



GADRI ACTIONS

Spring 2020
Volume 11— Number 1



We hope you are all doing well and keeping safe. We are all working towards containment of the corona virus. This is an extraordinary and an unprecedented situation where we are pushed to find immediate solutions to contain the Covid-19. It has exposed our vulnerabilities to unknown disasters of which risks were looming for decades. We need to learn to cope-up with the disease and uncertainties and proceed cautiously but expediently, especially to save lives. We need to evaluate carefully our response to the situation.

As researchers, we could collect data on how the world leaders responded to the situation and how they plan to build a prosperous, resilient and a substantiable world after the pandemic. Every researcher should act now, collect valuable data on the impact, response, and resilience, and share it among each other so that it can be used to help us approach a second-wave of the pandemic, if any, or future pandemics with a better understanding of the situation.

In this issue we are covering the GADRI 3rd Open Discussion Forum which took place on 26th February 2020. We managed to hold the forum just before lockdown. There were a few cancellations, yet we had a successful discussion session.

Another activity was the change in our Board of Directors and the Advisory Board. The five new members of the Board of Directors who took office from 1st April 2020, joined the meeting of the Board of Directors and the Advisory Board held on 25th February 2020.

Members of the Board of Directors and the Advisory Board also initiated to write a letter to the editor on Covid-19 and GADRI. This is currently being pursued by the Board and Advisory Board members to publish the letter in one of the newspapers or journals.

We hope you will remain strong under this situation, stay safe and act proactively to collect data and other information for the post-pandemic future.

With best wishes,

Hirokazu Tatano and Wilma James

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Photos were taken from the disaster reports shared by members of GADRI. Credit to the photos can be found in the respective articles.

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

GADRI LECTURE SERIES AT DPRI, KYOTO UNIVERSITY, JAPAN

The Spring Session of the GADRI Lecture Series were held at the Disaster Prevention Research Institute (DPRI), Kyoto University, Uji Campus, Kyoto, Japan on 25th February 2020. The following prominent professors delivered the lectures to DPRI students and faculty members. Prof. Andrew Collins and Prof. Gretchen Kalonji are members of the GADRI Board of Directors while Prof. John Clammer is a member of GADRI.



**Prof. Andrew Collins,
Leader,
Disaster and
Development
Network,
Northumbria
University
Newcastle,
United
Kingdom**

research, teaching and management responsibilities, he represents disaster, development and health related initiatives internationally. He gained his PhD from King's College London in Human Geography.

**Lecture title: Progress and Prospect for
Action Data in People Centred Disaster
Risk Reduction and Resilience Building**

Andrew Collins is Professor in Disaster and Development, Department of Geography. Beyond research, local teaching and management responsibilities, he represents disaster, development and health related initiatives internationally. He led the establishment of the world's first disaster management and sustainable development postgraduate programme launched in 2000, and Disaster and Development Network (DDN) launched 2004. Beyond his regular



Lectures will be available online through the GADRI webpage.

GADRI LECTURE SERIES AT DPRI, KYOTO UNIVERSITY, JAPAN



Prof. Gretchen Kalonji, Dean, Institute for Disaster Management and Reconstruction (IDMR), Sichuan University, China

Gretchen Kalonji is an American scientist and academic administrator. She is Dean of Sichuan University. Kalonji was previously the assistant Director-General for Natural Sciences at UNESCO. She is a graduate of Massachusetts Institute of Technology (MIT), USA and obtained her D.Phil. on Materials Science and Engineering.

Lecture title: Innovations in Undergraduate Education Design of a New Major in “Integrated Disaster Sciences and Management”

- Why was this topic chosen and how is it related to the strategic development of our Institute for Disaster Management and Reconstruction (IDMR)?
- Comparison of the emerging field of “disaster sciences” with the historical evolution of the field of “materials science” – lessons and ongoing challenges
- Details of our design for a new undergraduate major in “Integrated Disaster Sciences and Management”
- Prospects for international collaboration in a research-based, interdisciplinary undergraduate program



Prof. John Clammer, O. P. Jindal Global University, India

John Clammer is a Professor at Jindal School of Liberal Arts and Humanities. He comes to the university after a long period in Japan as Professor of Comparative Sociology and Asian Studies at Sophia University and formerly Director of the Graduate School of Comparative Culture there, and as Visiting Professor at the United Nations University, Tokyo. He is a graduate of Oxford University and completed his D.Phil. degree there in Social Anthropology.



Lecture title: Culture, Sustainability and Disaster Recovery: A Sociological, Architectural and Cultural Approach

- Linking Natural Disasters, Humanitarian Crises and Climate Change
- Building a Holistic model of the relationships between natural disasters (prevention and recovery), humanitarian crises, climate change and sustainability.
- Which means:
 - ⇒ Deepening Theory and methodology
 - ⇒ Exploring social, cultural and psychological dimensions as well as scientific and engineering ones
 - ⇒ Analyzing cases studies for clues for both preparedness, short-term recovery and long term recovery and rehabilitation

First Announcement to form the South Asian Alliance of Disaster Research Institutes at the International Workshop on Influencing Last Mile in Disaster Risk Reduction (DRR) - Evidence Based Lessons from the Communities'

Odisha, India from 20 to 21 December 2019



The School of Climate and Disaster Studies (SCDS) of the Centurion University of Technology and

Management, Odisha, India organized a 2-days' workshop of experts from 20th to 21st December 2019, at Bhubaneswar on 'Influencing Last Mile in Disaster Risk Reduction (DRR) - Evidence Based Lessons from the Communities'.

Realizing a sharp increase in frequency of occurrence of extreme weather condition related disasters, largely impacted by climate change, poses new challenges across the world. Realizing further that in order to achieve improved and comprehensive result in DRR it is very important that the adaption and coping capabilities at the local and community level, the last mile in DRR, must be significantly augmented. The eastern board of the Bay of Bengal, involving India, Bangladesh and Sri Lanka is emerging as the worst hit region under the climate change impact. Odisha state, in particular, has been struggling with both, increase in the frequency as well as the intensity of several disasters. Extremely severe cyclone, Fani, 26 April to 09 May 2019, first in summer months in 100 years, devastated the eastern regions of the state of Odisha, affecting the eastern and northern areas of the Bay of Bengal.

About 50 academicians, researchers, practitioners and NGO professionals from India, U.S.A, Japan, Nepal, Bangladesh and Sri Lanka actively participated in the event. Several institutions,

including universities, research institutions, civil society organizations and the Odisha State Disaster Management Authority (OSDMA) deliberated to strengthen the understanding on Community Efforts in disaster risk reduction. The event is expected to influence policy decisions and implementation of strategies for effective DRR. The workshop provided

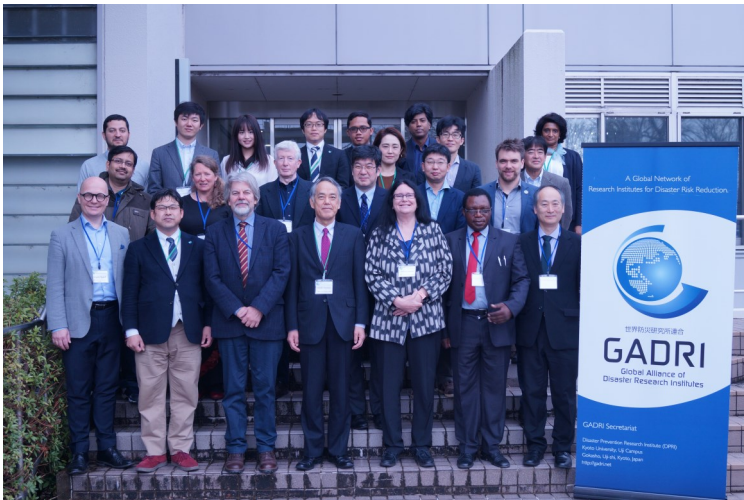
a platform for knowledge sharing as well as developing partnerships across institutions to strengthen research and further knowledge and practice on the theme.

Encouraged by strong support for regional networking to focus on regional and local issues by over 20 international participants at the 2019 conference of the Global Alliance of Disaster Research Institutes (GADRI) held in DPRI, Kyoto University, Japan, international workshop participants resolved to form the South Asian Alliance of Disaster Research Institutes (SAADRI) and made an announcement on the same.



Prof. Hirokazu Tatano represented GADRI at the workshop.

GADRI 3rd Open Discussion Forum: Changing Expectations of Natural Hazards: Lessons from Recent Disasters DPRI, Kyoto University, Uji Campus, Kyoto, Japan on 26 February 2020



discussed about changing hazards –and characterised briefly what are the changes and what have not changed over the last decade in a particular area. Are these changes caused due to actual hazard changing or due to societal fact? What sort of background is behind the changes that we see now and we expect in the next few decades.

Speakers within GADRI and DPRI presented their views on the subject.

The GADRI 3rd Open Discussion Forum took place at the Collaborative Research Hub-Conference Hall 301, Disaster Prevention Research Institute (DPRI), Kyoto University, Uji Campus, Kyoto, Japan on 26th February 2020.

The Open Discussion Forum is organized:

- to introduce GADRI activities, and the members of GADRI Board of Directors
- to facilitate discussion between GADRI members and important stakeholders in disaster risk reduction; and
- to find directions for GADRI to proceed in the next few



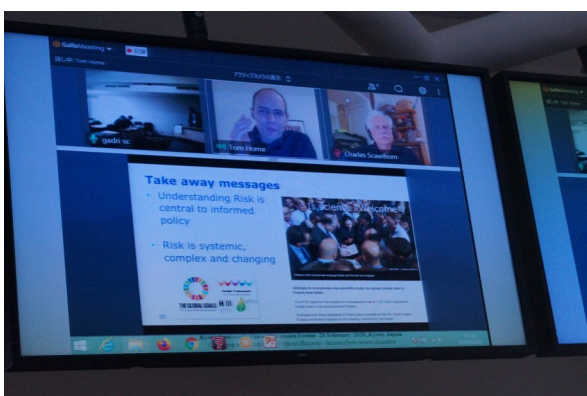
years and provide opportunity for participants to interact with the presenters.

The 3rd Open Discussion Forum focussed on the "Changing Expectations of Natural Hazards: Lessons from Recent Disasters". Theme of the session

- Prof. Andrew Collins, Leader, DDN, Northumbria University, UK talked on Revisiting Infectious Disease Risk Reduction in the Context of Current Emergencies;
- Prof. Gretchen Kalonji, Dean, Institute for Disaster Management and Reconstruction (IDMR), Sichuan University, China presented on the Disaster Health Sciences at IDMR – Background and News from the Front in Hubei;
- Prof. Eiichi Nakakita, DPRI, Kyoto University presented on the Perspectives on Disaster Related Climate Change Impact Assessment and Adaptation in Japan (II);
- Mr. Kazuhiko Fukami, International Centre for Water Hazard and Risk Management (ICHARM) under the auspices of UNESCO, Japan talked on the Japanese Policy Evolution Responding to the Recent Catastrophic Floods;
- Dr. Tom de Groeve, European Commission, Joint Research Centre (EC-JRC), Italy Understanding Risk: the key to preparedness and crisis management; and
- Prof. Charles Scawthorn, PEER, University of California, Berkeley, USA presentation was on the Wildland-Urban Fire—the risk and its mitigation (online).
- Prof. Jim Mori, DPRI, Kyoto University, on earthquake and volcanoes

The Panel session covered the following topics:

- On infectious disease risks – if we focus on the hazard, the exposure factors are to do with places and with your vulnerabilities including the biological susceptibility to the hazards. There are two dynamics to the situation: one is the physical proximity to the hazard and the other is the susceptibility to the hazard. The change in the hazard pathogen, is a result of the change in its environment. What we do know is that this is something which we could recognize as an extensive risk. Because as you can see – what happens in one part of the world immediately is an issue to another part of the world as well. It is completely interconnected and could be regarded as extensive risk.
- On adaptation - adaptation requires populations to move around but then it increases multi-risk levels as well – risk to more marginal environments which are more prone to flooding, more prone to perhaps nutritional insecurities, and that can raise the vulnerability levels. If we think about multi hazards, as well as multi risks, and the one which is usually left out and which is actually critical in looking at is the infectious disease risk, particular the old infectious diseases; what we call endemic diseases - is often associated with areas with lot of conflict. Another factor is conflict risks reduction and other forms of disaster risk reduction which could work together. Ultimately vulnerability seems to be the biggest risk we all face.

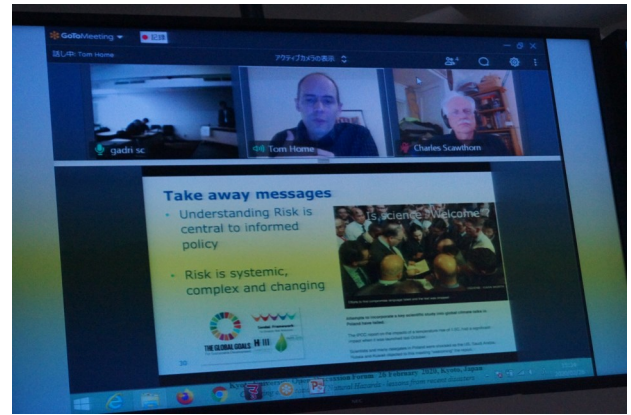


- On urbanization – urbanization enhance vulnerability – for example increased intensity in rainfall and urban flooding issues which are quite prominent in the recent years around the world. Not only the fact that the urbanization is increasing, this exacerbated by massive infrastructure development which in turn leads to poor planning or lack of insufficient attention to



planning or resilience against urban flooding. That could be significant in urban areas.

- On health risks, one of the huge health risks is the air pollution especially in industrialized countries. It is a human induced risk. It is having an horrendous impact on many aspects of human health especially for children. If that problem is not drastically dealt with more effectively, there could be another looming health disaster.
- In the area flood management and especially in this case dam construction, etc. - during the past few decades, we have encountered with many changes. Few factors that have greatly contributed are the limitation of budget and human resources. With the Internet, people have easy access to information and communication among the researchers and decision-makers have become scarce especially when decisions are concerning multi-stakeholders and multi-disciplinaries. In the past, if it is a problem in engineering, a decision could be reached just by consulting the specialist of river management or river engineering. Now with administrations, there are so many limitations and many administrative constraints. Another factor is communication with the local people who are residing in the areas affected by the disaster and it is important to understand the situation from their standpoint. They do have much important information that are useful for research too. Global initiatives such as the Sendai Framework, therefore, are needed to grip on such communications and share data.



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- Regarding the changing nature of disaster and hazards by rainfall – we have seen serious hazardous disasters caused by heavy rainfall. We have seen gradual or sometime rapid changes due to climate change. For example, we have experienced and seen an increase in rainfall intensity, increase in total volume, length and amounts which in turn induce inundation in larger scale. Future projections of heavy rainfall follow the characteristics of global warming simulations.
- Hazards are not changing much but the rest of the situations have changed - the risk is being in the intersection of natural hazards, society, and technology or the natural built social environment. Global warming may be changing

all that and certainly this, senses, severity in frequency of probable cyclones and probably going to increase.

- The world population is increasing and it will peak later this century. Increased population extending into flood prone areas or wildlife interface, volcanic areas create a problem. Rapid urbanization, and people moving and farmers becoming industrialized, thereby creating voice for labourers. Then they cannot live on the farms, hence move to cities, and cause an enormous increase in towns.





- On changing expectations of natural hazards; in a certain way it is not because of the hazard itself that has change, but also due to climate change. Perhaps climate change is aggravating certain natural hazards. But a lot of it depends on more exposure, complicity, interconnectedness and interdependent, including social media and social network and connectivity. For example, with the social media, people are more aware of what is happening everywhere. It is easy to spread true or false panic, as we have seen now about the corona virus.
- Another important fact is that mitigation does pay. It is essential to prepare for design and beyond. One of the issues is resources. Decision making is slow and it will be - as may science. These issues are all very important.
- This all comes down to understanding the risks - risks is what we are looking at and what can affect and it is a combination of the hazard, vulnerability, and exposure. We need to move regulations for example, require the governments to disclose information to its citizens although we may not have all the answers. How can we systematically extract important knowledge from the type of events we have encountered?
- Within the GADRI community, if it is possible to find a mechanism to extract such kind of information, even as an abstract, and collect data on the type of event, for example how it happened, what was implemented, what are the successes and what are the failures, lessons learned, etc. and share among members.
- GADRI could play an important global role by having a more exclusive focus on science policy issues that are having to deal with disaster risk reduction. The challenge would be how to make the long, detailed papers on science policy lessons bite size and comprehensible. It is an interesting challenge and GADRI could really make a difference.



GADRI Meeting of Board of Directors and the Advisory Board

DPRI, Kyoto University, Kyoto, Japan

25th February 2020



The 18th meeting of the GADRI Board of Directors and Advisory Board took place at the Disaster Prevention Research Institute (DPRI), Kyoto University, Uji Campus, Kyoto, Japan on 25th February 2020.

Term of office of half of the members of the Board of Directors will come to an end as of 31st March 2020. The occasion was used to introduce the new members of the Board. The meeting was attended by the new members of the Board who will start their term from 1st April 2020 for four years.

A few of the discussed included:

- The meeting was opened by Chair of the Board requesting all members to give a brief self-introduction. In addition to the Board members and the Advisory Board members, the meeting was joined by the new members of the Board who would take their term of office from 1 April 2020.
- Minutes of the last meeting - The minutes of the 17th Meeting of the GADRI Board of Directors was reviewed and approved by the members.
- Voting Results - The Secretary-General of GADRI shared information on the voting process that took



place between November 2019 to 1 February 2020 in two steps. The first step was to nominate the institutes for the vacant positions and the second step was the voting of the institutes to the GADRI Board of Directors. The vacant positions were - two vacancies in Europe and Africa; two vacancies in Asia and Japan; and one vacancy in Americas for USA.

- Appointment of the Chair – the term of office of the current Chair of the Board will come to an end as of 31 March 2020. It was proposed to receive nominations including self-nominations for the Chair of the Board by e-mail. The GADRI Secretariat will follow-up on this in due course.

- 5th Global Summit of GADRI: Preparations are underway for the 5th Global Summit of GADRI with the sub-theme on “Engaging Science with Action” in Milan, Italy, in March 2021.



Members of the GADRI Board of Directors

	Name	Term	Institute
Europe and Africa			
1	Prof. Ortwin Renn	1 April 2018 to 31 March 2022	Institute for Advanced Sustainability Studies (IASS), Germany
2	Dr. Zita Sebesvari	1 April 2020 to 31 March 2024	United Nations University, Institute for Environment and Human Security (UNU-EHS), Bonn, Germany
3	Prof. Peter Sammonds Prof. David Alexander	1 April 2020 to 31 March 2024	Institute for Risk and Disaster Reduction (IRDR), University College London, UK
4	Prof. Andrew Collins (Chair of Board)	1 April 2016 to 31 March 2021	Disaster and Development Network (DDN), Department of Geography, Northumbria University, UK
Asia and Oceania			
5	Prof. Gretchen Kalonji	1 April 2020 to 31 March 2024	IDMR, Sichuan University, Chengdu, China
6	Prof. Toshio Koike	1 April 2020 to 31 March 2024	Public Works Research Institute (PWRI), International Centre for Water Hazard and Risk Management (ICHARM) under the auspices of UNESCO, Tsukuba, Japan
7	Prof. Mahua Mukherjee	1 April 2018 to 31 March 2022	Indian Institute of Technology (IIT) Roorkee, India
8	Dr. Indrajit Pal	1 April 2018 to 31 March 2022	DPMM) Asian Institute of Technology (AIT), Bangkok, Thailand
Americas			
9	Prof. Paul Kovacs	1 April 2018 to 31 March 2022	Institute for Catastrophic Loss Reduction, Western University, Toronto Office, Canada
10	Prof. Rodrigo Cienfuegos	1 April 2018 to 31 March 2022	Centro Nacional de Investigacion par la Gestion de Desastres Naturales (CIGIDEN), Santiago, Chile
11	Prof. John van de Lindt	1 April 2020 to 31 March 2024	Center for Risk-Based Community Resilience Planning, Colorado State University, USA
GADRI Secretariat			
12	Prof. Hirokazu Tatano	Secretary-General	DPRI, Kyoto University, Kyoto, Japan

Members of the GADRI Advisory Board

	Name	Term Starting From	Institute
1	Dr. Stefan Hochrainer-Stigler	1 April 2018	International Institute for Applied System Analysis (IIASA), Austria
2	Prof. Qian Ye	1 April 2018	Integrated Risk Governance Project (IRGP/IHDP), State Key Lab of Earth Surface Processes and Resource Ecology (ESPRE), Beijing Normal University, China
3	Prof. Mohsen Ghafory-Ashtiany	1 April 2018	Iranian Earthquake Engineering Association (IEEA), Tehran, I. R. Iran
4	Dr. Tom de Groeve	1 April 2020	European Commission, Joint Research Centre (JRC), Ispra, Italy
5	Prof. Rajib Shaw	1 April 2018	Graduate School of Media and Governance, Shonan Fujisawa Campus (SFC), Keio University, Japan
6	Prof. Kaoru Takara	1 April 2018	Graduate School of Advanced Integrated Studies in Human Survivability (Shishu-kan), Kyoto University, Japan
7	Prof. Fumihiko Imamura, and Prof. Yuichi Ono	1 April 2020	International Research Institute of Disaster Science (IRIDeS), Tohoku University, Japan
8	Prof. Irasema Alcántara-Ayala	1 April 2018	Institute of Geography, National Autonomous University of Mexico (UNAM), Mexico
9	Dr. Gary Wilson	1 April 2018	GNS Science - Te Pu Ao, New Zealand
10	Prof. Jörgen Sparf	1 April 2020	Risk and Crisis Research Centre (RCRC), Mid Sweden University, Sweden
11	Dr. Walter Amman	1 April 2018	Global Risk Forum (GRF Davos), Switzerland
12	Prof. Wei-Sen Li	1 April 2018	National Science and Technology Center for Disaster Reduction (NCDR), Chinese Taipei
13	Prof. Khalid Mosalam	1 April 2018	Pacific Earthquake Engineering Research Center (PEER), University of California, USA
14	Prof. Lori Peek	1 April 2020	Natural Hazard Center, University of Colorado-Boulder, USA
GADRI Regional Alliances			
15	Prof. Andrew Collins (Chair of the Board of Directors)	1 April 2020	UK Alliance of Disaster Research (UKADR) and Disaster and Development Network (DDN), Northumbria University, UK
16	Prof. Charles Scawthorn	1 April 2018	North American Alliance for Hazards and Disaster Research Institutes (NAAHDR); and University of California, Berkeley, USA
17	Prof. Desmond Manatsa	1 April 2018	Chair, African Alliance of Disaster Research Institutes (AADRI), Bindura University of Science Education, Zimbabwe

COVID 19 and GADRI



The [Global Alliance of Disaster Research Institutes \(GADRI\)](#) promotes a collaborative platform for shared knowledge and networking on topics assisting disaster risk reduction and resilience, whereby combinations of research groups around the world become more influential by pulling together.

The current COVID-19 pandemic demonstrates anew the interconnected and systemic nature of risks and ongoing uncertainties affecting all societies in every part of the world. The GADRI Board of Directors and the Advisory Board—representing a membership of over 200 disaster research institutes worldwide—recognise the challenges for improved science, policy and practice in our championing of knowledge and understanding in one of the great challenges of our times.

To overcome COVID-19 and similar threats going forward we recognise that the emergence of pandemic occurs in contexts of complex biophysical, exposure and capacity influences that predispose to disaster outcomes. Addressing hope in our research and actions in securing sustainable futures our children wish to experience requires an unending advance in disaster related specialist knowledge and integrated and multidisciplinary contributions.

GADRI encourages all its members and their extensive array of further networks to invest their efforts to recognise their roles in bringing about improvements in the way global emergencies, such as that caused by COVID-19, can be informed by high quality knowledge from all regions and disciplines that are able to contribute. This way we

will answer back to the current global predicament, including through building up earlier our readiness and capacity to also address the wider array of hazards and risks and ongoing challenges that follow.

Towards this end, GADRI is joining with the [North American Alliance of Hazard and Disaster Research Institutes \(NAAHDRI\)](#) to support the new [COVID-19 Global Research Registry for Public Health and Social Sciences](#). The Registry is a collaborative initiative of the [CONVERGE facility](#) headquartered at the Natural Hazards Center at the University of Colorado at Boulder that involves partners from around the world. GADRI encourages all regional alliances of disaster research and their related networks to proactively share their further innovations and actions.

The next Global Summit of GADRI is due to take place in northern Italy 14th-19th March 2021, leading to which we will be consolidating an inevitable multi-institute stimulus to new knowledge and what must be achieved going forward. We also intend to run a participatory Webinar shortly for member discussions and debate relating to COVID 19.

Wishing you all well in your many contributions for championing the purpose of the Alliance.

On Behalf of GADRI Board of Directors and Advisory Board.

Prof. Hirokazu Tatano, Secretary-General, GADRI

Prof. Andrew Collins, Chair, GADRI Board of Directors



Evidence Aid—Covid-19

Evidence Aid's COVID-19 evidence collection (<https://www.evidenceaid.org/coronavirus-covid-19-evidence-collection/>) now contains more than 100 summaries of systematic reviews relevant to COVID-19 listing what works, what doesn't work and what's uncertain with new content being uploaded daily. Most of these have been translated into: Arabic, Chinese (simplified and traditional), French, Spanish and Portuguese. The summaries currently fall under the headings of 'Clinical characterization and management', 'Epidemiology', 'Ethical considerations', 'Health systems and services', 'Infection prevention and

control (including healthcare workers)', 'Public health interventions', 'Research and development: therapeutics and vaccines' and 'Social science in the response'. We are developing a more refined category list which will ensure easier identification of reviews you want to read in the future. We are still accepting volunteers for the project so if you think you can help us, please do contact Claire Allen (callen@evidenceaid.org).



Disaster and Risk Management Information Systems Research Group, Chulalongkorn University, Thailand

By Assistant Professor Natt Leelawat, Natt.L@chula.ac.th

The Disaster and Risk Management Information Systems Research Group, Chulalongkorn University, are trying to produce as many outputs in Thai language for Thai society:.

1. CU Radio podcast and article “สองเทคโนโลยีสารสนเทศจีนช่วงวิกฤต COVID-19” [Information Technologies in China during COVID-19]

Spotify: <https://open.spotify.com/episode/2KDBahkdIOCKRzYyOSXbOB>

TPA News: http://www.tpa.or.th/tpanews/upload/mag_content/156/ContentFile3154.pdf

2. Article: “BCP กับความเสี่ยงโรคระบาด และ COVID-19” [BCP with Pandemic Risk and COVID-19]

TPA News: http://www.tpa.or.th/tpanews/upload/mag_content/159/ContentFile3202.pdf

3. Article: “สังคมญี่ปุ่นกับการรับมือภัย COVID-19” [Japanese Society and Their Response to COVID-19]

TPA News: http://www.tpa.or.th/tpanews/upload/mag_content/157/ContentFile3177.pdf

4. Article: “เจาะลึกเรื่องราวไวรัสโคโรนาสายพันธุ์ใหม่ 2019” [Cover Story Novel Coronavirus 2019]

TPA News: http://www.tpa.or.th/tpanews/upload/mag_content/156/ContentFile3139.pdf

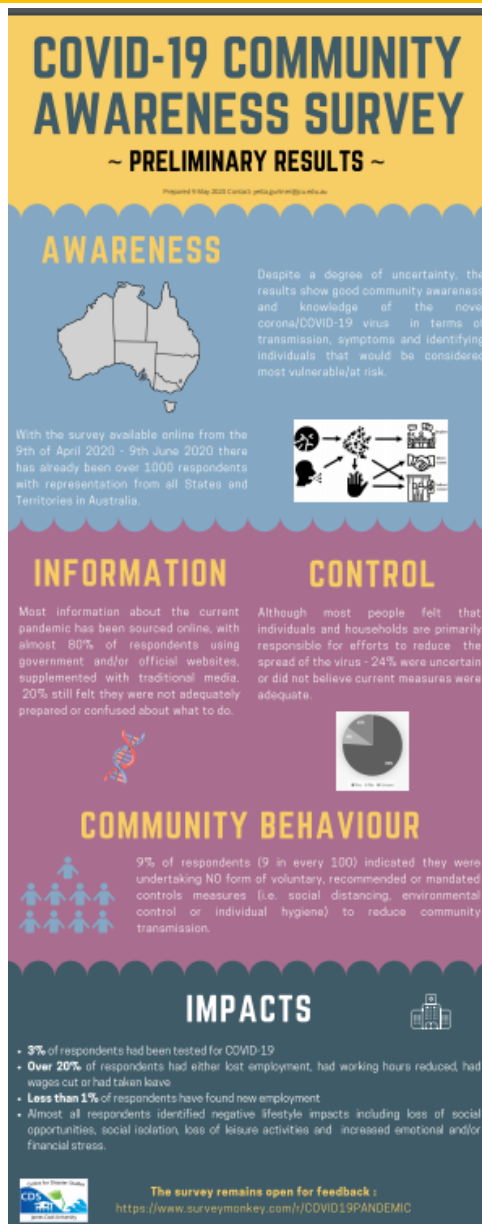
More info: <http://drmis.eng.chula.ac.th/covid-19-research/>

COVID-19 Community Awareness Survey

Centre for Disaster Studies, James Cook University Australia

Written by Dr. Yetta Gurtner Coordinator of the Centre for Disaster Studies 22 May 2020

Email: yetta.gurtner@jcu.edu.au



In 2020, most individuals and communities have been impacted by the global COVID-19 pandemic in some way. In addition to daily updates and tolls, there has been an abundance of information, advice and recommendations on how to reduce viral transmission and exposure. Although variable control and support measures have been developed, communities have been largely expected to self-adapt and cope in an environment of risk, uncertainty, and rapidly changing circumstances. There have been a number of surveys and research projects designed to determine medical, physical and mental health implications of this crisis, however, there has been limited understanding of impacted

communities in terms of awareness, preparedness, response and resilience. From a disaster management/risk reduction perspective there are a number of potential lessons that can be learnt from this event regarding effective communication, disaster preparedness and pandemic management.

To address this apparent knowledge gap, an online survey was developed by the Centre for Disaster Studies at James Cook University to investigate Australian community awareness, understanding, preparedness and response to COVID-19 and pandemics. Distributed primarily via electronic and social media, the survey directly targeted any public Australian based corona virus/covid-19 group visible on Facebook (over 50 groups). Within the first month of the survey (9 April – 9 May 2020) over 1000 survey responses had been received, with participants from all States and Territories. Key preliminary results were collated and publically disseminated to the community/associated groups with a basic infographic (refer Figure provided).

While the survey data cannot be considered representative of the entire Australian population, it did highlight a high degree of confusion and uncertainty regarding response, behavior and pandemic management strategies. Although most believed it was primarily an individual or household responsibility, 9% of respondents indicated they were taking no form of voluntary, recommended or mandated control measures (ie social, individual and/or environmental control). The degree of confidence in official information and government imposed strategies also remained highly variable. In the broader disaster management context, despite the duration and ongoing nature of the crisis, almost all respondents indicated they still did not have the knowledge, resources and/or capacity to adequately prepare for a recommended 14 day pandemic/isolation lock down. This limitation has significant implications if an additional hazard/disaster were to occur during a pandemic.

The survey will remain open until 9 June 2020 with further insight expected. The collated data and responses will be analysed to provide feedback and recommendations to all relevant stakeholder. As public good research the survey was not commissioned or sponsored by any agency.

DISASTER AND RISK RESEARCH: GADRI BOOK SERIES

Publication of the First Book



Under GADRI Book Series the first book “Disaster Risk Reduction and Resilience” edited by Muneta Yokomatsu and Stefan Hochrainer-Stigler was published by Springer in March 2020. <https://www.springer.com/series/16177?detailsPage=titles>

Other book proposals submitted to Springer under the series include the following:

Proceedings of the 3rd Global Summit of Disaster Research Institutes for Disaster Risk Reduction by Hirokazu Tatano and Andrew Collins

This book presents selected papers from the 3rd Global Summit of Research Institutes for Disaster Risk Reduction which focused on “Expanding the Platform for Bridging Science and Policy Making” which was held at the Disaster Prevention Research Institute (DPRI), Kyoto University, Uji Campus from 19 to 21 March 2017. The conference not only provided a platform for discussion and exchange of information on most important current and future research projects in disaster risk reduction and management but also

promoted active dialogue through group discussion sessions that were held according to various disaster research disciplines. To facilitate the group discussion sessions, a prior survey was conducted to evaluate the current research status and identify the most important future research themes and projects. This document was shared with each group leader. The 3rd Global Summit was organized by the Global Alliance of Disaster Research Institutes (GADRI) which was established soon after the second Global Summit and the UN World Conference Disaster Risk Reduction in March 2015, aims to support implementation of the Sendai Framework for Disaster Risk Reduction 2015-2030.

Enhancing Risk Governance to Manage Disaster Risks

by Masamitsu Onishi and Yuichi Ono

This book provides state-of-the-art of researches in integrated disaster risk management fields specifically from the aspect of governance. The Sendai Framework 2015 addresses the significance of governance in managing disaster risks. Subjects relevant to the governance include different levels from the international and national level to the municipality or smaller community level. Mechanisms of

governance at different levels are interrelated each other. Therefore, a variety of actual governance forms for DRR is observed in different contexts of hazards, geographical conditions and social norms. It implies the advantage of pursuing a governance pattern for DRR fitting for the hazard-specific and local-specific context rather than one-size-fits-all approach. To understand the variety in governance patterns, explicit knowledge on the compatibility between governance pattern and contexts is necessary.

DISASTER AND RISK RESEARCH: GADRI BOOK SERIES

Health and Disaster Risk Management

by Virginia Murray, Andrew Collins, Ryoma Kayano and Emily Chan

- Health is a key element of the Sendai Framework and the other landmark 2015 agreements including the SDGs and Paris Climate Change Agreements. Emphasis will be placed on population vulnerability at all levels including those of that are marginalized, young, old, disabled, and those that have non-communicable diseases, are migrants and are of indigenous origin.
- Under the Sendai Framework agreement, building resilient health systems through integration of all-hazards disaster risk management within health care and wellbeing is essential
- Capacity development of health professionals at all levels in understanding disaster risk reduction and management is vital. An all hazards approach demands an inclusive risk management system, of disaster preparedness for effective response to “Build Back Better” in recovery, rehabilitation and reconstruction as continuous quality improvement process of the health system.
- Research needs to deliver evidence informed Health and Disaster Risk and Management approaches that will be addressed in this book which will provide resource to facilitate how these goals can be addressed

Strategic inclusion of Eco-system based Disaster Resilience

by Mahua Mukherjee and Rajib Shaw

This book will aim to provide an introduction to critical role of Eco-system based Disaster Risk Resilience (Eco-DRR) for building community resilience to multiple environmental risks like rising heat, water stress, pollution etc. Blue-Green Infrastructure (BGI) are Eco-DRR tool which is an under-explored paradigm and can respond as one common strategy to targets set by Sustainable Development Goals (UNDP), Climate Agreements (UNEP), Sendai Framework (UNISDR) and New Urban Agenda (UNCHS).

The book is intended to be comprehensive beginning to systematic discussion on this emerging resilience tool. Our purpose is to introduce readers

to the challenging context of development and opportunity creation for Eco-DRR. Role of policy, science research and implementations will be presented cohesively. An attractive proposition of this book is a bouquet of case-studies from different parts of the world where integration of BGI are experimented with various levels of success. It is envisaged that shared tacit experiences from the realm of practices will strengthen explicit knowledge further.

The book will deliberate on Need and Context Building, Policy and Science (investigation, analysis and design), Case studies and Future Road map in 4 successive parts. Each part will be self-sufficient yet linked to its predecessor and/ or successor as the case may be.

GLOBAL DISASTERS OF 2017-2018

by Charles Scawthorn and Mohsen Ghafory-Ashtiany

The book is a compendium of papers from the 4th GADRI Summit, summarizing major disasters that occurred in 2017 and 2018 (see table of contents). The disasters range across the globe including Asia, North and South America and the Pacific. A section

also deals with the issues and current state of the art of global disaster databases. The volume is intended as the first of a biannual series on global disasters, compiled from GADRI Summits.

DISASTER AND RISK RESEARCH: GADRI BOOK SERIES

Social Dimensions of Disaster Risk by Andrew Collins, Masamitsu Onishi, and Subhajyoti Samaddar

This book brings together contiguous and interrelated aspects of people centered disaster risk for better understanding amongst practitioners, policy makers, postgraduate and undergraduate students. It responds to increasing demands to address risk as both cause and consequence of human struggle. Using an array of examples, the book examines how people are responding to, and living with old and new risks that are partly understood. Sentient people mediate risk through social relations and actions stemming from varying systems of meaning. This is explored through the different social contexts and adjustments that occur in times of crises exemplifying how people in groups or as

individuals negotiate future safety and security. The book presents an array of complex disruptive aspects of the people centred responses to living with risk, including conflict, health, mobility, communication, faith, capacity and politics. An outcome of this publication is to consolidate a contribution to decision making processes in disaster interventions that the series of chapter orient including through unique and co-produced analysis. The contributions herein represent smart accounts that combine underlying philosophical challenges of the subject with identifying what really addresses disaster risk. This involves studies of real world complex hazard, disaster and risk challenges and opportunities. It brings seemingly disparate chapter topics together into a common agenda of addressing humanity's social interaction with crises that can be both rare and a part of everyday life.

Deepening the Understanding of Risks: Atmospheric and Hydro-meteorological Disasters by Wei-Sen Li, Kaoru Takara, Srikantha Herath, Tetsuya Sumi, Sameh Kantoush, Tetsuya Takemi, Kazuyoshi Nishijima

This book will focus on atmospheric & hydro-meteorological disasters from scientific, engineering and implementation perspectives. The disasters could be caused by extreme meteorological phenomena at various spatial scales. Under changing climate, these extreme phenomena are anticipated to intensify and hence to become more disastrous. Therefore, a

special emphasis is given on the impact assessment of changing climate. The understanding of the risk is decomposed into the understanding of physical mechanisms for the responses of disaster-spawning extreme weather to global warming, changes in statistics of extreme hazard events, and responses of built environment to the extreme events. The chapters consist of contributions from scientists, researchers, engineers and practitioners.



Introduction and the structure of the report

1.1. Introduction to the damage assessment report

This report will explain the methods adopted by the Centre for Urban Water (CUrW) for the loss estimations for the simulated past and future flood scenarios. The losses will generally occur in the following aspects.

- Structural damage for buildings (Damages to the building structural elements such as walls/ roof)
- Content damage for buildings (Damages to the things inside the building such as sofas/ television/refrigerator)
- Damages to the economic activities (Damages occur from not conducting the economic activities such as interruptions to businesses etc.)
- Damages to the prominent infrastructure (such as bridges, roads, culverts, telephone connection points and poles, electrical infrastructure, flood protection structures etc.)
- Damages to the vehicles
- Expenditure for relief (cost borne for the relief requirements of the flood affected people, which is usually born by the relevant governmental authorities such as Disaster Management Centre, National Disaster Relief Services Centre, Municipal councils, Urban Councils and Divisional Secretariats)

There are more types of damages that can be seen in a disaster, which are not easily captured by a physical property, such as the value of a (lost) human life and the extent of a disease outbreak which is due to the cascading effect of the flood event.

Currently, CUrW adopts damage functions prepared for the structural damages and the content damages, which were prepared based on the field surveys carried out by the internal staff of CUrW, in order to calculate the respective damages. At the same time, CUrW seeks opportunities to develop relevant damage curves for the other types of the aforementioned damage categories, through possible partnerships, methodologies and workarounds.

1.2. Structure of the report The rest of the report will initially explain the concept behind damage assessment, the methodology adopted for the structural damage calculation and the development of the damage curves for the structural damages, the methodology of development of the content damage functions, computational methods for the damage calculation and how CUrW has adopted rapid calculation methodologies for the damage assessments.

2. Damage assessment-concept

2.1. Introduction Flood damages are assessed considering the flood hazard, exposure of the assets (buildings in this case) and the vulnerability of the exposed structures, by the following formula.

Here, the flood hazard is expressed by the flood inundation maps, which are often the results of the flood simulation exercises. Flood inundation maps for a particular flood scenario produce two important information: flood extent (area of inundation) and the flood depth at the inundated locations.

Exposure is the placement of the assets, buildings in this case (if the people at risk is concerned, the exposure would be the peoples' locations). Alongside, the building properties are considered in this stage such as structural properties for the structural damage calculation and the building use categories for the content damage calculations. There are five structural damage categories and nine building use categories considered in assessing damages in this study, as mentioned in the Section 3. These exposure maps are available in the form of vectors (shapefiles), having attributes of building structural fabrication and the building use, for each of the individual buildings.

Vulnerability is contextualized by the vulnerability (damage) functions and the base damage values for each of the building exposure category as discussed in section 3. These functions can be modelled in the Geographic Information System (GIS) modelling software, in order to calculate the damage for a given flood. Figure 1 demonstrates the concepts of hazard and exposure, where the flood map (hazard) is overlaid with the building footprint layer to show the exposure of the building to the floods.

3. Derivation of damage functions for structural damage

The damage functions for the structural damages are directly drawn from the study from Komolafe et al., 2018, which studies the floods in Sri Lanka for the 2010 floods. Since a comprehensive methodology of derivation of the damage curves and many more information is presented in the aforementioned study, only a summary of the methodology will be explained under this section. The full paper is annexed to this report at Annex 7.1. 3.1.

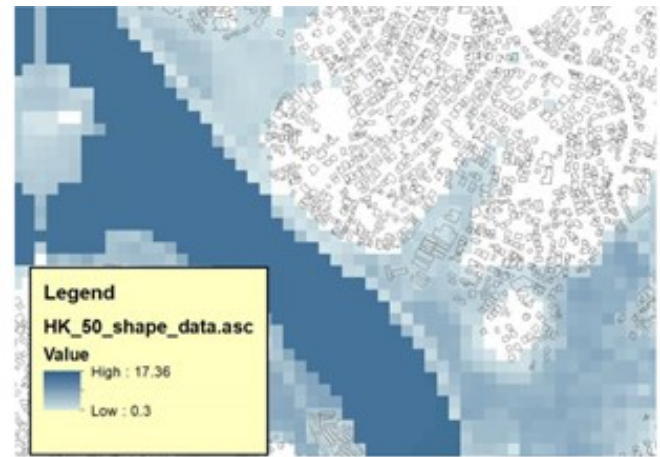


Figure 1. Hazard and Exposure: Hazard is shown by the flood map, where the colour intensity is linked to the flood depth, and the exposure of the buildings in the vicinity is shown by the buildings which have overlapped with the flood map

Data collection

For this study, data is collected as a questionnaire survey in the flood affected areas for the recent flood events. There have been 297 respondents, who are mainly adults who have a clear memory of the recent flood events. Data on the replacement cost and the repair cost of the damaged structural items were collected in this survey, alongside with the flood depths and the type of the building in the relevant flood event.

The basic types of the buildings are taken as (A) Unreinforced masonry bearing walls, (B) Concrete frame with unreinforced masonry fill walls, (C) Wooden structures, (D) Commercial buildings as identified by the World Agency of Planetary Monitoring and Earthquake Risk Reduction (WAPMERR) and as documented by United Nations office of Disaster Risk Reduction (UNISDR). Here, it is assumed that the commercial buildings are built with concrete frames and unreinforced masonry walls as well, however the finishes and the furnishes would be different from the general residential buildings. Furthermore, one more building category was identified as (E) Watta, in order to comply to the local conditions. The category Watta usually contain densely populated dwelling units often made with temporary building materials or with unreinforced masonry bearing walls.

Visit GADRI website for the full report—http://gadri.net/events/pdf/SriLanka_CURW%20ShortReport.pdf

GADRI Members

The Global Alliance of Disaster Research Institutes (GADRI) was established in March 2015 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 (UNDR).

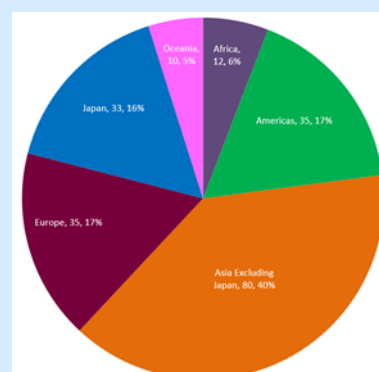
GADRI joined hands with science communities around the world to further realize these goals and targets of the Science and Technology Roadmap. Since March 2015, GADRI's membership has expanded to exceed 200 member institutions.

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

Membership is free; and completely voluntary and non-binding.

To join GADRI, please contact GADRI Secretariat:
secretariat-gadri@dpri.kyoto-u.ac.jp

Geographical Distribution of GADRI
Members as of 30 April 2020



Area	Members	Economies
Africa	12	7
Americas	35	8
Asia (Excluding Japan)	80	23
Europe	35	12
Japan	33	1
Oceania	10	2
Total Institutes	205	53
		53 economies



Global Alliance of Disaster Research Institutes (GADRI)
Secretariat

Disaster Prevention Research Institute (DPRI)
Kyoto University, Uji Campus, Gokasho, Uji-shi
Kyoto 611-0011, JAPAN

Tel: +81-774-38-4621

Fax: +81-774-38-4254

E-mail: secretariat-gadri@dpri.kyoto-u.ac.jp

Web: www.gadri.net