Final Report
Preface

The APRU MULTI-HAZARDS 2022 Symposium is an international symposium organized by the Asia Pacific Rim University (APRU) Multi-Hazards with different cooperation hosts annually. This year's symposium was organized by the Faculty of Engineering and the Risk and Disaster Management Program (RDM) of Chulalongkorn University. The theme of this year's symposium was "Innovation Towards Sustainable Growth and Disaster Risk Reduction." This symposium took place at Mandarin Hotel, Bangkok between 29 – 30, November 2022 and operated both onsite and online for the participants who were unavailable to join.

After the whole process, the conference has finished and accomplished all the organized goals and objectives. This final report has the details of the activities done during the process.

Assoc. Prof. Natt Leelawat, D.Eng.
Committee Chair
17th APRU MULTI-HAZARDS 2022
# Table of Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>1</td>
</tr>
<tr>
<td>APRU-MH 2022 Summarization</td>
<td>2</td>
</tr>
<tr>
<td>Conference Programs</td>
<td>3</td>
</tr>
<tr>
<td>Award lists and Winners</td>
<td>5</td>
</tr>
<tr>
<td>Annex</td>
<td>7</td>
</tr>
<tr>
<td>- Committee List</td>
<td>7</td>
</tr>
<tr>
<td>- Keynote Presentations</td>
<td>11</td>
</tr>
<tr>
<td>- Symposium Content</td>
<td>13</td>
</tr>
<tr>
<td>- Survey</td>
<td>23</td>
</tr>
<tr>
<td>- Participants Data</td>
<td>28</td>
</tr>
<tr>
<td>- Presentation Programs</td>
<td>30</td>
</tr>
<tr>
<td>- Photo</td>
<td>38</td>
</tr>
</tbody>
</table>
Introduction

The Faculty of Engineering, Chulalongkorn University, and the Risk and Disaster Management Program, Graduate School, Chulalongkorn University, together hosted the 17th APRU Multi-Hazards Symposium 2022. The symposium held during November 29 – November 30, 2022. The event took place at the Mandarin Hotel Bangkok Samyan, Thailand both onsite and online. Carrying the theme banner, "Innovation Towards Sustainable Growth and Disaster Risk Reduction", the symposium covered the following topics:

- Innovation for Disaster Risk Reduction
- Engineering and Infrastructure for Disaster Risk Reduction
- Community Health and Well-being for Disaster Risk Reduction
- Social and Governance Policies/Socio-economic Issues in Disaster Management
- Building Community Resilience in Disaster Management
- Disaster Communication in Disaster Management

Moreover, the participants had a chance to listen to the selected keynote speakers from various backgrounds related to disaster management both in academic and practical areas. And the main event of the symposium was to provide a place for the researcher in the community to present and update their work in the related field. The presentation sessions were separated as the listed topics and were evaluated by an experienced academic researcher in each session. Afterward, the symposium committee invited all the attendees and guests to join the banquet event for the awards announcement for the winners and the closing ceremony from the representatives from Chulalongkorn University and APRU MULTI-HAZARDS.
According to the APRU MULTI-HAZARDS 2022 Symposium on 29-30 November 2022, there are 121 participants, which can be divided into four main groups of people, including Committees, Staff, Presenters, Listeners, and Keynote Speakers. These people came from universities and organizations in 14 countries. Regarding this, the participation consists of an online and onsite engagement. During the two-day event, nine keynote speakers presented exciting research in the morning session. The main presentation session is separated into six main topics.

There are 45 presentations presented by around 50 presenters. From these 45 presentations, our conference committees provided two types of awards: the best presentation award for students and the best presentation award for non-students. We also offered a short lunch break for all participants during both conference days. Next, at the end of the second conference day, we provided the dinner cruise banquet to let the participants see the tradition and scenery of Bangkok from the Chao Praya river. Lastly, we also conducted a survey to collect data about participants' satisfaction. The results based on the survey came out to be very positive. However, there are some issues that the participants mentioned, such as time allocation and a small number of participants.

From the start until the conference day, we spent almost one year preparing the event. This Gantt chart summarizes the timeline for the event preparation.

<table>
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<tr>
<th>Event</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
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<tbody>
<tr>
<td>Create a conference webpage</td>
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<td>Announce the acceptance notification</td>
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<td>Open for the early-bird registration</td>
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<td>Open for the normal registration process</td>
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<td>8-9</td>
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<td>Finalize and announce the schedule and</td>
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<td>conference contents</td>
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<td>Prepare for the conference event</td>
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</table>

We managed all the staff and committees along this timeline to manage and streamline the process. Our committees and staff can be divided into six main groups: Organizing Committees, Academic Committees, Program Committees, Publicity Committees, Finance and Funding Committees, and Organizing staff.
# Conference Programs

**Tuesday November 29th**

<table>
<thead>
<tr>
<th>Time</th>
<th>Tuesday November 29th</th>
<th>Room</th>
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<tbody>
<tr>
<td>8:30 – 9:00</td>
<td>Registration for onsite participants at <strong>Mandarin Hotel Bangkok Samyan</strong></td>
<td>Mandarin A and B</td>
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<tr>
<td>9:00 – 9:30</td>
<td>Opening Ceremony</td>
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<td>9:30 – 9:45</td>
<td>Group Photos</td>
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<td>9:45 – 10:00</td>
<td>Coffee Break</td>
<td>Foyer</td>
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<tr>
<td>10:00 – 10:30</td>
<td>Keynote Presentation by <strong>Prof. Fumihiko Imamura, D.Eng.</strong></td>
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<tr>
<td>10:30 – 11:00</td>
<td>Keynote Presentation by <strong>Bhichit Rattakul, Ph.D.</strong></td>
<td>Mandarin A and B</td>
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<tr>
<td>11:00 – 11:30</td>
<td>Keynote Presentation by <strong>Sanjay Srivastava, Ph.D.</strong></td>
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<tr>
<td>11:30 – 12:00</td>
<td>Keynote Presentation by <strong>Aaron Opdyke, Ph.D.</strong></td>
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<tr>
<td>12:00 – 13:00</td>
<td>Lunch</td>
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<tr>
<td>13:00 – 13:30</td>
<td>Presentation from Sponsor, Program Presentation (Overall)</td>
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<tr>
<td>13:30 – 14:30</td>
<td>Session 1</td>
<td>1A – Mandarin A</td>
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<td>1B – Mandarin B</td>
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<td>1D – Kannika room</td>
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<td>1E – Rodsukon room</td>
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<tr>
<td>14:30 – 14:45</td>
<td>Coffee Break</td>
<td>Foyer</td>
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<tr>
<td>14:45 – 15:45</td>
<td>Session 2</td>
<td>2A – Mandarin A</td>
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<td>2B – Mandarin B</td>
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<td>2C – Karaked room</td>
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<td></td>
<td></td>
<td>2D – Kannika room</td>
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<tr>
<td></td>
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<td>2E – Rodsukon room</td>
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<tr>
<td>15:45 – 17:05</td>
<td>Session 3</td>
<td>3B – Mandarin B</td>
</tr>
<tr>
<td>Time</td>
<td>Wednesday November 30&lt;sup&gt;th&lt;/sup&gt;</td>
<td>Room</td>
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<tr>
<td>8:30 – 9:00</td>
<td>Registration for onsite participants at Mandarin Hotel Bangkok Samyan</td>
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<tr>
<td>9:00 – 9:30</td>
<td>Keynote Presentation by Prof. Harold Yih-Chi Tan, Ph.D.</td>
<td>Mandarin A and B (Coffee Break in Foyer)</td>
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<tr>
<td>9:30 – 10:00</td>
<td>Keynote Presentation by Atiq Ahmed</td>
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<td>10:00 – 10:30</td>
<td>Keynote Presentation by Asst. Prof. Supattra Visessri, Ph.D.</td>
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<tr>
<td>10:30 – 11:00</td>
<td>Keynote Presentation by Assoc. Prof. Tavida Kamolvej, Ph.D.</td>
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<tr>
<td>11:00 – 11:30</td>
<td>Keynote Presentation by Constance Chua, Ph.D.</td>
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<tr>
<td>11:30 – 12:00</td>
<td>Session 5 and Poster</td>
<td>5A – Kannika room 5B – Karaked room Poster – Foyer</td>
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<tr>
<td>12:00 – 13:00</td>
<td>Lunch</td>
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<td>13:00 – 17:00</td>
<td>Campus tour (Optional)</td>
<td>Chulalongkorn University</td>
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<tr>
<td>18:00 – 22:00</td>
<td>Banquet, Award Ceremony and Closing Ceremony (During Dinner Cruise: 19:00 – 22:00)</td>
<td>Meridian Cruise (@Icon Siam)</td>
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</table>

*** Time depends on ICT (GMT+7)
* Coffee Break also included
Award lists and Winners

- Best Presenter

  o *Applying southwestern monsoon weather factor to improve a probabilistic flood warning model based on a Nest-SOM*
    Presenter
    Tsung-Yi Pan
    Authors
    Lo-Yi Chen, Tsung-Yi Pan, Yi-Huan Hsieh, Jihn-Sung Lai, Hsin-Hsing Chia
    Organization
    National Taiwan University

  o *Seismic Performance Assessment of an Irregular School Building in the University of the Philippines Los Baños Based on Incremental Dynamic Analysis*
    Presenter
    Carmina B. Borja
    Authors
    Carla Mae B. Pilapil, Carmina B. Borja, Richelle G. Zafra, Bien David B. Papasin
    Organization
    University of the Philippines

  o *Seismic Fragility of Selected Public High School Buildings in Cagayan de Oro City, Philippines*
    Presenter
    Jameson Glen Lim
    Authors
    Jameson Glen Lim, Jerson Castro, Marvin Alisson Alama, Daisy Chris Salugsugan, Dexter Lo, Arash Nassirpour
    Organization
    Xavier University - Ateneo de Cagayan
- **Best Presenter (Student)**

  - *Lessons Learned from COVID-19 Management in Sri Lankan Hospitals*
    
    **Presenter**
    Nimali Lakmini Munasinghe
    
    **Authors**
    Nimali Lakmini Munasinghe, Gerard O'Reilly, Peter Cameron
    
    **Organization**
    Monash University

  - *Integrating Tsunami Evacuation Route Planning in Web Applications for Disaster Risk Reduction (Case Study: South Lampung, Indonesia)*
    
    **Presenter**
    Dita Wahyu Primastuti
    
    **Authors**
    Dita Wahyu Primastuti, Mahisa Ajy Kusuma
    
    **Organization**
    University of Indonesia

- **Best Poster (Student)**

  - *Comparing Non-Asset-Based Disaster Loss Models for Equitable Planning Outcomes*
    
    **Presenter**
    Jeanette Jiawen Choong
    
    **Authors**
    Jeanette Jiawen Choong, Dennis Wagenaar, and David Lalleman
    
    **Organization**
    Nanyang Technological University
Annex

Committees

Organizing Committees

1. Associate Professor Natt Leelawat, D.Eng.
2. Assistant Professor Phannee Saengkaew, Dr. rer. nat.
3. Associate Professor Witaya Wannasuphoprasit, Ph.D.
4. Associate Professor Tirawat Boonyatee, D.Eng.
5. Assistant Professor Anurak Sriariyawat, Ph.D.
6. Nattawin Chawaloephonsiya, Ph.D.
7. Sanguan Purahong
8. Duangporn Pisanusan
9. Kannika Masman
10. Kanyanat Phloisuk
11. Ngamta Chaia
12. Pisit Kunajak
13. Vorawan Mutakulcharoen
14. Chanon Skawattananon
15. Nuttapon Jitjana
16. Khanittha Rasamitat
17. Phuwadech Doungmanee
18. Siriyakorn Sasiponganan

Academic Committees

1. Kallaya Suntornvongsagul, Ph.D.
2. Associate Professor Natt Leelawat, D.Eng.
3. Professor Anat Ruangrassamee, Ph.D.
4. Professor Suched Likitlersuang, D.Phil.
5. Professor Sutep Gonlachanvit, MD
6. Professor Santi Pailoplee, Ph.D.
7. Associate Professor Phisan Santitamnont, Dr.Ing.
8. Associate Professor Jenyuk Lohwacharin, Ph.D.
9. Associate Professor Manoj Lohatepanont, Sc.D.
10. Associate Professor Vachara Peansupap, Ph.D.
11. Associate Professor Suwattana Thadaniti, Ph.D.
12. Associate Professor Tatri Taiphapoon, Ph.D.
13. Associate Professor Panit Pujinda, Ph.D.
14. Associate Professor Smith Boonchutima, Ph.D.
15. Assistant Professor Prasert Akkharaprathomphong
16. Assistant Professor Chatpan Chintanapakdee, Ph.D.
17. Assistant Professor Anurak Sriariyawat, Ph.D.
18. Assistant Professor Piyatida Ruangrassamee, Ph.D.
19. Assistant Professor Supattra Visessri, Ph.D.
20. Assistant Professor Pongsak Suttinon, D.Eng.
21. Assistant Professor Suthirat Kittipongvises, Ph.D.
22. Assistant Professor Penradee Chanpiwat, Ph.D.
23. Assistant Professor Nattasuda Taepphant, Ph.D.
24. Assistant Professor Juthatip Wiwattanapantuwong, Ph.D.
25. Assistant Professor Sutee Anantsuksomsri, Ph.D.
26. Assistant Professor Surasak Treenai, Ph.D.
27. Assistant Professor Pol. Sub.Lt. Dr. Pachanut Nunthaitaweekul
28. Assistant Professor Ruttiya Bhula-Or, Ph.D.
29. Assistant Professor Unruan Leknoi, Ph.D.
31. Puntita Tanwattana, Ph.D.
32. Tadashi Nakasu, Ph.D.
33. Kannika Swanpotipan
34. Ekatet Intakan
35. Phuwadech Doungmanee
36. Siriayakorn Sasiponganan

Program Committees

1. Kallaya Suntornvongsagul, Ph.D.
2. Associate Professor Natt Leelawat, D.Eng.
3. Professor Anat Ruangrassamee, Ph.D.
4. Professor Suched Likitlersuang, D.Phil.
5. Professor Santi Pailoplee, Ph.D.
6. Professor Nattiya Hirankarn, M.D., Ph.D
7. Professor Sutep Gonlachanvit, MD
8. Associate Professor Phisan Santitamnont Dr. Ing.
9. Associate Professor Manoj Lohatepanont, Sc.D.
10. Associate Professor Vachara Peansupap, Ph.D.
11. Associate Professor Jenyuk Lohwacharin, Ph.D.
12. Associate Professor Suwattana Thadaniti, Ph.D.
13. Associate Professor Panit Pujinda, Ph.D.
14. Associate Professor Tatri Taiphapoon, Ph.D.
15. Associate Professor Smith Boonchutima, Ph.D.
16. Associate Professor Saowanee Wijitkosum, Ph.D.
17. Assistant Professor Prasert Akkharapratathomphong
18. Assistant Professor Chatpan Chintanapakdee, Ph.D.
19. Assistant Professor Anurak Sriariyawat, Ph.D.
20. Assistant Professor Piyatida Ruanggrassamee, Ph.D.
21. Assistant Professor Supattra Visessri, Ph.D.
22. Assistant Professor Pongsak Suttinon, D.Eng
23. Assistant Professor Nattasuda Taephant, Ph.D.
24. Assistant Professor Juthatip Wiwattanapantu Wong, Ph.D.
25. Assistant Professor Surasak Treenai, Ph.D.
26. Assistant Professor Pol. Sub.Lt. Dr. Pachanut Nunthaitaweekul
27. Assistant Professor Sutee Anantsuksomsri, Ph.D.
28. Assistant Professor Ruttiya Bhula-Or, Ph.D.
29. Assistant Professor Unruan Leknoi, Ph.D.
30. Assistant Professor Suwinee Wivatvanit, Ph.D.
31. Assistant Professor Penradee Chanpiwat, Ph.D
32. Assistant Professor Suthirat Kittipongvises, Ph.D.
34. Tadashi Nakasu, Ph.D.
35. Pummarin Khamdahsag, Ph.D.
36. Nantamol Limphitakphong, Ph.D.
37. Nattapon Tuntiwattanaporn, Ph.D.
38. Wilailuk Niyommaneerat, Ph.D
39. Kannika Swanpotipan
40. Ekatet Intakan
41. Phuwadech Doungmanee
42. Kodchakorn Kruthphong
43. Ampan Laosunthara
44. Thitiporn Klainil
45. Piyaporn Sochoeiya
46. Nattapon Trumikaborworn
47. Sansanee Sapapthai
48. Wisit Batpantana
49. Issara Kaowaroex
50. Pusiya Ploylieng
51. Siriyakorn Sasiponganan
Publicity Committees

1. Assistant Professor Phannee Saengkaew, Dr. rer. nat.
2. Nuttapon Jitjana
3. Siraprapa Boonsuk
4. Niloh Pakeamae
5. Tuchakorn Tuntiwetchakul
6. Pattanasek Chanasirinon
7. Anopong Wongchumpa
8. Phuwadech Doungmanee
9. Siriyakorn Sasiponganan

Finance and Funding Committees

1. Nattawin Chawaloesthesponsiya, Ph.D.
2. Kannika Masman
3. Sanguan Purahong
4. Duangporn Pisanusan
5. Vorawan Mutakulcharoen
6. Tipsuda Wilai Wongmatanukroah
7. Siriyakorn Sasiponganan
8. Phuwadech Doungmanee

Organizing Staffs

1. Treerat Patiko
2. Kumpol Saengtabtim
3. Alfan Kurnia Yudha
4. Wanit Treeranurat
5. Penpitcha Arayachookiat
6. Teerapat Tappanom
7. Yaowapha Siripakarn
8. Kullachart Prathomchai
9. Ratchapong Chaiyadej
10. Korakoch Mongkornsuks
11. Boonthicha Saejia
12. Pawat Ongtranaphol
13. Phongnarin Sukcham
Keynote Presentation

The session of keynote presentation was separated into 2 days of the symposium both online and onsite joined by 9 speakers both international and local, and both academic and practical fields of work.

Day 1

- *The Challenging of Resilient Society Overcoming Disaster and Risk in the Future*
  By Professor Fumihiko Imamura, Ph.D.
  (The Director of International Research Institute of Disaster Science (IRIDeS), Tohoku University)

- *Participatory Technologies as a Catalyst to Reduce Disaster Risk*
  By Aaron Opdyke, Ph.D.
  (The Director of Research Training, School of Civil Engineering, The University of Sydney)

- *Managing Complex, Combined and Cascading Risk: Challenges and Opportunities for Regional Actions in Asia and the Pacific*
  By Sanjay Srivastava, Ph.D.
  (Chief for Disaster Risk Reduction, UNESCAP)

- *The Role of an Academia in Disaster Resilience*
  By Bhichit Rattakul, Ph.D.
  (Chair of the Thai Network for Disaster Resilience)
Day 2

- **The Climate Change Impacted on Zhengzhou's Flooding in China, 2021**
  By Professor Harold Yih-Chi Tan, Ph.D.
  (The Director of Weather Climate Disaster Research Center, National Taiwan University)

- **Integrating Multiple Domains of Science, Systems and Society for Disaster and Climate Resilience: Experiences and Lessons from the Asian Countries**
  By Mr. Atiq Ahmed
  (Senior Programme Manager of Climate Resilience from Asian Disaster Preparedness Center (ADPC))

- **Building Drought Resilience in Thailand's Agricultural Sector**
  By Assistant Professor Supattra Visessri, Ph.D.
  (Department of Water Resource Engineering, Faculty of Engineering, Chulalongkorn University)

- **Resilience Bangkok**
  By Associate Professor Tavida Kamolvej, Ph.D.
  (Deputy Governor of Bangkok Metropolitan Administration)

- **Tsunami Impacts on Critical Infrastructure: Research Gaps and Challenges**
  By Constance Chua, Ph.D.
  (Post-doctoral research fellow from Earth Observatory of Singapore, Nanyang Institute of Technology)
Symposium Contents

The symposium content in the 17th APRU MULTI-HAZARDS 2022 has been settled by the theme of "Innovation Towards Sustainable Growth and Disaster Risk Reduction." The topics provided for the participants are listed below.

- Innovation for Disaster Risk Reduction
- Engineering and Infrastructure for Disaster Risk Reduction
- Community Health and Well-being for Disaster Risk Reduction
- Social and Governance Policies/Socio-economic Issues in Disaster Management
- Building Community Resilience in Disaster Management
- Disaster Communication in Disaster Management

The submitted and approved abstracts are gathered in the Book of Abstracts and provided for all the participants in the form of an e-book. During the symposium event, the presentation sessions need to be conducted parallely and separated into 2 days of the symposium.

This topic will gather all the contents in the presentation of the participants arranged mainly by the title of the topic.

Topic 1
Innovation for Disaster Risk Reduction

- **Dynamic Capability for AREA-BCM: A Case Study of Industrial Complex in Thailand**
  
  **Yuko Iwasaki**<sup>1,*</sup>  
  1 Yokkaichi University, Yokkaichi, Japan  
  * Corresponding author, yiwasaki@yokkaichi-u.ac.jp

- **Integrating Tsunami Evacuation Route Planning in Web Applications for Disaster Risk Reduction (Case Study: South Lampung, Indonesia)**
  
  **Dita Wahyu Primastuti**<sup>1,*</sup>, **Mahisa Ajy Kusuma**<sup>2</sup>  
  1 Department of Geography University of Indonesia, Depok West Java 16424, Indonesia  
  * Corresponding author, dita.wahyu01@ui.ac.id  
  2 Meteorological, Climatology, and Geophysical Agency, Jakarta 10610, Indonesia

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Topic 2
Engineering and Infrastructure for Disaster Risk Reduction

- **Seismic Fragility of Selected Public High School Buildings in Cagayan de Oro City, Philippines**
  
  Jameson Glen C. Lim1,*, Jerson S. Castro1, Marvin Alisson B. Alama1, 
  Daisy Chris C. Salugsugan1, Dexter S. Lo1, Arash Nassirpour2
  
  1 Xavier University, Cagayan de Oro City, Philippines 
  2 University College London, London, United Kingdom
  
  * Corresponding Author, limjameson8@gmail.com

- **Traffic jams on flooded streets: quantifying flood-related traffic disruption in Singapore with an agent-based traffic micro-simulation model**
  
  Indraneel Kasmalkar, David Lallemant

- **Initiatives towards a Seismic Resilient Campus**
  
  Richelle G. Zafra1, *
  
  1 Department of Civil Engineering, University of the Philippines Los Baños, Laguna, Philippines 
  * Corresponding author, zgafra@up.edu.ph

- **Report on Architecture and Urban Design for Disaster Risk Reduction about the 2011 Great East Japan Earthquake and Tsunami**
  
  Osamu Murao1, *
  
  1 International Research Institute of Disaster Science, Tohoku University, Sendai, Japan 
  * Corresponding author, murao@irides.tohoku.ac.jp

- **Flood damage and economic loss assessment by Google Earth Engine in case of Ayutthaya Province, Thailand**
  
  Souliya Keola1,*, Pongsak Suttinon1
  
  1 Water Resources Engineering, Faculty of Engineering, Chulalongkorn University, Bangkok, Thailand 
  * Corresponding: Souliya Keola, e-mail: souliya_keola@outlook.com

- **Flood Warning Platform using Overland Flow Simulation**
  
  Yong-Jun Lin1, Hsiang-Kuan Chang1,*, Jihn-Sung La1,2, Yih-Chi Tan1,3
  
  1 Center for Weather Climate and Disaster Research, National Taiwan University, Taipei, Taiwan 
  2 Hydrotech Research Institute, National Taiwan University, Taipei, Taiwan 
  3 Department of Bioenvironmental Systems Engineering, National Taiwan University, Taipei, Taiwan
  
  * Corresponding author, akuanchang@gmail.com
• **Seismic Performance Assessment of an Irregular School Building in the University of the Philippines Los Baños Based on Incremental Dynamic Analysis**

  Carla Mae B. Pilapil1,*, Carmina B. Borja1, Richelle G. Zafra1,
  Bien David B. Papasin1

  1 University of the Philippines Los Baños, Laguna, Philippines
  * Corresponding author, cbpilapil@up.edu.ph

• **Reduction in the Environmental Impacts of Blasting at Pyrophyllite Mine, Saraburi, Thailand**

  Arif Khan1,*, Pipat Laowattanabandit1

  1 Department of Mining & Petroleum Engineering, Chulalongkorn University, Bangkok, Thailand
  * Corresponding author: arifkhan4749@gmail.com

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**Topic 3**

**Community Health and Well-being for Disaster Risk Reduction**

• **Lessons Learned from COVID-19 Management in Sri Lankan Hospitals**

  Nimali Lakmini Munasinghe1,*, Gerard O'Reilly1, Peter Cameron1

  1 School of Public Health and Preventive Medicine-Monash University, Melbourne, Australia.
  * Corresponding author, email: Nimali.Munasinghe@monash.edu

• **A Qualitative Study Exploring the Impact of COVID-19 Pandemic on Schools: Multi-Perspective Approach**

  Abdul Kadir1,*, Stevan Deby Anbiya1, Muhammad Sunarno1,
  Fatma Lestari1, Dadan Erwandi1

  1 Occupational Health & Safety Department, Faculty of Public Health, Universitas Indonesia,
  Depok, Indonesia
  * Corresponding author, abdul_kadir@ui.ac.id

• **Analysis of the relation between processability and accessibility to prevent respiratory infectious disease in Thai hospitals (Pilot-review study)**

  Opor Chaisangapong1,*, Tanut Waroonkun1, Titaya Sararit1

  1 Chiang Mai University, Chiang Mai, Thailand
  * Corresponding author, opor.c@psu.ac.th

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• **Subjective perception of risk and willingness to insure against flood risk**

Maria Forlicz, Patrycja Kowalczyk-Rólczyńska, Zdzisław Kes, Łukasz Kuźniński, Michał Nadolny
1 Wroclaw University of Economics and Business, Poland
* Corresponding author, maria.forlicz@ue.wroc.pl

• **Education Continuity Planning Amidst Compound Disasters: Lessons Observed from Teachers of Higher Education Institutions in the Philippines**

Joanna Rose T. Laddaran, Maricris B. Acido-Muega, Michael Arthus G. Muega
1 University of the Philippines Institute for Small-Scale Industries, Diliman, Quezon City, Philippines
* Corresponding author, jtladdaran@up.edu.ph
2 University of the Philippines - Diliman, Quezon City, Philippines

• **Rebuilding Strategies after the wildfire in San Francisco Bay Area, USA**

Chiho Ochiai
1 Graduate School of Global Environmental Studies, Kyoto University, Kyoto, Japan
* Chiho Ochiai, ochiai.chiho.2x@kyoto-u.ac.jp

• **Towards HPC-assisted High-resolution Evaluation of Economic Impacts of Disasters**

Amit Gill, Maddegedara Lalith, Joshua Panganiban, Tsuyoshi Ichimura, Kohei Fujita, Muneco Hori
1 Sumitomo Mitsui Construction Company, Ltd, Tokyo, Japan
2 Earthquake Research Institute, The University of Tokyo, Tokyo, Japan
* Corresponding author, lalith@eri.u-tokyo.ac.jp
3 Department of Civil Engineering, The University of Tokyo, Tokyo, Japan
4 Japan Agency for Marine-Earth Science and Technology, Yokohama, Japan

• **Marginality shaping vulnerability and risk of disaster in Kathmandu**

Rojani Manandhar, Dilli P. Poudel, Binod Adhikari
1 Southasia Institute of Advanced Studies, Kathmandu, Nepal
* Corresponding author, rojani.manandhar@gmail.com
Quantifying Economic Impacts of Flooding in North America – Insights into overcoming contemporary challenges

Zafar Adeel1,*
1Executive Director, Pacific Water Research Centre, Simon Fraser University, Surrey, Canada

Socio-economic and governance challenges of pandemic preparedness in urban agglomerations and the way forward

Asitha De Silva1,* Richard Haigh1, Dilanthi Amaratunga1,
Harkunti Rahayu2
1 Global Disaster Resilience Centre, University of Huddersfield, UK
* Corresponding author, Asitha.DeSilva@hud.ac.uk
2 School of Architecture, Planning and Policy Development, Institute of Technology Bandung (ITB), Indonesia

The COVID-19 Pandemic and Vulnerable Communities: Multi Hazard Disaster Risk Governance Discourse through a Social Justice Lens

Anuradha C. Senanayake1,* Dilanthi Amaratunga1, Richard Haigh1
1 Global Disaster Resilience Centre, University of Huddersfield, United Kingdom
* Corresponding author, anuradha.senanayake@hud.ac.uk

Significance of Policy Implementation in Disaster Risk Governance

Mahesh Senanayake1,*, D Amaratunga1, R. Haigh1
1 Global Disaster resilience Centre, University of Huddersfield, The UK
* Corresponding author: Mahesh.senanayake@hud.ac.uk

Topic 5
Building Community Resilience in Disaster Management

Resilience construction of different types of communities after the 2021 Henan floods from the perspective of social capital

Wang Yixuan1,*, Otani Junko1, Mo-Hsiung Chuang1
1 Osaka University, Osaka, Japan
* Corresponding author, ougeisen1996@yahoo.co.jp

A Study of Measures to Improve Resilience of Residents in Disaster-Prone Areas

Yuwen Gao1,* Junko Otani1
1 Graduate School of Human Sciences, Osaka University, Osaka, Japan
* Corresponding author, gaoyuwen52@yahoo.co.jp
• **HANDA: Community of Practice for Entrepreneurship for MSMEs to Build Forward Better**

  Joanna Rose T. Laddaran1,*, Allysa Anne M. De Guzman2

  1 University of the Philippines Institute for Small-Scale Industries, Diliman, Quezon City, Philippines
  * Corresponding author, jtladdaran@up.edu.ph
  2 University of the Philippines Institute for Small-Scale Industries, Diliman, Quezon City, Philippines

• **Bridging gaps in community based DRR in Fiji: policy review**

  Sainimere Veitata1,*, Ayako Fujieda1, Hirohide Kobayashi1

  1 Kyoto University, Kyoto, Japan
  * Corresponding author veitata.naikadroka.34n@st.kyoto-u.ac.jp 2 Kyoto Seika University, Kyoto, Japan

• **Women and Intersectionality in Disasters: toward Critical Disaster Studies in Japan**

  Paola Cavaliere1,*, Junko Otani1

  1 Osaka University, Graduate School of Human Sciences, Japan
  * Corresponding author, pcavaliere@hus.osaka-u.ac.jp

• **Analyzing the Resilience and Vulnerabilities of the Dumagat-Remontado in Sitio Masla in General Nakar, Quezon in the Philippines Using the Element of Collective Action**

  Chiarra C. Cleto1,*, Sharon Feliza Ann P. Macagba1, Almira Geles L. De Mesa1, Sandra S. Samantela1

  1 Department of Community and Environmental Resource Planning, College of Human Ecology, University of the Philippines, Los Baños, Laguna, Philippines
  * Corresponding author, ccleto@up.edu.ph

• **Policies and programs for housing recovery in three Asian countries – India, Thailand, and Japan**

  Titaya Sararit1,*, Liz Maly2, Mittul Vahanvati3

  1 Building Innovation and Management Center, Faculty of Architecture, Chiang Mai University, Thailand
  * Corresponding author, Titaya.s@cmu.ac.th
  2 Tohoku University, Sendai, Japan
  3 RMIT University, Melbourne City, Australia

• **How to Help Government to Enhance the Flood Reduction and Prevention by Volunteer Servants**

  Titaya Sararit1,*, Liz Maly2, Mittul Vahanvati3

  1 Building Innovation and Management Center, Faculty of Architecture, Chiang Mai University, Thailand
  * Corresponding author, Titaya.s@cmu.ac.th
  2 Tohoku University, Sendai, Japan
  3 RMIT University, Melbourne City, Australia
- **Youth Participation in the Disaster Risk Reduction and Management of a Coastal Village in Calamba City, Philippines**
  Zyril F. Palomares\(^1\), Almira Geles L. de Mesa\(^1\), John Ceffrey L. Eligue\(^1\), Kristina Cordero-Bailey\(^1\)
  \(^1\) University of the Philippines Los Banos, Laguna, Philippine
  * Corresponding author, zfpalomares@up.edu.ph

- **Participatory GIS (PGIS) for locally informed planning and future resilient city: A case from urbanizing Kathmandu, Nepal**
  Binod Adhikari\(^1\), Dilli Prasad Poudel\(^1\), Rojani Manandhar\(^1\), Mani Ram Banjade\(^1\)
  \(^1\) Southasia Institute of Advanced Studies (SIAS)
  * Corresponding author, Binod@sias-southasia.org; geo.binod@gmail.com

- **Collecting Local Practice on Flood Management by Gaming Simulation and Focus Group Discussion**
  Yusuke Toyoda\(^1,2\), Puntita Tanwattana\(^2\)
  \(^1\) Ritsumeikan University, Osaka, Japan
  * Corresponding author, toyoday@fc.ritsumei.ac.jp
  \(^2\) Chulalongkorn University, Bangkok, Thailand

- **Dynamic Prediction and Enhancement of Social Resilience in Highly Disaster Sensitive Urban Areas in Japan**
  Kenji Watanabe\(^1\)
  \(^1\) Nagoya Institute of Technology, Nagoya, Aichi, Japan
  * Corresponding author, watanabe.kenji@nitech.ac.jp

- **Incorporating Community Engagement within Multi-hazard Preparedness: An Evaluation of Two Community-based Planning Sessions in Sri Lanka**
  Thushara Kamalrathne\(^1,2\), Dilanthi Amaratunga\(^2\), Richard Haigh\(^3\), Lahiru Kodituwakku\(^4\)
  \(^1,2,3\) Global Disaster Resilience Centre, University of Huddersfield, UK
  * Corresponding author, Thushara.Kamalrathne@hud.ac.uk
  \(^4\) National Dengue Control Unit, Ministry of Health, Sri Lanka

- **Earthquake hazards in the Kashmir basin can cascade into major disasters; time to reflect on minimizing the risk**
  Shah A. A.\(^1\), Muhsana Mahoor\(^2\), Gazali Rahman\(^1\)
  \(^1\) Universiti of Brunei Darussalam, Bander, Brunei Darussalam
  * Corresponding author, afroz.shah@ubd.edu.bn
  \(^2\) Independent Researcher, Srinagar, Kashmir

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Topic 6
Disaster communication in Disaster Management

- **Applying southwestern monsoon weather factor to improve a probabilistic flood warning model based on a Nest-SOM**

  Lo-Yi Chen¹, Tsung-Yi Pan¹*, Yi-Huan Hsieh², Jihn-Sung Lai³, Hsin-Hsing Chia⁴
  ¹ Center for Weather Climate and Disaster Research, National Taiwan University, No. 1, Sec. 4, Roosevelt Rd., Taipei, 10617, Taiwan
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  ² International Degree Program in Climate Change and Sustainable Development, National Taiwan University, No. 1, Sec. 4, Roosevelt Rd., Taipei, 10617, Taiwan
  ³ Hydrotech Research Institute, National Taiwan University, No. 1, Sec. 4, Roosevelt Rd., Taipei, 10617, Taiwan
  ⁴ Taiwan Integrated Disaster Prevention of Technology Engineering Consulting Co., Ltd., Taipei, 23672, Taiwan

- **Identifying A Leverage Point of Business Continuity at Industrial Complexes through Causal Inference**

  Akira Kodaka¹, Natt Leelawat²,³*, Jing Tang³,⁴, Kenji Watanabe⁵, Naohiko Kohtake¹
  ¹ Graduate School of System Design and Management, Keio University, Kanagawa, Japan
  * Corresponding author, natt.L@chula.ac.th
  ² Department of Industrial Engineering, Faculty of Engineering, Chulalongkorn University, Bangkok, Thailand
  ³ Disaster and Risk Management Information Systems Research Unit, Chulalongkorn University, Bangkok, Thailand
  ⁴ International School of Engineering, Faculty of Engineering, Chulalongkorn University, Bangkok, Thailand
  ⁵ Department of Architecture, Civil Engineering and Industrial Management Engineering, Nagoya Institute of Technology, Nagoya, Japan

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Poster Session

- **Quantifying the Benefits of Nature-based Solutions in Disaster Management: A Review of Literature**

  Joeylyn Nato Marty\(^1,\ast\), U Hiroi\(^1\), Kensuke Otsuyama\(^1\)

  \(^1\) The University of Tokyo, Tokyo, Japan

  \* Corresponding author, joeylynnatomarty@g.ecc.u-tokyo.ac.jp

- **A Preliminary Study in Interoperability Assessment Model for Area Business Continuity Management**

  Penpitcha Arayachookiat\(^1\), Jing Tang\(^1,2,3,\ast\), Natt Leelawat \(^1,3,4\), Akira Kodaka\(^5\), Eri Ino\(^6\), Kenji Watanabe\(^6\), Yuko Iwasaki\(^6\), Kunruthai Meechang\(^6\), Kritchavit Thippayajindakul\(^6\)

  Theekadhas Chantarasanarm\(^2\)

  \(^1\) Risk and Disaster Management Program, Graduate School, Chulalongkorn University, Bangkok, Thailand

  \* Corresponding author, E-mail: jing.t@chula.ac.th

  \(^2\) International School of Engineering, Faculty of Engineering, Chulalongkorn University, Bangkok, Thailand

- **Influential Factors in Tsunami Evacuation Modeling: A Literature Review**

  Wanit Treeranurat\(^3\), Jing Tang\(^1,2,4\), Natt Leelawat\(^1,2,3,\ast\), Kodchakorn Krutphong\(^5\), Kumpol Saengtabtim\(^3\), Ampan Laosunthara\(^2\), Boonthicha Saejia\(^4\), Noppawan Srikhirin\(^6\), Penpitcha Arayachookiat\(^1\)

  \(^1\) Risk and Disaster Management Program, Graduate School, Chulalongkorn University, Bangkok, Thailand

  \* Corresponding author, E-mail: natt.l@chula.ac.th, n.leelawat@gmail.com

  \(^2\) Disaster and Risk Management Information Systems Research Unit, Chulalongkorn University, Bangkok, Thailand

  \(^3\) Department of Industrial Engineering, Faculty of Engineering, Chulalongkorn University, Bangkok, Thailand

  \(^4\) International School of Engineering, Faculty of Engineering, Chulalongkorn University, Bangkok, Thailand
• **Drivers and Pathways of Climate Change-Induced Human Migration in Southeast Asia**

  Sonali Manimaran1,*
  1 Nanyang Technological University, Singapore, Singapore
  * Corresponding author, sonali005@e.ntu.edu.sg

• **The impact of subjective well-being on risk perception and disaster preparedness actions: Re-examining a survey of the Kinki region, Japan, through structural equation modeling**

  Ryo Ashida1, Ana Maria Cruz1,* Dimitrios Tzioutzios1
  1 Disaster Prevention Research Institute, Kyoto University, Kyoto, Japan.
  * Corresponding author, cruznaranjo.anamaria.2u@kyoto-u.ac.jp

• **Comparing Non-Asset-Based Disaster Loss Models for Equitable Planning Outcomes**

  Jeanette Jiawen Choong1,* Dennis Wagenaar1, David Lallemant1
  1 Nanyang Technological University, Singapore
  * Corresponding author, jiawenje001@e.ntu.edu.sg

• **Time Series Analysis for Identifying the Correlation among the COVID-19 Prevention and COVID-19 Impact Indices: A Case of Thailand**

  Kumpol Saengtabtim1, Jing Tang2,3, Natt Leelawat1,3,* Ampan Laosunthara3, Penpitcha Arayachookiat4
  1 Department of Industrial Engineering, Faculty of Engineering, Chulalongkorn University, Bangkok, Thailand
  * Corresponding author, natt.l@chula.ac.th
  2 International School of Engineering, Faculty of Engineering, Chulalongkorn University, Bangkok, Thailand
  3 Disaster and Risk Management Information Systems Research Unit, Chulalongkorn University, Bangkok, Thailand
  4 Risk and Disaster Management Program, Graduate School, Chulalongkorn University, Bangkok, Thailand
Survey

- **Survey Results**

After the activities of the symposium, the organizer plan to distribute the survey of the event to the participants via the online platform with the QR code to scan and answer the questionnaire. The question was separated into the part of satisfaction and the part of information and suggestion from the participants.

<table>
<thead>
<tr>
<th>Type of Participation</th>
<th>Persons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Onsite</td>
<td>34</td>
</tr>
<tr>
<td>Online</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>34</strong></td>
</tr>
</tbody>
</table>

The total number of participants who answered the questionnaire is 34 persons and all of them attended the event onsite. The results showing in the form of a table to show the percentile of each question.

<table>
<thead>
<tr>
<th></th>
<th>Very Dissatisfied (1)</th>
<th>Dissatisfied (2)</th>
<th>Neutral (3)</th>
<th>Satisfied (4)</th>
<th>Very Satisfied (5)</th>
<th>Can't answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The overall satisfaction</td>
<td>11.76%</td>
<td>2.94%</td>
<td>2.94%</td>
<td>17.65%</td>
<td>61.76%</td>
<td>2.94%</td>
</tr>
<tr>
<td>1.1 Symposium theme and topics</td>
<td>11.76%</td>
<td>2.94%</td>
<td>2.94%</td>
<td>17.65%</td>
<td>61.76%</td>
<td>2.94%</td>
</tr>
<tr>
<td>1.2 Symposium location</td>
<td>11.76%</td>
<td>2.94%</td>
<td>0.00%</td>
<td>11.76%</td>
<td>70.59%</td>
<td>2.94%</td>
</tr>
<tr>
<td>1.3 Ease of paper/video submission, registration, and payment system</td>
<td>8.82%</td>
<td>5.88%</td>
<td>5.88%</td>
<td>14.71%</td>
<td>55.88%</td>
<td>8.82%</td>
</tr>
<tr>
<td>1.4 Symposium program (Opening &amp; closing ceremony, keynote speaker, sponsor, presentation sessions, campus tour, award)</td>
<td>11.76%</td>
<td>5.88%</td>
<td>8.82%</td>
<td>8.82%</td>
<td>58.82%</td>
<td>5.88%</td>
</tr>
<tr>
<td>1.5 Time allocated for program and/or discussions</td>
<td>8.82%</td>
<td>5.88%</td>
<td>5.88%</td>
<td>23.53%</td>
<td>52.94%</td>
<td>2.94%</td>
</tr>
<tr>
<td>1.6 Accommodation, transportation, facilities and catering</td>
<td>8.82%</td>
<td>2.94%</td>
<td>2.94%</td>
<td>23.53%</td>
<td>55.88%</td>
<td>5.88%</td>
</tr>
<tr>
<td>1.7 Helpfulness of event organizers]</td>
<td>11.76%</td>
<td>2.94%</td>
<td>0.00%</td>
<td>2.94%</td>
<td>70.59%</td>
<td>11.76%</td>
</tr>
</tbody>
</table>
2. Please rate us for the overall organization of this symposium

<table>
<thead>
<tr>
<th>Very Dissatisfied (1)</th>
<th>Dissatisfied (2)</th>
<th>Neutral (3)</th>
<th>Satisfied (4)</th>
<th>Very Satisfied (5)</th>
<th>Can’t answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00%</td>
<td>3.23%</td>
<td>9.68%</td>
<td>19.35%</td>
<td>77.42%</td>
<td>0.00%</td>
</tr>
</tbody>
</table>

3. How likely would you be to recommend the future APRU Multi-Hazards Symposium to a friend or colleague?

<table>
<thead>
<tr>
<th>Very Dissatisfied (1)</th>
<th>Dissatisfied (2)</th>
<th>Neutral (3)</th>
<th>Satisfied (4)</th>
<th>Very Satisfied (5)</th>
<th>Can’t answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00%</td>
<td>6.45%</td>
<td>6.45%</td>
<td>25.81%</td>
<td>70.97%</td>
<td>0.00%</td>
</tr>
</tbody>
</table>

4. Detailed satisfaction

Please rate us and/or select the answer following the topics below

<table>
<thead>
<tr>
<th>4.1 The symposium has met your expectations</th>
<th>12.90%</th>
<th>3.23%</th>
<th>12.90%</th>
<th>25.81%</th>
<th>54.84%</th>
<th>0.00%</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.2 The offer of parallel sessions has been interesting</td>
<td>12.90%</td>
<td>3.23%</td>
<td>12.90%</td>
<td>25.81%</td>
<td>54.84%</td>
<td>0.00%</td>
</tr>
<tr>
<td>4.3 The facilities are adequate in relation to comfort, networking and material resources</td>
<td>12.90%</td>
<td>6.45%</td>
<td>6.45%</td>
<td>19.35%</td>
<td>64.52%</td>
<td>0.00%</td>
</tr>
<tr>
<td>4.4 How satisfied were you with the platform experience?</td>
<td>9.68%</td>
<td>3.23%</td>
<td>16.13%</td>
<td>22.58%</td>
<td>58.06%</td>
<td>0.00%</td>
</tr>
<tr>
<td>4.5 How would you rate the quality of audio and video at the event?</td>
<td>12.90%</td>
<td>0.00%</td>
<td>16.13%</td>
<td>19.35%</td>
<td>61.29%</td>
<td>0.00%</td>
</tr>
<tr>
<td>4.6 How would you rate our event venue and equipment in regard to how it served your presentation/keynote?</td>
<td>12.90%</td>
<td>3.23%</td>
<td>3.23%</td>
<td>16.13%</td>
<td>74.19%</td>
<td>0.00%</td>
</tr>
</tbody>
</table>

5. Prior to the event, how much of the information that you needed did you get?

<table>
<thead>
<tr>
<th>None (1)</th>
<th>A little (2)</th>
<th>Some (3)</th>
<th>Most (4)</th>
<th>All (5)</th>
<th>Can’t answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00%</td>
<td>2.94%</td>
<td>17.65%</td>
<td>38.24%</td>
<td>41.18%</td>
<td>0.00%</td>
</tr>
</tbody>
</table>
6. Were the before, during, and post-event communications clear?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th>Can't answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>94.12%</td>
<td>6.45%</td>
<td>0%</td>
</tr>
</tbody>
</table>

7. Are you satisfied with the results of this event in regard to the impact it has made on your department?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th>Can't answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>97.06%</td>
<td>2.94%</td>
<td>0%</td>
</tr>
</tbody>
</table>

8. Is there anything else you would like us to know/we could have done to make your event experience easier or more convenient or you would like to have for the future APRU Multi-Hazards Symposium?

- The number of presentations was relatively small, and the format might have been condensed to one day or included other activities to better fill two days.
- Too few people in sessions. Not enough feedback on research.
- The temperature in the room is too cold.
- Equipment issues.
- Allow the payment in USD.
5. Prior to the event, how much of the information that you needed did you get?

- All (5)
- Most (4)
- Some (3)
- A little (2)
- None (1)

6. Were the before, during, and post-event communications clear?

   - Yes: 94%
   - No: 6%

7. Are you satisfied with the results of this event in regard to the impact it has made on your department?

   - Yes: 97%
   - No: 3%
### Participants Data

<table>
<thead>
<tr>
<th>Type of participant</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Committee and Staff</td>
<td>58</td>
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<td>Xavier University</td>
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<td>Yokkaichi University</td>
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**Presentation Programs**

**Day 1 – November 29, 2022**  
(Tuesday)

### Session 1A  
**Topic:** Engineering and Infrastructure for Disaster Risk Reduction (Part 1)  

**Mandarin A room**

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract ID</th>
<th>Abstract title and Author(s)</th>
</tr>
</thead>
</table>
| 13:30 - 13:50 | MH12010     | Title: *Seismic Fragility of Selected Public High School Buildings in Cagayan de Oro City, Philippines*  
Jameson Glen Lim*, Jerson Castro, Marvin Alisson Alama, Daisy Chris Salugsugan, Dexter Lo, Arash Nassirpour |
| 13:50 - 14:10 | MH12070     | Title: *Traffic jams on flooded streets: quantifying flood-related traffic disruption in Singapore with an agent-based traffic micro-simulation model*  
Indraneel Kasmalkar*, David Lallemant |
| 14:10 - 14:30 | MH12130     | Title: *Flood damage and economic loss assessment by Google Earth Engine in case of Ayutthaya Province, Thailand*  
Souliya Keola*, Pongsak Suttinon |

### Session 1B  
**Topic:** Social and Governance Policies/Socio-Economic Issues in Disaster Management (Part 1)  

**Mandarin B room**

<table>
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<tr>
<th>Time</th>
<th>Abstract ID</th>
<th>Abstract title and Author(s)</th>
</tr>
</thead>
</table>
| 13:30 - 13:50 | MH14020     | Title: *Subjective perception of risk and willingness to insure against flood risk*  
Maria Forlicz*, Patrycja Kowalczyk-Rólczyńska, Zdzisław Kes, Łukasz Kuźmiński, Michal Nadolny |
| 13:50 - 14:10 | MH14040     | Title: *Education Continuity Planning Amidst Compound Disasters: Lessons Observed from Teachers of Higher Education Institutions in the Philippines*  
Joanna Rose T. Laddaran*, Maricris B. Acido-Muega, Michael Arthus G. Muega |
| 14:10 - 14:30 | MH14210     | Title: *Quantifying Economic Impacts of Flooding in North America – Insights into overcoming contemporary challenges*  
Zafar Adeel* |
### Session 1C  
**Topic:** Building Community Resilience in Disaster Management (Part 1)

**Karaked room**

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract ID</th>
<th>Abstract title and Author(s)</th>
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</table>
| 13:30 - 13:50 | MH15030     | **Title:** Resilience construction of different types of communities after the 2021 Henan floods from the perspective of social capital  
Wang Yixuan*, Otani Junko, Mo-Hsiung Chuang |
| 13:50 - 14:10 | MH15040     | **Title:** A Study of Measures to Improve Resilience of Residents in Disaster-Prone Areas  
Yuwen Gao*, Junko Otani |
| 14:10 - 14:30 | MH15050     | **Title:** HANDA: Community of Practice for Entrepreneurship for MSMEs to Build Forward Better  
Joanna Rose T. Laddaran*, Allysa Anne M. De Guzman |

### Session 1D  
**Topic:** Building Community Resilience in Disaster Management (Part 2)

**Kannika room**

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<tr>
<th>Time</th>
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</table>
| 13:30 - 13:50 | MH15110     | **Title:** Analyzing the Resilience and Vulnerabilities of the Dumagat-Remontado in Sitio Masla in General Nakar, Quezon in the Philippines Using the Element of Collective Action  
Chiara C. Cleto*, Sharon Feliza Ann P. Macagba, Almira Geles L. De Mesa, Sandra S. Samantela |
| 13:50 - 14:10 | MH15120     | **Title:** Policies and programs for housing recovery in three Asian countries – India, Thailand, and Japan  
Titaya Sararit*, Liz Maly, Mittul Vahanvati |
| 14:10 - 14:30 | MH15170     | **Title:** Youth Participation in Disaster Risk Reduction and Management of a Coastal Village in Calamba City, Philippines  
Zyril F. Palomares*, Almira Geles L. de Mesa, John Ceffrey L. Eligue, Kristina Cordero-Bailey |
### Day 1 – November 29, 2022 (Tuesday)

**Session 1E**  
**Topic:** Engineering and Infrastructure for Disaster Risk Reduction (Part 2)

Rodsukon room

<table>
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<tr>
<th>Time</th>
<th>Abstract ID</th>
<th>Abstract title and Author(s)</th>
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| 13:30 - 13:50 | MH12060 (Online) | Title: **Recent Developments on Hazard and Risk Assessment for Multi-source Tsunamis**  
Anawat Suppasri*, Kwanhai Pakoksung, Tsuyoshi Nagasawa, Yuya Narita, Ryunosuke Tawatari, Shohei Iwai, Yukio Mabuchi, Fumihiko Imamura |
| 13:50 - 14:10 | MH12110     | Title: **Report on Architecture and Urban Design for Disaster Risk Reduction about the 2011 Great East Japan Earthquake and Tsunami**  
Osamu Murao* |
| 14:10 - 14:30 | MH12140     | Title: **Flood Warning Platform using Overland Flow Simulation**  
Yong-Jun Lin, Hsiang-Kuan Chang*, Jihn-Sung La, Yih-Chi Tan |

**Session 2A**  
**Topic:** Engineering and Infrastructure for Disaster Risk Reduction (Part 3)

Mandarin A room

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract ID</th>
<th>Abstract title and Author(s)</th>
</tr>
</thead>
</table>
| 14:45 - 15:05 | MH12080 (Online) | Title: **Initiatives towards a Seismic Resilient Campus**  
Richelle G. Zafra* |
| 15:05 - 15:25 | MH12160 (Online) | Title: **Seismic Performance Assessment of an Irregular School Building in the University of the Philippines Los Baños Based on Incremental Dynamic Analysis**  
Carla Mae B. Pilapil*, Carmina B. Borja, Richelle G. Zafra, Bien David B. Papasin |
| 15:25 - 15:45 | MH12190 (Online) | Title: **Reduction in the Environmental Impacts of Blasting at Pyrophyllite Mine, Saraburi, Thailand**  
Arif Khan* |
### Session 2B  
**Topic:** Social and Governance Policies/Socio-Economic Issues in Disaster Management (Part 2)  
**Location:** Mandarin B room

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract ID</th>
<th>Abstract title and Author(s)</th>
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</table>
| 14:45 - 15:05 | MH14130     | **Title:** Rebuilding Strategies after the wildfire in San Francisco Bay Area, USA  
Chiho Ochiai*                                                                                             |
| 15:05 - 15:25 | MH14180     | **Title:** Marginality shaping vulnerability and risk of disaster in Kathmandu  
Rojani Manandhar*, Dilli P. Poudel, Binod Adhikari                                                   |
| 15:25 - 15:45 | MH14160 (Online) | **Title:** Towards HPC-assisted High-resolution Evaluation of Economic Impacts of Disasters  
Amit Gill, Maddegedara Lalith*, Joshua Panganiban, Tsuyoshi Ichimura, Kohei Fujita, Muneo Hori   |

### Session 2C  
**Topic:** Building Community Resilience in Disaster Management (Part 3)  
**Location:** Karaked room

<table>
<thead>
<tr>
<th>Time</th>
<th>Abstract ID</th>
<th>Abstract title and Author(s)</th>
</tr>
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</table>
| 14:45 - 15:05 | MH15190     | **Title:** Participatory GIS (PGIS) for locally informed planning and future resilient city: A case from urbanizing Kathmandu, Nepal  
Binod Adhikari*, Dilli Prasad Poudel, Rojani Manandhar, Mani Ram Banjade |
| 15:05 - 15:25 | MH15200     | **Title:** Collecting Local Practice on Flood Management by Gaming Simulation and Focus Group Discussion  
Yusuke Toyoda*, Puntita Tanwattana                                                                                     |
| 15:25 - 15:45 | MH15210 (Online) | **Title:** Dynamic Prediction and Enhancement of Social Resilience in Highly Disaster Sensitive Urban Areas in Japan  
Kenji Watanabe*                                                        |
### Day 1 – November 29, 2022 (Tuesday)

**Session 2D**  
**Topic:** Building Community Resilience in Disaster Management (Part 4)

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<th>Time</th>
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| 14:45 - 15:05| MH15060 (Online)| Title: Bridging gaps in community based DRR in Fiji: policy review  
Sainimere Veitata*, Ayako Fujieda, Hirohide Kobayashi |
| 15:05 - 15:25| MH15070 (Online)| Title: Women and Intersectionality in Disasters: toward Critical Disaster Studies in Japan  
Paola Cavaliere*, Junko Otani |
| 15:25 - 15:45| MH15250 (Online)| Title: Incorporating Community Engagement within Multi-hazard Preparedness: An Evaluation of Two Community-based Planning Sessions in Sri Lanka  
Thushara Kamalrathne*, Dilanthi Amaratunga, Richard Haigh, Lahiru Kodituwakku |
| 15:45 - 16:05| MH15080         | Title: Earthquake hazards in the Kashmir basin can cascade into major disasters; time to reflect on minimizing the risk  
Afroz Ahmad Shah*, Muhsana Mahoor, Gazali Rahman |
## Session 2E
**Topic:** Community Health and Well-being for Disaster Risk Reduction

Rodsukon room

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<th>Time</th>
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<th>Abstract title and Author(s)</th>
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<tbody>
<tr>
<td>14:45 - 15:05</td>
<td>MH13010</td>
<td>Title: Lessons Learned from COVID-19 Management in Sri Lankan Hospitals</td>
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<td>Nimali Lakmini Munasinghe*, Gerard O'Reilly, Peter Cameron</td>
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<tr>
<td>15:05 - 15:25</td>
<td>MH13040</td>
<td>Title: A Qualitative Study Exploring the Impact of COVID-19 Pandemic on Schools: Multi-Perspective Approach</td>
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<td>Abdul Kadir*</td>
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<tr>
<td>15:25 - 15:45</td>
<td>MH13050</td>
<td>Title: Analysis of the relation between processability and accessibility to prevent respiratory infectious disease in Thai hospitals (Pilot-review study)</td>
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<td>Opor Chaisangapong*, Tanut Waroonkun, Titaya Sararit</td>
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**Day 1 – November 29, 2022 (Tuesday)**

## Session 3B
**Topic:** Social and Governance Policies/Socio-Economic Issues in Disaster Management (Part 3)

Mandarin B room

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<th>Time</th>
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<tr>
<td>15:45 - 16:05</td>
<td>MH14190 (Online)</td>
<td>Title: Socio-economic and governance challenges of pandemic preparedness in urban agglomerations and the way forward</td>
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<td>Asitha De Silva*, Richard Haigh, Dilanthi Amaratunga, Harkunti Rahayu</td>
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<tr>
<td>16:05 - 16:25</td>
<td>MH14140 (Online)</td>
<td>Title: The COVID-19 Pandemic and Vulnerable Communities: Multi Hazard Disaster Risk Governance Discourse through a Social Justice Lens</td>
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<td>Anuradha C. Senanayake*, Dilanthi Amaratunga, Richard Haigh</td>
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<tr>
<td>16:25 - 16:45</td>
<td>MH14200 (Online)</td>
<td>Title: Significance of Policy Implementation in Disaster Risk Governance</td>
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<td>Mahesh Senanayake, D. Amaratunga*</td>
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***Time depends on ICT (GMT+7)***
### Session 5A  
**Topic**: Innovation for Disaster Risk Reduction

**Kannika room**

<table>
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<tr>
<th>Time</th>
<th>Abstract ID</th>
<th>Abstract title and Author(s)</th>
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</table>
| 11:30 - 11:45 | MH11090     | Title: Integrating Tsunami Evacuation Route Planning in Web Applications for Disaster Risk Reduction (Case Study: South Lampung, Indonesia)  
Dita Wahyu Primastuti*, Mahisa Ajy Kusuma |

### Session 5B  
**Topic**: Social and Governance Policies/Socio-Economic Issues in Disaster Management (Part 3)

**Karaked room**

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<th>Time</th>
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</table>
| 11:30 - 11:45 | MH11060     | Title: Dynamic Capability for Area-BCM: A Case Study of Industrial Complexes in Thailand     
Yuko Iwasaki*                                            |
| 11:45 - 12:00 | MH16030     | Title: Identifying A Leverage Point of Business Continuity at Industrial Complexes through Causal Inference 
Akira Kodaka, Natt Leelawat*, Jing Tang, Kenji Watanabe, Naohiko Kohtake |
| 12:00-12:15   | MH16020     | Title: Applying southwestern monsoon weather factor to improve a probabilistic flood warning model based on a Nest-SOM 
## Session Poster

### Day 2 – November 30, 2022

(Wednesday)

**Mandarin B room**

<table>
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<tr>
<th>Time</th>
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</table>
| 11:30 - 12:00 | MH21040     | Title: *Quantifying the Benefits of Nature-based Solutions in Disaster Management: A Review of Literature*  
Joeylyn Marty*, U Hiroi, Kensuke Otsuyama |
| MH21080     |             | Title: *A Preliminary Study in Interoperability Assessment Model for Area Business Continuity Management*  
Penpitcha Arayachookiat, Jing Tang*, Natt Leelawat, Akira Kodaka, Eri Ino, Kenji Watanabe, Yuko Iwasaki, Kunruthai Meechang, Kritchavit Thippanyajindakul, Theekadhas Chantarasanarm |
| MH22100     |             | Title: *Influential Factors in Tsunami Evacuation Modeling: A Literature Review*  
Wanit Treeranurat, Jing Tang, Natt Leelawat*, Kodchakorn Krutphong, Kumpol Saengtabtim, Ampan Laosunthara, Penpitcha Arayachookiat, Boonthicha Saejia, Noppawan Srihirin |
| MH24110     |             | Title: *Drivers and Pathways of Climate Change-Induced Human Migration in Southeast Asia*  
Sonali Manimaran* |
| MH24150     |             | Title: *The impact of subjective well-being on risk perception and disaster preparedness actions: Re-examining a survey of the Kinki region, Japan, through structural equation modeling*  
Ryo Ashida, Ana Maria Cruz*, Dimitrios Tzioutzios |
| MH24220     |             | Title: *Comparing Non-Asset-Based Disaster Loss Models for Equitable Planning Outcomes*  
Jeanette Jiawen Choong*, Dennis Wagenaar, David Lallemant |
| MH25090     |             | Title: *Time Series Analysis for Identifying the Correlation among the COVID-19 Prevention and COVID-19 Impact Indices: A Case of Thailand*  
Kumpol Saengtabtim, Jing Tang, Natt Leelawat*, Ampan Laosunthara, Penpitcha Arayachookiat |

***Time depends on ICT (GMT+7)***
• **Photo**

Preparation period

Registration process
Main session

Opening ceremony by dean of faculty of engineering, Chulalongkorn University
Group photo (Keynote speaker and committees)

Conference presentation
Group photo (Among committees and session’s chair)

Closing ceremony