Special Report

10th CITYNET Disaster Cluster Seminar
Yokohama, Japan
August 31st-September 3rd, 2017

CITYNET Disaster Cluster Members (as of July 2017)
- Banda Aceh Municipality
- Bangkok Metropolitan Administration
- Bharatpur Metropolitan City
- Capital Development Authority
- Center for Advanced Philippine Studies, Inc.
- Centre for Asia Pacific Initiatives-University of Victoria
- City Government of Baguio
- City Government of Cagayan de Oro
- City Government of Muntinlupa
- City of Marikina
- City of San Fernando
- City of Tomohon
- City of Yokohama
- Colombo Municipal Council
- Da Nang People’s Committee
- Dehiwala-Mt. Lavinia Municipal Council
- Dhaka North City Corporation
- Dhaka South City Corporation
- Dharan Sub-Metropolitan City
- Government of Palembang City
- Hue City People’s Committee
- Iloilo City Government
- Kathmandu Metropolitan City
- Lalitpur Metropolitan City
- League of Cities of the Philippines
- Mahidol University Kanchanaburi Campus
- Municipal Association of Nepal (MuAN)
- National Municipal League of Thailand
- Philippine Councillors League
- Seoul Metropolitan Government
- SEVANATHA-Urban Resource Center
- Sri Jayawardenapura Kotte Municipal Council
- Surabaya City Government
- Taipei City Government
- The Local Government of Quezon City
- Yokohama Association for International Communications and Exchanges (YOKE)

In Collaboration With:
I. Introduction

The 10th CITYNET Disaster Cluster Seminar was organized in Yokohama from August 31st to September 3rd, 2017 with over 120 participants attending from 16 cities and 2 institutions. The seminar this year was organized in collaboration with the World Bank Tokyo Disaster Risk Management (DRM) Hub. Representatives from five World Bank client countries also attended the seminar as part of the Technical Knowledge Exchange on Emergency Preparedness and Response, organized by the World Bank DRM Hub.

The theme this year focused on urban disaster prevention and response which included disaster education at community levels as well as the involvement of the private sector for disaster mitigation. Deputy Mayor of the City of Yokohama Mr. Katsunori Watanabe welcomed the participants during the seminar and stressed the importance of international cooperation to address the increasing need for disaster risk reduction work. He also highlighted the fact that Yokohama has been fully involved with CITYNET since its establishment and continues to provide support for the cities in Asia.

The disaster risk profile survey conducted this year of the participating cities’ shows that training and management needs are among the cities top priorities as the intensity and unpredictability of otherwise common disasters are varying each year. Even with the latest and the most sophisticated monitoring systems, many areas in Japan have faced unprecedented levels of landslides triggered by torrential rains and floods. Causing widespread damages to agriculture and livelihood, these disasters bring forth the vulnerability of the Asian cities and the need to strengthen human resources, mitigation and to improve critical infrastructure.

II. Seminar Highlights

Session one: Perspectives on Enhancing Disaster Risk Reduction Programs

<table>
<thead>
<tr>
<th>Presenters</th>
<th>Presentation Topics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr. Marc S Forni, Lead Disaster Management Specialist, World Bank</td>
<td>City Resilience Program</td>
</tr>
<tr>
<td>Mr. Junji Wakui, Deputy Director General, Group Director for DRR, Global Environment Department</td>
<td>JICA’s Cooperation for Disaster Risk Reduction</td>
</tr>
<tr>
<td>Japan International Cooperation Agency (JICA)</td>
<td></td>
</tr>
</tbody>
</table>

Disaster Risk Reduction strategies and implementation practices have varied depending on the economic, social, and political circumstances. In order to understand DRR from the broader context, experts from the World Bank and JICA presented their approaches to better mitigate disasters and improve the recovery process. As disasters create an avenue for urban and city development the presentations demonstrated the need for better urban management. Mr. Forni noted that, as countries’ resilience increase, the necessity of global communication defines the nature for both concepts and programs. As cities are often limited in their resources for disaster recovery, the larger problems they are facing have to be identified as to acknowledge the limitation of resources.

“Many people from the world have gathered to implement international cooperation and develop helpful relations to solve the challenges the cities are facing”

Mr. Katsunori Watanabe, Deputy Mayor, City of Yokohama
Session two: Urban Crisis Management

<table>
<thead>
<tr>
<th>Presenter</th>
<th>Presentation Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr. Nobuyuki Sato, Manager for Crisis Planning Division, Crisis management Office, City of Yokohama</td>
<td>Countermeasures against Earthquake Disasters of Yokohama City</td>
</tr>
</tbody>
</table>

Crisis management in Yokohama deals with all matters of prevention; by making preparations, human suffering may be mitigated. As past experiences create learning strategies, DRR can be used as a source to minimize economic damage. In the Great Kanto earthquake of 1923, fire was a devastating factor causing immense economic damage. While damages were estimated at 5.5 billion yen, the allocated budget for recovery was initially 1.37 billion yen. Through that experience Yokohama has learned that it is necessary to first secure one’s own safety. As a national policy in Japan, the government provides guidelines to address future disasters. In the case of an earthquake, command headquarters are established immediately after the disaster in an attempt to access the damage and help in search and rescue operations. Disaster mitigation can be achieved through “self-help, mutual-help and public-help”, which is a widely practiced principle in Japan.

Session three: Overview of Yokohama City Fire Bureau and their Disaster Prevention Efforts

<table>
<thead>
<tr>
<th>Presenter</th>
<th>Presentation Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr. Yoshihiro Oshirabe, Fire Captain, Manager for Projects, Project Division, Fire Bureau, City of Yokohama</td>
<td>Overview of Yokohama City Fire Bureau and their Disaster Prevention Efforts</td>
</tr>
</tbody>
</table>

Japan has a long history of fire incidents as most of the nation’s residences are constructed from wood. A necessary reform in the fire prevention administration was created in 1948 to establish a complex knowledge of housing structures to best allocate the department’s budget. Community efforts in fire prevention include education initiatives in schools. By having children participate in disaster prevention drills, they are shown the importance of mutual-help. Counter measures for earthquakes have demonstrated the value of securing sea and river water as well as the operation of mini fire trucks to be able to access narrow roads.

“From our past experiences with earthquakes we have learned that there is a need to facilitate the evacuation of residences as well as the establishment of evacuation guidelines”
- Mr. Nobuyuki Sato, City of Yokohama

Session five: Enhancing resilience through City-to-City Cooperation

<table>
<thead>
<tr>
<th>Presenters</th>
<th>Presentation Topics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr. Takeo Ota, Manager of Conformity Division, Architecture Inspection Department, Housing and Architecture Bureau, City of Yokohama</td>
<td>Report on Technical Training for Earthquake-Resistant Constructions: City-to-city Cooperation between Yokohama and Kathmandu</td>
</tr>
<tr>
<td>Mr. Purusottam Shakya, Director of Disaster Department, Kathmandu Metropolitan City (KMC)</td>
<td>Impact of the training received from Yokohama</td>
</tr>
</tbody>
</table>

The devastating 2015 earthquake in Nepal prompted a request from Kathmandu to Yokohama for technical assistance regarding the city's reconstruction and recovery efforts. As CITYNET’s framework emphasizes city-to-city cooperation to address urban issues, experts from the Housing and Architecture Bureau of the City of Yokohama were dispatched to Kathmandu to assess and develop a training module for the city’s engineers. The assessment proved that the lack of reinforcement in the buildings attributed to the damages and the collapse of 700 buildings. While it was proven that engineers in Nepal were capable, their numbers had to increase. The three-year ongoing training focuses on the need for collaboration to raise awareness on the implementation and interpretation of building codes, compliance of laws and regulations, as well as proper inspection process. Each year, one training session is held in Japan while two are held in Kathmandu with more than 20 municipalities and 40 engineers attending the trainings in Nepal. The expected output of the training is to build the capacity of the engineers as well as to raise awareness of the public through simplified manuals of the technical construction knowledge and the strengthening of inspection processes at the municipal level.
Session six: Mainstreaming DRR within City Departments

This session focused on the community based disaster risk reduction project implemented by Iloilo City government through a project conducted with the City of Yokohama. Increasing economic growth, urbanization, and population present as challenges in mainstreaming Disaster Risk Reduction activities in Iloilo. However, with a 5% investment in DRRM from the total budget, Iloilo has created an initiative in building a resilient city. The shift from being reactive to proactive in focusing from disaster management to disaster risk reduction has shifted the city's perspectives. The focus on KABALAKA, an acronym from local language translates, “to show concern, be compassionate, to show love and understanding” served as a defining factor in the establishment of avenues to promote awareness on DRR in Iloilo at an educational levels. The project has also helped redefine the City Disaster Risk Reduction Management Council (CDRRMC), enabling them to develop plans and execute the activities with a particular focus on prevention at the community levels. This project has been supported by JICA; a detailed report can be found on CITYNET Yokohama Project Office website.

Session seven: Application of Innovations in Reducing Disaster Risks

<table>
<thead>
<tr>
<th>Presenters</th>
<th>Presentation Topics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr. Yukihiko Ito, CEO, Unimation System Inc.</td>
<td>Introduction of Water Hazard Early Warning Device</td>
</tr>
<tr>
<td>Mr. Takayuki Kusayanagi, Damping Group Oil Damper Sales Dept. Hitachi Automotive Systems &amp; Nagano, Ltd.</td>
<td>Introduction of Vibration-proof oil damper for housing</td>
</tr>
<tr>
<td>Mr. Shinya Kukita, Chief Engineer, Global Business Unit, NEC Corporation</td>
<td>Using big data for DRR</td>
</tr>
</tbody>
</table>

This session introduced efforts by the private sector, which may attribute to the local mitigation of disasters through innovations and technology. Unimation System Inc. introduced a flood-warning device, which can be installed in flood prone areas. In achieving resilience to water related disasters, early warning systems have been established to monitor flooding and help minimize human suffering as well as economic losses, which is a contributing factor to poverty. Knowing how to respond, as well as developing a mechanism for evacuations when the alarm is sounded and maintenance of the equipment is critically important.

For strengthening buildings, Hitachi Automotive Systems & Nagano Ltd. introduced the hydraulic dampers, which absorb vibrations while enacting seismic control. The installation of counter-measures reduces earthquake caused building damage. This is a relatively cost effective method, which can be applied to residential houses. Both the hydraulic damper and flood early warning system attributed to community based resilience.

In terms of data and IT interventions, NEC highlighted the usefulness of tapping into available data, as global warming has become a leading topic in reference to natural disaster. Digital DRR has initiated the use of media to support preparedness through early warning systems. Combined with inter-agency cooperation, digital technology has been used to reduce CO2 emissions to improve the mobility of logistics in urban developments.

“**The installation of countermeasures have the ability to reduce flood caused damages, therefore preparedness and trainings are important**”

-Mr. Yukihiko Ito, Unimation System Inc.
Session eight: Public Outreach Strategies and Process for DRR

<table>
<thead>
<tr>
<th>Presenters</th>
<th>Presentation Topics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr. Hirokazu Nagata, Chairman, Plus Arts, Vice Director, Design and Creative Center Kobe</td>
<td>“Iza! Kaeru Caravan!”</td>
</tr>
<tr>
<td>Ms. Tanya Patterson, Emergency Program Coordinator, City of Victoria</td>
<td>Community Powered Emergency Preparedness</td>
</tr>
</tbody>
</table>

One of the most important tasks in awareness raising is the process in which the information is disseminated to the public. Examples from Japan and Canada were shared in this session to demonstrate how public outreach is conducted in their communities. Based on community participation, the presenters demonstrated techniques to engage public participation through their innovative teaching strategies. With Plus Arts, their education is based on disaster preparedness games to educate children in a fun and innovative way while drawing lessons from past disaster survivors. Activities included paper crafting to make bowls and plates. During disasters this technique is encouraged instead of usual items to help mitigate the usage of water. Other activities include disaster exercises to teach children on the sequence of events that happen during a disaster and memory games to memorize items needed for an emergency bag.

Mayor of Lalitpur discussing his city’s accomplishments and needs in Disaster Risk Reduction.

II. Site Visits

Session four: Yokohama Emergency Call Center

All emergency calls from Yokohama City related to fire and medical emergencies are directed to this Call Center. Using both wireless and cable communications, they aim for speedy responses to minimize damages from disasters. The Center is equipped with high-tech location search systems, memo-pad devices and displays for support information that allows for precise and efficient commands to be given to emergency responders. During this session participants had the opportunity to examine the station’s various resources as well as the efficiency and effectiveness of the call center. As the response vehicles stationed at the Center serve different purposes, participants learned the necessity of preparedness for different situations including having mini-fire trucks for accessing narrow roads.

In the presentation made by the City of Victoria, community participation was demonstrated as a resource in rehabilitation. The ARC GIS application tool was presented as one method to achieve orientation and mapping of the local community on available resource locations to be utilized during disasters. With the slogan “together we are ready” both presentation sought recovery affiliated with community preparedness and cooperation.

Session ten: 10th CITYNET Disaster Cluster Meeting (CITYNET Members Only)

The Cluster Meeting acknowledged the year’s successes, which included the structural and seismic engineering training in Nepal as the next stage is underway, as well as educational activities for children which conducts seminars based on the experiences of disaster survivors. The meeting then focused on the direction the next four years will bring. Flood mitigation, education in DRR, and increased support and cooperation of local governments, were the reoccurring points of interest of the meeting. While Colombo, Dehiwala and Taipei suffer from heavy rainfall resulting in frequent flooding in their cities, strengthening capacity of the first responders, training technical people and upgrading equipment have been stated as necessary tools for the upcoming years. Yokohama City expressed their continuous support in addressing members need towards Disaster Risk Reduction.

“Solely memorizing the necessary items for disaster preparedness is meaningless. You have to understand why the objects are important and how many of each is required.”

- Mr. Hirokazu Nagata, Chairman, Plus Arts
Participants using fire extinguishers to put out a simulated fire at the Disaster Risk Reduction learning center

The main objective of this center is to improve citizens’ disaster risk reduction knowledge, store emergency supplies and material, and respond to emergencies in Yokohama Station area. With a construction cost of 680 million yen and an operating cost of 52 million yen, the center has received 122,862 visitors in the 2016 fiscal year. Through experiential learning, the center educates its participants on various types of disasters. Its purpose is not to educate but enlighten the public. By simulating disasters, the center allows for a practical experience on responding to disasters as well as understanding the purpose of preparedness. The facilities’ resources include a theater showing a potential large-scale earthquake and its effect on urban areas, fire extinguishing operation areas, which participants were able to use in the attempt to extinguish a simulated fire, and an earthquake simulator which let participants experience various earthquake magnitudes which have previously occurred in Japan.

Session nine: Raising Public Awareness on DRR

<table>
<thead>
<tr>
<th>Presenter</th>
<th>Presentation Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr. Masahiro Kawashima, Fire Captain, Manager for Yokohama Disaster Risk Reduction Learning Center, Fire Prevention Department, Fire Bureau</td>
<td>Yokohama Disaster Risk Reduction Learning Center</td>
</tr>
</tbody>
</table>

“The Yokohama’s DRR learning center is a good example for which our institution can model its own educational learning center.”

(survey commentary)

Session eleven: Yokohama City Annual Disaster Prevention Drill

The annual disaster prevention drill conducted in Yokohama creates a simulated exercise to practice emergency responses during disasters. By enacting evacuation strategies, citizens alongside disaster prevention and response line agencies are able to perform the concepts of self-help, mutual-help and public-help. The drill was initiated by a shake out and preceded in 3 stages. Members of the community were the first responders to the scene, with the help of the participants, their primary objective was to work as a team in an attempt to extinguish the fires. Their contribution demonstrated the impact of mutual-help. The second stage of the drill focused on community rehabilitation through the elimination of road obstacles and repairing of lifelines including gas leaks and fractured water pipelines. As repair services are conducted by the private sector, they were in charge of repairing the damages. Also included were trucking companies who have MOU’s with the city to provide their services for transporting and distributing the supplies during emergencies. The final stage included the public-help which mainly demonstrated various rescue and coordination operations through the Yokohama Fire Bureau (YFB), prefectural police, Japan Self-Defense Forces (JSDF), Disaster Medical Assistance Team (DMAT), the Japan Red Cross and Tactical Aerial Response (TAR) units, the Japan Coast Guard and the aerial unit of the Yokohama Fire Bureau.

Participants after putting out a fire at Yokohama City’s Annual Disaster Prevention Drill

III. CITYNET Disaster Risk Reduction Survey Results

The DRR survey results of participating cities show that on average 93% of participants were either very satisfied or satisfied with the overall Disaster Cluster Seminar.

While participants found community involvement key to DRR, 54% were very satisfied with initiatives by Yokohama City in mitigating disaster risks. 96% of those who answered the survey found that the city’s work to improve its Emergency Preparedness and Response (EPR) system by learning from each disaster that happens, is a best practice that can be adopted in their cities. There were various comments made that expressed the importance of data and statistics in improving their systems, which indicates that not all representing cities have a system to review their protocols each time a disaster occurs. Conducting research and collecting statistical data from disasters can also help cities make risk assessments for various disasters, which is currently not considered as a priority action in all cities.
The 3rd day of the seminar consisted of a site visit to Yokohama’s Disaster Risk Reduction Learning center. Participants took part in various interactive activities leaving the DRR Learning center with a 75% rating of very satisfied, the highest satisfaction of all 4 days. Survey results specifically demonstrated that the visit was useful for participants to identify suitable approaches in achieving their goals and defining their next steps after returning to their workplace.

For the final day of the seminar (Day 4), participants attended Yokohama City’s annual disaster prevention drill. Participants rated the drill with an overall high satisfaction of 67%, and stated that the drill could be locally adopted and applied to the local context. Moreover, participating representatives were inspired by the concept of self-help and mutual-help and felt that education programs for the community could be helpful in mitigating disaster risks by achieving community preparation in various types of disasters.

One of the themes highlighted in this year’s Disaster Cluster Seminar was the involvement of the private sector. As this was a recurring topic in various presentations, participants stated that they learned the importance of involving various stakeholders in DRR. Specifically, they were impressed with how the disaster drill was conducted with a joint effort of all departments of the city as well as services outside of city hall. By attending the annual drill, they were able to see and experience firsthand the importance of a strong network of stakeholders in DRR as well as self-help and mutual-help.

### Disaster Cluster Survey Results

<table>
<thead>
<tr>
<th></th>
<th>Very High</th>
<th>Satisfactory</th>
<th>Below Satisfactory</th>
<th>Not at All</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day 1</td>
<td>54.19%</td>
<td>38.55%</td>
<td>4.27%</td>
<td>3%</td>
</tr>
<tr>
<td>Day 2</td>
<td>63.41%</td>
<td>29.88%</td>
<td>3.35%</td>
<td>3.35%</td>
</tr>
<tr>
<td>Day 3</td>
<td>75.33%</td>
<td>18.66%</td>
<td>2.11%</td>
<td>3.87%</td>
</tr>
<tr>
<td>Day 4</td>
<td>67.37%</td>
<td>25.76%</td>
<td>2.86%</td>
<td>4.01%</td>
</tr>
</tbody>
</table>

Yokohama Fire Bureau; Participants were briefed on the response vehicles of the Super Ranger Team

Yokohama Fire Bureau; Heavy equipment designed for specific purposes are stationed at Yokohama Fire Bureau

Participants practiced putting out a simulated kitchen fire using infra-red fire extinguishers at the Disaster Risk Reduction Learning Center
Explaining the different purposes of the fire trucks at the Disaster Risk Reduction Learning Center

Participants had to use techniques they had learned to maneuver safely through the smoke simulated corridor at the Disaster Risk Reduction Learning Center

Yokohama Annual Disaster Prevention Drill; Fire fighters are putting out a fire during the final stage of the drill, ‘public-help’

Yokohama Annual Disaster Prevention Drill; Individual are receiving medical aid during the final stage of the drill, ‘public-help’

Participants observing as individuals practice ‘self-help’ during a simulated earthquake at the Disaster Risk Reduction Learning Center

Yokohama Annual Disaster Prevention Drill; Disaster Cluster Seminar participants took part during the stage of ‘mutual-help’