Mon. Nov 11, 2019

Room 1

Oral Sessions | Session

[O2-1]
Local production for local protection (Chisan Chibo) - Proposing standardized local-level bosai operations from Toho

8:30 AM - 10:00 AM Room 1 (Main Hall)

[O2-1-01] Local production for local protection (*Chisan Chibo*) – Proposing standardized local-level *bosai* operations from Tohoku

*Shohei Sakota[1], *Fumihiko Imamura[2], *Satoru Nishikawa[3], *Haruo Hamachi[4], *Tomohisa Sashida[5], *Kanako Iuchi[2] (1. Ministry of Economy, Trade and Industry, 2. Tohoku University, 3. Nagoya University, 4. National Research Institute for Earth Science and Disaster Resilience, 5. Tokio Marine &Nichido Fire Insurance)

8:30 AM - 10:00 AM

Oral Sessions | Session

[O2-2]
Public Understanding on Typhoon and Related Disaster (Lessons Learned from the Past Disaster)

10:30 AM - 12:00 PM Room 1 (Main Hall)

[O2-2-01] Public Understanding on Typhoon and Related Disaster (Lessons Learned from the Past Disaster)

*Chihun Lee[1], *Meteorology Expert[1], *Hydrology Expert[1], *DRR Expert[1], *Typhoon Committee Secretary[1] (1. UNESCAP/WMO Typhoon Committee)

10:30 AM - 12:00 PM

Oral Sessions | Session

[O2-3]
How to deal with intensifying cyclone disasters - lessons from the Built Back Better process-

1:30 PM - 3:00 PM Room 1 (Main Hall)

[O2-3-01] Lessons from the Built Back Better process - How we will deal with intensifying meteorological disasters -

*Ronnan Christian M. Reposar[2], *Francisco Pereira[3], Augusta Maita[4], *Ahmad Dading Gunadi[5], Masaaki Chida[1], Hiroyuki Takamatsu[1], Takuya Ito[1] (1. Pacific Consultants Co., Ltd., 2. Palo Municipality, Republic of the Phillipines, 3. Reconstruction Cabinet, Republic of Mozambique, 4. National Disasters Management Institute, Republic of Mozambique, 5. SMEs and Cooperatives Development, BAPPENAS, Republic of Indonesa)

1:30 PM - 3:00 PM

Oral Sessions | Session

[O2-4]
Contribution from meteorology, hydrology and DRR for the Platform on Water Resilience and Disasters

3:30 PM - 5:00 PM Room 1 (Main Hall)

[O2-4-01] Contribution from meteorology, hydrology and DRR for the Platform on Water Resilience and Disasters

*Tetsuya Ikeda[1] (1. ICHARM)

3:30 PM - 5:00 PM

Oral Sessions | Session

[O2-5]
GADRI Activities and Contributions to the Science and Technology Roadmap for the implementation of SFDRR Agenda 2015-2030

5:30 PM - 7:00 PM Room 1 (Main Hall)

[O2-5-01] GADRI Activities and Contributions to the Science and Technology Roadmap for the implementation of SFDRR Agenda 2015-2030

Wilma James James[1,2], *Hirokazu Tatano[1,2], *Tetsuya Takemi[1,2], *Kazuyoshi Nishijima[1,2], *Subhajyoti Samaddar[1,2], *Ana Maria Cruze[1,2], Ayuna Matthews[1,2], *Andrew Collins[2,3], *Paul Kovacs[2,4] (1. Kyoto University, Japan, 2. GADRI, Japan, 3. Northumbria University, UK, 4. Western University, Canada)

5:30 PM - 7:00 PM

Room 2

Oral Sessions | Session

[O2-6]
New Horizon of IRIDeS-NTT Innovative Research

8:30 AM - 10:00 AM Room 2 (Tachibana)

[O2-6-01] New Horizon of IRIDeS-NTT Innovative Research

*Naoko Kosaka[1], *Kenjiro Terada[2], *Shunichi Koshimura[2], *Masashige Motoe[2], *Masayuki Ihara[1],

*Satoshi Kubota[1], *Tomohiro Kokogawa[1] （1. NTT, 2. Tohoku University）

8:30 AM - 10:00 AM

Oral Sessions | Session

[O2-7]

Practical use of recovery experiences from the Great East Japan Earthquake for support to Central Sulawesi in Indonesia

10:30 AM - 12:00 PM Room 2 (Tachibana)

[O2-7-01] Practical use of recovery experiences from the Great East Japan Earthquake for support to Central Sulawesi in Indonesia

Atsutoshi Hirabayashi[1], *Sumedi Andono Mulyo[4], *Samuel Pongi[5], *Takafumi Kawaguchi[2], *Hisashi Konno[3], *Masatsugu Komiya[7], *Hitoshi Ara[1], Ahmad Dading Gunadi[4], Hasanuddin Atjo[6] （1. Japan International Cooperation Agency (JICA), 2. Higashimatsushima city, 3. Kamaishi city, 4. The Ministry of National Development Planning (BAPPENAS), Indonesia , 5. Department of Cooperatives &MSME, Sigi, Central Sulawesi Province, Indonesia, 6. BAPPEDA, Central Sulawesi Province, Indonesia, 7. Yachiyo Engineering Co., Ltd）

10:30 AM - 12:00 PM

Oral Sessions | Session

[O2-8]

Transdisciplinary Approach(TDA) for Building Societal Resilience to Disasters -Efforts towards Achieving the Goals of Sendai Framework -

1:30 PM - 3:00 PM Room 2 (Tachibana)

[O2-8-01] Transdisciplinary Approach (TDA) for Building Societal Resilience to Disasters - Efforts towards Achieving the Goals of Sendai Framework -

*Mikio Ishiwatari[1], *Romeo S. Momo[2], *Kenichi Tsukahara[3], *Senro Kuraoka[4], *Youb Raj Paudyal[5], *Khamarrul Azahari Razak[6], *Takako Izumi[7] （1. the University of Tokyo / Japan International Cooperation Agency (JICA), 2. Construction Workers Solidarity, the Philippines, 3. Kyushu University, Japan, 4. Nippon Koei Co., Ltd., Japan, 5. National Reconstruction Authority, Nepal, 6. Universiti Teknologi Malaysia (UTM), Malaysia, 7. International Research Institute of Disaster Science (IRIDeS), Tohoku University, Japan）

1:30 PM - 3:00 PM

Oral Sessions | Session

[O2-9]

Preparation for "SUPER-ISE-BAY Typhoon", 60-Years After Ise Bay Typhoon

3:30 PM - 5:00 PM Room 2 (Tachibana)

[O2-9-01] Preparation for "SUPER-ISE-BAY Typhoon", 60-Years After Ise Bay Typhoon

*Tetsuro Tsujimoto[2], *Norimitsu Koike[3], *Makoto Takeda[4], *Takashi Tashiro[2], *Yuji Toda[2], *Atsuko Mizoguchi[5], *Osamu Matsuo[1], Yoshihumi Kodama[1], Michio Toya[1], Hirokazu Kawashima[1], Yoshinobu Mizutani[1] （1. Chubu Regional Development Bureau of the Ministry of Land,Infrastructure,Transport and Tourism, 2. Nagoya University, 3. Aichi Institute of Technology, 4. Chubu University, 5. Meijo University）

3:30 PM - 5:00 PM

Oral Sessions | Session

[O2-10]

Enhancing Resilience of Coastal Communities through Reduction of Ocean Risks

5:30 PM - 7:00 PM Room 2 (Tachibana)

[O2-10-01] Enhancing Resilience of Coastal Communities through Reduction of Ocean Risks

*Nagisa YOSHIOKA[1], Atsushi WATANABE[1], Hajime TANAKA[1], Osamu MATSUDA [2], Hiroshi TAKAGI[3], Marlon de Luna ERA[4], Riyanti DJALANTE[5] （1. The Ocean Policy Research Institute, Sasakawa Peace Foundation, 2. Hiroshima University , 3. Tokyo Institute of Technology, 4. De La Salle University , 5. United Nations University ）

5:30 PM - 7:00 PM

Room 3

Oral Sessions | Session

[O2-11]

Recent Progress of the Global Centre for Disaster Statistics(GCDS)

8:30 AM - 10:00 AM Room 3 (Hagi)

[O2-11-01] Recent Progress of the Global Centre for Disaster Statistics (GCDS)

*Daisuke Sasaki[1], *Yuichi Ono[1], *Makoto Okumura[1], *Rajesh Sharma[2], *Sogo Fujisaki[3], *Hidemi Tanaka[3], *Hiroaki Ishiwata[4] (1. International Research Institute of Disaster Science (IRIDeS), Tohoku University, 2. United Nations Development Programme (UNDP), 3. Fujitsu Limited, 4. Pacific Consultants Co., Ltd.)

8:30 AM - 10:00 AM

Oral Sessions | Session

[O2-13]

Variation of Build-Back-Better: Asian Perspectives

1:30 PM - 3:00 PM Room 3 (Hagi)

[O2-13-01] **Variation of Build-Back-Better: Asian Perspectives**

*Toshihisa Toyoda[1], Teuku Alvisyahrin[2], Linsheng Gu [3], Win Ohnmar[4], Katsumi Matsuoka[5], Tara Nidhi Lohani[1], Shinya Horie[1] (1. Kobe University, 2. Syia Kuala University, 3. Sichuan Institute of Administration, 4. Department of Disaster Management of Myanmar Government, 5. Iwate University)

1:30 PM - 3:00 PM

Oral Sessions | Session

[O2-14]

Technology and disaster management education for "adult"

3:30 PM - 5:00 PM Room 3 (Hagi)

[O2-14-01] Technology and disaster management education for “adult”

*Muneyoshi Numada[1] (1. Institute of Industrial Science, The University of Tokyo)

3:30 PM - 5:00 PM

Oral Sessions | Session

[O2-15]

Fostering U-Inspire alliance- Youth and young professionals in Science, Engineering, Technology, and Innovation for DRR in Asia and the Pacific

5:30 PM - 7:00 PM Room 3 (Hagi)

[O2-15-01] **Fostering U-INSPIRE Alliance - Asia and the Pacific youth and young professionals in Science, Engineering, Technology, and Innovation for DRR**

Sachi Suzuki[1], *Mizan Bustanul Fuady Bisri[5,7,9], *Ranit Chatterjee[4,6,9], *Reza Abedi[10,11], *Glenn Fernandez[3,8,9], *Li Fan[3], *Anna Shinka[2], *Yu Watanabe[2] (1. UNESCO, 2. International Research Institute for Disaster Science (IRIDeS), Tohoku University, 3. Sichuan University-Hong Kong Polytechnic University Institute for Disaster Management and Reconstruction, 4. CRRP (U-INSPIRE India), 5. UNU-IAS, 6. Kyoto University, 7. U-INSPIRE Indonesia, 8. U-INSPIRE Philippines, 9. IRDR Young Scientist, 10. U-INSPIRE Malaysia, 11. Malaysian Youth Delegation)

5:30 PM - 7:00 PM

Room 4

Oral Sessions | Session

[O2-16]

The tale of the two 2018 tsunamis in Indonesia from a health perspective.

8:30 AM - 10:00 AM Room 4 (Shirakashi 1)

[O2-16-01] The tale of the two 2018 tsunamis in Indonesia from a health perspective.

*Masdalina Pane[2,3,4], *Fiona Yin Mei Kong[1], *Tri Bayu[5,3], *Mugi Wahidin[2,3] (1. The Center for Applied One Health Research and Policy Advice, City University of Hong Kong, 2. The National Institute of Health Research and Development, Ministry of Health, Republic of Indonesia, 3. Perhimpunan Ahli Epidemiologi Indonesia (PAEI), 4. Sari Mutiara Indonesia University, 5. Sumatera Utara Islamic State University)

8:30 AM - 10:00 AM

Oral Sessions | Session

[O2-17]

Health System Disruption at Primary Health Center Level Affected by Earthquake, Tsunami, and Liquifaction in Three Districts of Central Sulawesi, Indonesia

10:30 AM - 12:00 PM Room 4 (Shirakashi 1)

[O2-17-01] Health System Disruption at Primary Health Center Level Affected by Earthquake, Tsunami, and Liquifaction inThree Districts of Central Sulawesi, Indonesia

*Mugi Wahidin[1,2,3], Masdalina Pane[1,4,3], Tri Bayu Purnama[5], Siti Maemun[6] (1. NIHRD, Ministry of

Health, Indonesia, 2. University of Esa Unggul, Jakarta, Indonesia, 3. Indonesia Epidemiological Association, 4. Sari Mutiara Indonesia University, Medan, Indonesia, 5. Islamic State University, North Sumatera, Indonesia , 6. Sulianti Saroso Center of Infectious Disease Hospital, Jakarta, Indonesia）
10:30 AM - 12:00 PM

Oral Sessions | Session

[O2-18]

Participatory Monitoring of Health Security by Nurses for Disaster Risk Reduction

1:30 PM - 3:00 PM Room 4 (Shirakashi 1)

[O2-18-01] Participatory Monitoring of Health Security by Nurses for Disaster Risk Reduction

Sushila Paudel[4], *Sakiko Kanbara[1], Ma. Regina E. Estuar[2], Shoko Miyagawa[3], Hyeon Ju Lee[1], Ngatu Rogers[5] （1. Univ. of Kochi, Japan, 2. Ateneo de Manila Univ., Philippines, 3. Keio Univ., Japan, 4. Nursing Association of Nepal, 5. Congo Heiwa Mura, Congo）
1:30 PM - 3:00 PM

Oral Sessions | Session

[O2-19]

Immediate capacity assessment of infectious disease surveillance officer after disaster in Central Sulawesi Province earthquake and tsunami, Indonesia

3:30 PM - 5:00 PM Room 4 (Shirakashi 1)

[O2-19-01] Immediate capacity assessment of infectious disease surveillance officer after disaster in Central Sulawesi Province earthquake and tsunami, Indonesia

*Tri Bayu Purnama[1,2], *Masdalina Pane[3,2], Siti Maemun[4,2] （1. Islamic State University of North Sumatera, Medan, Indonesia, 2. Indonesian Epidemiological Association, 3. National Institute of Health Research and Development, Ministry of Health, Indonesia, 4. Prof Sulianti Saroso Infectious Disease Hospital, Indonesia）
3:30 PM - 5:00 PM

Room 5

Oral Sessions | Session

[O2-22]

Innovative remote sensing technologies for enhancing disaster management

10:30 AM - 12:00 PM Room 5 (Shirakashi 2)

[O2-22-01] Innovative remote sensing technologies for enhancing disaster management

*Shunichi Koshimura[1], *Naoto Yokoya[2], *Christian Geiß[3], *Marc Wieland[3], *Fumio Yamazaki[4], *Hiroyuki Miura[5], Günter Strunz[3], Erick Mas[1] （1. International Research Institute of Disaster Science, Tohoku University, Japan, 2. RIKEN AIP Center, Japan, 3. German Aerospace Center, Germany, 4. National Research Institute for Earth Science and Disaster Resilience, Japan, 5. Graduate School of Engineering, Hiroshima University, Japan）
10:30 AM - 12:00 PM

Oral Sessions | Session

[O2-24]

Is relocation an effective solution to increased coastal community resilience? Sharing international perspectives

3:30 PM - 5:00 PM Room 5 (Shirakashi 2)

[O2-24-01] Is relocation an effective solution to increased coastal community resilience? Sharing international perspectives

*Kanako Iuchi[1,2], *Robert Olshansky[5], *Michio Ubaura[3,1], *Wiriya Puntub[4], *Margaret Arnold[6], *Paivi Koskinen-Lewis[6] （1. International Research Institute of Disaster Science, Tohoku University, 2. Core Research Cluster of Disaster Science, Tohoku University, 3. Department of Architecture and Building Science, Tohoku University, 4. Technical University of Dortmund, 5. University of Illinois at Urbana-Champaign, 6. World Bank）
3:30 PM - 5:00 PM

Oral Sessions | Session

[O2-25]

Planning for resettlement after disaster: Lessons from the case of Dar es Salaam, Tanzania

5:30 PM - 7:00 PM Room 5 (Shirakashi 2)

[O2-25-01] Planning for resettlement after disaster: Lessons from the case of Dar es Salaam, Tanzania

*Venkata Narayanan AEKBOTE LAKSHMINARAYANAN[1] （1. University of Grenoble

Alpes &Technical University of Darmstadt)

5:30 PM - 7:00 PM

Oral Sessions | Session

[O2-1]

Local production for local protection (Chisan Chibo) - Proposing standardized local-level bosai operations from Toho

Mon. Nov 11, 2019 8:30 AM - 10:00 AM Room 1 (Main Hall)

Tohoku University- IRIDeS

Simultaneous Interpretation is available.（同時通訳有り）

[O2-1-01] Local production for local protection (*Chisan Chibo*) – Proposing standardized local-level *bosai* operations from Tohoku

*Shohei Sakota[1], *Fumihiko Imamura[2], *Satoru Nishikawa[3], *Haruo Hamachi[4], *Tomohisa Sashida[5], *Kanako Iuchi[2] （1. Ministry of Economy, Trade and Industry, 2. Tohoku University, 3. Nagoya University, 4. National Research Institute for Earth Science and Disaster Resilience, 5. Tokio Marine &Nichido Fire Insurance）

8:30 AM - 10:00 AM

8:30 AM - 10:00 AM (Mon. Nov 11, 2019 8:30 AM - 10:00 AM Room 1)

[O2-1-01] Local production for local protection (*Chisan Chibo*) – Proposing standardized local-level *bosai* operations from Tohoku

*Shohei Sakota[1], *Fumihiko Imamura[2], *Satoru Nishikawa[3], *Haruo Hamachi[4], *Tomohisa Sashida[5], *Kanako Iuchi[2] (1. Ministry of Economy, Trade and Industry, 2. Tohoku University, 3. Nagoya University, 4. National Research Institute for Earth Science and Disaster Resilience, 5. Tokio Marine &Nichido Fire Insurance)

Keywords: Standardized bosai operations, Sendai Framework for Disaster Risk Reduction, Local production for local protection, Chisan Chibo

Local operations are critical to reducing disaster risk. With this understanding, Japan has developed various strategies, policies, and instruments for disaster management operations. One of the recent examples, after the 2011 Great East Japan Earthquake and tsunami, is the System on Community Disaster Management Plan (*Chiku Bosai Keikaku Seido*) approved for implementation in 2014. It urges local communities to make their *bosai* plan to prepare their actions during the time of disasters. Meanwhile, the 2015 Sendai Framework for Disaster Risk Reduction internationally shares the goal of reducing risk and adapting climate change by increasing the number of nations taking actions towards disaster risk reduction. Sharing a standardized operation on bosai operations for the interested states are an important step forward.

This session shares the concept of Chisan Chibo – local production for local protection – by sharing ideas on the followings:
What does it mean to have an international standard on local-*bosai* operations? In which way could the standard benefit disaster reduction? What are the possible approaches and tools and how could it stimulate industry? What is the value of standardizing this concept from Sendai/Tohoku?

Oral Sessions | Session

[O2-2]

Public Understanding on Typhoon and Related Disaster (Lessons Learned from the Past Disaster)

Mon. Nov 11, 2019 10:30 AM - 12:00 PM Room 1 (Main Hall)

UNESCAP/WMO Typhoon Committee

[O2-2-01] Public Understanding on Typhoon and Related Disaster (Lessons Learned from the Past Disaster)

*Chihun Lee[1], *Meteorology Expert[1], *Hydrology Expert[1], *DRR Expert[1], *Typhoon Committee Secretary[1] （1. UNESCAP/WMO Typhoon Committee）

10:30 AM - 12:00 PM

10:30 AM - 12:00 PM (Mon. Nov 11, 2019 10:30 AM - 12:00 PM Room 1)

[O2-2-01] Public Understanding on Typhoon and Related Disaster (Lessons Learned from the Past Disaster)

*Chihun Lee[1], *Meteorology Expert[1], *Hydrology Expert[1], *DRR Expert[1], *Typhoon Committee Secretary[1] (1. UNESCAP/WMO Typhoon Committee)

Keywords: Typhoon, UNESCAP/WMO Typhoon Committee, Disaster Risk Reduction, International Cooperation on DRR, Community Based Resilience

Typhoon is one of the serious natural hazards in the Asia-Pacific area and causes tremendous damages over very large geographical areas every year. Therefore, any effective response to them calls for regional cooperation among the affected countries. A key element in such a response is an efficient typhoon warning system which involves the rapid and frequent exchanges of information between countries and areas based on close observation and monitoring of the storms' development and movements. The Typhoon Committee (TC) is an inter-governmental body organized under the joint auspices of the Economic and Social Commission for Asia and the Pacific (ESCAP) and the World Meteorological Organization (WMO) in 1968 in order to promote and coordinate the planning and implementation of measures required for minimizing both loss of lives and properties caused by typhoons in Asia and the Pacific. In carrying out these functions, the TC maintains and implements action programs under the three Working Groups: namely the Working Group on Meteorological (WGM), the Working Group on Hydrological (WGH), the Working Group on Disaster Risk Reduction (WGDRR); with supported by the Typhoon Committee Secretary (TCS), the Advisory Working Group (AWG), the Training and Research Coordination Group (TRCG), and also with contributions by its 14 Members including China, Hong Kong, China, Japan, the Republic of Korea, Lao PDR, the Republic of Philippines, Thailand, Cambodia, Malaysia, Viet Nam, Macao, China, the People's Democratic Republic of Korea, Singapore, and the United States of America.
The main objective of this session is providing an introduction on the Typhoon Committee including TCS, WGM, WGH, WGDRR, and TRCG and also presenting the main activities of TC including developing technologies and policies related to Typhoon Disaster Risk Reduction. In panel discussion, there will be knowledge sharing on disaster related to Typhoon and lessons learned from it.

Oral Sessions | Session

[O2-3]

How to deal with intensifying cyclone disasters -lessons from the Built Back Better process-

Mon. Nov 11, 2019 1:30 PM - 3:00 PM Room 1 (Main Hall)

Pacific Consultants Co.,Ltd.

Simultaneous Interpretation is available.（同時通訳有り）

[O2-3-01] Lessons from the Built Back Better process - How we will deal with intensifying meteorological disasters -

*Ronnan Christian M. Reposar[2], *Francisco Pereira[3], Augusta Maita[4], *Ahmad Dading Gunadi[5], Masaaki Chida[1], Hiroyuki Takamatsu[1], Takuya Ito[1] （1. Pacific Consultants Co., Ltd., 2. Palo Municipality, Republic of the Phillipines, 3. Reconstruction Cabinet, Republic of Mozambique, 4. National Disasters Management Institute, Republic of Mozambique, 5. SMEs and Cooperatives Development, BAPPENAS, Republic of Indonesa）

1:30 PM - 3:00 PM

1:30 PM - 3:00 PM (Mon. Nov 11, 2019 1:30 PM - 3:00 PM Room 1)

[O2-3-01] Lessons from the Built Back Better process - How we will deal with intensifying meteorological disasters -

*Ronnan Christian M. Reposar[2], *Francisco Pereira[3], Augusta Maita[4], *Ahmad Dading Gunadi[5], Masaaki Chida[1], Hiroyuki Takamatsu[1], Takuya Ito[1] (1. Pacific Consultants Co., Ltd., 2. Palo Municipality, Republic of the Phillipines, 3. Reconstruction Cabinet, Republic of Mozambique, 4. National Disasters Management Institute, Republic of Mozambique, 5. SMEs and Cooperatives Development, BAPPENAS, Republic of Indonesa)
Keywords: Built Back Better, Climate Change, Cyclone, Typhoon, Hurricane

The session will focus on the lessons learnt from disaster and its recovery process including the realization of BBB (build back better) which is indicated in the Sendai Framework for Disaster Risk Reduction. As a background we will take a look into the experience of Japan in dealing with many disasters and understand about the concept of BBB and the importance of activities to act proactively against disaster. In addition, to grasp the future trend we might face in the future, we will also discuss about how climate change might affect the trends in disaster related to meteorological events such as the trend of intensifying cyclone, typhoon or hurricane.
Challenges and lessons learnt will be shared by three countries, Mozambique, Japan and the Philippines.

Oral Sessions | Session

[O2-4]

Contribution from meteorology, hydrology and DRR for the Platform on Water Resilience and Disasters

Mon. Nov 11, 2019 3:30 PM - 5:00 PM Room 1 (Main Hall)

ICHARM

[O2-4-01] Contribution from meteorology, hydrology and DRR for the Platform on Water Resilience and Disasters

*Tetsuya Ikeda[1] （1. ICHARM）

3:30 PM - 5:00 PM

3:30 PM - 5:00 PM (Mon. Nov 11, 2019 3:30 PM - 5:00 PM Room 1)

[O2-4-01] Contribution from meteorology, hydrology and DRR for the Platform on Water Resilience and Disasters

*Tetsuya Ikeda[1] （1. ICHARM）

Keywords: Water-related disasters, Meteorology, Hydrology, Disaster Risk Reduction, International Flood Initiative

Water related disasters including flood and typhoon-induced disasters are the key challenges to overcome for the achievement of sustainable development on the society and economy. Water related disasters will also be aggravated by climate change and the societal change such as urbanization, over exploitation and population growth. Enhancing disaster preparedness for effective response has been prioritized in the Sendai Framework for Disaster Risk Reduction 2015-2030, which was adopted at the Third UN World Conference on Disaster Risk Reduction in 2015. Such efforts require effective hydro-meteorological monitoring and forecasting, and its utilization to mitigate the damages through early warning, smooth evacuation, and promotion of preparedness and preventive activities.

In this perspective, consecutive efforts are important: meteorological monitoring and prediction, hydrological simulation and forecasting, and preparedness and preventive actions for disaster risk reduction on water-related disasters. Furthermore, building the collaborative scheme are essential among these responsible governmental sectors. In collaboration with UN agencies and the other international organizations, International Flood Initiative (IFI) is now being promoted, and ICHARM is working as its secretariat. Under the IFI, the efforts are being made to establish the Platform on Water Resilience and Disasters where the departments of meteorology, hydrology and DRR of each country meet together. In this Platform, each department provides data, it is planned to develop more effective flood management through flood forecasting and socio-economic assessment by accumulating and analyzing these data.

With an aim at promoting more effective flood management by utilizing the Platform, this session highlights the key roles of the governmental sectors of meteorology, hydrology and DRR in Japan and the Asian countries, and discuss how to build more effective collaborative scheme among them.

Oral Sessions | Session

[O2-5]

GADRI Activities and Contributions to the Science and Technology Roadmap for the implementation of SFDRR Agenda 2015-2030

Mon. Nov 11, 2019 5:30 PM - 7:00 PM Room 1 (Main Hall)

Kyoto University; GADRI

[O2-5-01] GADRI Activities and Contributions to the Science and Technology Roadmap for the implementation of SFDRR Agenda 2015-2030

Wilma James James[1,2], *Hirokazu Tatano[1,2], *Tetsuya Takemi[1,2], *Kazuyoshi Nishijima[1,2], *Subhajyoti Samaddar[1,2], *Ana Maria Cruze[1,2], Ayuna Matthews[1,2], *Andrew Collins[2,3], *Paul Kovacs[2,4] （1. Kyoto University, Japan, 2. GADRI, Japan, 3. Northumbria University, UK, 4. Western University, Canada）

5:30 PM - 7:00 PM

5:30 PM - 7:00 PM (Mon. Nov 11, 2019 5:30 PM - 7:00 PM Room 1)

[O2-5-01] GADRI Activities and Contributions to the Science and Technology Roadmap for the implementation of SFDRR Agenda 2015-2030

Wilma James James[1,2], *Hirokazu Tatano[1,2], *Tetsuya Takemi[1,2], *Kazuyoshi Nishijima[1,2], *Subhajyoti Samaddar[1,2], *Ana Maria Cruze[1,2], Ayuna Matthews[1,2], *Andrew Collins[2,3], *Paul Kovacs[2,4] （1. Kyoto University, Japan, 2. GADRI, Japan, 3. Northumbria University, UK, 4. Western University, Canada）

Keywords: GADRI, SFDRR, S&T Roadmap, Disaster risk reduction, Network

The session will highlight GADRI activities and contributions by its members to targets of the Science and Technology Roadmap for the implementation of the Sendai Framework for Disaster Risk Reduction Agenda 2015-2030. It will capture current and planned research activities, outcomes and expected achievements. GADRI community is requested to conduct self-evaluation of their respect institutes research activities geared towards the S&T Roadmap and report their outcomes and achievements at the biennial GADRI Global Summits.

Oral Sessions | Session

[O2-6]

New Horizon of IRIDeS-NTT Innovative Research

Mon. Nov 11, 2019 8:30 AM - 10:00 AM Room 2 (Tachibana)

NTT

[O2-6-01] New Horizon of IRIDeS-NTT Innovative Research

*Naoko Kosaka[1], *Kenjiro Terada[2], *Shunichi Koshimura[2], *Masashige Motoe[2], *Masayuki Ihara[1], *Satoshi Kubota[1], *Tomohiro Kokogawa[1] （1. NTT, 2. Tohoku University）

8:30 AM - 10:00 AM

8:30 AM - 10:00 AM (Mon. Nov 11, 2019 8:30 AM - 10:00 AM Room 2)

[O2-6-01] New Horizon of IRIDeS-NTT Innovative Research

*Naoko Kosaka[1], *Kenjiro Terada[2], *Shunichi Koshimura[2], *Masashige Motoe[2], *Masayuki Ihara[1], *Satoshi Kubota[1], *Tomohiro Kokogawa[1] (1. NTT, 2. Tohoku University)

Keywords: shared-vision-type collaborative research, living lab, real-time tsunami flood-damage prediction, decision-making

Tohoku University and NTT have started collaborative research using their combined strengths based on the shared vision of “Fundamental technology to support safety for living”. In the field of disaster prevention, mitigation, response and recovery/reconstruction, we aim to contribute to the creation of new values on disaster research and recovery from the 2011 Great East Japan Earthquake.

Instead of establishing bottom-up research themes based on current technologies, we held workshops with the participation of researchers from universities and companies to define collaborative research projects linked to our vision.

The research projects to be addressed from this fiscal year are as follows.

[Project 1]
Research on decision-making support using real-time tsunami inundation and damage forecast

[Project 2]
Research on a social-problem-solving service-design method using earthquake archives

In this session, we will introduce our preliminary achievements and encourage innovation to create new values of our shared-vision research.

<Program>
1. Introduction of purpose
2. Vision sharing process
3. Project 1: Research on decision-making support using real-time tsunami inundation and damage forecast
4. Project 2: Research on a social-problem-solving service-design method using earthquake archives

Oral Sessions | Session

[O2-7]

Practical use of recovery experiences from the Great East Japan Earthquake for support to Central Sulawesi in Indonesia

Mon. Nov 11, 2019 10:30 AM - 12:00 PM Room 2 (Tachibana)

Japan International Cooperation Agency (JICA)

Simultaneous Interpretation is available.（同時通訳有り）

[O2-7-01] Practical use of recovery experiences from the Great East Japan Earthquake for support to Central Sulawesi in Indonesia

Atsutoshi Hirabayashi[1], *Sumedi Andono Mulyo[4], *Samuel Pongi[5], *Takafumi Kawaguchi[2], *Hisashi Konno[3], *Masatsugu Komiya[7], *Hitoshi Ara[1], Ahmad Dading Gunadi[4], Hasanuddin Atjo[6]

（1. Japan International Cooperation Agency (JICA), 2. Higashimatsushima city, 3. Kamaishi city, 4. The Ministry of National Development Planning (BAPPENAS), Indonesia , 5. Department of Cooperatives &MSME, Sigi, Central Sulawesi Province, Indonesia, 6. BAPPEDA, Central Sulawesi Province, Indonesia, 7. Yachiyo Engineering Co., Ltd）

10:30 AM - 12:00 PM

10:30 AM - 12:00 PM (Mon. Nov 11, 2019 10:30 AM - 12:00 PM Room 2)

[O2-7-01] Practical use of recovery experiences from the Great East Japan Earthquake for support to Central Sulawesi in Indonesia

Atsutoshi Hirabayashi[1], *Sumedi Andono Mulyo[4], *Samuel Pongi[5], *Takafumi Kawaguchi[2], *Hisashi Konno[3], *Masatsugu Komiya[7], *Hitoshi Ara[1], Ahmad Dading Gunadi[4], Hasanuddin Atjo[6] (1. Japan International Cooperation Agency (JICA), 2. Higashimatsushima city, 3. Kamaishi city, 4. The Ministry of National Development Planning (BAPPENAS), Indonesia , 5. Department of Cooperatives &MSME, Sigi, Central Sulawesi Province, Indonesia, 6. BAPPEDA, Central Sulawesi Province, Indonesia, 7. Yachiyo Engineering Co., Ltd)

Keywords: Japan's recovery experiences from the Great East Japan Earthquake, Central Sulawesi in Indonesia, Local Government, Community Restoration, Livelihood Recovery

What are key roles and approaches of local government to disater-affected people?
This session aims at discussing the above-mentioned theme by sharing recovery experiences such as formulation of recovery plan, livelihood recovery and community restoration, and its lessons learned in the Central Sulawesi in Indonesia with a reference to lessons learned of Higashimatsushima city and Kamaishi city from the Great East Japan Earthquake.

Oral Sessions | Session

[O2-8]

Transdisciplinary Approach(TDA) for Building Societal Resilience to Disasters -Efforts towards Achieving the Goals of Sendai Framework -

Mon. Nov 11, 2019 1:30 PM - 3:00 PM Room 2 (Tachibana)

Japan Society of Civil Engineers

[O2-8-01] Transdisciplinary Approach (TDA) for Building Societal Resilience to Disasters - Efforts towards Achieving the Goals of Sendai Framework -

*Mikio Ishiwatari[1], *Romeo S. Momo[2], *Kenichi Tsukahara[3], *Senro Kuraoka[4], *Youb Raj Paudyal[5], *Khamarrul Azahari Razak[6], *Takako Izumi[7] （1. the University of Tokyo / Japan International Cooperation Agency (JICA), 2. Construction Workers Solidarity, the Philippines, 3. Kyushu University, Japan, 4. Nippon Koei Co., Ltd., Japan, 5. National Reconstruction Authority, Nepal, 6. Universiti Teknologi Malaysia (UTM), Malaysia, 7. International Research Institute of Disaster Science (IRIDeS), Tohoku University, Japan）

1:30 PM - 3:00 PM

1:30 PM - 3:00 PM (Mon. Nov 11, 2019 1:30 PM - 3:00 PM Room 2)

[O2-8-01] Transdisciplinary Approach (TDA) for Building Societal Resilience to Disasters - Efforts towards Achieving the Goals of Sendai Framework -

*Mikio Ishiwatari[1], *Romeo S. Momo[2], *Kenichi Tsukahara[3], *Senro Kuraoka[4], *Youb Raj Paudyal[5], *Khamarrul Azahari Razak[6], *Takako Izumi[7] (1. the University of Tokyo / Japan International Cooperation Agency (JICA), 2. Construction Workers Solidarity, the Philippines, 3. Kyushu University, Japan, 4. Nippon Koei Co., Ltd., Japan, 5. National Reconstruction Authority, Nepal, 6. Universiti Teknologi Malaysia (UTM), Malaysia, 7. International Research Institute of Disaster Science (IRIDeS), Tohoku University, Japan)
Keywords: Transdisciplinary approach , Scientific knowledge-based decision-making, Resilience, Sendai Framework for Disaster Risk Reduction

Resilience building against damaging effects of natural hazards is the indispensable step towards sustainable development in any nation. It is obvious that in contemporary society resilience building needs the best available scientific knowledge as the basis of decision-making. Yet regardless of continuous accumulation of scientific knowledge on hazards and vulnerability, it has not been well put to practice in real societal decision-making in disaster management.

While we note that important causative factors to disasters are related to the population growth with urbanization and economic development, we believe that the societal policy and decision-making process in disaster management is the decisive factor to be improved to solve the increasingly serious disaster issues. Society should take a new approach that makes a holistic and transformative approach possible. That is a transdisciplinary approach (TDA) where scientists of all disciplines and stakeholders of all sectors work together for a common objective.

Based on the background, the 21st Technical Committee (TC21) of the Asian Civil Engineering Coordinating Council(ACECC) was established in 2016 to encourage the ACECC members to further develop its capacity to enhance scientific knowledge-based decision-making through TDA. Since its establishment, TC21 has conducted symposiums, special sessions and technical surveys in the Philippines, Nepal, Vietnam, and Japan to deepen and share the understandings on TDA.
This session presents the actual cases and key points of DRR as well as the past and current activities of TC21, where emphasis will be placed on transdisciplinary approach; the institutional scheme to establish efficient processes of scientific knowledge-based decision-making to implement DRR. Takeaway of the session will be the remarks that are reached through discussing the factors and mechanisms of actual DRR cases in light of the Sendai Framework.

Oral Sessions | Session

[O2-9]

Preparation for "SUPER-ISE-BAY Typhoon", 60-Years After Ise Bay Typhoon

Mon. Nov 11, 2019 3:30 PM - 5:00 PM Room 2 (Tachibana)

Chubu Regional Development Bureau of the Ministry of Land,Infrastructure,Transport and Tourism

Simultaneous Interpretation is available.（同時通訳有り）

[O2-9-01] Preparation for "SUPER-ISE-BAY Typhoon", 60-Years After Ise Bay Typhoon

*Tetsuro Tsujimoto[2], *Norimitsu Koike[3], *Makoto Takeda[4], *Takashi Tashiro[2], *Yuji Toda[2], *Atsuko Mizoguchi[5], *Osamu Matsuo[1], Yoshihumi Kodama[1], Michio Toya[1], Hirokazu Kawashima[1], Yoshinobu Mizutani[1]（1. Chubu Regional Development Bureau of the Ministry of Land,Infrastructure,Transport and Tourism, 2. Nagoya University, 3. Aichi Institute of Technology, 4. Chubu University, 5. Meijo University）

3:30 PM - 5:00 PM

3:30 PM - 5:00 PM (Mon. Nov 11, 2019 3:30 PM - 5:00 PM Room 2)

[O2-9-01] Preparation for "SUPER-ISE-BAY Typhoon", 60-Years After Ise Bay Typhoon

*Tetsuro Tsujimoto[2], *Norimitsu Koike[3], *Makoto Takeda[4], *Takashi Tashiro[2], *Yuji Toda[2], *Atsuko Mizoguchi[5], *Osamu Matsuo[1], Yoshihumi Kodama[1], Michio Toya[1], Hirokazu Kawashima[1], Yoshinobu Mizutani[1] (1. Chubu Regional Development Bureau of the Ministry of Land,Infrastructure,Transport and Tourism, 2. Nagoya University, 3. Aichi Institute of Technology, 4. Chubu University, 5. Meijo University)
Keywords: Ise-Bay-Typhoon, Super-Tyhoon, Evacuation on pre-disaster stage, cross-municipalities Evacuation, Storm Surge

In 1959, ISE-BAY Typhoon hit Nobi Plain, causing serious damage with more than 5,000 dead and missing. In 2019, just 60 years have passed.
Under the climate change in future, it is feared that Chubu region would be striken by "SUPER-ISE-BAY Typhoon", that exceeds the ISE-BAY Typhoon.
After the storm surges disaster by Hurricane Katrina in New Orleans in 2005, the "Study Group on Storm Surge Countermeasures in "Below-Sea-Level Areas" was established to consider the best way to deal with storm surges in below-sea-level areas in Japan.
The way how Japan should deal with storm surges was discussed and, summarized in recommendations in 2006.
Therefore, the Chubu Regional Bureau of the MLIT established the "Tokai Nederland Storm Surge and Flood Area Council (hereinafter referred to as TNT)" for the purpose of minimizing the damage by the cooperation of the related organizations.
In the case of

- the large-scale and wide-area inundation damage by the storm surge
- the flood which exceeds the planned scale

in the below-sea-level zone of Tokai region, and the examination is being carried out centering on the operation of information sharing, transmission and evacuation in the stage before the disaster.
TNT consists of 53 organizations concerned and academic experts as facilitators.
Currently, the TNT is considering a system to encourage residents to evacuate from a wide area from an early stage; before the typhoon hits.
In this session, the discussion and exchange views on issues in the previous session would be expected.

Oral Sessions | Session

[O2-10]

Enhancing Resilience of Coastal Communities through Reduction of Ocean Risks

Mon. Nov 11, 2019 5:30 PM - 7:00 PM Room 2 (Tachibana)

The Ocean Policy Research Institute,Sasakawa Peace Foundation

[O2-10-01] Enhancing Resilience of Coastal Communities through Reduction of Ocean Risks

*Nagisa YOSHIOKA[1], Atsushi WATANABE[1], Hajime TANAKA[1], Osamu MATSUDA [2], Hiroshi TAKAGI[3], Marlon de Luna ERA[4], Riyanti DJALANTE[5] （1. The Ocean Policy Research Institute, Sasakawa Peace Foundation, 2. Hiroshima University , 3. Tokyo Institute of Technology, 4. De La Salle University , 5. United Nations University ）

5:30 PM - 7:00 PM

5:30 PM - 7:00 PM (Mon. Nov 11, 2019 5:30 PM - 7:00 PM Room 2)

[O2-10-01] Enhancing Resilience of Coastal Communities through Reduction of Ocean Risks

*Nagisa YOSHIOKA[1], Atsushi WATANABE[1], Hajime TANAKA[1], Osamu MATSUDA [2], Hiroshi TAKAGI[3], Marlon de Luna ERA[4], Riyanti DJALANTE[5] （1. The Ocean Policy Research Institute, Sasakawa Peace Foundation, 2. Hiroshima University , 3. Tokyo Institute of Technology, 4. De La Salle University , 5. United Nations University ）

Keywords: Ocean Risks, Coastal Community Resilience , Southeast Asia

Coastal communities are threatened by various ocean-related disaster risks such as tsunamis, storm surges, rising sea-levels, etc. To combat or adapt to these ocean risks, it is an urgent task to consider policy or research priorities to reduce these damages and enhance resilience of the communities. Japan and Southeast Asian countries such as Indonesia and the Philippines are particularly susceptible or vulnerable to the ocean risks, and thus can share the experiences in common and discuss the way towards the resilient coastal areas in the region. We will invite researchers working in these areas from various disciplines such as marine science, engineering, economics, and international development fields to discuss topics including ecosystem-base disaster risk reduction (Eco-DRR), mixture of green and gray infrastructures, and blue financing for reducing ocean risks in transdisciplinary ways.

Oral Sessions | Session

[O2-11]

Recent Progress of the Global Centre for Disaster Statistics(GCDS)

Mon. Nov 11, 2019 8:30 AM - 10:00 AM Room 3 (Hagi)

Tohoku University- IRIDeS

[O2-11-01] Recent Progress of the Global Centre for Disaster Statistics (GCDS)

*Daisuke Sasaki[1], *Yuichi Ono[1], *Makoto Okumura[1], *Rajesh Sharma[2], *Sogo Fujisaki[3], *Hidemi Tanaka[3], *Hiroaki Ishiwata[4] （1. International Research Institute of Disaster Science (IRIDeS), Tohoku University, 2. United Nations Development Programme (UNDP), 3. Fujitsu Limited, 4. Pacific Consultants Co., Ltd.）

8:30 AM - 10:00 AM

8:30 AM - 10:00 AM (Mon. Nov 11, 2019 8:30 AM - 10:00 AM Room 3)

[O2-11-01] Recent Progress of the Global Centre for Disaster Statistics (GCDS)

*Daisuke Sasaki[1], *Yuichi Ono[1], *Makoto Okumura[1], *Rajesh Sharma[2], *Sogo Fujisaki[3], *Hidemi Tanaka[3], *Hiroaki Ishiwata[4] （1. International Research Institute of Disaster Science (IRIDeS), Tohoku University, 2. United Nations Development Programme (UNDP), 3. Fujitsu Limited, 4. Pacific Consultants Co., Ltd.）
Keywords: Global Centre for Disaster Statistics (GCDS), Sendai Framework, Disaster Loss Database (GDB), Evidence-Based Policy Making (EBPM), Disaster Science

Four years have passed since the Global Centre for Disaster Statistics (GCDS) was established jointly by Tohoku University, the United Nations Development Programme (UNDP), and Fujitsu Limited. The GCDS aims at supporting the Sendai Framework for Disaster Risk Reduction 2015-2030 (SFDRR) in the monitoring and evaluation of progress by providing support at country level for capacity building in developing national statistics on disaster damage and by establishing an improved global database (GDB). Furthermore, the GCDS is supposed to contribute to the evidence-based policy making by national and/or local governments. Under these circumstances, our session spotlights the following progress recently achieved at the GCDS. Firstly, a detailed presentation regarding the GDB newly developed at the GCDS will be given by Fujitsu Limited. It is considered that all of the following requirements: (i) including small-scale disasters, (ii) being officially authorized by the governments, (iii) applying standardized criteria to all countries, and (iv) holding sufficient cross sectional and time series data, need to be satisfied to meet the request for monitoring the progress in achieving the SFDRR global targets. Secondly, a couple of presentations concerning the achievement of statistical analysis will be conducted. The special issues on the development of disaster statistics already published in the Journal of Disaster Research are also supposed to be introduced in terms of application to the evidence-based policy making. At the end of the session, some of the pilot countries at the GCDS will state their comprehensive views on the recent progress achieved at the GCDS so far.

Oral Sessions | Session

[O2-13]

Variation of Build-Back-Better: Asian Perspectives

Mon. Nov 11, 2019 1:30 PM - 3:00 PM Room 3 (Hagi)

Kobe University

[O2-13-01] Variation of Build-Back-Better: Asian Perspectives

*Toshihisa Toyoda[1], Teuku Alvisyahrin[2], Linsheng Gu [3], Win Ohnmar[4], Katsumi Matsuoka[5], Tara Nidhi Lohani[1], Shinya Horie[1] （1. Kobe University, 2. Syia Kuala University, 3. Sichuan Institute of Administration, 4. Department of Disaster Management of Myanmar Government, 5. Iwate University）

1:30 PM - 3:00 PM

1:30 PM - 3:00 PM (Mon. Nov 11, 2019 1:30 PM - 3:00 PM Room 3)

[O2-13-01] Variation of Build-Back-Better: Asian Perspectives

*Toshihisa Toyoda[1], Teuku Alvisyahrin[2], Linsheng Gu [3], Win Ohnmar[4], Katsumi Matsuoka[5], Tara Nidhi Lohani[1], Shinya Horie[1] (1. Kobe University, 2. Syia Kuala University, 3. Sichuan Institute of Administration, 4. Department of Disaster Management of Myanmar Government, 5. Iwate University)

Keywords: Build Back Better, Sendai Framework, Asian views, hard and soft measures, Japan's characteristics of BBB

Panel Discussion

Outline: Although the Sendai Framework on Disaster Risk Reduction explicitly mentioned to the issues of disaster recovery under the slogan (Article 4) of “Build Back Better,” varieties of interpretation have been given to articulate this concept into each domestic context. For the purpose of identifying the common social phenomena and challenges in the phase of post-disaster recovery across Asia, we will explore the issues of institutions and policies in the post-disaster recovery phases of major disasters in Asia. Following the keynote speech by Prof. T. Toyoda, 6 international panelists will discuss on varieties of the BBB notion peculiar to each country. The nationalities of the panelists include China, Indonesia, Nepal, Myanmar in addition to Japan. Prof. Y. Kaneko will serve as coordinator.

Cordinator: Yuka Kaneko (Kobe University)

Organizer: Center for Social Systems Innovation, Kobe University

Oral Sessions | Session

[O2-14]

Technology and disaster management education for "adult"

Mon. Nov 11, 2019 3:30 PM - 5:00 PM Room 3 (Hagi)

Institute of Industrial Science, The University of Tokyo

[O2-14-01] Technology and disaster management education for “ adult”

*Muneyoshi Numada[1] （1. Institute of Industrial Science, The University of Tokyo）

3:30 PM - 5:00 PM

3:30 PM - 5:00 PM (Mon. Nov 11, 2019 3:30 PM - 5:00 PM Room 3)

[O2-14-01] Technology and disaster management education for “adult”

*Muneyoshi Numada[1] （1. Institute of Industrial Science, The University of Tokyo）

Keywords: Disaster management education, technology, Virtual Reality (VR), Disaster Management Training Center (DMTC)

In this session, we would like to discuss disaster management education for adults in the future. There are various initiatives for disaster management education for children, but as technology and digital content with experiences such as VR are developing, we would like to reconsider how disaster management education should be for adults in the point of a long-term perspective.
Eight years have passed since the 2011 Great East Japan Earthquake disaster, but inefficient responses have been carried out in recent disaster fields due to the lack of basic knowledge on disaster management and no-experience/ no- physical training in basic operations. According to the percentage of entrants to short-term higher education institutions over 25 years old (OECD, 2014), the average of OECD is 37.4%, while Japan is only 4.6%. Although there are factors such as difficulty in making study time and insufficient educational environment for adults, normally “general adults” will stop studying after starting their business.
Currently, various educational methods such as active learning, STEM education, and recurrent education are starting, and advanced technologies and rich digital contents such as VR and e-learning have been developed. In this situation, we want to discuss what kinds of the educational system are suitable for adults to enhance creativity, judgment, problem-solving, and execution capacities.

Oral Sessions | Session

[O2-15]

Fostering U-Inspire alliance- Youth and young professionals in Science, Engineering, Technology, and Innovation for DRR in Asia and the Pacific

Mon. Nov 11, 2019 5:30 PM - 7:00 PM Room 3 (Hagi)

UNESCO

[O2-15-01] Fostering U-INSPIRE Alliance - Asia and the Pacific youth and young professionals in Science, Engineering, Technology, and Innovation for DRR

Sachi Suzuki[1], *Mizan Bustanul Fuady Bisri[5,7,9], *Ranit Chatterjee[4,6,9], *Reza Abedi[10,11], *Glenn Fernandez[3,8,9], *Li Fan[3], *Anna Shinka[2], *Yu Watanabe[2] （1. UNESCO, 2. International Research Institute for Disaster Science (IRIDeS), Tohoku University, 3. Sichuan University-Hong Kong Polytechnic University Institute for Disaster Management and Reconstruction, 4. CRRP (U-INSPIRE India), 5. UNU-IAS, 6. Kyoto University, 7. U-INSPIRE Indonesia, 8. U-INSPIRE Philippines, 9. IRDR Young Scientist, 10. U-INSPIRE Malaysia, 11. Malaysian Youth Delegation）

5:30 PM - 7:00 PM

5:30 PM - 7:00 PM (Mon. Nov 11, 2019 5:30 PM - 7:00 PM Room 3)

[O2-15-01] Fostering U-INSPIRE Alliance - Asia and the Pacific youth and young professionals in Science, Engineering, Technology, and Innovation for DRR

Sachi Suzuki[1], *Mizan Bustanul Fuady Bisri[5,7,9], *Ranit Chatterjee[4,6,9], *Reza Abedi[10,11], *Glenn Fernandez[3,8,9], *Li Fan[3], *Anna Shinka[2], *Yu Watanabe[2] （1. UNESCO, 2. International Research Institute for Disaster Science (IRIDeS), Tohoku University, 3. Sichuan University-Hong Kong Polytechnic University Institute for Disaster Management and Reconstruction, 4. CRRP (U-INSPIRE India), 5. UNU-IAS, 6. Kyoto University, 7. U-INSPIRE Indonesia, 8. U-INSPIRE Philippines, 9. IRDR Young Scientist, 10. U-INSPIRE Malaysia, 11. Malaysian Youth Delegation）

Keywords: youth and young professionals, Science, Engineering, Technology, and Innovation (SETI)

U-INSPIRE is a platform to enable practical engagement of youth and young professionals in applying their Science, Engineering, Technology, and Innovation to support Disaster Risk Reduction (DRR). Originally started in 2018 from Indonesia with support from UNESCO, the platform is currently expanding its chapters in Pakistan, Nepal, Kazakhstan, Malaysia, India, and Philippines. The session consists of reports of DRR initiatives around U-INSPIRE and a focus group discussion. Reports include key practices from U-INSPIRE Indonesia, India, Malaysia and the Philippines, and information sharing from youth and young professionals from China and Japan, as well as a report of the latest toolkit development workshop held on 20-21 September 2019 in Jakarta. In the following focus discussion, all the participants and presenters will be divided into groups to discuss potential area of work in the countries where U-INSPIRE chapter is not yet established, opportunity and potential collaboration for U-INSPIRE Alliance, U-INSPIRE’ s link and contribution to SFDRR.

Oral Sessions | Session

[O2-16]

The tale of the two 2018 tsunamis in Indonesia from a health perspective.

Mon. Nov 11, 2019 8:30 AM - 10:00 AM Room 4 (Shirakashi 1)

The City University of Hong Kong

[O2-16-01] The tale of the two 2018 tsunamis in Indonesia from a health perspective.

*Masdalina Pane[2,3,4], *Fiona Yin Mei Kong[1], *Tri Bayu[5,3], *Mugi Wahidin[2,3] (1. The Center for Applied One Health Research and Policy Advice, City University of Hong Kong, 2. The National Institute of Health Research and Development, Ministry of Health, Republic of Indonesia, 3. Perhimpunan Ahli Epidemiologi Indonesia (PAEI), 4. Sari Mutiara Indonesia University, 5. Sumatera Utara Islamic State University)

8:30 AM - 10:00 AM

8:30 AM - 10:00 AM (Mon. Nov 11, 2019 8:30 AM - 10:00 AM Room 4)

[O2-16-01] The tale of the two 2018 tsunamis in Indonesia from a health perspective.

*Masdalina Pane[2,3,4], *Fiona Yin Mei Kong[1], *Tri Bayu[5,3], *Mugi Wahidin[2,3] （1. The Center for Applied One Health Research and Policy Advice, City University of Hong Kong, 2. The National Institute of Health Research and Development, Ministry of Health, Republic of Indonesia, 3. Perhimpunan Ahli Epidemiologi Indonesia (PAEI), 4. Sari Mutiara Indonesia University, 5. Sumatera Utara Islamic State University）
Keywords: tsunami , health capacities, disaster preparedness and mitigation, local health system

In 2018, there were two main destructive tsunamis in Indonesia. The first occurred in the Donggala Regency (Central Sulawesi province) in September and the second along the Sunda Strait (coastal regions of Banten and Lampung provinces) in December. In Donggala regency, the landslides, liquefaction and tsunami caused a total of 2,830 fatalities, 701 missing, 2,537 seriously injured and an estimated 1,016 victims buried in liquefaction. In Sunda Strait, there were 437 fatalities, 16 missing, 14,059 injured and 33,719 internally displaced persons (IDPs) due to the holiday peak season and festivities on the beaches. Due to the large numbers of IDPs, there was a high risk of both epidemic-prone and vaccine-preventable diseases (VPDs) as most areas had WASH issues, endemic vector-borne diseases, and less than 90% immunization coverage. The disaster preparedness and mitigation plans were limited to none in the affected districts and sub-districts which was further exacerbated by the manpower issues, lack of surge capacity in the local health system, and infrastructure damages. The aim is to detail the coping mechanisms and challenges for the health system and its capacities in a lower-middle-income country (LMIC) during a disaster based on the field assessments. The proposed session will be divided into four 20-25 minute components which will focus on: (1) the initial disaster assessments and how the assessments were further refined in the second tsunami; (2)an in-depth analysis of the impact on the local health systems and capacities in both areas (from the acute phase to a month); (3) the contribution of the NGOs to the acute phase of the disasters and the challenges which need to be further explored; (3) the comparison of health projections with ongoing issues in the recovery process; and conclude with (4) the lessons learnt to inform disaster risk reduction for similar high risk areas.

Oral Sessions | Session

[O2-17]

Health System Disruption at Primary Health Center Level Affected by Earthquake, Tsunami, and Liquifaction in Three Districts of Central Sulawesi, Indonesia

Mon. Nov 11, 2019 10:30 AM - 12:00 PM Room 4 (Shirakashi 1)

Ministry of Health

[O2-17-01] Health System Disruption at Primary Health Center Level Affected by Earthquake, Tsunami, and Liquifaction inThree Districts of Central Sulawesi, Indonesia

*Mugi Wahidin[1,2,3], Masdalina Pane[1,4,3], Tri Bayu Purnama[5], Siti Maemun[6] （1. NIHRD, Ministry of Health, Indonesia, 2. University of Esa Unggul, Jakarta, Indonesia, 3. Indonesia Epidemiological Association, 4. Sari Mutiara Indonesia University, Medan, Indonesia, 5. Islamic State University, North Sumatera, Indonesia , 6. Sulianti Saroso Center of Infectious Disease Hospital, Jakarta, Indonesia）

10:30 AM - 12:00 PM

10:30 AM - 12:00 PM (Mon. Nov 11, 2019 10:30 AM - 12:00 PM Room 4)

[O2-17-01] Health System Disruption at Primary Health Center Level Affected by Earthquake, Tsunami, and Liquifaction inThree Districts of Central Sulawesi, Indonesia

*Mugi Wahidin[1,2,3], Masdalina Pane[1,4,3], Tri Bayu Purnama[5], Siti Maemun[6] （1. NIHRD, Ministry of Health, Indonesia, 2. University of Esa Unggul, Jakarta, Indonesia, 3. Indonesia Epidemiological Association, 4. Sari Mutiara Indonesia University, Medan, Indonesia, 5. Islamic State University, North Sumatera, Indonesia , 6. Sulianti Saroso Center of Infectious Disease Hospital, Jakarta, Indonesia）

Keywords: health system disruption, earthquake, tsunami, liquifaction, primary health center

Indonesia is the country which has many natural disasters lately. One of the biggest disaters occured on 28 September 2018, an eartquake followed by tsunami and liquifaction. These disasters caused serious damage, inlcuding health system and facilities, especiallly primary health centers (PHC). This study aimed to know health disruption at primary health center level due to the disaster. This was a qualitative study conducted in March 2019 involving 36 PHCs of three district (Palu, Sigi, Donggala) in Central Sulawesi province. Data collected through interview to PHC officers using questionaire adopted from Public Health Situation Analysis, WHO. Variables to be analyzed were disruption on management, budget, human resources, drug supply, Early Warning Alert and Respons System (EWARS) of epidemic prone disease (EPD), human resource migration, health facility damage, and health facility access.These variable catagorised to red, orange, yellow, and green related to functionality and access to health care. Red means it was majority non functional and non accesable, orange means minor substantial non functional and non accessable, yellow means small non functional, and green means majority fungtional and accessable. The disruption was also projected for 1 upcoming year after disaster. Result of the study showed that the health system disruption occured in Palu District was management, budget, human resources, EPD EWARS, health facility damage, and health access. These occured within 1-2 month and projected become better after 6 months. Problems in Sigi District were management, human resources, drug supply, and EPD EWARS for 1 month after disaster and projected to be better after 2 months. Meanwhile, the problem in Donggala District were health services access, management, human resources for 1 month after disaster, and projected to be normal after 2 months.

Oral Sessions | Session

[O2-18]

Participatory Monitoring of Health Security by Nurses for Disaster Risk Reduction

Mon. Nov 11, 2019 1:30 PM - 3:00 PM Room 4 (Shirakashi 1)

University of Kochi, Japan

[O2-18-01] Participatory Monitoring of Health Security by Nurses for Disaster Risk Reduction

Sushila Paudel[4], *Sakiko Kanbara[1], Ma. Regina E. Estuar[2], Shoko Miyagawa[3], Hyeon Ju Lee[1], Ngatu Rogers[5] （1. Univ. of Kochi, Japan, 2. Ateneo de Manila Univ., Philippines, 3. Keio Univ., Japan, 4. Nursing Association of Nepal, 5. Congo Heiwa Mura, Congo）

1:30 PM - 3:00 PM

1:30 PM - 3:00 PM (Mon. Nov 11, 2019 1:30 PM - 3:00 PM Room 4)

[O2-18-01] Participatory Monitoring of Health Security by Nurses for Disaster Risk Reduction

Sushila Paudel[4], *Sakiko Kanbara[1], Ma. Regina E. Estuar[2], Shoko Miyagawa[3], Hyeon Ju Lee[1], Ngatu Rogers[5]
（1. Univ. of Kochi, Japan, 2. Ateneo de Manila Univ., Philippines, 3. Keio Univ., Japan, 4. Nursing Association of Nepal, 5. Congo Heiwa Mura, Congo）

Keywords: Participatory monitoring, Health Security, Nursing, GIS

In this session, 6 presenters from RC Congo, the Philippines, Nepal, and Japan will present the conceptual framework, theoretical approaches, and health security related practices toward disaster risk reduction through a case project called EpiNurse Nepal. Based on concepts from epidemiology and nursing, EpiNurse was established among local nurses who act as the main informants of health monitoring. They function as health security keepers in communities where health services are scarce. Local nurses understand the language, culture, and needs and resources of their community; they can assess the living environment, identify high risk populations and needs, help restore public health in post-disaster conditions, and communicate information with concerned authorities at the local and national level, “leaving no one behind”. In Nepal, EpiNurse was launched immediately after the 2015 earthquake. Geospatial information technology for community nursing was incorporated. This is an innovative approach to an early health risk case findings. Monitoring was conducted by trained local nurses using the toolkit for 4 months at 24 camps in 10 affected districts. This local participatory approach helps in visualizing disaster health risks to monitoring in line with Sendai Framework for disaster risk reduction, sustainable development goals and promote sustainable human security. This initiative was endowed with funding from Munich Re Foundation as the winner of “Risk Award 2017”. To sustain globally, the toolkits and manuals are revised taking considerations into global standards such as WHO Minimum data set; ICN disaster nursing competencies; sphere standard, and setting them as an open source.

Oral Sessions | Session

[O2-19]

Immediate capacity assessment of infectious disease surveillance officer after disaster in Central Sulawesi Province earthquake and tsunami, Indonesia

Mon. Nov 11, 2019 3:30 PM - 5:00 PM Room 4 (Shirakashi 1)

Islamic State University of North Sumatera, Medan, Indonesia

[O2-19-01] Immediate capacity assessment of infectious disease surveillance officer after disaster in Central Sulawesi Province earthquake and tsunami, Indonesia

*Tri Bayu Purnama[1,2], *Masdalina Pane[3,2], Siti Maemun[4,2] （1. Islamic State University of North Sumatera, Medan, Indonesia, 2. Indonesian Epidemiological Association, 3. National Institute of Health Research and Development, Ministry of Health, Indonesia, 4. Prof Sulianti Saroso Infectious Disease Hospital, Indonesia）

3:30 PM - 5:00 PM

3:30 PM - 5:00 PM (Mon. Nov 11, 2019 3:30 PM - 5:00 PM Room 4)

[O2-19-01] Immediate capacity assessment of infectious disease surveillance officer after disaster in Central Sulawesi Province earthquake and tsunami, Indonesia

*Tri Bayu Purnama[1,2], *Masdalina Pane[3,2], Siti Maemun[4,2] (1. Islamic State University of North Sumatera, Medan, Indonesia, 2. Indonesian Epidemiological Association, 3. National Institute of Health Research and Development, Ministry of Health, Indonesia, 4. Prof Sulianti Saroso Infectious Disease Hospital, Indonesia)

Keywords: Infectious disease, Surveillance, Disease related disaster prevention

Infectious disease spreading among internal displaced person (IDPs) remains serious problem in post disaster event. Increasing number of infectious diseases and death cases due to lack of surveillance monitoring and surveillance officer capacities negatively associated with daily surveillance monitoring at affected public health center area. This study aimed to assess infectious diseases capacities and to identify issues emerged among surveilance officer at post disaster event. In this study, we obtained the data from all surveillance officer (50 subject) in affected areas that located in Palu, Sigi and Donggala, Province of Central Sulawesi, Indonesia after 60 days sudden of disaster. Short message service was applied in this study due to lack of internet connection and unconnected road after disaster hit these areas. Almost 50% of total surveillance officer in Palu affected the tsunami and earthquake and it caused the shut down of infectious disease surveillance in Palu for 2 weeks after sudden of disaster. Of 90% surveillance officers had taken responsibility to giving assistence to other department in public health center. There was no supporting surveillance equipment available in Sigi and Palu in order to report surveillance data. Approximately 10% of total surveillance officers was trained for surveillance in general setting and no information available about number of surveillance officer had trained with post disaster surveillance. During the disaster, loss of internet connection and unconnected networks accected low reporting of completeness and timeliness of infectious disease surveillance system. Post disaster training and manual guideline for reporting system is needed to monitor infectious disease circulating in shelter and temporary housing. To extend the reporting system while there was no internet connection and transportation available is essential part to improve the post disaster surveillance system.

Oral Sessions | Session

[O2-22]

Innovative remote sensing technologies for enhancing disaster management

Mon. Nov 11, 2019 10:30 AM - 12:00 PM Room 5 (Shirakashi 2)

[O2-22-01] Innovative remote sensing technologies for enhancing disaster management

*Shunichi Koshimura[1], *Naoto Yokoya[2], *Christian Geiß[3], *Marc Wieland[3], *Fumio Yamazaki[4], *Hiroyuki Miura[5], Günter Strunz[3], Erick Mas[1] （1. International Research Institute of Disaster Science, Tohoku University, Japan, 2. RIKEN AIP Center, Japan, 3. German Aerospace Center, Germany, 4. National Research Institute for Earth Science and Disaster Resilience, Japan, 5. Graduate School of Engineering, Hiroshima University, Japan）

10:30 AM - 12:00 PM

10:30 AM - 12:00 PM (Mon. Nov 11, 2019 10:30 AM - 12:00 PM Room 5)

[O2-22-01] Innovative remote sensing technologies for enhancing disaster management

*Shunichi Koshimura[1], *Naoto Yokoya[2], *Christian Geiß[3], *Marc Wieland[3], *Fumio Yamazaki[4], *Hiroyuki Miura[5], Günter Strunz[3], Erick Mas[1] （1. International Research Institute of Disaster Science, Tohoku University, Japan, 2. RIKEN AIP Center, Japan, 3. German Aerospace Center, Germany, 4. National Research Institute for Earth Science and Disaster Resilience, Japan, 5. Graduate School of Engineering, Hiroshima University, Japan）

Keywords: Remote Sensing, Geoscience, Data Fusion

Thanks to recent advances and improvements in satellite sensors, data accessibility, applications and services, many space agencies support data-sharing policies that facilitate access to remotely-sensed data for more efficient use in disaster management. Tremendous progress has been made with sophisticated methods to analyze imageries and geospatial data in near real-time via geo-web-services and crowd-sourcing, and those can be used in disaster management and emergency response. Satellite earth observations achieved consistent and repeated coverage of the world, and that makes it possible to understand and share disaster impacts among the countries, regardless of time and weather conditions.

This session aims to provide state-of-the-art technologies and recommended practices on how the integration of Earth Observation and satellite-based technologies into enhancing disaster management. Part of this session's outcomes will be considered to be published in the Special Issue "Advances in Remote Sensing for Disaster Research: Methodologies and Applications" in Remote Sensing (ISSN 2072-4292), a peer-reviewed open access journal of MDPI, one of the media partners of WBF2019.

Keynote and invited presentations are as follows;

Keynote Presentation
Naoto Yokoya (RIKEN), "Geospatial AI for Disaster Damage Assessment"

Invited Presentations
Marc Wieland (German Aerospace Center), "Towards Operational Flood Monitoring based on Multi-Sensor Satellite Data“
Christian Geiss (German Aerospace Center), "Collective Sensing Techniques for Exposure Estimation"
Fumio Yamazaki (National Research Institute for Earth Science and Disaster Resilience), "Value of on Site and Airborne Sensing for Ground Truth"
Hiroyuki Miura (Hiroshima Univ.), "Remote Sensing and DEM-based Approach for Debris Flow Assessment"

Oral Sessions | Session

[O2-24]

Is relocation an effective solution to increased coastal community resilience? Sharing international perspectives

Mon. Nov 11, 2019 3:30 PM - 5:00 PM Room 5 (Shirakashi 2)

Tohoku University- IRIDeS

[O2-24-01] Is relocation an effective solution to increased coastal community resilience? Sharing international perspectives

*Kanako Iuchi[1,2], *Robert Olshansky[5], *Michio Ubaura[3,1], *Wiriya Puntub[4], *Margaret Arnold[6], *Paivi Koskinen-Lewis[6] （1. International Research Institute of Disaster Science, Tohoku University, 2. Core Research Cluster of Disaster Science, Tohoku University, 3. Department of Architecture and Building Science, Tohoku University, 4. Technical University of Dortmund, 5. University of Illinois at Urbana-Champaign, 6. World Bank）

3:30 PM - 5:00 PM

3:30 PM - 5:00 PM (Mon. Nov 11, 2019 3:30 PM - 5:00 PM Room 5)

[O2-24-01] Is relocation an effective solution to increased coastal community resilience? Sharing international perspectives

*Kanako Iuchi[1,2], *Robert Olshansky[5], *Michio Ubaura[3,1], *Wiriya Puntub[4], *Margaret Arnold[6], *Paivi Koskinen-Lewis[6] (1. International Research Institute of Disaster Science, Tohoku University, 2. Core Research Cluster of Disaster Science, Tohoku University, 3. Department of Architecture and Building Science, Tohoku University, 4. Technical University of Dortmund, 5. University of Illinois at Urbana-Champaign, 6. World Bank)

Keywords: Relocation, Coastal resilience, Sustainable community

Coastal regions are home to a large and growing population around the world. According to the United Nations (2017), about ten percent (or more than 600 million people) of the world’ s population now live in low-lying areas, or land less than 10 meters above sea level. Coastal zones are increasingly occupied by the poor, who settle there seeking access to food, urban infrastructure, and economic systems. Climate change is adding another layer of complexity to coastal communities. Meteorological, geological, and hydrological phenomenon such as hurricanes and tropical cyclones, flood events, earthquakes, and El Nino and La Nina cause hazards such as storm surges, heavy rain, flooding, tsunamis, landslides, and erosion. Together with the growth of disadvantaged coastal populations, various hazards increase coastal vulnerability.

To counter this risk, relocation is considered a critical method for increasing resiliency. However, relocation is known to be disruptive, especially for a community’ s social network and economic well-being. Drawing from lessons learned from various efforts, there is an ongoing discussion on how to best implement relocation both pre- and post-disaster with the hope of mitigating future devastation. This session shares lessons learned, on various policies and its diverse impacts on communities. Presenters will share key findings that are critical when considering community relocation, focusing on cases from Puerto Rico (Caribbean), Leyte (the Philippines), and Tohoku (Japan) as well as policy findings from a cross-country analysis targeting different regions of the Americas, Africa, Asia, Oceania, and Europe.

Oral Sessions | Session

[O2-25]

Planning for resettlement after disaster: Lessons from the case of Dar es Salaam, Tanzania

Mon. Nov 11, 2019 5:30 PM - 7:00 PM Room 5 (Shirakashi 2)

University of Grenoble Alpes &Technical University of Darmstadt

[O2-25-01] Planning for resettlement after disaster: Lessons from the case of Dar es Salaam, Tanzania

*Venkata Narayanan AEKBOTE LAKSHMINARAYANAN[1] （1. University of Grenoble Alpes &Technical University of Darmstadt）

5:30 PM - 7:00 PM

5:30 PM - 7:00 PM (Mon. Nov 11, 2019 5:30 PM - 7:00 PM Room 5)

[O2-25-01] Planning for resettlement after disaster: Lessons from the case of Dar es Salaam, Tanzania

*Venkata Narayanan AEKBOTE LAKSHMINARAYANAN[1] (1. University of Grenoble Alpes &Technical University of Darmstadt)

Keywords: Post-disaster resettlement, Resettlement challenges, Dar es Salaam, Tanzania

Post-disaster resettlement issues are becoming more important world-wide with the increasing number of disasters. The presentation is based on the doctoral research carried out by the author in Dar es Salaam (Tanzania), one of the fastest urbanising cities in Sub-Saharan Africa. It presents the challenges faced by the government authorities in the post-disaster resettlement process following the floods of 2011 and the experiences of the population since resettlement. On 20 December 2011, Dar es Salaam was subjected to massive flooding following unprecedented rains. The official death toll was 43 and over 50,000 persons were affected, among which about 10,000 people were displaced. As part of disaster recovery, the flood victims were accommodated in temporary camps and subsequently provided plots and resettled in Mabwepande, about 40 Kilometres from the Central Business District (CBD). However, this affected the livelihood opportunities of the flood victims, besides resulting in various other socio-economic challenges, leading to questions on the rationality of the resettlement measure. On the other hand, the local government that managed the process with limited financial resources, considers the measure favourably, despite the challenges in the process. The qualitative study brings out the reasons behind such diverse perceptions and the challenges involved in the resettlement process. Consequently, the presentation will throw light on the factors that need to be considered in planning towards resettlement after disaster in a developing country context. The presentation will conclude with lessons to learn from the case of Dar es Salaam.