(4) Panel Discussion "International Cooperation on Earthquake Disaster Management to Protect Lives"

1) UNESCO

Mr. Rouhban, acting as moderator, opened the panel discussion by remarking that earthquake risk and natural hazards do not recognize geographical, political or geopolitical boundaries. The study of seismology and earthquake risk mitigation over the past five decades has gained from international cooperation, and without this cooperation it is not possible to advance in the future. International cooperation benefits from the individual input of institutions and entities located in different countries. The panel discussion should therefore illuminate lessons drawn from individual experiences in international cooperation, and how to improve this cooperation in the future.

2) Chile

Mr. Raul Alvarez, Professor at the Universidad Catolica de Chile stated that the 2010 magnitude 8.8 Chile earthquake highlighted many problems with disaster preparedness and response. There was a lack of coordination between different government departments. The primary responsible institution was overwhelmed by the circumstances of the event. Management personnel had insufficient technical competence, autonomy and budget. There was a lack of crisis coordination and management. Knowledge was concentrated in the capital. Some government buildings were destroyed leaving no base for coordination. Political power's response to looting and vandalism was delayed. The population was not educated on a crisis management plan. Buildings had been constructed in vulnerable areas, and inappropriate building materials had been used as well as structural solutions from non-seismic countries. There was no early tsunami warning. Mobile communications were severely crippled. There was a lack of proper and properly maintained monitoring equipment, and monitoring data was not readily available to the scientific community. There was no unique methodology to evaluate structures following the earthquake, complicating data interpretation. And there

was a lack of volunteers to assess damage.
Improvements need to be implemented in order to address these issues. The National Office of Emergency of the Interior Ministry (ONEMI) needs to be completely restructured, provided with sufficient budget, empowered against political power, members technically trained, and a strong research area developed. An early warning network should be created nationwide, with data provided to civilians and to the local and international scientific community. Communication networks should be reinforced to ensure continuous operation. A quick inspection of structures must be implemented, with a coordinated volunteer network at the country level. Sufficient budget must be provided. School curriculums should incorporate natural disaster education, and crisis management education should be provided to the general population.
Mr. Alvarez concluded with some suggestions for Japan and UNESCO: to share positive experiences in institutional issues, management and monitoring of successful countries; to exchange technical personnel and experts in risk management, methodologies, studies of human behavior in emergencies, etc; and to help create a critical mass of experts in each area of risk, to permeate this knowledge throughout the country.

3) Egypt

Mr. Salah Mahmoud, Head of the Department of Geodynamics at the National Research Institute of Astronomy and Geophysics (NRIAG) outlined NRIAG's roles for international cooperation and earthquake disaster management. NRIAG's Earthquake and Information Centre (EIC) continuously monitors and analyzes earthquake signals in and around Egypt and is able to spring into action immediately when it receives a call for assistance. NRIAG also aims to mitigate disasters through awareness-raising media, education, and training for regional colleagues.
During emergencies, NRIAG may act as a communication hub for requests and offers of assistance, and can offer assistance to affected neighboring countries. NRIAG can also coordinate the provision of Egyptian assistance by matching offers to needs, identifying gaps in assistance and searching for solutions, as well as facilitating the pooling of common resources where possible. This mechanism can be activated by any participating state seeking prompt international assistance following a major earthquake disaster.
Currently most resource is allocated to post-disaster efforts, which can save relatively few lives in comparison to pre-disaster preparation.

4) Peru

Mr. Carlos Zavala, Director of the Japan-Peru Center for Earthquake Engineering and Disaster Mitigation (CISMID) talked about the problems in execution of field surveys in Peru. Accessing emergency funds following a disaster is difficult as bureaucracy delays the issuing of the funds, and the funding is limited to US$2,000 which is only sufficient for two days.

There are also several impediments to earthquake disaster management in Peru: the government offices are not sensible with disaster risk; there are cities where hazard, microzonification and risk analysis have been developed but city authorities do not use this data for city planning; and the National Center for Assessment, Prevention and Disaster Risk Reduction is not aggressive in considering alliances or teaching local authorities about disaster management policies.

The main future challenges for implementation of disaster risk management are: achieving a culture of disaster risk management in the population; building consensus and commitments between public and private institutions involved in disaster prevention and relief; developing a system to automatically disseminate information on potential risks at local, regional and national levels; and strengthening SINAGERD in a decentralized manner to empower regional and local governments. The integrated approach to disaster management should include the participation of the population. A risk reduction plan should be developed for each government agency or ministry in order to produce a national plan. Sustainable development demands an improvement in capacities of authorities and officers with power of decision. The indifference of decision makers and authorities is one of the primary issues, and their capacity needs to be improved.

Japan and UNESCO can further international cooperation on earthquake disaster management through assistance to protect vulnerable historical buildings and schools. Peru has a cooperative project with Japan under the SATREPS program, which encompasses several research topics: strong motion and geotechnical; tsunami; damage assessment; building; and disaster mitigation planning.

5) Romania

Mr. Radu Vacareanu, Vice-Rector of the Technical University of Civil Engineering of Bucharest (UTCB) noted that in Romania the source of seismic risk is very well known, coming directly from the Vrancea subcrustal source. It is an intermediate earthquake occurring two to three times per century, and affects particularly the building stock in Bucharest. The most destructive event occurred in 1977 when more than 1,600 people died, of which 1,500 died in Bucharest. Bucharest still has many high-rise buildings that do not incorporate any seismic design. National programs for seismic risk mitigation in Romania aim to strengthen seismic risk class I buildings, upgrade the code for seismic design of buildings, and improve seismic instrumentation.

In terms of international cooperation, there have been several projects in Romania. Most important was a JICA project to reduce seismic risk for buildings and structures in Romania. Through this project, Romania received a lot of structural and soil testing equipment and new seismic networks were installed. However rather suddenly in 2010 the Romanian authorities decided to dismantle the National Center for Seismic Risk Reduction (NCSRR) and move the equipment to the BRI, while the staff remaining at the university, which has been a significant setback. Other international collaborations include projects with Germany, with the European Union, with Earthquake Protection of Historical Buildings (PROHITECH), and with the World Bank.

Impediments in earthquake disaster management include weak political support, low public awareness, the difficulty in retrofitting residential buildings due to social issues, and the focus of international financing bodies of retrofitting programs on public buildings and structures.

6) Japan

Mr. Kenji Okazaki, Professor at GRIPS commented that even as more international communities express their commitment to disaster reduction, the number of disasters has been increasing. There has been a failure to apply technologies and knowledge to reduce the impact of disasters. There has also been an indifference to the loss of human life. The economic value of human lives is not accounted for in the calculation of the

economic cost of disasters. Although protecting the lives of citizens should be the highest priority of government, it does not seem that they are making every effort to achieve that. The trend of international activity is still focused on response, which cannot recover lives lost in disasters. If people were to survive, reconstruction would be much easier and less costly. Additionally, donor countries are now thinking that they can no longer afford to fund response efforts any longer. More resources must therefore be mobilized for protecting lives before disasters hit.

The most important lesson of the Great East Japan Earthquake and Tsunami of 2011 is that thousands of people would not have been killed if they had evacuated promptly. Although people in the region knew well that a tsunami would strike after a strong earthquake, and knew how to evacuate, and there was good early warning of an impending tsunami, many people did not evacuate promptly.

The most important lesson learned from the 1995 Hanshin-Awaji earthquake is that thousands of people would not have been killed if they had retrofitted their vulnerable houses. Japan has strong building codes and techniques for retrofitting are available as is financial assistance. Despite that, people have many reasons not to retrofit their houses. The basic reason is that people are risk takers; they do not invest in the retrofitting, gambling on the chance that a large earthquake would not occur in the near future.

Measures to convince people to take action before a disaster hits can include education, training, awareness raising, community-based disaster management, and policy development and institutionalization for safer communities.

Recommendations for international cooperation to reduce the loss of life due to disasters include: an international commitment to promoting proactive efforts; fostering more experts who can develop appropriate policies for disaster reduction and have good skills for risk communication with local people; financial and technical assistance to promote community-based disaster management; more research to investigate how to motivate people and local governments to take actions against disaster; and establishing a multi-disciplinary academic approach for disaster risk management.

7) Question and Answer Session

Mr. Faruk Karadoğan: Mr. Okazaki, how can we ensure that our message and the outcome of symposiums such as this one are communicated to governments?

Mr. Paul Grundy, Australia: I was particularly impressed with Mr. Okazaki's comments because it raises the problem of how to get out of the bind of spending all of our money after a disaster strikes rather than on building resilience to survive further disasters. We do not seem to have any academic institutions that have a totally multidisciplinary approach to DRR. There is a parallel between that lack and the recent burgeoning of sustainability institutes in many places. Natural disasters are unsustainable, yet none of the sustainability arguments are being brought to bear on our need for a coherent multidisciplinary approach to disasters.

Mr. Okazaki: In Japan the national and local governments are aware of the risk and how to tackle the challenges. However this may not be the case in many developing countries. That is why I propose that local governments who make DRR efforts may receive more subsidies and advice and activities from the national government. Also, if local people are very aware

of the importance of DRR then local politicians should act on the interests of the local people.

Mr. Rouhban: A point that has been made very frequently is that within a country we need to have more cooperation among different disciplines, as well as better dialogue between scientists, specialists and policymakers. The public awareness issue has also been raised, and we need to find incentives to ensure that the anticipation and prevention of disasters pays off in the final analysis. Also many recommendations went to UNESCO, and it is for UNESCO to listen to these recommendations and make the best possible use of them in the future.

Mr. Vacereanu: Responding to Mr. Karadoğan's question, I would like to give an example. The US National Earthquake Hazard Reduction Program launched in 1977 was in fact drafted in the 1960s by Professor Frank Press. When a new president came to the White House, Frank Press was the scientific advisor to the new president. One month later, the program was on its way. So, sometimes good things do happen.

Mr. Mahmoud: Responding to Mr. Karadoğan, we need the ministry of foreign affairs to facilitate cooperation between international and local partners. Sometimes we face problems cooperating on projects with different countries. In Egypt with the new regime we hope that this problem will be addressed.

Mr. Zavala: On the comment about sustainability, in Peru the law changed last year to require every urban development plans to include a DRR component. So politicians in local and regional governments are now required by law to produce disaster management projects, and pressure can therefore be applied to politicians to apply this law.