

A Brief Report on the 5th Global Summit of GADRI: Engaging Sciences with Action Held Intercontinentally and Virtually from 13:00 hours UTC, 31st August to 16:00 hours UTC, 1st September 2021

The Global Alliance of Disaster Research Institutes (GADRI) - <https://gadri.net/> conference, the 5th Global Summit of GADRI under the sub-theme of Engaging Sciences with Action was held virtually and regionally from 31st August to 1st September 2021. <http://gadri.net/summit/>

This year's Global Summit of GADRI was attentive to the necessary influence of the Global Alliance and its supporting regional Alliances on bringing the disasters research to bare on the outcomes of the UN Climate Change Conference of the Parties (COP26) COP26 taking place in Glasgow, UK from 2 to 12 November 2021. The 5th Global Summit of GADRI recommendations, facilitated through the UK Alliance of Disaster Research, was presented at the COP26. GADRI will further submit the conference recommendations at the UNDRR Global Platform for DRR: From Risk to Resilience: Towards Sustainable Development for All in a Covid-19 Transformed World to be held in Bali, Indonesia from 23 to 28 May 2022.

The 5th Global Summit of GADRI was opened by Prof. Paul Kovacs, Chair, Board of Directors of GADRI and followed by a video message from Ms. Mami Mizutori, Special Representative of the Secretary-General for DRR, UNDRR, Switzerland; and the greetings from the Secretary-General of GADRI, Prof. Hirokazu Tatano.

The first Plenary Session on the topic of Systemic Risk and Current Action was covered by Ms. Loretta Hieber Girardet, Chief, Risk Knowledge, Monitoring and Capacity-Development Branch, United Nations Office for Disaster Risk Reduction (UNDRR); COVID-19 and other hazards – Science into Action was delivered by Prof. Virginia Murray, Head, Global Disaster Risk Reduction, Public Health England (PHE), UK; and the Lessons of COVID-19 for Systemic Risk Governance: Recycling Sustainability and Resilience was delivered by Prof. Ortwin Renn, Scientific Director, Institute for Advanced Sustainability Studies (IASS), Germany. The session was chaired by Prof. Kaoru Takara, Professor and Dean, Graduate School of Advanced Integrated Studies (GSAIS) in Human Survivability (Shishu-Kan), Kyoto University.

The Opening Ceremony and the Plenary Session I was logged in by about 334 people from around the world.

The regional session on Americas covering North and South America was on **Current Situation of Science Collaborations in Hazards DRR**. The session was opened by Dr. Guirong Grace Yan, Director, Center for Hazard Mitigation and Community Resilience, Missouri University of Science and Technology.

Keynote speech on Multidisciplinary Modeling Progress and the Role of Community Engagement in Resilience Planning was delivered by Prof. John W. van de Lindt, Colorado State University & Center for Risk-Based Community Resilience Planning. USA; and Board Member, GADRI Board of Directors.

The following four topics for panel discussion sessions were selected by the North American Alliance of Hazards and Disaster Research Institutes (NAAHDRI). The four sessions were divided to two parallel sessions, i.e. I and III and II and IV.

I. Enabling Resilience: Preventing Disasters in Hazard-Prone Areas

What goal do we want to achieve? The goal is to enable resilience by preventing natural hazards from becoming disasters

II. Reducing Barriers for Scientists and Engineers to Enhance Resilience

How to achieve the goal by developing innovative approaches?

III. Innovative Approaches in Disaster Resilience

How to reduce barriers in implementing the developed approaches?

IV. Equitable Resilience: Addressing Social Justice in Disasters

How to upgrade “resilience” into “equitable resilience” in order to reduce hazard impacts on marginalized populations?

The Americas session was coordinated by Prof. John van de Lindt, Dr. Guirong (Grace) Yan, Dr. Jamie Kruse, Prof. Lori Peek, and Prof. Paul Kovacs and brought in 25 experts in various disciplines from all over the region to do a 10–15-minute presentation and engage in discussion with the audience for 30-80 minutes.

The Americas time zone session was covered within six hours and about 377 participants from all over the world logged in via zoom meeting.

The second Plenary Session on How to Engage Science in the Decision-Making Process within National Governance and Relate Science into Action? – was covered by four keynote speakers.

- Mobilizing science for disaster risk reduction and development safety - a decade quest of IRDR delivered by Prof. Qunli Han, Executive Director, International Programme Office of Integrated Research on Disaster Risk (IRDR-IPO), China
- Disaster Risk Reduction in Small Nations delivered by Dr. Selwyn Mahon, American University of the Caribbean School of Medicine, Sint Maartens
- Non-regret climate change adaptation with a paradigm-shift of the water-related disasters delivered by Prof. Eiichi Nakakita, Director, Disaster Prevention Research Institute (DPRI), Kyoto University, Japan; and
- Finally a video message by Ms. Emilia Saiz Carracedo, Secretary-General, United Cities and Local Governments (UCLG), Spain

This session was chaired by Prof. Charles Scawthorn, Visiting Researcher, Univ. California at Berkeley and Principal of SPA Risk LLC.

Asia and Oceania regional session covered the topic on **Engaging Sciences with Action: Voices from Asia and Oceania**

The session was opened by four keynote speeches.

- Open Synthetic Systems, Haruo Hayashi, National Research Institute for Earth Science and Disaster Resilience

- An introduction of the first national comprehensive disaster risk survey project of China, Yang Saini, Beijing Normal University
- Using science to support decision-makers to reduce risk from natural hazards events: some examples from Aotearoa New Zealand, Gill Jolly, GNS Science
- Engaging Science with actions: A case for EEW in India, M. L. Sharma, SAADRI Programme Adviser

The opening session was chaired by Prof. Toshio Koike, Executive Director, International Centre for Water Hazard and Risk Management (ICHARM) under the auspices of UNESCO, Japan; and Member of the GADRI Board of Directors.

The four-panel sessions on the following topics were held in parallel in two parts.

- I. Regional Alliances: Improving collaboration to support global stakeholders on DRR and DRM
 - Introducing current and existing alliances; and Introducing Viewpoints: Suggestions for Improvement –
 - What should we do to encourage youth to engage in education?
- II. Target E - Disaster Risk Governance and Contribution for Policy Making
 - Progresses and challenges of DRR policies
 - Potentials of Scientific knowledge for DRR policies
- III. Contributions to Climate Change Adaptation
 - To create a roadmap for Universities and Research Centres in support of the climate change research agenda
 - To list measurable contributions of the Asia and Oceania Region towards the COP26.
- IV. Implementation of Sciences in Action
 - Implementation Science in DRR

The panel discussion session brought in 32 experts in various fields of specialisation to present their arguments and to engage in discussion with the audience.

The session was wrapped up by each group chair with the session achievements and recommendations.

The Asia and Oceania time zone session was covered within six hours and was attended by nearly 140 participants from around the world.

The regional time zone session on Europe with Africa and the Middle-East was on **Exploring solutions to Bridge the Gaps for Implementation of Science in Action.**

This session was coordinated by Prof. Jörgen Sparf, Regional Organising Committee, Associate Professor in Sociology and a founding member of the Risk and Crisis Research Centre, Mid Sweden University, Sweden; Prof. Andrew Collins; Disaster and Development Network, Northumbria University, UK and Dr. Tom De Groeve, Deputy Head of Unit, Disaster Risk Management Unit, European Commission, Joint Research Centre (EC-JRC), Italy.

The session opened with two keynotes by Dr. Tom De Groeve, Deputy Head of Unit, Disaster Risk Management Unit, European Commission, Joint Research Centre (EC-JRC), Italy on Engaging Sciences with Action: Results from the first five years of the Sendai Framework; and Prof. Nico Elema, Director, PeriPeri U, Stellenbosh University International, South Africa on Exploring solutions to bridge the gaps for implementation of Science in Action. Keynote session was chaired by Prof. Andrew Collins, Northumbria University, UK.

Migration in Africa is a huge issue. People migrate for various reasons. Often due to various challenges faced in life and it is something that needs to be looked at in the future. Another important challenge is refugees. How African countries handle refugees. Many initiatives are in the process

Following four topics were identified for the panel discussion sessions.

- I. Bridging the Collaboration Gaps: Integrating DRR and CCA for a Science in Action Agenda
- II. Bridging the knowledge Gaps: Exploring solutions for Transforming Data into Action
- III. Bridging the Science-Policy Gaps: Contextualising Governance to Explore Opportunities for Action
- IV. Bridging the Generational Gap: Catalysing Science in Action by Youth Engagement

The panel presentation and discussion brought in 16 specialists including the Deputy Head, Adaptation Unit, European Directorate General for Climate Action; a Member of Parliament, Scottish Government, Shadow SNP Spokesperson for Environment, Food and Rural Affairs.

Within the six hours, nearly 150 participants from around the world attended the session.

In addition to the regional time zone sessions, there were two other sessions on Networking with Institutes; and an e-poster session.

During the two hour period, 17 institutes participated in the Networking with Institutes session and 48 e-posters were presented.

This session was held in parallel within two hours and attended by 102 persons from around the world.

Closing wrap-up session included a wrap-up session for all three regional sessions to share the final outcomes of the session. Each representative of the session shared achievements and recommendations of their respective session.

During the closing session, Dr. Jenty Kirsch-Wood, Chief of Section, Global Risk Analysis and Reporting, UNDRR, Switzerland; Prof. Qunli Han, Executive Director, International Programme Office of Integrated Research on Disaster Risk (IRDR-IPO), China; and Prof. Andrew Collins, Leader, Disaster and Development Network, Northumbria University, UK congratulated on the success of the conference.

Closing remarks were delivered by Prof. Paul Kovacs and the session was finally closed by Prof. Eiichi Nakakita, Director, Disaster Prevention Research Institute (DPRI), Kyoto University, Japan at 01:23 hours of 2nd September 2021 covering 27 hours and 23 minutes.

Conclusion

An amazing number of 640 participants from 77 economies registered for the conference; and nearly 568 members from 73 economies logged in via zoom meeting to attend the 27-hour long conference.

The 27-hour long conference was a success especially in terms of its global participation and achieving the conference's set objectives.

Achievements and Recommendations

Americas covering North and South America

Recommendations out of keynote speech:

- Multidisciplinary research to develop comprehensive community-level models of physical, social, and economic infrastructure
- Implementation: Community engagement from the very beginning (constraints and resources. Help communities understand their strengths and vulnerabilities)

Recommendations from the panel discussion sessions:

- “All disasters are local”: resilience is a local issue that must be addressed at that scale – using a combination of technical and community engagement efforts
- Risk modeling: multi-hazards. Encourage interdisciplinary efforts
- Impacts on civil structures: physics-based modeling to get the design loading
- Retrofit houses by leveraging insurance
- Resilience in recovery: “build it back better” mentality
- Create, support, and find mechanisms to facilitate research-to-practice partnerships (like the NSF Civic program, companies that can do the translation). Successful model.
- Engage decision-makers (those who control the funds) in trying to implement resilience solutions.
- Improve the communication between engineers and physical and social scientists, and decision-makers. Find new ways to share information.
- Educate to improve broad-based public understanding and support.
- Identify which aspects of inequality we have not captured, which communities are slower in recovery and under what conditions?
- Incorporate equity in resilience measurement
- Incorporate equity in the state hazard mitigation plan
- Partner with non-traditional partners and multi-agency coordination to leverage funds
- Get voices of behavioural scientists in the weather services and forecast
- Understand institutional mechanisms that create inequitable outcomes for public housing after disasters
- For outreach activities, take a whole community perspective to include all ages, all races, renters,...
- National Collaboration: Science->action
- International collaboration (funding mechanism)

In summary, it takes transdisciplinary research and initiatives, through a convergent approach by including all stakeholders, to win the battle of climate change; and it takes close national

and international collaborations to address the grand challenge of climate change faced by the entire world.

Asia and Oceania Time Zone Session

The session included four parallel discussions sessions.

I Regional Alliances: Improving collaboration to support global stakeholders on DRR and DRM

I-1 Introducing current and existing alliances; and Introducing Viewpoints: Suggestions for Improvement –

Two important areas emerged from the discussions.

- How can the different regional initiatives collaborate, what avenues are available?
- need to find overarching themes to connect different programs to discuss findings to identify commonalities and disparities and learn from each other.
- For example in SAADRI discussions there are these two focus areas: (a) Improving knowledge to practice transformation to benefit affected people and (b) Improving Policies for effective DRR. We may discuss where policies were formulated to enhance or adopt successful practices or where good policies led to improved practices. This type of topics can bring different regional perspectives to be discussed together.
- Early warning, Climate change adaptation and Infrastructure safety were themes that were addressed by most groups. Workshops under these topics can be another approach.
- Community engagement
 - It may be worthwhile to explore how GADRI can support and develop a program to synthesize rich experiences of small islands, the programs conducted by AIT etc., to develop education and practice guidelines for engagement of communities to create a long-term effective dialogue between research researchers and affected communities.
 - Endorsement of such a program by a UN organization would make it effective.

I-2 What should we do to encourage youth to engage in education?

Within Session 1.2, five panelists extensively delivered roadmap, ideas, project outcomes, capacity building programs and networking for engaging, empowering and enabling the youth for next generation education in disaster risk management (DRM). All speakers are welcomed to cover the following three topics during their talks.

1. How to build up platform for youth's involvement with multi-

stakeholders?

2. What are necessary elements to be include in new DRM paradigms for the youth?
3. Where are the ideal approaches to attract the youth to initiate the next mile of DRM?

Following highlights a few of the recommendations:

- To enroot “culture of protection”, DRM education should start early at basic education and be carried out lifetime.
- To meet dynamic social development, an enabling education environment should be inclusive of possible social and physical impacts.
- To build connection and collaboration between universities and national platform to enable an environment for both researcher and disaster manager.
- To highlight creativity of the youth in IoT and social media to enhance risk communication.
- To motivate social enterprise as one engine to continuously engage the youth in DRM.
- To encourage young “voice” and “face” to speak out DRM like Greta Thunberg advocating for CCA.
- To recognize youth group as a resource for DRM work, instead of vulnerable group.
- To make youth as an important source of DRM information for local communities
- To deliver tailored youth/young adult learning approaches
- To introduce more mainstreaming of disaster risk reduction into sectoral policy/development process
- To welcome more regional/sub-regional collaboration and knowledge sharing on the subject
- To utilize platform like U-INSPIRE Alliance connecting regional and global youth professionals to co-work and co-implement.
- To invest more in youth DRM education.
- To include diversities of disciplines, languages, cultures and hazards for DRM education to the youth.
- To organize platforms to enable out-of-the-box thinking, open-ended dialogues among multi-stakeholders, cross-cutting collaboration and public-private partnership with youth generation and other stakeholders.
- To deliver capacity building program or curriculum through diverse and inclusive approaches and to address how science and technology can make broad-spectrum contributions to disaster risk reduction and emergency management.

- The session 1.2 is a starting point to map out how GADRI can make changes to DRM education and the topic should continue to produce more fruitful outcomes.

II Target E - Disaster Risk Governance and Contribution for Policy Making

- Progresses and challenges of DRR policies
 - How have national and local governments adopted DRR strategies so far in line with Sendai Framework?
 - Roughly a total 120 countries have adopted DRR strategies
 - What are good practices of DRR strategies in national and local levels?
 - 8 steps approach by JICA
 - Case study in Philippine
 - Extending application to other Asian countries
 - What are the challenges for making and implementing DRR strategies?
 - Multi-hazard and New risk landscape
 - Financing is very much important
 - Involving multi-stakeholders with inter-sector corporation
 - Risk assessment information is the first step to involve multi-stake holders
 - Monitoring and evaluation
 - Multi-language
- Potentials of Scientific knowledge for DRR policies
 - How can scientific knowledge support national and local governments to make and implement DRR strategies?
 - Satellite image just after disasters is helpful for making DRR strategies
 - Approach integrating both human system (evacuation drill) and natural system (hazard maps)
 - Communications among residents, governments and researchers
 - How can scientific knowledge provide evidence for effective implementation of DRR policies?
 - Randomized control trial (RCT) is useful to select out actually effective policies among seemingly effective policy

- Although strict RCT is difficult to be conducted in field, modified versions of RCT can be feasible.
- How can research institutions contribute to capacity development of national and local governments and practitioners in fields?
 - JICA presented an 8-step approach they have implemented
 - Evacuation drill study based on the integrated approach human and natural system
 - Win-win relationship is important for sustainable contribution

III Contributions to Climate Change Adaptation

- To create a roadmap for Universities and Research Centres in support of the climate change research agenda
 - Important milestones for roadmap for universities and research centres in support of the climate change research agenda
 - Need for enhance Observation network particularly in mountain areas for better data and information for climate modeling and validation
 - The nature of risks are changing - there are more compound risks leading to cascading disasters - science and technology and use of Earth Observation plays a critical role in understanding the risk
 - Individual and institutional capacity building at regional, national to local level for informed decision making for enhancing adaptive capacity for climate and disaster resilience
 - Strengthening partnerships and networks
- Listing measurable contributions of the Asia and Oceania Region towards the COP26
 - Integrated approach for DRR and CCA
 - Data and knowledge sharing both at national-level and international-level, transboundary collaboration
 - Evidence from observations – in-situ and remote-sensing observations
 - Weather and climate monitoring: DRR and CCA
 - Third Pole: important weather & climate driver in Asia-Oceania region
 - Impact-based forecasting, early warning and rapid information dissemination
 - Resilient infrastructure

IV Implementation of Sciences in Action

- Implementation Science in DRR
 - Perspectives expected of implementation science
 - Dealing systemic thing as science – even disaster risk is one of
 - Implementation process is inevitably dynamic
 - Dealing the dynamics of systems
 - Norms of implementation dynamics
 - How should professional scientists approach to the field?
 - Mechanism design to create the desired dynamism
 - Sense-making
 - Diversity in academics
 - Long-term perspective and commitment

There is no manifested scientific view of the above subjects yet.

- Needs implementation science as a cognitive system for activist scientists
- Appreciate and Evaluate scientists those who take on tough challenges

Europe covering Africa and the Middle-East

There were four discussion sessions:

- I. Bridging the Collaboration Gaps: Integrating DRR and CCA for a Science in Action Agenda
- II. Bridging the knowledge Gaps: Exploring solutions for Transforming Data into Action
- III. Bridging the Science-Policy Gaps: Contextualising Governance to Explore Opportunities for Action
- IV. Bridging the Generational Gap: Catalysing Science in Action by Youth Engagement

In drawing together solutions to bridging gaps between science and action, focus was on collaboration and the pressing issue of the need to integrate DRR and CCA for a more urgent and effective Science in Action agenda stimulated by four contributions spanning research, policy and practice.

On the question of “how we can use the GADRI network of collaborating institutions to speed up disaster risk reduction and climate change adaptation solutions based on evidence-based actions of the combined agenda, there was not time for all panellists to fully expand on this, but comments have already indicated that GADRI has a unique lead in this agenda through the interlinking of institutions, which brings added value. This adds to the influence of academic institutes being able to guide policy with vary opportunities for its development and consequent science going into action.

In the **final plenary session**, following points were highlighted as some aspects that stood out in the Europe, Africa, and Middle East section.

- Bridging gaps require close and continuous collaboration between stakeholders to build shared understanding: populations, researchers, policymakers, economic actors. Eco-system approach!

- If we (as individual and collective scientists) do not communicate, someone else does.
- Heterogeneity and diversity of all sorts are crucial—narratives are essential to provide context for evidence.
- More data and evidence are necessary: fine-grained and delivered in the right format at the right time.
- Make sure young people have a seat at the table! What about systemic youth engagement in GADRI? Can we improve?