, two earthquakes and also one tsunami in the year 2011, so the number of casualties increased abruptly.

So perhaps you may ask me, so Japan has been investing heavily on disaster management, but what about the year 2011 and 1995, the year Japan had a huge loss of lives. So my sense is that we have been investing for disaster management for flood and typhoons, and that investment has been successful, but the earthquake and tsunami is very, very unpredictable, so it's very difficult to stop the casualties, or decrease the casualties in the case of the tsunami and earthquakes, because nobody knows when and where the earthquakes will happen.

So accounting to the structure in the developing countries, the Millennium Development there is, there are Millennium Development Goals which were set by the United Nations in India in 2001. And, unfortunately enough, the MDGs does not include disaster risk reduction, so accordingly, the spending on disaster risk reduction is not enough. As you can see, between -- this is data from the government of Japan and some others. According to this data, only two percent of the total development assistance is for the disaster related activities.

And, among these international disaster financings, only 3.6 percent

has been allocated for disaster prevention, and most of them, almost 70 percent is allocated for emergency response. People's emergency responses is very easy to -- well, in the case of emergency, it's very easy to mobilize money from the international society, but it's very difficult for the international society to put the money for the prevention. So that is sort of the dilemma of this disaster risk management.

So the question is how can we mainstream disaster risk reduction and development in the international society? So, indeed, Japan has been committed ourselves to leading international efforts for that. And there is a series of UN conferences on disaster reduction, the first conference was held in the year 1994 in Yokohama, and the second one was in Hyogo in 2005, and the third conference will be held in Japan again in early 2015.

So ten years ago -- so sorry -- in the year 2005, the international society agreed to the Kyoto framework for action. This ten year program will terminate in the year 2015, so we have to have the next round of this framework. In addition to that, in the last slide, I talked about the MDGs. The MDGs target year will be the year 2015, as well, so the international society, and especially the United Nations are now discussing what the post 2015 Millennium Development agenda should be.

So my country is trying to incorporate disaster risk reduction as a priority issue in the post 2015 development agenda, but this is also a matter with the United Nations in the year 2015, so we have to see how the international society will react to this issue in the year 2015. So these efforts, we believe this efforts will realize human security. Human security is a notion which Japan has been advocating for more than 15 years, so I will speak a little bit about that.

Firstly, what is human security? Well, there are many threats in the international society like the infectious diseases, terrorism, and even the financial shocks, as well. So we should focus on the individuals who will be affected by those external shocks, and we should have a people-centered focus, and we should have a very holistic or comprehensive approach to protect the people. So what we need is, the people should be centered in the whole range, and from the top we should protect, we should have a protection for the people, and from the bottom, we should have the empowerment of the people. So that is sort of the idea or principles of human security.

So, as I told you, we have been, Japan has been promoting this idea for almost 15 years. So I will skip that part. I would like to speak a little bit about our concrete projects of the ODA which incorporate the notion of disaster risk reduction. In the year 2005, on the occasion of the second UN conference on

disaster risk reduction, we have obligations this kind of elements. But the concrete projects are the following: Firstly, this is a subway project in Thailand. From the planning and the construction stages, the risk of flood was well considered.

For instance, every entrance can incorporate the water emerging as high as, more than three meters, so as a result of that, this subway withstood the floods in Bangkok in 2011. I hope you remember this flood. And the second project is, this is early warning system for tsunami in Chile, and Japan provided this expertise on tsunami early warning system, so as a result of that, Chile could avoid loss of lives from a tsunami.

And the third one is this one, which is a bit different from the others. So this is disaster risk reduction education in El Salvador, and because of this education for the people and students, the people could avoid casualties or damage by a tsunami. So these are just examples of Japan's ODA integration with disaster risk reduction. So you may ask what is the point? So, the point is, firstly here, we should have some kind of infrastructure such as dikes or embankments or the walls for the subways, and also the early warning system.

So we need this kind of infrastructure, and this is absolutely the protection for the people, but this is not enough, what we need is education or empowerment of the people, or the building for the people. So this is the bottom line

approach of the human security; empowerment. So these two approaches, protection and empowerment, they're very important perspectives when we consider disaster risk reduction in developing countries.

So, having said that, they are, unfortunately, some of the natural disasters are very unpredictable, we can't predict how big or where or what are the route for typhoons and hurricanes, but some of the natural disasters cannot be prevented. So, with these two perspectives, protection and empowerment, can be sort of the glue for disaster risk reduction, so that we will be able to establish a residential society in developing countries.

I thank you very much. (Applause)

MR. HIRUMA: Hello, everyone, good afternoon. I am Yoshiki Hiruma with Loan DBJ. DBJ is short for Development Bank of Japan. So it's a great pleasure to be giving this presentation before such a distinguished gathering. Because of a long flight from Japan, (inaudible) so now is the time that my own (inaudible).

So before starting on my mental peaks, let me briefly introduce myself, my background is civil engineering, with a major in urban disaster mitigation engineering. I got my Master's degree from the University of Tokyo in 2009.

My biggest concern is risk crisis finance and minimizing preventable

death and loss. I'm interested in financing and investing as a form of social engineering for the improvement of the communities in which we live, so we have now just cast these plans through. Right now, I have several jobs, the first is the Bank of DBJ; the second is a researcher with the University of Tokyo; and, thirdly, partner with Risk Response Network and World Economic Forum . Today, I will talk about concrete solutions for building resilience, it's surely (inaudible) enterprise resilience.

If I had time, maybe now, I talk about (inaudible) resilience and national resilience. So we all know that risk can (inaudible) the loss. All human systems are connected, and we are living a hyper-connected society. Our society has faced numerous crises in recent years, there were (inaudible) financial crises, and Japan's (inaudible) disasters, as well as the natural and manmade disasters, and there are invisible risks, as well.

In order to cope with these risks, we have developed new millennium goals, developed a framework for action, and (inaudible) risk counsel techniques. Why, then, have there been increased damage from natural disasters? Why can't we take a preventable approach, can we minimize preventable deaths and loss? These are my thoughts and questions today. So I would like now to move on to my first main topic; building enterprise resilience.

I can see the residential society needs resilient companies, and I believe smart disclosure makes smart market, and also, I want to design the society where self-efforts were rewarded. My principle work at DBJ has involved the enterprise resilience, related loan program, vision county management, vision emulating loan program I developed. We know that, for effective risk management, (inaudible) need to balance to tasks for avoiding, minimizing, transferring and retaining this, and, more incidentally, to be proactive in doing so.

At DBJ, we evaluate the (inaudible) capacity for business county management, and enterprise resilience have intangible asset before extending financing or investing. It may be the social experiment which aims to improve resilient societies using company and market as the driving force. This is one way in which DBJ takes responsible financing action for the future of Japan. So let's look at the impact of disaster modulations to enterprise in Japan.

On the one hand, there are some companies how to be within default within two years, direct damage type is only six percent to add to hock area. Indirect damage type is 90 percent, that's Tokyo, and Tokai, and (inaudible) the Kyushu area. Why is it so much bigger? The one side seems fairly simple, this is because a chain was cut out . It is one of the problems of south wide change risk management. This fax shows the actual condition of the present disaster, and the

total liability, over one trillion Yen. This is a huge damage for Japan's economy.

So we in Japan absolutely counteract resilience in (inaudible) economy. So we think about the philosophy and the concept of product. It's natural market risks to have a negative impact at times. In complex finance, however, the modern tendency is to estimate enterprise value in terms of earning potential alone. Financial stakeholders give a little thought to information of disaster prevention for business country management. What I want to say is, enterprise resilience is not material information for them.

This brings us to the phenomenon of adverse reaction. So let's consider this, guests, that you are an investor and you want to lay down big money. You call Company A and Company B. If Company A has invested in active risk management, Company A's free cash flow will be lower than Company B, then you and the market will estimate Company A's enterprise value as lower than Company B, and rank it lower than Company B. It is possible that investing financially in companies which are more vulnerable to crises, we are increasing the risk to our servers. Clearly, the market is not perfect, so this is why DBJ developed the product by which to evaluate private resiliency. Resiliency alone, resiliency related to lending of important economic incentives, so the higher the company ranking, the lower the interest rate. We hope to design a new market to

serve as the driving force in both improved in social resilience. As I said, I believe that smart disclosure makes smart market.

So what is enterprise resilience? This will give us some idea. When enterprise face a crisis, its operation level declines, both at the head office and the factory.

Preparedness and mitigation will help to prevent this decline with the ultimate aim of saving life. The population level can recover, of course, with the passage of time, and this is what we call business continuity and resilience. It's less responsibility to stakeholders apply, social responsibility and (inaudible). So firms must come itself spending time and effort on recovery. A high level of resilience will be achieved by aiming for the red line rather than blue.

Since we are bankers, we tend to (inaudible) enterprise resilience, along with a cash flow point of view. So this area in yellow represents a loss of cash flow. Through risk management, firms must keep this area to minimal. The (inaudible) of (inaudible) of events is a clear indicator of how well it will operate in compentant in events of emergency. At DBJ, we rate enterprise resilience by examining the answer to one hand of the questions, analysis meant coverage preparedness, mitigation, and resilience are both headway in this area.

This figure shows items, major and intermediary importance, and

there is a logomark showing ranking results. The logomark had a signaling effect to stakeholders at (inaudible), we assign various local market coding to company's ranking. We have been very pleased to see this logomark come into use in Japan. To mention just a few examples, we see down here the shareholder's report, press report, financial report and business card. Our clients use this logomark as a tool of communication for stakeholders. And what CEOs, CFOs and CROs want most from us is feedback.

Thanks to the visionary program, we have gained a great deal of high quality data on enterprise risk management. I'm showing in this figure, we offer our (inaudible) visualize and legitimize information resilience. We have also invited by executive committee and risk management committees to explain how the product works. This should give a snapshot picture of resilience situations in the present. In the future, I think it will be most important to share information that's skilled that will improve our company's resilience.

So here is our track record. It exceeds one hundred -- totaling 100 billion Yen, as of the 2012 fiscal year. (Inaudible), of course, I can't believe the change, the old model to the new one, I already explain. And use of the program has increased rapidly since then. Right now, more than one handle it (inaudible) are waiting . So there are a couple of banks, I'm happy to rip out the particular loan

program is now being used by companies in all industries through Japan.

Generally speaking, many of these manufacturing firms is the B2B type, supplying goods to cast them overseas. And, our contributions extend beyond making loans. In my view, finance creation is no different from the creation of reliable information. It's important that we share our tacit knowledge of enterprise risk management. Moreover, we need to create a community which will support risk managers. For this purpose, DBJ has created the Enterprise Resilience Club, open to (inaudible).

All of these initiatives have enjoyed good reception and have been described at World Economic Forum, a groundbreaking project, and (inaudible) global risks. After my work on this program, I began doing research at Risk Response Network as expert on risk and resilience in Japan. And that summarizes my work at DBJ in building enterprise resilience.

I'm sorry, I have almost no time, so I will talk about resilience and national resilience very, very quickly. So please get the image. So ICUS is short for International Center for Safety and Research of this organization. So when we discuss about resilience, it is necessary to think about it from a whole societal approach, from individual resilience, of course, and chain of network resilience, and, finally, societal resilience (inaudible) a layer.

This is ICUS network over 100 nations in Asia. And this resilient cycle. So this is an image of global resilience. So, in Japan, you know, we have framework of self health, mutual health and public health. And that this is under which (inaudible) and private sector and public sector must each take responsibility for proactive risk management. So this shows it's working, you see some local governments after March 11, you see us there. This is my research.

We developed the method by which we could compare disaster and response plan and the action taken. And, next, this is research of disaster information management project. Today the (inaudible), so we should integrate disaster intelligence. Using this system, we can gain and share the real time understanding of damage of the lifeline sector , hospital capacity, and (inaudible).

In my view, this system is one of the engineering solutions to be able to minimize preventable death, so we are finally building national resilience. So today's conference is focused on natural disaster management in Asia. This is a very important subject to discuss, but there are many other risks that we also ought to confront. Resilient dynamics is obtained World Economic Forum (inaudible) and that was this year.

This report defines 50 global risks, from the economic, environmental, geopolitical, societal and technological. This is the impact. This is

the risk landscape, a risk map, and this is risk connection, and what is risk gravity? So this is a framework of national resilience. Resilience has the three main components: robustness, redundancy and resourcefulness. And resilience performance has two components: response and recovery.

So this chart demonstrates that there may be a link between effectiveness of government risk management and a country's competitiveness. So where is Japan, here? Japan's risk governance is the same as developing country. Why? Resilience is a default agenda from disaster prevention mitigation. So resilience needs political ability, and communication, and public/private sector coordination, and so on. So which country with leadership in the new era, and how can we design good coordination to managing global risk for a securer global balance?

So this is my basic message; resilience is on the global agenda, resilience is a driver for sustainability, and resiliency is a shared social body. So, the final slide, you already know living with risk is a title left for the issue in 2004 by the United Nations, International Strategy for Disaster Action. No resilience, no (inaudible) we must remember. For better or worse, we are living in the age where crisis is the new normal.

So thank you for your time. If we can, I prepared a video -- no?

MS. SOLIS: Just finish with your presentation --

MR. HIRUMA: Okay, thank you. Thank you for your time.

(Applause)

MR. GHESQUIERE: Thank you very much, I really liked the slide with resilience plus growth equals sustainability, which I think is something we very much believe in at the World Bank. I'm going to try to get to my very brief presentation, and I understand that the interesting part is always the panel, so I'll try to go quickly. My name is Francis Ghesquiere, I'm the Head of the Global Facility for Disaster Reduction and Recovery, and Disaster Risk Management Practice Group at the World Bank.

I don't want to start without thanking the Brookings Institution, it's always a great honor to be here, it's always impressive to see all the speakers you can line up. So thank you very much. And I also thank our Japanese friends, Japan has been a real force in promoting disaster risk management for many years. Actually, Japan, together with the UK, are amongst the few who were the founder of the Global Facility for Disaster Risk Reduction, and certainly our two strongest partners in this partnership.

As I said, I'm going to go very quickly, because I distributed the Sendai report, which was a very short report produced with the government of Japan

at the last annual meeting of the World Bank and the IMF which tells you everything you want to know about what we do in Disaster Risk Management, it's nicely summarized, so I don't want to repeat everything. I just took a few interesting statistics just to start, and I'm sure we've covered this in many, many ways, but this observed increase in disaster loss around the world, probably since the existence of time, but particularly over the last 50 to 30 years, where we see, actually, disaster loss in economic terms growing faster than economic development.

In a sense, through many analyses, in a way, this disaster increase loss is related to non controlled or development that is not very well managed, and the need to do better in the way we develop in the world, but also the way we support and try to help developing countries. In fact, we observed that this increase in disaster loss is particularly fast and high in fast growing countries. So it's really something that comes with development, and, again, I'm talking about economic terms, the poorer country, of course, still bear the brunt of the human suffering.

But in terms of economic loss, fast growing countries certainly see a very rapid growth simply because we observe an increase in assets exposed to adverse natural event in societies that haven't had the time to set up the right systems to cope with the risk to which they're exposed. In a sense, that really, in a way, risk management should be at the core of our development program. And, yet,

I think, as an international community, we have not been too good, and we had a previous speaker putting the same slide, which isn't the same, that report. This is the result of very painstaking work in looking at tall project in development aid in the last 30 years. You can imagine students going through every single project and try to tag how much was dedicated to project that have something to do with adverse natural event, natural disaster.

In all these programs, which I think is a lot of money, about $90 billion was dedicated to projects related, one way or another, to adverse natural events, to disasters. And the striking statistics that, out of this $90 billion spent by the international community on supporting program related to adverse natural events, only about 3.6 percent was responsibility on prevention, on trying to address a root cause of disaster. And I think a sense, especially in recent years, and I believe a strong sense at the World Bank that this has to be changed.

The World Bank, from its foundation, is not a humanitarian agency, in fact, it was established in a multi agreement state, the World Bank shall not engage into relief. So the World Bank does not engage into relief, it's really a funder of poverty reduction project, a funder of government and an agency that tries to help developing countries' governments reduce poverty, and more and more we're trying to integrate this concept of disaster risk management.

This image simply because this is what we understand as disaster risk. It's not the image of a cyclone, it's not the image of the flood, this is disaster risk, it's population living in vulnerable conditions that eventually -- I mean, when you look at this, and you know this is in a seismic zone, it doesn't leave much to the imagination, you know that this population is bound to be affected one day or another.

In fact, one of the sad things about disaster risk management is that, in many cases, we know where disaster will occur, we now have techniques that are sufficiently developed that tell us where. We may not know exactly when, but we know that, in the base of the Himalayas, in the Ganges basin and in Nepal and those countries, we will have a mega earthquake in the next 20 years. And we know that these are going to be major catastrophes, so a sense of urgency that really, we need to try to help countries, not so much address the existing risk, this is a very expensive proposition, but at least make sure that, in the future, that everything that is built nowadays is built in a way that we don't increase this risk, or we don't augment the exposure of population with the resources available, try to assess existing risk, as well.

We at World Bank are applying a framework with five pillars. It could be any other framework, of course, many different frameworks to look at

disaster risk, we could have used the Hyogo framework for action, which we very much support. In fact, we're part of the dialogue in trying to, leading to the conference in 2005. We found that the Hyogo framework is a very good advocacy tool, but we needed something a little bit more operational, so we are using a framework with five pillars, starting with risk identification.

We've started scaling up in recent year activities to help countries, governments, communities better understand their risk, and this program goes from, works with mapping communities and opening data, all the way to working with the finance industry and using insurance techniques, modeling techniques to try to better understand the sources of risk and better guide a mitigation program. Risk reduction, as I said, really, looking at, first, how can we stop the creation of new risk, how can we strengthen territorial planning system, how can we change building practices.

Not simply by creating building codes, but, really, how do you change the culture of construction in a society, which is quite a challenge. And there's some really good ideas coming out that are gradually being applied, and also addressing existing risk preparedness, which is all the early warning systems. The terminology varies, as well, it's not a totally unified form. All the work on financial protection, assurance, deepening of insurance market, how do we -- or

strengthening of safety net systems, and finally, resilient reconstruction.

After all, the World Bank's original name was the International Bank for Reconstruction and Development. Not so much because the World Bank gets engaged in larger construction programs, but very often because large reconstruction after a disaster are a unique opportunity to change the status quo, a unique opportunity to engage with a government and try to look at the root cause of this disaster, and, in the most diverse way possible, try to change current practices to improve and avoid recreating the same vulnerability.

Now, this is translating in many ways in the operations of the World Bank, we have now an official sector. In fact, the Disaster Risk Management Practice Group of the World Bank is probably the fastest growing group. There were probably 20 experts five years ago, and there are more than, I would say, more than 100, certainly, probably 150 nowadays. And it keeps growing, thanks to the support of the fleet and the government of Japan in great part. But one thing I think is quite important to realize is that the effort is not so much in creating one practice group or one unit that deals with disaster risk management, but an effort to try to reintegrate this in every sector.

Working with the finance and private sector department on deepening insurance markets, and working with countries in creating financial

protection strategies, working with the social development department in community based disaster risk reduction program. In fact, the Bank has substantial investment operation in working with communities in trying to reduce, help them deal with vulnerability to adverse natural events, working with urban teams on urban planning and resilient cities, if you wish, almost in every sector. Also embedding this in, really, the partnership strategies. There's been a big effort in recent years, and I think we're about 75 percent of all country partnership strategies, which is a document that the Bank produces every three to five years, which summarize the engagement with a country.

About 75 percent of these country partnership strategies have now, or at least taken into account risk from adverse natural events. And I think even more interesting, I think one thing that's quite interesting is the portfolio of activities at the World Bank that, a project that deals with adverse natural events or with natural disaster is growing gradually. But what's much more interesting is to see that, in the last ten years, it's been shifting from about 80 percent of the portfolio dealing solely on response, on reconstruction operation, and now getting to half or to two-thirds of that portfolio dealing with disaster risk management. And really looking at, well, if we build a bridge, can we make sure that these bridges are resilient, if we build schools, can we make sure the schools don't collapse every time there is an

earthquake.

And, finally, I think a very interesting development is the creation of new instruments, now products. The World Bank has initiated, launched a few years ago a contingent credit instrument that allows a government to draw funds very quickly when they're affected. This is very interesting as a financial protection tool, but it's very important to understand that these instruments were not created just as financial instruments, financial production tools, they were created as a carrot for a government to engage in disaster risk management.

Because, simply, governments who want to access this instrument have to present a program to deal with disaster risk. It can be fairly sophisticated, the government of Columbia is very advanced in disaster risk management, and hence, has presented a very advanced, and other countries are much less advanced, so these programs are adapted based on their, on the level of advancement of the countries. More and more credit or grants provided by the World Bank include what's called a contingent component. That means that, in case of a disaster, funds from this operation can be moved almost overnight in emergency operations.

So if we have a program to build roads or to provide a safety net for poor families, and there's a disaster occurring, then, certainly, the means to have

transport can request the use of the money to address the disaster. This gives us and some of our client governments a lot more flexibility on use, using this instrument. And there are more and more of those.

I see that we're reaching the end, just to finish by saying that, a lot of this has been made possible, as I says, thanks to the support of the government of Japan and the UK, we're an extremely strong supporter of the global facility of disaster reduction and recovery, which was hosted by the World Bank and has a lot of influence on how the Bank is seeing this issue. Thank you very much.

(Applause)

MS. PLANITZ: Well, good afternoon. I know it's almost just me and the panel discussion that's between this and a beautiful afternoon out there, but I'm also aware that we're behind schedule a little bit, but please bear with me for a little moment longer. My name is Angelika Planitz, I'm working for the Bureau for Crisis Prevention and Recovery at UNDP, and I'm their disaster and governance adviser, and I'm really delighted to be here this afternoon to share a little bit on our approach in disaster and risk reduction, particularly mainstreaming disaster risk reduction.

Now, what I thought to do, since we have a bit of diverse audience here, is to give you a bit of background on UNDP and DRR, then come to the question why mainstreaming DRR into development is a priority for us, how we

explain it, what's our approach to it, and how we support it. Now, as regards UNDP, in fact, we have a mandate to mitigate, prevent and prepare for disaster since 1998, but, in fact, we have started much sooner, it was at work already.

And, in 2001, the Bureau for Crisis Prevention and Recovery was established precisely to enhance UNDP's efforts for sustainable development by reducing the impact of disasters and violent conflicts. In terms of our portfolio, we are supporting about 50 to 60 countries every year with an average annual expenditure of over $150 million. Disaster reduction and recovery are both quite predominantly features in our annual business plans and, in particular, in our new strategic plan, and they are also one of our four core practice areas within UNDP. And, overall, of course, UNDP's work in DRR is very much guided by the Hyogo Framework For Action.

Now, why is DRR mainstreaming important for us? And I'm not going to go again through the figures, because I think you've heard them already this afternoon. But, of course, yes, disaster risk has increased quite dramatically, but two take home messages are particularly poorer countries have much higher levels of disaster risk. That's one important aspect to remember. The other aspect is that disasters increasingly push people into poverty, and sometimes back into poverty. And we have seen poverty levels after the Haiti 2010 earthquake, as well as the

Djibouti 2011 drought where we see that people's poverty levels have returned to those in 2001 and 2003, respectively.

So, basically, disasters have an impact on development, they undermine our development efforts, and also contribute to rising poverty levels. However, it's not only disasters that impact on development, also, as we've mentioned before, it is also the other way around; development contributes to disaster risk, and particularly flood development and inappropriate development processes. Basically, what happens, those development processes translate exposure to natural hazards into disaster risk. So, basically, exposure of what? Exposure of populations, exposure of livelihoods and assets that are really brought into harm's way of disasters.

And the processes behind it, it's weak governance, inappropriate land use management, environment degradation. I mean, you see the whole list here. The important thing to remember, it's that, basically, through these processes, we have allowed disaster vulnerability to grow faster than our combined efforts to build resilience. In addition to this, of course, we have a much more magnified natural hazard risk context due to global climate change that are really intensifying, particularly our weather related events.

Now, what is the challenge at hand? The challenge at hand for us

is to make, really, a move from this floor development process to one that is sustainable and one that is disaster and climate resilient. This, we at UNDP believe, can only be achieved when disaster risk reduction, climate change adaptation and sustainable developments are pursued as mutually supportive goals. It can only be achieved when we really see disaster risk reduction as an essential investment into sustainable development, not just an additional cost. And through corrective development planning that insures that our development effort does not configure new disaster risk. So, in short, really, through disaster risk reduction mainstreaming.

Now, how do we explain DRR mainstreaming? Unfortunately, it is not quite as simple the move from the side stream to the mainstream. We all hear about mainstream music, for UNDP, what we really mean with this is doing development better. Doing it better by integrating additional qualitative considerations into the way we define, implement and evaluate our development projects and programs. So, in that sense, mainstreaming would require that we are assessing the implications of disasters and climate change on any planned development action, across any thematic area or development sector, particularly those, of course, that are especially at risk from natural hazards. It's important to do this at all levels, and to involve the widest spectrum of stakeholders that are concerned in this.

As regards the process, well, this is a bit simplified depiction of it, but basically, what we're trying to say is, at the outset, it is important to start with a thorough risk assessment. And the steps are briefly described here, but basically going through the process, it will help us to identify the most appropriate risk management options which can then be prioritized and incorporated into development. And what does this mean? It means into our broader national development, policies and strategies, into laws and regulations, very important into budgets, sector plans, programs and projects.

And this sometimes goes very linear from top to bottom, sometimes it can start anywhere, basically, but this is very simplistic, the process for DRR mainstreaming. Now, how does UNDP support this? We have basically five vehicles by which we do this; one is we implement comprehensive disaster risk reduction programs in our partner countries, we provide tailor made technical assistance and policy advice, we provide knowledge, product, guidelines and training courses, we have a number of partnerships with specialized institutions, as well as through global advocacy efforts.

And, just to give you a bit more detail on our comprehensive DRR and programs, since 2005, UNDP supported 45 national disaster risk management authorities, we've worked in 30 countries to integrate DRR into national development

policies and frameworks, we strengthened legal frameworks in about 58 countries, worked on climate risk management in 22 countries, and helped establish disaster loss databases that inform risk assessments in 13 countries.

On tools, I'd like to spend a little bit more time. I mean, we are having a range of tools, of course, and many of them are, in fact, developed at the country level in partnership with the stake holders there, but still we've got the request from our program countries, don't you have a guideline for us. So we looked at the experience of UNDP across the regions in various countries, and we looked what was happening there, and based on this practice, developed this DRR mainstreaming framework. Basically, what it says, maybe not surprising, is that mainstreaming is very context specific, and that it doesn't follow a linear or step-by-step process.

The main entry points for mainstreaming that we have found were those five: The policy's fear, that also includes budgets and political commitment, legislation and planning; the organizational or institutional's fear; there's fear around advocacy and knowledge; a citizen's fear; and an implementation's fear. And, just to give you maybe a couple of examples, for example, in Peru, the entry point because the policy's fear, UNDP supported a policy that makes disaster risk reduction mandatory for all development decisions.

And, in Indonesia, for example, we heard that, before, already UNDP-supported established 357 high-risk district municipalities setting up the institutional mechanisms. In the interest of time, just to say one more thing on this, that we are now working to also integrate climate change adaptation into this framework, because we see both things need to be brought into the process jointly.

Now, I think I have two minutes, I'm not going to go through all the partnerships now, but just to say that we are working with UNISDR, with the World Bank, with IFRC on various aspects in mainstreaming, you will all get a copy of the presentation so you can see the details. One mention I would like to make on our efforts in mainstreaming DRR into development of the UN, the UN Development Assistance Frameworks, we've worked there to come up with guidelines, trainings and technical assistance.

And since 2009, we see that 50 out of 54 of those frameworks now integrate disaster risk reduction, and especially in the high-risk countries, we get very good feedback to do this. In terms of global advocacy, also not much detail, we've heard already, the colleague from DIFITZ did speak about the political champion's group. We are, of course, working on integrating DRR in the post 2015 development agenda, partnered with ISDR on informing the HFA2 based on our practice in the field, which then actually only keeps me to say a few more words in

closing.

I would like to highlight a couple of things, and that is that DRR mainstreaming is really something that requires time. It's really a sustained engagement that is needed and therefore, actually requires long term funding mechanisms. In the moment, and we've heard that similarly before, in the moment -- I mean, in 2009, in fact, 68 percent of DRR financing required humanitarian aid sources. So, in fact, it already said this is not your best match with this kind of short term funding to support long term sustainable processes.

So, there, what can we do to change this? In closing, also, we should look at more opportunities to use the recovery phase for DRR mainstreaming. It is when, actually, the risk has been exposed, and there should be a lot of open ears to go that route. And, very important, that we need to find integrated solutions. Disaster risk is complex, and it's not only disaster risk, there are, in fact, other risks that come into play; conflict, economic, et cetera. So we need to find integrated solutions to address those risks.

I know this was a broad brush, very quick, however, if you have any more questions on how we are applying the mainstreaming frameworks for strategy development or analysis in country, please contact me afterwards. Thank you very much. (Applause)

MS. SOLIS: Thank you very much. Those were really stimulating presentations, I know that it is hard to be the last panel and to keep the energy going, but I think they really kept us very interested in this discussion about how we think about mainstreaming disaster risk reduction. So -- thank you so much -- I just want to share with you a few thoughts that were generated by the different presentations, and then, given that time is very short, instead of asking the presenters to respond to those directly, open it to the floor, and then you can decide which points you would like to address.

Now, I'll start with a disclaimer; I'm not a development expert, therefore, I've been really struck by a lot of the conversation today in the sense that there is this very powerful message that two speakers today used these figures in their presentations about how the prevention aspect has been minuscule. Right? We're talking about three percent of all resources allocated go to the prevention stage. And I know that hindsight is 20/20, but I still would like to get your thoughts as to why you think we're only coming to this discussion about making a more concerted effort to address the gaps, the very severe gaps that exist in the prevention stage of how you deal with disasters.

Why now, and why it hasn't happened sooner? And I think it was really striking, to me, Francis, when you were talking about how the students had to

go through all these different projects and really tag and so forth, which made me think that perhaps we didn't have a comprehensive database that could point to the trends, and therefore, we're not tackling this. So I thought that very, very interesting. Then the other comment I have is for the representatives from the United Kingdom and Japan.

And we were very eager to have you here today because we had heard about how your two countries have been really in the forefront, have been pioneers in really incorporating and embedding disaster risk management into your bilateral aid programs. But what I would like to ask you, and, of course, without giving you specific names, because we don't want to bad mouth anyone, when you think about the broader community of bilateral donors, where do you think the others stand?

I mean, are you really ahead of everyone, or do you think that this is really wide movement in that community and the donor countries are all moving in these lines, and do you think that there could be benefits to peer pressure in being more bilateral donors to really try to embed DRR more substantially in their development efforts. Then I was also thinking about the challenges of really embedding DRR in all activities of your different institutions and the different platforms. What are the challenges of making DRR really second nature in all

activities that you undertake? I imagine that there are institutional inertias out there, I imagine it must be difficult to transfer resources, I imagine that this requires the development of technical expertise across all the departments of the very complex organizations that you handle. So I was wondering how you actually do this so that you really think about DRR as an essential, second nature component to development.

And the last thing that I want to bring up is, of course, resources. The fact is, everybody has been emphasizing how disaster, natural disasters have increased in frequency, the cost has gone up, and we know that many countries, the World Bank, and many other development banks also face limited resources. So there's going to be that effort to try to stretch out, try to be very effective, and try to get the most bang for your buck. I think that's how you say it.

And I have a specific question for Japan. Given that we started this conference with Japan, I want to also make sure that I ask this question; Japan has been really a leader in the field of economic assistance, and for a while, it was actually the top donor in terms of resources. We know that with the economic situation in Japan, suffering a little bit, then there has been some cut back in the budgets allocated.

So I was always thinking that Japan's experience with 3/11 could

allow Japan to effectively develop more of a knowledge-based ODA, given this budgetary realities. And we've heard in the panels today a frequent reference to the benefit of low tech efforts, and therefore, that Japan could actually use more of a knowhow, and not only the hard core financial resources as it thinks about how it can actually accomplish more with limited resources. So I leave it there for now, and I would like to then take questions from the audience and ask our panelists to respond to all of this.

Thank you very much, I'll have this gentleman and then this lady.

MR. CHAPMAN: Hello, Max Chapman, Software Technology Magazine. Since many developing countries are clamoring for reactors, the answer to the following question may strongly affect long term development assistance in DRR. I'd like to ask our honored Japanese friends whether, if disaster risk management and planning includes prevention strategies.

Shouldn't Japan's leadership keep an eye on what China's doing with safe pebble bed reactors, or is it Japan's intention to minimize nuclear power and cease building reactors altogether? How will this decision affect developing countries in their building of infrastructure? Thank you.

MS. SOLIS: Thank you very much. We'll take the other question, we're going to start grouping them.

MR. HWANG: I'm Jimmy Hwang from Taiwan and I'm a visiting fellow in Brookings. I have a question for our friends from Japan, Mr. Minami. As you mentioned in your presentation, some disasters are quite unpredictable, such as earthquake or tsunami, and it's my understanding most of our houses in Japan are built by material of wood, such as we call wooden structures, where the cause of a fire, or wash away all the houses by the tsunami.

So, regarding the issue of resilience, will Japan's government do some rethinking or limitation or restriction of the area of potential disaster of earthquake or tsunami, or doing some kind of reinforcement of the structure of the buildings, some kind of reinforced concrete structure for the area of this tsunami or earthquake in this area? This is my question, thank you.

MS. SOLIS: Thank you. So I'll ask the panelists to respond to what has been asked so far, and then we'll take more questions from the audience.

MR. MINAMI: Thank you very much, indeed. The first thing, I will respond to the question from the gentleman from Taiwan. Well, it's quite right that most Japanese houses are built of wood, so in the case of the earthquake in 1995 in Hanshin, indeed, there were significant amount of houses destroyed by the earthquake. As a result of that, there was a fire. So, however, after that, there was a change of the regulations for the houses, so the resilience of the Japanese houses

have gone up after 1995.

But in the case of the 2011, the problem was not the earthquake as such, but the problem was the tsunami, because the power of the tsunami was much bigger than the earthquake. So in 2011, I believe that there are not many houses were destroyed by the earthquake, but most of them, including the concrete ones, most of them were destroyed by the tsunami. So, well, I have to say, unfortunately enough, it's very difficult to prevent the tsunami.

To respond to the question raised by another gentleman, if I'm not mistaken, this is the, the preparedness for the nuclear disasters, well, I would presume that, because of the extreme incident, I think that we have got some knowledge about how to prevent or how to escape from nuclear disasters. However, unfortunately, it's a bit premature at this moment for my government to disseminate that kind of wisdom or knowledge to other countries. So, at this moment, I don't think I have an answer to you, I'm sorry.

MS. SOLIS: Any other comments, or do you want to take more questions?

MR. GHESQUIERE: I'm happy to answer your question about why now, why so much interest. I've asked myself that question, because people have been advocating before and, certainly, engineers have always been trying to apply

safety ratings or safety range under construction. But I think that, if you look at the last ten years, we've had a stream of major events, and then we had a few interesting combinations where, for example, the Indian Ocean tsunami right at the time of the UN conference in Hyogo, which led to the Hyogo Framework for Action, which has been a very effective advocacy tool.

I think that we should give are credit to the UNSDR for really putting it on the map and pushing through the international system and bringing attention to this issue. I must say, however, that it's actually surprising how fast people forget. We talk about disaster in Asia, in any country, anybody works on disaster knows that, if you try to bring this to the attention of government, within 20 years, people have forgotten that they live in a seismic zone, right? Government will just forget.

So without a continuing pushing, and I just say, in the last 18 months, there hasn't been any major, front page disaster, and you can even see in the donor community in general, it's kind of fading. Thank God we now have this, 2015 will be a big year, and I hope we won't need a big disaster to keep it on the map. But it's a very interesting dynamic that you mentioned there.

MS. SOLIS: Thank you. Yes?

MS. PLANITZ: Maybe also something on your question regarding what are the challenges to make it second nature, and also why does it happen

now? I think, in terms of the challenges of why isn't it second nature yet, in fact, it is very, very difficult when you work with a term like disaster risk reduction to not think of the event. And this is, I think, a big problem that we have to work with. People usually just think about a disaster event and what you can do before, during and after, so it's still considered quite divorced from the actual development process.

And, to me, it was really a little bit of a revelation when this whole climate change talk came up, and there was no hesitation whatsoever immediately to look at this as a key concern to development. So, now, either it is the resilience discussion or the climate change discussion, but I think this is a big opportunity for the disaster reduction community to get this topic more into the center point.

The other thing, why is it not really happening. I guess it has to do with overall capacities that we have in many countries. I mean, you have to think, there are many poor countries, many fragile countries with very weak governments, so on the one hand, even if you have achieved your national level mainstreaming into your national development plan or policies, to really get this into the sectors and down at the local level, it requires quite an effort, and it requires people who have transferable skills, interdisciplinary skills. And this is also not very easy to find, something we just need to highlight, too.

Now, in terms of why does it happen now? I think one thing is the

big events, big events that are close to home, and global advocacy are important. However, in the end, it all falls or moves ahead with your in-country champions. And a little bit of what I mentioned before with the mainstreaming framework, your champion can be your president, your champion can be the head of a planning department, your champion can be in the advocation ministry, it doesn't really matter. But you need to find some people who are able to get others on board and to excite people and to understand, really, the issue at hand.

And I think this is, in many countries, where you then see change, where you can start, and then, by this, you can, you know, move ahead and bring others on to the train. Thanks.

MS. SOLIS: Thank you very much. So more questions, I'll take that lady in the back and then this gentleman.

MS. ELLIS PEED: Thank you. My name is Sarah Ellis Peed, I'm with the Department of Homeland Security, I have a couple of questions which are probably related, depending on your answer to the first one, that is. The first question is how do you measure resilience? So we're aspiring to build more resilient projects, to build resilient communities; when you are investing in a project or any community, how do you determine which project is more resilient than another? The gentleman from the Development Bank of Japan had mentioned 100 questions they

use; I would love to see those questions if those are available.

And then my second question is, the gentleman from the UK mentioned the multi hazard disaster risk assessment, and then you flipped quickly past the slide. I was a little disappointed, I'd be interested, because I think this is related. What are you measuring in that risk assessment, and specifically maybe, how are you capturing some of the intangibles, environmental impacts, psychological impacts, community impacted, things that are not human lives lost and economic damages, which are more commonly able to be measured?

MS. SOLIS: Thank you. Now this gentleman.

MR. KITONO: My name is Tomei Kitono , visiting fellow of the Center for New American Security. I'd like to ask a question about the efforts for prevention and damage control. I think training and education and exercise is absolutely important, too, and has the capability, because only by experience, only by actually moving your bodies and actually using tools, you can check the efficacy of your plan.

But, in my country, I confess, in Japan, not all, but some high rank men or women, especially those who have acquired their position by elections, not all of them, but I feel some of them consciously or unconsciously wishes to avert realistic exercises, because I think, I assume they think it would be too difficult, and

they may experience failure. I don't think this is an exceptional phenomenon because, in any society, not all people are familiar with the art of science.

So my question is, I'm not sure to whom I should ask, but what is the clue, what is the effective technique to encourage and promote realistic exercise, encouraged seeing failure as without hurting the trust of dignity of political grounds of the national or local government.

MS. SOLIS: Thank you. We have time for one more question, if you can be very concise so we have, then, time for the panelists. Thank you so much. Yes, sir.

MR. SPEAKER: Thank you. First of all, I think, over the past several decades, there's been a tremendous accomplishment in terms of carrying out what many of you have mentioned, in terms of risk assessment, hazard assessment, vulnerability assessment, and a great deal of data is available even in developing countries now. Why has there been so little effort to apply that knowledge in supporting the development of effective and efficient regulatory capacity?

MS. SOLIS: Thank you very much. So, Hiruma-san, I think you had a question, and then, Stewart, do you want to start that way?

MR. HIRUMA: Yes, thank you. So this is difficult how to measure

resilience. So I already explained my slide, related enterprise resilience by 100 questions. So important for enterprise resilience, enterprise is cash flow point of view. So we are bankers, so this product protect our vulnerability in emergency. So resilient company, we get the loan. So most important is the business impact, in our eyes, when the enterprise face the worst case scenario.

What is the worst case scenario in Japan's country, company? Most companies are earthquake , of course, but today a triple disaster is expected , so our due diligence system is up to date year by year, gathering the information from enterprise resilience. And now we research a link between enterprise value and resilience. This is an academic check, this is my project.

MS. SOLIS: Thank you.

MR. JAMES: Yes, thanks for the question. I should say we make these slides available, I don't know if you do that as a matter of course.

MS. SOLIS: Oh, yes, we do.

MR. JAMES: So what they're trying to get at here is to really take a country, any country, and look at the natural and manmade hazards that it tends to be prone to, and then to think of these, that might be weather related, et cetera, but it could also be political instability in the neighborhood which could have a big trade effect, or whatever it might be. And then to look at that, break it down, and sort of

start making a matrix about, well, if that goes wrong, which community is affected, where are they within the country, and get sort of a mapping of that and then to say, well, what is the capacity of the government itself to deal with that with the existing measures that it has, where the gaps are likely to be, and what would be a sensible policy intervention to address some of these, and how should that burden be shared by the international community and donors.

Perhaps some donors are very good at some particular things, and some others have specialists in other areas, and to try and just sort of say, well, let's look at all that, then, and see how can we make it as resilient as possible. So that's the sort of flavor, but I can certainly get more information from the specialists for you.

Just very quickly, you said, you gave us an invitation to beat DIFITZ drum, and I don't know is the honest answer about whether they're ahead. One reason they might be ahead, though, is we went through a process of really focusing down on the countries that we were going to be involved in, and when we did that, I think a lot of the countries that we remain very active in are prone to a lot of natural disasters, so it's become a bigger theme of our work. But I'll leave it to others to decipher.

In terms of trying to spread it to others is a political champion thing

that I mentioned, but I think the key thing is that donor finances are really under stress at the moment, so it's not a question necessarily of just looking for more money, I think you should look at it through the prism of effectiveness; if you want your existing development programs to actually produce the results that you intend and hope, then you need to build resilience into them. Otherwise, your value for money is at danger of being very poor.

MS. SOLIS: Thank you so much. So, unfortunately, we are out of time, so I just want to ask everybody to please join me in thanking the panelists for a terrific job this afternoon. Thank you. (Applause)

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