Report on discussion in the field of "Disaster Prevention"
at the e-ASIA JRP Science Talk Workshop（December 5, 2012）

1. Significance of Research in this Field

Climate change induced by global warming and its hydrologic impacts causes coastal erosion, more frequent and more severe flooding, more serious landslides, and higher risk of drought in East Asian countries. Other geophysical natural disasters, such as earthquakes, tsunamis, and volcanic eruptions are also shared challenges in this region. Following presentations and in depth discussion, the Workshop participants were able to recognize the priority topics in the field of "Disaster Prevention" for each country and agreed that **floods, land-slides, earthquakes, volcanic eruptions,** and possibly **drought** would be the most important issues to be addressed by multilateral research collaboration in the context of the e-ASIA JRP.

The people in this region can be seriously affected by floods, land-slides in mountainous areas following heavy rainfall, and serious damage can be caused across borders as the countries are geographically close and largely located in the same river basin: the Mekong River basin. Flooding occurs especially in the rainy season when typhoons hit the region, and can be intensive and disastrous. Regarding earthquakes, tsunamis, and volcanic eruptions, the effects can be disastrous. Developing scenarios and taking appropriate countermeasures against the risk, through comparison of data, and by obtaining accurate information based on multilateral collaboration, will lead to safer evacuation and fewer casualties.

Under these circumstances, the accumulation of data, expertise, knowledge, the understanding and use of eco-systems, and the application of satellite-based data will contribute to the reduction of disaster risk and damage. These effects will be more substantial when efforts are made in the form of multilateral collaboration.

2. Necessity of International Collaboration and Expected Synergistic Effects

1) Flood

Flood disaster prevention is one of the top issues in Lao PDR, Myanmar, Viet Nam, Cambodia, and also Japan. Heavy floods in recent years have affected millions of people in the region and underlined the need for stronger disaster management efforts. The heavy flooding in many cases damages the sources of water supplies, which unavoidably causes unhygienic conditions. Peoples' livings are seriously affected irrespective of national borders, and so international collaboration is particularly important. The application of knowledge from the observation of eco-systems, such as the realization that mangrove plantations act as bio-shields, the use of satellite-based data integrated with ground-based data, and expertise on structured disaster management systems will enhance the effectiveness of multilateral collaboration among the East Asian countries for sustainable

disaster prevention.

Landslides following heavy rain falls can be disastrous, and should be treated as an independent topic apart from floods.

2)Earthquakes

Earthquake disaster prevention is a common topic to be addressed in the region. Especially for Myanmar, it is the most important issue due to the location of its most densely-populated cities, such as Yangon and Mandalay. Considering the experience and expertise other countries have on earthquake disaster prevention, there is great potential for multilateral collaboration in this field. Further discussion is expected on future collaboration among the e-ASIA JRP Members.

3)Volcanic Eruptions

Historically, there have been volcanic eruption disasters in Japan, the Philippines, and Indonesia. The three countries share the challenges posed by volcanic eruptions. Countermeasures against volcanic hazards require deterministic information, especially for evacuation. The survey and comparison of various types of volcanic eruptions in the above three countries, and accumulation of data through collaboration within the e-ASIA JRP framework will enable better planning and more appropriate scenarios for safe evacuation.

3. Identified Areas for Cooperation

a. Collaboration in Flood Disaster Prevention

Japan, Viet Nam, Lao PDR, Myanmar and Cambodia (if it can participate as a Member) are prospective research collaborators.

Exchange of researchers will be a good starting point for the collaboration, and then collecting data from each other and structuring systems will lead to optimal preparedness to prevent flood disasters. The application of ecological knowledge in flood disaster prevention will also play an important role, and satellite-based data, integrated with ground-based data, will help to identify heavy rainfall or flood risk areas, and maximize the accuracy of data. There are already a few platforms on which flood analysis and alert systems are expected to be effectively constructed, such as IFAS (Integrated Flood Analysis System), Vietnam Flooding System, and satellite observations over a large area across borders in the region will be good source data for making more effective flood forecasting/warning, safe evacuation and reduction of disaster.

b. Collaboration in Earthquake Disaster Prevention

Myanmar presented earthquake disaster prevention as its most important issue and is committed to various international collaborative efforts for earthquake risk assessment and seismic source study, etc. There is a strong need for risk management in the densely-populated cities, such as Yangon and Mandalay, in the event of a major earthquake. For many countries in the East Asian region, earthquake disaster prevention is one of the top priorities, and so the issue should be further tackled in the context of

collaboration among the e-ASIA JRP Members, some of which were not represented in the Workshop this time.

c. Collaboration in Volcanic Eruption Disaster Prevention

Japan, the Philippines, and Indonesia are the prospective members of this research collaboration. Multilateral collaboration to develop scenarios for safer evacuation or to determine countermeasures against volcanic hazards can be effective through the accumulation of data and the comparison of volcanic eruptions in these three countries. However, both Indonesia and the Philippines were not represented in this Workshop and hence further communication and discussion among the concerned parties are expected regarding future multilateral collaboration in this field.

- Participants are listed as follows.

Cambodia

Dr. Kol Hero, Vice Director, Preventive Medicine Department, Ministry of Health

Japan

Dr. Takashi Asaeda, Professor, Saitama University

Dr. Kazuhiko Fukami, Chief Researcher for Hydrology and Hydraulics, International Centre for Water Hazard and Risk Management under the auspices of UNESCO (ICHARM), Public Works Research Institute (PWRI)

Dr. Masato Iguchi, Professor, Director of Sakurajima Volcano Research Center, Disaster Prevention Research Institute, Kyoto University

Lao PDR

Dr. Viengsavanh Khitthiphong, Deputy Director of Surveillance and Outbreak Response Division, Ministry of Health

Dr. Bounnaloth Insisiengmai, Department of Disease Control, Ministry of Health

Myanmar

Dr. Khin Than Yu, Pro-Rector, Yangon Technological University

Viet Nam

Dr. Vu Kien Trung, Deputy Director, Department of Dyke Management and Flood, Storm Control

Dr. Le Quoc Hung, Deputy Director, Center for Natural Resources and Environmental Monitoring National Remote Sensing Center