Global Alliance of Disaster Research Institutes (GADRI)

Formation of GADRI

By Prof. Hirokazu Tatano, Secretary-General, GADRI; and
Professor, DPRI, Kyoto University, Japan

Global Alliance of Disaster Research Institutes (GADRI)

- At the 1st Global Summit of Research Institutes for Disaster Risk Reduction (Global Summit) held at the Disaster Prevention Research Institute (DPRI), Kyoto University, Uji Campus in November 2011, an international alliance of research institutes involved in disaster risk reduction and risk management to be fostered by DPRI, Kyoto University was proposed.

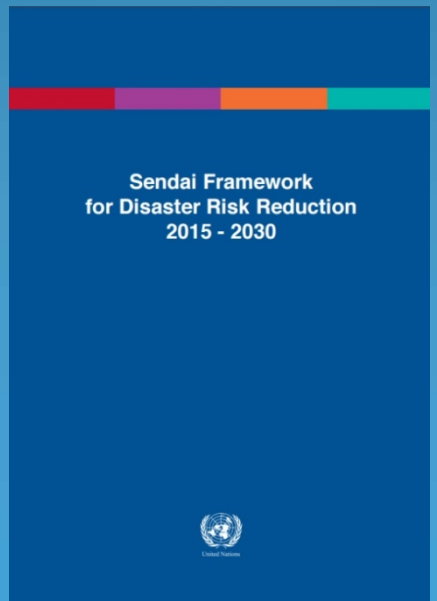
- This proposal was further taken up at the 2nd Global Summit which was held at DPRI in March 2015, soon after the Third UN World Conference on DRR, and a resolution was adopted to establish the Global Alliance of Disaster Research Institutes (GADRI)

PURPOSE OF GADRI

- GADRI was established as a collaborative platform for engaging discussion, sharing knowledge and promoting networks on topics related to risk reduction and resilience to disasters.

- A major focus for the formulation of GADRI was the Sendai Framework for Disaster Risk Reduction 2015-2030 that called for prioritising understanding of disaster risks at global and regional levels.

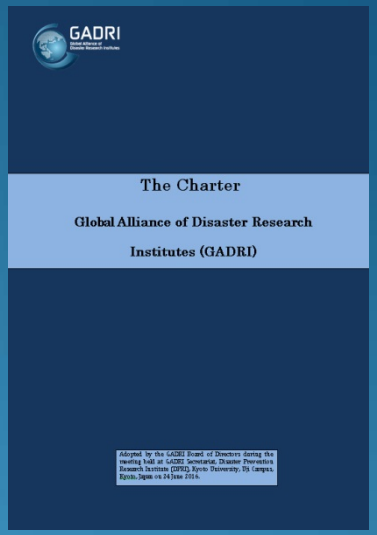
- GADRI contributes to enhancing disaster risk reduction (DRR) and disaster resilience through the collaboration of research organizations around the world.



Global Alliance of Disaster Research Institutes (GADRI)

Since the establishment in March 2015, GADRI has moved forward rapidly.

- GADRI Member Institutes remains around 130 representing 35 states
- Out of which the Board of Directors are from 10 different states
- Adopted the “GADRI Charter”
- Launched GADRI webpage
- Continue to issue GADRI periodic newsletter “GADRI Actions”



GADRI Organized the 3rd Global Summit of Research Institutes for Disaster Risk Reduction (GSRIDRR2017)

- This year, GADRI successfully organized the 3rd Global Summit in March 2017.

The 3rd Global Summit was quite successful, in terms of its contents, participation and recognition received within Japan and abroad.
Following are a few examples of the keynote representatives:

Japan and the Academia
- Cabinet Office of Japan, Government of Japan
- Japan International Cooperation Agency (JICA)
- International Centre for Water Hazard and Risk Management (ICHARM)

International Organizations
- UNISDR
- The World Bank
- UNESCO
- UNU IAS – International Network for Transdisciplinary Education (INATE)
- European Commission – Joint Research Centre (EU JRC)
- Embassy of Colombia in Tokyo, Japan

Global Summit Series 2011 to 2017

Global Alliance of Disaster Research Institutes (GADRI)

GADRI Members of the Board of Directors

Member Institutions of GADRI Board of Directors	
Europe and Africa	
1	European Commission, Joint Research Center
2	International Institute for Applied System Analysis (IIASA)
3	Disaster and Development Network (DDN), Northumbria University
Asia and Oceania	
4	International Research Institute of Disaster Science, Tohoku University
5	National Research Institute for Earth Science and Disaster Prevention (NIED)
6	National Science and Technology Center for Disaster Reduction (NCDR)
7	GNS Science
America	
8	Disaster Risk Research, Institute of Geography, National Autonomous University of Mexico (UNAM)
9	Natural Hazards Center, University of Colorado, Boulder
10	Pacific Earthquake Engineering Research Center (PEER), National Information Service for Earthquake Engineering, University of California, Berkeley
Secretariat	
11	Disaster Prevention Research Institute (DPRI), Kyoto University

Global Alliance of Disaster Research Institutes (GADRI)

GADRI Members of the Board of Directors

International Institute for Applied Systems Analysis (IIASA)

Stefan Hochrainer-Stigler

Senior Research Scholar, Risk and Resilience Program, IIASA

http://www.iiasa.ac.at/

Stefan Hochrainer-Stigler is a Senior Research Scholar with the Risk and Resilience (RISK) program at International Institute for Applied Systems Analysis (IIASA), and the leader of the Risk Analysis and Modeling group. A member of the Board of Directors of the Integrated Disaster Risk Management (IDRiM) Society and the Board of Directors for the Global Alliance of Disaster Research Institutes (GADRI). He is also a lecturer at the University of Vienna, the Karlsruhe Institute of Technology and the UME (Understanding and Managing Extremes) Graduate School at the Institute for Advanced Study in Pavia.

European Commission, Joint Research Centre

Tom De Groeve

Tom De Groeve, Acting Head of Unit, Disaster Risk Management Unit, European Commission, Joint Research Centre

https://ec.europa.eu/jrc/en

Tom's research career covered risk management, disaster monitoring and emergency management systems using geospatial technology. He initiated the Global Disaster Alert and Coordination System (GDACS), the Index for Risk Management (INFORM) and the Global Flood Partnership. Tom has been working on bringing science into policy, including for the UN Sendai Framework for Disaster Risk Reduction and EU crisis management, humanitarian aid, climate change and disaster risk policy. Tom currently is deputy Head of the Disaster Risk Management Unit and leading a wider research portfolio. His latest interest is in knowledge management, with the European Commission Disaster Risk Management Knowledge Centre.

National Research Institute for Earth Science and Disaster Resilience (NIED)

Koji Suzuki

Director, National Research Institute for Earth Science and Disaster Resilience (NIED)

http://www.bosai.go.jp/e/

Koji Suzuki is Executive Director of the National Research Institute for Earth Science and Disaster Resilience, Japan. He is a graduate of the University of Tokyo and earned his master's degree from Columbia University in the City of New York. He joined the Ministry of Land, Infrastructure, Transport and Tourism as Counsellor for the Global Strategies, and was Director for Navigation Safety, Japan Coast Guard. He was the Executive Director, Asian Disaster Reduction Center in Kobe. He was a member of the Result Management Council, Global Facility for Disaster Reduction and Recovery (GFDRR), The World Bank, and Disaster Risk Reduction Expert in Indonesia and Sri Lanka for JICA.

Institute of Geological and Nuclear Sciences Limited, GNS Science

Kelvin Berryman

Principal Scientist, General Manager Strategic Relationships, Natural Hazards Group, GNS Science, Te.Pu. Ao.

https://www.gns.cri.nz/

Kelvin R. Berryman serves as a General Manager of Natural Hazards Strategic Relationships at Institute of Geological and Nuclear Sciences Limited. Kelvin was one of the Principal Spokespersons during the Canterbury earthquake sequence. He managed the research platform that integrates New Zealand's government-funded research in natural hazards. He serves as NZ Representative on the Governing Board of the GEM (global earthquake model) Foundation. His research and applied science was undertaken throughout New Zealand and extensively around the Pacific. In 2012, he received a Queens Service Order for services to science and Canterbury earthquake recovery. He has been a Geologist at GNS Science since November 1974.

Natural Hazards Center, University of Colorado-Boulder

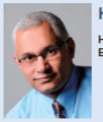
Lori Peek

Director, Natural Hazards Center, University of Colorado-Boulder

https://hazards.colorado.edu/

Lori Peek is director of the Natural Hazards Center and professor of Sociology at the University of Colorado-Boulder. She has published widely on the social aspects of disaster and is author of *Behind the Backlash: Muslim Americans after 9/11*, co-editor of *Displaced: Life in the Katrina Diaspora*, and co-author of *Children of Katrina*. She is past chair of the American Sociological Association Section on Environment and Technology and is currently president of the Research Committee on Disasters for the International Sociological Association. Peek has received numerous awards for her scholarship, teaching, and service to the broader hazards and disaster community.

Pacific Earthquake Engineering Research Center (PEER)



Khalid Mosalam

Head, Pacific Earthquake Engineering Research Center (PEER)

http://peer.berkeley.edu/

Mosalam obtained BS/MS from Cairo and PhD from Cornell in Structural Engineering. In 1997, he joined UC-Berkeley where he is the Taisei Professor of Civil Engineering and Director of the PEER Center. He conducts research on performance and monitoring of structures, assessment and rehabilitation of essential facilities, and building energy efficiency and sustainability, involving large-scale computations and experiments including hybrid simulation. He is the recipient of 2006 ASCE Huber Prize, 2013 Chancellor award for Public Services, and 2016 EERI outstanding paper award. He was a visiting professor at Kyoto, METU, and NTU. He is a High-end Expert in Tongji and PI of Tsinghua-Berkeley-Shenzhen Institute.

Disaster and Development Network (DDN), Northumbria University

Andrew Collins

Leader, Disaster and Development Network, Northumbria University

https://www.northumbria.ac.uk/about-us/academic-departments/geography/research/disaster-and-development-network-ddn/

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. Prior to academic appointments, Andrew also worked internationally including through three years voluntary support to communities in wartime Mozambique. He services his subject area through high level policy and advisory roles, reviewing and commissioning boards for national and international organisations, conferences, multiple journals and 13 research funding bodies.

International Research Institute of Disaster Science (IRIDeS), Tohoku University

Fumihiko Imamura

Director, IRIDeS, Tohoku University

http://irides.tohoku.ac.jp/eng/

Fumihiko Imamura is Director of the International Research Institute of Disaster Science (IRIDeS) at Tohoku University in Japan. He received a doctoral degree in Engineering and became a Professor of Tohoku University in 2000. He specializes in tsunami modeling, mitigation planning and education/awareness, disaster prevention and evacuation systems. He has been conducting field surveys on earthquake and tsunami damage since the 1992 Nicaragua and Flores Island Tsunamis. He is also the secretary of the Tsunami Inundation Modeling Exchange (TIME) Project supported by the Intergovernmental Oceanographic Committee (IOC) and the International Union of Geodesy and Geophysics (IUGG) in its Tsunami Commission.

National Science and Technology Center for Disaster Reduction (NCDR)

Wei-Sen Li

Director, National Science and Technology Center for Disaster Reduction (NCDR)

http://www.ncdr.nat.gov.tw/Introduction.aspx?WebSiteID=873f5b27-b86d-4d5c-a356-c369768bffe9&id=43&subid=48&PageID=6

Wei-Sen Li currently is Secretary-General of National Science and Technology Center for Disaster Reduction (NCDR) and is responsible for international collaboration on disaster risk reduction. Since 2009, he has been serving as a committee member of the Committee of Natural Disaster Reduction of the Chinese Institute of Civil and Hydraulic Engineering. He was the Co-Chair of the Emergency Preparedness Working Group (EPWG) during 2012-2015 under the Asia-Pacific Economic Cooperation (APEC). Since then, as Co-Chair APEC EPWG, he is working on enhancing capacity building and strengthening regional collaboration on emergency preparedness and disaster reduction.

Institute of Geography, National Autonomous University of Mexico (UNAM)

Irasema Alcántara-Ayala

Professor, Institute of Geography, National Autonomous University of Mexico (UNAM)

http://www.igeograf.unam.mx/sigg/

Irasema Alcántara-Ayala is a former Director and current Professor and Researcher of the Institute of Geography at the National Autonomous University of Mexico (UNAM). She got a degree in Geography from UNAM, a Ph.D. degree in Geography/Geomorphology from King's College London, University of London, and carried out a post-doc stay at the Massachusetts Institute of Technology, Boston. Her research interest is concentrated on landslides, vulnerability and integrated disaster risk. Current Vice-President of the International Association of Geomorphologist (IAG), the International Consortium on Landslides (ICL), and Vice-Chair of the Integrated Research on Disaster Risk (IRDR) Programme of International Council for Science (ICSU).

Disaster Prevention Research Institute (DPRI), Kyoto University

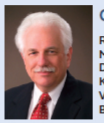
Hirokazu Tatano

Head, Social Systems for Disaster Risk Governance, DPRI, Kyoto University; and Secretary-General, GADRI

http://www.dpri.kyoto-u.ac.jp/en/

In addition to the responsibilities as professor, Disaster Prevention Research Institute, Kyoto University, Japan, Hirokazu Tatano serves as Vice-President of International Society of Integrated Disaster Risk Management (IDRiM Society) since 2010, and the Secretary-General of Global Alliance of Disaster Research Institutes (GADRI), since 2015. He has done pioneering research on economic consequence analysis with major focus on economic resilience to natural disasters at the levels of individual business, market, and regional economy. Another research focus is methodologies for integrated disaster risk management and governance. Through these academic activities, he wishes to contribute to establishing "implementation science" as a key area of science for disaster risk reduction.

Pacific Earthquake Engineering Research Center (PEER)



Charles Scawthorn

Retired as Professor of Infrastruvture Risk Management and head of the Earthquake Disaster Prevention Systems Laboratory, Kyoto University (Japan), and is currently Visiting Researcher, Univ. California at Berkeley and Principal of SPA Risk LLC.

http://peer.berkeley.edu/

From 1998 to 2003 he led technical development of the US national Flood Loss Estimation Model (HAZUS) for FEMA, and is widely recognized for the development of methods for rapid risk analysis of buildings (FEMA 154), seismic vulnerability assessment of US national infrastructure (FEMA 224), stochastic models for earthquake, wind and flood, and seismically reinforcing low-strength masonry buildings. He is the author or co-editor of a number of books and technical papers on earthquake engineering, fire following earthquake, catastrophe risk and human casualties. Charles is a graduate of the Cooper Union and holds an M.S.C.E. degree from Lehigh University and D. Eng. from Kyoto University.

Global Alliance of Disaster Research Institutes (GADRI)

GADRI Members of the Secretariat

Members of the GADRI Secretariat Committee

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

Programme Adviser

Prof. Kaoru Takara, Deputy Executive Director, Kyoto University; and Director, DPRI, Kyoto University

Secretary-General

Prof. Hirokazu Tatano, Head, Integrated Management for Disaster Risk, DPRI; and Secretary-General, GADRI

Members

Prof. Masahiro Chigira
Prof. Ana Maria Cruz
Prof. Manabu Hashimoto
Prof. Hirohiko Ishikawa
Ms. Wilma James, Project Activity Coordinator
Dr. Sameh Ahmed Kantoush
Prof. Hiroshi Kawase
Dr. Yuki Matsushi
Prof. Jim Mori
Prof. Eiichi Nakakita
Mr. Masaya Nakamura, Director of Administration
Prof. Kin'ya Nishigami
Dr. Kazuyoshi Nishijima
Dr. Masamitsu Onishi
Ms. Kaoru Saeki, Manager, Publications Office
Dr. Subhajyoti Samaddar
Prof. Sumio Sawada
Ms. Miciko Sawai, Secretary
Prof. Tetsuya Sumi
Dr. Muneta Yokomatsu
Dr. Ryokei Yoshimura

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

GADRI Representation at Major Conferences

GADRI is represented at major scientific conferences and forums.

Aims and Objectives

Recognizing the need for continuing and improving international efforts in disaster risk reduction, GADRI will strive to:

•establish a global research network that promotes and engages disaster research.

•provide a research road map, with plans that help facilitate the organization of disaster research groups.

•promote capacity building and development of disaster research institutes.

•promote exchange knowledge and research results and sharing of data and information for scientific research across the globe.

Projects and Activities

- Cross-cutting

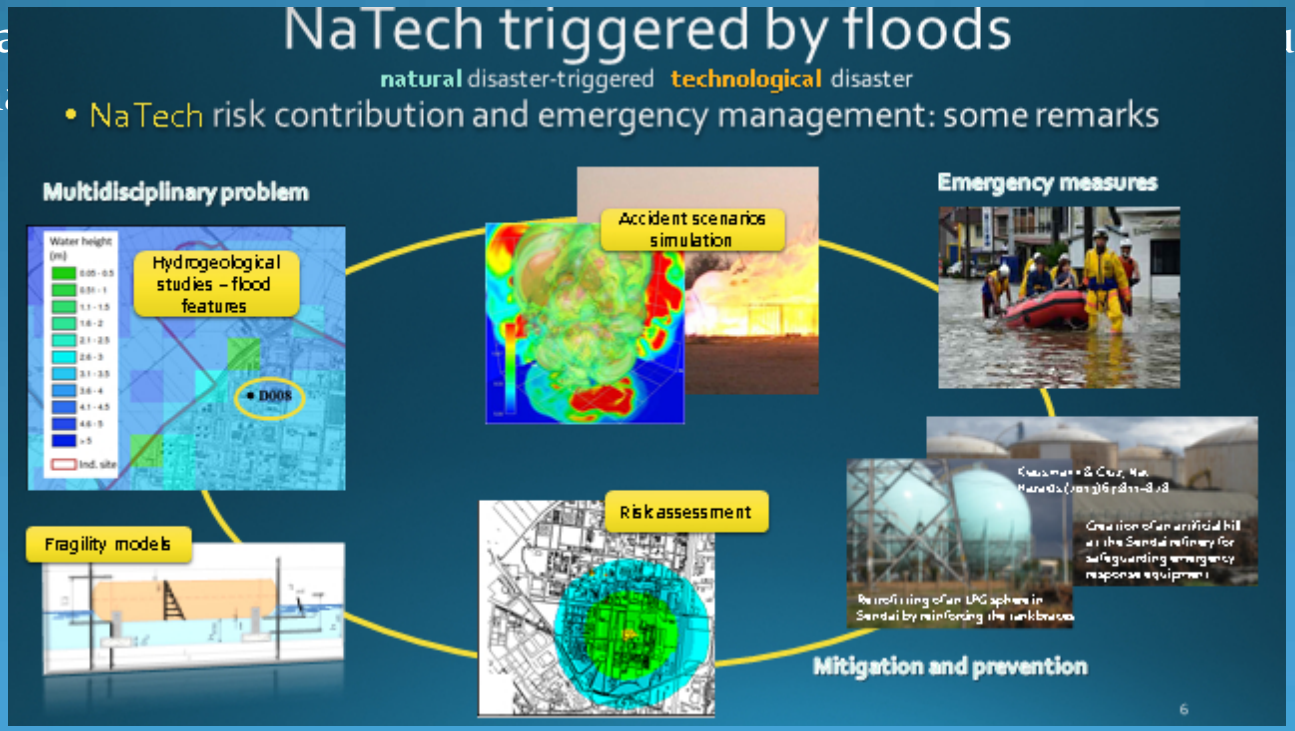
Projects which aim at development of methodologies, information platforms and materials which can be shared among GADRI members.

...e.g. Risk Assessment Platform, Capacity Building

- Thematic Projects

Projects concerned with research topics to enhance collaboration between members of GADRI who share interests in the same thematic research fields.

...e.g. Na uction, Clim

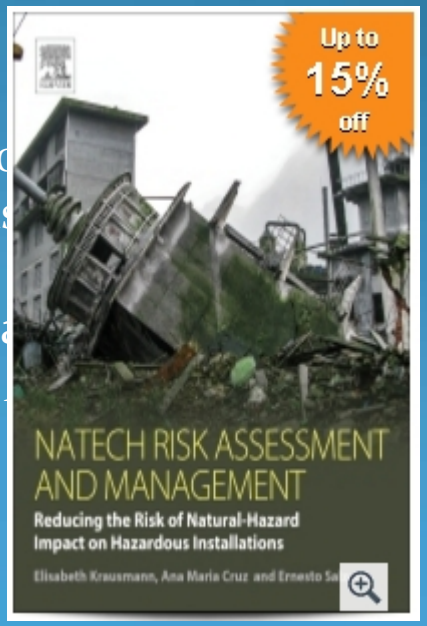


GADRI Contributions to Sendai Framework

- GADRI is in a better position today to play an important role to further facilitate contributions from the Science and Technology community towards the implementation of the Sendai Framework through reinforcing various channels to deliver on the key actions of the UNISDR Science and Technology Roadmap.

- Just recently, GADRI was nominated as a member of the Science and Technology Advisory Group (STAG) for the UN Office for the Disaster Risk Reduction (UNISDR).

- GADRI contribute to timely dissemination of research programmatic priorities related to disaster risk reductio publication of books, online communications, contributions journals and other efforts in knowledge management.
  - In this regard, I would like to mention the recent public First Book on Natech Risk Assessment and Management by



Institutional Capacity Building

- For institutional capacity building efforts, GADRI promote the new interdisciplinary field of Disaster Risk Reduction.
- When a disaster happens, local institutes should play a important roles in the phases from response to recovery.
- To implement plans and/or strategies for DRR, local institutes should take an important role too, because they knows people and context in the area.

Global Alliance of Disaster Research Institutes (GADRI)

GADRI Publication Series

Deepening the Understanding of the Risks

I Part 1. Hydrometeorology Related
Proposed editors: Wei-Sen Li (NCDR), Srikantha Herath (INATE), Tetsuya Sumi, Kaoru Takara, Kantoush Sameh, and Kenji Kawaike
Part 2. Meteorological and Wind Related
Proposed editors: Hirohiko Ishikawa, Tetsuya Takemi and Kazuyoshi Nishijima

II Earthquake and Tsunami Related
Proposed editors: Khalid Mosalam (PEER), Kelvin Berryman (GNS), Jim Mori, Yoshiki Ikeda, and Ryokei Yoshimura

III Volcano, and Compound and Technological Disasters Related.
Proposed editors: (Masato Iguchi), Ana Maria Cruz, and others to be nominated

IV Landslides and Surface Processes Related
Proposed editors: Masahiro Chigira, and Yuki Matsushi

V Social and Human Science Related
Proposed editors: Andrew Collins (DDN), Lori Peek (NHC), Masamitsu Onishi, and Subho Samaddar

Managing and planning Disaster Risk Reduction (DRR)

VI (Enhancing Governance to Manage Disaster Risks)/ Enhancing Risk Governance to Manage Disaster Risks
Proposed editors: Yuichi Ono (IRIDeS), and Masamitsu Onishi with contributor Tom de Groeve (EU-JRC)

VII Disaster Risk Reduction for Resilience
Proposed editors: Charles Scawthorn (PEER), Stefan Hochrainer-Stigler (IIESA), Chadia Wannous (UNISDR) and Muneta Yokomatsu

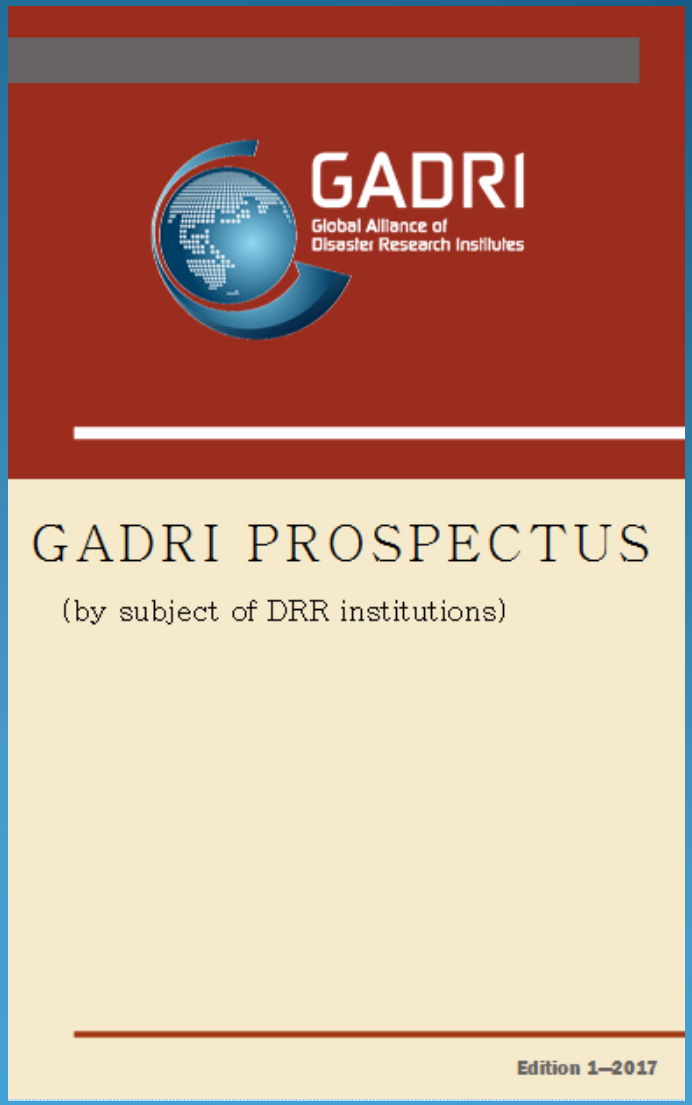
VIII Disaster Recovery and Build-Back-Better
Proposed editors: Norio Maki, and Subho Samaddar with other contributors Koji Suzuki (NIED) and Irasema Alcántara (UNAM)

IX Transdisciplinary/Multidisciplinary Approaches to Disaster Risk Management (to be changed/edited)
Proposed editors: Srikantha Herath (INATE), Tom de Groeve (EU-JRC), Chadia Wannous (UNISDR), Johanna Diwa (PEMSEA) and others

X Health Related Issues in Disaster Risk Management (to be changed/edited)

GADRI Prospectus

In due course, what is needed is an institutional map of progress in DRR. To support this, GADRI will create a prospectus including DRR research institutions based around its membership.



GADRI Membership

- Currently, over 130 research institutes from 35 states have joined GADRI.
- GADRI membership is non-binding and voluntary
- At the moment, there is no membership fee.

GADRI
Global Alliance of Disaster Research Institutes

CERTIFICATE OF MEMBERSHIP

It is hereby certified that the

DISASTER PREVENTION RESEARCH INSTITUTE (DPRI), KYOTO UNIVERSITY

of JAPAN

has become a member of the Global Alliance of Disaster Research Institutes (GADRI)

as of 2 NOVEMBER 2016.

Hirokazu Tatano

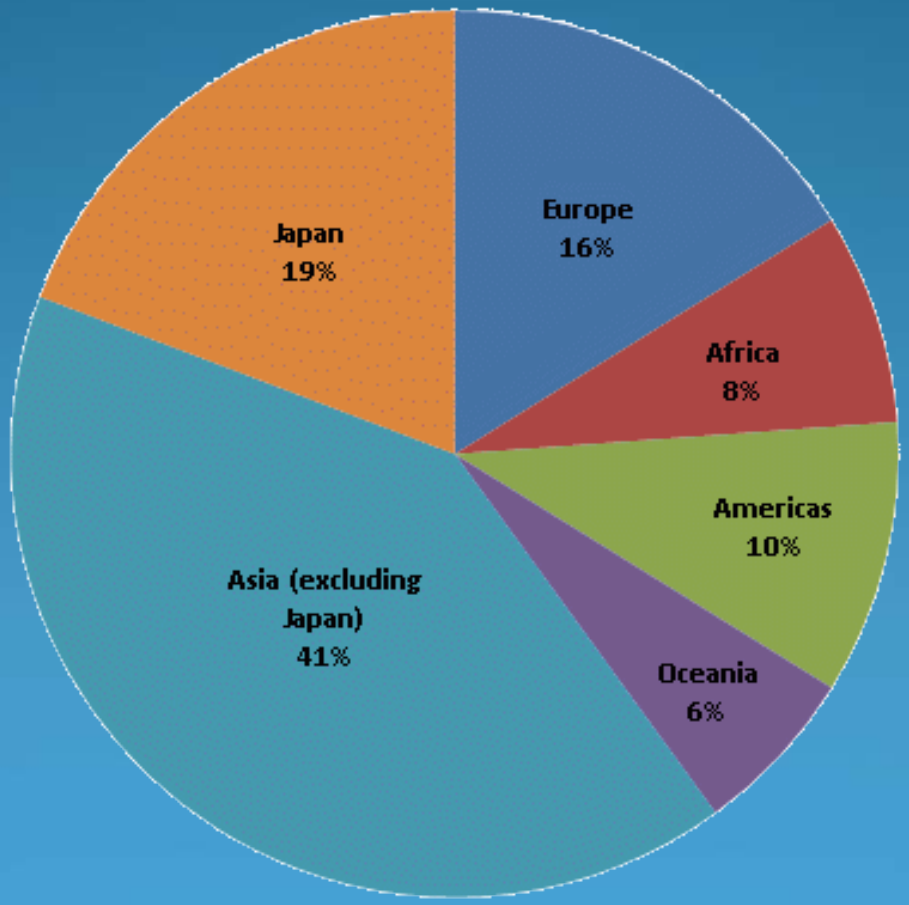
Prof. Hirokazu Tatano
Secretary-General
Global Alliance of Disaster Research Institutes

Andrew Collins

Prof. Andrew Collins
Chair, Board of Directors
Global Alliance of Disaster Research Institutes

States of GADRI Member Institutes

Geographical Distribution of GADRI Member Institutes



As of 6 July 2017

GADRI Administration

- Currently, the Disaster Prevention Research Institute (DPRI), Kyoto University; and the Kyoto University funds GADRI Administrative expenses.
- GADRI welcome funds and / or other forms of support necessary for its work through direct or indirect contributions, donations, grants and legacies, provided these are in line with the vision, purpose and objectives of GADRI.

GADRI Secretariat

- The structure of GADRI includes a General Assembly, a Board of Directors, a Secretary-General, and a Secretariat.
- The Secretariat facilitates and organizes GADRI activities.
- Currently, the Disaster Prevention Research Institute (DPRI) of Kyoto University serves as the Secretariat to initiate these activities.

Global Alliance of Disaster Research Institutes (GADRI)

GADRI Secretariat
DPRI, Kyoto University, Uji Campus

Thank you!

GADRI

Global Alliance of
Disaster Research Institutes

United Kingdom Alliance for Disaster Research (UKADR)

World Bosai Forum / IDRC 2017
27th November, Sendai

Andrew E. Collins
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Northumbria University
andrew.collins@northumbria.ac.uk

Disaster and Development Network (DDN)

www.northumbria.ac.uk/ddn


BOOKS AND MUSIC
The Chantry
Tea Rooms

Epidemic Risk in 19th Century Newcastle upon Tyne, United Kingdom

Newcastle upon Tyne, UK
Today

Fragility of Human Security

Champions of Change: the Disaster and Development Alliance

November 2012

Champions for Change: rationale and challenge

RIO+20: the need for change

The RIO+20 United Nations Conference on Sustainable Development that took place over 10 days of June 2012 involved 45,000 people and 190 nations. The event reorganised and reemphasised international commitments to sustainable development principles and poverty reduction.

The breadth and depth of issues addressed highlight the urgency to significantly act now to reduce the disaster vulnerability of future generations. Whilst some progress has been made in poverty reduction since Rio+10 in 2002 and the original Earth Summit of 1992, many environmental, economic and social development contexts have deteriorated still further.

In this call for action, our suggested priority areas are listed over ...

Emergence of UKADR

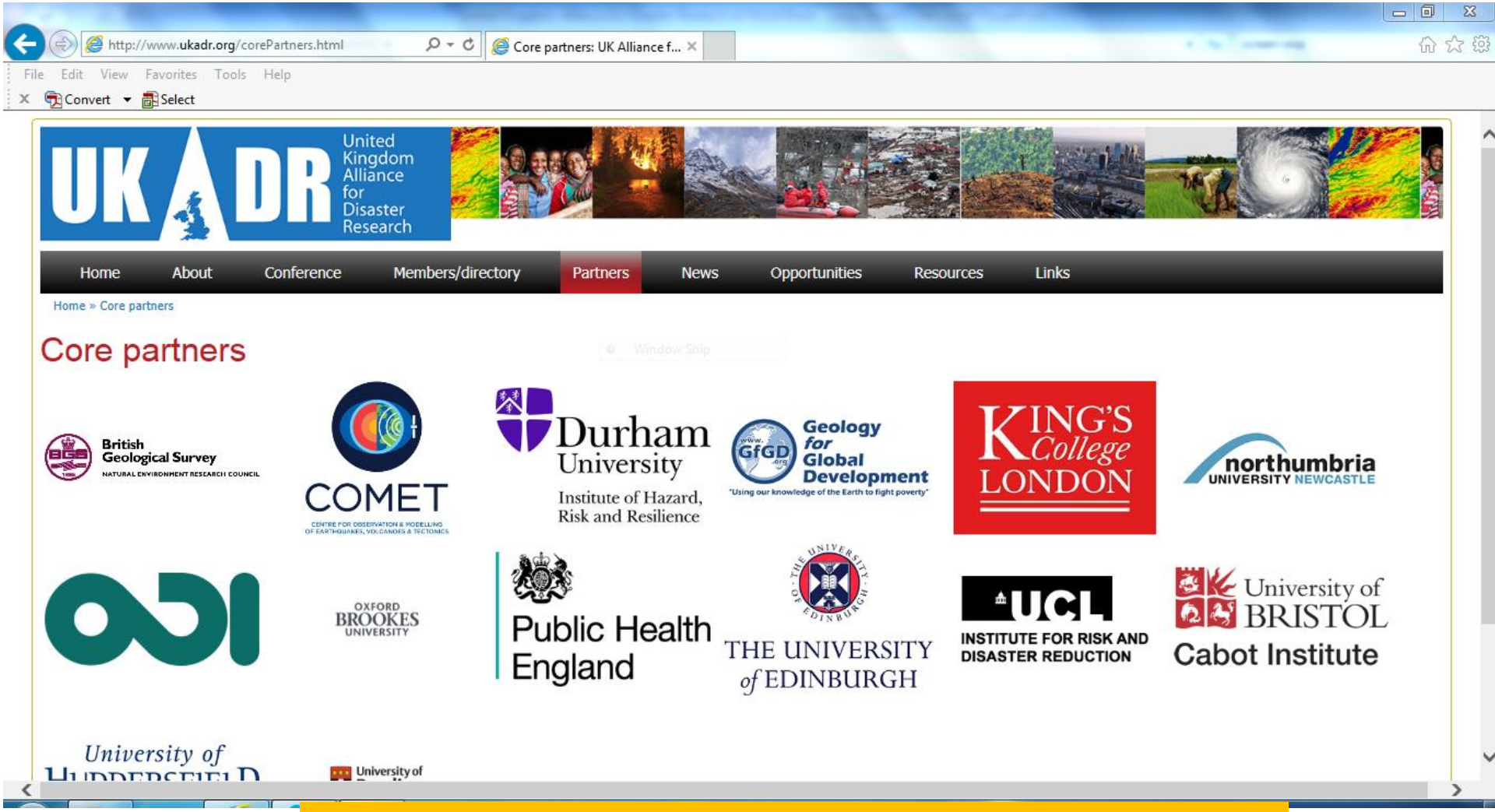
DDN as one of the other contributors

1. **Creating opportunities for civil society, particularly youth,** to be employed in shaping a future for physical, economic and social environmental quality and safety.

Collins, A.E. (2013) Linking Disaster and Development: Further Challenges and Opportunities, *Environmental Hazards* 12:1, pp.1-4

UNITED KINGDOM ALLIANCE FOR DISASTER RESEARCH (UKADR)

http://www.ukadr.org/



www.ukadr.org

What?

- An alliance of the UK based research community to facilitate collaboration and partnership

- An advocate for UK science to UK Government, RCUK and practical actors

- A contact point for UK Government, RCUK and practical actors seeking the best UK science input

- A mechanism for UK Government, RCUK and practice actors to communicate emerging needs to the UK research community.

Why?

- *Demand from UK government for an independent science consultation group*
  - To support UK government commitments to Sendai
  - To enable smart, rapid response to international emergencies
  - To inform the wider international development and disaster risk reduction policy process

- *Need from UK research community*
  - DRR lacks a coherent advocacy voice to UK gov. including RCUK compared to other specialisms
  - Competition is good but can undermine collective weight
  - There is a risk of lock-in making new partnership difficult

Who?

- Independent – not owned by a discipline or existing network
- Funded by voluntary contributions from member organisations
  - No membership fee for individual members
- Open to employees and research students from any UK based organisation engaged in research and/or capacity building for disaster risk reduction/management with a focus on low- and middle-income countries.
- Natural sciences, engineering and technology, medical and health sciences, agricultural science, social sciences, and humanities and includes information technology, economics, and behavioural sciences

How?

Membership events: An annual conference to bring together decision-makers, activist, students and researchers.

- *January 9-10 2017, King's College London*
- *19-22 September 2017, IHRR Durham University and DDN University of Northumbria 'The impact of hazard, risk and disasters on societies'. Hosted by Durham University IHRR – 11th Dealing with Disasters (DwD) Conference*
- *March 2018 2nd UKADR Conference, Bristol University*
- *2019 3rd UKADR Conference, Northumbria University (subject to confirmation)*

Strategic working by elected UKADR committee:

- Membership of the *UK Disasters Research Group* (RCUK, DFID, GoScience, Cabinet Office, ELHRA, Royal Society, UKCDS).
- Association with *UNISDR Science and Technology Advisory Group,* and wider systems
- Recognition by international equivalents through the ICSU programme *Integrated Research on Disaster Risk.*
- Endorsement and linkage to *Global Alliance of Disaster Research Institutes* (GADRI)

Open elections:

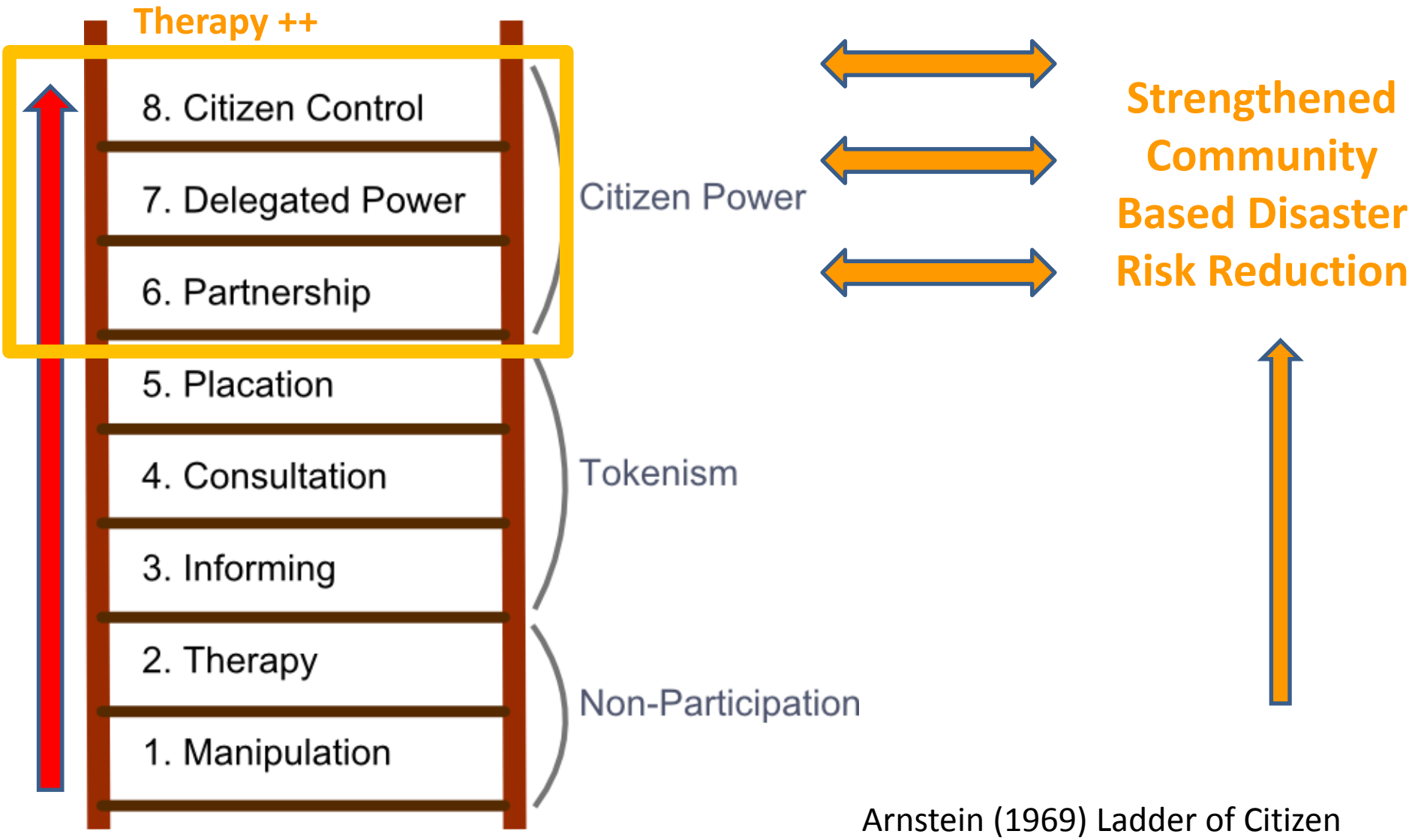
- Including co-chair positions and thematic champions.
- Decisions announced at Durham/Northumbria conference – *process to be announced on www.ukadr.org*

Ingredients of *Alliancing* in DRR

- Co-operation
- Union
- Collectivism
- Collaboration
- Networking
- Partnership building
- Internationalism
- Integration
- Cohesion
- Voice

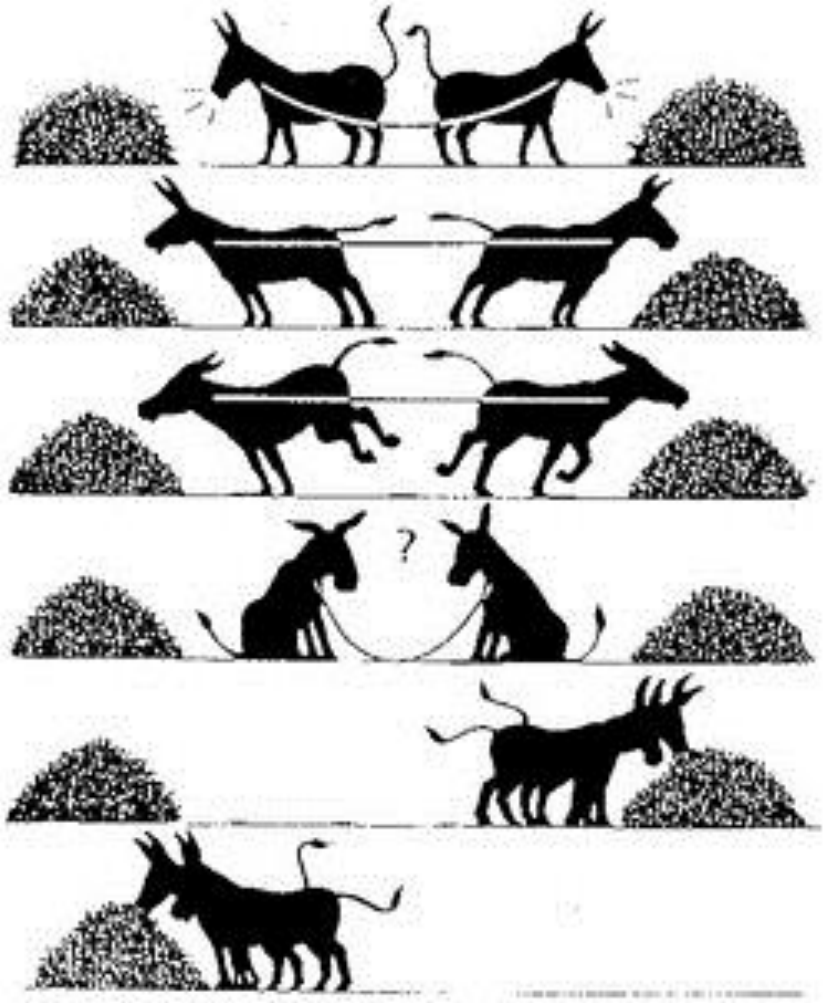
… or what ever you need it to be in order to progress evidence based and impactful disaster risk reduction and sustainable development

Pathways that contribute: e.g. 'Ladder of Participation'



Arnstein (1969) Ladder of Citizen Participation

Pathways that contribute:
e.g. cooperation as better than competition



… and leads to **communicating trust**.

Evident Alliancing Characteristics

- Demand lead
- Action oriented
- Inclusive

Outcome:

More Cooperative, Safer and Sustainable Future that is Fun to Work for!

Thoughts on Alliances

- Collective learning greater than sum of individual learning
- Collectively includes varied experiences, secondary sources, feelings and beliefs
- Works best when participatory and solutions are locally derived and owned
- The more we know the more we are responsible for what we know
- Cooperation that transcends competition – *reclaiming the commons*.

Disaster and Development Network (DDN)
www.northumbria.ac.uk/ddn

Global Alliance of Disaster Research Institutes (GADRI)
www.gadri.net

UK Alliance for Disaster Research (UKADR)
www.ukadr.org

Global Alliance of Disaster Research Institutes (GADRI) - Vision and Future.

World Bosai Forum, Sendai, 27 Nov 2017

North American Alliance of Disaster Research Institutes (NAADRI)

Charles Scawthorn
UC Berkeley PEER

GADRI

Global Alliance of Disaster Research Institutes

To deepen the understanding of disasters and find implementable solutions to achieve a disaster resilient world, by integrating knowledge and technologies from around the world

www.gadri.net

GADRI seeks to contribute to enhancing disaster risk reduction and disaster resilience in close collaboration with organizations around the world through sharing of information, knowledge, experiences and ideas on disaster research.

GADRI Objectives

To achieve the above purpose, GADRI has the following objectives:

- To establish a global research network
- To provide a research road map, and plans and organization of disaster research groups
- To promote capacity development of disaster research institutes and enhance researcher and student exchange
- To promote exchange and sharing of data and information for scientific research across the globe
- To serve as an advocacy organization to speak with one voice in an effort to influence decision-making processes.

Activities

To reach the proposed objectives, GADRI will engage in general key activities with its member institutions as follows:

- Planning and organization of collaborative disaster risk research initiatives
- Formation of international research groups to investigate current global disasters, and implement new research methodologies
- Establishment of an international network for timely communication related to natural disaster research
- Organization of conferences, workshops and meetings
- Dissemination and sharing of information, publications, reports, data, etc.
- Facilitating rapid reconnaissance field surveys following disasters
- Preparation of GADRI news releases, policy recommendations, news bulletins, research reports, and other publications

GADRI – young, and v

7th International Conference on Building Resilience

Date: 27 November 2017 ～ 29 November 2017

Venue:Swissotel Le Concorde, Bangkok, Thailand

World Bosai Forum

Date: 25 November 2017 ～ 27 November 2017

Venue:Sendai International Center, Sendai, Japan

3rd Global Summit of Research Institutes for Disaster Risk Reduction GSRIDRR2017
Expanding the Platform for Bridging Science and Policy Making
19 to 21 March 2017, Disaster Prevention Research Institute, Kyoto University, Uji Campus, Kyoto, Japan
DPRI-KU

First Globa

Date: 24 No

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

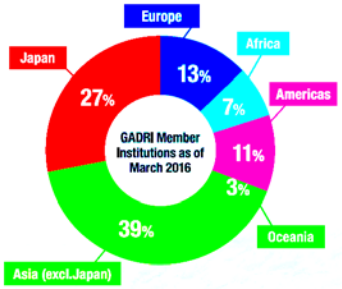
Member Institutions of the Board of Directors

Europe and Africa

- European Commission, Joint Research Center (JRC)
- International Institute for Applied System Analysis (IIASA)
- Disaster and Development Network (DDN), Northumbria University

Americas

- Disaster Risk Research, Institute of Geography, National Autonomous University of Mexico (UNAM)
- Natural Hazards Center, University of Colorado, Boulder
- Pacific Earthquake Engineering Research Center (PEER), National Information Service for Earthc University of California, Berkeley



Asia and Oceania

- International Research Institute of Disaster Science (IRIDeS), Tohoku University
- National Research Institute for Earth Science and Disaster Prevention (NIED)
- National Science and Technology Center for Disaster Reduction (NCDR)
- GNS Science

GADRI Secretariat
Disaster Prevention Research Institute (DPRI)

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E-mail secretariat-gadri@dpri.kyoto-u.ac.jp
WEB www.gadri.net

Members

More than 91 member institutions have joined GADRI - 69 universities and 22 others from 27 states (Australia, Austria, Bangladesh, Brazil, Canada, China, Colombia, Egypt, France, Germany, Indonesia, Iran, Italy, Japan, Rep. Korea, Malaysia, Mexico, Nepal, New Zealand, Sri Lanka, Sudan, Switzerland, Taiwan, Thailand, Turkey, UK, USA), including UN agencies such as UNISDR, UNESCO and UNU.

Membership of GADRI is open to institutes / organizations / networks working with an aim to contribute to disaster risk reduction and disaster resilience.

Organizational Structure

The structure of GADRI includes a General Assembly, a Board of Directors, and a Secretariat. The Secretariat facilitates and organizes GADRI activities. Currently, the Disaster Prevention Research Institute (DPRI) of Kyoto University serves as the Secretariat to initiate these activities.

Projects

1 Flagship Projects

Projects which aim at development of methodologies, information platforms and materials which can be shared among GADRI members.

···e.g. Risk Assessment Platform, Capacity Building

2 Thematic Projects

Projects concerned with research topics to enhance collaboration between members of GADRI who share interests in the same thematic research fields.

···e.g. NaTech Research, Seismic Risk Mitigation, Geohazard Risk Reduction, Climate Change Adaptation

3 Transdisciplinary and Region Specific Projects

Projects concerned with case studies to solve real world problems in a specific area.

···e.g. Flash Floods and Water Resources Management in the Arabic Region

GADRI activities are not limited to research projects!

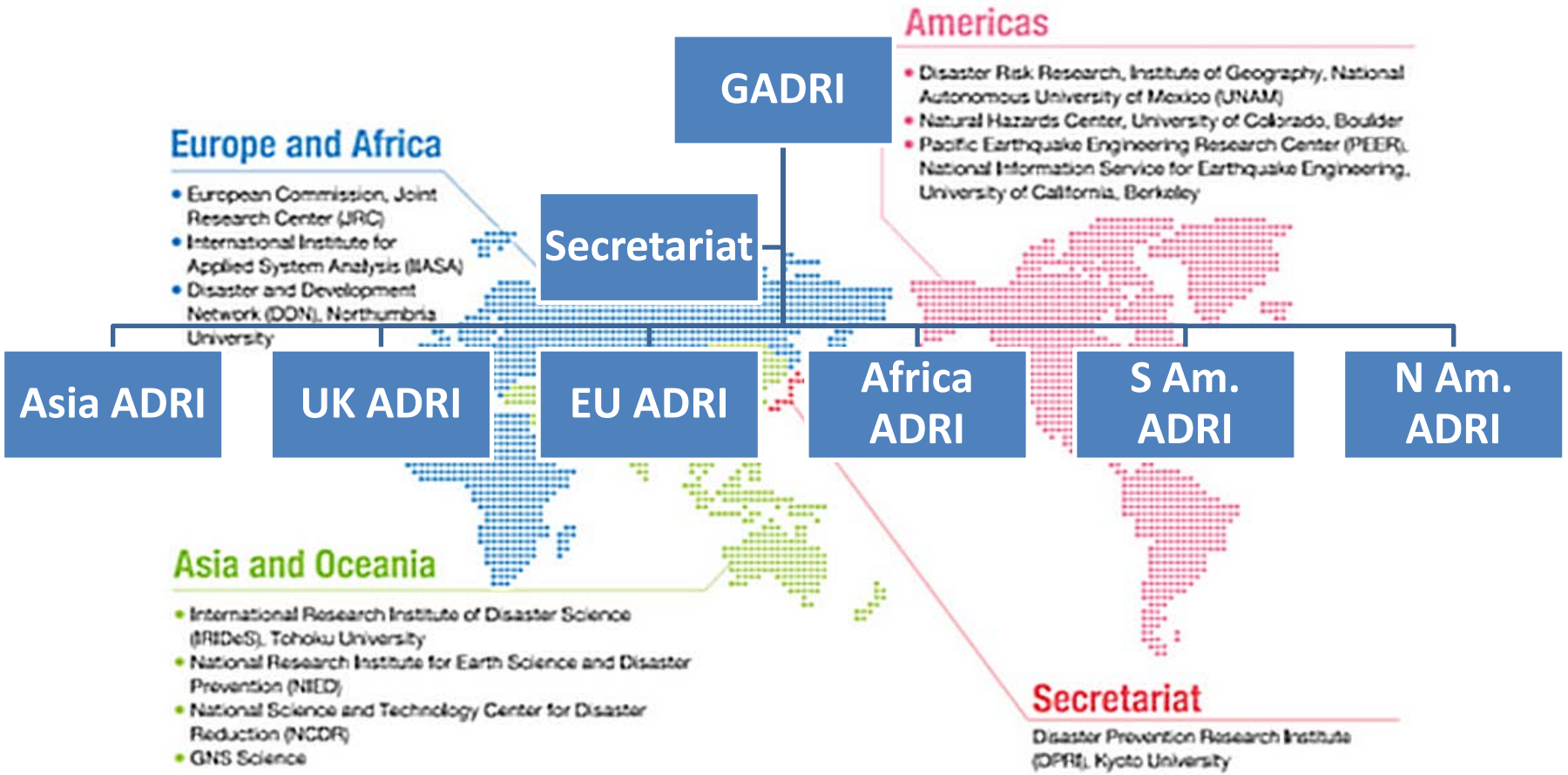
GADRI membership is free.
We welcome you to join and work together to further disaster research and risk reduction

Dr. Hirokazu Tatano, Secretary-General
Professor and Head, Social Systems for Disaster Risk Governance
Disaster Prevention Research Institute (DPRI), Kyoto University

f Disaster Research Institutes (GADRI) - Vision and Future
World Bosai Forum, Sendai, 27 Nov 2017

GADRI Governance

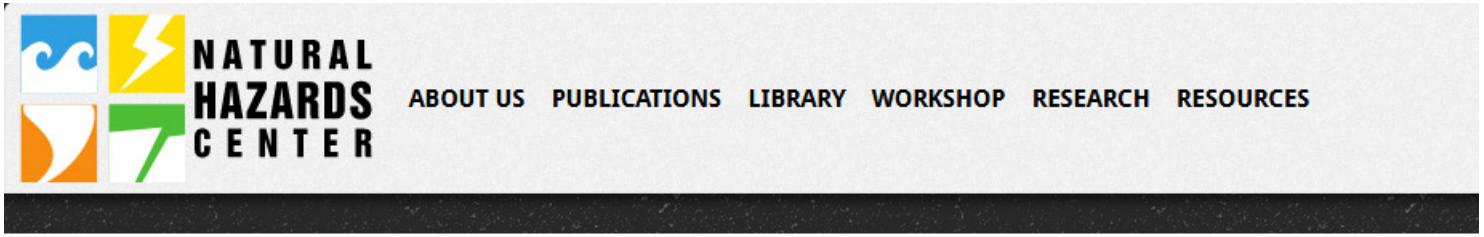
- Currently, BOD elected globally
- In future, may be composed of representatives of Regional Councils



Americas

- Disaster Risk Research, Institute of Geography, National Autonomous University of Mexico (UNAM)
- Natural Hazards Center, University of Colorado, Boulder
- Pacific Earthquake Engineering Research Center (PEER), National Information Service for Earthquake Engineering, University of California, Berkeley

Precise number of DRIs in the Americas is unknown (depends on definition…) but in US alone > 100



Towards the goal of learning if there is interest in a N. American Alliance of DRIs, a session was convened at the Natural Hazards Center 2017 Annual Meeting, in Boulder Colorado.

Over 50 US and Canadian DRIs attended.

There was strong interest.

Including from Federal agencies (NSF, NIST…)

Next Steps

- February 2018 meeting of “Centers Coalition” (existing loose organization of US DRIs) to discuss if it should become NAADRI
- Depending on decision…NAADRI?
- GADRI session at 2018 Annual Meeting

Thank You

cscawthorn@berkeley.edu

African Alliance for Disaster Research Institutes (AADRI)

Vision and Future

WORLD BOSAI FORUM

25th – 28th NOVEMBER 2017

By Prof Desmond Manatsa (interim chair AADRI)

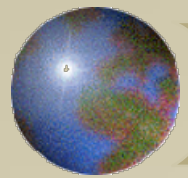
What hazards and vulnerabilities does Africa face?

Hazards

- Droughts
- Floods
- Cyclones
- Landslides
- Diseases
- Earthquakes
- Insect infestations

Vulnerabilities

- Poverty
- Urbanization
- Social and economic inequalities
- Environmental degradation
- Gender relations
- Illiteracy
- HIV and AIDS
- Corruption



What is AADRI?

What is the rationale for AADRI?

- Africa's disaster research community is fragmented and diverse
- No clear collaboration and partnership to inform decision-making in African
- Africa's disaster research output is less than 1% of global disaster research
- No hub of Africa's disaster research

What is AADRI?

Forum for advancing disaster risk reduction knowledge through:

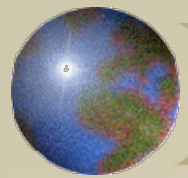
- Producing knowledge
- Sharing knowledge
- Promoting collaboration and partneship
- Provide a unified message for policy makers across Africa

What is AADRI?

- A membership organisation comprising:
  - Universities
  - Government organizations
  - Non-governmental Organisations
  - Private sector organisations
  - Disaster Research PhD students

Organisation of AADRI

- An independent alliance that will be managed by voluntary contributions from the Africa's research community
- Secretariat hosted by School of Climate Change and Disaster Research; Bindura University, Zimbabwe
- Rotating committee including chair



What is AADRI's Strategy?

What are main themes for AADRI?

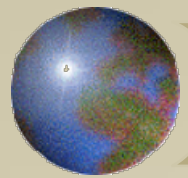
- Disasters Risk Reduction
- Climate Change Adaptation
- Sustainable Development

Collaboration and partnerships

- International
  - GADRI
  - UKADRI
  - UNISDR (Science and Technology)
- African Region
  - PERI PERI U
  - ACDS
  - RIASCO – Regional Inter-agency standing committee
  - UINSDR Africa

ACTION PLAN FOR AADRI

Action	Period	Stage of implementation
1. Initiation & hosting institution & constitution	Sept 2017	Interim chairman and hosting institution selected. Constitution done
2. Application for membership to GADRI	Oct 2017	Membership to GADRI confirmed
3. AADRI website development	Oct-Dec 2017	Website Developed remains populating it
4. Membership Drive	Nov 2017- Jan 2018	10 institutes in 4 countries have already expressed willingness to join AADRI. Consultations still in progress for more members
5. Formation of AADRI interim committee	March 2018	Consultations Pending
6. Selection of AADRI substantive committee	August 2018	Conference Pending



Thank you

DRMKC report

Science for disaster risk management 2017: knowing better and losing less

World Bosai forum
25-28 November 2017, Sendai, JP

Elisabeth Krausmann

Elisabeth.KRAUSMANN@ec.europa.eu

Joint Research Centre
the European Commission's
in-house science service

JRC Science Hub: ***ec.europa.eu/jrc***

Disaster Risk Management Knowledge Centre

Ensuring the uptake of science in DRM policy formulation and implementation.

http://drmkc.jrc.ec.europa.eu/

About JRC

"As the science and knowledge service of the Commission our mission is to support EU policies with independent evidence throughout the whole policy cycle"

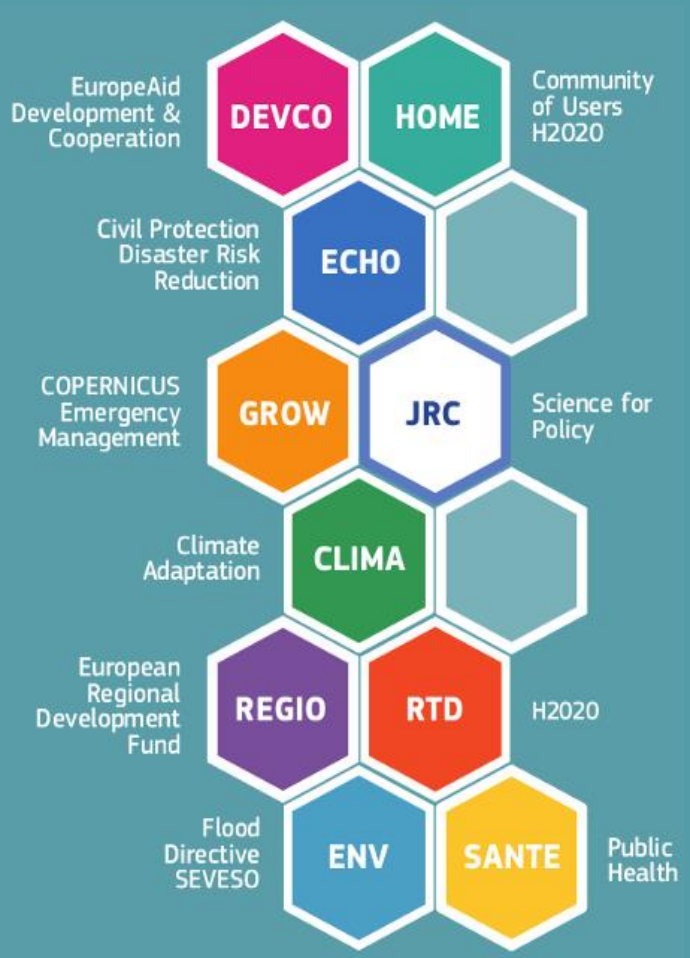
- 6 locations in 5 Member States: Italy, Belgium, Germany, The Netherlands, Spain
- Policy neutral: has no policy agenda of its own
- 42 large scale research facilities,
  more than 110 online databases
- 1500 core research staff,
  3000 total staff
- 83% of core research staff with PhD's
- Over 1,400 scientific publications per year

European Commission

Disaster Risk Management Knowledge Centre

DRMKC Large scientific community for DRM

EC Directorates



DRMKC

PARTNERSHIP

1 Hazard Scientific Partnerships

2 Science Policy Interface

KNOWLEDGE

3 Pooling of Research Results

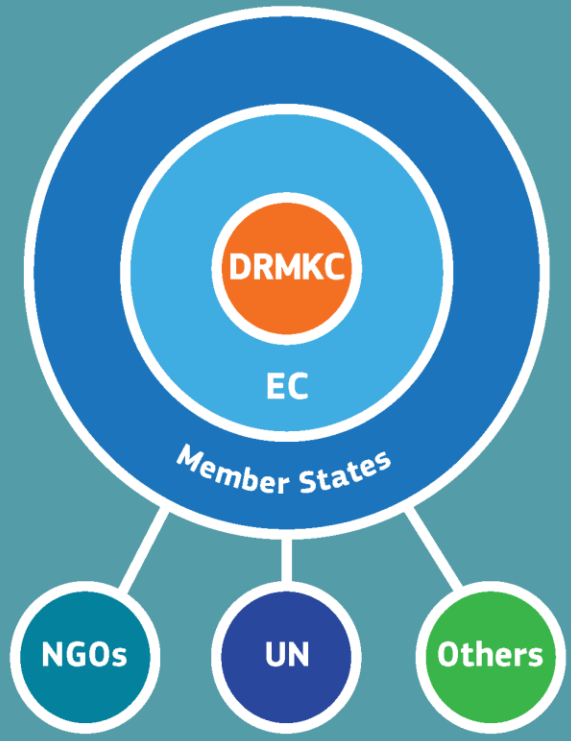
4 Identification of research needs and gaps

INNOVATION

5 Networks of Laboratories

6 Support System

Serving



What?

PARTNERSHIP

Improving science based advice through networks and partnership

Where knowledge begins

Fostering EU-level **disaster science networks** in support to the European Response Coordination Centre (**ERCC**) and Member States.

Where knowledge applies

Improving the science-policy interface by providing science-based advice to **policy development** services and support to Member States for **policy implementation**.

KNOWLEDGE

Improving the use and uptake of research and operational knowledge

Where knowledge meets

Pooling of information and granting access to scientific results and expertise to boost **transfer of research outputs** to end-users.

Where needs are identified

Disseminating knowledge, research results and information looking for **identification** of research **needs and gaps** in disaster risk and crisis management.

INNOVATION

Advancing technologies and capacities in disaster risk and crisis management

Where gaps are filled

Implementing a Support System for Member States providing **scientific** and **technical advice** for **harmonized development**.

Where innovation is tested

Developing dedicated **technologies** and **capabilities** to support different types of emergency management operations and disaster recovery processes.

What? Objective 4

DRMKC periodic scientific reports present the European contribution to the UNSIDR Science and Technology Roadmap of **Sendai framework for DRR** and show possibilities to strengthen society's resilience by using science and technology.

DRMKC Periodic Science Reports:
First in a series ....May 2017

Available online

http://drmkc.jrc.ec.europa.eu/knowledge/Challenges-Sharing

European Commission

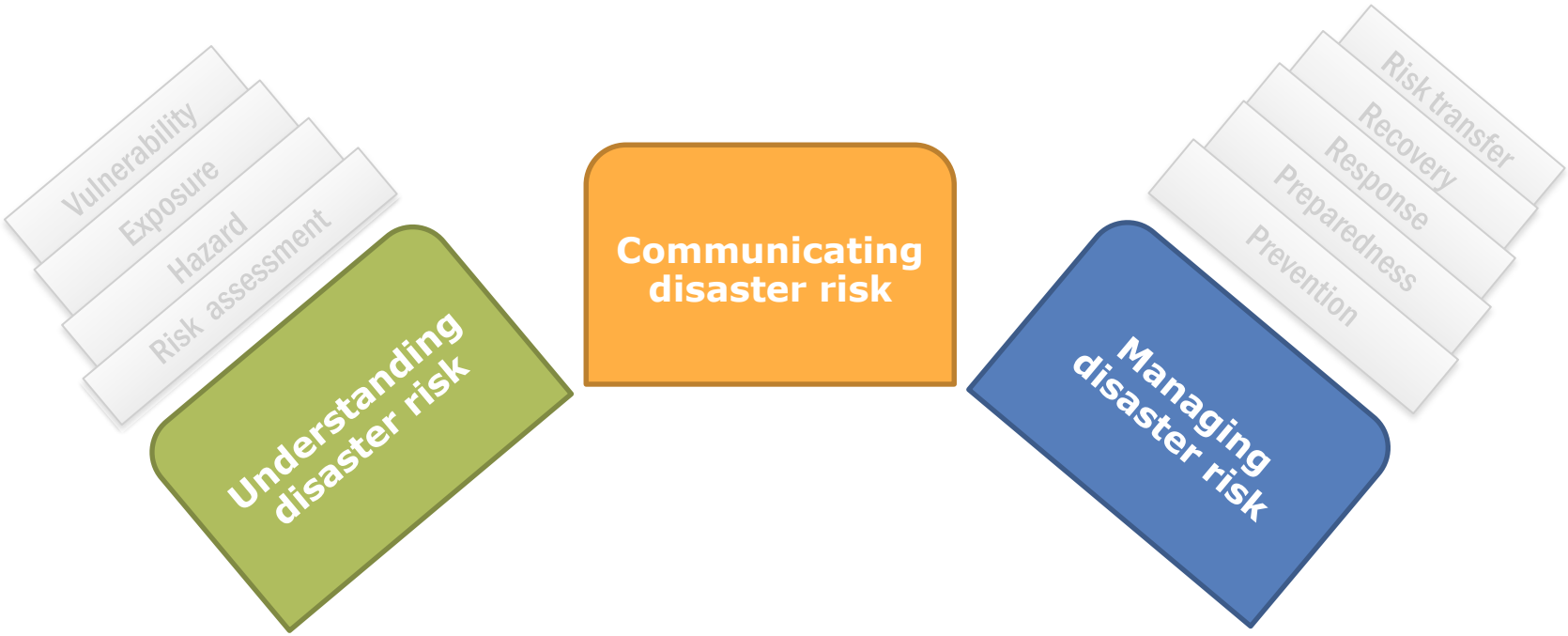
SCIENCE FOR DRM 2017: Knowing better and losing less

Expectations at the conceptual level

Title	• **Science for DRM**
Purpose	• Reviews of the **scientific solutions** in DRM for **policy makers, practitioners and scientists**.
Focus	• **European contributions**, but on topics that can be global scale
Scope	• **Comprehensive** in scope but selective in topics covering understanding, communicating and managing disaster risk
Message	• **Knowing better and losing less**

Bridge concept

Understanding risk to manage it



Current status of DRM

HOW?

Future challenges of DRM

SFDRR

Paris agreement

SDGs

European Commission

Science for DRM 2017
Knowing better and losing less

Scope • Table of content at the concept level

Foreword
Preface
Executive Summary

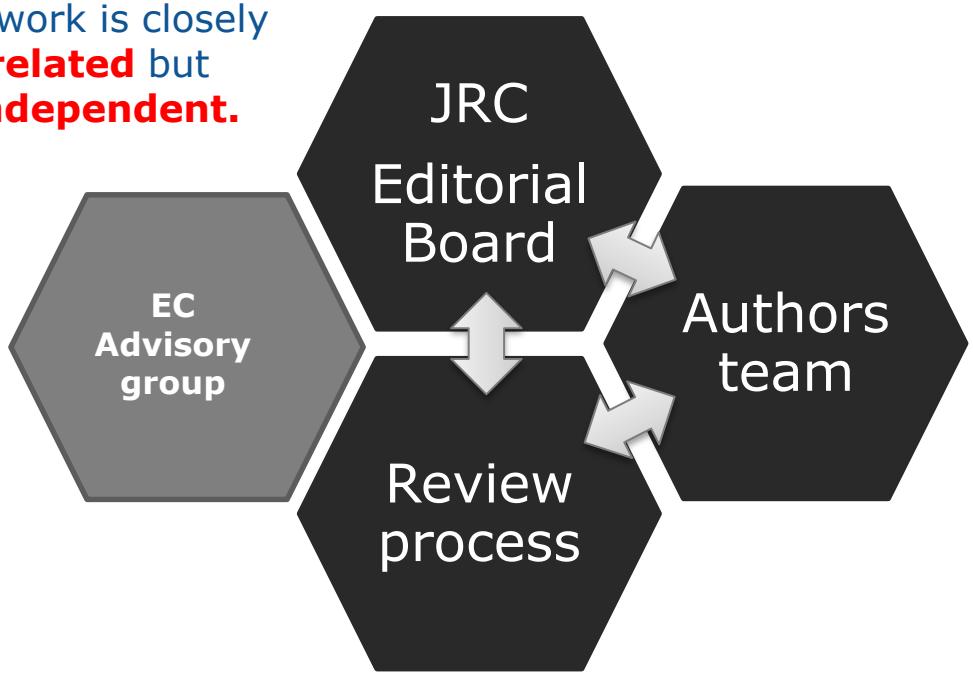
1. **Current status of DRM and policy frameworks**
2. **Understanding disaster risk: Risk assessment methodologies and examples**
3. **Understanding disaster risk: Hazard related risk issues**
4. **Communicating disaster risk**
5. **Managing disaster risk**
6. **Future challenges of DRM**

3. Understanding disaster risk: Hazard related risk issues in EU

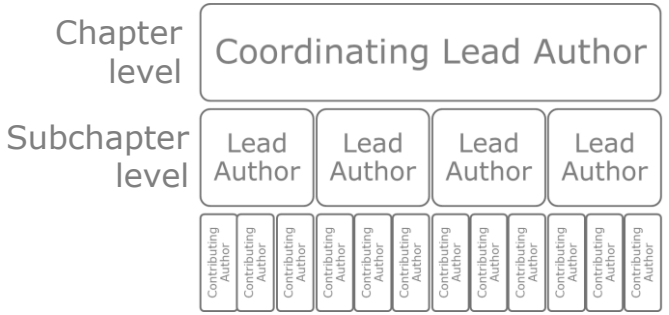
- Geophysical risk: earthquakes
- Geophysical risk: volcanic activity
- Geophysical risk: tsunamis
- Hydrological risk: floods
- Hydrological risk: landslides
- Hydrological risk: wave action, surges and coastal flooding
- Meteorological hazard: extratropical cyclones, tropical cyclones, convective storms,
- Meteorological hazard: extreme temperatures,
- Climatological events: droughts
- Climatological events: wildfires
- Biological risk: epidemics
- Technological risk: chemical releases
- Technological risk: nuclear accidents
- Technological risk: Natech

Organizational structure

Their work is closely **interrelated** but still **independent.**



- **Coordinating Lead Authors**
- **Lead Author**
- **Contributing Authors**



- **Scientific experts** (accuracy and completeness of scientific data)
- **Target readers** (accessibility and relevance of information

We gave scientists, policymakers and practitioners opportunity to **"sit around the same table".**

European Commission

Network

160 Authors

123 Reviewers

172 Organizations

26 Countries

79 EC Advisors

11 DGs

273 Contributors

Scientific experts

Policy makers

Practitioners

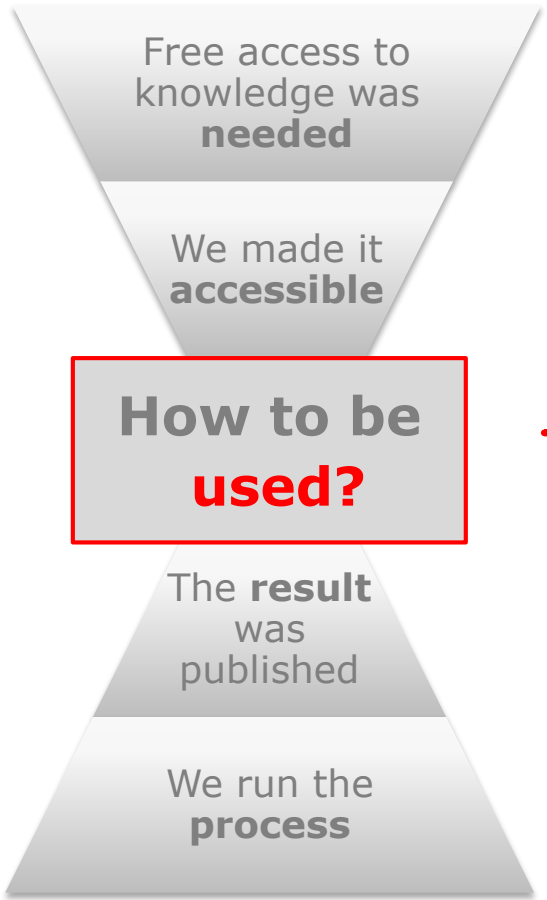
Other DRM actors

…from both communities,
CCA and DRR

European Commission

Done?

Not until someone uses it for something real



All DRM actors	• For increasing **awareness**
Scientists	• As a **reference book** for further exploration and transfer of knowledge
Policymakers	• For **better informed decision making**
Practitioners	• To **enrich the experiences** as a source of the useful scientific solutions
Young people	• as a **textbook** for the university curriculum (summer course preparation in progress)

European Commission

SCIENCE FOR DRM 2017: Knowing better and losing less

Now available online

http://drmkc.jrc.ec.europa.eu/knowledge/Challenges-Sharing

Next DRMKC report SCIENCE FOR DRM 2020

Join us!

for the next one

http://drmkc.jrc.ec.europa.eu/

Planning for the end of year 2017:

- **17 November 2017 -** Publish online the **content for a 3-week public consultation**
- **20 December 2017** - **Call for expression of interest** for authors and reviewers

Next DRMKC report – Science for DRM 2020

Expectations at the conceptual level

Title	• **Science for DRM 2020**
Purpose	• Provide science-based and prevention-oriented solutions in DRM for decision-makers, practitioners and citizens
Focus	• Global contributions, but on topics that are relevant and impacting to the EU
Scope	• Comprehensive on DRM cycle and disaster impacts, emphasising the role of communication in articulating disciplines, sectors and stakeholders
Message	• Preventing risks, reducing losses (*preliminary*)

Draft Contents

Introduction

- Review of hazards
- Moving from DM to DRM (risk approach)
- Local solutions for global disasters

Integrating the DRM Cycle

- Risk assessment
- Risk management planning
- Implementing risk management measures

Impacts and Assets at Risk

- Disaster impacts assessment
- Assets related risk issues:
  - **Population**
  - **Infrastructures**
  - **Economy**
  - **Environment**

Communicating disaster risk

- Linking stakeholders, sectors and governance
- Citizen participation & public awareness
- Integrating tools for for comms systems

Going Global

- Synergies of EU expertise with the rest of the world

Disaster Prevention Research Institute
KYOTO UNIVERSITY
Gokasho, Uji, Kyoto 611-0011, Japan

NATECH RISK MANAGEMENT

Ana Maria Cruz
Professor
Disaster Prevention Research Institute Kyoto University
anamaria@drs.dpri.kyoto-u.ac.jp

Bosai Forum
GADRI Session
27 November 2017

Source: Photo arrangement by Cozzani, 2015

OUTLINE

- 1. What are Natechs?
- 2. Natech risk management
- 3. Research on Natechs
- 4. Challenges for Natech risk reduction
- 5. How GADRI can contribute
- 6. GADRI endorsed project funded by DPRI

1. What are Natechs?
"Natural hazard-triggered chemical accidents"

Refinery oil spill during Coffee Ville, Floods, Kansas, USA, 2007 (Source: Cjonline 2007)

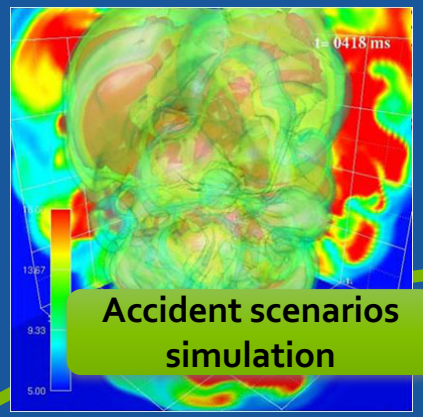
- Catastrophic scenarios and cascading events
- Multiple damaged units
- Fires explosion dispersion contamination
- Mitigation and emergency response hampered

JX Refinery (top), Kesennuma oil tsunami fires (bottom), Tohoku EQ, Japan, 2011 (Source: 47News 2011)

2. NaTech risk management

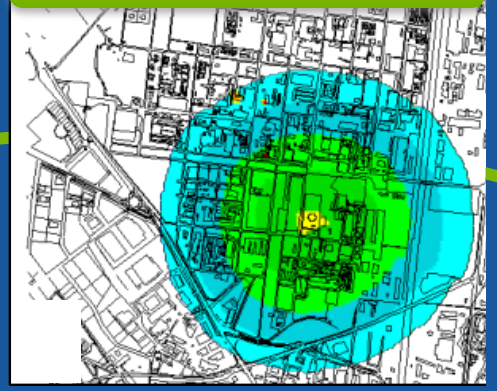
Risk assessment

Risk management



Accident scenarios simulation

Modeling consequences

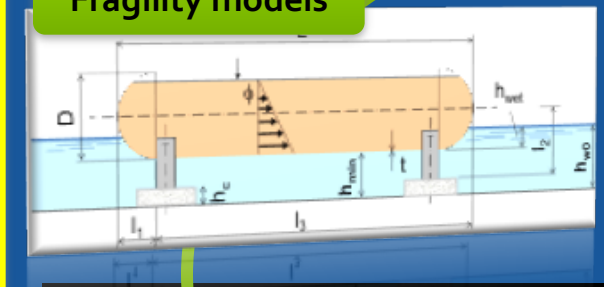


Mitigation and prevention

Creation of an artificial hill at the Sendai refinery for safeguarding emergency response equipment

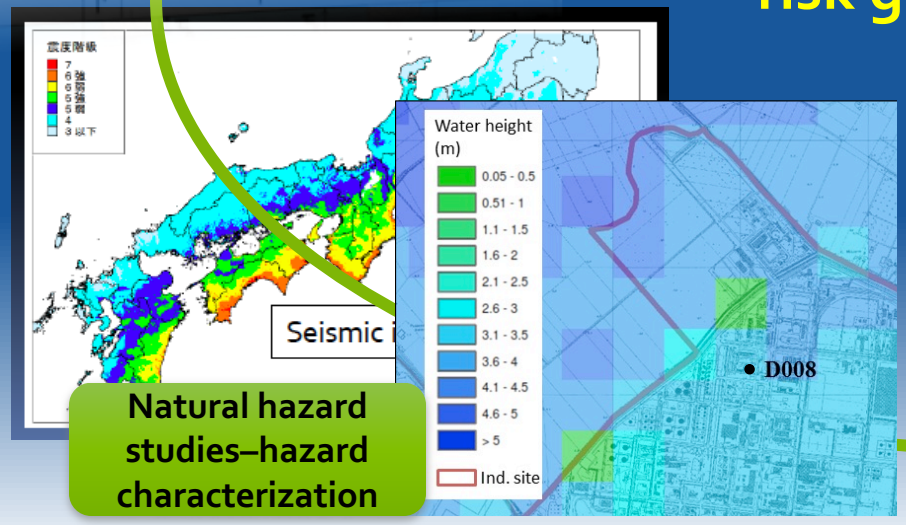
Retrofitting of an LPG sphere in Sendai by reinforcing the tank braces

Fragility models



Multidisciplinary,

risk governance problem



Natural hazard studies–hazard characterization

Reconstruction and recovery

Emergency measures

(Slide adapted from Landucci, G and Cruz, AM. 2015)

4. Research on Natechs

- Empirical studies to understand failure mechanisms and equipment vulnerabilities to propose **fragility models** (Cozzani, Landucci, Necci 2015, 2014; Krausmann & Cruz 2013, 2010; Antonioni et al. 2009; Cruz & Krausmann 2008, 2009; Salzano et al. 2003; Fabbroccino et al. 2005)
- Development of **qualitative** risk assessment (RA) methodologies (Cruz and Suda 2015; JRC-EC Rapid-N by Girgin & Krausmann 2012; Busini et al. 2011; Cruz and Okada 2008; Krausmann and Mushtaq 2008)
- **Development of quantitative risk assessment (QRA)** methodologies (Cozzani's group, U. Bologna):
  - Campedel et al. (2008) used the above findings and proposed a quantitative methodology for earthquake related Natech risk assessment (similar efforts are being made for flooding and lightning)
  - Necci et al. (2014) assessed lightning impact frequency for process equipment
  - Antonioni et al (2007, 2015; and Cozzani (2015) proposed quantitative assessment of risk due to NaTech scenarios caused by earthquakes and floods

Research on Natechs (cont.)

- **Improving equipment design and hard countermeasures** for risk reduction (Hamada et al. 2016; Kato et al. 2016; Zama et al. 2012, 2008, 2004; Landucci et al. 2016; Nishi 2012; Ibata et al. 2012; Hatayama et al.2015; etc.)
- **Improving consequence assessment and modeling** (Tsunami oil spills, earthquake and tsunami fire-Thaw et al. 2017; Kato et al. 2016; Nishino and Imazu 2016; Nishino et al. 2012; Cruz et al. 2010;
- **Improving soft countermeasures (risk prevention programs, updating codes/ standards, regulatory frameworks** (Krausmann, Cruz, Salzano 2016; Cruz, Kajitani and Tatano 2014; Cruz and Okada 2009; Cruz et al. 2006; Steinberg et al. 2008; Showalter and Myers 1996)
- **Community impact assessment and disaster prevention (Hazard adjustments, risk perception, risk communication, evacuation planning, emergency response** (Yu et al. 2017; Yu and Cruz 2016; Yu et al. 2016, 2015; Basolo et al. 2008; Steinberg et al. 2004; Lindell and Perry 1997, 2000, 2001, 2003)

Summary of Natech research (3rd Global Summit 2017)

Approach / Categories	Earthquake			Floods			Lightning			Storms			Tsunami			Hurricanes			Volcanic eruptions			Landslides			Extreme Temp.			Wildfires			Droughts			Multihazard and crosscutting		
	Qualitative	Semiquantitative	Quantitative	Qualitative	Semiquantitative	Quantitative	Qualitative	Semiquantitative	Quantitative	Qualitative	Semiquantitative	Quantitative	Qualitative	Semiquantitative	Quantitative	Qualitative	Semiquantitative	Quantitative	Qualitative	Semiquantitative	Quantitative	Qualitative	Semiquantitative	Quantitative	Qualitative	Semiquantitative	Quantitative	Qualitative	Semiquantitative	Quantitative	Qualitative	Semiquantitative	Quantitative	Qualitative	Semiquantitative	Quantitative
Hazard assessment																																				
Risk Analysis																																				
Risk Assessment																																				
Prevention and mitigation																																				
BCP+R^3 (Reconstruct, Recovery, Restoration)																																				

Methods and methodologies: Hazard / Approach	Earthquake	Floods	Lightning	Storms	Tsunami	Hurricanes	Volcanic eruptions	Landslides	Extreme Temp.	Wildfires	Droughts	Multihazard and crosscutting
Qualitative												
Semiquantitative												
Quantitative												

Proportion of articles

Low — High

5. Challenges for Natech risk reduction

- Still lack of empirical data and field surveys (floods, tsunami…)
- Need for area-wide Natech risk management frameworks (area-BCP proposed by JICA (Baba et al. 2014) could serve as model framework)
- Need for minimum standards for Natech risk management (definition of scenarios, critical equipment, combination of cascading events and determining event frequencies)
- Need to apply and test emerging methods/ tools
- Still large gap between agencies/organizations and disciplines ("join hands" "bridge the gap" N. Okada) : studies in crises management in different cultural contexts – integrated risk governance
- Integrated Natech risk governance (move towards "people centered" actions

6. How GADRI can contribute

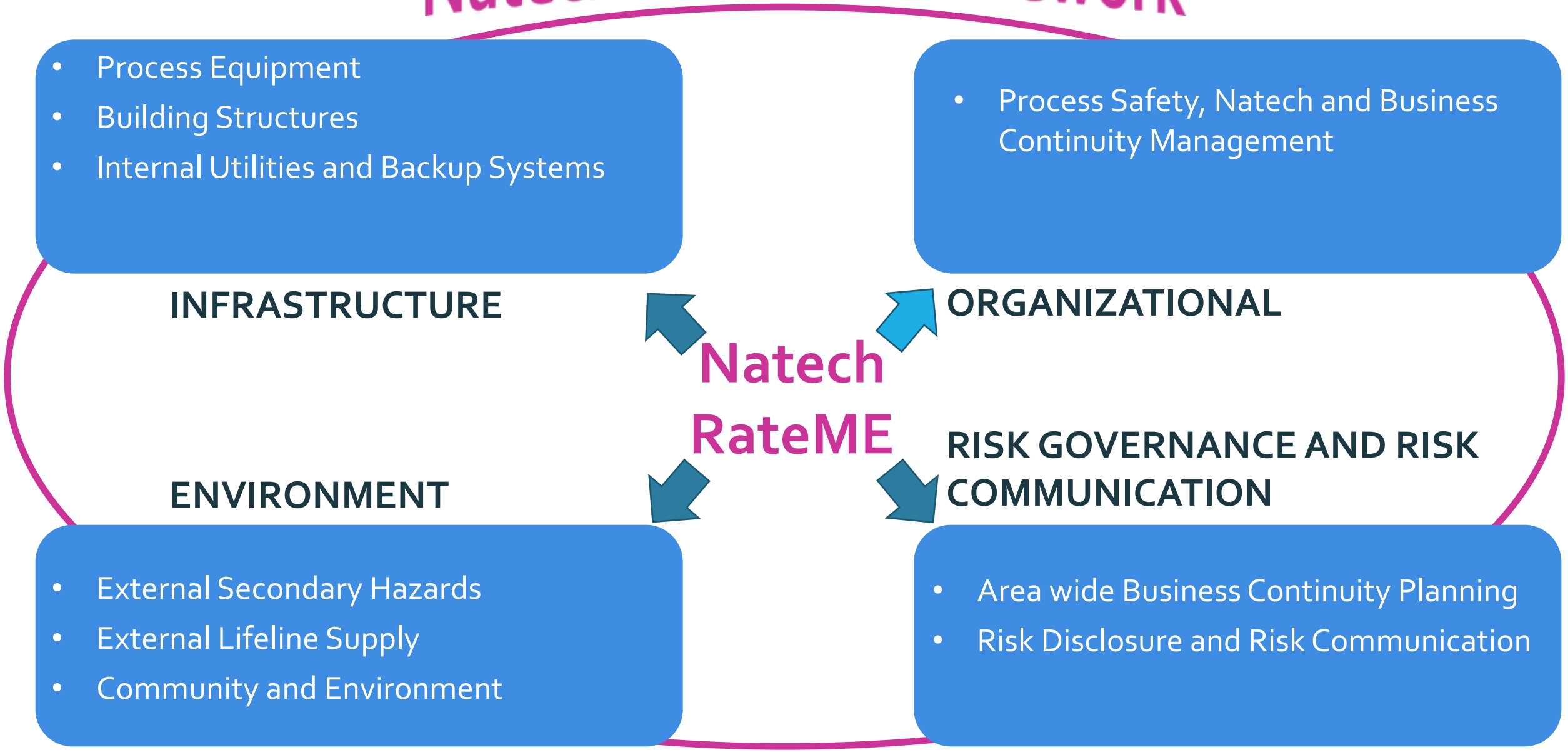
- Data collection and sharing lessons learned (locally, globally)
- Benchmarking of methods and models; model and tool testing
- Development of international risk management standards (or minimum rules)
- Rating system to assess performance of industry when faced with Natech events
- Natech is relatively new, capacity building is needed at all levels, in all countries

6. GADRI endorsed project funded by DPRI

Development of a Comprehensive area-wide industrial performance rating system for extreme events: Natech-RateME

María Camila Suarez and Ana María Cruz
Disaster Risk management Lab
DPRI, Kyoto University

Natech RateME Framework

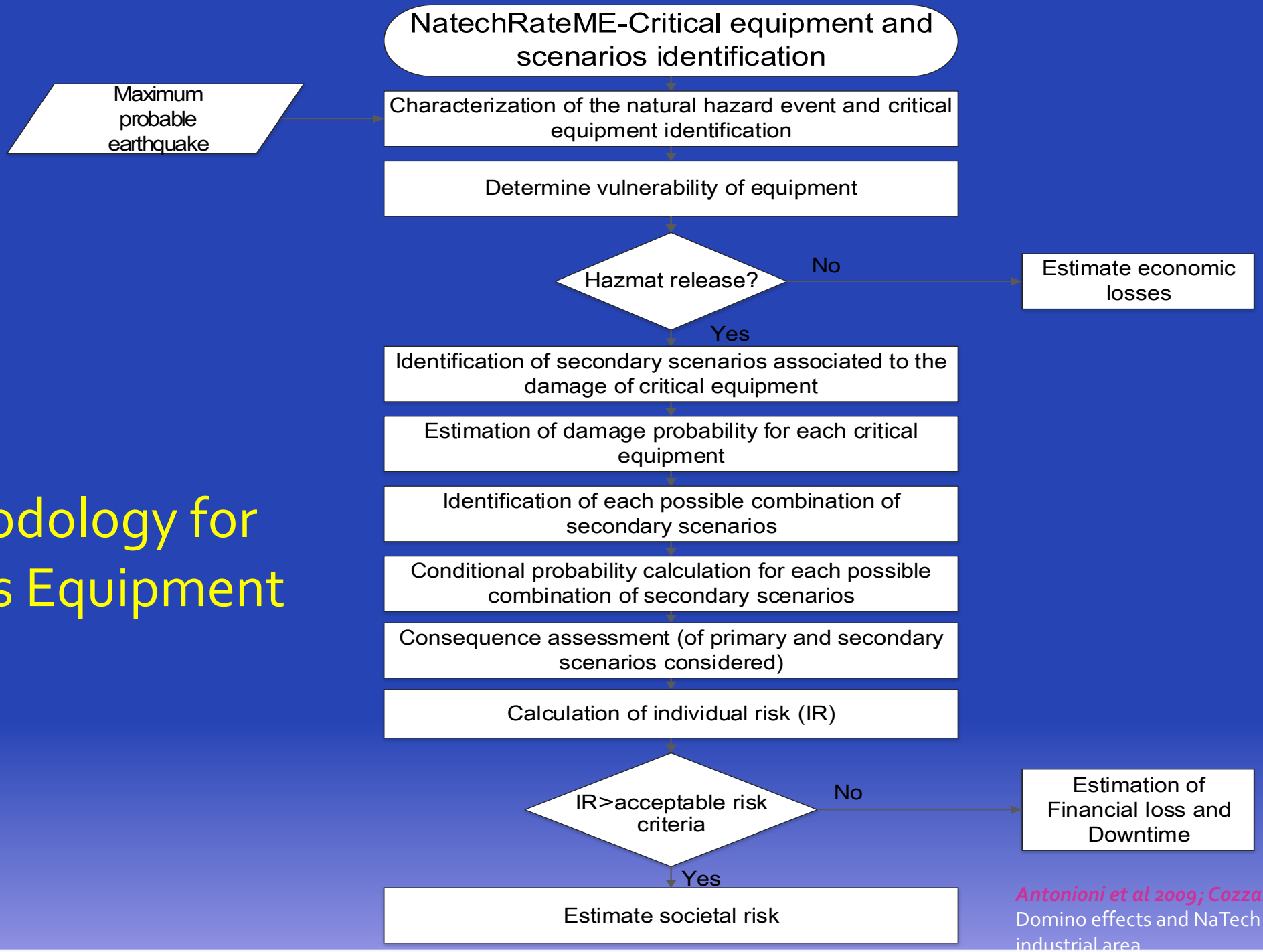


Process Equipment and Performance Criteria

- Maintain structural integrity
- Maintain position
- Maintain containment of material
- Function immediately following an earthquake

Pipes and storage tanks are the most vulnerable equipment for earthquakes, floods and lightning. *E. Krausmann et al 2011* *CalARP, 2013*

Methodology for Process Equipment



Antonioni et al 2009; Cozzani et al 2014
Domino effects and NaTech scenarios in extended industrial area

Methodology for Building Structures

NatechRateME- Evaluation of potential earthquake hazardous scenarios

FEMA 154 methodology adapt.

Potential unsafe building identification

Estimate of collapse probability score

Score > Threshold value

No

Verify results with FEMA-178 methodology (ASCE/ SEI 41-06 standard)

Probability of collapse > threshold value

No

Building damage state

Yes

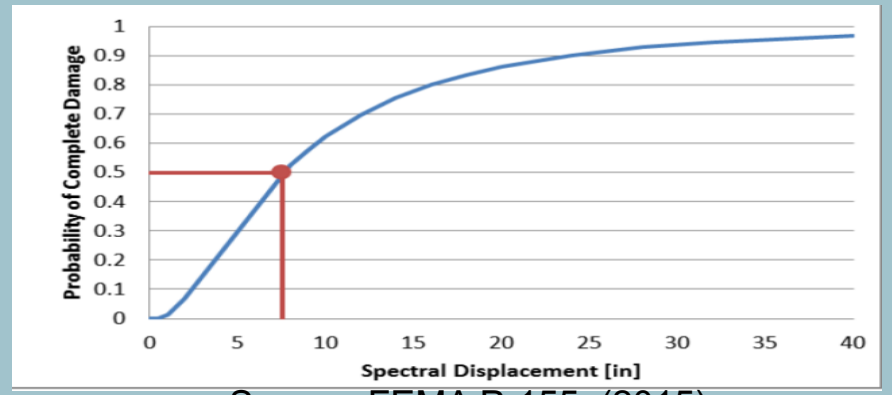
Yes

FEMA-P58 methodology adapt.

Conduct a detailed analysis of unsafe buildings

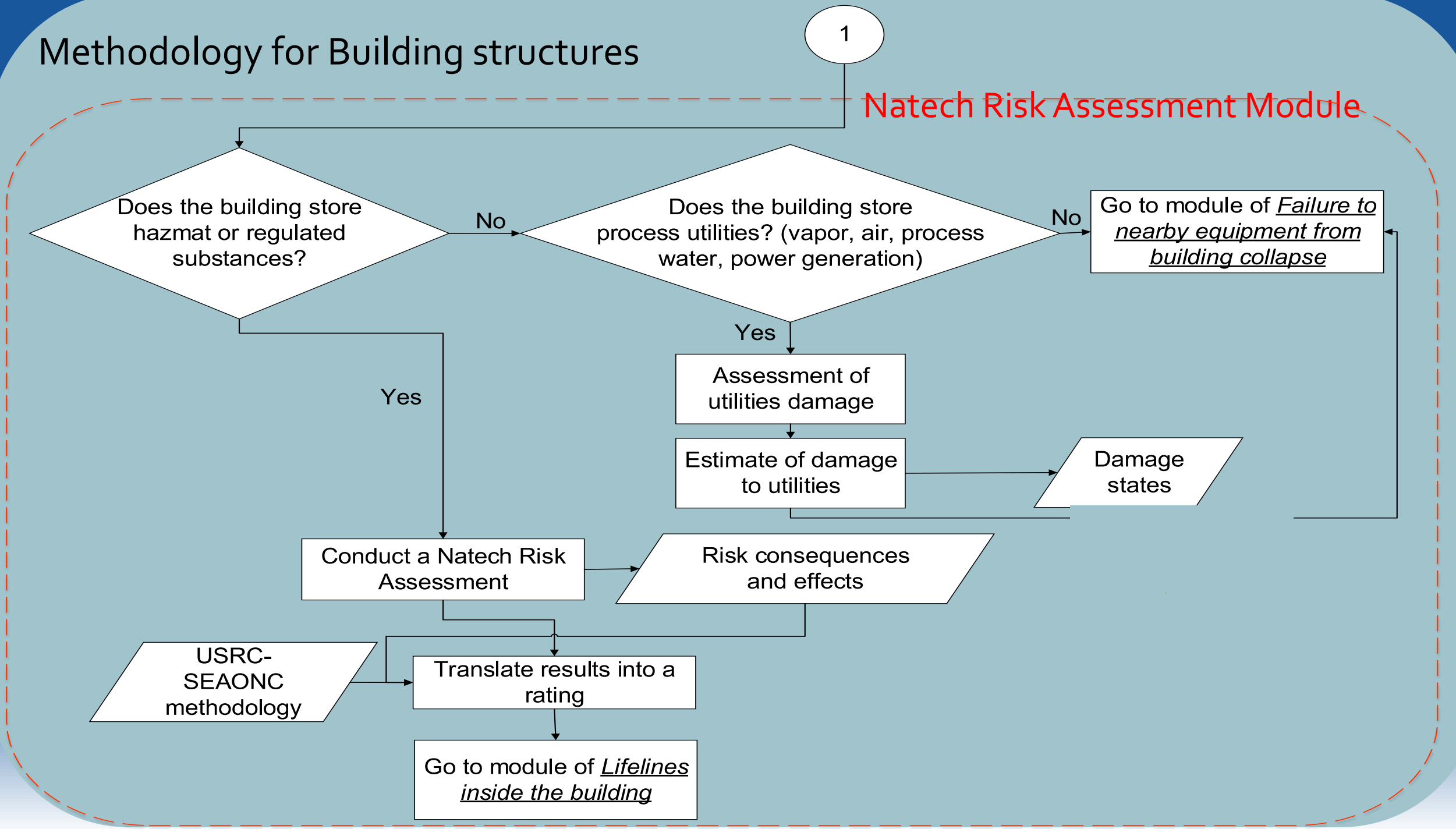
Casualties
Downtime
Financial Loss
Due to building damage/collapse

1



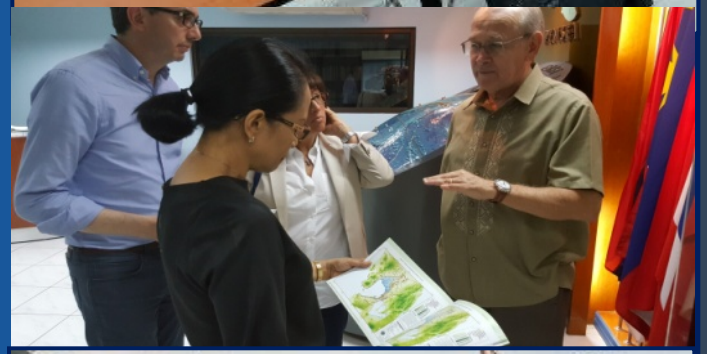
Source: FEMA P-155, (2015)

Methodology for Building structures

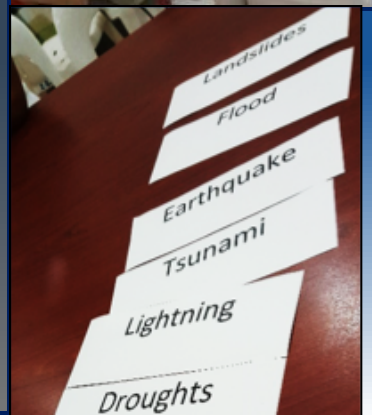


Field visits and presentation of NatechRateMe
1-17 December, Colombia
Industry and ports, National and local government, researchers

VISIT TO BATAAN, PHILIPPINES (March 2017)



1. Visits with Bataan industries, govern.
2. Present NATECH proposal & explore interest in Natech risk management framework
3. Meeting with Partnerships in Environmental Management for the Seas of East Asia (PEMSEA)
4. Meeting with Bataan mayors and governor to discuss chemical accident prevention, and Natechs
5. Meeting with Responsible CARE of Bataan area



Future Work

- Complete the construction of detailed flow diagrams of each component of the Natech-RateME framework.
- Validate and discuss the methodology with experts.
  - **Field trip to Colombia – December 2017**
  - **Presentation and discussion with experts, Japan (Feb-Jun 2018)**
  - **Discussion with experts in U. Bologna, Italy (Sept. 2018)**
- Apply NatechRateMe framework and conduct multi-stakeholder workshops in case study area.


Thank you for your attention !
ありがとうございます
Xie Xie
شكرا
Gracias
Grazie
Merci
Danke

GADRI Book / Publication Series

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GADRI
Global Alliance of
Disaster Research Institutes

Background and Motivations

- Knowledge, regulations and policy measures are falling short to ensure disaster resilient societies because they are applied in an isolated manner.
- The gap remains large between what is known and what needs to be done.
- Disaster risk issues should be managed in a holistic and integrated manner.
- There is a need for multi-disciplinary and holistic approach
- That will integrate different disciplines , different stakeholders and experts .

Objectives of GADRI Book Series

- Provide visions and knowledge to connect to the current status of science and technology with future directions for disaster research to contribute for disaster resilient communities.

- Focus :
  - (i) Deepening the understanding of risks from the perspectives of different disaster research domains.

  - (ii)Managing and planning disaster risk reduction.

Target Audience

- Researchers (across the descipinces) and students
- Policy Makers , Planners and Practitioners

Book Series

- **Deepening the Understanding of Risks –**

  - (i) Hydrometeorology Related
  - (ii) Earthquake and Tsunami Related
  - (iii) Volcano, and Compound and Technological Disasters Related.
  - (iv) Landslides and Surface Processes Related
  - (v) Social and Human Science Related

Book Series

- **Managing and Planning Disaster Risk Reduction (DRR)**
  - (i) Enhancing Risk Governance to Manage Disaster Risks
  - (ii) Disaster Risk Reduction for Resilience
  - (iii) Disaster Recovery and Build-Back-Better

  - (iv) Interdisciplinary Approaches and Methods for Hazards and Disaster Researcher
  - (v) Health Related Issues in Disaster Risk Management