

Interview with Neil McFarlane, Chief of Regional Programmes and Disaster Risk Reduction Coordination, UNISDR

# Climate Change & Expected Geophysical Effects — & the People Working Today to Save Lives Tomorrow

By Japan SPOTLIGHT

The United Nations Office for Disaster Risk Reduction (UNISDR) is not the best known or the largest of the UN agencies that are called in when the worst happens. It has, however, a unique mandate in that its work is to look at what happened, what failed and what held, and to collate that information and compare with similar events in other parts of the world and make recommendations based on the data gathered from the disaster sites.

Increasingly its work has been on climate-related events and on separating these (which cannot be predicted perfectly but which can be designed for) from disasters that are clearly “natural” and not climate related. The Great East Japan Earthquake presented a particularly difficult case in that it was a triple disaster: a quake, tsunami and a nuclear meltdown, the first two clearly natural and not climate related, the second man made but also not climate related. Despite that, the information gathered from all three disasters can be accessed by communities worldwide and help them with their own disaster planning.

Dr. Neil McFarlane is the Chief of Regional Programmes and DRR Coordination for the UNISDR, the agency charged with coordinating disaster prevention, relief and mitigation efforts. *Japan SPOTLIGHT* interviewed him on his recent visit to Tokyo.

## Getting Started

**JS:** How did you start off in this?

**McFarlane:** I really started off with the Australian government and worked with them for 20 years. Parts of Australia have always had an extreme climate but what we found was that the area being affected by events was growing larger. I actually graduated with a degree in urban planning, and how cities were responding to this or that event was intrinsically interesting to me. Maybe we were a bit of a canary in the coalmine, but at first it was really about relief, why is this happening here, what can be done to remedy that? It was not at all starting from some overbearing perspective because there simply wasn't one.

In my own background, I moved from urban planning to disaster relief and then to humanitarian relief, particularly with some of Australia's neighbors, such as East Timor, and the Pacific Islands. So when this position at the UN came up it gave me a chance to look at these issues and to deal with them, not just as crisis to crisis or how do you react, but how do you plan and prepare better



*Neil McFarlane, Chief, Regional Programmes and Disaster Risk Reduction Coordination, UNISDR*

and particularly with adapting to climate change. Adaptation is really one of those points where at first it was not even on the map, and now it is right in the middle.

**JS:** I'm assuming you began straight out of university when this would not have been the hottest topic. What drove you?

**McFarlane:** What drove me was Cyclone Nargis that hit Myanmar in 2008 and took over 130,000 lives. I could see that a cyclone of similar strength hit Bangladesh but it experienced much less loss. Why was this so? So since I have this interest in humanitarian work, climate change and development cooperation — the work of disaster risk reduction brings it all together. Not just the relief which is what grabs the headlines, but the preparation, lessening the toll and the building back afterwards. And I could see this would be a good future for me.

## The Big Picture

**JS: The type of group you are describing makes it sound like you wanted to look at disasters holistically, rather than as disparate events.**

**McFarlane:** To give two good examples: in any disaster, when it is happening or about to happen, we need to be able to see what kind of exposure there is, how well the preparedness is and how robust are the transport systems, buildings and critical infrastructure for both evacuation, relief and recovery. But this is getting more complex with many disasters striking, and we certainly saw this with the Great East Japan Earthquake, in that one disaster can trigger another. [This refers to what was, in the immediate aftermath, called a synchronous failure where many interrelated systems which had relied on each other had no capacity to function independently.]

**JS: It was a huge disaster which blew away categories at both government and corporate levels, and people suddenly felt very isolated. Corporations that had never known, or thought of having to know, their suppliers' suppliers' supplier suddenly realized when they did not have his phone number that they could not get the widget they needed.**

**McFarlane:** Not only the Great East Japan Earthquake but there have been other events leading to shifts in thinking. The 2010 floods in the north of Thailand had a big impact on the private sector with global repercussions on GDP. There were so many companies, most of them automotive but some high tech, that could not get the component parts for their assembly lines. Once you have a cut in supply chains for many months, many firms will fail to ever win back market share. The Icelandic volcano eruption and massive ash cloud across Europe in 2010 also had a huge impact on the airline industry, and there were a large number of businesses saying "This is affecting our business, big time!"

## Big Business Catches Up

**JS: I had a number of experts cite that particular example to me as what should have been the warning sign to industry around the world to "Get your house in Order" — but it did not happen.**

**McFarlane:** People were not reading the tea leaves. And it is interesting with private companies — particularly the larger ones — because they have now been changing their business planning and modelling using different supply chains. I think in the past all they thought was: "Is my factory safe? Have I got evacuation plans, so I can get my staff evacuated?" — that kind of business contingency plan. But now it's: "Are my supply chains okay? What am I going to do if there is a disaster? How am I going to ship resources around?"

**JS: I do not want to be so crude as to say the quake broke the door locks, but certainly it broke some categories down because even if Company A was fine, and all their people and plants were okay, they**

**knew people for whom that was not so.**

**McFarlane:** In the past, of course, the insurance industry has always been there and the travel industry was aware of the impact of disasters on their business. But now we have got big companies ranging from the automotives to Dupont, Tilton and Caterpillar who are taking up disaster risk reduction measures. At UNISDR we have a very big private sector focus and we have a large network feeding us material and we are helping them to plan better.

A few years ago they used to tell me "We're prepared to take the risk, we know there's going to be a flood but if it's every 20-30 years we can take the risk." But now it's every five years, and that's hurting. So there's a big change in thinking compared to five years ago and now they are saying "It's too frequent, we're losing too much." Therefore we need to be part of the solution. Annual economic losses are now running at about \$300 billion. Reducing these is a key target of the Sendai Framework for Disaster Risk Reduction which was adopted as a global blueprint earlier this year at the Third UN World Conference on Disaster Risk Reduction in Sendai, Japan.

**JS: You always were sure before that somebody would pick up your primary insurance, as a reinsurance package. That is no longer true. Reinsurers who might once only have asked what return they are going to get for a 10-year exposure are now also asking "What exactly are we exposed to?"**

**McFarlane:** Yes, a lot is now coming in on the information and the data. The data is providing the basis for new modeling, as you mentioned, and it allows us to sit with them and ask "What is your exposure, based on this or that factor?" I think the insurance industry itself is undergoing a huge transformation if not a revolution and that is data driven.

**JS: So do you find that corporations are more widely accepting now?**

**McFarlane:** Oh, definitely there is a thirst for knowledge now. There's a thirst for new approaches because we're in new territory. There's no kind of standard model that they are all following at the moment so there's a real thirst for knowledge and cooperation, and I think there is more of a sense that they need to be a good corporate citizen by trying to reduce their own risk as well as the risk to the surrounding communities.

**JS: So you do not think there is much steam left in those naysayer think tanks in the United States and I guess much less so in Europe where they are running around saying "Oh no, this is all happening naturally, it has nothing to do with human activity?"**

**McFarlane:** No, I think that argument has pretty well run out of steam. You still have a few naysayers here and there but I think it is more generally accepted that disasters are happening more intensely and more frequently and that this is climate related. Maybe not one particular disaster, but the overall trend.

**JS: So do you find, then, that your real task in one way is to be giving people lists, or at least ideas, of the kinds of questions they need to be asking themselves?**

**McFarlane:** One of the things we have is this new Sendai Framework for Disaster Risk Reduction and that is a very practical guide to what sorts of questions need to be asked if we are to reduce existing levels of disaster risk and avoid creating new risk. It is not just looking at the responses and have we got enough ambulances, but have we got the schools safe, have we got the hospitals in the right place, have we got sound ecosystem management in place? And the second thing that I think we need to do is more work with our local level stakeholders in the cities, the mayors, city councils, whatever the local forms of government are.

**JS: So is more and more of the work being data driven, or is there much more to it?**

**McFarlane:** It is clear to me that we have been given three responsibilities. First is to monitor the situation and the data is part of that. Second is to monitor the implementation, and again there are data-driven points in that. And third is to continue to advocate for risk reduction measures which include risk assessments and collection of loss data. The UN Office for Disaster Risk Reduction has assisted over 80 governments to establish national disaster loss databases. If you do not measure your losses and understand where they are recurring then it is extremely difficult to manage your disaster risk.

**JS: That is a large plateful.**

**McFarlane:** Well, we are part of the UN and I can reach out to practitioners, experts and organizations that are part of the solution as well.

## Planning for the Unthinkable

**JS: It seems that there is another component than the data and the planning, and that is the modeling. There were three satellites overhead at various times, so**



**this was real time watching and they were telling their Japanese colleagues what was happening on 3.11. But among those colleagues, who were they going to call and say “This is no drill, everyone in these areas needs to move as quickly as possible to high ground now”? The information was right there, the data set, the theory it proved but all anyone could do was watch some 20,000 people being washed away.**

**McFarlane:** This is certainly one big block in the system, and in Japan it is probably as good as anywhere else in the world. But that moment between knowledge and action is always a very hard thing to deal with, whether we talk about it at the individual, group, or national level.

What we are seeing increasingly is that the political leaderships in many hazard-exposed countries are putting the weight of their office behind improvements in disaster risk governance. In recent weeks we have seen the presidents of the Philippines and Mexico broadcasting to their nations on the eve of these countries being hit by major cyclonic storms. In both cases, early warnings and evacuations were critical in minimizing loss of life and disaster response was effective. Political ownership and commitment is important to the success of disaster risk management.

Another thing we want people to start realizing is that it is not just these big disasters such as Hurricane Sandy, Hurricane Katrina. Those are all big bites. What is happening is that there are lots of little bites, such as a flood in Tbilisi, Georgia — they just had one a month ago and it was a small flood but quite devastating. It was just one mountain, a bad storm, but it had been raining for three months before so the mountain had soaked up a whole lot of water. It collapsed and washed away a dam. These kinds of things are happening all the time, and they do add up. There’s a little village in East Timor that used to have a once-every-10-year flood and now has one every year. And we’re saying when you add all that up across the world, that is where the extensive impacts are. It is quite interesting. With a big fire you have sparks, but it is constant across the world — small localized disasters.

**JS: We’ve been hearing this through the Balkans.**

**McFarlane:** Yes, the Balkans, everywhere, we are hearing stories of floods particularly, or climate systems that persist an unusually long time. And it is not that you can take this one and say it is climate, and that one is just a natural build up. It does not break down that neatly.

## Unpredictable Extremes

**JS: That actually has major implications once you consider abnormal conditions on rivers, floods, ice, etc. I have been in Germany when the Rhine iced up and the river was essentially closed to traffic for some days. It is not the first thing you would think of involving a river but stopping the traffic on a major river has a large knock-on effect.**

**McFarlane:** I think it is the unpredictability that also becomes a large issue. After all, the long-term forecast for part of Europe is drought. And that may happen and in the meantime there are going to be

freezes and floods and cold snaps and icing over. It is unpredictable, that's one of the issues.

**JS: It can be difficult trying to explain to people who may never have thought of this that long-term changes are not orderly, they're chaotic.**

**McFarlane:** That's it exactly. They are becoming more random. A good example is Typhoon Haiyan which hit the Philippines in 2013 and killed over 6,000 people. It was listed as a Category 7. Until then there was no such thing as Category 7 but the winds were so strong they had to find a new classification for the storm with such high wind speeds. With new categories a lot of things need to be changed, building codes upgraded for one. And what was tragic about that particular storm was that no one expected the water to be driven that high. Many people drowned in locations that previously would have been considered safe, and probably were safe in smaller storms.

Another example was when Australia had its hottest day, over 50 degrees Celsius. For the weather charts they had to invent a new burgundy color to indicate this category of extreme heat.

**JS: Are the big data starting to have an impact on our ability to predict and understand the various kinds of events?**

**McFarlane:** What type of data are we talking about here?

**JS: The ability to look beyond the number of casualties or destroyed properties in a particular event and get a better overall picture of what is really happening during these events?**

**McFarlane:** In the richer countries, such as the US and Japan, and in Europe to some extent, yes; in other countries, as of this moment, it will take more time. Risk estimates are calculated using highly simplified global hazard models and available data on hazard, exposure and vulnerability. They are sufficient to enable governments to discuss which disaster risk management strategies are most appropriate for its risk profile. There is a wealth of information on this subject in UNISDR's biennial Global Assessment Reports.

**JS: Coming back to 3.11 for a moment and the loss of communications so many people experienced, do you see any pickup from that?**

**McFarlane:** Yes, I see a deeper understanding of the complexity of risk. And certainly the more thoroughly you do your risk assessments, the more confidently you can act and respond to a particular event or crisis.

**JS: The problem there is that you really have huge data, much larger than most people can imagine. To take downtown Manhattan as an example: there are many buildings that have all kinds of ornamental cornices and balconies, and a lot that were built in the late 19th and early 20th centuries. Just imagine**

**doing a risk assessment for falling masonry in just this one part of the island, and in an earthquake.**

**McFarlane:** Of course, it is clear that there is still a lot that has to be looked at and studied, as you said, compared to past events, but think for a moment about Kathmandu. Local governments and the private sectors have important roles to play in ensuring that the urban environment is well mapped and understood in terms of risks that have to be managed or eliminated. UNISDR's Making Cities Resilient Campaign now has over 2,800 cities and towns taking part and this is a key focus for all of them.

**JS: I have been to Kathmandu twice, and from what I saw many of the buildings along the streets I walked along are no longer there. They were typical, crowded, a lot of overhanging, and there was a lot of ornamental architecture there too.**

**McFarlane:** And yet even that earthquake could have been a lot worse. It happened in the middle of the day so many people were out shopping and not at home on a Saturday.

**JS: There is a very good question, though: where does the money come from to rebuild?**

**McFarlane:** That is a tough question. You've got the traditional international development banks (like the World Bank and the ADB) but it's not nearly enough. It cannot be. A lot of it is going to come from a country's own resources, which means in effect that it could take a generation to rebuild.

**JS: One of the only good things I could see coming out of this was that China immediately closed its routes going up Everest from the Tibetan side. They could, certainly, have taken commercial advantage of the situation but they did not.**

**McFarlane:** I think China and India have both responded very well, which is another good sign that people are rallying.

**JS: Nepal has got a lot of goodwill from around the world, so I guess the question is whether or not that is enough.**

**McFarlane:** If they build back sensibly, maybe fewer villages but stronger, they could manage.

**JS: It's going to take a long time.**

**McFarlane:** It is and they are going to need a very good local government structure. **JS**

*Written with the cooperation of Richard P. Greenfield, a Japan-based journalist, editor, and consultant.*