WEBINAR REPORT

"Expert Consultation on Building Earthquakes Resilient Communities and Societies for Bangladesh: Sharing Experiences and Lesson Learned from Earthquakes around the World"

United Nations International Day for Disaster Risk Reduction
October 13, 2020

Centre on Integrated Rural Development for Asia and the Pacific (CIRDAP)
in collaboration with
Bangladesh University of Engineering and Technology (BUET)

CIRDAP

CIRDAP

"Webinar on Expert Consultation on Building Earthquakes Resilient Communities and Societies for Bangladesh: Sharing Experiences and Lesson Learned from Earthquakes around the World"

A Celebration of the United Nations International Day on Disaster Reduction

Tuesday, 13 October 2020

On the day of International Day on Disaster Reduction, Centre on Integrated Rural Development for Asia and the Pacific (CIRDAP) in collaboration with Bangladesh University of Engineering and Technology (BUET), organized a webinar on Tuesday 13th October, 2020. The webinar is entitled "Expert Consultation on Building Earthquakes Resilient Communities and Societies for Bangladesh: Sharing Experiences and Lesson Learned from Earthquakes around the World". Experts from Bangladesh, Thailand and U.S.A. joined this webinar to discuss this highly burning issue – Earthquake risks – and it's after effects on the planet and the general people on the world.

INTRODUCTION

1. Director General (DG) CIRDAP Dr. Cherdsak Virapat welcomed all participants. He informed that the date of 13 October is an important day for Thailand as the country commemorates the passing of the late King Bhumibol Adulyadej, the Father of the Nation in 2016. . For honoring the King, all the participants were requested to stand up for the Royal Anthem.

2. Dr. Virapat then proceeded by giving opening address of the webinar and provided his message for the International Day for Disaster Risk Reduction. He called for immediate global attention on disaster risk reduction by mean of hazard vulnerability assessment, disaster early warning, mitigation, preparedness and response. He expected that the meeting will identify strategic actions, measures and pilot implementation of end-to-end earthquake risk reduction systems for Bangladesh. Each participant was asked to introduce oneself. Then, Dr. Virapat invited Prof. Mehedi Ansary, BUET to provide background and aims of the meeting.

3. Prof. Ansary acknowledged CIRDAP for collaboration with BUET in organization of this webinar. He briefly addressed the past earthquakes occurred in Bangladesh as follows.

PROFESSOR MEHEDI ANSARY

4. Prof. Ansary showed some graphs on the earthquakes of Bangladesh as this is a moderately seismic country in the world. Several past earthquakes have occurred in Bangladesh and surrounding region in the last several hundred years. Among these earthquakes, the 1762 Arakan, 1869 Cachar, 1885 Bengal, 1897 Indian, 1918 Srimangal, 1930 Dhubri, 1934 Nepal, 2015 Nepal Earthquakes are well known in Bangladesh. The 1897 Indian Earthquake located in Assam, has

caused massive destruction to structures in Dhaka City killing 1542 people in the region (Oldham 1899). He also showed some old photographs regarding the damage of 1897 great Indian (AKE M. 8.1) and 1918 Srimangal earthquake (7.6), which showed destruction of the buildings and land.

5. Prof. Ansary pointed out that at that time only 90,000 people lived in the Dhaka city out of them 1542 were killed. Today, almost 20 million people live in Dhaka city, and also there are around 2 million buildings here so that it can be imagined that what will be the casualty if the same earthquake happens today. Prof. Ansary also shared that no large earthquake has occurred here for the last few decades, so the people have become complacent.

DR. WALTER D. MOONEY

6. Dr. Mooney gave his speech on Indonesian Palu and Sulawesi earthquakes which occurred on September 28, 2018. This earthquake caused Tsunami and also ground shaking created lots of destruction on the areas. Dr. Mooney showed the 5 –year period of Indonesian seismicity (2015-2020). Not only Tsunami but also the Palu earthquake generated ground shaking, landside and liquefaction which was un-anticipated. Most of the emergency warning centres were also destroyed due to this earthquake and also the ground shaking stayed for a long time.

7. Due to the earthquake, the death toll was high with the confirmed death of 3,400 people. Dr. Mooney described the enigmatic source of Tsunami and quantifying damage facilitates informed decisions on seismic building design. He said it will not matter how strong a building is built if the foundation is weak. The key points of the Palu earthquake is that Tsunami waves was there for several minutes after the main shock. And another point is that the maximum tsunami inundation was 469 m.

8. Dr. Mooney also presented some of the images of the Palu earthquakes in the city regarding mass destructive buildings, roads, houses and bridges with intensity and severity levels. There is severe liquefaction in three areas – Balaroa, Petobo and Jonooge-Sidera.

9. In the end of his presentation, Dr. Mooney shared the recovery plan

Recovery Plan 1:

- Not allowed to build any settlements within 100 m of the coast.
- Areas with high risk pf liquefaction to be converted to public places.
- Local living in "high risk" zones are being rehoused to "low risk" areas.

Recovery Plan 2:

- 1,100 new houses built in "safe zones"
- Mangrove and sea wall being assessed for coastal protection
- BMKG working collaboratively with the USGS to improve efficiency of Tsunami

warning system.

Prof. Ansary discussed and gave his opinion on the presentation of Dr. Mooney that the Palu city is not densely populated as Dhaka city given the fact that death toll and causes. Dr. Mooney responded that this city is much higher than the Switzerland in population but obviously lower than Dhaka city. He also said that at present they changed their land use policies because of the earthquake. But it's very difficult to relocate or gave up the land in the offshore because it the matter of people's land ownership and livelihoods.

PROF. TAVIDA KAMOLVEJ

10. Prof. Tavida Kamolvej, Dean of Political Science, Thammasat University, Thailand presented on lesson learned from disasters.

11. Prof. Kamolvei emphasized more to lesson learned, awareness and education training about the earthquake more than the technicality of it. How are we doing about the safety of the people? What measures did the governments take for this? Are people aware enough about the consequences of earthquake? Do they have enough knowledge about post disaster risk reductions measures and others?

12. She focused on the shared risk big data and communication amongst nations, and on the risk governance.

- Degree of uncertainty and nonlinearity still there.
- There are compound hazards and trans border still.
- Structural and non-structural measures for disaster risk reductions cannot be same for every sector of the people. Combination of both is important and need balance between the two.
- Transboundary and different level of capacity and literacy are required.
- Research and development on possible risks and measures are required.
- Different vulnerabilities from capacity and competency.
- Political commitment and priority must be given.
- Public and private investment should be allocated in the disaster risk reduction. And 1% of the national budget must be allocated for the post disaster measures. Everyone always talks about the pre-disaster measures not post-disaster risk reduction measures.
- Self-sustained emergency management with reverse risks and adaptive risk governance is required.
- Policy sandbox and institutional innovation are needed. Translations of institutional design/measures to local mechanism are needed for the community people. It is difficult to change the mindset of the people so that we need to focus more on for increasing technical capacity.
- Balanced risk and economic loss in recovery is needed. (with a combination of

pre-designed measures, policy alternative simulation and institutional changes).

- After Dr. Tavida's presentation, Prof. Ansary commented that it is very difficult to change the political will and institutional changes are needed. He pointed out that knowledge of people is power.

- Dr. Tavida stressed that communication at the community level helped make risk reduction measures more practical than the national level measures. Participatory action research is required for this. Academics and local people – this combined team of these two groups – can be useful through pilot project on the disaster risk reductions measures or post – disaster phases.

13. Prof. Ansary presented some of the work slides of Bangladesh Earthquakes and Risk Assessment of Dhaka, Bangladesh on behalf of **Dr. Fouad Bendimerad, EMI, U.S.A.** This presentation showed about the risk assessment of building collapse due to distance earthquake outside the Dhaka city.

- Recent incidents at Shakharinazar in 2004, Collapse of 9 storied building Rana Plaza in April, 2013 are described. In every building collapse tragedy, 80% of the people is rescued by local community people rather than fire brigades and other defense people.

- One of the world bank funded assessment study on the proposed earthquake scenario in Dhaka which is developed by Earthquakes & Megacities Initiatives (EMI), U.S.A showed that because of the earthquake 6 billion dollar will be direct loss. Nearly 200 thousand people will die and nearly 300 thousand people will be injured. More than 5.3 million people will be displaced person in need of access to basic social services.

OPEN DISCUSSIONS

At the open discussion, Dr. Virapat gave a Mock scenario questions to everyone about what are lessons learned from earthquakes happen in different countries, what are local capacity requirements on end-to-end early warning and mitigation systems. What will be practical measures and action plan in response to an incoming earthquake for Bangladesh.

Dr. Tavida Kamolvej: In reply to these questions, Dr. Tavida responded that to communicate with earthquake is very much difficult than other disasters. If an autonomy is established, she would want to build an earthquake resistant building and in the risk prone area instead of trying to change political thoughts which is very difficult. Also a learning center with data regarding earthquake can be built closer to the epicenter kind of area to educate the community and people. This center will have warning of aftershock and record or predict about the destructions. It is not possible to help people by forecasting about the earthquake beforehand. However, this learning and education will teach the community what to do after the earthquake. With this learning center, government can also be aware or learnt about the investment, what kind of balance between

structure and non – structured measurement, Community capacity, etc. And this building can be used as a shelter for a short period of time. Basically, this building will be an example of safety for the community people beforehand of the earthquake. Those places which are already being destroyed and have destruction, to communicate with the people of those areas to prepare for the next one will be less difficult. But those areas which are not suffered or observed the earthquake yet will be difficult. Because most of the people will not understand the future risks of the earthquake that you are forecasting.

Dr. Ansary discussed that by showing and experiencing the incidents especially with the fire incidents then people can easily relate to that. This is due to the fact that during the last few years several fire incidences in Dhaka killed several hundred people as well as damaged several multi-storied buildings. If fire incidents and earthquake can work together, people will understand. But creating awareness to the people only about the earthquake, it will be very difficult to work. People need some example – like since there is no earthquake in the last decades but there are lots of fire incidents – people can relate because the fire incidents are still burning in their minds.

Dr. Tavida then asked the question regarding the recent event of Indonesian tsunami to Dr. Mooney. She asked that is it possible to forth sight the different kind of source of risks or have pre-design of every possible risks from disasters based on the geo data and other techniques. And relating to the Dr. Tavida's query, Mr. Tomasi asked about the indigenous people of Indonesia and their knowledge whether it exists or not?

Dr. Walter Mooney: There are too many earthquakes with the faults around the world. The main issue is the more responsibility needs to be pushed down to the local level for all these agencies. The field staff/people always depends or waits for the instruction from the headquarters – the local people are identifying the vulnerable structur
e and also not sending the recommendations back to the headquarters. There is a lack of empowerment in the local level for example in Indonesia there are 10 warning centers/bureaus at the local level in different places. But every bureaus always look at the Jakarta and waits for the instruction but it should be other way around, these local bureaus should tell the headquarter about what they need? It is a big problem of a human organization for reducing the risks and also saving the lives.

Prof. Ansary suggested to start communicating with Director General (DG) of Department of Disaster Management (DDM), Bangladesh. Or the secretary of the disaster management about the EMI CVMP produced the risk of map of earthquake of Dhaka city.

Prof. Helal Uddin of Director Research:

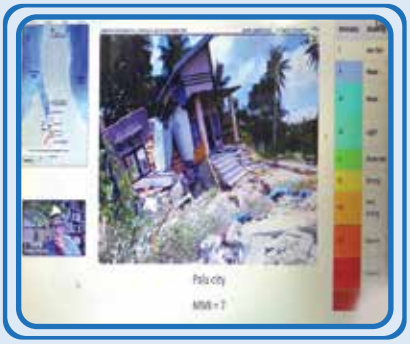
Prof. Helal pointed out on the earthquake impacts on the country economy. Since the capital stock of Bangladesh is more than trillion dollar and Dhaka city contributes around 40% of our GDP which is a huge amount. So, Dhaka is being the most popular city and exposed to the earthquake, economic development and growth will be tremendously affected by indirect loss incurred by any earthquake. Because direct cost implies to the other disaster but for the earthquake immediately have a huge indirect cost. It will be seriously damaging effect to the Bangladesh's economy. This figures and statistics is needed to place before government.

In Bangladesh, the earthquake is in nowhere in the priority of the government. Agreeing with Dr. Tavida that one tsunami change the public sector priority in Indonesia, the common and general people should be aware of more about the earthquake rather than constantly going back to the government in Bangladesh – make general people aware about the severity of earthquake – Once general people makes the earthquake as a popular demand, then government will give priority. After that this future risks can be calculated or for casted about the disaster. Through some projects, this awareness amongst people about earthquake can be possible – they can learn and apply the measurements and at the same time with this government will also be attracted.

Mr. Tinnakorn Tatong: Earthquake cannot be predicted but still the good data base is needed for kind of predicting about where it is going to happen. Which magnitude it is going to be? Then we can go to the government – pursuing government is clearly a management issue. Government always have to make priority about each sectors such as COVID 19 is a big issue. So, government will prioritize this pandemic more than the earthquake. For every projects, the big data of Earthquake is more needed.

CLOSING REMARKS

With the open discussions amongst the participants the webinar ended on 12 p.m. by the closing remarks of DG CIRDAP Dr. Virapat. On behalf of CIRDAP, he thanked all the experts and participants for sharing their views on the issue of earthquake. The ideas that we are generating that how we are going to mitigate the risks and problems due to the earthquake which may happen in Bangladesh or anywhere in the world. CIRDAP and Prof. Ansary have already submitted a project proposal on the earthquake and natural disaster resilience in Chittagong city to European Union Horizon 2020 fund and hoping that next year EU will approve the fund for this project. Again, thanking all the participants for celebrating the international day of disaster risk reductions, DG CIRDAP closed the webinar.



EXPERTS AND PARTICIPANTS OF THE WEBINAR:

Experts

1. Prof. Mehedi Ansary, Department of Civil Engineering, BUET
2. Dr. Walter Mooney, United States Geological Survey (USGS), U.S.A.
3. Prof. Tavida Kamolvej, Dean, Faculty of Political Science, Thammasat University, Thailand
4. Mr. Tinnakorn Tatong, Department of Mineral Resources, Ministry of Natural Resources and Environment, Thailand

CIRDAP

1. Dr. Cherdsak Virapat, DG, CIRDAP
2. Prof. Helal Uddin, Centre on Integrated Rural Development for Asia and the Pacific (CIRDAP)
3. Mr. Tomasi V. Raiyawa, Strategic Planning Officer, CIRDAP
4. Mr. George C. Babu, Programme Officer, CIRDAP
5. Dr. Usharani Boruah, Head of Librarian, CIRDAP
6. Ms. Hurain Jannat, Communication Officer, CIRDAP

CIRDAP

Center on Integrated Rural Development for Asia and the Pacific
Chameli House, 17 Topkhana Road, GPO Box 2883, Dhaka 1000, Bangladesh
Tel: 880-9558751, 9559686, 9586509 Fax: : 880-2-9571880, 9562035
Email: dgcirdap@cirdap.org, icd@cirdap.org; Web: www.cirdap.org