GADRI
Global Alliance of Disaster Research Institutes

GADRI ACTIONS

Summer / Winter 2018
Volume 7—Number 1

Welcome to the Summer/Winter Issue of *GADRI Actions*.

This issue highlights project activity reports on NaTech and Wadi Flash Flood informing about the current status and upcoming events.

GADRI continued to move forward endorsing the voice of its members and set objectives among various global platforms and stakeholders.

To share a few examples of the GADRI achievements during 2018:

- Appointment of new members to the GADRI Board of Directors
- Forming of the GADRI Advisory Board
- Launching of the GADRI book series with *Springer Nature* - Disaster and Risk Research: GADRI Book Series
- Playing a pivotal role at the Scientific and Technical Advisory Group (STAG), UNISDR – participated in online and face-to-face meetings
- Appoint of GADRI as a member of the Global Risk Assessment Forum (GRAF), UNISDR and engaging in various online and face-to-face meetings
- Publishing of the first GADRI Annual Report 2017
- Completion of the Proceedings of the 3rd Global Summit of Research Institutes for Disaster Risk Reduction and publishing it with *Springer Nature*
- Increased number of GADRI membership requests up to 172 institutes
- Organizing the 4th Global Summit of Disaster Research Institutes for Disaster Risk Reduction: Increasing the Effectiveness and Relevance of our Institutes; and

Much more…

Preparations for the 4th Global Summit of Research Institutes for Disaster Risk Reduction is progressing and I hope to see you all during Summit in March 2019 (12th March side event and 13 to 15 March the summit).

We would like to take this opportunity to thank you for your continued support toward GADRI and its activities.

We wish you a Happy Christmas and a Happy New Year!

Prof. Hirokazu Tatano and Wilma James

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On the Cover — Photographs taken by the Disaster Prevention Research Institute (DPRI), Kyoto University, Japan.

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

4GSRIDRR 4th Global Summit of Research Institutes for Disaster Risk Reduction

Increasing the Effectiveness and Relevance of our Institutes

http://gadri.net/summit/

Dates

13 to 15 March 2019

Venue

Obaku Plaza, DPRI, Kyoto University, Uji Campus, Kyoto, Japan

The Fourth Global Summit on Increasing the effectiveness and relevance of our institutes will be organized by GADRI and held at the Disaster Prevention Research Institute (DPRI), Kyoto University, Uji Campus, Kyoto, Japan from 13 to 15 March 2019.
The programme will include keynote speeches, discussion sessions, poster presentations, and panel sessions.
In addition, research institutions are encouraged to hold side events and academic booths.

Uji Campus → Yoshida Campus: Approx. 50 min. by taxi

Important Dates Website: http://gadri.net/summit/

- Deadline: submission of paper title and abstract — 31 December 2018
- Deadline: early bird registration — 31 January 2019
- Closing of online registration and fee payment — 28 February 2019

Side Events Contact: secretariat-gadri@dpri.kyoto-u.ac.jp

GADRI welcome proposals from GADRI member institutions to hold planned workshops or other activities in conjunction with the 4th Global Summit as a side event. For this purpose, the conference facilities are available for Saturday, 16 March 2019.

Academic Booths Contact: secretariat-gadri@dpri.kyoto-u.ac.jp

A limited number of booths are available to:

- Prominent publishers and journals to share information
- GADRI members, universities/departments/institutions to present their programmes

Organizer:

GADRI Global Alliance of Disaster Research Institutes

GADRI Secretariat

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Natech Activities

Maria Camila Suarez Paba and Ana Maria Cruz
Disaster Prevention Research Institute, Kyoto University

The increased awareness on Natech impacts and area-wide consequences has called the attention of different stakeholders. This has resulted in the increasing interest in developing mechanisms to prevent, prepare, mitigate and respond to Natech scenarios. Several activities regarding Natech (joint natural and technological) risk management and Natech research have been carried out this year highlighting the growing attention to Natechs. Researchers at the Disaster Risk Management laboratory (DRS), Disaster Prevention Research Institute (DPRI), Kyoto University, led by professor Ana Maria Cruz, have actively participated in these activities.

One of these activities was the 4th Natech Symposium hosted by the Joint Research Centre, European Commission, and co-organized by Kyoto University and Osaka University, was held in Ispra, Italy on 3 October 2018. The 4th symposium followed the 1st, 2nd and 3rd Natech Symposiums which were carried out in 2015, 2016 and 2017, respectively, at Osaka University and Kyoto University in Japan. Over 30 people attended the 4th Natech Symposium including experts from academia and government organizations, and researchers from DPRI.

Another activity was the 2nd Natech Workshop organized by the Organization for Economic Cooperation and Development (OECD) and co-organized with the United Nations. This high level workshop, attended by representatives of member states (e.g., civil protection authorities and government officials responsible for chemical and Natech risk management), international organizations, local government, and researchers, was held in Potsdam, Germany on 5 -7 October 2018.

Presentations from different countries regarding Natech regulations, best practices and lessons learned, and implementation of prevention measures and methodologies to improve Natech risk assessment were given. Several researchers from DPRI, including graduate students, presented their work. As a result, there were fruitful discussions that contributed to the consolidation of the Discussion Document that will present recommendations for further improvements in the Natech Risk Management agenda and guidance document on Natech risk management published by OECD.

Another highlight is the creation of the Subgroup on Natech, in December 2017, by the United Nations International Strategy for Disaster Reduction (UNISDR) under the Science and Technology Advisory Group (STAG). This is an important step to formalize the inclusion of Natech risk management and risk reduction in the Sendai Framework. This group has had meetings in Geneva, with the participation of experts in the field. DPRI, as well as other GADRI member organizations are supporting these activities.

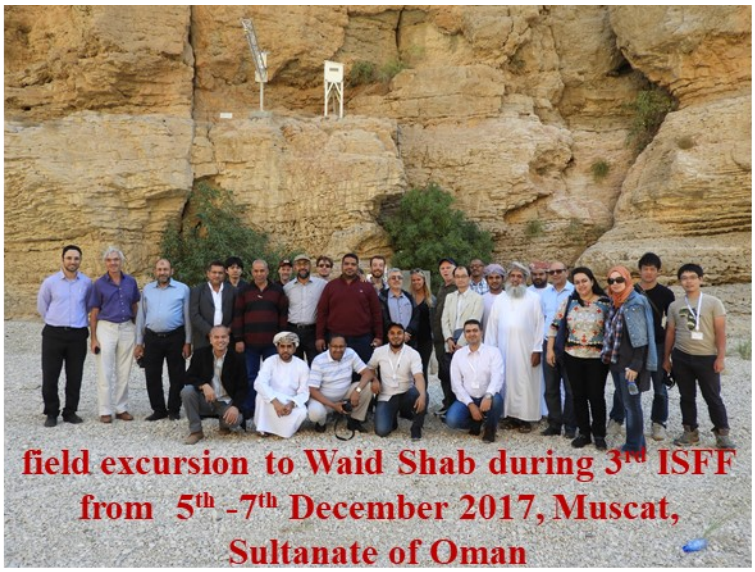
The next STAG meeting will be held during the IRDR-SC Agenda for the 20th Scientific Committee Meeting in Chengdu, China in October, where the Natech STAG subgroup will participate.

There is growing interest in China concerning Natechs, and how to cope with their potential consequences. For this reason, Nanjing University will host a Natech workshop in March 2019 where several members of GADRI including Prof. Cruz will be attending.

Finally, in November, Indonesia will carry out the ASEAN Regional Disaster Emergency Response Simulation Exercise (ARDEX 2018), which seeks to evaluate the efficacy of emergency response mechanisms when a Natech event occurs. Professors Cruz and some of her students will participate in the event.

Organizers: Hassan II University of Casablanca and Water Resources Research Center,
Venue: Hotel IDOU ANFA, Casablanca, Morocco, 4th – 6th December, 2018

In the last two decades, many Arab cities such as Riyadh (2016), Casablanca (2016), Doha (2015) and Guelmim (2014) have experienced flash floods despite their highly arid and semi-arid climate. These events have caused live losses and important damages. Such causalities are usually due to the combination of many factors such as extreme precipitations, weak or insufficient urban storm water infrastructure and drainage system, urban stream bursting their banks, uncontrolled urban sprawl, groundwater table high rise or tides generated backwater effects on drainage systems outlets in coastal cities. These phenomena are still not well studied. Besides, mitigation and adaptation measures are very rare in such countries and regions because of the prevailing arid or semi- arid climate and growing urbanization. Tackling these problems requires a good analysis of climate change and meteorological data, particularly precipitation, and good knowledge of the city vulnerability to floods in such territories. Finding solutions to these challenging problems requires close collaboration between scientists, practitioners, and stakeholders from local, regional, national and international organizations whether they are public or private. So we encourage you to contribute to the development of future solutions for urban floods in the MENA countries.


field excursion to Waid Shab during 3rd ISFF from 5th -7th December 2017, Muscat, Sultanate of Oman

This event is the fourth in a new series of annual international symposia on flash floods in wadi systems. Furthermore this symposium is supported by the Water Resources Research Center (WRRC) and the Global Alliance of Disaster Research Institutes (GARDI) of the Disaster Prevention Research Institute (DPRI), Kyoto University, Japan. The first International Symposium on Flash Floods in Wadi Systems held in October 2015 in Kyoto, Japan, was attended by about one hundred scientists, practitioners and stakeholders from 11 countries (Japan, Arab Region, Europe; see http://ecohyd.dpri.kyotou.ac.jp/en/index/1.html). The second Symposium was held at Technische Universität Berlin, Campus El Gouna, Egypt. The third International Symposium on Flash Floods in Wadi Systems was held in Oman and the fourth edition of this international symposium will be held in Casablanca, Morocco

TIMES OF OMAN WEDNESDAY, DECEMBER 20, 2017 | A3

OMAN

Plan to mitigate flash floods impact

t is always important o be prepared for uch disasters with limate change esulting in a redicted rise in flash loods in the future

AUTAM VISWANATHAN

AUSCAT: As Oman's cities con- ue to develop and grow, care- l planning will be required to inimise the devastating impact uch floods have on people and roperty.

Although it is easy to dismiss the ossibility of flash floods in arid reas such as the Middle East, it is lways important to be prepared or such disasters with climate hange resulting in a predicted in- rease in flash floods in the future.

ymposium

e the third International Sympo- um on Flash Floods and Wadi ystems held at the Sherman Uni-

NATURAL CALAMITY: More than 100 experts from across the world met at GUTech to discuss how the devastating impact of flash flood could be reduced.

more than 100 experts from across the world met to discuss how this could be mitigated.

"Whenever any advice is issued, it is very important for people to follow that," said Ahmed Al Barwani, water resources expert at the Ministry of Regional Municipalities and Water Resources.

"People should not drive on the wadis unless they are very safe, because you only have less than half a metre of water in the wadi sometimes, but this is very dangerous, and it can wash away everything, so people should take care."

Sur to ward off future flash floods, and Al Barwani says this is one of the measures the Sultanate undertook after Cyclone Gonu to ensure that the nation's worst natural disaster does not repeat itself in future. "Gonu was a very good lesson for all of us," he noted.

is Sahlah and Amseet now. The ministry is upgrading the flood-risk maps, and these will be distributed to other organisations. We are also monitoring all the floods through 400 stations that analyse data on wadi flows and rainfall, which can be read in real time. We can now alert people even before a flood happens. Once impending cyclones have been announced, people now know what to do."

A number of topics, including hydraulic simulation, water harvesting and sedimentation, risk assessment management, as well as hazards and mitigation were discussed, and recommendations on these were expected to be forwarded to the ministries.

"We are looking forward to cooperation with other nations, because people are interested in Oman as we have done lots of studies in flood management, we have a good database of previous floods, and we know a lot about the behaviour of floods. We have several PhDs working on this," stressed Al Barwani.

Long-term planning

A number of Japanese scientists also attended the symposium. Long-term planning saw Japan debate the impact of Hurricane Fukushima, and Al Barwani was keen to learn from them.

"The Japanese have very good

them, and whatever we can share will help to improve our networks and the way we mitigate floods," he emphasised.

Also present was Dr Dalila Loudyi, professor of water and environmental engineering at the Universite Hassan II in Morocco.

"In Oman, there are several areas in cities that are not covered with pavement, so flood water runoff will be less harmful," she explained.

Protection measures

"Flood protection must be observed from the very beginning of city planning, because cities sometimes grow at a fast pace because of the demand from people moving into them.

"It is important not to overlook these things as cities expand," added Loudyi. "People think that because they are in an arid zone, there is no chance of a flood happening, but the history of events shows that this is not true, because this is a very important and recurring problem.

"There should be good governance for city expansion, through good communication between the administration and those who manage the cities," she said.

"Green spaces are very important in cities, and you should not cover all the ground with impervious material. Let nature do its

- River/Wadi basin management and flood protection
- Storm water infrastructures and urban drainage systems
- Urban planning, green infrastructure and flood mitigation

Symposium themes

- Climate change impacts, weather forecasting and flood warning systems
- Rainfall-runoff data monitoring and analysis
- Hydrology and hydraulic modeling of floods
- Groundwater flooding and impacts on urban areas
- Sediment management, water harvesting and flood control
- Flood vulnerability and risk assessment
- Flood damage assessment: environmental, social and economical tools
- Flood adaptation: structural and non-structural measures

Program: during two days we will have 50 oral and 50 poster presentations

Excursion: Excursion to Wadi El Malleh Flood Protection Dam and west Casablanca floodway channel for urban Wadi Bouskoura diversion (West Super Channel) will be on Thursday, 6 of December 2018

8:00 Departure from hotel (to be specified)

9:30 Arriving at the Wadi El Malleh Flood Protection Dam, guided visit by dam's Engineers

10:30 West Casablanca floodway channel for urban Wadi Bouskoura diversion (West Super Channel) - 13:00Lunch /14:30 Head back to the hotel

4th Global Summit of Research Institutes for Disaster Risk Reduction

The Fourth Global Summit of Research Institutes for Disaster Risk Reduction, sponsored by the Global Alliance of Disaster Research Institutes (GADRI) and Kyoto University, is the fourth session of the Global Summit Series. It provides a platform for researchers, practitioners, policy makers, and other stakeholders in both government and non-governmental institutes involved in disaster risk reduction and resilience to come together to discuss, share and exchange ideas to contribute and be relevant to the priority areas of the Sendai Framework for Disaster Risk Reduction. The program will include keynote speeches, discussion sessions, oral/ poster presentations, and panel sessions. In addition, research institutions are encouraged to hold side events and academic booths.

The Fourth Global Summit on **Increasing the effectiveness and relevance of our institutes** will be organized by GADRI and held at the Disaster Prevention Research Institute (DPRI), Kyoto University, Uji Campus, Kyoto, Japan from 13 to 15 March 2019. The program will include keynote speeches, discussion sessions, oral/poster presentations, and panel sessions. In addition, research institutions are encouraged to hold side events and academic booths.

Background of the Global Summit of Research Institutes for Disaster Risk Reduction Series

The biennial session of the Global Summit Series was initiated by the Disaster Prevention Research Institute (DPRI), Kyoto University, Uji Campus, Kyoto Japan with the first Global Summit of Research Institutes for Disaster Risk Reduction session held in November 2011 during the same year a triple disaster – Great East Japan Earthquake and Tsunami devastated Japan in March 2011. The First Global Summit which brought together 52 research institutes involved in disaster risk reduction and management from around the world, proposed the establishment of an international network of disaster research fostered by DPRI, Kyoto University. This proposal was further endorsed by the Second Global Summit that took place at DPRI, Kyoto University soon after the UN World Conference on Disaster Risk Reduction, participated by 83 institutes, and established the Global Alliance of Disaster Research Institutes (GADRI) to support the Sendai Framework for Disaster Risk Reduction 2015 -2030 agenda. The Third Global Summit in March 2017 was successfully organized by GADRI with 102 institutes and 251 participants from around the world.

A few outcomes of the 3rd Global Summit are the launching of the World Status of Disaster Research: GADRI Book Series, proposal for publication of GADRI Prospectus, and GADRI's active participation and contributions to the UNISDR and other major conferences.

Purpose and Objectives:

The past Global Summits have continued to maintain an institutional structure advocating importance of engagement in collaborative research activities to accomplish disaster risk reduction and resilience at a global level. The Sendai Framework Agenda for 2030 calls to increase awareness on disaster risk reduction and resilience and implement policies to prevent new risks. What could GADRI do to further promote the 2030 agenda of the Sendai Framework? GADRI are committed to take a coherent and a global approach to disaster risk reduction and resilience through its network of disaster research institutes.

A few unique characteristics of the Global Summit series are the high-level dialogues between the governmental including ministers and parliamentarians, heads of UN and other leaders from the private sector and science and technology community; parallel thematic group discussion sessions; panel session to present synthesis reports of group discussion sessions; and poster presentations which provide opportunities for participants to interact and review contributions and progress to disaster risk reduction and resilience activities.

The Fourth Global Summit under the theme of “Increasing the effectiveness and relevance of our institutes” will explore:

- GADRI contributions to the Science and Technology Roadmap; and the Tokyo Statement 2017
- Climate change and adaptation - What engagement mechanisms and research linkages are needed in governments, localities, media, etc.?
- To what extent are these research directions and SDGs influence or impact the policy-makers, governments, etc.?
- What are the targeted research areas in DRR? How is disaster research management promoted?
- Where are the funding for disaster risk reduction activities coming from and are they invested to right causes and areas that are most needed?

Discussion sessions:

There will be two discussion sessions.

Disasters continue to increase in numbers and affect nations and communities by impact and intensity. Most research institutions conduct research for publication purposes or for fulfilling a requirement for grants and without an aim or a specific target of purpose. Such research is most oftenly duplicated and at times though valuable goes unnoticed and archived.

Focusing on the purpose and objectives, the Fourth Global Summit will explore the governing nature of empirical research on disaster risk reduction conducted by various research institutions nationally and globally, especially how evidence-based research results are utilized or implemented in mitigating disasters. Emphasise will be on integrated disaster research with a wider focus on collaborative research activities.

Expected Outcomes:

Based on purpose and objectives, the participants will:

- learn from accumulated research knowledge of each research institute
- share information on ongoing project activities and achievements
- explore opportunities for collaborative and empirical research activities
- develop a statement of actions for various stakeholders in DRR which could be presented at the Global Platform 2019.

Call for papers

Focusing along the lines of 4th Global Summit of Research Institutes for Disaster Risk Reduction purpose and objectives and the discussion sessions, papers are called from young researchers, scientists, policy-makers, and GADRI member institutions.

Abstracts could be submitted through MyPage.—http://www.knt-ec.net/2019/gsri/#howto of the 4th Global Summit homepage http://gadri.net/summit/ .

In addition, authors could also present disaster reports, results of research findings, ongoing research projects and activities and other related topics.

Paper title with an abstract should be submitted by 31 December 2018 which will be reviewed by the session conveners/GADRI Secretariat. Selected authors will be contacted by e-mail.

There could be a possibility to publish selected articles (peer-reviewed) through GADRI Book Series by *Springer Japan / International Journal of Disaster Risk Science / Journal of Natural Disaster Science.*

4th Global Summit of Research Institutes for Disaster Risk Reduction (4GSRIDRR 2019): Increasing the Effectiveness and Relevance of our Institutes; and GADRI General Assembly, DPRI, Kyoto University, Uji Campus, Obaku Plaza, Kyoto, Japan
13 to 15 March 2019

	Day 1 : Wednesday, 13 March 2019	Day 2 : Thursday, 14 March 2019	Day 3 : Friday, 15 March 2019
AM	Registration	Plenary Session II - Bridging Science and Decision Making through Sharing of Knowledge	Plenary Session IV - New Scientific Challenges to DRR and DRM
	Opening Ceremony		
	Group Photograph (A printed copy of the photo will be available during the Welcome Reception for participants to sign.)		
	Plenary Session I - Listening to Advice and Management of Science Kowledge by Various Stakeholders	Panel Discussion I - Discussion summaries and outcomes from Day 1 Group discussion sessions Invited speakers from each group	Panel Discussion II - Discussion summaries and outcomes from Day 2 Group discussion sessions Invited speakers from each group
PM	GADRI Session - Introduction of Regional Alliances - Showcasing Collaboration and Research: Workflow and Opportunities	Plenary Session III - Fostering Uptake of Science in Governments and Industries	Wrap-up Session
	Poster Session I	Poster Session II	Closing Remarks
	Group Discussion Session I : Contributions to increase the effectiveness and relevance of our institutes in DRR	Group Discussion II: Effectiveness and relevance of disaster research institutes in DRR - Contributions to World Stakeholders	Transit to Kyoto Station - Hotel Granvia-3F
	Water and Weather Related; Earthquake and Volcano Disaster Related; NaTech and Cross-Cutting Issues; Geohazard Related; Social and Human Sciences, and Health Related	GADRI Contributions to the 2016 Science & Technology Roadmap; and how best could GADRI promote SFDRR 2030 agenda?; SDGs and Climate change and adaptation - what engagement mechanisms and research linkages are needed to influence research directions among policy makers, governments, localities, media, etc.?; Knowledge Management and Science Synthesis Nation's Synthesis: Online Synthesis System and Pre-Synthesis; Research funding allocations / uses / importance / most needed research areas / and future budgets for DRR	GADRI Meeting of the GADRI General Assembly Registration - Meeting of the GADRI General Assembly Hotel Granvia, 3F, Kyoto (Limited to GADRI member institutes. We expect one member from each GADRI participating institutes to attend this session.)
18:30 - 20:00	Welcome Reception University Co-Op, Uji Campus, Kyoto University	DPRI Alumni Meeting and Dinner	Cultural Performance & Closing Banquet Granvia Hotel-3F, Kyoto

https://www.unisdr.org/we/inform/publications/42519

Main focus of the meeting was the review of the 2016 Science and Technology Conference Roadmap and reporting the progress at the Global Forum 2019.

Among the deliberations, resilience was discussed in depth. Few of the action points are given below:

- On resilience it was decided to share various UN documents for information - Analytical Framework on Risk and Resilience and UN Resilience Framework
- Identify future opportunities in inter-governmental processes and to invite STAG members to participate
- Request STAG to identify opportunities for engagement and joint messaging

UNISDR will engage STAG in 'Target F' discussions and will send other opportunities for engagement, for example, engage with future GRAF working groups; support GRAF data gap analysis through the Data Working Group; and Main GAR peer review.

STAG intend to develop

- A final concept note for the S&T Conference at Global Platform 2019
- A short document with suggestions to how to address the question of additional Sendai Hazards. Perhaps by linking this to a review of the IRDR Hazard list.

With regard to the S&T Roadmap, the roadmap is to be 'conceptualized' to align with global and regional trends and developments since 2016; updates including additional hazards, education references and implementation action plans will be looked into and added to the proposal. GADRI is part of the working group.

Further it was agreed to review a revised Roadmap during the GADRI, 4th Global Summit of Research Institutes for Disaster Risk Reduction in March 2019 in DPRI, Kyoto University, Kyoto, Japan which will be endorsed by wider S&T community at the Global Platform 2019.

With regard to S&T Partnerships, UNISDR to explore filling of gap of expertise in technology; share most recent version of S&T Partners lists; clarify how organizations/networks can join the S&T Partnership; and use S&T Partners as a resource base for Working Groups.

STAG Working groups on Data, Education, NATECH; Economics and the new group on Climate Change and DRR will work to achieve various timelines set to end of 2018, GADRI 4th Global Summit in March 2019 and Global Platform 2019.

Another item discussed was funding and resource mobilization. In this regard it was agreed to ensure cross-pollination or sharing of information between STAGs and to implement working group activities.

GADRI has added S&T Roadmap under discussion items of the 4th Global Summit and will submit the outcomes at the Global Platform 2019.

GADRI Participation at UN Global Risk Assessment Framework (GRAF)

From the UNISDR website - https://www.unisdr.org/archive/58772)

GADRI was elected as a member of the Expert Group on the Global Risk Assessment Framework (GRAF) which was established as an important global initiative to support the implementation of the Sendai Framework Agenda for 2015-2030. The establishment of the Expert Group was one of the principal recommendations of the

Expert Meeting on the GRAF held in Geneva on 20 to 21 November 2017. The initial responsibility of the Expert Group is to provide guidance and direction in the co-design and collaborative development of the GRAF, including strategic, technical, functional and operational aspects. The Expert Group will guide the development and co-creation of a preliminary implementation roadmap, including the definition and possible composition of the GRAF Sub-Working Groups that will need to be established to support the co-design and development process.

The first meeting of the Expert Group on the GRAF took place in Geneva, Switzerland from 13 to 14 June 2018.

The following excerpt was from the UNISDR website From the UNISDR website - https://www.unisdr.org/archive/58772)

"Selection has been made on the basis of: technical and operational relevance to the design and development of the GRAF; updated and scientifically sound experience and topic excellence; assuring global geographic coverage; and representation of gender and major stakeholder groups to the greatest extent possible.

Experts from across multiple sectors and global regions met this week in Geneva over two days to brainstorm ideas for an open user platform that will help communities and decision makers more easily apply their understanding of risk to generate better targeted solutions for resilience.

The group of 32 included representatives from science, big data, technical modelling and the insurance industry as well as special interest groups such as youth, to hone the vision for the Global Risk Assessment Framework (GRAF), which will be developed over the coming months.

Participants agreed that a user-centric, co-development approach was necessary to generate a truly interactive platform driven by the needs of the communities it serves, from national or local government to cities, towns and villages.

John Schneider, from the GEM (Global Earthquake Model) Foundation, said that it was vital that that the framework supported implementation of the Sendai Framework for Disaster Risk Reduction, the global plan to reduce disaster losses, while pulling in experiences from around the globe. "We need the GRAF to amplify the work of all the partners in this field", he said.

At the same time, Claire Souch of the Insurance Development Forum spoke of the framework "bridging the gap between creators and end users" to create communities and "webs of participants" as opposed to passive users of the information.

While practical issues on the GRAF's development, such as governance and methodologies, were debated, participants agreed unanimously with the overarching vision of the project – to accelerate the shift from response to prevention; an idea that is fundamental to the achievement of the Sustainable Development Goals.

"In this day of technology and knowledge, why are losses from disasters continuing to rise at a faster rate than economic growth and GDP?" said Ian Burton, University of Toronto.

The GRAF will be introduced as part of the 2019 Global Assessment Report for Disaster Risk Reduction, published by UNISDR every two years, and launched in Geneva at the Global Platform for Disaster Risk Reduction in May 2019."

Report Evacuation Activity After Explosion of the Aluminum Factory: Case of Sojya City of Okayama

An evacuation activity after the explosion of the aluminum factory caused by 2018.7 Japan Flood

By Yuko ARAKI PH.D

Disaster Mitigation Research Center, Nagoya Univ.
Research Associate Professor

An aluminum factory explosion happened by flood inundation at midnight of 6 July 2018 in Sojya city of Okayama. Shimobara area was hit by explosion and was heavily damaged before the area was flooded. The residents of Shimobara area were evacuated after the explosion based on the previous community works prepared for the flood.

2018.7 Japan Flood—Heavy downpours continued from 28 June to 8 July 2018 mainly in west Japan by typhoon 7 and the seasonal rain front. Special heavy rain warnings were issued in 11 prefectures by weather officials. 224 people were dead and 8 people were missing by floods and landslides (Cabinet office report, 9 Sep. 2018).

The aluminum factory explosion—The aluminum factory was located at the point of Shinpon river flow into Takahashi river which has been around since 1975. They produce deoxidizer for steelmaking and aluminum alloy ingots by recycling of aluminum. According to the news reports, the aluminum factory operates a melting furnace to produce aluminum over 24 hours in general. However, to prepare for the forecasted heavy rain, the factory had been requested to stop operating the melting furnace since morning of July 6. Staff members of the factory tried to remove high temperature aluminum from the furnace prior to evacuating around 10 PM July 6 as the water reached up to the factory.

Around 11:35 PM the aluminum factory exploded. Highly-heated scatters from the factory caused multiple fires and demolished rooftops. Air blast of the explosion destroyed window glasses and walls of houses in the surrounding area of the factory in Sojya city and Kurashiki city and some people were taken by ambulance to hospital.

Evacuation process of Shimobara area residents—Shimobara area is located west side of the aluminum factory and surrounded by 157 householders. Jishubousaisoshiki (Jisyubou) is the community-based organization counter for major disasters in Japan. Shimobara Sako Jishubou was established in April 2012. Since 2013, they had included night evacuation drills in the evacuation drills conducted for the community. Through this activity Jisyubou members grasped information of the residents and they identify how and who help vulnerable people at times of disaster.

At the time of the factory explosion, the leaders of Jishubou were in the Shimobara community hall to respond for the flood warning. Police and Sojya city disaster management headquarter (DRM) indicated to Jisyubou leaders to evacuate to Kibiji Arena of Sojya city to prepare for the additional explosion. Jisyubou leaders requested for vehicles through the city DMH for evacuation activity and tried to provide evacuation information by designated 7 area leaders of Jishubou to residents.

Around 1 AM, 5 minivans arrived driven by city officers. The residents evacuated to Kibiji Arena by the minivans or by their own car sharing. Jishubou leaders confirmed a place of evacuation for about 270 residents at 2AM. They used the check list of residents used in the evacuation drill. Jisyubou leaders finally moved to Kibiji Arena after the confirming the residents have evacuated designated area of evacuation around 4 AM of July 7.

That was a good case of community-based activity worked well by the cooperation between Jisyubou and administrative agencies even in the unexpected accident. But it cannot say they could do the same if flood water would come in the resident area before the explosion or those occur at the same time. It could be harder to extinguish the fire and stop spread-out of fire. Additionally, information transfer and evacuation activity were could be difficult.

Preventive Evacuation is necessary if there are risks of complex disaster and Natech. The residents had no information or knowledge of the risk of explosion if the aluminum factory were flooded. In order to response and reduce the risk, it is necessary to conduct prior risk communication by the business operator, residents' organization and administrative agencies.

Dr. Masamitsu Onishi interacting with students of Brawijaya University

Brawijaya University, Indonesia—Visit by Faulty and Students Visit to Disaster Prevention Research Institute, Kyoto University, Uji Campus

A group of nine members including doctoral students and faculties from Brawijaya University, Indonesia visited DPRI on September, 2018. Associate Professors Masamitsu Onishi and Subhajyoti Samaddar from Disaster Prevention Research Institute (DPRI), Kyoto University hosted the Indonesian delegates and conducted interactive course on disaster risk communication and governance.

Session Abstract: Cities are complex and interdependent systems, extremely vulnerable to threats from natural and environmental hazards. The very features that make cities feasible and desirable – their architectural structures, population concentrations, places of assembly, and interconnected infrastructure systems – also put them at high risk to floods, earthquake, cyclones and so on. Annual loses from natural hazards in urban areas are staggering. Most of these losses occurred at locations where vulnerable urban settlement were developed near known hazard areas , such as floodplains, earthquake fault zones and cyclone prone shorelines. Must we continue to accept these looses? The short answer is no. We must find ways to mitigate their impacts.

Over the decades, however, it has been realized that solely engineering based structural measures are inadequate to establish resilient city. In retort to this challenge, it is suggested to encourage citizens to adopt innovative disaster preventive measures , such as nailing furniture, installing rainwater harvesting, raising plinth, following building bylaws, evacuation etc.). However, the reality is that despite the enormous efforts of local government and disaster management authorities, urban communities living in disaster risk prone areas continue to demonstrate a reticence to adopt protective measures. Therefore, the important question is how can we best facilitate individual and collective changes in behavior for better preparedness?

Effective risk communication is critical for increasing risk awareness and encouraging preparedness among the community members. But the decision making on environmental and disaster risks faces three major challenges that make risk communication more difficult – complexity, uncertainties and ambiguity. It became evident that it is not the information per se that determines whether people take actions to manage their risks reflect how people interpret and collate information to make it meaningful to them. The risk communication in urban planning context becomes more challanging because there involve diverse stakeholders and it is critical to manage and incorporate the values, interest and concerns of stakeholders in the decision making process. The goal of this course was to explain how planners and practitioners can design and implement communication plans related to urban disaster risks.

Group photo

Lecture addressing Empirical, Methodological and Organizational Frontiers in Interdisciplinary Hazards Research by David Mendonça

Dr. David Mendonça, Rensselaer Polytechnic Institute, New York, USA visited GADRI and DPRI, Kyoto University on 11 October 2018. During his visit, he delivered a lecture on Empirical, Methodological and Organizational Frontiers in Interdisciplinary Hazards Research. The talk proposed three empirical, methodological and organizational responses to an emerging set of exogenous and endogenous threats to research excellence in the disaster domain. His remarks were based on his own observations over the last two decades, but also on his recent experience as a progam officer at the US National Science Foundation--perhaps the major funder of basic research in the disaster domain in the US.

The exogenous threats include the explosion of Big Data, the conflation of "resilience" with "security", and funders' requirements to pursue interdisciplinary research. The endogenous threats include a steady drift of disaster-oriented research away from traditional disciplines and towards "Disaster Science and Engineering" (DSE); second, a low rate of methodological innovation within DSE; and third, a core of young researchers who identify with DSE but whose "home" is not recognized as a standalone discipline in many universities.

Three positive, opportunistic responses to these threats are proposed: first, reframing DSE as a field (rather than a discipline) in which the methodological foundations of interdisciplinary science and engineering can be developed; second, the re-engagement of core disciplinary areas--particularly in the social sciences--through a increased emphasis on testing and extending boundary conditions of basic theory; and third, a radical revision to the education of doctoral students involved in DSE-related research through training in innovative disciplinary and interdisciplinary methods.

Biographical Note

David Mendonça is an Associate Professor in the Industrial and Systems Engineering Department at Rensselaer Polytechnic Institute (RPI) in Troy, NY. In 2017 he completed a two-year term as a Program Officer in the Engineering Directorate of the US National Science Foundation (NSF), where he directed and co-directed programs at the intersection of engineered and human systems and also participated in various multi-agency Federal committees in the hazards and disasters domain. He has published extensively in the fields of Industrial Engineering and Applied Computing, with support from grants from NSF (including a 2005 CAREER award) and the Office of Naval Research, among other sources.

New GADRI Members

Indian Institute of Technology, Bombay, India

Indian Institute of Technology (IIT) Bombay was established in 1958 to carry out research and education in fields across science, engineering, and humanities / social sciences. IIT Bombay currently has nearly 10,000 students and 650 faculty members. Nearly 3,000 students are currently enrolled in the PhD program. The Institute has 39 academic units such as departments, centres, schools and inter-disciplinary programs offering under-graduate, post-graduate, and PhD degrees.

Indian Institute of Technology (IIT) Bombay carries out wide-ranging activities in disaster management. The areas of research include hazard assessment of geological hazards such as earthquakes, meteorological hazards such as floods and climate change related impacts including extreme events. Research areas also include vulnerability assessment, vulnerability reduction using innovating technologies, risk assessment, risk mitigation and risk reduction, and adaptation. Areas of research also include sociological and economic impact of disasters. IIT Bombay also contributes to policy-making in disaster risk management at national, state and local levels. Faculty members across several department carry out disciplinary and inter-disciplinary research projects in disaster related areas in collaboration with partners in Indian and other countries in the world. Civil Engineering, Environmental Science and Engineering, Humanities and Social Science, Climate Studies, Urban Science and Engineering, Management, Chemical Engineering, Energy Science and Engineering are the major academic units involved in disaster research.

Asian Disaster Reduction Center (ADRC), Kobe, Japan

The Asian Disaster Reduction Center was established in Kobe, Hyogo prefecture, in 1998, with mission to enhance disaster resilience of the member countries, to build safe communities, and to create a society where sustainable development is possible. The Center works to build disaster resilient communities and to establish networks among countries through many programs including personnel exchanges in this field.

The Center addresses this issue from a global perspective in cooperation with a variety of UN agencies and international organisations/initiatives, such as the International Strategy for Disaster Reduction (ISDR), the Office for the Coordination of Humanitarian Affairs (OCHA), the United Nations Educational, Scientific and Cultural Organization (UNESCO), the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP), the World Meteorological Organization (WMO), and the World Health Organization Regional Office for the Western Pacific (WHO/WPRO).

Laboratório de Aerodinâmica das Construções, Universidade Federal do Rio Grande do Sul (Building Aerodynamics Laboratory, Federal University of Rio Grande do Sul), Brazil

LAC is composed by a group of professionals always attempting to create solutions in the most different wind engineering problems. Our wind tunnel was the pioneer in Latin America, always working for the development of wind engineering industrial applications, research and education. The Brazilian Wind Code NBR-6123 is largely based on the work developed in the lab. In association with partner institutions in Brazil, Argentina, Cuba and Paraguay, there has been an enormous effort in the last years aiming to natural disaster reduction.

Research interests:

• Static and dynamic wind effects on buildings: pressure prognosis, tension, deformation, translation and vibration characteristics.

• Wind effects on special structures: tall buildings, chimneys, bridges, transmission lines, stadiums and flexible structures.

• Climatic studies and environmental impacts / Atmospheric pollution / Acclimatization and ventilation / Agriculture / Eolic Energy / Transport.

• Wind related disaster reduction & hazards mitigation.

Achievements:

• Development and improvement of the Brazilian Wind Code (currently under revision, with Prof. Acir M. Loredo-Souza as the President of the Code Review Committee).

• LAC/UFRGS has more than 40 years' experience in the development of wind tunnel studies and applications to real buildings and environmental solutions, helping to diminish the number of wind related disasters.

Challenges:

• In a country with numerous problems to solve, as Brazil, the challenges are enormous, ranging from the lack of financial resources to limited culture. The understanding that natural disasters may be diminished or even avoided is still not clear. There is a confusion between natural meteorological event and natural disaster. LAC has been disseminating educational activities along the past years with the aim to teach the technical processes regarding wind engineering, helping in the design and construction of more resilient buildings and infrastructure throughout Brazil and neighboring countries. We have joint research activities with groups in Argentina, Cuba and Paraguay.

Rensselaer Polytechnic Institute , New York, USA

http://www.rpi.edu

Rensselaer Polytechnic Institute, founded in 1824, is America's first technological research university. Perched on a 275-acre hilltop campus overlooking the Hudson River in the historic city of Troy, in the heart of upstate New York's Tech Valley, Rensselaer Polytechnic Institute has long been a leader in educating men and women in vanguard technological and scientific fields. The university offers bachelor's, master's, and doctoral degrees in engineering; the sciences; information technology and web sciences; architecture; management; and the arts, humanities, and social sciences. Rensselaer faculty advance research in a wide range of fields, with an emphasis on biotechnology, nanotechnology, computational science and engineering, data science, and the media arts and technology. The Institute is has an established record of success in the transfer of technology from the laboratory to the marketplace, fulfilling its founding mission of applying science "to the common purposes of life." We usher along new discoveries and inventions that benefit humankind, protect the environment, and strengthen economic development, shaping the very way we live in the 21st century. Visit our website for more information.

Institut des Sciences de la Terre, Université Grenoble Alpes - ISTerre, Grenoble, France

The history of the ISTerre laboratory covers the whole history of Earth Sciences in Grenoble and Chambéry: from the beginning of the 19th century to the present, almost 200 years of research which resulted in the creation of a single laboratory in 2011.

The history of Grenoble geology, at least of the faculty of geology, began in 1824 with the creation of the chair of natural sciences including geology. It was then necessary to wait until 1889 to attend the creation of the first laboratory of geology of the University of Grenoble. Initially housed in the attic of the former "Palace of the university", it was installed from 1908 in the former bishopric, rue Très-Cloîtres, where it remains more than 50 years. ISTerre (Institut des Sciences de la Terre - Institute of Earth Science) stems from former LGCA and LGIT labs.

The various research teams of ISTerre study the Earth with the various and complementary approaches of geology, chemistry or physics.

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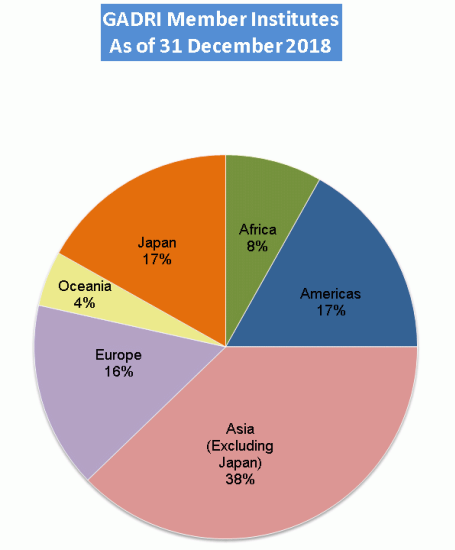
Global Alliance of Disaster Research Institutes (GADRI)

At the commendation of the Second Global Summit of Research Institutes held in March 2015 at the Kyoto University Disaster Prevention Research Institute (DPRI), Kyoto, Japan, 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.

Since March 2015, over 172 research institutes in 45 states have expressed interest to become members of GADRI.

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

Area	Members
Africa	14
Americas	29
Asia (Excluding Japan)	65
Europe	27
Oceania	8
Japan	29
Total Institutes	**172**
	45 states



To Join GADRI:
Contact GADRI Secretariat - 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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