



4<sup>th</sup> GSRIDRR 4th Global Summit of Research Institutes for Disaster Risk Reduction

Increasing the Effectiveness and Relevance of our Institutes

<http://gadri.org>



The Science and Technology Roadmap to Support the Implementation of the Sendai Framework for Disaster Risk Reduction 2015-2030



13 to 15 March 2019

Location: Kyoto University, Uji Campus, Kyoto, Japan

# GADRI ACTIONS

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Welcome to the GADRI Actions Volume 8. This edition covers the 4<sup>th</sup> Global Summit of Research Institutes for Disaster Risk Reduction (4<sup>th</sup> GSRIDRR 2019): Increasing the Effectiveness and Relevance of our Institutes held at DPRI, Kyoto University, Kyoto, Japan from 13<sup>th</sup> to 15<sup>th</sup> March 2019.

The 4<sup>th</sup> Global Summit mandated to provide inputs for the contextualization of the Science and Technology Roadmap for the implementation of the Sendai Framework Agenda 2030. Over 240 participants attended the summit. Through the informative plenary sessions, the participants engaged in group discussion sessions, panel discussions as well as poster presentations, participants shared their inputs to revise the Roadmap.

Also covered in this issue is the annual international training course offered by National Science and Technology Center for Disaster Reduction (NCDR), Chinese Taipei, and the visit to Centre for Urban Water (CURW, Sri Lanka by Salford University, UK.

We hope enjoy reading GADRI Actions.



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An open door with a bouquet of lights to brighten up the pathway for the future of the S&T Roadmap which is moving forward with promising major opportunities for disaster risk reduction agenda.

**4<sup>th</sup> GSRIDRR**  
**Increasing the Effectiveness and Relevance of our Institutes**  
**PROGRAM**

**13 to 15 March 2019**

Disaster Prevention Research Institute (DPRI), Kyoto University, Uji Campus, Kyoto, Japan



Photos were taken by the staff of DPRI during the 4th Global Summit of Research Institutes for Disaster Risk Reduction held at DPRI, Kyoto University, Kyoto, Japan.

GADRI Actions is designed, formatted and edited by Hirokazu Tatano and Wilma James.



4<sup>th</sup> Global Summit of Research Institutes for Disaster Risk Reduction (4<sup>th</sup>GSRIDRR2019)  
Increasing the Effectiveness and Relevance of our Institutes  
Disaster Prevention Research Institute (DPRI), Kyoto University, Uji Campus, Kyoto, Japan  
13 to 15 March 2019





Prof. Juichi Yamagiwa, President, Kyoto University (3rd from left) and Mayor, Uji City (2nd from left) among others honoured the 4th Global Summit with their presence

International Centre for Water Hazard and Risk Management under the auspices of UNESCO (ICHARM), Public Health England, Northumbria University Newcastle and others. Keynote speakers referenced the Sendai Framework for Disaster Risk Reduction and efforts taken by governments, international, national and local organizations.

The two group discussions were followed by panel sessions, and poster sessions attracted 52 presenters. Among the final outcomes of the conference were the contributions to the contextualization of the Science & Technology Roadmap which was presented at the Global Platform for Disaster Risk Reduction to be held in Geneva in May 2019.

Since its inception in March 2015, GADRI has garnered global recognition

as a central hub for research institutes engaged in global disaster risk reduction. In addition, GADRI was elected to the Science and Technical Advisory Group (STAG) and the Global Research Assessment Framework (GRAF) of UNDRR.

During the 4<sup>th</sup> Global Summit of Research Institutes for Disaster Risk Reduction (4thGSRIDRR2019), discussions and debates surrounded issues and directions for further scientific and meaningful social contributions to disaster risk reduction and resilience. One of the major outcomes were the contributions and commitments from the group discussion sessions to the contextualization of the revised Science and Technology Roadmap. The contributions and commitments from GADRI 4<sup>th</sup> Global Summit were further communicated to the Science and Technology Advisory Group (STAG) of UNDRR which presented the revised Roadmap during the Science and Policy Forum organized in conjunction with the Global Platform for Disaster Risk Reduction (GP2019) in Geneva in May 2019.

GADRI Secretariat proposed to rotate the Global Summit series among its member institutes. The European Commission – Joint Research Centre (EC-JRC), Italy; and the Disaster and Development Network (DDN), Northumbria University, Newcastle, United Kingdom have agreed to jointly host the next Global Summit at EC-JRC in Ispra, Italy in March 2021.

The 5<sup>th</sup> Global Summit will specifically address inputs, contributions to the goals of the Science and Technology Roadmap, and the status of measures and achievements of disaster prevention in relation to the implementation of the Priority Areas of the Sendai Framework Agenda. The conference is expected to further enhance the role of the international community along those lines.

The 4th Global Summit was attended by 246 participants representing 107 institutes from 33 states.

The fourth Global Summit of Research Institutes for Disaster Risk Reduction (4thGSRIDRR2019) was held at the Disaster Prevention Research Institutes (DPRI), Kyoto University, Uji Campus, Kyoto, Japan from 13<sup>th</sup> to 15<sup>th</sup> March 2019. It was sponsored by the Global Alliance of Disaster Research Institutes (GADRI) and Kyoto University, and hosted by DPRI. It was the fourth session of the Global Summit Series which was initiated by DPRI in November 2011.

Stakeholders in both government and non-governmental institutes, researchers, practitioners, policy makers, and young researchers involved in disaster risk reduction and resilience engaged in discussions, sharing and exchanging ideas and knowledge. The conference specifically focused on contributions to the contextualization of the 2016 Science and Technology Roadmap for the implementation of the Sendai Framework for Disaster Risk Reduction 2015-2030.

The conference, among others, accomplished the following goals:

- ◆ Engagement in dialogue on issues related to disaster prevention and contributions to Science and Technology Roadmap adopted to support the implementation of the Sendai Framework Agenda 2015-2030;
- ◆ Evaluated current efforts on global and national involvements in the field of disaster prevention research in relation to the implementation of the Priority Areas of the Sendai Framework for Disaster Risk Reduction 2015-2030;
- ◆ Assessed the status of current research knowledge and efforts, and research results at institution level in each country.

The conference program included 16 keynote speeches by prominent speakers from various fields and areas of specializations. To name a few agencies among were the Government of Japan, The World Bank, UNISDR,

## Day 1: 13 March 2019 — Opening Ceremony

The Opening Ceremony was Chaired by Prof. Andrew Collins, Chair of the GADRI Board of Directors; and Leader, Disaster and Development Network (DDN), Northumbria University, United Kingdom.



Prof. Hajime Nakagawa, welcomed all participants to DPRI, Kyoto University, Uji Campus, and the 4<sup>th</sup> Global Summit of Research Institutes for Disaster Risk Reduction (4<sup>th</sup>-GSRIDRR 2019). The global summit series was initiated by DPRI in 2011 and the 2<sup>nd</sup> Global Summit established GADRI in March 2015. Prof. Nakagawa stressed that as disasters around the globe continue to increase in intensity and complexity, that together, we can confront these challenges through outstanding research, sharing knowledge, insightful analysis and evidence-based results. He stressed the importance of drawing the attention of policy makers and other stakeholders to take necessary steps forward to combat disaster risks and climate change and advance boldly to greater disaster resilience in the world.

One of the major highlights of the Opening Ceremony was the presence of Prof. Juichi Yamagiwa, the President of the Kyoto University. After welcoming the participants and congratulating the organizers, GADRI and the Disaster Prevention Research Institute (DPRI), Kyoto University, Prof. Yamagiwa expressed his pleasure to host the Global Alliance of Disaster Research Institutes (GADRI) at DPRI, Kyoto University Uji Campus, to support the implementation of the Sendai Framework for Disaster Risk Reduction 2015-2030 (SFDRR) and the work of the Science and Technology Advisory Group (STAG) of the United Nations Office for Disaster Risk Reduction (UNDRR). He further emphasized that he is pleased to note GADRI's pivotal role in the midst of the global science and technology community. The goals and visions of GADRI and the Sendai Framework Agenda 2030 were aligned to the Kyoto University vision of the WINDOW concept – a vision for the future – to internationalize and localize - which was launched in 2015. It is a set of guidelines and themes to highlight endeavours and resources of the Kyoto University. Prof. Yamagiwa concluded his remarks with Kyoto University's firm conviction to support GADRI in its journey to enhance their efforts to strengthen the agenda on disaster risk reduction and resilience.



In her foreword, Ms. Mami Mizutori, United Nations Special Representative of the Secretary-General for Disaster Risk Reduction, United Nations Office for Disaster Risk Reduction (UNDRR), stated that the 4<sup>th</sup> Global Summit gathering is an important opportunity to take stock of the role that the advancement of science and technology play in reducing disaster risk and losses. It is also largely due to the efforts made by GADRI and the broader science and research community. Ms. Mizutori strongly welcomed the Summit's focus on how evidence-based research can be utilized to support implementation of the Sendai Framework including the achievement of its seven targets, particularly those which seek to reduce mortality, reduce the numbers of people affected by disasters, and reduce both economic losses and damage to critical infrastructure. She further stressed that this is a critical moment in the implementation of the Sendai Framework which is an important pillar of the 2030 Agenda for Sustainable Development and vital to overall efforts to eradicate poverty and strengthen action on climate change.

Prof. Hirokazu Tatano, Secretary-General, GADRI presented a brief history of the global summit series which was initiated by DPRI, Kyoto University in 2011, and the establishment of GADRI during the 2nd Global Summit held in March 2015, the same year the Sendai Framework was adopted by the UN General Assembly. After presenting the outline of the 4th Global Summit, he expressed the importance of working together as one science community and thereby enhancing advocacy and advance in better engagement practices in the path for disaster risk reduction and resilience. He expected the 4th Global Summit will achieve its expected outcomes and contribute to the contextualization of the 2016 Science and Technology Roadmap for the implementation of the Sendai Framework Agenda 2030.



## Day 1: 15 March 2019 — Closing of the 4th Global Summit



Closing remarks were delivered by Prof. Manabu Hashimoro, Director-Elect, DPRI, Kyoto University. He thanked all of keynote speakers and panellists as well as all participants for their active participation and for doing an outstanding job by sharing their valuable knowledge, insights, expertise and experiences. He said that without doubt and without their contributions, the 4<sup>th</sup> Global Summit could not have achieved its set goals. He further stressed that the world continue to be affected by climate change and disasters, and dealing with the consequences calls for commitments to widen, deepen, and to share our knowledge and experiences by the science and technology community. He mentioned that everyone should resolutely move forward as a team, and use this stimulus to improve disaster risk management on a regional and a global scale. Although it is not possible to completely prevent disasters but it is possible to contribute to disaster risk reduction and resilience to disasters.

## Day 1: 13 March 2019 — Opening Reception

In his speech, Mr. Shuichi Yamauchi, Vice-Governor of Kyoto Prefecture who attended the Opening Ceremony Reception, offered his best wishes to the success of the 4<sup>th</sup> Global Summit. The Global Alliance of Disaster Research Institutes (GADRI) organizes numerous international symposiums, through which it shares information, knowledge, experiences and ideas with institutions across the globe working on disaster research and prevention. Given the fact that large-scale disasters occur frequently around the world, he expressed his strong belief GADRI activities are greatly contributing to the development of the disaster countermeasures eagerly sought by all nations. He continued to appreciate the advice provided by DPRI, Kyoto University and the role played with contributions to existing and future disasters by capitalizing on the achievements brought about with advanced research on disaster countermeasures.



## Day 1: 15 March 2019 — Closing Banquet

The Closing Banquet was opened by Prof. Kayo Inaba. After congratulating all participants, Prof. Inaba opened her speech by expressing her delight, as the Vice President for Gender Equality, International Affairs and Public Relations of the Kyoto University, to see many female keynote speakers and participants too, contributing to the 4<sup>th</sup> Global Summit of Research Institutes for Disaster Risk Reduction.

Prof. Inaba expressed her personal conviction to stay committed together to work towards the goals set out in the 4<sup>th</sup> Global Summit resolution document and Sendai Framework Agenda for 2030, 2016 S&T Roadmap, and SDGs. She reiterated to work together to achieve DRR and disaster resilience in the world, and to ensure that the voices are being heard, and DRR is integrated and implemented by various stakeholders, especially in governments and industries.



Mr. Daisaku Kadokawa, Kyoto City Mayor, Kyoto, Japan

The Mayor of Kyoto City attended the Closing Banquet and congratulated the participants and welcomed them to the Kyoto City. Mr. Kadokawa expressed his support to make Kyoto more resilient to natural or man-made disasters and shared initiatives on various community-based disaster preparedness activities regularly conducted by the City. He appreciated the contributions from the scientific community, GADRI, and the DPRI, Kyoto University toward disaster risk reduction and resilience.



During the Closing Banquet, the Members of the Board of Directors of GADRI took the opportunity to thank Prof. Andrew Collins, the Chair of the Board, for his dedication and support to GADRI. Prof. Collins was a stalwart figure during the early-years of shaping GADRI and its activities. He has actively promoted and represented GADRI in the UN and conferences and symposia. He Co-Chairs the United Kingdom Alliance of Disaster Research (UKADR). Prof. Collins term of office as the Chair of the Board of Directors of GADRI will end on 31 March 2020.



## Day 1: 13 March 2019— Plenary Session I: Listening to Advice and Management of Science Knowledge by Various Stakeholders

This session helped orientate the summit discussion sessions to exchange ideas on disaster risk reduction activities and provide inputs to the Sendai Framework Agenda for 2030, the 2016 Science and Technology Roadmap and the SDGs. The Chair was Prof. Kaoru Takara, Dean, Graduate School of Advanced Integrated Studies in Human Survivability (Shishu-kan), Kyoto University, Japan.



Madame Setsuko Seya, Director, Disaster Management Bureau, Cabinet Office, Government of Japan on “Communication between Science and Technology, and civil societies - Japan’s

experience regarding the Nankai Trough Earthquake”. She discussed the role of science and technology in disaster risk reduction and the relationship between the Government of Japan and the science and technology community which has been very successful since the establishment of the basic act of disaster management in 1963, almost 60 years ago. The presentation highlighted effectiveness of exchange of science and technology community contributions to the policy making processes of the Japanese government and how the inputs are always indispensable. Ms. Saya also shared examples of the lessons learned from recent experiences and how the Government of Japan perceives the importance of such communications. Communication is a very important tool in the process of managing disaster risk and contribution from the science and technology community to the local citizens.



Mr. Soichiro Yasukawa, Coordinator, Natural Sciences Sector, UNESCO, France represented Prof. Shab haz Khan, the Director of UNESCO Office in Jakarta. His presentation was on

“UNESCO’s Priorities on DRR Activities with Scientific Partners”. His presentation focused on UNESCO programmes and projects and the multi-stakeholder engagement for disaster risk reduction. Examples highlighted how to engage in programmes and projects; how to engage with different stakeholders on DRR such as academics, scientists, civil societies, or multiple stakeholders at the same time. UNESCO with a UN mandate for education, science, social science, culture and communication information, actively contributes to DRR. He shared a few examples on how education is promoting DRR curriculum in the school curriculum or science in the local earthquakes DRR, flood management DRR, tsunami DRR, or culture sector famous for the world heritage sector. These activities are targeted towards prevalence of catastrophes of natural hazards.



Mr. Masato Miyazaki, Special Representative Japan, The World Bank Tokyo Office, Japan on “Partnerships for Mainstreaming DRM in Developing Countries”. He highlighted the

importance of strong leadership and commitment from the global leaders and experts to partner with stakeholders around the world to strengthen resilience against natural disasters. In order to support developing countries and cities to become resilient, The World Bank and the Tokyo DRM Hub continue to support initiatives that advance disaster resilience and keep fostering collaborations with international research communities to tackle disaster risk by incorporating elements of science and technology in The World Bank investments. He concluded by stating that collaboration have shown major advances in technology information and research which can provide opportunities to policy makers and development practitioners, and communities to understand disaster risk and keep themselves with information on how best to prepare for hazards in order to save lives and others.



Prof. Toshio Koike, Director, International Centre for Water Hazard and Risk Management (ICHARM), Japan on “Nation’s Synthesis-concept design and implementation”. Through

follow-up discussions for realizing the activity, careful consideration was placed on the relationship between the national platforms and the science and technology synthesis for DRR as each country is expected to lead the implementation of the nation’s synthesis. The national platform is expected to develop a mechanism that allows all stakeholders to share information of science and technology for DRR in its own language. How can the science and technology community contribute to these activities? The science and technology community need to provide science and technology knowledge to national governments as well as the local governments, and civil society and local community and people working as facilitators. For providing effective and usual public support, people should take action to proactively plan and take action for their self-help and mutual support and instead of sole dependent on national, and local government efforts.

## Day 2: 14 March 2019— Plenary Session II: Fostering Uptake of Science in Governments and Industries

The session was based on the assertion that it is vital for governments, industries and the science community to be innovative and act fast in providing scientific information with evidence-based results. Session was Chaired by Prof. Hirokazu Tatano, Secretary-General, GADRI, and Professor, DPRI, Kyoto University, Japan and Prof. Ortwin Renn, Scientific Director, Institute for Advanced Sustainability Studies (IASS), Germany.



Ms. Shoko Arakaki, Chief of Branch, Partnerships, Inter-governmental Process and Inter-agency Cooperation, UNISDR, Switzerland on “The Role of Science and Technology to Enhance Risk-informed

Development for a Resilient and Sustainable Future”. Ms. Arakaki started by welcoming GADRI’s focus of the meeting to further promote the Sendai Framework and specifically the coherent approach to disaster risk reduction and resilience. As stated in the Sendai Framework, it is the role of the science community to help understand the risks and assist the decision making and policy making processes. Yet adequate financing for DRR strategy as well as for sustainable development agenda is really a problem. Discussions must go beyond traditional short-term ‘risk financing’ to the more long-term integration of risks into investment decisions. Building political will to invest in a more risk-sensitive manner needs to be supported by clear science evidence. Now it is more important for science and technology to play a key role to better understanding and addressing of risks.



Dr. Jörgen Sparf, Associate Professor Mid Sweden University, Sweden on “Navigating the European Landscape of DRR – The Case of Data and Socioeconomic Factors”. Prof. Sparf represented E-STAG and discussed on two target

areas the group is working on: Data for resilience and problems associated with that, and socioeconomic disaster risk reduction covering the European landscape. He shared background information on the studies conducted to date and some of the challenges and dynamics. Three study areas, in particular shared were the population and population density covering prognosis of difference in population densities and changes; culture and ethnicities and how people perceive their identify to places; and corruption which is increasing partly related to cultures but most heavily due to economics. The analysis of the empirical data and the report will be presented at the forthcoming Global Platform 2019 in Geneva in May 2019.



Prof. Virginia Murray, Head, Global Disaster Risk Reduction, Public Health England, UK on “The Sendai Framework and Science Advice to Governments to Support Implementation – Suggestions on What Works”. Prof. Murray stated

that science has been absolutely critical in the delivery of the Sendai Framework and how it should be useful, usable and used. The Sendai Framework reflects science throughout the framework, and the challenge for the science and technology community is that there is a job to do but much more to the point, to deliver it. The Sendai Framework Monitor contributing to Target E of the Sendai Framework is due by 2020. With various examples, Prof. Murray showed the difference made by Sendai Framework in government science advise, and science advise for global goals. She also shared information about the work done by What Works network and how it can be used as a mechanism to take knowledge synthesis to knowledge brokering and how to try and inform science and policy. While supporting the concept of the national synthesis, Prof. Murray stressed that there is a need for partnership synthesis to get the best evidence and make it accessible to us all.



Prof. Andrew Collins, Leader, Disaster and Development Network (DDN), Northumbria University, UK on “Global Risk Assessment Framework (GRAF), UNISDR: Emphasising the Relevance of Disaster Research Institutes”.

Prof. Collins transmitted information on the work done by the expert group of GRAF which is a framework for assessing risks. There is a vision, the objectives, principles and process of GRAF and it is based around the fascinating theory of change. The draft framework is already in place with a basic and a governance structure. It is expected to be presented and launched at the Global Platform 2019 in Geneva in May 2019. Sciences and multidisciplinary are fundamental bases for GRAF. It is science with a voice and impact and GRAF will bring about change and actually achieving the priorities of action for Sendai Framework. The key point at the end is that is the vision for sustainable societies and systems to increase resilience to risks. GRAF has been organized extremely well by UNDRR and it has been put together by the disaster management community.

## Day 2: 14 March 2019— Plenary Session III: Bridging Science and Decision Making through Sharing of Knowledge

This session presented various tools and analyses that address gaps in science and technology capacities and how to bridge science and evidence-based decision making through sharing of knowledge and lessons learned. Session was Chaired by Prof. Tomoharu Hori, Vice-Director, DPRI, Kyoto University, Japan and Prof. Paul Kovacs, Executive Director, ICLR, Western University, Canada.



Prof. Eiichi Nakakita, DPRI, Kyoto University, Japan on “Perspectives on Climate Change Impact Assessment and Adaptation”. As the global warming progress, Japan has some increase in disasters due to heavy rainfall. Enhancement

of improving the scientific knowledge of global warming affect is very important now more than before. This emphasizes the importance of collaboration among the climatologist and the meteorologist and the academia for disaster related climate change impact assessment and adaptation and as well as the implementation authorities which has responsibilities to the public directly. In conclusion, Prof. Nakakita stressed that risk management will be a phenomenon of the risk hazards. It is very important to take into account the result from the worse case classes as one of the forces. Another important point is for climate change adaptation to discriminate between the planning with the uncertain development and risk managements in the worst case hazard itself.



Dr. Jean-Paul Pinelli, Head, Civil Engineering and Construction, Florida Institute of Technology (FIT), USA on “DesignSafe: a Cyberinfrastructure Available to Disaster Research Institutes”. The designsafe infrastructure is a tool for disaster research institutes

throughout the world. When dealing with natural hazards, whether it is for hazard assessment itself or the assessment of the community response or for the assessment of the infrastructure response, or in any kind of analysis, it will be generating or dealing with very large datasets which are going to come in very different shapes and forms. How do we deal with these very important and large datasets? Designsafe is a platform on the cloud that could accompany the researchers’ effort from inception of the research to the final stage of the research including publication. Designsafe changes the way of contribution to the resilience of a given community. It basically shortens the time to post-process and analyze the data and the data can be available within half-a-year or between half-a-year and two years so that it will accelerate the rate of learning from natural disaster. The data will be available to the people that need the data much sooner than before.



Dr. Elisabeth Krausmann, Principal Scientist, European Commission-Joint Research Centre (EC-JRC), Italy on “Disaster Risk Management Knowledge Centre: A Collaborative Approach to Foster Resilience”. Dr.

Krausman, in particular introduced the DRM-KC which was initiated four years ago at the 2<sup>nd</sup> Global Summit, and concept of the disaster risk management Knowledge Center and shared a few concrete outcomes and achievements. The JRC is part of the European Commission and the European Commission’s science and knowledge service. JRC’s role as scientists is to provide scientific support to the whole policy cycle, including policy, design, development and up to the implementation. A few of the problems facing Europe is mostly due to climate change. For example, in August 2018, the temperatures in Spain and Portugal predicted to exceed 48°, and wildfires and Natech accidents are among them. Another example was in the critical infrastructure sectors looking forward to 2020s and 2050s and 2080s in terms of economic damage due to climate change. There are other threats and vulnerabilities. JRC try to address all of these issues, and produce knowledge on disaster risk management scientists. The Knowledge Center, DRM-KC for short, has three pillars, i.e. partnership, knowledge, and innovation. The Joint Research Centre is scientific arm and work on knowledge and technology transfer.



Dr. Craig Davis, founding Executive Committee Chairperson, Infrastructure Resilience, American Society of Civil Engineering (ASCE), USA on “Infrastructure Resilience: A Framework for Assessment, Governance and Management”.

Dr. Davis presented the development framework for assessment, governance and management by ASCE and JSCE. The partnership between ASCE and JSCE started in 2017 with the purpose of creating a global infrastructure resilience framework to improve global understanding of resilient infrastructure systems and aid institutions in focusing toward common goals for research, development, and implementation, and to fill existing gaps. The framework is divided to assessment, and governance and management, and it is broken down to eight elements of process supported by data needs, sources and expert opinions. It supports the Sendai framework targets in many different ways. Most substantially, by considerably reducing the disaster damage to critical infrastructure, and disruptions to basic services, helps to reduce the direct disaster economic loss; reduce global disaster mortality; and significantly reduce number of affected people globally.

## Day 3: 15 March 2019— Plenary Session IV: New Scientific Challenges to DRR and DRM

The session addressed new scientific challenges in relation to gaps in DRR and DRM. Session was chaired by Prof. Norio Maki, Vice-Director, DPRI, Kyoto University, Japan and Prof. Mahua Mukherjee, Head and Professor, CoEDMM, IIT, Roorkee, India.



Prof. Ortwin Renn, Scientific Director, Institute for Advanced Sustainability Studies (IASS), Germany on “Scientific Challenges for Disaster and Risk Governance”. Prof. Renn shared his thoughts about the challenges for science. Either coming from a

practical background or from an academic background, it is very important to understand what are the major contributions of science and technology development, and assessment for disaster research, even more, for disaster management and governance. There are three major types of transformation experienced which are global in nature. Globalization: It has all its imperfections and also its conflicts that go along with it, is part of what have been experiencing for the last three decades that have tried to globalize. Digitalization which is a part of that technical modernization development that is facing. The last one though doesn't exist but it fits well with the other two – which is sustainabilization - and that is our acknowledgment that there are limited resources. Not only natural resources, social and economic resources. A new role for science is, first, need to provide calls on the functional knowledge. There is a need to be goal-oriented, strategic, instrumental concepts, and need a process-oriented catalytic concept. All of that need to be synthesized in an integrated governance approach, specifically when talking about systemic risk that can provide an outstanding orientation, good strategies, co-production of knowledge and actions.



Prof. Mohsen Ghafory-Ashtiany, Earthquake Engineering and Risk Management, International Institute of Earthquake Engineering and Seismology (IIEES), I. R. Iran on “Closing Gaps Between Scientists and Decision Makers by Creating

Demand for Safety as a Basic Human Right”. There were different types of frameworks – they all have one message in different languages which says saving of human lives and resources. Why change the platforms? When one system appears to fail, another framework or a different language is brought forward. But all have the same one objective - save human lives and resources. But you have to change your language throughout the past 30 some years. Even though we have changed our language, the fact remain, that considering the existing knowledge that has been created especially after mid 60s and 70s, technologies, standards, guidelines, strategies, policies, always international levels, one would expect to see change with these policies, and all these initiatives, and it would make our built environment safer. We expect our built environment would be, or would have at least meet the minimum safety and quality standards. It is not. All of the global, national reports these days, show that we are still living in a vulnerable environment with high risk. Disaster reduction strategies and plan have not yet effectively implemented around the world. And the proof of this statement is the casualties and losses that we see and hear after each event.



Prof. Desmond Manatsa, Full Professor, Geography Department, Bindura University of Science, Zimbabwe on “Taming New Scientific Challenges to Disaster Risk Reduction (DRR) and Disaster Risk Management (DRM) in Africa”. When faced with the new scientific challenges all over the

world, and by the way these are affecting the world is quite different. In a developed world, the effect is more positive but in Africa, it is more of a challenge. Prof. Manatsa articulated, how as a global village, to term these challenges in Africa to become positive. Africa is the only continent whose share of reported disasters in the world total has increased over the past decades. Whilst disasters in other parts of the world are decreasing, disasters in Africa, they are increasing. The new global scientific knowledge has become increasingly complex. Now, with just a click of a mouse, people are exposed to unlimited amount of scientific knowledge more than any other time in history. Prof. Manatsa resonated that scientific community should thrive to capacitate the institutions from Africa to enable them to be more systematic in knowledge management. Africa lacks financial resources but in need of the knowledge in order to be hand-in-glove with the rest of the world to combat to reduce the risks and manage disasters.



Prof. Rajib Shaw, Keio University, Japan; and Chair, STAG, UNDRR on “Advances and potentials of science and technology in implementation of Sendai Framework”. Prof. Shaw shared some examples of the work that is underway at the global level with more

focus on the regional levels, and gaps or issues, especially on the science technology in DRR which are more regional specific, to Asia. In 2016, UNDRR's, Asia Science and Technology Advisory Group, conducted an analysis of eleven different countries to study how science and technology influence or contribute to different levels of decision-making in DRR. This particular research, focused on the issue of gaps to learn which type of research studies were undertaken on disaster risk reduction, irrespective of the language. Yet, science in national decision making or science investment do not necessarily link to the people's needs. That is the major challenge possibly recognized and thought earlier, as a strong existing gap in what is done and what is required. There are different regional frameworks, and global frameworks, but the most important thing is the national, and national and local linkages. The governance system, or the legal framework, is very also important for science policy direction. However, it is necessary to possibly go beyond, as scientists' approach and bring other stakeholders into the process.

## Day 2: 14 March 2019— Panel Session I—Outcomes from Group Discussion Session I

The panel session highlighted group discussion session summaries. After the presentations by the group rapporteur, it was opened for interaction with participants. Important and useful suggestions were provided by the audience.

The Sendai Framework Agenda for 2030 is requesting the science and technology community to step-up in realizing its goals which will be implemented based on the inputs from the 2016 Science and Technology Roadmap. The group discussion sessions worked specifically to meet these challenges by providing inputs on how to respond to disaster risk reduction in a consistent and a harmonized manner with a timeframe as follows:

- A plan for 3-years – what is planned to accomplish within this period; and
- Long-term plans until 2030

Panel I—Group Discussion Session I consisted of the following groups:

- I-A: Water and Weather Related
- I-B: Earthquake and Volcano Disaster Related
- I-C: Geohazard Related
- I-D: NaTech and Cross-Cutting Issues Related
- I-E: Social and Human Sciences including Health Related



Panel I Chair Prof. Srikantha Herath and Prof. Yuichi Ono

Panel II—Group Discussion Session II included following sessions:

- II-A: GADRI Contributions to the 2016 Science & Technology Roadmap - how best could GADRI promote the SFDRR 2030 agenda?
- II-B: SDGs, climate change and adaptation - what engagement mechanisms and research linkages are needed to influence research directions among policy makers, governments, localities, media and other groups?
- II-C: Nation's Synthesis: Concept Design and Implementation, and the SFDRR Agenda 2030 – what systemic synthesis can be built?
- II-D: Research Funding - where is the funding for disaster risk reduction activities coming from and is this invested to the right causes and the areas that are most needing support?
- II-E: Data Working Group - what are the real strengths and weaknesses of data and risk management?



Expected outcomes:

- Provide inputs to the 2016 Science & Technology Roadmap and submit the outcomes through the Global Platform 2019.
- Learn from the accumulated research knowledge of each research institute.
- Share information on ongoing project activities and achievements.
- Explore opportunities for collaborative and empirical research activities.

GADRI will contribute to the contextualization of the 2016 Science and Technology Roadmap which will be presented at the Global Platform for DRR 2019 in Geneva, May 2019.



Panel II Chair Ms. Shoko Arakaki and Prof. Charles Scawthorn

## Day 2: 14 March 2019— Panel I—Discussion Session I

Deliberations of each group discussion were presented within 10 minutes by the rapporteur. At the end, each presenter was given an opportunity to appeal to the audience with one most important element of the discussion session that was the concern of the group. Panel 1 was chaired by Prof. Srikantha Herath and Prof. Yuichi Ono.



### I-A: Water and Weather Related - Rapporteur Dr. Tetsuya Takemi

The Session focused water and weather-related disasters from the scientific, engineering and implementation perspectives with emphasis on state-of-the-art concepts, methodologies, and approaches and interaction between natural events and human actions. Members also shared information on past experiences, implementation, evidence-based best practices and approaches. Discussion also focused on understanding risks and dealing with emerging risks in each region. When it concerned scientific, engineering knowledge and human society, more cooperation between designers, protected infrastructure, and analysis on behaviour responses in crisis situations by understanding cultural diversity around the world are needed. As an important element, Dr. Takemi emphasised on the importance of communication with technical development organizations as well as with local agencies and local governmental officials or other stakeholders for weather forecasting and other water related warnings.



### I-B: Earthquake and Volcano Disaster Related—Rapporteur Dr. Craig A. Davis

Although the session title included earthquake and volcano disasters, the group specifically focused on earthquake disaster related issues with specific focus on: understanding disaster risks; strengthening governance; investing in risk reduction and enhancing disaster preparedness. Using a matrix for each of the above-mentioned topics, discussions focused on short-term which meant 1 to 3 years and long-term up to 2030 earthquake disasters. Some difficulties were encountered defining whether the event is short-term, long-term, or continuous. As an important element, Dr. Craig mentioned, if we were to get one thing accomplished, he would strongly encourage to have all of the universities within GADRI and beyond to create courses and educational materials for students, for politicians and others. If we were to take that to a second-level, it would be to have that warranted culturally specific, and culturally meaning, and to a broader perspectives. If that could be accomplished, we would change the world in a significant way.



### I-C: Geohazard Related—Rapporteur Prof. Michel Jaboyedoff

Although landslide related loss of lives are high, it is, yet the most underestimated hazard among natural disasters. Statistically landslide related hazards are underestimated. Another important point is geohazards, especially landslides, the perception of it is localized by people. Unlike earthquakes, landslide occurrences are fairly evident. Discussion focused on improvement and assessment of vulnerabilities of geohazard and the need to push for global coordination of projects. One important element will be establishing early warning systems and flexible solutions by finding ways to improve community participatory tools. This could be a way to manage to go through early warning systems and monitoring and inform people that they have to develop these tools and systems together with the help of the scientific community.



### I-D: NaTech and Cross-Cutting Issues Related - Ms. Maria Suarez

Natech, natural and technological accidents, entails huge consequences and impacts on losses of human lives and economic losses. Although, learning from past accidents and lessons are possible, further research is needed to support and development of Natech accident modeling and simulations for risk assessment, addressing cascading events and considering risk reduction issues. Social impact of Natech is a topic to be further developed.

One important element of the discussion would be to raise awareness through education, training and engaging all stakeholders in discussions on Natech risk factors.

## Day 2: 14 March 2019— Panel I—Discussion Session I

I-E: Social and Human Sciences including Health Related—Rapporteurs—Ms. Robin Eve Miller and Dr. RamSateesh Paspuleti



Social Dimension of Risk - Risk itself is a social construct and due to this, there is an unequal distribution of resources, skills, and abilities. When talking about the social Dimension, first, even before coming into the society, it starts with the concept of “I”. “I”, are accountable for we, you, ours, and theirs. It continues to grow in this manner. This is where the accountability begins and therefore, “I” is very important in the context of how one actually looks at the risk; how it is not only one’s own context but holistic. In terms of local knowledge system, how risk is perceived by local person and the experts are different and not many researches are done in this area. By creating a culture to introduce DRR at school curriculum, and exploring ways to integrate that in an early learning stage, would help disseminate the knowledge and producing evidence-based knowledge as well.

As an important element—The concept of “I” although it is discussed within the social dimension, it is taking the inner spiritual dimension of the social dimension. It would be good to see stakeholders considering the spiritual dimension of that social dimension as part of DRR.

Robin – what first came to mind is the trust between the communities and on all levels of government. Because it is easily lost during disasters.

Health and Risk Related Disasters – It is very difficult to isolate health related risks from the disaster as it will come immediately after a disaster. Because health and safety are an integral part of DRR, there is no upper limit of the health. But there is a lower limit which is the fact that we are just alive. Therefore, the lower limit is to be safe in DRR. There are direct and indirect risks associated. There are certain risks, and also uncertainty in some known risks, and unknown risks. Advocacy has to go into the bottom level and build partnerships across various stakeholders.

As one important point to take home, the trust between communities and on all levels of governments should be established. It is easy to lose the trust during disasters. Once the people lose their trust among the those who are giving directions, it is hard to regain that trust.

Comments by the Panel Chairpersons—Prof Herath and Prof. Ono

To bring forward sharing accumulated research knowledge, one way would be:

- ◆ publications through Disaster and Risk Research: GADRI Book Series; and
- ◆ to create an exchange platform.

By creating an exchange platform would be a dynamic system, bringing together various new developments on communications, collecting data from different sources, and a portal to have a dialogue. It would not be one time reporting.

Once common recommendation from all five discussion session was the proposal to exchange data or sharing data and knowledge, exchanges of practices, good and bad practices, and education. If GADRI could initiate at least some or part of the recommendations, it would benefit various players in the science community as well as help students reshaping their thesis and research questions.



## Day 2: 14 March 2019— Panel II—Discussion Session II

Each group presented the deliberations of the discussion session within 10 minutes. At the end, each presenter was given an opportunity to appeal to the audience with one most important element of the discussion session that was the concern of the group. Panel II was chaired by Ms. Shoko Arakaki and Prof. Charles Scawthorn



### II-A GADRI Contributions to the 2016 Science and Technology Roadmap – how best could GADRI promote SFDRR 2030 Agenda? —Rapporteur Ms. Annisa Triyanti

The role of the roadmap itself is to promote the role of Science and Technology activities and to realize the Sendai Framework for disaster risk reduction goals and targets. The roadmap is a guideline, and a checklist and behind that, the importance of decision-making and evidence-based policies are highlighted. In order to expand beyond assessing and trying to look into a directive for dissemination, communication, capacity-building, monitoring and evaluation, it is important to realize to consolidate scientific efforts for collective impact. The group emphasised the importance to open up to communicate, learn from each other, and other sectors as well be transdisciplinary to ensure transformation.

### II-B – SDGs, Climate Change and Adaptation – what engagement mechanisms and research linkages are needed to influence research directions among policy makers, governments, localities, media and other groups?— Rapporteur Prof. Yuichi Ono

Climate change adaptation and disaster risk reduction are related and inseparable - they are on the same line. The group identified communication as one of the keywords to understanding mechanisms through which policy on climate change is enacted; sharing experiences to develop mechanisms in individual countries or regions or in facilitating to adjust the mechanisms in individual contexts. There should be a guideline linking SFDRR, SDGs and CCA at the country level. To help at the regional and national level to identify/prioritize the most significant indicators – by focusing or prioritizing some of the significant indicators accounting (present and future in terms of SDGs) that account for risks, so that policy makers could focus on the implementation more practically and effectively.

### 11-C – Knowledge Management and Science Synthesis Nation's Synthesis: Online Synthesis System and Pre-Synthesis— Rapporteur Dr. Rodrigo Cienfuegos and Dr. Indrajit Pal

The group discussion kicked-off by sharing different experiences from different countries regarding gaps for data issues, gaps for science and policy coordination, and also for interdisciplinary research, and how the nations in a concept of synthesis could help to reach those gaps. Stakeholders need to work together for disaster risk reduction through the national platform for disaster risk reduction, the government, business, industry and civil society and the social science and technology community. There is a role to play in building the system but also as a facilitator for working and thereby helping coordination between different stakeholders. Need a bridge as a framework to fostering establishment of science and policy coordination framework at the local and national level to community level.



# 4th Global Summit Resolution and Outcomes

## GADRI Session on Regional Alliances



Prof. Kaoru Takara

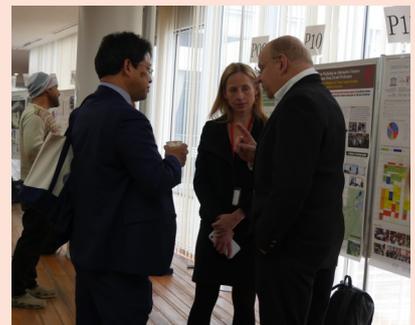
This session covered activities and functions of GADRI regional alliances. Prof. Kaoru Takara, Associate Member of SCJ, Professor and Dean, Graduate School of Advanced Integrated Studies in Human Survivability, Kyoto University presented the Science Council of Japan (SCJ) which was established in January 1949 under the jurisdiction of the prime minister yet operating independently of the government. It represents Japan's scientists both domestically and internationally with the firm belief that science is the foundation upon which a civilized nation is built.

Background of The North American Alliance for Hazards and Disaster Research Institutes (The North American Alliance—NAAHDRI) was presented by Ms. Jennifer Tobin on behalf of Prof. Lori Peek, Director, Natural Hazards Center, University of Colorado-Boulder, USA. The North American Alliance was initiated in July 2017 and the first meeting of the Board of Directors will take place in July 2019.

On the African Alliance for Disaster Research Institutes (AADRI), Prof. Desmond Manatsa, Chairman of AADRI presented an Introduction to “Regional Alliances-Showcasing Collaboration & Research: Workflow & Opportunities” and current status of the network.

Prof. Andrew Collins shared information on the United Kingdom Alliance for Disaster Research (UKADR), a research community to facilitate collaboration and partnerships among others, and its activities on “creating opportunities for civil society, particularly youth, to be employed in shaping a future for physical and economic and social environmental quality and safety”.

Prof. Kyoji Sassa, Chair of the 5th World Landslide Forum and Secretary-General of ICL, introduced the 5th World Landslide Forum; and Prof. Wei-Sen Li shared information about the capacity development activities offered by National Science and Technology Center for Disaster Reduction (NCDR) and forthcoming international courses in May and June 2019.



Ms. Jennifer Tobin (center)

## 4th Global Summit of Research Institutes for Disaster Risk Reduction—Outcomes

GADRI will actively contribute to the actions of the 2016 Science and Technology Roadmap by providing a common voice and identifying priorities on important issues, such as;



Prof. Jim Mori

- Syntheses for all types of risks on a country or regional level, including examples of successes and contributions of local knowledge, to expand sponsor and user groups (e.g. DRRKC, Nations Synthesis Framework).
- Effective education programs about disaster risk reduction for scientists, government and community officials, media and the public
- Improved research and practice on communication and interactions among and between technical experts, policy makers, implementation groups, and stakeholders
- Development of new methodologies and technologies for data analyses, promotion of action data and encouragement of open data sharing, for research and risk reduction applications

- Dissemination of research achievements and reports through GADRI Book Series
- Voluntary evaluation and reporting of achievements at the biennial GADRI Global Summits



Hiroshi Kawase

The wrap-up session was chaired by Prof. Hiroshi Kawase and presented by Prof. Jim Mori, both from DPRI, Kyoto University.

## 2nd GADRI General Assembly

The members of GADRI participated at the 2nd General Assembly of GADRI which is conducted once every biennium jointly with the global summit series. The Second GADRI General Assembly was held at the Granvia Hotel Kyoto, Kyoto, Japan on 15<sup>th</sup> March 2019. This session was limited to members of GADRI. Over 60 members from 26 states attended the session.

Unanimous approval was obtained on a number of important issues such as the Chairman of the Board of Directors, the new members of the GADRI Board of Directors, and the members of the newly formed Advisory Board who joined in April 2018.

In particular, the meeting

- ◆ clarified the short-term and long-term issues to be tackled in each research field through group discussions, and
- ◆ agreement to provide contributions and commitment by each institute to submit recommendations to the Science and Technology Roadmap.

The participants unanimously agreed to report and review achievements and information at GADRI biennial summits and other opportunities. GADRI Secretariat also used the opportunity to encourage members to further disseminate their research reports, conferences, capacity development activities through GADRI website, GADRI Actions, and to be engaged in GADRI activities to the extent possible.

On the topic of the GADRI Global Summit series initiated by the Disaster Prevention Research Institute (DPRI), Kyoto University, the participants observed that the title of the Global Summit series is too long and it should be shortened. The shorter version of the title would be Global Summit of the Global Alliance of Disaster Research Institutes (GADRI) with a colon. A subtitle will be attached to it at each session which will clearly describe theme of the conference.



## Side Events on 12 March 2019

### Future Leaders for Risk, Crisis, Disaster and Development Management



Side Event on **Future Leaders for Risk, Crisis, Disaster and Development Management** joint event organized by Kansai, Leicester and Sheffield Universities. It was the final dissemination event of the research project for '**Risk, Crisis, Disaster and Development Management: Future Leader Programme**' funded by Kansai University's Improvement in Research & Education Fund. The research project intends to identify a future programme to improve students' learning skills and improve teaching experiences for the effective management of risk, crisis, disaster and development.

Dr Nibedita S. Ray-Bennett from the University of Leicester and Dr Hideyuki Shiroshita from Kansai University jointly established ADN in February 2019. It was officially launched at the 4th Summit of Global Alliance of Disaster Research Institutes (GADRI) at Kyoto University on 12th March 2019. This was done during the side event,

titled: Future Leaders for Risk, Crisis, Disaster and Development Management.

The ADN is a diverse, dynamic, inclusive and innovative global membership network of experts, practitioners and researchers interested in avoiding human deaths from natural hazards, NATEC, human-made disasters in low- and middle-income countries.

Since the launch, ADN has been focused on expanding its global and diverse network. This has included hiring an administrator, a number of volunteers and affiliates, 5 Interns, and 14 organisational partners. The editorial board is currently working on the first newsletter. ADN's networking is aided by social media and online activity - including Facebook, Twitter and website (<http://www.avoidable-deaths.net/partners/>). To join ADN please follow this weblink : <http://www.avoidable-deaths.net/join/>

Funded by Leicester's Institute of Advanced Studies Rutherford Fellowship, Dr Nibedita Ray-Bennett hosted the first Research Fellow of ADN, Dr Edris Alam from Chittagong University. Dr Alam's research focused on 'Disaster Risk Governance of Local Administration in Bangladesh'.

The ADN has been invited to present on the **IGNITE stage at the Global Platform for DRR in Geneva on 17<sup>th</sup> May 2019 at 2.0 pm**. If you are attending the Global Platform, please do attend the ADN's session.



## Side Events—GADRI Workshop on Efforts and Responses to Major Disasters Around the World

Side Event on Efforts and Responses to Major Disasters Around the World: Narratives and Communications held at Disaster Prevention Research Institutes (DPRI), Kyoto University, Uji Campus, Obaku Plaza, Kyoto, Japan on 12<sup>th</sup> March 2019 from 13:00-17:00 hours.

GADRI organized the side event on the Efforts and Responses to Major Disasters Around the World: Narratives and Communications at the Obaku Plaza on 12<sup>th</sup> March 2019 from 13:00-17:00 hours. The event was participated by nearly 100 participants.

The session was divided to two Panel sessions. Panel 1 on Earthquakes, Tsunami, Volcano Eruptions and Recovery Related; and the Panel II on Water Related issues.

Panel One consisted of five presentation by Prof. Jim Mori, DPRI, Kyoto University; Prof. Yuichi Ono, International Research Institute of Disaster Science (IRIDeS), Tohoku



The event in the region - nature of the event and the damage it caused (structures destroyed, killed, dollar loss etc.)

The Recovery - given the damage, how recovery is occurring – the plan, its status, problems

Knowledge gaps: what gaps exist, what research is needed, how DRIs can contribute

The participants and the panellists of the event endorsed to publish a compendium of the papers as a book under the *Disaster and Risk Research: GADRI Book Series*. It will be titled as Global Disasters of 2017-2018 and edited by Prof. Charles Scawthorn and Prof. Mohsen Ghafory-Ashtiany.

Wrap-up was chaired by Prof. Andrew Collins, DDN, Northumbria University, UK and delivered the closing remarks.



University, Japan; Dr. Craig Davis, American Society of Civil Engineering (ASCE), USE, Dr. Irwan Meilano, Institut Teknologi Bandung (ITB), Indonesia, and Dr. Rodrigo Cienfuegos, Centro de Investigación para la Gestión Integrada del Riesgo de Desastres (CIGIDEN), Chile.

Panel Two was covered by Prof. Toshio Koike Prof. Toshio Koike, Director, International Centre for Water Hazard and Risk Management under the auspices of UNESCO (ICHARM), Japan; Prof. Srikantha Herath, Director, CURW, and Senior Advisor, Ministry of Megapolis and Western Development, Sri Lanka; Prof. Bijay Anand Misra, SPA, Kerala, India; Prof. Charles Scawthorn, PEER, University of California, Berkeley, USA; Prof. Paul Kovacs, ICLR, Western University, Canada; Dr. Jennifer Tobin on behalf of Prof. Lori Peek, Director, NHC, University of Colorado, Boulder, USA; Prof. Mahua Mukherjee, Head, CoE in Disaster Mitigation and Management, IIT, Roorkee, India; and Prof. Jean Paul Pinelli, Florida Institute of Technology, USA.

Within the allocated 10 minutes, each presenter described the natural disaster as follows.



## Activities at GADRI Member Institutes

### 2019 International Training Workshop on Natural Disaster Reduction-Disaster Big Data Analysis and Applications, National Science and Technology Center for Disaster Reduction (NCDR), Chinese Taipei



Group photo of all delegates

By: Ms. Kiri Chen, Research Assistant, NCDR

Taiwan is a highly disaster-prone country and how to mitigate disaster risk is an essential issue catching attention from both government and the general public. The analysis of big data provides an in-depth view about how people reacted to shakings and warnings. Before, during and after disasters, data and information are two key elements to keep citizens and government prepared for it and also help emergency responders through providing situation awareness. By applying big data as open data, it will enhance societal preparedness and resilience.

The Workshop took place from 30 April to 2 May in Taipei City, and focuses on what kinds of big data sets are possibly applied; how to use big data to create in-depth views for better policy on disaster management; and why user-oriented applications of big data could enhance information coverage among the general public. There are 30 delegates from 10 countries, including Bhutan, India, Indonesia, Cambodia, Japan, Switzerland, Malaysia, Nepal, the Philippines, Thailand, The United States, and Viet Nam, also included one from GADRI. Besides lectures and practice courses, the delegates visited the Emergency



Prof. Wei-Sen Li

### Visit to Centre for Urban Water (CUrW), Sri Lanka by THINKLab, University of Salford, UK—by Mr. Muditha Dantanarayana



Representatives from University of Salford and THINKLab at University of Salford which is a center for Leading Research in advanced technology platforms for smart city applications visited the Center for Urban Water, Sri Lanka (CUrW) which is established to manage urban water in Colombo at the invitation of team leader Prof. Srikantha Herath on 25<sup>th</sup> of April, 2019. Prof. Terrance Fernando (Director at THINKLab), Prof. Bingunath Indrige and Dr. Kaushal Keraminiya were present for the meeting along with the CUrW staff. Prof. Srikantha Herath introduced the structure, objectives and the current operations at CUrW including the staff, major study areas working on and the progress made so far. Discussions were made on CUrW's new facility which will accommodate with state-of-the-art interactive digital infrastructure to be used in both operational and research based studies and the similar facilities currently available at THINKLab. Prof. Bingunath Indrige discussed the importance of social aspects in disaster resilience operations which lead to express

the experience CUrW gained from the survey on economic loss on floods conducted recently in the flood prone areas in Colombo. Visitors were delighted to see similar focus areas pursued by CUrW and THINKLab and agreed to further extend the relations with collaborative studies and support in future development. Two focus areas will be use of augmented reality in communicating flood risk and the dissemination of flood risk to communities through interactive platforms. Ms. Wilma James, from GADRI who was visiting Colombo also joined the meeting and shared information on GADRI and its current activities.

# Group Discussion Sessions



## Calligraphy Club members of Todoh High School



At the upper left, we drew;

「京に彩づく文化の風 繋げよう 未来へ」

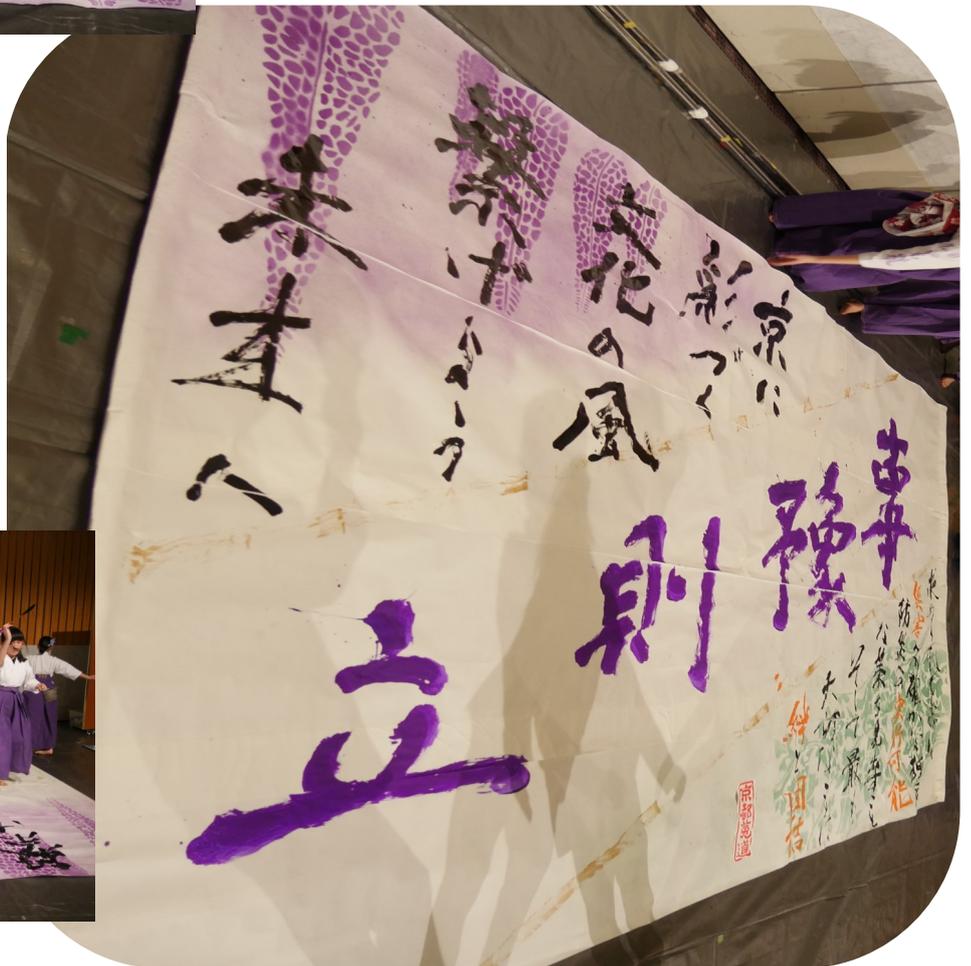
Kyoto is a very cultural city. We'd like to learn about disaster risk reduction and preserve this peaceful society for future generations.

Actually, our school was hit and heavily damaged by a local heavy rain several years ago. We think we should tell the next generations about our experience.

In the middle;

「じしゅうそくりつ」

This old Chinese word means that preparation is important in everything. We wanted to show that it's important to prepare for disasters to reduce the damages. And finally, in the words at the lower right, we express our ideas about disaster reduction, which means we need to correctly understand how to reduce disaster risks and find out a practical solution. And the most important thing is our strong bonds and cooperation. We hope that fewer and fewer people will suffer from damages caused by natural disasters.



### 5th Global Summit of GADRI:

The Fifth Global Summit of GADRI: will take place in Ispra, Italy in March 2021 and will be sponsored by the European Commission-Joint Research Centre, Italy and the Disaster and Development Network (DDN), Northumbria University, UK.



It is first time for the global summit series to move out of Japan.

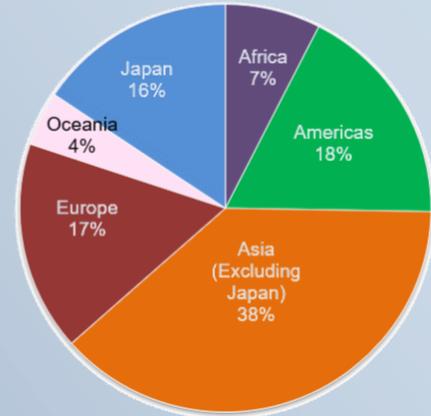
Mark your calendars and we look forward to seeing you in Italy in March 2021!

# Global Alliance of Disaster Research Institutes (GADRI)

At the recommendation of the Second Global Summit of Research Institutes held at the Kyoto University Disaster Prevention Research Institute, Kyoto, Japan, in March 2015, the Global Alliance of Disaster Research Institutes (GADRI) was established to support the implementation of the Sendai Framework for Disaster Risk Reduction 2015-2030 (SFDRR) and the work of the Scientific and Technical Advisory Group of the United Nations Office for Disaster Risk Reduction (UNISDR). One of the recommendations was to form a research roadmap for the next decade.

To further realize these goals, GADRI join hands with research institutes around the world. Since March 2015, GADRI's membership has been steadily expanding to include institutions around the world engaged in disaster risk reduction and resilience research.

GADRI Secretariat is currently hosted by the Disaster Prevention Research Institute (DPRI), Kyoto University, Uji Campus, Kyoto, Japan.



Area	Members	States
Africa	14	8
Americas	33	7
Asia (Excluding Japan)	71	19
Europe	31	11
Oceania	8	2
Japan	29	1
<b>Total Institutes</b>	<b>186</b>	<b>48</b>
	48 states	

## To Join GADRI:

Contact GADRI Secretariat ([secretariat-gadri@dpri.kyoto-u.ac.jp](mailto:secretariat-gadri@dpri.kyoto-u.ac.jp)).  
Membership is free; and completely voluntary and non-binding.



**GADRI**  
Global Alliance of  
Disaster Research Institutes

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