

Day1
Opening Ceremony
10:00-11:15

Moderator of Opening Ceremony

KAWASAKI Akiyuki



Short biography

KAWASAKI Akiyuki is Professor of the Institute for Future Initiative, The University of Tokyo. He is also an affiliating professor at the Department of Civil Engineering at the School of Engineering, the Digital Observatory Research Initiative, and the Global Environmental Data Commons at the University of Tokyo.

KAWASAKI's research focuses on water-related disaster risk and poverty reduction in Asia through interdisciplinary applications of engineering and social science approaches. He is leading several interdisciplinary research projects in China, India, Myanmar, Sri Lanka and Thailand in collaboration with experts in various fields such as economics, cultural anthropology, history, international relations and computer science using GIS as a collaborative platform.

Before joining the University of Tokyo in 2010, he conducted research at Yokohama National University, United Nations University, Asian Institute of Technology in Thailand, and Harvard University in the US.

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Opening Remarks

KAJITA Takaaki



Short biography

President, Science Council of Japan

KAJITA Takaaki has been serving as the President of Science Council of Japan since October 2020. He is the Distinguished Professor at The University of Tokyo. He received his Ph.D. from The University of Tokyo School of Science in 1986, and has been researching at the Kamiokande and Super-Kamiokande detectors at Kamioka Observatory in central Japan. In 1998, at the International Conference on Neutrino Physics and Astrophysics held in Takayama, Gifu, he showed the analysis results which provided strong evidence for atmospheric neutrino oscillations. In 2015, he shared the Nobel Prize in Physics for his role in discovering neutrino oscillations. Currently, he is the project leader for the KAGRA project, aiming to explore the gravitational wave astronomy.

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Guest Speech

GOTO Shigeyuki



Short biography

GOTO is a member of the House of Representatives from 2000 (seventh term), and currently serving as the Minister of State for Economic and Fiscal Policy under the KISHIDA Cabinet from October 2022. He has held important posts including Minister of Health, Labour and Welfare, State Minister of Justice, Parliamentary Vice-Ministers of Land, Infrastructure, Transport and Tourism. He graduated from the University of Tokyo, faculty of law and joined the Ministry of Finance in 1980. He received a Master's degree from Brown University, USA.

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Guest Speech

TANI Koichi



Short biography

TANI is the member of the Japanese House of Representatives and currently serves as the Minister of State for Disaster Management and Ocean Policy under the KISHIDA Cabinet. He also serves as the Minister in Charge of Building National Resilience and Territorial Issues, and the Chairman of the National Public Safety Commission. He has been the member of the Parliament since 2003 and has experienced several important positions including the Senior Vice-Minister for Reconstruction, Parliamentary Vice-Minister of Land, Infrastructure, Transport and Tourism. He graduated from Political Science and Economics in Meiji University in 1975. Upon graduating, Joined the Hyogo Prefectural Government and he served Ministry of Home Affairs (current Ministry of Internal Affairs and Communications), Fire and Disaster Management Agency, Director-General of Prefectural Disaster Prevention Bureau and Director of Prefectural Policies Office.

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Ceremonial Address

KOMATSU Hiroko



Short biography

KOMATSU Hiroko is President in Japanese Red Cross Kyushu International College of Nursing. KOMATSU' research is centered on oncology nursing. KOMATSU is the former president of the Japan Society of Cancer Nursing.

Education

04/1976-03/1978 Bachelor of Science in Education, University of Tokushima

04/1980-03/1982 Master of Science in Nursing, University of Chiba

04/1990-03/1993 PhD in Nursing Sciences, Graduate School of Nursing, St. Luke's College of Nursing

Academic

04/1982-03/1984 Instructor, St. Luke's College of Nursing

04/1984-03/1988 Lecturer, St. Luke's College of Nursing

04/1988-03/1994 Associate Professor, St. Luke's College of Nursing

04/1994-03/2010 Professor, St. Luke's College of Nursing

04/2010-03/2020 Professor, Faculty of Nursing and Medical Care, and Graduate School of Health Management, Keio University,

10/2015-09/2019 Dean, Faculty of Nursing and Medical Care, Keio University

10/2017-present Council Member, Science Council of Japan

04/2020-present President, Japanese Red Cross Kyushu International College of Nursing

Certification and Licensure

1978 Minister of Health, Labour and Welfare, Registered Nursing License #351148

Ceremonial Address

KURIYAMA Shinichi



Short biography

KURIYAMA Shinichi is Director of International Research Institute of Disaster Science (IRIDeS), Tohoku University. He is a physician, and his specialty is disaster public health. Public health is the science and art with practice of preventing disease and promoting health in populations. He would like to apply the methods of public health that encourage people to lead healthy lives to the field of disaster prevention, and he would like to encourage individuals to actually take action to prevent and mitigate disasters. Public health has developed a national health movement using various means, such as epidemiological surveys to understand the health situation, learning, enactment of laws, and establishment of healthy behaviours as part of the culture. In disaster preparedness, he would like to use the same methods to contribute to a dramatic increase in disaster preparedness and response, including reaching out to those who are indifferent to disaster preparedness and those who recognize the need for disaster preparedness but have not yet implemented it. With the key phrase "fusion of Bosai and health care," he would like to link this to an expansive disaster prevention movement.

Ceremonial Address

NAKAKITA Eiichi



Short biography

Director, Disaster Prevention Research Institute, Kyoto University Deputy Executive Director, Kyoto University Special Advisor, Ministry of Education, Culture, Sports, Science and Technology

Born in Osaka, Japan in 1959. After graduating from the Graduate School of Engineering, Kyoto University, he worked as an assistant in 1985, associate professor in 1991, and associate professor at the Graduate School of Engineering in 2000, Kyoto University, and has been in his current position since 2004. He is a doctor of engineering. During this time, he concurrently served as a visiting associate professor at the University of Iowa and a visiting research professor at the National University of Singapore.

His specialty is radar hydrology and hydrometeorology. He has been leading big national programs related to such as campaign observations of severe storms and researches on climate change effects on disaster environments, and has been involved in various governmental committee members on heavy rain / flood forecasting using weather radar and assessment of the impact of climate change on the disaster environment for many years. He is also engaged in disaster survey teams at home and abroad such as Hurricane Katrina. He was also the chairman of the committee on hydraulic Engineering in Japan Society of Civil Engineers Hydraulic Engineering Committee. He has been leading disaster prevention research that combines civil engineering and meteorology.

He obtained awards such as “Science Award”, Japan Society of Hydrology and Water Resources (JSHW), 2012, “Gambo Award”, Meteorological Society of Japan (MSJ), 2016, and “Research Excellence Award”, Japan Society of Civil Engineers, 2019.

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Introduction

KOIKE Toshio



Abstract

Considering disasters in the past, and those in the years ahead, it is evident that societies across the world need to enhance their capacity to rebuild from catastrophic damage and transform themselves into societies better able to recover, even when this results in significant changes in the state of a nation. On the occasion of the 100th anniversary of the Great Kanto Earthquake, it is important to reflect on Japan's experiences and its accumulated knowledge over the past century, alongside the lessons learned by the experiences of other countries and regions affected by massive earthquakes, violent tsunamis, and giant cyclones. Our goal is to share these valuable insights with the international community and transmit them efficaciously to the younger generation, with the aim of fostering international cooperation. This forum will discuss two themes including "Experiences of Catastrophic Disasters and Transformation" and "Pathways to Overcome Catastrophic Disasters," and consolidate the outcomes in the integrated session. Proceeding from this, we will produce the Tokyo Declaration 2023, and disseminate it to the world.

Short biography

KOIKE Toshio is Executive Director of International Centre for Water Hazard and Risk Management (ICHARM) under the auspices of UNESCO, Professor Emeritus of the University of Tokyo and Council Member of the Science Council of Japan, Cabinet Office. He received the Bachelor, Master, and Doctor of Engineering, in 1980, 1982, and 1985, respectively, from the University of Tokyo, Japan. He was at the University of Tokyo, as a research associate in 1985 and a lecturer from 1986 to 1987, and at the Nagaoka University of Technology, Japan as an associate professor from 1988 to 1999 and a professor in 1999. In 1999, he joined the Department of Civil Engineering, the University of Tokyo, where he held the position of Professor until 2017. He has chaired the River Council of Japan since 2015 and led discussions on water-related disasters to advise the Minister of Land, Infrastructure, Transport and Tourism (MLIT) of Japan. Some of the prominent awards he has won recently include the following: "Award for Contribution to the IPCC NOBEL Peace Prize" from WMO and UNEP" in 2008, "Friendship Award" from the Government of China in 2019, and "AGU Ambassador Award" from the American Geophysical Union in 2022.

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Keynote Speech

HAYASHI Haruo



Abstract

Trillion US Dollar Scale catastrophic disasters are expected to occur in the first half of 21st century in Japan such as the Nankai Trough Earthquake and the Tokyo Metropolitan Earthquake. Since it is impossible to completely deter the expected damage in the time remaining before disasters strike, we focus on "resilience," which is the ability to overcome disasters by encompassing prediction, prevention, response, and recovery efforts. To improve disaster resilience, it is essential to promote science and technology aiming at the "consilience" that integrates knowledge from fields related to disasters as natural phenomena with expertise from fields related to disasters as social phenomena.

As for what should we do with the time we have left to achieve the resilience to overcome catastrophic disasters, we recommend that all stakeholders should continue their efforts in line with the four priority actions of the Sendai Framework for Disaster Risk Reduction 2015-2030. (1) Deepen and expand understanding of disaster risk, (2) Establish new governance to cope with disasters, (3) Ensure the investment in financial expenditure, human resource development, as well as technological development in preparation for disasters, and (4) Establish proactive measures to enable Build Back Better

Short biography

HAYASHI Haruo is the former President of the National Research Institute for Earth Science and Disaster Resilience between 2015 and 2023. He is also Professor Emeritus from Disaster Prevention Research Institute, Kyoto University where he has taught between 1994 and 2015. He received both his Bachelors and Master's degrees from Waseda University, and Ph.D. from the University of California at Los Angeles in the field of social psychology in 1983. He was appointed as an Assistant Professor from Hirosaki University in 1983 where he started his career as a disaster researcher when he studied the responses of people impacted by the 1983 Nihonkai-chubu Earthquake and Tsunami. He moves to Hirosshima University in 1988 as an Associate Professor where he studied societal reactions to an urban typhoon disaster in 1991. In nine months after moving to Kyoto University, he went through the 1995 Kobe earthquake in which he performed the scientific description and theorization of the entire long-term recovery processes. The general focus of HAYASHI's work is on Societal and Human Reactions to Disasters, Risk Communication and Education, Information System for Disaster Management, Standardization of Emergency Operations, and Multi-hazard Risk Assessment.

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Tokyo Statement 2023 Suggestion

TATANO Hirokazu



Short biography

Professor, Disaster Prevention Research Institute, Kyoto University

TATANO Hirokazu is a professor at Disaster Prevention Research Institute (DPRI), Kyoto University, Japan and serving as a head of Social Systems for Disaster Risk Governance Laboratory in DPRI. From September 2010, he is serving a role of Vice President of International Society of Integrated Disaster Risk Management (IDRiM Society). He is also serving as a secretary general of the Global Alliance of Disaster Research Institutes, which established at the occasion of the second global summit of research institutes for disaster risk reduction, March 19-20th 2015. He is appointed as a President of Japan society of natural disaster sciences.

He received his M.Sc. and Ph.D. in civil engineering from Kyoto University. Much of TATANO's research is on the economics of natural hazards. He led the socio-economic assessment survey team of the Japan Society of Civil Engineering for the East Japan Earthquake, Kumamoto Earthquake, and so on. TATANO has done pioneering research on economic consequence analysis. Another major focus of his research has been on resilience to natural disasters at the levels of the individual business, market, and regional economy.

Theme 1 : Experiences of Catastrophic Disasters and Transformation

Session1-1 : The Great Kanto Earthquake and Recovery

11:20 – 12:30

Theme Coordinator,
Moderator

TAKARA Kaoru



Short biography

TAKARA Kaoru serves as President of National Research Institute for Earth Science and Disaster Resilience (NIED) from 2023. He also holds positions as Professor Emeritus of Kyoto University, Associate Member of Science Council of Japan (SCJ) from 2008, Secretary-General of Asia Pacific Association of Hydrology and Water Resources (APHW), Executive Director of the International Consortium on Landslides (ICL) and Chairperson of Japanese National Committee for International Water Resources Association (IWRA) among others. He received his B. Eng. (1979), M. Sc. (1981) and D. Eng. (1990) degrees from Kyoto University and his main research interests have been on hydrological analysis using advanced modeling of river basins and disaster risk governance. He is former Director of the Disaster Prevention Research Institute (DPRI) and Dean of Graduate School of Advanced Integrated Studies in Human Survivability (GSAIS) of Kyoto University. He published series of co-authored books, peer-reviewed papers in academic journals, and articles in annuals, journals and international conferences. He has significantly contributed to promoting international research activities through key initiatives including the UNESCO International Hydrological Programme (IHP), ICL and the Global Alliance of Disaster Research Institutes (GADRI). He had also taken central roles in the establishment of Japan-ASEAN Science, Technology and Innovation Platform (JASTIP) Disaster Prevention Program (WP4) and UNECO Chair on Water, Energy and Disaster Management for Sustainable Development (WENDI) at Kyoto University. As an educator, he has produced 48 doctors from Japan, Asia-Pacific countries, and other regions such as Brazil, Croatia, and Tanzania. He received a number of notable awards, including Long-Term Contribution Award from UNESCO-IHP Regional Steering Committee for Southeast Asia and the Pacific in 2015 and Distinguished Contribution Award from Japan Society of Civil Engineers (JSCE) in 2022.

Characteristics of the 1923 Great Kanto Earthquake and Lessons Learned

TAKEMURA Masayuki



Abstract

At the 100th anniversary of the Great Kanto Earthquake, the presentation is aimed to recall the principles of the past reconstruction projects and to rebuild Tokyo into a more resilient city against earthquakes.

The industrial urbanization policies after the Meiji Restoration in 1868 resulted in concentrated population and wooden buildings on soft ground without sufficient infrastructure in/around Tokyo. Consequently, the Great Kanto Earthquake in 1923 became one of the most destructive disasters in Japan in which approximately 70% of the damages concentrated in Tokyo. The Imperial Capital Reconstruction Project (1924-1930) was aimed to reconstruct the capital with strengthened resilience against earthquakes and fire, which costed the government about 724.5 million yen (about 4 trillion yen in current value). The Project included land readjustment, redesign of road networks with new national, arterial and auxiliary roads, reconstruction of bridges with aesthetic improvements, construction of new parks, and reconstruction of elementary schools.

In post-World War II, new resilience challenges against large-scale earthquakes have been observed such as densely-packed wooden houses, waterfront development, and expansion of zero-meter zones in land subsidence areas due to overuse of groundwater, high-rise condos on reclaimed land in central Tokyo causing isolation due to rapid development. Japan has been pursuing economic growth at the cost of resilience and the dignity of the capital city which had been priorities after the Great Kanto Earthquake.

Short biography

TAKEMURA Masayuki is a graduate of Tohoku University's Graduate School of Science and currently visiting professor of Disaster Mitigation Research Center at Nagoya University, Japan. An expert in seismology and earthquake engineering, he published notable publications, especially on the Great Kanto Earthquake. Previously, he worked for Kajima Technical Research Institute and as Vice-President of Kobori Research Complex Inc. He has also taken several key positions including Vice-President of Japan Association for Earthquake Engineering, President of the Society of Historical Earthquake Studies and an Advisory Panel member of the Central Disaster Management Council. He has received various awards including the Best Paper Award from the Seismological Society of Japan (2007) as well as Architectural Institute of Japan (2013), the Commendation for Science and Technology by the Minister of Education, Culture, Sports, Science and Technology (MEXT), Japan (2017) and appointed as an Honorary Member of Japan Association for Earthquake Engineering in 2021.

Disaster Records of the Great Kanto Earthquake: International Outreach

KITAHARA Itoko



Abstract

Projects developed after a disaster generally start with the relief of victims, and then progress to the development and reconstruction of the damaged infrastructure of the society. In the case of the Great Kanto Earthquake, since the business entity responsible for these two phases and the implementation period were different, the disaster record was also divided into two. In the current presentation, I will give a closer look at "The Great Earthquake of 1923 in Japan" (The Bureau of Social Affairs) and "The Reconstruction of Tokyo" (Tokyo Municipal Office) as representative examples, and examine what they tried to convey to the outside world.

Short biography

Institute of Disaster Mitigation for Urban Cultural Heritage,
Ritsumeikan University
58 Komatsubara Kitamachi, Kita Ward, Kyoto, 603-8341
Email: itoko70@gmail.com

Academic employment

- Visiting scholar, Ritsumeikan University, 2014-present.
- Visiting professor, National Museum of Japanese History, 2013-2014.
- Distinguished visiting professor, Ritsumeikan University, 2009-2013.
- Specially appointed professor, Kanagawa University, 2007-2009.

Education

- Ph.D. in Literature, Seijo University, 1999.
- M.A. in History, Tokyo Educational University, 1970.
- B.A. in Liberal Arts, Tsuda College, 1962.

Honors and awards

- The 30th Minakata Kumagusu Prize, 2020.
- Achievement Award, Japanese Society for Natural Disaster Science, 2018.
- Distinguished Service Award, The Society of Historical Earthquake Studies, 2018.

Publication (selected)

- Shinsai fukko wa dou hikitsugaretaka (How the earthquake disaster reconstruction was inherited), Fujiwara shoten, 2023.
- Saigai to shisha (Disaster and the deceased), Yoshikawa Kobunkan, 2021.
- Tsunami saigai to kindai nihon (Tsunami disaster and modern Japan), Yoshikawa Kobunkan, 2013.
- Nihon shinsai shi (Disaster history in Japan), Chikuma Shobo, 2016.
- Jishin no shakai shi (Social history of earthquake), Asahi Shimbun Shuppan, 2011.

The Great Kanto Earthquake and the Subsequent Progress in Disaster Management and Disaster Risk Reduction Policy in Japan

MURAKAMI Takeo



Abstract

The Great Kanto Earthquake not only caused unprecedented damage to the metropolitan area of modern Japan but also marked the starting point of modern disaster management and disaster risk reduction policy in the country. Its date of occurrence, 1st of September, is remembered by Japanese citizens as the "Disaster Prevention Day," on which many communities and local governments organize disaster drills. The presentation by MURAKAMI will provide the audience an overall picture of the centennial development of disaster management and disaster risk reduction policy in Japan after the Great Kanto Earthquake and changes in surrounding socio-economic conditions. He will also highlight major policy development after the subsequent major disasters, including the Ise-Wan Typhoon in 1959, the Great Hanshin-Awaji Earthquake in 1995 and the Great East Japan Earthquake in 2011.

Short biography

MURAKAMI Takeo is a Japanese career government official with working experience in the Ministry of Land, Infrastructure, Transport and Tourism (MLIT), the Cabinet Office and the United Nations. His areas of expertise include disaster risk reduction, land and property policy, and territorial development. He engaged in disaster response against the Great East Japan Earthquake in 2011 as a member of the Secretariat for the Government's Disaster Management Headquarters. He also worked for the United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA) and United Nations Office for Disaster Risk Reduction (UNDRR, then UNISDR) from 2007 to 2010. He graduated from the University of Tokyo and earned a master's degree from the Harvard University.

Theme 1 : Experiences of Catastrophic Disasters and Transformation
Session1-2 : Catastrophic Disasters and International Cooperation
13:50-15:00

Moderator

NISHIKAWA Satoru



Abstract

This session 2 of Theme1 will invite inputs from the 1948 Ashgabat Earthquake of Turkmenistan, 1970 Cyclone Bohla of Bangladesh and how these countries have stood up to address these catastrophic events through preventive approaches and mobilized necessary resources and expertise domestically and from the international community. There will also be input from the United States

Regarding key principles for effective leadership in a catastrophe. Based on these three inputs, there will be interactive discussions on how to effectively address catastrophic disasters from both domestic and international perspectives.

Short biography

NISHIKAWA Satoru has a long professional experience in the Japanese Gov't, United Nations, Tokyo Metropolitan Gov't, Asian Disaster Reduction Center and universities, related to disaster reduction, humanitarian affairs and infrastructure planning. At the wake of the Indian Ocean Tsunami in 2004, he coordinated the Japanese Government technical assistance to the affected countries. He hosted and coordinated the 2005 UN World Conference on Disaster Reduction where HFA was adopted. He formulated the Japanese Business Continuity Guideline in 2005, proposed the Nationwide Movement for Disaster Reduction in 2006 and newly organized the Japanese policy to reduce tornado damage in 2007. He was the Japanese Gov't on-site coordinator for the Niigata-Chuetsu Earthquake in 2004. He was a member of the Advisory Group to the UN SRSG for DRR for the formulation of SFDRR. From 2013 to 2015, he served as Vice-president, Japan Water Agency. He holds a master's degree in regional science and Ph.D. in risk analysis. In 2018 he joined Nagoya University Disaster Mitigation Research Center as professor. After completion of his term as tenure professor he joined JICA in April 2023 as senior advisor for disaster reduction strategy. He is also a specially appointed professor at Tohoku University IRIDeS

Focus zones of strong earthquakes occurring in Turkmenistan. Disaster and recovery after Ashgabat earthquakes of 1948

Svetlana Akhmedova



Abstract

On October 6, 1948, a strong earthquake occurred in the Ashgabat region. For 10-15 seconds, the city and nearby villages were destroyed. After the disaster, only a few buildings remained in the city, suitable for use after a major reconstruction. To date, everything is being done in the country so that such a tragedy does not happen again. The country has a state program "Seismic Risk Reduction in Seismic Zones of Turkmenistan". The Institute developed the National map of seismic zoning of Turkmenistan in 2017. and a new seismic microzoning map of Ashgabat in 2023. All new maps being developed will be approved as regulatory documents for construction. On the basis of normative maps of seismic zoning, earthquake-resistant construction, rational land use and long-term socio-economic planning are carried out, seismic vulnerability and possible damage from the destructive consequences of strong earthquakes are assessed. Since 2018 The Institute, in cooperation with the United Nations Development Program, participates in the Project "Strengthening the National Capacity of Turkmenistan in Seismic Risk Assessment, Prevention and Response to Potential Earthquakes".

Short biography

Svetlana Akhmedova, after graduating from the Faculty of Mathematics of the University, went to work at the Institute of Seismology and Atmospheric Physics of the Academy of Sciences of Turkmenistan. The main scientific articles are devoted to the study of the seismic regime, the identification of spatial and temporal patterns of seismicity in the Turan-Iranian region.

Work experience 42 years, the last 24 years I have been working as the scientific secretary of the institute. By occupation, I am currently involved in the organization of scientific research at the institute, reporting on the implementation of surveys, on state programs and international cooperation.

The State of U.S. Catastrophic Planning: A U.S. Practitioner's Perspective

Clifford Oliver



Abstract

The United States' approach to preparing for and responding and recovering from catastrophic events continues to evolve. Several defining events to include the September 11, 2001, terrorist attacks and Hurricane Katrina in 2005, drove changes in how the U.S. responds to large scale hyper-disruptive disasters. The 9/11 attacks resulted in the creation of the Department of Homeland Security and the effects of Hurricane Katrina led the U.S. Congress to pass the Post Katrina Emergency Management Reform Act. More recently, the COVID-19 pandemic is the impetus for a renewed conversation among U.S. policy makers, numerous stakeholders, and academicians as to how best to respond to unprecedented, but not unpredicted, catastrophic events. There continues to be an ongoing debate as to how to best plan for catastrophic events. Some argue it isn't possible to plan for a large scale hyper-disruptive disaster, instead arguing that developing a response and recovery "framework" offers a better path forward. Another area of ongoing debate is whether the "all-hazards" approach, currently generally accepted as the most efficient approach to disaster planning or is the hazard-specific scenario-based planning approach currently employed for catastrophic planning, the best approach to managing hyper-disruptive events. This presentation will examine these issues.

Short biography

Clifford Oliver is the Principal of Nanticoke Global Strategies LLC located in the State of Delaware, U.S. He is currently supporting domestic and international clients. His formidable public safety background and forty years of experience enables him to offer his clients a unique perspective and extensive knowledge of emergency management, homeland security, and business continuity programs. In his 30 years of U.S. government federal service, he held numerous technical, managerial, and executive level positions and authored numerous government publication. Oliver spent twenty years as a federal Senior Executive Service (SES) member with the U.S. Department of Homeland Security's (DHS) Federal Emergency Management Agency (FEMA), and the United States Department of Agriculture (USDA). Before recently retiring from University of Maryland Global Campus (UMGC), he served on the faculty, achieving the rank of Adjunct Professor. During his over decade with UMGC, he developed and delivered undergraduate and graduate level courses across a broad array of emergency management, homeland security, and public safety subjects. He was nominated multiple times for the UMGC Stanley J. Drazek Teaching Excellence Award and the UMGC Teaching Recognition Award.

Unprecedented International Response to a Catastrophic Cyclone: The Bangladesh Case

Muhammad Saidur Rahman



Abstract

The Bhola Cyclone of 12 November 1970 is the worst hydro-meteorological disaster in the recorded history of the world. It killed over one million people and caused colossal damage to properties and infrastructure. The international response to this catastrophic disaster was un-precedented.

The United Nations conveyed a Special General Assembly to address the challenges posed by the need of immediate humanitarian assistance, reconstruction of the infrastructure and development of community capacity to face such disaster in the future. It coordinated a massive operations, supported by a large number of its Member States, several national societies of Red Cross and international NGOs. Under the reconstruction phase, among other areas, a large number of purpose-built reinforced cyclone shelters were constructed as safe havens for evacuation of people at threat of cyclonic disaster.

One component of international cooperation to prepare the community to face tropical cyclone in the future was the establishment of the Cyclone Preparedness Programme (CPP). Thousands of volunteers from the high-risk areas were recruited, trained and equipped to disseminate the early warning against approaching cyclone, evacuate population at risk to cyclone shelters, rescue of people trapped and provide first aid to the injured. Today, fifty years later, the programme is still going very strong with over 74,000 community volunteers, 50% of whom are women.

Short biography

Muhammad Saidur Rahman, Founder and Director of Bangladesh Disaster Preparedness Centre (BDPC), is the only Bangladeshi to have received the Certificate of Distinction under United Nations-Sasakawa Award for Natural Disaster Reduction from UNISDR in the year 2002. The Award was presented to him in recognition of his credible services in the field of disaster management at home and abroad.

Graduated from the Australian Counter Disaster College in Disasters Services Administration, Saidur held important positions such as the Country Representative for Oxfam-UK in Bangladesh, Deputy Country Representative for Oxfam-UK in Somalia, Deputy Secretary General of Bangladesh Red Cross Society and the Director of the widely acclaimed Cyclone Preparedness Programme (CPP) of Bangladesh.

During his long career of over fifty years in the field of disaster management, Saidur lead major relief and rehabilitation operations at home and abroad. He trained a large number of professionals and civil servants from many countries of Asia and Africa in the field of disaster risk reduction. He participated at and facilitated or moderated several national, regional and international events related to disaster management.

TBC

Mürsel Dođrul



Abstract

The wide-ranging array of calamities, including earthquakes, floods, fires, and more, spanning extensive territories and yielding catastrophic consequences, inflict substantial economic and societal harm, necessitating arduous and enduring endeavors for effective mitigation. Addressing these threats with a scientific foundation is imperative. The profound earthquake disasters that unfolded in our nation on February 6, 2023, stand engraved in memory as an unforgettable natural catastrophe. The earthquake's impact zone (11 cities) and its manner of occurrence presented multifaceted challenges for our country. Serving as our nation's scientific academy, the Turkish Academy of Sciences (TÜBA) extended not only tangible and intangible support to our field operatives but also diligently documented data recognizing its significance for fortifying recovery and fostering sustainable reconstruction. Guided by TÜBA's organization, we hold the "TÜBA Conference on East Anatolian Fault Line Earthquakes: Findings and Recommendations" on February 22, 2023, in Ankara. The conference underscored the potential of international collaboration, notably Japan's, in surmounting earthquakes. Gratitude was expressed towards all entities, individuals, and states for their invaluable contributions. Alongside technical earth science analyses and seismic inquiries, a diverse spectrum of subjects encompassing disaster management, education, ecology, environment, agriculture, animal husbandry, crisis management, communication, urban planning, psychology, law, and public health was comprehensively explored. In light of past experiences, notably, lessons from the 1999 İzmit Earthquake, revisiting our upgraded legislation, replete with globally surpassing regulations and safeguards, is requisite due to practical impediments encountered during implementation. The experiences of the country in this process have been discussed in detail for strong resilience and sustainable reconstruction in a scientific report by TÜBA and the findings of this report titled East Anatolian Fault Line Earthquakes: Findings and Recommendations will be shared with the participants in summary form.

Short biography

Mürsel Dođrul holds the position of Assistant Professor at the Turkish National Defence University and is also an Advisor to the President of the Turkish Academy of Sciences (TÜBA). He is also the representative of the Turkish Young Academy. He successfully obtained his degree in International Relations from Bolu Abant İzzet Baysal University in 2014, embarking on a journey of academic exploration that spanned both his undergraduate and postgraduate studies, during which he conducted substantive research endeavors in countries including Romania, Spain, and Ukraine. In 2013, he completed insightful one-month internships at both the Ministry of EU Affairs and the Ministry of Foreign Affairs of Turkey. His academic pursuits culminated in the attainment of an M.Sc. degree in International Relations from Necmettin Erbakan University, followed by the successful completion of his Ph.D. at the Turkish National Defense University in 2021. In the year 2023, Dođrul contributed his expertise as a guest researcher at Meiji University. Dođrul has made notable contributions to the field through an array of scholarly and scientific works, with a dedicated concentration on international security and the evolutionary dynamics of international relations literature. His scholarly pursuits further extend to the understanding of Japanese foreign policy, energy policies, and security considerations. Beyond his academic endeavors, Dođrul exhibits an intermediate level of proficiency in Japanese, complemented by advanced fluency in English.

Theme 2 : Pathways to Overcome Catastrophic Disasters

Session2-1 : Projected Catastrophic Disasters

15:30-16:40

Moderator

SATAKE Kenji



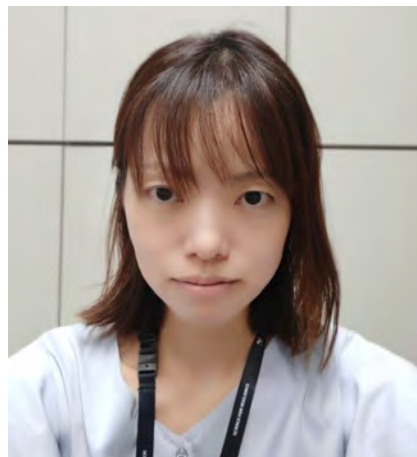
Short biography

SATAKE Kenji is professor and former (2019-2023) director of Earthquake Research Institute, the University of Tokyo. He obtained BS and MS from Hokkaido University and Ph.D. from the University of Tokyo. He has held research and teaching positions in Tokyo Institute of Technology, California Institute of Technology, the University of Michigan, Geological Survey of Japan, before joining the University of Tokyo. His research interests are giant earthquakes and tsunamis in the world, for which he uses geophysical, geological and historical approaches.

He is a current member of Science Council of Japan, and past president of International Association of Seismology and Earth's Interior (2019-2023), a fellow of American Geophysical Union (2010) and International Union of Geodesy and Geophysics (2015). He received Axford Medal (2020) from Asia and Oceania Geosciences Society (AOGS), and prime minister's award for disaster management (2022).

Progress of Seismology and its Application toward Seismic Disaster Risk Reduction

IWAKI Asako



Abstract

One hundred years have passed since the 1923 Great Kanto Earthquake. Confronting the risk from the future earthquakes, our society have developed various technologies and systems for seismic hazard assessment and disaster mitigation, taking advantage of the progress of seismology. Modern seismology in Japan started in the late 19th century and rapidly evolved with the development of nation-wide seismic observation. Establishment of the Headquarters for Earthquake Research Promotion (HERP) after the 1995 Kobe earthquake further accelerated seismological research and its application. Based on the HERP's long-term evaluation of the earthquake occurrence probability, the first national seismic hazard maps of Japan were released by HERP in 2005, which have been updated annually. Strong-motion observation network has been strengthened, which contributed to development of the methodologies for predicting seismic damage for future earthquakes as well as real-time ground-motion prediction, i.e. earthquake early warning. Using these technologies, it is now an urgent task to make a prediction of the catastrophic seismic disaster due to oncoming future mega-earthquakes, including Nankai earthquakes. The biggest challenge in predicting such phenomena that we have never experienced or recorded in the history, is the management of various uncertainties in prediction.

Short biography

IWAKI Asako is a Chief Researcher of the National Research Institute for Earth Science and Disaster Resilience (NIED). After graduating from Kyoto University in 2006, she received the doctor of science degree in 2011 at the Department of Earth and Planetary Sciences, Graduate School of Science, Kyoto University.

Her main research topics at NIED are strong-motion prediction and seismic hazard assessment using seismic observation records and simulations. She is a governing board member of the non-profit public-private partnership Global Earthquake Model, in which NIED participates as a public partner.

Catastrophic Tsunami Disaster - Its Impact, Disaster Response, and Mitigation

KOSHIMURA Shunichi



Abstract

The 2011 Great East Japan earthquake and tsunami disaster revealed many problems in Japan's disaster management policies, and these have undergone reforms in the years since to promote initiatives for building national resilience in confronting any future disasters. One of the key challenges in the aftermath of a tsunami disaster is identifying its impact and prioritizing disaster response and relief activities. Because of the widespread damage to infrastructure and communication networks, the impacted regions were hampered in addressing the overall damage, sometimes for months. This experience highlighted the need to develop technologies to forecast the regional impact of tsunamis and to utilize forecast information for better and more effective relief and response efforts. Recent advances in high-performance computing and large data sets comprising observations and sensing of tsunami generation, propagation, inundation, and its effects hold out the promise of dramatically improving our understanding of the whole picture of tsunami-affected areas in real-time.

Short biography

KOSHIMURA Shunichi is a Deputy Director and a Professor at International Research Institute of Disaster Science, Tohoku University. His research focuses on "Real-time Disaster Science" which aims to elucidate disaster processes and social impacts of natural disasters by fusion of numerical modeling, earth observation, and geo-informatics with HPCI (High-Performance Computing Infrastructure). KOSHIMURA is a Co-Founder and CTO of RTi-cast, Inc., a university-based technology start-up to offer real-time tsunami inundation damage forecast services to government organizations and commercial clients.

KOSHIMURA received a Ph.D. degree from the Graduate School of Engineering, Tohoku University in 2000. After graduating from Tohoku University, he started his career as a postdoctoral research fellow at Pacific Marine Environmental Laboratory (PMEL), NOAA.

As his research achievements, he has received awards and honors including Coastal Engineering Journal Award, Mohammed El-Sabh Award of Natural Hazards Society, Japan Water Prize, Best Paper Award of Japan Society of Civil Engineers, and the Commendation for Science and Technology by the Minister of Education, Culture, Sports, Science and Technology.

Climate Change Impacts on Catastrophic Meteorological Disasters

HIRABAYASHI Yukiko



Abstract

As climate change advances, the frequency and severity of weather-related disasters, such as heatwaves, heavy rainfall, and flooding, are expected to rise. Through the utilization of large ensemble climate experiments, the impact of climate change on weather-related disasters has been confirmed, with projections indicating future rates of increase.

Furthermore, if our climate goes beyond a tipping point, such as the potential collapse of ice sheets, this might lead to catastrophic changes, including disastrous sea level rises ranging from several meters to as much as ten meters. Additionally, extensive climate transformations could result from the slowing or cessation of the Atlantic Meridional Ocean Circulation (AMOC) due to the freshwater supply from melting ice sheets. In response to the observed destabilization of the West Antarctic Ice Sheet, the latest IPCC 6th Assessment Report mentioned for the first time the qualitative impact of the low-frequency, high-impact tipping elements when they occur.

A rapid transition to a low-carbon society is imperative in reducing the likelihood of such catastrophic tipping element. Moreover, since climate change is already underway, promoting appropriate adaptation measures to counter the increasingly frequent weather-related disasters is also of utmost importance.

Short biography

After completing her studies at the School of Engineering, Shibaura Institute of Technology, she pursued further education in Department of Civil Engineering, The University of Tokyo, where she obtained her Ph.D. Subsequently, she held positions as an assistant professor at the Interdisciplinary School of Medicine and Engineering, Yamanashi University, and as an associate professor at the School of Engineering, The University of Tokyo. Since April 2018, she has been serving as a professor at the Department of Civil Engineering, Shibaura Institute of Technology.

She is a member of the Engineering Academy of Japan since 2022. Additionally, she has served as a board member of the Japan Society of Hydrology and Water Resources from 2022 to 2024, as well as a board member of JSCE from 2023 to 2025. Furthermore, she is a lead author of the Sixth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC). Her expertise lies in the field of global water cycle, water related hazards, and water resource projection and adaptation in response to climate change.

She has received prestigious accolades, such as the 2009 Tison Award from the International Association of Hydrological Sciences and the 17th JSPS Award in 2021.

Designing New Economic Instruments for Resilience Against Mega-Disasters

Christopher Allen



Abstract

The presentation examines how Japan as an advanced capitalist economy can develop the economic instruments required to unlock private financing in order to successfully resist the combined threats of mega-natural disasters and climate change. Policy suggestions are developed based on best international practices for financing mitigating investments, developing broader insurance coverage, and enhancing capacity for resilience against natural disasters. Specific challenges facing households, SMEs, and local areas are separately addressed. The scope for transformative resilience through increased decentralisation of the economy is also examined. Consideration of these wider policy tools can hopefully help reset sterile debates over the appropriate size of government spending on natural disaster management. The size of overall resources for natural disaster mitigation can and should be greatly enlarged through encouraging new private investments.

Short biography

Christopher Allen is speaking at the conference on a personal basis. He currently works as an economist for the European Commission in Athens. He has close personal experience of the Greek economic crisis program and the successful recent recovery of the Greek economy. Mr Allen earlier contributed to the EU's negotiating strategy on global climate change, was responsible for EU industrial and business policy making, and played an important role in the development of the EU Horizon 2020 programme on key enabling technologies. He was previously head of economic forecasting at the European Central Bank and was a university lecturer in the UK and the Netherlands. He has a PhD in Economics from London Business School and numerous.

Theme 2 : Pathways to Overcome Catastrophic Disasters

Session2-2 : Transforming societies to overcome future catastrophic disasters:
what to protect and how to recover and rebuild

9:30-10:40

Moderator

NISHIGUCHI Naohiro



Short biography

NISHIGUCHI Naohiro, President, Japan Bosai Platform.

NISHIGUCHI Naohiro is the co-founder and President of the Japan Bosai (Disaster Risk Reduction) Platform (JBP). As a Japanese citizen, he fully understands the significance of preparing for natural disasters. He strongly supports the Sendai Framework and SDGs.

JBP's motto and mission are "Saving People Beforehand" by fostering a society where rescue missions after natural disasters are unnecessary. This can only occur when society makes proactive financial and non-financial investments.

He is globally recognized as an expert in ISO Innovation Management System Standards and certified as an Innovation Management Professional by RISE (Sweden), possessing the expertise to navigate the intricate landscape of global innovation.

In his roles as the Managing Director at the Global Entrepreneurship Network (GEN) Japan, President of the Japan Bosai (Disaster Risk Reduction) Platform (JBP), and a Professor at Sophia University, he plays a pivotal role in driving entrepreneurship, fostering innovation, and promoting disaster risk reduction initiatives. His educational background, including an MBA from the Kellogg School of Management, Northwestern University, and a Bachelor's degree from Sophia University, combined with an entrepreneurial mindset and extensive experience, contribute to his success in inspiring and empowering others.

Theme 2 : Pathways to Overcome Catastrophic Disasters

Session2-2 : Transforming societies to overcome future catastrophic disasters:
what to protect and how to recover and rebuild

9:30-10:40

Impact of the Great East Japan Earthquake on Society and Livelihoods and the Recovery Process

YAMAMOTO Masanori



Abstract

YAMAMOTO Masanori, who has on-the-ground experience as Mayor of Miyako City, will provide valuable insights from a governance and investment perspective on the current situation and subsequent approaches to recovery and reconstruction based on his first-hand experience of disaster recovery and reconstruction.

Short biography

YAMAMOTO Masanori, Mayor Miyako City

August 3, 1955: Born at former Taro-cho

1974: Graduated from Morioka Daiichi High School

1981: Graduated from School of Dentistry, Iwate Medical University

1984: Started Dentistry Clinic at former Taro-cho

2000: Appointed as Vice Chairman of Miyako Dental Association

2001: Appointed as a member of Taro-cho Board of Education

2004: Appointed as a member of Miyako City, Taro-cho, Niisato-mura Merger Commission

2005: Appointed as a member of the Miyako City Board of Education

2008: Appointed as Chairman of the Miyako City Board of Education

July 3, 2009: Assumed the office of Second Miyako City Mayor

Theme 2 : Pathways to Overcome Catastrophic Disasters

Session2-2 : Transforming societies to overcome future catastrophic disasters:
what to protect and how to recover and rebuild

9:30-10:40

Systemic Approaches to Reducing Health Risks and Impacts of Emergencies and Disasters

Jonathan Abrahams



Abstract

Jonathan Abrahams offers insights into systematic approaches to managing health-related risks and impacts from health emergencies and disasters from governance and whole-of-society perspectives. He will discuss key developments, including the WHO Health Emergency and Disaster Risk Management Framework, to support the implementation of the Sendai Framework for Disaster Risk Reduction 2015-2030, the SDGs, International Health Regulations (2005) and other related global, regional and national frameworks.

Short biography

Jonathan Abrahams, Director, Monash University Disaster Resilience Initiative (MUDRI)

Associate Professor (Practice) - Disaster Risk Management and Resilience

Jonathan Abrahams leads and supports transdisciplinary collaborative research, education and projects with local, national, regional and international partners on strengthening community resilience, health emergency and disaster risk management, and climate change adaptation. While working with the WHO Health Emergencies Programme, he played leading roles in advancing risk-based approaches to global policy, good practice guidance and capacity development across health systems and the whole-of-society, e.g., the WHO Health Emergency and Disaster Risk Management (EDRM) Framework, and providing advice to Member States for the negotiations of the Sendai Framework for Disaster Risk Reduction 2015-2030. Associate Professor Abrahams has facilitated partnerships in health, e.g., WHO Health EDRM Research Network in collaboration with the WHO Centre for Health Development in Kobe, Japan, and with countries, UNDRR, WMO and partners to promote the integration of public health, disaster risk management and climate change adaptation. His experience includes designing and delivering regional training programs for country health emergency managers at the Asian Disaster Preparedness Centre, establishing emergency response teams at AusAID, managing development programs and performance standard reporting at Emergency Management Australia, and helping establish the National Centre for War-Related Post-traumatic Stress Disorder.

Theme 2 : Pathways to Overcome Catastrophic Disasters

Session2-2 : Transforming societies to overcome future catastrophic disasters:
what to protect and how to recover and rebuild

9:30-10:40

The Impact of Disruptive Disasters on Socioeconomic Activities and the Effectiveness of Regional BCM

WATANABE Kenji



Abstract

WATANABE Kenji emphasizes the significance of Business Continuity Management (BCM) not only at the individual organization level but also from an area-BCM perspective. His perspective highlights the importance of a coordinated approach within a region to increase resilience based on the Public-Private Partnership from perspective of economic rationality.

Short biography

WATANABE Kenji is professor at the Graduate School of Engineering, and also the head of Disaster & Safety Management of the Nagoya Institute of Technology in Nagoya, Japan. His professional areas are risk management, BCM (Business Continuity Management), and CIP(Critical Infrastructure Protection) based on his over 20 years business and professional experiences at the Mizuho Bank (corporate finance in US operation), PricewaterhouseCoopers and IBM in financial business (strategy building, process reengineering, system design) and risk management fields. He is assigned as a chair of several governmental committees in Japan on risk management, business continuity management (BCM), critical infrastructure protection (CIP), and national security in the Cabinet Secretariat, the Ministry of Economy, Trade and Industry, Ministry of Agriculture, Forestry and Fisheries and other national/regional governments. He is the expert member and head of delegation of Japan for ISO/TC292 (Security & resilience)

He also contribute in supporting partitional researches at NIED (National Research Institute of Earth Science and Disaster Resilience) and DRI (Disaster Reduction and Human Renovation Institution) as an invited researcher, an editorial board member of the International Journal of Critical Infrastructure Protection (IJCIP), and a member of the Future Vision Committee of DRII (DRI International). He has MBA and PhD in Information, Production and Systems.

Theme 2 : Pathways to Overcome Catastrophic Disasters

Session2-2 : Transforming societies to overcome future catastrophic disasters:
what to protect and how to recover and rebuild

9:30-10:40

Achieving Transnational Resilience through Science and the Participation of Diverse Actors (tentative)

Lauren Alexander Augustine



Abstract

Lauren Alexander Augustine provides insights into transnational resilience and the value of international collaboration in overcoming challenges posed by catastrophic disasters. Her perspective highlights the need for strategic direction and multidimensional, scientifically grounded programs in recovery and reconstruction efforts from governance and investment

Short biography

Lauren Alexander Augustine is the executive director for the Gulf Research Program. She is responsible for overseeing all aspects of management and use of the criminal settlement funds from the Deepwater Horizon disaster that were entrusted with the National Academies by the federal government. This includes fulfilling the vision, defining the strategic direction, and leading the development and implementation of this multidimensional, science-based program.

Since her tenure at the National Academies began in 2002, Augustine has gained experience working in a variety of roles on a broad range of topics pertaining to water, natural disasters, and resilience. Prior to joining the Gulf Research Program in 2018, she served as director of the Resilient America Program, which supports communities' efforts to build resilience to extreme events using science and diverse stakeholder engagement. In addition, she has formerly served as country director for the African Science Academy Development Initiative, a decade-long program that built scientific capacity in national academies across Africa; as director of the Disasters Roundtable; and as a study director for the Water Science and Technology Board.

Outside of her work at the National Academies, Augustine has served on the World Economic Forum's Global Agenda Council on Risk and Resilience; was a member of the Advisory Board for the American Geophysical Union's Thriving Earth Exchange program; and was a juror for two resilience competitions, Rebuild by Design for recovery after Hurricane Sandy and Resilience by Design in San Francisco. She is also a NATO expert for the Civil Protection Group.

Augustine earned her B.S. in applied mathematics and systems engineering and her M.S. in environmental planning and policy from the University of Virginia, and her Ph.D. in an interdisciplinary program that combined physical hydrology, geomorphology, and ecology from Harvard University.

Moderator

TAMURA Keiko



Short biography

TAMURA Keiko received her Ph.D. from the Graduate School of Informatics, Kyoto University, and has been Professor at the Risk Management Center of Niigata University since 2009. She is currently Research Supervisor of Science and Technology Research Partnership for Sustainable Development (SATREPS) Program of Japan Science and Technology Agency (JST) and Senior Researcher at the Disaster Reduction and Human Renovation Institution (DRI). She has established a scientific methodology to identify social issues related to disaster resilience from survivors and practitioners in workshop settings using her excellent facilitation skills, formulate hypotheses in an exploratory manner, and substantiate them through social surveys based on statistical methods.

Expected Earthquakes and Disaster Preparedness in Europe

Gian Michele Calvi



Abstract

A number of different situations coexist in Europe, for example in Portugal not much seismic activity has been reported after the disastrous event of 1755; in Italy the average time interval between strong earthquakes is around 12 years, but “strong” here means $M_w > 6.0$, considering the spread faults distribution and the high vulnerability of the constructed environment; in northern Turkey the North Anatolian fault slips at a rate of about 22 mm/year and a strong event ($M_w \approx 7.5$) is expected within a few years in the Marmara region.

Concentrating in these two last cases, it is interesting to note that the frequent, relative low magnitude earthquakes expected in Italy induced to a policy of fostering the cooperation between private ventures and public capital, in the form of relevant fiscal benefits in case of investment of reduction of vulnerability of private buildings. The ratio behind this logic is that a significant fraction of the total expected losses derives from the damage to private (often historical) buildings and that the State is anyway called to act as a sort of “final insurer”.

In Turkey, where a large fraction of the built environment is due to relatively recent urban development and the expected earthquake magnitude is much greater, the public intervention concentrated on inadequate concrete multistorey buildings and on strategic public infrastructures. A major code provision has been to make mandatory to introduce seismic base isolation in all hospitals, new and existing. Clearly, the vision is here to be more prepared to emergency management.

Short biography

Gian Michele Calvi is Professor and Vice-Rector for Research at the IUSS Pavia, Italy, Director of Science of the Eucentre Foundation, Italy, Adjunct Professor at the North Carolina State University, Executive Vice-President of the IAEE.

Master of Science from the University of California, Berkeley; PhD, the Politecnico di Milano and a Honorary Doctorate from the University of Cujo, Mendoza, Argentina.

He has been the founder of the Eucentre Foundation and of the ROSE School.

He is author of hundreds of publications and of a few books, including: *Seismic design and retrofit of bridges* (with M.J.N. Priestley and F. Seible, 1996), *Displacement-Based Seismic Design of Structures* (with M.J.N. Priestley and M.J. Kowalsky, 2007), *Seismic design and analysis of tanks* (with R. Nascimbene, 2023).

He has been designer, consultant or checker for hundreds of structural projects, including: the Rion-Antirion cable stayed bridge (2883 m, in Greece); the Bolu viaduct (119 spans, in Turkey); the new housing system after L’Aquila earthquake (2009, with 185 buildings seismically isolated with more than 7,000 devices, completed in about six months); the construction of 103 schools in Costa Rica (2013-2018, for the IAD bank); the assessment and strengthening program in the area of Groningen, in The Netherlands (2013-2020, due to problems of induced seismicity).

He is associate editor of the *Journal of Earthquake Engineering* (Taylor and Francis) since its foundation and has been invited keynote speakers in tens of conferences, including two *World* and four *European Conferences on Earthquake Engineering*.

He has been always active in conceptual innovation in seismic design, focusing on masonry in his early days, on bridges, displacement-based design and seismic isolation from the nineties.

An Interactive Effort between the Public and Private Sectors on Disaster Mitigation

NAKASHIMA Masayoshi



Abstract

No matter how much technological developments may be achieved, we shall rely upon young human power immediately after a huge disastrous event that rarely occurs. Traditionally, local governments and authorities were the primary vehicles to procure such human power and lead the post-disaster rescue and temporal recovery.

However, Japan's workforce population has been shrinking notably, particularly in the public sector. A solution to overcome population shrinkage and secure human power during disastrous events is a closer interaction between the public and private sectors since young human power is available more frequently in the private sector.

A workable way to achieve such an interaction is forming a community-based coalition between the industry and the people residing in the same region. One ongoing example is a coalition between a construction firm in downtown Tokyo and the people living there. The firm has voluntarily installed a strong motion station that is connected to the national network of seismographs. The installation has made it possible to identify the damage locations and severities microscopically within the region. Upon detecting a significant shaking, the predicted damage is shared within the community, and the people, companies, and local authorities in the area can smoothly take actions most suitable for securing their lives and businesses.

Regarding the firm's decision about this effort, we observed that the firm had not considered any short-term business merit when initiating such an action. Instead, the firm worries about difficult situations that the firm's employees, buildings, and facilities should encounter. The firm was convinced that maintaining the lives of people residing in the same region and their assets is equally crucial when considering the firm's safety. The key is for the region's leading industry to recognize that forming a community-based consortium is vital to the firm's crisis management.

Short biography

NAKASHIMA Masayoshi has been engaged in seismic analysis and design research for nearly four decades and has published over 250 technical articles in competitive archival journals. He also led multiple large national and international projects, including the US/Japan joint research project using large-scale testing facilities (as the Director of E-Defense, the world's largest shaking table) and the project on strengthening national resilience against natural disasters led by the Cabinet Office in Japan (as the Program Director), among others. Nakashima also served professional and learned organizations related to earthquake engineering and earthquake disaster mitigation, for instance, as President of the International Association for Earthquake Engineering (IAEE), Executive Editor of the Journal of Earthquake Engineering and Structural Dynamics (EESD). Because of such activities of his, Nakashima has been bestowed a Member of the Engineering Academy of Japan, an International Member of the National Academy of Engineering of the United States, a Corresponding Member of the Mexican Academy of Engineering, and a Corresponding Member of the Slovenian Academy of Arts and Science. He also holds multiple honorary professorships in several universities worldwide. Currently, he is Professor Emeritus of Kyoto University and President of Kobori Research Complex (KRC).

Theme 2 : Pathways to Overcome Catastrophic Disasters

Session2-3 : Science and technology for supporting social changes

10:50-12:00

Increasing Resilience Using Geospatial Infrastructure, a Digital Twin, and a Geographic Approach

Ryan Lanclos



Abstract

To build more resilient and sustainable communities, we need to understand risk that is more complex and interconnected than ever before. This understanding must account for the cascading consequences across the social, economic, and natural aspects of our communities. By creating a digital twin, built on a national geospatial infrastructure, we enable the collection and sharing of data, and the visualization and analysis of information across multiple scales and sectors that is required to create this understanding. Using the digital twin, we can apply a geographic approach using GIS and the science of geography to quickly identify vulnerabilities, develop risk reduction strategies that target resources more equitably, and communicate risk and action with residents and decision makers to increase resilience.

Short biography

Ryan Lanclos is Esri's Director of National Government and Public Safety Solutions. He helps organizations apply the science of geography and geographic information system (GIS) technology to make a positive impact in the world. Ryan is a subject matter expert on the use of GIS for emergency management. He is an appointed member of the Federal Emergency Management Agency (FEMA) National Advisory Council, an XPRIZE Wildfire Advisory Board member, a representative member on the United Nations Working Group for Disasters, and a member of the Group on Earth Observations Disaster Risk Reduction Working Group. At Esri, he leads the Disaster Response Program where he has helped thousands of organizations around the world respond to crises of all types and sizes. Ryan previously served as the State of Missouri's first Geographic Information Officer (GIO) and GIS Advisor for the Governor's Homeland Security Advisory Council, and as the Director of State and Local Government Programs for the National Alliance for Public Safety GIS (NAPSG) Foundation. Ryan holds a Master of Science in Cartography and GIS from the University of Wisconsin–Madison, and Bachelor of Arts in Geology from Centenary College of Louisiana.

Enable an Information Supply Chain for Disaster Risk Management

Wei-Sen Li



Abstract

Nowadays more digital technology, tools and systems are essential for disaster risk management (DRM) to enhance efficiency and effectiveness. In fields of data collection, data analytics, data transmission and data demonstration, huge leaps appear and bring DRM information to all levels of society. To enable an ideal environment for DRM information supply chain, it needs to produce actionable information intelligence meeting demands of diverse end users including decision makers, emergency responders, business owners and citizens. At national-level preparedness on digitalization, always the major sources of quality raw data, a robust mechanism should be in place for setting national standards and protocols, supporting data sharing and information exchange, and exploring advanced technologies. Therefore, how to aggregate non-homogeneous data to deliver information intelligence displayed on a Web-GIS system requires teamwork to produce common operational pictures (COPs). For years, digitized COP has proved its unreplaceable values during emergency operation by raising situation awareness among all key stakeholders. For civil society, there are multiple channels to receive “information,” but less can lead to actions, even disinformation. For a healthy DRM information supply chain, it requires an “end-to-end” design to build linkages among information producers, facilitators and end users.

Short biography

Wei-Sen Li have been involved in international societies of disaster risk management such like APEC Emergency Preparedness Working Group (EPWG) as Co-chair and a member of IRDR Scientific Committee. He has a wealth of experience in the development and implementation of disaster risk reduction and management systems. His responsibilities include building capacity in the region through engaging public-private partnership to better mitigate and respond to emergencies and natural disasters. Li holds a PhD in Civil Engineering from National Central University, where he specializes in structure dynamics, seismic design, and earthquake engineering. Currently, he is Secretary General and leads international collaboration and conducts research on large-scale urban disasters and disaster risk management in the National Science and Technology Center for Disaster Reduction.

Necessity of Dynamic Simulation System by Utilizing AI and DX

INOGUCHI Munenari



Abstract

Utilizing AI and DX will make possible not only to estimate the damage situation but also to predict the future of situation in affected area by following responders behavior and decision making. To utilize AI and DX, we have to clarify how to convert past disaster records into data and reuse them. To proceed this research, the following three technological developments are required: 1) technology to integrate data recorded by each organization, 2) standardization of data format and structure, and 3) development of a common infrastructure in cloud for data management and reuse. Once this is achieved, records of disasters that occur in various regions of Japan will be available for reference in other regions and can be used for disaster response. In particular, an advisory function based on AI-based learning and DX-based estimation of future changes in the situation will be created. Currently, the research to reproduce records of past disasters in space, parameterize them, and reuse them as training scenarios for disaster response are going on, and the usefulness of this approach has been verified. However, it is necessary to expand the use of this data in actual disasters in near-real time.

Short biography

INOGUCHI Munenari received both Master's degree and Ph.D. in Informatics from Kyoto University. He belonged to Research Institute for Natural Hazard and Disaster Recovery in Niigata University from 2008 to 2015 as assistant professor, Faculty of Informatics in Shizuoka University from 2015 to 2018 as lecturer. And now he is associate professor of Faculty of Sustainable Design in University of Toyama since 2018. The general focus of his work is on Design and Development of Effective Information Management System utilizing GIS for Disaster Response and Prevention. Recently, he worked on new research about how to design and implement DX (Digital Transformation) for inclusive and resilient society from the perspective of advanced information management with human-AI harmonious collaboration.

Coordinator

IMAMURA Fumihiko



Abstract

This Integration Session summarizes the results of five sessions by each Session Moderator, coordinated by Fumihiko Imamura.

Short biography

IMAMURA Fumihiko is Professor of Tsunami Engineering and former director (2014-2023) of the International Research Institute of Disaster Science (IRIDeS), Tohoku University. He received Dr. Engineering in 1989 and was Research Associate in 1989, Assoc.Prof. in 1992 and Prof. of Tohoku University in 2000, and joined the IRIDeS in 2012 as vice director.

He is an expert on tsunami modeling, mitigation planning and education/awareness. He has conducted several field surveys as leader for earthquakes and tsunamis damage investigation since the 1992 Nicaragua and Indonesia. And he is a secretary, international TIME-project (Tsunami Inundation Modeling Exchange) supported by IOC and IUGG Tsunami commission. He is a member of Science Council of Japan, Science member of the Central Disaster Management Council in Japan, and was the president of Japan Society for Natural Disaster Science in 2008-2011. He is also the representative director of the 3.11 Densho Road promotion organization and the chair of the Reconstruction Promotion Committee of the Reconstruction Agency.

NAGAMATSU Shingo



Abstract

This presentation reports the outcome of the discussion with the young scholars about the research proposal in response to the proposal by the science council of Japan.

Short biography

NAGAMATSU Shingo is Professor of Risk and Disaster Economics, Faculty of Societal Safety Sciences at Kansai University in Japan. His research concern is disaster management and recovery policy analysis. He was awarded a prize from the Public Policy Studies Association of Japan in 2010 for his publication on disaster management policy. His recent publications include 'Return Migration and Decontamination After the 2011 Fukushima Nuclear Power Plant Disaster,' Risk Analysis, 40(4), 2020 with J. Eyer, and A. Rose. 'Building Back a Better Tohoku from the March 2011 Tsunami - A Contradicting Evidence as a chapter of "Reconstruction and Restoration after the 2011 Japan Earthquake and Tsunami" from Springer, 2016. He was a visiting scholar at Sol Price School of Public Policy of the University of Southern California from August 2015 to September 2016. He also currently serves as the manager of Disaster Resilience Research Division, National Research Institute for Earth Science and Disaster Resilience (NIED), Tsukuba, Japan.

OHARA Miho



Abstract

This presentation will share several perspectives toward a future disaster resilient society based on the discussions among working team members for upcoming research proposals.

Short biography

Miho OHARA is a professor of Center for Integrated Disaster Information Research, Interfaculty Initiative in Information Studies, the University of Tokyo in Japan. Her research topics are disaster risk assessment and management. After receiving a Ph.D degree in Engineering from the University of Tokyo, she worked as an Associate Professor of the Institute of Industrial Science and the Center for Integrated Disaster Information Research in the University of Tokyo. She has worked in International Centre for Water Hazard and Risk Management (ICHARM) under the auspices of UNESCO and National Graduate Institute of Policy Studies (GRIPS) in Japan from April 2014 to March 2023. Since April 2023, she is a Professor of the Center for Integrated Disaster Information Research in the University of Tokyo, in addition to a Professor of the Institute of Industrial Science and visiting researcher of ICHARM. She has contributed to disaster risk assessment in local areas in Japan and developing countries, and to capacity development of governmental officers. She is leading an international joint research project between Japan and the Philippines on water-related disaster risk assessment as project leader. She is a member of the Central Disaster Management Council of Japan and a cooperating member of Science Council of Japan. She is also involved in the Committee of the national government's business continuity, Committee of the national training program for disaster management specialists, etc.

Day2
High Level Panel Session
15:10-16:20

Moderator

EGAWA Shinichi



Short biography

EGAWA Shinichi is a pancreatic surgeon, Professor of International Cooperation for Disaster Medicine, and Assistant Director at the International Research Institute of Disaster Science (IRIDeS), Tohoku University. He participated in the Tohoku University Hospital's headquarters during the 2011 Great East Japan Earthquake. His research major is about medical needs in disaster medicine, hospital business continuity plans, health workforce development, computer simulation of disaster medicine, and the development of a healthy and resilient community against disaster. He published 190 and more English articles and serves as Head of the program committee of WADEM 2025 Tokyo Congress, Executive Editor for disaster medicine in the Tohoku Journal of Experimental Medicine, Deputy Editor for Disaster Medicine and Public Health Preparedness, and the Advisory Working Group for the Project for Strengthening the ASEAN Regional Capacity on Disaster Health Management (ARCH Project). He has been the Head of the Disaster Resilience Co-creation Center in IRIDeS since 2022.

Moderator

HIROKI Kenzo



Short biography

HIROKI Kenzo is Professor of National Graduate Institute of Policy Studies (GRIPS) and Coordinator of High-level Experts and Leaders Panel on Water and Disasters (HELP). He is also Member, Executive Board of International Lake Environment Committee (ILEC), Bureau Member of OECD High-level Risk Forum, and Member of International Advisory Committee, Sichuan University, China. He was Member and Vice Chair of GWP Steering Committee, and Chair of GWP Selection Committee.

HIROKI Kenzo has been engaged, globally and nationally for over 40 years, in field engineering and designing, research and development, budgeting and financing, and policy formulation and legislation in the sectors of water and sanitation, integrated water resources management, and particularly water and disasters. The positions he held include Vice Secretary-General of the 3rd World Water Forum, Head of Secretariat, Secretary-General's Advisory Board on Water and Sanitation (UNSGAB) of the United Nations, New York, Director for Innovation, Science and Technology, Cabinet Office, Director of Water Resources Management, MLIT and Vice President of College of Land, Infrastructure, Transport and Tourism (CLIT).

KOIKE Yuriko



Short biography

Governor of Tokyo

KOIKE Yuriko became Tokyo's first female governor in 2016 and is currently serving her second term following re-election.

KOIKE was elected to the House of Councillors in 1992 and to the House of Representatives in 1993, where she served for a total of eight terms. She held various posts, including Minister of the Environment, Minister of State for Okinawa and Northern Territories Affairs, Special Advisor to the Prime Minister for National Security Affairs, Minister of Defense, and General Council chairperson of the Liberal Democratic Party.

Before entering national politics, she worked as a newscaster covering economic issues. KOIKE graduated from Cairo University, Egypt.

Lidia Arthur Brito



Short biography

Lidia Arthur Brito was appointed UNESCO Assistant Director-General for Natural Sciences a.i. in June 2023. A forest engineer with a Master's and Doctorate in Forest and Wood Science from Colorado State University-USA, she was born in Mozambique and has been part of Eduardo Mondlane University's staff since her graduation in Forest Engineering in 1981.

Brito has held senior positions in Mozambique such as Head of the Forestry Department from the Faculty of Agronomy, Vice-Rector for Academic Affairs of Eduardo Mondlane University, Minister for Higher Education, Science and Technology, and Advisor for Strategic Planning and External Relations of the Mayor of Maputo City.

She joined UNESCO in November 2009 as Director for Science Policy and Sustainable Development in the Natural Sciences Sector, in Paris, and in 2014 she was appointed UNESCO Regional Director for Sciences in Latin America and the Caribbean region (UNESCO Montevideo Office). In 2022, she became Director of the UNESCO Multisectoral Regional Office for Southern Africa in Harare (Zimbabwe).

Her areas of expertise range from forestry and sustainable management of natural resources to higher education, science, and technology policies and programmes as part of public policies for sustainable development.

Tedros Adhanom Ghebreyesus



Dr Tedros Adhanom Ghebreyesus
Director-General
World Health Organization

Short biography

Tedros Adhanom Ghebreyesus was elected WHO Director-General for a five-year term by WHO Member States at the Seventieth World Health Assembly in May 2017, and was reelected to a second term in May 2022 during the Seventy-Fifth World Health Assembly. Tedros was the first WHO Director-General elected from among multiple candidates by the World Health Assembly, and was the first person from the WHO African Region to head the world's leading public health agency. Born in the Eritrean city of Asmara, Tedros graduated from the University of Asmara with a Bachelor of Biology, before earning a Master of Science (MSc) in Immunology of Infectious Diseases from the University of London, a Doctorate of Philosophy (PhD) in Community Health from the University of Nottingham and an Honorary Fellowship from the London School of Hygiene and Tropical Medicine. Following his studies, Tedros returned to Ethiopia to support the delivery of health services, first working as a field-level malariologist, before heading a regional health service and later serving in Ethiopia's federal government for over a decade as Minister of Health and Minister of Foreign Affairs. As Minister of Health from 2005 to 2012, he led a comprehensive reform of the country's health system, built on the foundation of universal health coverage and provision of services to all people, even in the most remote areas. Under his leadership, Ethiopia expanded its health infrastructure, developed innovative health financing mechanisms, and expanded its health workforce. A major component of reforms he drove was the creation of a primary health care extension programme that deployed 40 000 female health workers throughout the country. A significant result was an approximate 60% reduction in child and maternal mortality compared to 2000 levels. As Minister of Foreign Affairs from 2012 to 2016, he elevated health as a political issue nationally, regionally and globally. In this role, he led efforts to negotiate the Addis Ababa Action Agenda, in which 193 countries committed to the financing necessary to achieve the Sustainable Development Goals. Prior to his election as Director-General of WHO, Tedros held many leadership positions in global health, including as Chair of the Global Fund to Fight AIDS, Tuberculosis, and Malaria, Chair of the Roll Back Malaria Partnership, and Co-chair of the Partnership for Maternal, Newborn and Child Health Board. After taking office as WHO Director-General, Tedros initiated the most significant transformation in the Organization's history, which has generated a wide range of achievements.

MIZUTORI Mami



Short biography

MIZUTORI Mami is the Special Representative of the United Nations Secretary-General (SRSG) for Disaster Risk Reduction, and head of the United Nations Office for Disaster Risk Reduction, based in Geneva, Switzerland.

The role of the UN Office for Disaster Risk Reduction is to support countries and stakeholders in the implementation of the Sendai Framework for Disaster Risk Reduction (2015-2030). The Special Representative ensures the strategic and operational coherence between disaster risk reduction, climate change and sustainable development agendas as well as the linkage with the UN Secretary General's prevention agenda and with humanitarian action.

MIZUTORI served for twenty-seven years in various capacities in the Japanese Ministry of Foreign Affairs. Prior to joining the UN, Ms. Mizutori was Executive Director of the Sainsbury Institute for the Study of Japanese Arts and Cultures, University of East Anglia, UK, since 2011.

MIZUTORI graduated in law from Hitotsubashi University, Tokyo and obtained a Diploma in International Studies from the Diplomatic School of Spain.

Qunli Han



Short biography

Qunli Han is the Executive Director of International Programme Office of Integrated Research on Disaster Risk (IRDR), co-sponsored by ISC and UNDRR. He took this position in September 2017 and has been working with IRDR scientific community to complete IRDR first phase (2010-2020), and contributing to the formulation of “A Framework of Global Science in Support of Risk-informed Sustainable Development and Planetary Health” toward 2030 and beyond as well as the establishment of IRDR’s new decennium phase. He is Professor at the International Research Center of Big Data for Sustainable Development Goals and heads a team on assessing and reporting SDGs progress since 2018.

During 1989-2017, Qunli worked for UNESCO, including positions of Senior Programme Specialist on Environmental Sciences in Asia-Pacific Region, Director of Tehran Cluster Office and Director of the Executive Office of Natural Science Sector. He actively participated in UN-led post-disaster actions responding to 2004 Indian Ocean Earthquake and Tsunami, 2005 Central Java Earthquake and 2010 Pakistan floods. During 2013-2017, Qunli was the Director of Division of Ecological and Earth Sciences and Secretary of UNESCO’s Man and the Biosphere (MAB) Programme and led development of the World Network of Biosphere Reserves.

Day2
Closing Ceremony
16:40-17:05

Moderator of Closing Ceremony

KOMORI Daisuke



Short biography

KOMORI Daisuke is a Specially Appointed Professor in the Green Goals Initiative, the Graduate School of Environmental Studies, and International Research Institute of Disaster Science, Tohoku University, Japan. He received Dr. Agriculture from the Tokyo University of Agriculture and Technology in 2005, and was Research Associate at the University of Tokyo in 2005, Specially Appointed Assistant Professor in 2009 and Specially Associate Professor in 2012. He joined Tohoku University in 2013 as Associate Professor.

Affiliated members of the Science Council and Young Academy of Japan. Board members on "Promoting Observation and Monitoring of Climate Change Impacts" Ministry of the Environment; Countermeasures against Woody debris in Reservoirs" and "Urban Flooding Countermeasures in Light of Climate Change" Ministry of Land, Infrastructure, Transport and Tourism, and so on.

He has been researching the phenomenon that human activities modify the water cycle and environment, and affect human life as environmental problems and natural disasters, from regional to global scales.

- (1) Assessing the impacts of climate change and land-use change on the natural environment.
- (2) Development of a system to support the planning and implementation of adaptation measures in the water sector.
- (3) Understanding the mechanisms of slope failure and debris flow with large wood.
- (4) Tradeoffs between urban flood resilience and urbanization.

Day2
Closing Ceremony
16:40-17:05

Tokyo Statement 2023 Adoption

ONO Yuichi



Short biography

ONO Yuichi received his Ph. D. in Geography from Kent State University, Ohio in 2001. He did not pursue an academic career and worked for the United Nations in policy making in disaster risk reduction, including World Meteorological Organization in Geneva (2002-2003), United Nations International Strategy for Disaster Reduction in Geneva and Bonn (2003-2009), and United Nations Economic and Social Commission for Asia and the Pacific in Bangkok (2009-2012). Finally, he came back to Japan after the Great East Japan Earthquake and Tsunami as a Professor at the International Research Institute of Disaster Science at Tohoku University (2012-) where he currently serves as a Deputy Director. He is also a Representative Director of the World Bosai Forum Foundation, which convenes an international multistakeholder forum of disaster risk reduction in Sendai every two year.

Day2
Closing Ceremony
16:40-17:05

Ceremonial Address

YONEDA Masako



Short biography

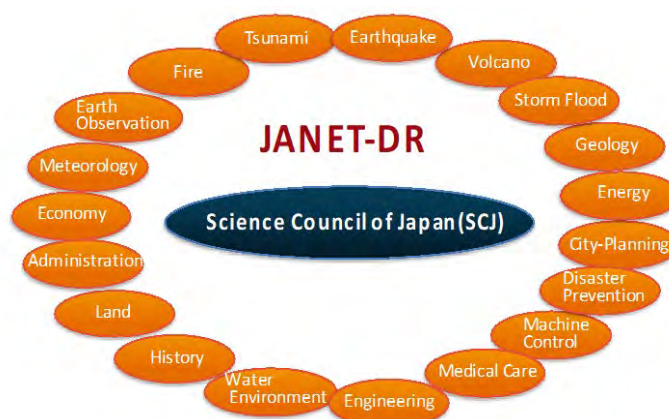
YONEDA Masako has been a council member of Science Council of Japan since 2016, and has multiple roles such as:

- (1) Chair of Japan Academic Network for Disaster Reduction
- (2) Professor of Tokyo Institute of Technology
- (3) Executive Director of Utsunomiya University

She emphasizes fieldwork and engages in interdisciplinary research in a wide range of fields, including regional construction, agriculture and forestry, reforestation, disaster prevention and mitigation, and local public policy.

[Japan Academic Network for Disaster Reduction]

The Great East-Japan Earthquake occurred on March 11, 2011. Its effect exceeded people's expectations and proved that current scientific knowledge and technology were insufficient. The members of Science Council of Japan became founders and 63 academic societies relevant to disaster management gathered and established an emergency contact network. This network aims to collaborate across academies and makes efforts to integrate different specialties for disaster reduction.



Day2
Closing Ceremony
16:40-17:05

Closing Remarks

TAKAMURA Yukari



Short biography

TAKAMURA Yukari, Vice-President in charge of International Activities, Science Council of Japan. She serves as Vice-President since October 2020. She is Professor at the Institute for Future Initiatives, The University of Tokyo. Before joining the University of Tokyo in 2018, she worked as Professor at Ryukoku University and Professor at Nagoya University, Japan. She also studied at Graduate School of University of Paris II (Pantheon-Assas), France and was Visiting Researcher at University of London, U.K.

Specializing international law and environmental law, her research focuses on legal and governance issues relating to multilateral environmental agreements as well as climate and energy laws and policies.

She is member of the Editorial Board of Journal Sustainability Science and of the Editorial Advisory Board of Journal Climate Policy. She is member of Board of Directors of Japanese Society for Environmental Economics and Policy Studies and member of Board of Executive Directors, Japanese Society for Environmental Law and Policy Studies.

She serves as members of governmental advisory bodies such as Central Environmental Council as President, Procurement Price Calculation Committee for Feed-in Tariff Scheme for Renewable Energy as Chair, and Advisory Group on Climate Change and Sustainable Development of ADB. She received Environmental Conservation Merit's Minister of the Environment Award in 2018.