Sun. Nov 10, 2019

Room 1

Oral Sessions | Open Session

[O1-1]

Great East Japan Earthquake Memorial Symposium: Passing Down Disaster Experience - Its True Meaning and Reality

11:00 AM - 12:30 PM Room 1 (Main Hall)

[O1-1-01] Great East Japan Earthquake Memorial Symposium: Passing Down Disaster Experience - Its True Meaning and Reality

Noriyuki Kurosaka[1], *Chihiro Minato[2], *Natsuki Ikezawa[3], *Hiroyasu Yamauchi[4], *Kenji Shiga[5], *Masashige Motoe[6] （1. Disaster-Resilient and Environmentally-Friendly City Promotion Office,City Planning Policy Bureau,City of Sendai , 2. Department of Information Design, Faculty of Art and Design,Tama Art University , 3. Author / Poet, 4. Rias Ark Museum, 5. Hiroshima Peace Memorial Park , 6. Graduate School of Engineering, Tohoku University / Central Memorial Site Consideration Commission）

11:00 AM - 12:30 PM

Oral Sessions | Open Session

[O1-2]

The past and present role of national universities experienced the 2011 Tohoku Earthquake and tsunami for discussion on the future BOSAI

2:00 PM - 3:30 PM Room 1 (Main Hall)

[O1-2-01] The past and present role of national universities experienced the 2011 Tohoku Earthquake and tsunami for discussion on the future BOSAI

*Fumihiko Imamura[1], Akira Iwabuchi[2], Hideo Ohno[1], Katsumi Nakai[3], Kiyoshi Murakami[2] （1. Tohoku University, 2. Iwate University,, 3. Fukushima University）

2:00 PM - 3:30 PM

Oral Sessions | Session

[O1-3]

Accelerating formulationof local DRR plans towardthe next 10 years of theirimplementation - How toachieve Global Target (e)of the SendaiFramework?-

4:00 PM - 5:30 PM Room 1 (Main Hall)

[O1-3-01] Accelerating formulation of local DRR plans toward the next 10 years of their implementation - How to achieve Global Target (e) of the Sendai Framework?-

*Moderator Prof. Kimio Takeya[1], *Four (4) Speakers[2], Wataru Ono[1] （1. Japan International Cooperation Agency (JICA), 2. National and/or local authority related to DRR, Planning and Finance）

4:00 PM - 5:30 PM

Oral Sessions | Open Session

[O1-4]

3.11 DENSHO ROAD to Hand down the Lessons of the Great East Japan Earthquake ~Activities of Memorializing the Earthquake in Industry-academia-government-citizen Collaborations ~

6:00 PM - 7:30 PM Room 1 (Main Hall)

[O1-4-01] 3.11 DENSHO ROAD to Hand down the Lessons of the Great East Japan Earthquake~Activities of Memorializing the Earthquake in Industry-academia-government-citizen Collaborations ~

*Akira Matsumoto[1] （1. Tohoku Regional Bureau, Ministry of Land, Infrastructure, Transport and Tourism）

6:00 PM - 7:30 PM

Room 2

Oral Sessions | Open Session

[O1-6]

"Moving Hearts" With Experiences and Lessons ~ Connecting Stories to Specific Disaster Prevention Measures

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

[O1-6-01] **“ Moving Hearts” With Experiences and Lessons ~ Connecting Stories to Specific Disaster Prevention Measures**

*Emiko Kuriyagawa[1] （1. Miyagi Prefectural Government）

2:00 PM - 3:30 PM

Oral Sessions | Session

[O1-7]

Cross-cutting theDisaster-RelatedSciences: Challenges of aMultidisciplinary Team inTohoku

©World Bosai Forum Foundation

University
4:00 PM - 5:30 PM Room 2 (Tachibana)

[O1-7-01] Cross-cutting the Disaster-Related Sciences: Challenges of a Multidisciplinary Team in Tohoku University
*Junko Okuyama[1], *Fumihiko Imamura[1], *Shuji Seto[1], *Toru Matsuzawa[1], *Toshiki Iwasaki[1], *Hiroki Takakura[1], *Yu Fukuda[1], *Kiyoshi Ito[1] （1. Core Research Cluster of Disaster Science, Tohoku University）
4:00 PM - 5:30 PM

Oral Sessions | Open Session

[O1-8]
Thinking about Disaster Storytelling: How to Use Oral Narratives to Prevent Future Fatalities
6:00 PM - 7:30 PM Room 2 (Tachibana)

[O1-8-01] Thinking about Disaster Storytelling: How to Use Oral Narratives to Prevent Future Fatalities
*Jun Suzuki[1], *Mana Abe[4], *Tatsuya Kishimoto[5], *Muzailin Affan[2], *Sushil Gyewali[3] （1. The Kahoku Shimpo, 2. Syiah kuala University, 3. Government of Nepal , 4. TV-U FUKUSHIMA, 5. THE KOBE SHIMBUN DAIRY NEWSPAPER）
6:00 PM - 7:30 PM

Room 3

Oral Sessions | Session

[O1-9]
Media and Bosai: A Crucial Combinationfor Saving Lives
11:00 AM - 12:30 PM Room 3 (Hagi)

[O1-9-01] Media and Bosai: A Crucial Combination for Saving Lives
*Takaaki Takai[1], *Minori Takao[1] （1. NHK World-Japan）
11:00 AM - 12:30 PM

Oral Sessions | Open Session

[O1-10]
Disaster Risk Reduction and Women's Leadership
2:00 PM - 3:30 PM Room 3 (Hagi)

[O1-10-01] Disaster Risk Reduction and Women's Leadership
Taga Enomoto[1], *Asako Osaki[2], *Naomi Sato[3], *Naomi Yatsu[4], *Yaeko Kisu[5], *Midori Shigeno[6], *Isao Yamauchi[7] （1. Sendai Gender Equal Opportunity Foundation, Citizen Cooperation and City Planning Department, Community Affairs Bureau, 2. Kansei Gakuin University / NPO Gender Action Platform, 3. We Are One Kitakami, 4. Approved NPO After School Paruke , 5. NPO The National Council of Women's Centers, Sendai Gender Equal Opportunity Foundation , 6. Nishitaga-kita Neighborhood Association / Women Bosai Leaders Network, 7. Yama-no-dera United Neighborhood Association ）
2:00 PM - 3:30 PM

Oral Sessions | Open Session

[O1-11]
Creating new disaster prevention industry based on the lessons learned from the Great East Japan Earthquake
4:00 PM - 5:30 PM Room 3 (Hagi)

[O1-11-01] Creating new disaster prevention industry based on the lessons learned from the Great East Japan Earthquake
Nobuhiro Sato[1], *Yoshihiro Okami[2], *Barbara Noonan[3], *Shohei Sakoda[4] （1. Industry Promotion Section,Industrial Policy Department,Economic Bureau,City of Sendai , 2. Industrial Policy Department, City of Sendai, 3. Public Sector Sales APAC, Nokia Solutions &Networks,Singapore, 4. Industry Creation Policy Division, Ministry of Economy, Trade and Industry）
4:00 PM - 5:30 PM

Oral Sessions | Open Session

[O1-12]
Teachers' Capacity Development for Enhancing Disaster Risk Reduction at School
6:00 PM - 7:30 PM Room 3 (Hagi)

[O1-12-01] Teachers' Capacity Development for Enhancing Disaster Risk Reduction at School
*Takashi Oda[1], *Shinichi Takeda[1], *Takeshi Sato[2], *Shinya Morimoto[3], *Masaaki Oka[1], *Takashi Muramatsu[1], * Tuba Gokmenoglu Karakaya[4] （1. Miyagi University of Education, 2. Tohoku University, 3. Ministry of Education, Culture, Sports, Science and Technology, 4. Republic of Turkey

©World Bosai Forum Foundation

Ministry of National Education）
6:00 PM - 7:30 PM

Room 4

Oral Sessions | Session

[O1-13]

State-of-the-art researchon wind related disasterrisk reduction

11:00 AM - 12:30 PM Room 4 (Shirakashi 1)

[O1-13-01] State-of-the-art research on wind related disaster risk reduction

*Kazuyoshi Nishijima[1], *David O. Prevatt[2], *Frank Lombardo[3], *Tetsuya Takemi[1], *Murray Morrison[4], *Shuyang Cao[5], Yukio Tamura[7], Yuichi Ono[6] （1. Kyoto University, 2. University of Florida, 3. The University of Illinois at Urbana-Champaign, 4. Insurance Institute for Business &Home Safety, 5. Tongji University, 6. Tohoku University, 7. Chongqing university）
11:00 AM - 12:30 PM

Oral Sessions | Session

[O1-14]

Knitting Networks ofScience-Policy-Actions forAccelerating Achievement ofSFDRR Targets andEnsuring Coherence of Post-2015 Global Agreements

2:00 PM - 3:30 PM Room 4 (Shirakashi 1)

[O1-14-01] Knitting Networks of Science-Policy-Actions for Accelerating Achievement of SFDRR Targets and Ensuring Coherence of Post-2015 Global Agreements

*Riyanti Djalante[1], *MIZAN BUSTANUL FUADY BISRI[1], Giulia Roder[1], *Giles Sioen[2,3], *Sachi Suzuki[4] （1. United Nations University-Institute for the Advanced Study of Sustainability, 2. FutureEarth, 3. The University of Tokyo, 4. UNESCO）
2:00 PM - 3:30 PM

Oral Sessions | Session

[O1-15]

Research, Development,and Utilization of BeppuModel Disability-inclusiveDisaster Risk Reduction:Towards SeamlessConnections betweenNormal and DisasterTimes

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

[O1-15-01] Research, Development, and Utilization of Beppu Model Disability-inclusive Disaster Risk Reduction: Towards Seamless Connections between Normal and Disaster Times

*Shigeo Tatsuki[1], *Junko Murano[2], *Kazuhiko Abe[3], *Anna Matsukawa[6], *Bill Ho[4], *Taku Sugano[5], *Aya Tsujioka[1] （1. Doshisha University, 2. Beppu City, 3. Tohoku Fukushi University, 4. Asian Disaster Preparedness Center, 5. Osaka City University, 6. Disaster Reduction and Human Renovation Institution）
4:00 PM - 5:30 PM

Oral Sessions | Session

[O1-16]

Role of NPOs andvolunteer organizationsin disaster recovery:International and Japan cases

6:00 PM - 7:30 PM Room 4 (Shirakashi 1)

[O1-16-01] Role of NPOs and volunteer organizations in disaster recovery: International and Japan cases

*Takako Izumi[1], *Rajib Shaw[2], *Jessica Alexander[3], *Sangita Das[4], *Akilesh Surjan[6], *Miwa Abe[5], *Takeshi Komino[7] （1. Tohoku University, 2. Keio University, 3. Sophia University/UNICEF Geneva, 4. CWS Japan, 5. Kumamoto University, 6. Charles Darwin University, Australia , 7. Asian Disaster Response and Reduction Network (ADRRN)）
6:00 PM - 7:30 PM

Room 5

Oral Sessions | Session

[O1-17]

Creating a disaster-resilient society through industry-academia collaboration

11:00 AM - 12:30 PM Room 5 (Shirakashi 2)

[O1-17-01] Creating a disaster-resilient society through industry-academia collaboration

*Fumihiko Imamura[1], *Hiroo Shimada[2], *Akihiro Hayashi[3], *Anawat Suppasri[1], *Ryu Miyamoto[1] （1. International Research Institute of Disaster Science (IRIDeS), Tohoku University, 2. Tokio Marine &Nichido Fire Insurance Co., Ltd., 3. Tokio Marine &Nichido Risk Consulting Co., Ltd.）
11:00 AM - 12:30 PM

©World Bosai Forum Foundation

Oral Sessions | Session

[O1-18]

NATECH Risk in Asia Pacific

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

[O1-18-01] **NATECH Risk in Asia Pacific**

*Rajib Shaw[1], *Ana Maria Cruz[2], *Fatma Lestari[3], *Kampanart Silva[3,4], *Devendra Narayan Singh[5], *Antonia Loyzaga[6], *Emily Chang[7], *Takako Izumi[8]

（1. Keio University , 2. Kyoto University , 3. University of Indonesia, 4. Thailand Institute of Nuclear Technology, 5. IIT Bombay, 6. Manila Observatory and Philippines National Resilience Council (PNRC), 7. Chinese University of Hong Kong, 8. Tohoku University）

2:00 PM - 3:30 PM

©World Bosai Forum Foundation

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],

©World Bosai Forum Foundation

*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)

©World Bosai Forum Foundation

*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

©World Bosai Forum Foundation

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

©World Bosai Forum Foundation

Alpes &Technical University of Darmstadt)

5:30 PM - 7:00 PM

©World Bosai Forum Foundation

Tue. Nov 12, 2019

Room 1

Oral Sessions | Session

[O3-1] Toward Restoration after Fukushima Daiichi Nuclear Accident

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

[O3-1-01] Toward Restoration after Fukushima Daiichi Nuclear Accident

*Nobuyoshi Hara[1], *Akira HASEGAWA[2], *Masatoshi SUZUKI[3], *Masashi KONYO[4], *Yutaka WATANABE[5] （1. Institute for Disaster Reconstruction and Regeneration Research, Tohoku University, 2. School of Engineering, Tohoku University, 3. International Research Institute of Disaster Science, Tohoku University, 4. Graduate School of Information Sciences, Tohoku University, 5. Center for Fundamental Research on Nuclear Decommissioning, Tohoku University）

8:30 AM - 10:00 AM

Oral Sessions | Session

[O3-3] Value of advance information for earthquake damage reduction and its feasibility

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

[O3-3-01] Value of advance information for earthquake damage reduction and its feasibility

Toshihiro Mori[1], *Izumi Tobo[2], *Ken Umeno[3], *Yukio Fujinawa[4], Atsushi Oono[1], Takashi Mii[1], Tadahiro Eguchi[1], Morihiro Matsuda[1], Michiaki Yokoyama[1] （1. OPTAGE Inc., 2. Mitsubishi Research Institute, Inc., 3. Kyoto University, 4. Organization for Development of Resilient Communities）

1:30 PM - 3:00 PM

Oral Sessions | Session

[O3-4] Support to Disaster Risk Reduction by private sector

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

[O3-4-01] Support to Disaster Risk Reduction by private sector

*Hisashi Hamada[1] （1. JAPAN TOBACCO INC.）

3:30 PM - 5:00 PM

Room 2

Oral Sessions | Session

[O3-5] Spiritual care and relevant faith-based activity in disaster relief and recovery

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

[O3-5-01] Spiritual care and relevant faith-based activity in disaster relief and recovery

Takaaki Ito[3], Nobuhiko Katayama[2], *Emiko Kubo[1] （1. Soka Gakkai International, 2. World Vision Japan, 3. Sophia University）

8:30 AM - 10:00 AM

Oral Sessions | Session

[O3-6] BOSAI DIVERSITY Diversity in disaster preparation

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

[O3-6-01] **BOSAI DIVERSITY**

Diversity in disaster preparation.

*Shuichi Nishida[1], Takahiro Koga[1] （1. Yahoo Japan Corporation）

10:30 AM - 12:00 PM

Oral Sessions | Session

[O3-7] The Asia-Pacific Disaster Report 2019: Pathways for resilience, inclusion and empowerment

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

[O3-7-01] The Asia-Pacific Disaster Report 2019: Pathways for resilience, inclusion and empowerment

*Laura Louise Hendy[1], Maria Bernadet Karina Dewi[1] （1. United Nations ESCAP）

1:30 PM - 3:00 PM

Oral Sessions | Session

[O3-8] "FUKUSHIMA" its disasters archives, current revitalization status and the future

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

[O3-8-01] "FUKUSHIMA" its disasters archives, current revitalization status and the future

*Hideya KITAMURA[1], *Shubun ENDO[2], *looking for suitable person looking for suitable person[3] （1. Business Council for the Fukushima Innovation Coast Initiative (representative of Tokyo Electric Power

©World Bosai Forum Foundation

Company), 2. Futaba Inc, 3. Fukushima prefecture or University of Fukushima）
3:30 PM - 5:00 PM

Room 3

Oral Sessions | Session

[O3-10] Interdisciplinary Strategies in General Education for Disaster Risk Reduction:The Six-Year Experience by DRMAPS at the University of the Philippines

10:30 AM - 12:00 PM Room 3 (Hagi)

[O3-10-01] **Interdisciplinary Strategies in General Education for Disaster Risk Reduction:** The Six-Year Experience by DRMAPS at the University of the Philippines

*Benito M. Pacheco[1], *Flaudette May V. Datuin[1], *Aurora Odette C. Mendoza[1], *Elenita N. Que[1], *Leonardo C. Rosete[1], *Mark Albert H. Zarco[1] （1. University of the Philippines Diliman）

10:30 AM - 12:00 PM

Oral Sessions | Session

[O3-11] BOSAI POINT.A new disaster-preventing service,using your untouched points to raise donations

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

[O3-11-01] **BOSAI POINT. A new disaster-preventing service, using your untouched points to raise donations.**

*JUNSHIRO KAMEYAMA[1] （1. BOSAI POINT PROJECT）

1:30 PM - 3:00 PM

Oral Sessions | Session

[O3-12] The future of wide area disaster response by drones and air mobilities

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

[O3-12-01] The future of wide area disaster response by drones and air mobilities

*Shintaro Takahashi[1], Kotara Chiba[1], Kenichi Ohmae[1], Yukihiro Maru[2] （1. Drone Fund, 2. Leave a Nest）

3:30 PM - 5:00 PM

Room 4

Oral Sessions | Session

[O3-13] Advances of International Collaboration on M9 Disaster Science

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

[O3-13-01] Advances of International Collaboration on M9 Disaster Science

*Kenjiro Terada[1,4], *Shunichi Koshimura[1,4], *Jorge Leon[3,6], Randall J LeVeque[2], Gabriel Gonzalez[3,7], *Patricio Catalan[3,6], Elizabeth Maly[1], *Dan Abramson[2], Carrie Garrison-Laney[2], *Michael Motley[2], *Naoko Kuriyama[5], *Lan Nguyen[2], *Adams Adams[2], Anawat Suppasri[1,4], Erick Mas[1,4], Shuji Moriguchi[1] （1. IRIDeS, Tohoku University, 2. University of Washington, 3. CIGIDEN, Chile, 4. Core Research Cluster of Disaster Science, Tohoku University, 5. Kobe University, 6. Universidad Federico Santa Maria, 7. Universidad Católica del Norte）

8:30 AM - 10:00 AM

Oral Sessions | Session

[O3-14] Fuel stocking proposal to connect life at the time of disaster

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

[O3-14-01] Fuel stocking proposal to connect life at the time of disaster

mitsuaki kizaki[1], *Masataka Nakai[1], *Toru Matsunaga[1] （1. NIPON BCP INC）

10:30 AM - 12:00 PM

Oral Sessions | Session

[O3-15] Support for affected areas by "local residents" in the Great East Japan Earthquake "Connecting" town development by "collaboration"

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

[O3-15-01] Support for affected areas by "local residents" in the Great East Japan Earthquake "Connecting" town development by "collaboration"

©World Bosai Forum Foundation

*Hideaki Murai[1], *Chikako Adachi[1], Hiroaki Enoki[1], *Fumihiko Sugawara[1] （1. All Japan Council Company）

1:30 PM - 3:00 PM

Oral Sessions | Session

[O3-16]

The Factors Regulate to Community Participation in Sustainable Disaster Recovery Program: An Experience of Cyclone Aila Disaster Affected Coastal People Bangladesh

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

[O3-16-01] **The Factors Regulate to Community Participation in Sustainable Disaster Recovery Program: An Experience of Cyclone Aila Disaster Affected Coastal People Bangladesh**

*Emadul Islam[1], Haris Abd Wahab[1] （1. University of Malaya, Malaysia）

3:30 PM - 5:00 PM

Room 5

Oral Sessions | Session

[O3-17]

Redefining and be preparing for disasters: the lessons from the Moken sea nomads of Thailand

8:30 AM - 10:00 AM Room 5 (Shirakashi 2)

[O3-17-01] Redefining and be preparing for disasters: the lessons from the Moken sea nomads of Thailand

*Narumon Arunotai[1] （1. Research Unit on Indigenous Peoples and Alternative Development, Social Research Institute, Chulalongkorn University, ）

8:30 AM - 10:00 AM

Oral Sessions | Session

[O3-18]

IFIP session on IT in Disaster Risk Reduction (ITDRR)

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

[O3-18-01] IFIP session on IT in Disaster Risk Reduction (ITDRR)

*Yuko MURAYAMA[1], *Jun Sasaki[2], *Takashi Yoshino[3] （1. Tsuda University and IFIP(International Federation for Information Processing), 2. Iwate Prefectural University, 3. Wakayama University）

10:30 AM - 12:00 PM

©World Bosai Forum Foundation

Oral Sessions | Open Session

[O1-1]

Great East Japan Earthquake Memorial Symposium: Passing Down Disaster Experience - Its True Meaning and Reality

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

Disaster-Resilient and Environmentally-Friendly City Promotion Office, City Planning Policy Bureau, City of Sendai

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

[O1-1-01] Great East Japan Earthquake Memorial Symposium: Passing Down Disaster Experience - Its True Meaning and Reality

Noriyuki Kurosaka[1], *Chihiro Minato[2], *Natsuki Ikezawa[3], *Hiroyasu Yamauchi[4], *Kenji Shiga[5], *Masashige Motoe[6] （1. Disaster-Resilient and Environmentally-Friendly City Promotion Office,City Planning Policy Bureau,City of Sendai , 2. Department of Information Design, Faculty of Art and Design,Tama Art University , 3. Author / Poet, 4. Rias Ark Museum, 5. Hiroshima Peace Memorial Park , 6. Graduate School of Engineering, Tohoku University / Central Memorial Site Consideration Commission）

11:00 AM - 12:30 PM

©World Bosai Forum Foundation

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

[O1-1-01] Great East Japan Earthquake Memorial Symposium: Passing Down Disaster Experience - Its True Meaning and Reality

Noriyuki Kurosaka[1], *Chihiro Minato[2], *Natsuki Ikezawa[3], *Hiroyasu Yamauchi[4], *Kenji Shiga[5], *Masashige Motoe[6] （1. Disaster-Resilient and Environmentally-Friendly City Promotion Office,City Planning Policy Bureau,City of Sendai , 2. Department of Information Design, Faculty of Art and Design,Tama Art University , 3. Author / Poet, 4. Rias Ark Museum, 5. Hiroshima Peace Memorial Park , 6. Graduate School of Engineering, Tohoku University / Central Memorial Site Consideration Commission）

Keywords: Great East Japan Earthquake, memory, experience, memorial, memorial site

Passing down the memories and experiences of the Great East Japan Earthquake, the City of Sendai has been working on projects for preserving the memory of the Great East Japan Earthquake. As a part of these projects, we are currently discussing development of the Disaster Memorial Site in the central area of Sendai. In this session, the City's current efforts will be introduced while deliberating over the fundamental meaning of the memorial and what aspects of the City will be influenced by the memorial site, while asking questions such as "what exactly is a memorial?", "how should we pass down this historic event to the future?" and "how will this memorial influence the future?"

©World Bosai Forum Foundation

Oral Sessions | Open Session

[O1-2]

The past and present role of national universities experienced the 2011 Tohoku Earthquake and tsunami for discussion on the future BOSAI

Sun. Nov 10, 2019 2:00 PM - 3:30 PM Room 1 (Main Hall)

Tohoku University- IRIDeS

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

[O1-2-01] The past and present role of national universities experienced the 2011 Tohoku Earthquake and tsunami for discussion on the future BOSAI

*Fumihiko Imamura[1], Akira Iwabuchi[2], Hideo Ohno[1], Katsumi Nakai[3], Kiyoshi Murakami[2]（1. Tohoku University, 2. Iwate University,, 3. Fukushima University）

2:00 PM - 3:30 PM

©World Bosai Forum Foundation

2:00 PM - 3:30 PM (Sun. Nov 10, 2019 2:00 PM - 3:30 PM Room 1)

[O1-2-01] The past and present role of national universities experienced the 2011 Tohoku Earthquake and tsunami for discussion on the future BOSAI

*Fumihiko Imamura[1], Akira Iwabuchi[2], Hideo Ohno[1], Katsumi Nakai[3], Kiyoshi Murakami[2] (1. Tohoku University, 2. Iwate University,, 3. Fukushima University)

Keywords: National universities, Science and technology, Human resources, education

The 2011 Tohoku earthquake tsunami caused massive damage over a wide area, leaving great shocks and scars in communities. It is still in the process of reconstruction, and new development at the affected areas is being explored while utilizing regional resources. Among these, the role of the university is large, the situation and issues of scientific and technological correspondence and dispatch at that time, human resource development necessary for reconstruction and rebirth, and further, leading the region, and one role in future disaster prevention and mitigation, there is a mission to In this symposium, keynote speeches will be given to the Presidents of Iwate University, Tohoku University, and of Fukushima University, who will report on the response from that time to the current efforts. On that basis, the existence and role of the university toward the future will be discussed by Prof.Kiyoshi Murakami, the coordinator at Iwate University's special assistant director', and information exchange will be conducted on the initiatives for the 10 years of the earthquake and the direction thereafter.

©World Bosai Forum Foundation

Oral Sessions | Session

[O1-3]

Accelerating formulationof local DRR plans towardthe next 10 years of theirimplementation - How toachieve Global Target (e)of the SendaiFramework?-

Sun. Nov 10, 2019 4:00 PM - 5:30 PM Room 1 (Main Hall)

Japan International Cooperation Agency

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

[O1-3-01] Accelerating formulation of local DRR plans toward the next 10 years of their implementation - How to achieve Global Target (e) of the Sendai Framework?-

*Moderator Prof. Kimio Takeya[1], *Four (4) Speakers[2], Wataru Ono[1] （1. Japan International Cooperation Agency (JICA), 2. National and/or local authority related to DRR, Planning and Finance）

4:00 PM - 5:30 PM

©World Bosai Forum Foundation

4:00 PM - 5:30 PM (Sun. Nov 10, 2019 4:00 PM - 5:30 PM Room 1)

[O1-3-01] Accelerating formulation of local DRR plans toward the next 10 years of their implementation - How to achieve Global Target (e) of the Sendai Framework?-

*Moderator Prof. Kimio Takeya[1], *Four (4) Speakers[2], Wataru Ono[1] （1. Japan International Cooperation Agency (JICA), 2. National and/or local authority related to DRR, Planning and Finance）
Keywords: Sendai Framework for Disaster Risk Reduction 2015-2030, Global Target (e), Local DRR plans, JICA, International cooperation

This session will provide an opportunity to discuss and identify practical solutions for achieving Global Target (e) of the Sendai Framework for Disaster Risk Reduction 2015-2030, especially in developing local DRR strategies/plans, and accelerating their implementation. We are now facing two (2) key challenges of 1) how to develop and spread “practical” local DRR plans toward 2020 and 2) how to promote implementation based on plans by allocating appropriate resources including human, finance and techniques next 10 years. JICA has been continuously tackling these issues through leading discussions in international arenas and working with counterparts of developing countries. 8 STEPS – Practical Method for Developing Local DRR Strategies/Plans – is one of the remarkable outcomes, which is utilized in JICA’s knowledge co-creation programs and capacity development projects. The session will invite some practitioners from national and local governments of counterparts’ countries as panelist and discuss some key issues along with following questions.

1. What is the key component to be included in the local DRR plans for promoting pre-disaster investment?
2. What are the challenges for developing local DRR plans?
3. Do you have any good practices and lessons learned to develop local DRR plans?
4. What is a key factor to achieve actual implementation of local DRR plans?
5. How can we accelerate implementation of local DRR plans?

©World Bosai Forum Foundation

Oral Sessions | Open Session

[O1-4]

3.11 DENSHO ROAD to Hand down the Lessons of the Great East Japan Earthquake ~Activities of Memorializing the Earthquake in Industry-academia-government-citizen Collaborations ~

Sun. Nov 10, 2019 6:00 PM - 7:30 PM Room 1 (Main Hall)

Disaster Memorial Network Council (Tohoku Regional Bureau MLIT, Aomori Prefecture, iwate Prefecture, Miyagi prefecture, Fukushima Prefecture, Sendai City)

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

[O1-4-01] 3.11 DENSHO ROAD to Hand down the Lessons of the Great East Japan Earthquake~Activities of Memorializing the Earthquake in Industry-academia-government-citizen Collaborations ~

*Akira Matsumoto[1]（1. Tohoku Regional Bureau, Ministry of Land, Infrastructure, Transport and Tourism）

6:00 PM - 7:30 PM

©World Bosai Forum Foundation

6:00 PM - 7:30 PM (Sun. Nov 10, 2019 6:00 PM - 7:30 PM Room 1)

[O1-4-01] 3.11 DENSHO ROAD to Hand down the Lessons of the Great East Japan Earthquake~Activities of Memorializing the Earthquake in Industry-academia-government-citizen Collaborations ~

*Akira Matsumoto[1] （1. Tohoku Regional Bureau, Ministry of Land, Infrastructure, Transport and Tourism）
Keywords: The Great East Japan Earthquake , The 3.11 DENSHO ROAD, Memorializing the Earthquake

It has been 8 years since the Great East Japan Earthquake occurred and fading memories over time is a deep concern. It has been said that damage might be reduced if the lessons of past disasters are passed down.

We have launched “ the Disaster Memorial Network Council” through the collaboration of industry, academia, government and citizen sectors, and have started activities for handing down the lessons of the earthquake across the sectors in the Tohoku Region. We are setting up the project of the 3.11 DENSHO ROAD to transmit the lessons by connecting memorial facilities in the four disaster affected prefectures. This project includes making maps utilizing a standard set of pictogram and building its website, both will be multilingual, to guide memorial facilities on-site.

In our session, we will introduce the 3.11 DENSHO ROAD, which aims to enhance disaster management capacities in Japan and overseas by passing on the lessons, and also to cheer up the affected area by increasing the flow of people.

©World Bosai Forum Foundation

Oral Sessions | Open Session

[O1-6]

"Moving Hearts" With Experiences and Lessons ~ Connecting Stories to Specific Disaster Prevention Measures

Sun. Nov 10, 2019 2:00 PM - 3:30 PM Room 2 (Tachibana)

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

[O1-6-01] “Moving Hearts” With Experiences and Lessons ~ Connecting Stories to Specific Disaster Prevention Measures

*Emiko Kuriyagawa[1]（1. Miyagi Prefectural Government）

2:00 PM - 3:30 PM

©World Bosai Forum Foundation

2:00 PM - 3:30 PM (Sun. Nov 10, 2019 2:00 PM - 3:30 PM Room 2)

[O1-6-01] “Moving Hearts” With Experiences and Lessons ~ Connecting Stories to Specific Disaster Prevention Measures

*Emiko Kuriyagawa[1] (1. Miyagi Prefectural Government)

Keywords: “Moving Hearts”

How did people who previously experienced natural disasters pass on their stories and lessons they learned as well as prepare others for later disasters?

Using remaining records and conveying the scene of the disaster at that time to people who did not experience the calamity first-hand allows them to relive the situation as if they were there. This session discusses the initiatives needed to increase the number of people able to properly react and take action in emergency situations as a result of storytelling.

Additionally, experts and the regional community members involved share opinions regarding initiatives aimed at achieving regional revitalization by creating networks between different disaster memorial facilities, where they pass on memories and lessons concerning disasters to the world and future generations.

©World Bosai Forum Foundation

Oral Sessions | Session

[O1-7]

Cross-cutting theDisaster-RelatedSciences: Challenges of aMultidisciplinary Team inTohoku University

Sun. Nov 10, 2019 4:00 PM - 5:30 PM Room 2 (Tachibana)

The Core ResearchCluster of DisasterScience

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

[O1-7-01] Cross-cutting the Disaster-Related Sciences: Challenges of a Multidisciplinary Team in Tohoku University

*Junko Okuyama[1], *Fumihiko Imamura[1], *Shuji Seto[1], *Toru Matsuzawa[1], *Toshiki Iwasaki[1], *Hiroki Takakura[1], *Yu Fukuda[1], *Kiyoshi Ito[1] （1. Core Research Cluster of Disaster Science, Tohoku University）

4:00 PM - 5:30 PM

©World Bosai Forum Foundation

4:00 PM - 5:30 PM (Sun. Nov 10, 2019 4:00 PM - 5:30 PM Room 2)

[O1-7-01] Cross-cutting the Disaster-Related Sciences: Challenges of a Multidisciplinary Team in Tohoku University

*Junko Okuyama[1], *Fumihiko Imamura[1], *Shuji Seto[1], *Toru Matsuzawa[1], *Toshiki Iwasaki[1], *Hiroki Takakura[1], *Yu Fukuda[1], *Kiyoshi Ito[1] (1. Core Research Cluster of Disaster Science, Tohoku University)

Keywords: Core Research Cluster of Disaster Science, cross-cutting the disaster-related sciences, collaboration of citizens and researchers, the town of Shichigahama

This study presents the research activities, results, and progress of the Core Research Cluster of Disaster Science at Tohoku University. Our cluster adopts a multidisciplinary approach to disaster studies, linking natural science, engineering, medical science, and the social sciences and humanities. The town of Shichigahama in Miyagi, on Japan's northeastern coast, was severely inundated by the tsunami following the Great East Japan Earthquake in 2011. We will report the results of the town's two-year disaster-related activities as well as the prospects drawn from a recent workshop in September 2019. We begin with an overview of our project followed by presentations from the disaster medicine research group and the disaster social sciences and humanities research group, which are based on the field studies in Shichigahama and consider the relation between local culture and health. The natural hazard science research group and the applied disaster risk reduction research group will discuss both past and future regional risk environment evaluation efforts and which factors caused actual damages in society in the context of the 2011 disaster. After the presentations, we intend to gather feedback from our overseas collaborative partners from the Association of Pacific Rim Universities (APRU) network, Indonesia, and the United Kingdom regarding further investigations that would enhance disaster preparedness. Such endeavors will guide cross-cutting research on climate change, natural disasters, survival, health, and culture.

©World Bosai Forum Foundation

Oral Sessions | Open Session

[O1-8]

Thinking about Disaster Storytelling: How to Use Oral Narratives to Prevent Future Fatalities

Sun. Nov 10, 2019 6:00 PM - 7:30 PM Room 2 (Tachibana)

The Kahoku Shimpo

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

[O1-8-01] Thinking about Disaster Storytelling: How to Use Oral Narratives to Prevent Future Fatalities

*Jun Suzuki[1], *Mana Abe[4], *Tatsuya Kishimoto[5], *Muzailin Affan[2], *Sushil Gyewali [3] （1. The Kahoku Shimpo, 2. Syiah kuala University, 3. Government of Nepal , 4. TV-U FUKUSHIMA, 5. THE KOBE SHIMBUN DAIRY NEWSPAPER）

6:00 PM - 7:30 PM

©World Bosai Forum Foundation

6:00 PM - 7:30 PM (Sun. Nov 10, 2019 6:00 PM - 7:30 PM Room 2)

[O1-8-01] Thinking about Disaster Storytelling: How to Use Oral Narratives to Prevent Future Fatalities

*Jun Suzuki[1], *Mana Abe[4], *Tatsuya Kishimoto[5], *Muzailin Affan[2], *Sushil Gyewali [3] (1. The Kahoku Shimpo, 2. Syiah kuala University, 3. Government of Nepal , 4. TV-U FUKUSHIMA, 5. THE KOBE SHIMBUN DAIRY NEWSPAPER)

Keywords: Disaster Storytelling

Our goal is to create a space where general audiences can listen to domestic and foreign reporters, journalists, broadcasters, research scientists,and administrator of past disaster sites as they present examples of their research investigations and participate in panel discussions. We aim to convey the importance of survivors of natural disasters sharing their stories as a long-term method of preventing future large-scale loss of life.

©World Bosai Forum Foundation

Oral Sessions | Session

[O1-9]

Media and Bosai: A Crucial Combinationfor Saving Lives

Sun. Nov 10, 2019 11:00 AM - 12:30 PM Room 3 (Hagi)

NHK World-Japan

[O1-9-01] Media and Bosai: A Crucial Combination for Saving Lives

*Takaaki Takai[1], *Minori Takao[1] （1. NHK World-Japan）

11:00 AM - 12:30 PM

©World Bosai Forum Foundation

11:00 AM - 12:30 PM (Sun. Nov 10, 2019 11:00 AM - 12:30 PM Room 3)

[O1-9-01] Media and Bosai: A Crucial Combination for Saving Lives

*Takaaki Takai[1], *Minori Takao[1] (1. NHK World-Japan)

Keywords: The Role of Public Broadcast

Speakers: Minori Takao(Ms.) and producers(TBD) NHK, Japan's sole public broadcaster, is addressing disaster preparedness and DRR through TV, radio and the Internet. Using its multi-language and cross media platform, NHK World Japan delivers "information that saves lives" from every angle, including emergency broadcasting, disaster resilience and public awareness activities.Minori Takao, news anchor at NHK World - Japan will present the team's role in issuing multi-language emergency warnings to help foreign language speakers in Japan. The team will also present its role in preparing wide audiences around the world for the next disaster through its educational programs and web contents.They include a TV series "Bosai: An Educational Journey", featuring disaster preparedness education in Japan and other parts of Asia, Bosai radio programs aired in 17 languages and BOSAI homepage launched last year. This session will look into the role of media in "Bosai", and what more can be done to mitigate disaster through media outlets.

©World Bosai Forum Foundation

Oral Sessions | Open Session

[O1-10]

Disaster Risk Reduction and Women's Leadership

Sun. Nov 10, 2019 2:00 PM - 3:30 PM Room 3 (Hagi)

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

[O1-10-01] Disaster Risk Reduction and Women's Leadership

Taga Enomoto[1], *Asako Osaki[2], *Naomi Sato[3], *Naomi Yatsu[4], *Yaeko Kisu[5], *Midori Shigeno[6], *Isao Yamauchi[7] （1. Sendai Gender Equal Opportunity Foundation, Citizen Cooperation and City Planning Department, Community Affairs Bureau, 2. Kansei Gakuin University / NPO Gender Action Platform, 3. We Are One Kitakami, 4. Approved NPO After School Paruke , 5. NPO The National Council of Women's Centers, Sendai Gender Equal Opportunity Foundation , 6. Nishitaga-kita Neighborhood Association / Women Bosai Leaders Network, 7. Yama-no-dera United Neighborhood Association ）

2:00 PM - 3:30 PM

©World Bosai Forum Foundation

2:00 PM - 3:30 PM (Sun. Nov 10, 2019 2:00 PM - 3:30 PM Room 3)

[O1-10-01] Disaster Risk Reduction and Women's Leadership

Taga Enomoto[1], *Asako Osaki[2], *Naomi Sato[3], *Naomi Yatsu[4], *Yaeko Kisu[5], *Midori Shigeno[6], *Isao Yamauchi[7]
（1. Sendai Gender Equal Opportunity Foundation, Citizen Cooperation and City Planning Department, Community Affairs Bureau, 2. Kansei Gakuin University / NPO Gender Action Platform, 3. We Are One Kitakami, 4. Approved NPO After School Paruke , 5. NPO The National Council of Women's Centers, Sendai Gender Equal Opportunity Foundation , 6. Nishitaga-kita Neighborhood Association / Women Bosai Leaders Network, 7. Yama-no-dera United Neighborhood Association ）
Keywords: Women, Leadership, Diversity, Great East Japan Earthquake , Sendai Framework for Disaster Risk Reduction 2015-2030

Women play an important role in Disaster Risk Reduction. In order to build a disaster-resilient community, it is essential for women to participate in opportunities for making decisions in ordinary times. Based on the experiences from the Great East Japan Earthquake and other disasters, issues and future perspectives will be discussed, focusing on the diverse power of women who actively engage in Disaster Risk Reduction and recovery, as well as our nations' efforts towards promotion of women's leadership.

©World Bosai Forum Foundation

Oral Sessions | Open Session

[O1-11]

Creating new disaster prevention industry based on the lessons learned from the Great East Japan Earthquake

Sun. Nov 10, 2019 4:00 PM - 5:30 PM Room 3 (Hagi)

City of Sendai

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

[O1-11-01] Creating new disaster prevention industry based on the lessons learned from the Great East Japan Earthquake

Nobuhiro Sato[1], *Yoshihiro Okami[2], *Barbara Noonan[3], *Shohei Sakoda[4] （1. Industry Promotion Section,Industrial Policy Department,Economic Bureau,City of Sendai , 2. Industrial Policy Department, City of Sendai, 3. Public Sector Sales APAC, Nokia Solutions &Networks,Singapore, 4. Industry Creation Policy Division, Ministry of Economy, Trade and Industry）

4:00 PM - 5:30 PM

©World Bosai Forum Foundation

4:00 PM - 5:30 PM (Sun. Nov 10, 2019 4:00 PM - 5:30 PM Room 3)

[O1-11-01] Creating new disaster prevention industry based on the lessons learned from the Great East Japan Earthquake

Nobuhiro Sato[1], *Yoshihiro Okami[2], *Barbara Noonan[3], *Shohei Sakoda[4] （1. Industry Promotion Section,Industrial Policy Department,Economic Bureau,City of Sendai , 2. Industrial Policy Department, City of Sendai, 3. Public Sector Sales APAC, Nokia Solutions &Networks,Singapore, 4. Industry Creation Policy Division, Ministry of Economy, Trade and Industry）

Keywords: Fully autonomous drone, Private LTE

Sendai City aims to create new disaster prevention industry based on the lessons learned from the Great East Japan Earthquake by utilizing ICT and conducting demonstration experiments on drones.
In this session, we introduce the latest initiatives and future directions for the creation of disaster prevention industry by Sendai City, the national government, and private companies.

©World Bosai Forum Foundation

Oral Sessions | Open Session

[O1-12]

Teachers' Capacity Development for Enhancing Disaster Risk Reduction at School

Sun. Nov 10, 2019 6:00 PM - 7:30 PM Room 3 (Hagi)

Miyagi University of Education

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

[O1-12-01] Teachers' Capacity Development for Enhancing Disaster Risk Reduction at School

*Takashi Oda[1], *Shinichi Takeda[1], *Takeshi Sato[2], *Shinya Morimoto[3], *Masaaki Oka[1], *Takashi Muramatsu[1], * Tuba Gokmenoglu Karakaya[4] （1. Miyagi University of Education, 2. Tohoku University, 3. Ministry of Education, Culture, Sports, Science and Technology, 4. Republic of Turkey Ministry of National Education）

6:00 PM - 7:30 PM

©World Bosai Forum Foundation

6:00 PM - 7:30 PM (Sun. Nov 10, 2019 6:00 PM - 7:30 PM Room 3)

[O1-12-01] Teachers' Capacity Development for Enhancing Disaster Risk Reduction at School

*Takashi Oda[1], *Shinichi Takeda[1], *Takeshi Sato[2], *Shinya Morimoto[3], *Masaaki Oka[1], *Takashi Muramatsu[1], *Tuba Gokmenoglu Karakaya[4] （1. Miyagi University of Education, 2. Tohoku University, 3. Ministry of Education, Culture, Sports, Science and Technology, 4. Republic of Turkey Ministry of National Education）
Keywords: DRR education, teacher training, in-service, pre-service, curriculum

During this session, experts from Japan and abroad on DRR education and teacher training discuss the states and challenges on the teachers' capacity building for DRR teaching and school safety. Some invited presenters include ministrial officials in charge of schol DRR and some master teachers. The session is organized by 311 Disaster Risk Reduction Learning Institute for Educators (DRR-LIFE) established at Miyagi University of Education, Sendai, Japan in April, 2019 and will be co-sponsored by the Japan Association of National Universities, and International Research Institute of Disaster Science, Tohoku University.

©World Bosai Forum Foundation

Oral Sessions | Session

[O1-13]

State-of-the-art researchon wind related disasterrisk reduction

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

International Group on Wind-Related Disaster Risk Reduction

[O1-13-01] State-of-the-art research on wind related disaster risk reduction

*Kazuyoshi Nishijima[1], *David O. Prevatt[2], *Frank Lombardo[3], *Tetsuya Takemi[1], *Murray Morrison[4], *Shuyang Cao[5], Yukio Tamura[7], Yuichi Ono[6] （1. Kyoto University, 2. University of Florida, 3. The University of Illinois at Urbana-Champaign, 4. Insurance Institute for Business &Home Safety, 5. Tongji University, 6. Tohoku University, 7. Chongqing university）

11:00 AM - 12:30 PM

©World Bosai Forum Foundation

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

[O1-13-01] State-of-the-art research on wind related disaster risk reduction

*Kazuyoshi Nishijima[1], *David O. Prevatt[2], *Frank Lombardo[3], *Tetsuya Takemi[1], *Murray Morrison[4], *Shuyang Cao[5], Yukio Tamura[7], Yuichi Ono[6] （1. Kyoto University, 2. University of Florida, 3. The University of Illinois at Urbana-Champaign, 4. Insurance Institute for Business &Home Safety, 5. Tongji University, 6. Tohoku University, 7. Chongqing university）

Keywords: Observation, Damage survey, Full-scale experiment, Numerical simulation, Climate change

Wind-related disaster is the most devastating disaster around the world, causing enormous severe injury and fatality as well as economic losses. Climate change can increase the risk of damages to our built and surrounding environments, subjected to intensified tropical cyclones and other meteorological phenomena.

Over the last decades, wind engineering and related research communities have made efforts to reduce wind-related disaster risk reduction. These include diagnosis of damage process through post disaster surveys, better understanding of aerodynamic characteristics of building structures and their surrounding wind flows through wind tunnel experiments and numerical simulations, and evaluation of wind-resistant performance of building elements by experiments with partial or scaled models. These efforts were partially successful in reducing wind-induced damages. However, significant damages and losses caused by wind have yet been reported around the world. This has necessitated the research communities to direct new research agenda.

This session organizes a series of presentations on the state-of-the-art research facilitating to wind-related disaster risk reduction. The topics covered by this session range from meteorological observation technology, disaster survey, performance evaluation of infrastructure, super-high-resolution numerical simulation and future climate projection with climate models. Through the presentations and discussion that follows, the session expects to deepen the understanding of the current situation and future prediction on wind-related disasters, and to share with audience the frontier of the research on wind-related disaster risk reduction.

©World Bosai Forum Foundation

Oral Sessions | Session

[O1-14]

Knitting Networks ofScience-Policy-Actions forAccelerating Achievement ofSFDRR Targets andEnsuring Coherence of Post-2015 Global Agreements

Sun. Nov 10, 2019 2:00 PM - 3:30 PM Room 4 (Shirakashi 1)

United Nations University-Institute for the AdvancedStudy of Sustainability

[O1-14-01] Knitting Networks of Science-Policy-Actions for Accelerating Achievement of SFDRR Targets and Ensuring Coherence of Post-2015 Global Agreements

*Riyanti Djalante[1], *MIZAN BUSTANUL FUADY BISRI[1], Giulia Roder[1], *Giles Sioen[2,3], *Sachi Suzuki[4] （1. United Nations University-Institute for the Advanced Study of Sustainability, 2. FutureEarth, 3. The University of Tokyo, 4. UNESCO）

2:00 PM - 3:30 PM

©World Bosai Forum Foundation

2:00 PM - 3:30 PM (Sun. Nov 10, 2019 2:00 PM - 3:30 PM Room 4)

[O1-14-01] Knitting Networks of Science-Policy-Actions for Accelerating Achievement of SFDRR Targets and Ensuring Coherence of Post-2015 Global Agreements

*Riyanti Djalante[1], *MIZAN BUSTANUL FUADY BISRI[1], Giulia Roder[1], *Giles Sioen[2,3], *Sachi Suzuki[4] （1. United Nations University-Institute for the Advanced Study of Sustainability, 2. FutureEarth, 3. The University of Tokyo, 4. UNESCO）

Keywords: coherence, SFDRR, networks, science-policy-actions, sustainable development goals

Sustainable development endeavor is at risk in the face of hazards and disasters perpetuated by climate change. Thus, countries continuously pledging and committing to various international and regional agreements/frameworks on disaster risk reduction (DRR) and climate change adaptation (CCA). However, despite efforts in science, technology, grass-roots initiatives, and actions, it seems risk governance of various levels have not been able to become an enabling factor for a genuine resilience building. Despite the current rate of ratification/adoption of various post-2015 international frameworks to country-level legislation and science/technology-driven risk assessments, the number of disasters, affected people, economic damage and losses continuously increased.

This session will deliberate and review comprehensively the political and public administration aspect of risk governance across geographical regions to expedite implementation of post-2015 global agreements, its monitoring, and outlook towards 2030. It investigates, stock takes, and confirm whether political architecture and processes in those regions and its member states enable DRR/CCA advancement to enrich and informed policy discourse and actions, or instead it becomes a hindrance. By leveraging on machine learning and various network analyses techniques (social, network, citation, and discourse networks), this session will discuss whether it is possible to predict subsequent dynamic and state of coherence/divergence between science-policy interactions of DRR/CCA across levels. It is deliberating whether a complementary function exists in the implementation of various international and regional agreements/frameworks through national policy and global/regional resource mobilizations.

At a practical level, this session is providing an independent review on the status of science adoption into SFDRR Target E report by Member States of United Nations as well as outlining opportunity and pathway for increasing Target F on international cooperation for achieving global DRR targets. The session will also release the concept of “vertical and horizontal coherence” of post-2015 global agreements for guiding and monitoring of global governance implementation in the period of 2020-2030 surrounding the implementation of SFDRR, Paris Agreement, New Urban Agenda, Agenda for Humanity, Addis Ababa Action Agenda, and Sustainable Development Goals.

©World Bosai Forum Foundation

Oral Sessions | Session

[O1-15]

Research, Development,and Utilization of BeppuModel Disability-inclusiveDisaster Risk Reduction:Towards SeamlessConnections betweenNormal and DisasterTimes

Sun. Nov 10, 2019 4:00 PM - 5:30 PM Room 4 (Shirakashi 1)

Doshisha University

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

[O1-15-01] Research, Development, and Utilization of Beppu Model Disability-inclusive Disaster Risk Reduction: Towards Seamless Connections between Normal and Disaster Times

*Shigeo Tatsuki[1], *Junko Murano[2], *Kazuhiko Abe[3], *Anna Matsukawa[6], *Bill Ho[4], *Taku Sugano[5], *Aya Tsujioka[1] （1. Doshisha University, 2. Beppu City, 3. Tohoku Fukushi University, 4. Asian Disaster Preparedness Center, 5. Osaka City University, 6. Disaster Reduction and Human Renovation Institution）

4:00 PM - 5:30 PM

©World Bosai Forum Foundation

4:00 PM - 5:30 PM (Sun. Nov 10, 2019 4:00 PM - 5:30 PM Room 4)

[O1-15-01] Research, Development, and Utilization of Beppu Model Disability-inclusive Disaster Risk Reduction: Towards Seamless Connections between Normal and Disaster Times

*Shigeo Tatsuki[1], *Junko Murano[2], *Kazuhiko Abe[3], *Anna Matsukawa[6], *Bill Ho[4], *Taku Sugano[5], *Aya Tsujioka[1] (1. Doshisha University, 2. Beppu City, 3. Tohoku Fukushi University, 4. Asian Disaster Preparedness Center, 5. Osaka City University, 6. Disaster Reduction and Human Renovation Institution)

Keywords: Disability-inclusive Disaster Risk Reduction, Leave no one behind during disaster times, seamless connection between social services and disaster response

Older and/or disabled people have been known to suffer more serious damages in disasters. After the Great East Japan Earthquake, Tatsuki (2013) pointed out that the root cause of the proportionately heavier damages is due to the siloed approaches taken by everyday social service and crisis time disaster management organizations and to the lack of coordination between normal and disaster time responses. One solution is to involve social workers who make care plans for everyday living needs during normal time and to ask them to simultaneously prepare disaster care plans. This session shares a Research, Development and Utilization project that interlinks normal time social services and disaster time local responses to persons with disabilities (PWD). A three-year project was launched in Beppu City in 2016 that led to the standard operation procedure (SOP) for assessment, informal human resources matching, and inclusive disaster response simulation during disaster drills. At the end of the project, a quasi-experimental, inverse propensity score weighted impact evaluation demonstrated a significant increase of DRR literacy scores only among the experimental group PWDs. In 2018, Hyogo prefecture initiated the Beppu-model SOP utilization grant program. Based on the preliminary results in Harima township, one of the two initial municipalities, Hyogo prefecture decided to expand the grant program to all Hyogo municipalities. As a result, 37 out of 41 local governments applied for the project as of April, 2019. The similar Beppu model SOP utilization have been spreading to other areas of Japan such as Sendai, Kyoto, Ibaraki and Suginami cities. Overseas applications of Beppu Model is also currently being planned. This session concludes with future research/practice directions such as integrating pre-disaster care planning to post-disaster case management practices.

©World Bosai Forum Foundation

Oral Sessions | Session

[O1-16]

Role of NPOs andvolunteer organizationsin disaster recovery:International and Japan cases

Sun. Nov 10, 2019 6:00 PM - 7:30 PM Room 4 (Shirakashi 1)

Tohoku University- IRIDeS

[O1-16-01] Role of NPOs and volunteer organizations in disaster recovery: International and Japan cases

*Takako Izumi[1], *Rajib Shaw[2], *Jessica Alexander[3], *Sangita Das[4], *Akilesh Surjan[6], *Miwa Abe[5], *Takeshi Komino[7] （1. Tohoku University, 2. Keio University, 3. Sophia University/UNICEF Geneva, 4. CWS Japan, 5. Kumamoto University, 6. Charles Darwin University, Australia , 7. Asian Disaster Response and Reduction Network (ADRRN)）

6:00 PM - 7:30 PM

©World Bosai Forum Foundation

6:00 PM - 7:30 PM (Sun. Nov 10, 2019 6:00 PM - 7:30 PM Room 4)

[O1-16-01] Role of NPOs and volunteer organizations in disaster recovery: International and Japan cases

*Takako Izumi[1], *Rajib Shaw[2], *Jessica Alexander[3], *Sangita Das[4], *Akilesh Surjan[6], *Miwa Abe[5], *Takeshi Komino[7] （1. Tohoku University, 2. Keio University, 3. Sophia University/UNICEF Geneva, 4. CWS Japan, 5. Kumamoto University, 6. Charles Darwin University, Australia , 7. Asian Disaster Response and Reduction Network (ADRRN)）

Keywords: Non-profit Organization, Recovery, Coordination

Local non-profit organizations and volunteer networks can play a critical role in preparing for and responding to disasters, often filling in gaps not provided for by the government or international responders. As they are usually closer to the communities being served, their efforts have often been found to be more flexible, relevant and efficient than other stakeholders. Leveraging these inputs and connecting them to other recovery efforts can contribute to a more coherent, sustainable and effective response. Yet experience has shown that if these efforts are not well-coordinated, or done with insufficient capacity, they run the risk of creating duplication, frustration and potentially doing more harm than good.

Using both international case studies - including from Australia, Haiti, and regional networks such as ADDRN – as well as those from inside Japan - including the Great East Japan Earthquake of 2011, Kumamoto earthquake of 2016, and West Japan floods of 2018 - this session will focus on 1) the contributions of NPOs and volunteer networks in disaster recovery, 2) challenges in coordination and capacity building and the implications of these, and 3) best practices with regards to their engagement and involvement in preparing for and responding to disasters.

©World Bosai Forum Foundation

Oral Sessions | Session

[O1-17]

Creating a disaster-resilient society through industry-academia collaboration

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

Tohoku University-IRIDeS

[O1-17-01] Creating a disaster-resilient society through industry-academia collaboration

*Fumihiko Imamura[1], *Hiroo Shimada[2], *Akihiro Hayashi[3], *Anawat Suppasri[1], *Ryu Miyamoto[1]

（1. International Research Institute of Disaster Science (IRIDeS), Tohoku University, 2. Tokio Marine &Nichido Fire Insurance Co., Ltd., 3. Tokio Marine &Nichido Risk Consulting Co., Ltd.）

11:00 AM - 12:30 PM

©World Bosai Forum Foundation

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

[O1-17-01] Creating a disaster-resilient society through industry-academia collaboration

*Fumihiko Imamura[1], *Hiroo Shimada[2], *Akihiro Hayashi[3], *Anawat Suppasri[1], *Ryu Miyamoto[1] （1. International Research Institute of Disaster Science (IRIDeS), Tohoku University, 2. Tokio Marine &Nichido Fire Insurance Co., Ltd., 3. Tokio Marine &Nichido Risk Consulting Co., Ltd.）

Keywords: Eco-DRR, Mangrove Planting Project, Coastal Disaster Prevention Forest, Global Tsunami Risk, Disaster Risk Quantification

1. Fumihiko Imamura;
Greetings and introductions from Representative
2. Hiroo Shimada;
Creating Value through Mangrove Planting Project as 'Insurance for the Future of the Earth'
3. Akihiro Hayashi;
Tsunami disaster risk prevention/mitigation effect by coastal forest
4. Anawat Suppasri;
Global tsunami hazard and risk assessment: Suitable countermeasures and impact on container vessels network
5. Ryu Miyamoto;
Advancement of tsunami risk assessment

©World Bosai Forum Foundation

Oral Sessions | Session

[O1-18]

NATECH Risk in Asia Pacific

Sun. Nov 10, 2019 2:00 PM - 3:30 PM Room 5 (Shirakashi 2)

Keio University

[O1-18-01] NATECH Risk in Asia Pacific

*Rajib Shaw[1], *Ana Maria Cruz[2], *Fatma Lestari[3], *Kampanart Silva[3,4], *Devendra Narayan Singh[5], *Antonia Loyzaga[6], *Emily Chang[7], *Takako Izumi[8] （1. Keio University , 2. Kyoto University , 3. University of Indonesia, 4. Thailand Institute of Nuclear Technology, 5. IIT Bombay, 6. Manila Observatory and Philippines National Resilience Council (PNRC), 7. Chinese University of Hong Kong, 8. Tohoku University）

2:00 PM - 3:30 PM

©World Bosai Forum Foundation

2:00 PM - 3:30 PM (Sun. Nov 10, 2019 2:00 PM - 3:30 PM Room 5)

[O1-18-01] NATECH Risk in Asia Pacific

*Rajib Shaw[1], *Ana Maria Cruz[2], *Fatma Lestari[3], *Kampanart Silva[3,4], *Devendra Narayan Singh[5], *Antonia Loyzaga[6], *Emily Chang[7], *Takako Izumi[8] （1. Keio University , 2. Kyoto University , 3. University of Indonesia, 4. Thailand Institute of Nuclear Technology, 5. IIT Bombay, 6. Manila Observatory and Philippines National Resilience Council (PNRC), 7. Chinese University of Hong Kong, 8. Tohoku University）
Keywords: NATECH Risk, Asia-Pacific, Science policy dialogue, private sector, citizen perspectives

The Sendai Framework for Disaster Risk Reduction 2015-2030 highlights the need to better understand different hazards, including technological and so-called Natech (conjoint natural and technological) hazards. There is growing evidence, for example from the Great East Japan earthquake, tsunami and consequent incident at the Fukushima-Daichii nuclear power plant, that natural hazards can trigger technological accidents, leading to natural hazard triggered technological (Natech) disasters. These complex hazard events may have catastrophic consequences, in particular in countries that are not prepared for them. They require extended and specific risk management strategies that need to be based on a deeper understanding of their causes and cascading consequences. they run the risk of creating duplication, frustration and potentially doing more harm than good.

Natech risk management needs a holistic approach of government regulations, private sector management, and community’ s awareness. As the first phase, this work proposes to engage science technology academic community for collecting evidences on Natech risk in the region, followed by policy dialogue with governments for co-designing Natech Risk Management framework. At certain point, there needs to have a dialogue with private sector, through ARISE network in certain countries. Finally, citizen awareness will be enhanced through citizen science approach as well as through civil society networks.

The session aims at presenting initial findings of the NATECH science policy dialogue in Asia Pacific. This session is considered as one of the series of events leading to the Asia Pacific Science Technology Conference on DRR in Malaysia in March 2020, and Asia Pacific Ministerial Conference on DRR in Australia in June 2020.

©World Bosai Forum Foundation

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

©World Bosai Forum Foundation

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?

©World Bosai Forum Foundation

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

©World Bosai Forum Foundation

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.

©World Bosai Forum Foundation

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

©World Bosai Forum Foundation

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.

©World Bosai Forum Foundation

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

©World Bosai Forum Foundation

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.

©World Bosai Forum Foundation

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

©World Bosai Forum Foundation

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.

©World Bosai Forum Foundation

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

©World Bosai Forum Foundation

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

©World Bosai Forum Foundation

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

©World Bosai Forum Foundation

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.

©World Bosai Forum Foundation

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

©World Bosai Forum Foundation

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.

©World Bosai Forum Foundation

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

©World Bosai Forum Foundation

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.

©World Bosai Forum Foundation

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

©World Bosai Forum Foundation

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.

©World Bosai Forum Foundation

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

©World Bosai Forum Foundation

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.

©World Bosai Forum Foundation

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

©World Bosai Forum Foundation

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

©World Bosai Forum Foundation

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

©World Bosai Forum Foundation

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.

©World Bosai Forum Foundation

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

©World Bosai Forum Foundation

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.

©World Bosai Forum Foundation

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

©World Bosai Forum Foundation

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.

©World Bosai Forum Foundation

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

©World Bosai Forum Foundation

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.

©World Bosai Forum Foundation

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

©World Bosai Forum Foundation

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.

©World Bosai Forum Foundation

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

©World Bosai Forum Foundation

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.

©World Bosai Forum Foundation

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

©World Bosai Forum Foundation

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"

©World Bosai Forum Foundation

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

©World Bosai Forum Foundation

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.

©World Bosai Forum Foundation

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

©World Bosai Forum Foundation

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.

©World Bosai Forum Foundation

Oral Sessions | Session

[O3-1]

Toward Restoration after Fukushima Daiichi Nuclear Accident

Tue. Nov 12, 2019 8:30 AM - 10:00 AM Room 1 (Main Hall)

Tohoku University

[O3-1-01] Toward Restoration after Fukushima Daiichi Nuclear Accident

*Nobuyoshi Hara[1], *Akira HASEGAWA[2], *Masatoshi SUZUKI[3], *Masashi KONYO[4], *Yutaka WATANABE[5] （1. Institute for Disaster Reconstruction and Regeneration Research, Tohoku University, 2. School of Engineering, Tohoku University, 3. International Research Institute of Disaster Science, Tohoku University, 4. Graduate School of Information Sciences, Tohoku University, 5. Center for Fundamental Research on Nuclear Decommissioning, Tohoku University）

8:30 AM - 10:00 AM

©World Bosai Forum Foundation

8:30 AM - 10:00 AM (Tue. Nov 12, 2019 8:30 AM - 10:00 AM Room 1)

[O3-1-01] Toward Restoration after Fukushima Daiichi Nuclear Accident

*Nobuyoshi Hara[1], *Akira HASEGAWA[2], *Masatoshi SUZUKI[3], *Masashi KONYO[4], *Yutaka WATANABE[5] (1. Institute for Disaster Reconstruction and Regeneration Research, Tohoku University, 2. School of Engineering, Tohoku University, 3. International Research Institute of Disaster Science, Tohoku University, 4. Graduate School of Information Sciences, Tohoku University, 5. Center for Fundamental Research on Nuclear Decommissioning, Tohoku University)

Keywords: Fukushima Daiichi Nuclear Accident, Nuclear Decommissioning, Restoration of Living Environments, Disaster Response Robots, Human Resource Development

A few selected activities being set forward by Institute for Disaster Reconstruction and Regeneration Research, Tohoku University, for restoration after Fukushima Daiichi Nuclear Accident will be shared with the audience in this session.

The first topic is “technology development for the restoration of living environments contaminated by radioactive materials”. The project aspires to develop technology for the restoration of living environments contaminated with radioactive materials. That is, decontamination technology for soil, technology effectively utilizing collected radioactive materials, methods for the cultivation of non-radioactive crops, or non-destructive (whole) monitoring technology for gamma radiation. The outcomes are offered to residents living in the areas damaged by Great East Japan Earthquake for their recovering from the disaster.

The second topic is “comprehensive radiation assessment of disaster affected animals”. Biological effects by long-term exposure of low dose/ low dose-rate radiation have been drawing scientific and social attention since the accident of Fukushima Daiichi Nuclear Power Station occurred. The presentation will introduce the activities in which biological samples were collected from livestock and Japanese macaques living within the ex-evacuation zone of the accident and biological effects were analyzed.

The third topic is “disaster response robots and remote technologies”. Remote operation in confined spaces with many obstacles is a tough mission for the disaster response robots. The talk introduces a snake-like long flexible robot applied for the Fukushima Daiichi Accident and its recent advanced technologies.

The fourth topic is “activities of Center for Fundamental Research on Nuclear Decommissioning”, where our approaches of fundamental research and human resource development to contribute to decommissioning of Fukushima Daiichi NPS will be introduced.

©World Bosai Forum Foundation

Oral Sessions | Session

[O3-3]

Value of advance information for earthquake damage reduction and its feasibility

Tue. Nov 12, 2019 1:30 PM - 3:00 PM Room 1 (Main Hall)

OPTAGE Inc.

[O3-3-01] Value of advance information for earthquake damage reduction and its feasibility

Toshihiro Mori[1], *Izumi Tobo[2], *Ken Umeno[3], *Yukio Fujinawa[4], Atsushi Oono[1], Takashi Mii[1], Tadahiro Eguchi[1], Morihiro Matsuda[1], Michiaki Yokoyama[1] (1. OPTAGE Inc., 2. Mitsubishi Research Institute, Inc., 3. Kyoto University, 4. Organization for Development of Resilient Communities)

1:30 PM - 3:00 PM

©World Bosai Forum Foundation

1:30 PM - 3:00 PM (Tue. Nov 12, 2019 1:30 PM - 3:00 PM Room 1)

[O3-3-01] Value of advance information for earthquake damage reduction and its feasibility

Toshihiro Mori[1], *Izumi Tobo[2], *Ken Umeno[3], *Yukio Fujinawa[4], Atsushi Oono[1], Takashi Mii[1], Tadahiro Eguchi[1], Morihiro Matsuda[1], Michiaki Yokoyama[1] （1. OPTAGE Inc., 2. Mitsubishi Research Institute, Inc., 3. Kyoto University, 4. Organization for Development of Resilient Communities）

Keywords: Value of advance information, Nankai Trough Earthquake, the state-of-the-art earthquake technology, feasibility, earthquake precursors

In this session, the value of advance information for earthquake damage reduction will be shared, and experts will introduce the state-of-the-art earthquake precursor detection technology in Japan.

The probability of a huge earthquake in the Nankai Trough is estimated to be 70-80% within the next 30 years.
In addition, the estimated number of fatalities is up to 320,000, of which 230,000 are caused by the tsunami.

In order to reduce such expected damage, the Meteorological Agency has announced that it will issue an order of emergency information if an abnormal phenomenon is observed along the Nankai Trough.

(Case of abnormal phenomenon)
- Half of Nankai Trough's epicenter is broken and the other half remains
- M7 class earthquake occurs near the epicenter area of Nankai Trough
- A significant change is observed by a strain gauge

By distributing such advance information, many people can take actions in advance, which leads to mitigation of earthquake damages.

We believe that we need to improve the accuracy of useful emergency information.
That is because people can understand the increased risk, but they do not know when an earthquake will occur.

Recently, a number of abnormal phenomena before an earthquake have been reported.
We believe that it will lead to further improvement in accuracy by using such information.
In this session, we introduce the latest research and discuss its feasibility.

©World Bosai Forum Foundation

Oral Sessions | Session

[O3-4]

Support to Disaster Risk Reduction by private sector

Tue. Nov 12, 2019 3:30 PM - 5:00 PM Room 1 (Main Hall)

JAPAN TOBACCO INC.

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

[O3-4-01] Support to Disaster Risk Reduction by private sector

*Hisashi Hamada[1] （1. JAPAN TOBACCO INC.）

3:30 PM - 5:00 PM

©World Bosai Forum Foundation

3:30 PM - 5:00 PM (Tue. Nov 12, 2019 3:30 PM - 5:00 PM Room 1)

[O3-4-01] Support to Disaster Risk Reduction by private sector

*Hisashi Hamada[1] (1. JAPAN TOBACCO INC.)

Keywords: Disastar Risk Reduction, Tohoku earthquake reconstraction, word-of-mouth tradition

-Introduction of our support for Tohoku earthquake reconstraction
-Introduction of our support for Disastar Risk Reduction program
-Necessity of word-of-mouth tradition (Introduction of 311 memorial network)

©World Bosai Forum Foundation

Oral Sessions | Session

[O3-5]

Spiritual care and relevant faith-based activity in disaster relief and recovery

Tue. Nov 12, 2019 8:30 AM - 10:00 AM Room 2 (Tachibana)

Soka Gakkai International

[O3-5-01] Spiritual care and relevant faith-based activity in disaster relief and recovery

Takaaki Ito[3], Nobuhiko Katayama[2], *Emiko Kubo[1] （1. Soka Gakkai International, 2. World Vision Japan, 3. Sophia University）

8:30 AM - 10:00 AM

©World Bosai Forum Foundation

8:30 AM - 10:00 AM (Tue. Nov 12, 2019 8:30 AM - 10:00 AM Room 2)

[O3-5-01] Spiritual care and relevant faith-based activity in disaster relief and recovery

Takaaki Ito[3], Nobuhiko Katayama[2], *Emiko Kubo[1] (1. Soka Gakkai International, 2. World Vision Japan, 3. Sophia University)

Keywords: spiritual care, grief and loss, faith, faith-based organizations

The spiritual or psychosocial care of each victim of disaster is vitally important for their recovery. This aspect, however, tends to be given little attention in debates on disaster relief and recovery by governments. On the other hand, some academics and faith-based organizations proactively promote such care in a unique way that is beginning to receive increased attention.
In this session, Prof. Ito will share an overview of spiritual care for disaster victims and how faith can make a difference in all aspects of recovery. Mr. Katayama will elaborate how World Vision Japan is involving local churches in disaster preparation. He will address both the physical and spiritual aspects of recovery. Ms. Kubo will focus on the Soka Gakkai Japan's concert initiative that utilizes the power of music to aid recovery in the aftermath of disaster.

©World Bosai Forum Foundation

Oral Sessions | Session

[O3-6]

BOSAI DIVERSITY Diversity in disaster preparation

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

Yahoo Japan co.

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

[O3-6-01] BOSAI DIVERSITY

Diversity in disaster preparation.

*Shuichi Nishida[1], Takahiro Koga[1] （1. Yahoo Japan Corporation）

10:30 AM - 12:00 PM

©World Bosai Forum Foundation

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

[O3-6-01] BOSAI DIVERSITY

Diversity in disaster preparation.

*Shuichi Nishida[1], Takahiro Koga[1] (1. Yahoo Japan Corporation)

Keywords: diversity, preparation, emergency kit

Talk to anyone who's lived through a disaster, and they'll tell you the same thing:

There's no such thing as a universal emergency kit. Different people have specific needs that can only be met with specific items.

We saw that this led to low levels of disaster preparedness, and wanted to let everyone know the preparations required for each person in evacuation shelters.

Immediately after an earthquake or other disaster, media coverage and interest among the government, corporations and populace focuses on the afflicted area. But few take into consideration the diverse characteristics and living environments of people forced to evacuate. It is a little-known fact that many people in post-disaster shelters suffer from declining health, or even lose their lives. For this reason, we wanted to make it easier for people who have never experienced a disaster to immediately take action by clearly presenting the kinds of emergency kit items that people would need for themselves and their own living environments.

The launch of the project was timed to the week before the anniversary of the Great East Japan Earthquake and Tsunami, when reporting and awareness about disasters and disaster preparedness are highest in Japan. Our approach was to present a new concept that emergency kits are unique for diverse types of people. We communicated this through a website and hands-on events with illustrated cards that show how different kinds of people should prepare for disasters. These were covered in numerous online articles and TV reports, and participants posted positive comments about the project on social media, along with support from Japan's Cabinet Office, the United Nations Information Centre, UNICEF, and other government and international non-governmental organizations.

This widespread recognition contributed to greater awareness about disaster preparations. Celebrities, government agencies, international NGOs and others saluted our new concept and began promoting it on their own.

©World Bosai Forum Foundation

Oral Sessions | Session

[O3-7]

The Asia-Pacific Disaster Report 2019: Pathways for resilience, inclusion and empowerment

Tue. Nov 12, 2019 1:30 PM - 3:00 PM Room 2 (Tachibana)

TBA

[O3-7-01] The Asia-Pacific Disaster Report 2019: Pathways for resilience, inclusion and empowerment

*Laura Louise Hendy[1], Maria Bernadet Karina Dewi[1] （1. United Nations ESCAP）

1:30 PM - 3:00 PM

©World Bosai Forum Foundation

1:30 PM - 3:00 PM (Tue. Nov 12, 2019 1:30 PM - 3:00 PM Room 2)

[O3-7-01] The Asia-Pacific Disaster Report 2019: Pathways for resilience, inclusion and empowerment

*Laura Louise Hendy[1], Maria Bernadet Karina Dewi[1] (1. United Nations ESCAP)

Keywords: The Asia-Pacific Disaster Report

The Asia-Pacific region faces a daunting spectrum of natural hazards. Many countries could be reaching a tipping point beyond which disaster risk, fueled by climate change, exceeds their capacity to respond. This session will explore the findings of The Asia-Pacific Disaster Report 2019, which captures the full complexity of disaster risk in the region for the first time and introduces policy actions for strengthening disaster resilience.

Representatives from ESCAP will present the regional ‘riskscape’ introduced by the Report. This reveals that annual economic losses are quadruple previous estimates, at US $ 675 billion a year until 2030. The risks are distributed unevenly across the region, clustered around four transboundary disaster risk hotspots in which environmental fragility converges with critical socioeconomic vulnerabilities. Furthermore, the report demonstrates how disasters are widening inequalities in incomes and opportunities, thereby threatening hard won development gains.

In a second presentation, representatives from ESCAP will then outline the policy actions introduced by the Report, to break the links between disasters, poverty and inequality. It will demonstrate that governments can outpace disaster risk through a comprehensive portfolio of risk-informed social sector investments and innovative pro-poor disaster risk reduction measures. Similarly, it will showcase how emerging technologies such as big data and digital identities are being applied to ensure that the poorest and most vulnerable groups are included in these policy interventions. Finally, it will outline the potential for strengthened regional cooperation to reinforce national efforts.

The session will then proceed with a series of presentations in which organizations and researchers will provide feedback on the findings from their perspectives. This will inform a subsequent open discussion, wherein participants will consider how the policy actions introduced by the report can be used to strengthen the resilience across the riskscape.

©World Bosai Forum Foundation

Oral Sessions | Session

[O3-8]
"FUKUSHIMA" its disasters archives, current revitalization status and the future

Tue. Nov 12, 2019 3:30 PM - 5:00 PM Room 2 (Tachibana)

Business Council for the Fukushima Innovation Coast Initiative (representative of Tokyo Electric Power Company)

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

[O3-8-01] "FUKUSHIMA" its disasters archives, current revitalization status and the future

*Hideya KITAMURA[1], *Shubun ENDO[2], *looking for suitable person looking for suitable person[3]

（1. Business Council for the Fukushima Innovation Coast Initiative (representative of Tokyo Electric Power Company), 2. Futaba Inc, 3. Fukushima prefecture or University of Fukushima）

3:30 PM - 5:00 PM

©World Bosai Forum Foundation

3:30 PM - 5:00 PM (Tue. Nov 12, 2019 3:30 PM - 5:00 PM Room 2)

[O3-8-01] "FUKUSHIMA" its disasters archives, current revitalization status and the future

*Hideya KITAMURA[1], *Shubun ENDO[2], *looking for suitable person looking for suitable person[3] (1. Business Council for the Fukushima Innovation Coast Initiative (representative of Tokyo Electric Power Company), 2. Futaba Inc, 3. Fukushima prefecture or University of Fukushima)

Keywords: Great East Japan Earthquake, Fukushima Innovation Coast Initiative, Accident of Fukushima Daiichi Nuclear Power Plant, Revitalization, Resilience

Over 8 years has passed from Great East Japan Earthquake and follwing nuclear powe plants accident in Fukushima. We will briefly provide feedback about the disasters, and explain the curent revitalization efforts such as decontamination acitivities of environment, Innovation Coast Program (national industrial development program) in detail. We also run a panel discussion about the current regional problems and possible efforts to create the future.

©World Bosai Forum Foundation

Oral Sessions | Session

[O3-10]

Interdisciplinary Strategies in General Education for Disaster Risk Reduction:The Six-Year Experience by DRMAPS at the University of the Philippines

Tue. Nov 12, 2019 10:30 AM - 12:00 PM Room 3 (Hagi)

University of the Philippines Diliman

[O3-10-01] Interdisciplinary Strategies in General Education for Disaster Risk Reduction:

The Six-Year Experience by DRMAPS at the University of the Philippines

*Benito M. Pacheco[1], *Flaudette May V. Datuin[1], *Aurora Odette C. Mendoza[1], *Elenita N. Que[1], *Leonardo C. Rosete[1], *Mark Albert H. Zarco[1] （1. University of the Philippines Diliman）

10:30 AM - 12:00 PM

©World Bosai Forum Foundation

10:30 AM - 12:00 PM (Tue. Nov 12, 2019 10:30 AM - 12:00 PM Room 3)

[O3-10-01] Interdisciplinary Strategies in General Education for Disaster Risk Reduction:
The Six-Year Experience by DRMAPS at the University of the Philippines

*Benito M. Pacheco[1], *Flaudette May V. Datuin[1], *Aurora Odette C. Mendoza[1], *Elenita N. Que[1], *Leonardo C. Rosete[1], *Mark Albert H. Zarco[1] (1. University of the Philippines Diliman)
Keywords: General education, Interdisciplinary, Strategies

In panel discussion, professors from different colleges of the University of the Philippines Diliman share their experience co-pioneering the course DRMAPS (formerly DMAPS) or Disaster Risk Mitigation, Adaptation, and Preparedness Strategies, for general education of undergraduates. In open forum, ideas are solicited how DRR education may be improved.

The professors come from departments of art studies, civil engineering, educational technology, psychology, and visual communication. Students of the class also come from different disciplines.

Over six years, the course has been offered in ten semesters and taken by more than 1,000 students; with recent curricular revisions in the university, more students are expected.

Among the themes of this session are:

(a) Disaster risk reduction, rather than disaster management, is the preferred focus of general education; preemptive strategy is preferred over reactive.

(b) Interdisciplinary is the preferred character of general education, intersecting arts and humanities, social sciences and philosophy, and mathematics, science and technology.

(c) Interdisciplinary or transdisciplinary is the preferred character of disaster risk reduction strategies.

(d) Collaboration is encouraged not only among the teachers but also among the students.

(e) Risk perception and risk communication are as important as risk assessment.

(f) Understanding risk is facilitated by distinguishing such risk factors as hazard, exposure, and vulnerability; considered are multiple hazards, various exposed elements including human, and the unique vulnerabilities of each element as exposed to each particular hazard.

(g) In framing questions about risk and risk factors, equally useful are such frameworks as ecocritical, psychosocial, and sociopolitical.

(h) ICT in education must capture the imagination of today’ s students, to hasten the assimilation of disaster risk reduction ideas into the households and communities.

The session panelists introduce some outcomes of their researches and creative works, while they preview the conduct of DRMAPS class and share practical lessons in teaching the class.

©World Bosai Forum Foundation

Oral Sessions | Session

[O3-11]

BOSAI POINT.A new disaster-preventing service,using your untouched points to raise donations

Tue. Nov 12, 2019 1:30 PM - 3:00 PM Room 3 (Hagi)

BOSAI POINT PROJECT

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

[O3-11-01] BOSAI POINT.
A new disaster-preventing service,
using your untouched points to raise donations.

*JUNSHIRO KAMEYAMA[1] （1. BOSAI POINT PROJECT）

1:30 PM - 3:00 PM

©World Bosai Forum Foundation

1:30 PM - 3:00 PM (Tue. Nov 12, 2019 1:30 PM - 3:00 PM Room 3)

[O3-11-01] BOSAI POINT.
A new disaster-preventing service,
using your untouched points to raise donations.

*JUNSHIRO KAMEYAMA[1] （1. BOSAI POINT PROJECT）

Keywords: non

OSAI POINT.
A new disaster-preventing service,
using your untouched points to raise donations.

There was a huge earthquake in Hokkaido, on the night of September 6th, 2018.
Sapporo, one of the biggest cities in Japan, experienced a severe blackout, and the earthquake touched off enormous landslides. It was broadcasted across the country, and shocked people all over Japan.

Since there could be more natural disasters in the near future,
can’ t we invent a new way to prepare for them?

From that standpoint, we started a whole new disaster-preventing service,
using an untouched asset to raise donations; the points.

In September, the service has been launched in Hokkaido,
and is planned to be available across the country next year.

©World Bosai Forum Foundation

Oral Sessions | Session

[O3-12]

The future of wide area disaster response by drones and air mobilities

Tue. Nov 12, 2019 3:30 PM - 5:00 PM Room 3 (Hagi)

Drone Fund

[O3-12-01] The future of wide area disaster response by drones and air mobilities

*Shintaro Takahashi[1], Kotara Chiba[1], Kenichi Ohmae[1], Yukihiro Maru[2] （1. Drone Fund, 2. Leave a Nest）

3:30 PM - 5:00 PM

©World Bosai Forum Foundation

3:30 PM - 5:00 PM (Tue. Nov 12, 2019 3:30 PM - 5:00 PM Room 3)

[O3-12-01] The future of wide area disaster response by drones and air mobilities

*Shintaro Takahashi[1], Kotara Chiba[1], Kenichi Ohmae[1], Yukihiro Maru[2] (1. Drone Fund, 2. Leave a Nest)

Keywords: Drone, Air Mobility

This session aims to discuss the future of wide area disaster response by drones and air mobilities. Japan is facing problems of population decline so it is necessary to consider the social implementation of new technologies in order to cope with large-scale disasters. When disasters occur, Unmanned Aircraft Systems are expected to be active in areas such as wide-area disaster surveys and emergency transportations. Many first responders have already started using small multicopters for research purposes. In the 2020s, commercialization of large cargo drones and air mobilities are expected. In this session, we will mainly discuss three themes. Firstly, we will consider the future image of drone and air mobility based society. The Japanese government has made cabinet decisions on commercialization of drone at level 4 in 2022 and air mobility in 2023 as important policy goals. Secondly, we will analyze how to use new technologies including Unmanned Aircraft Systems and eVTOL. eVOTL has the potential to contribute to the potential of emergency supplies, medical staff and patients. Thirdly, we will discuss technical and legal issues.
In order to proceed with the implementation of drones for disaster response, it is necessary to work on the improvement of safety. We also need to share significance of thies approach with various stakeholders including public and private sectors.

©World Bosai Forum Foundation

Oral Sessions | Session

[O3-13]

Advances of International Collaboration on M9 Disaster Science

Tue. Nov 12, 2019 8:30 AM - 10:00 AM Room 4 (Shirakashi 1)

Tohoku University- IRIDeS

[O3-13-01] Advances of International Collaboration on M9 Disaster Science

*Kenjiro Terada[1,4], *Shunichi Koshimura[1,4], *Jorge Leon[3,6], Randall J LeVeque[2], Gabriel Gonzalez[3,7], *Patricio Catalan[3,6], Elizabeth Maly[1], *Dan Abramson[2], Carrie Garrison-Laney[2], *Michael Motley[2], *Naoko Kuriyama[5], *Lan Nguyen[2], *Adams Adams[2], Anawat Suppasri[1,4], Erick Mas[1,4], Shuji Moriguchi[1] （1. IRIDeS, Tohoku University, 2. University of Washington, 3. CIGIDEN, Chile, 4. Core Research Cluster of Disaster Science, Tohoku University, 5. Kobe University, 6. Universidad Federico Santa Maria, 7. Universidad Católica del Norte）

8:30 AM - 10:00 AM

©World Bosai Forum Foundation

8:30 AM - 10:00 AM (Tue. Nov 12, 2019 8:30 AM - 10:00 AM Room 4)

[O3-13-01] Advances of International Collaboration on M9 Disaster Science

*Kenjiro Terada[1,4], *Shunichi Koshimura[1,4], *Jorge Leon[3,6], Randall J LeVeque[2], Gabriel Gonzalez[3,7], *Patricio Catalan[3,6], Elizabeth Maly[1], *Dan Abramson[2], Carrie Garrison-Laney[2], *Michael Motley[2], *Naoko Kuriyama[5], *Lan Nguyen[2], *Adams Adams[2], Anawat Suppasri[1,4], Erick Mas[1,4], Shuji Moriguchi[1] (1. IRIDeS, Tohoku University, 2. University of Washington, 3. CIGIDEN, Chile, 4. Core Research Cluster of Disaster Science, Tohoku University, 5. Kobe University, 6. Universidad Federico Santa Maria, 7. Universidad Católica del Norte)

Keywords: Magnitude Nine (M9), Disaster simulation, Modeling, Planing, Sensing

Megathrust earthquakes along the subduction zones have caused significant impacts on our society and will be causes of future enormous risks and crisis. Many challenges and issues in reducing risks and enhancing disaster resilience have been addressed by on-going and previous research efforts. Now it is time to share the issues and produce innovative outcomes.

This session is a sequel of the International Workshop on Magnitude Nine (M9) Disaster Science that aims to initiate and accelerate the collaborations among the participants from the countries that have experienced megathrust earthquakes with M9, e.g. 1700 Cascadia, 1960 Chile, 1964 Alaska, and 2011 Japan.

©World Bosai Forum Foundation

Oral Sessions | Session

[O3-14]

Fuel stocking proposal to connect life at the time of disaster

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

NIOPN BCP INC

[O3-14-01] Fuel stocking proposal to connect life at the time of disaster

mitsuaki kizaki[1], *Masataka Nakai[1], *Toru Matsunaga[1] （1. NIPON BCP INC）

10:30 AM - 12:00 PM

©World Bosai Forum Foundation

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

[O3-14-01] Fuel stocking proposal to connect life at the time of disaster

mitsuaki kizaki[1], *Masataka Nakai[1], *Toru Matsunaga[1] （1. NIPON BCP INC）

Keywords: ・ About "Japan BCP" approach, ・Service contents, ・ Past activity results, ・ Future prospects, ・Finally

・ About "Japan BCP" approach

Explanation of company profile, activity content

Situation analysis of the oil shortage in the Great East Japan Earthquake

Given the risk of disasters, the fact that large oil tanks are often found in coastal areas is dangerous and it is desirable to store them in inland areas.

Purpose of Emergency Fuel Stocking Proposal

In Japan, the Ministry of Internal Affairs and Communications must require fuel stocks to be able to operate emergency generators for 72 hours for companies with important public infrastructure such as communications and broadcasting, etc., and promote voluntary stockpiling from the Ministry of Economy, Trade and Industry There is a notification to be promoted, and each company is considering fuel storage.

· Service contents

Exclusive storage contract for oil, exclusive delivery contract for emergency

Taking into consideration the emergency, we have stockpiled petroleum fuel from normal times, and we have also operated and maintained the vehicle date and time, and have established a system that can be delivered 24 hours a day, 365 days a year.

・ Past activity results

Activity results for each disaster, such as the Great East Japan Earthquake and heavy rainfall in West Japan

Osaka Prefecture, disaster prevention agreement of Osaka City

Joint research with Kansai University

©World Bosai Forum Foundation

・ Future prospects

There is a big difference in thinking between a company that proactively measures BCP in management after the earthquake and cases that are not. The problem is how to improve awareness.

©World Bosai Forum Foundation

Oral Sessions | Session

[O3-15]

Support for affected areas by "local residents" in the Great East Japan Earthquake "Connecting" town development by "collaboration"

Tue. Nov 12, 2019 1:30 PM - 3:00 PM Room 4 (Shirakashi 1)

All Japan Council Company

[O3-15-01] Support for affected areas by "local residents" in the Great East Japan Earthquake "Connecting" town development by "collaboration"

*Hideaki Murai[1], *Chikako Adachi[1], Hiroaki Enoki[1], *Fumihiko Sugawara[1] （1. All Japan Council Company）

1:30 PM - 3:00 PM

©World Bosai Forum Foundation

1:30 PM - 3:00 PM (Tue. Nov 12, 2019 1:30 PM - 3:00 PM Room 4)

[O3-15-01] Support for affected areas by "local residents" in the Great East Japan Earthquake "Connecting" town development by "collaboration"

*Hideaki Murai[1], *Chikako Adachi[1], Hiroaki Enoki[1], *Fumihiko Sugawara[1] （1. All Japan Council Company）

Keywords: Support for affected areas by "local residents" in the Great East Japan Earthquake "Connecting" town development by "collaboration"

We worked on business warehouse "container Oami" which was not used for making of local bustling before earthquake disaster, but warehouse suffered from Great East Japan Earthquake before completion. The facility was unfinished but staff were employed, so the staff started a cell phone charging service.

Problems such as lost chargers and problems waiting in turn have been resolved each time. Other support activities include:

・ Learning support

Investigate the city of Tome with the University of Tokyo for three years, make a community, and confirm the importance of the living base.

・ Minami Kata temporary housing association activity support

・ Tome establishment of woman support center

・ Support for supplies

・ The RQ Civil Disaster Relief Center starts supporting activities based on the former Masbuchi elementary school gymnasium in Towa Town, Tome City. So we decided to make an original design "Eco Brush". In order to look for areas that can be tackled by the community members, we will hold knitting classes around 40 temporary housing units and community associations so that we can become a team that can work together toward reconstruction rather than just internal jobs.

Develops and sells "Eco-Brush" as a community business.

We visited the town development friends of the whole country, held lectures and knitting parties, and found fans, etc., and developed a sales destination while building a visible relationship

In Hokkaido, we participate in events around March 11 every year and report the situation in Tohoku.

In Kyushu, he has continued to interact with Kumamoto (Mashiki, Minamiaso), Isahaya, Fukuoka and

©World Bosai Forum Foundation

Kitakyushu.

In Kansai, we are building a network with Osaka, Kobe, Ashiya and Mita.

・ We worked on business warehouse "container Oami" which was not used for making of local bustling before earthquake disaster, but warehouse suffered from Great East Japan Earthquake before completion. The facility was unfinished but staff were employed, so the staff started a cell phone charging service.

Problems such as lost chargers and problems waiting in turn have been resolved each time. Other support activities include

We will continue our reconstruction support activities from the perspective of the victims.

©World Bosai Forum Foundation

Oral Sessions | Session

[O3-16]

The Factors Regulate to Community Participation in Sustainable Disaster Recovery Program: An Experience of Cyclone Aila Disaster Affected Coastal People Bangladesh

Tue. Nov 12, 2019 3:30 PM - 5:00 PM Room 4 (Shirakashi 1)

University of Malaya, Malaysia

[O3-16-01] The Factors Regulate to Community Participation in Sustainable Disaster Recovery Program: An Experience of Cyclone Aila Disaster Affected Coastal People Bangladesh

*Emadul Islam[1], Haris Abd Wahab[1] （1. University of Malaya, Malaysia）

3:30 PM - 5:00 PM

©World Bosai Forum Foundation

3:30 PM - 5:00 PM (Tue. Nov 12, 2019 3:30 PM - 5:00 PM Room 4)

[O3-16-01] The Factors Regulate to Community Participation in Sustainable Disaster Recovery Program: An Experience of Cyclone Aila Disaster Affected Coastal People Bangladesh

*Emadul Islam[1], Haris Abd Wahab[1] (1. University of Malaya, Malaysia)

Keywords: Community participation, Factors, Sustainable disaster recovery, Bangladesh

Community participation is crucial for sustainable disaster recovery. The philosophy of Build Back Better in sustainable disaster recovery has emerged in the early 90s and progressed by the United Nations office of the Disaster Risk Reduction (UNISDR) Sendai Framework of Action (2015-2030). Bangladesh ranked 7th top disaster-affected country in the world in recent climate risk index (2019). However, Bangladesh has shown remarkable progress in disaster preparedness, response policy, and planning, but the disaster recovery phase is still remaining weak and ignore in national policy and planning.

This study aim was to identify the factors regulate to community participation in disaster recovery GO and NGO,s program and provide a model to strengthen the local and national strategies to promote bottom-up participation in a disaster recovery program for sustainability.

The study employed a convergent parallel mixed method design where the pragmatic paradigm and concurrent strategies applied in data collection, analysis, and interface. The study interviewed 230 Aila affected people, who participated in the government and non-government recovery program. In addition, a total 20 in-depth interview, 10 key informant interviews, and 2 focus group discussion were conducted for qualitative data. The study had developed a semi-structured questionnaire for quantitative and 3 different checklists for an in-depth interview, KII, and FGD, which was submitted to the University of Malaya Research Ethics Committee (UMREC) for getting ethical approval of the study.

Findings reveal that community participation in GO and NGO,s recovery program can be defined as passive participation. Because of project participant has no or limited access to project related decision making, while they have participated mostly in the project related information and consultation. The study identified eight dominant factors namely, disaster experience and vulnerability, resources, coordination, implementation strategies, ignorance, social capital, commitment and expectation of the community regulate to community participation in the disaster recovery program. In addition, leadership capacity, stakeholder power, political wishes, and power structure influence are also predictor to community participation in the recovery program. The study findings argue that to promote bottom-up participation, collaboration, and integration between GO and NGOs recovery program needed to improve for updating the existing policy or adopting a new policy. The proposition of the study developed from the expert level consultation that in the developing country context the “time paradox” in the disaster management administration has created the new challenge for adopting new policy and planning in the sustainable disaster recovery.

©World Bosai Forum Foundation

Oral Sessions | Session

[O3-17]

Redefining and be preparing for disasters: the lessons from the Moken sea nomads of Thailand

Tue. Nov 12, 2019 8:30 AM - 10:00 AM Room 5 (Shirakashi 2)

Chulalongkorn University

[O3-17-01] Redefining and be preparing for disasters: the lessons from the Moken sea nomads of Thailand

*Narumon Arunotai[1] （1. Research Unit on Indigenous Peoples and Alternative Development, Social Research Institute, Chulalongkorn University, ）

8:30 AM - 10:00 AM

©World Bosai Forum Foundation

8:30 AM - 10:00 AM (Tue. Nov 12, 2019 8:30 AM - 10:00 AM Room 5)

[O3-17-01] Redefining and be preparing for disasters: the lessons from the Moken sea nomads of Thailand

*Narumon Arunotai[1] (1. Research Unit on Indigenous Peoples and Alternative Development, Social Research Institute, Chulalongkorn University,)

Keywords: Moken, Seas nomads, Surin Islands, disaster, relief

Prior to the Indian Ocean tsunami “disaster” of 2004, the Moken sea nomads of Thailand were practically invisible to the Thai public as well as the world. Yet the fact that one village on the Surin Islands in Phang-nga Province survived the incident despite their village being totally destroyed made them visible almost overnight. Recovery was also quick, as they did not have many material possessions and the huts were rebuilt within 3 weeks. In 2019, another “disaster” struck again, this time in the form of village fire, and again, 61 out of 80 huts were destroyed while all villagers escaped safely. Rebuilding huts was quickly done with the help and donation from outside the community. This presentation will trace the Moken’s definition and interpretation of “disasters” and make the analysis of the lessons to be learned from the two incidents and possible ways of thinking about “disasters.” In addition, the presentation will problematize how the “relief” and “recovery” is perceived by the Moken and those outsiders who meant well and who tried to help facilitating the relief and recovery.

©World Bosai Forum Foundation

Oral Sessions | Session

[O3-18]

IFIP session on IT in Disaster Risk Reduction (ITDRR)

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

Tsuda University

[O3-18-01] IFIP session on IT in Disaster Risk Reduction (ITDRR)

*Yuko MURAYAMA[1], *Jun Sasaki[2], *Takashi Yoshino[3] （1. Tsuda University and IFIP(International Federation for Information Processing), 2. Iwate Prefectural University, 3. Wakayama University）

10:30 AM - 12:00 PM

©World Bosai Forum Foundation

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

[O3-18-01] IFIP session on IT in Disaster Risk Reduction (ITDRR)

*Yuko MURAYAMA[1], *Jun Sasaki[2], *Takashi Yoshino[3] (1. Tsuda University and IFIP(International Federation for Information Processing), 2. Iwate Prefectural University, 3. Wakayama University)

Keywords: Information Processing and Sharing for Disaster, Disaster Communications, Use of IT for Disaster Risk Reduction, Tools and Systems for Situation Awareness, Trust Issues at Disaster Management

This IFIP session on IT in Disaster Risk Reduction (ITDRR) is organized to promote a novel area within the IT community, disaster risk reduction (DRR). We have founded an IFIP domain committee on ITDRR and organized annual conferences since 2016. We also organized a workshop related to disaster and diversity at WSIS organized by ITU and UNESCO for three years. We introduce such activities as well as those in Japan: IPSJ as an IFIP Japanese representative, has organized the Disaster Communication Symposium since 2011. We introduce our work as well as introducing this area of research in this session.

©World Bosai Forum Foundation