



# Overview of IRDR Mission and Achievements

Qunli Han/John Handmer  
30 September 2019, Geneva

A international research *programme focused on*

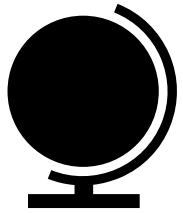
# ***Integrated Research on Disaster Risk***

**Mission**

**2010-2020**

**Research Objectives**

To develop trans-disciplinary, multi-sectorial alliances for:



in-depth, practical disaster risk reduction research studies



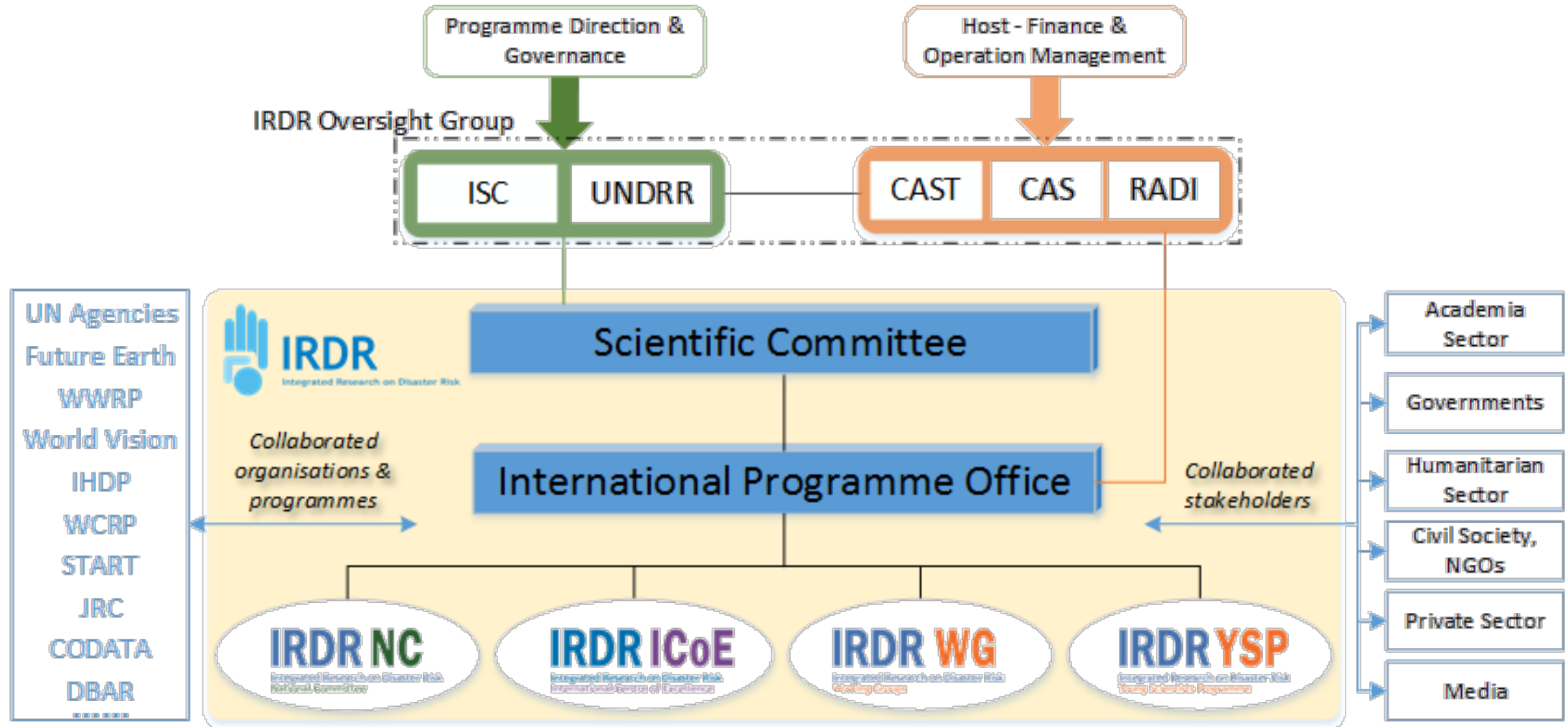
the implementation of effective evidence-based disaster risk policies and practices.

Characterisation of hazard, vulnerability and risk.

Effective decision-making in complex and changing risk context.

Reducing risk and curbing losses through knowledge-based actions.

# IRDR Structure



# IRDR Scientific Committee

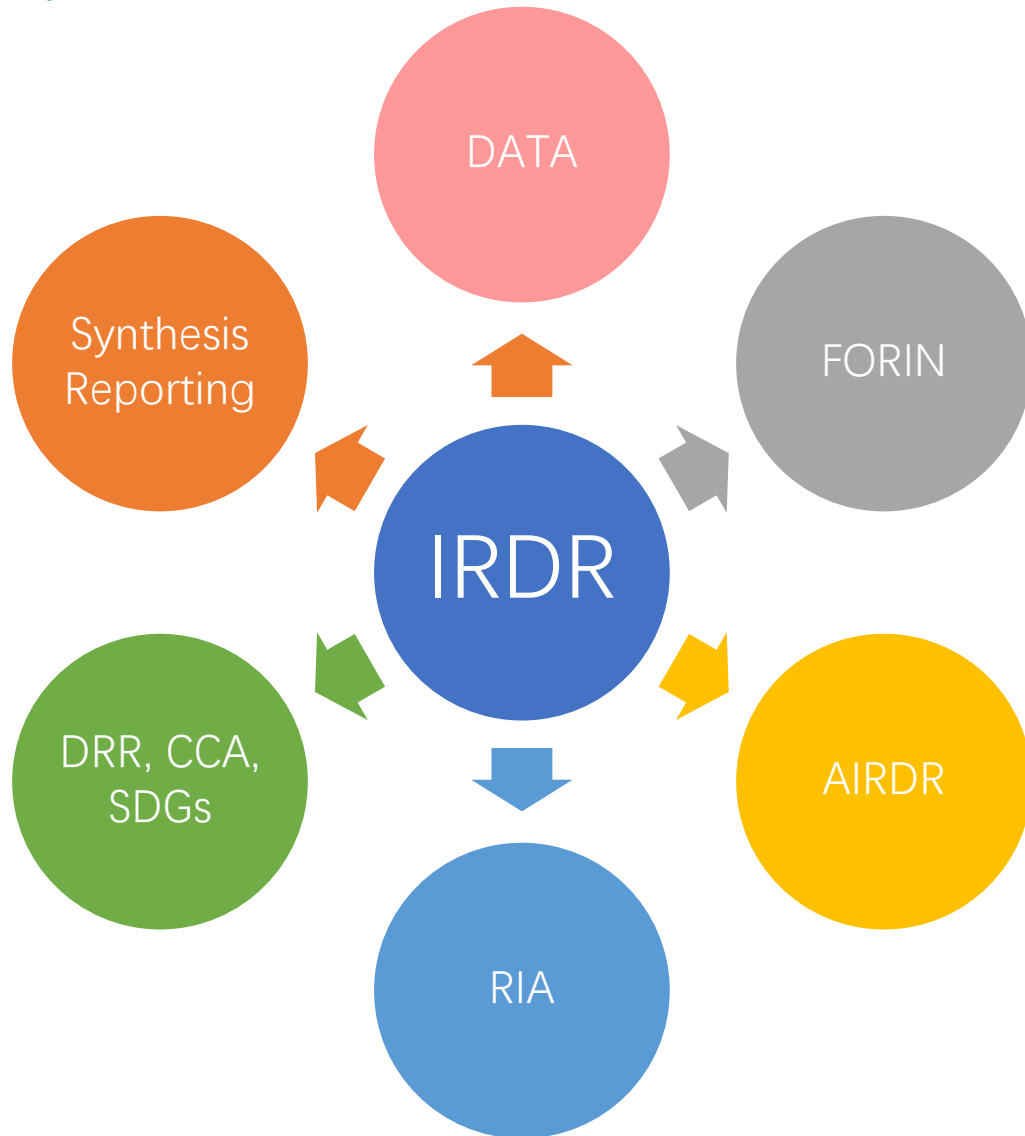


**Scientific Committee Members**

● IRDR International Programme Office

**In total: 41 scientists from 24 countries served the Scientific Committee**

# IRDR Working Groups

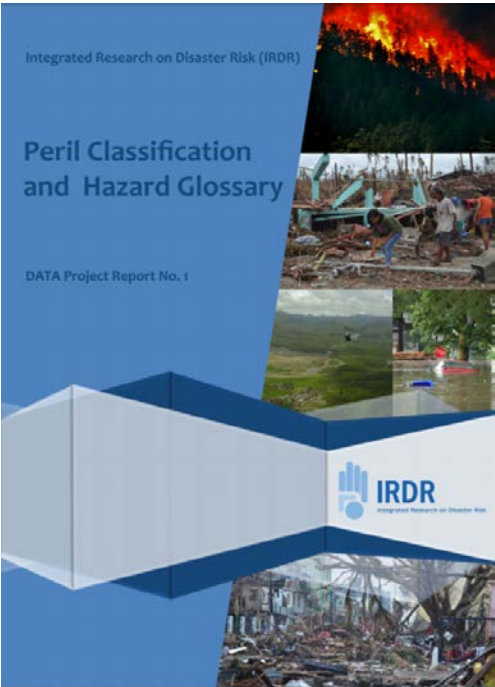


- Disaster Loss Data
- Forensic Investigations of Disasters
- Assessment of Integrated Research on Disaster Risk
- Risk Interpretation and Action
- Disaster Risk Reduction, Climate Change and Adaption, Sustainable Development Goals
- Sendai Framework National Synthesis Reporting

# A review of **Hazard Terminology** and the need for enhancing interdisciplinary collaboration

- AIM: To develop a scientific list of hazard definitions encompassed by the Sendai Framework, linking to the SDGs and the Paris Agreement by November 2019
- PROCESS: in partnership across
  - UNDRR and UN science partners
  - ISC and related scientific organisations
  - global, regional, national and if possible at local scales

**From Virginia Murray GP2019**





 **IRDR NC**  
Integrated Research on Disaster Risk  
National Committee

Scientific advice on reducing  
disaster risks

Building national DRR  
capacity



[Click for 13 National Committees+1 Regional Committee for Latin America](#)

# 13 National Committees, 1 Regional Committee

<b>IRDR Australia</b>	Bushfire & Natural Hazards Cooperative Research Centre (BNH CRC)	<b>IRDR New Zealand</b>	Natural Hazards Research Platform (NHRP)
<b>IRDR Canada</b>	Science and Technology Working Group, Canada's Platform for Disaster Risk Reduction	<b>IRDR USA</b>	Natural Hazards Center (NHC), Institute of Behavioral Science, University of Colorado at Boulder
<b>IRDR China</b>	China Association for Science and Technology (CAST)	<b>IRDR Iran</b>	A group of eight Iranian research institutes and scientific associations
<b>IRDR Colombia</b>	National Committee of Disaster Risk Knowledge, National Unit for Disaster Risk Management of the Presidency of the Republic of Colombia	<b>IRDR Indonesia</b>	Indonesia Institute of Sciences (LIPI)
		<b>IRDR Japan</b>	Science Council of Japan (SCJ)
<b>IRDR France</b>	Scientific Council, Association Française Pour la Prévention des Catastrophes Naturelles (AFPCN)	<b>IRDR Republic of Korea</b>	National Disaster Management Research Institute (NDMI) in Ministry of the Interior and Safety
<b>IRDR Germany</b>	German Committee for Disaster Reduction	<b>IRDR Nepal</b>	National Reconstruction Authority of Nepal

**IRDR Regional Committee**

ISC Regional Office for Latin America and the Caribbean



# Global Forum on Science & Technology for Disaster Resilience 2017, Tokyo



## **Tokyo Statement 2017**

Science and technology commits -Actions for a disaster-resilient world

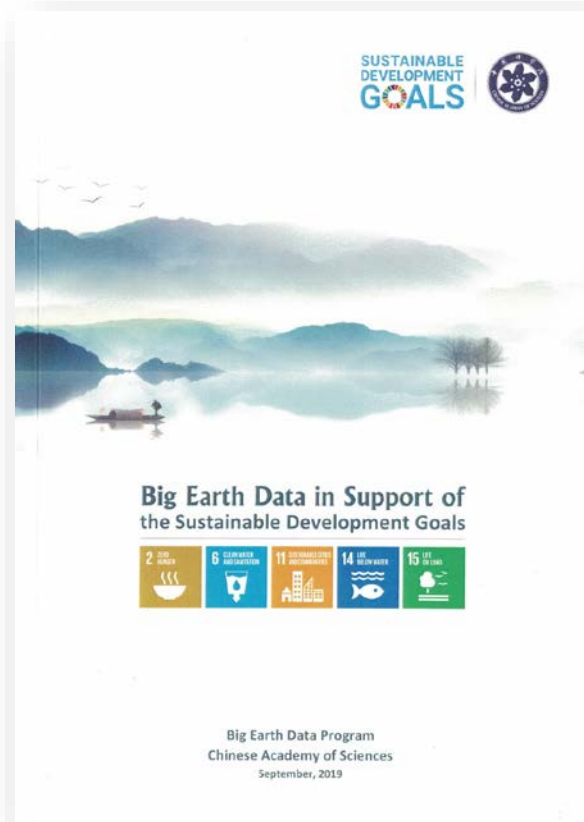
**A new era on disaster risk reduction began in Sendai.**

**The four priorities for action defined by the Sendai Framework are our bases.**

**We need to co-create and co-implement new types of science and technology in society.**

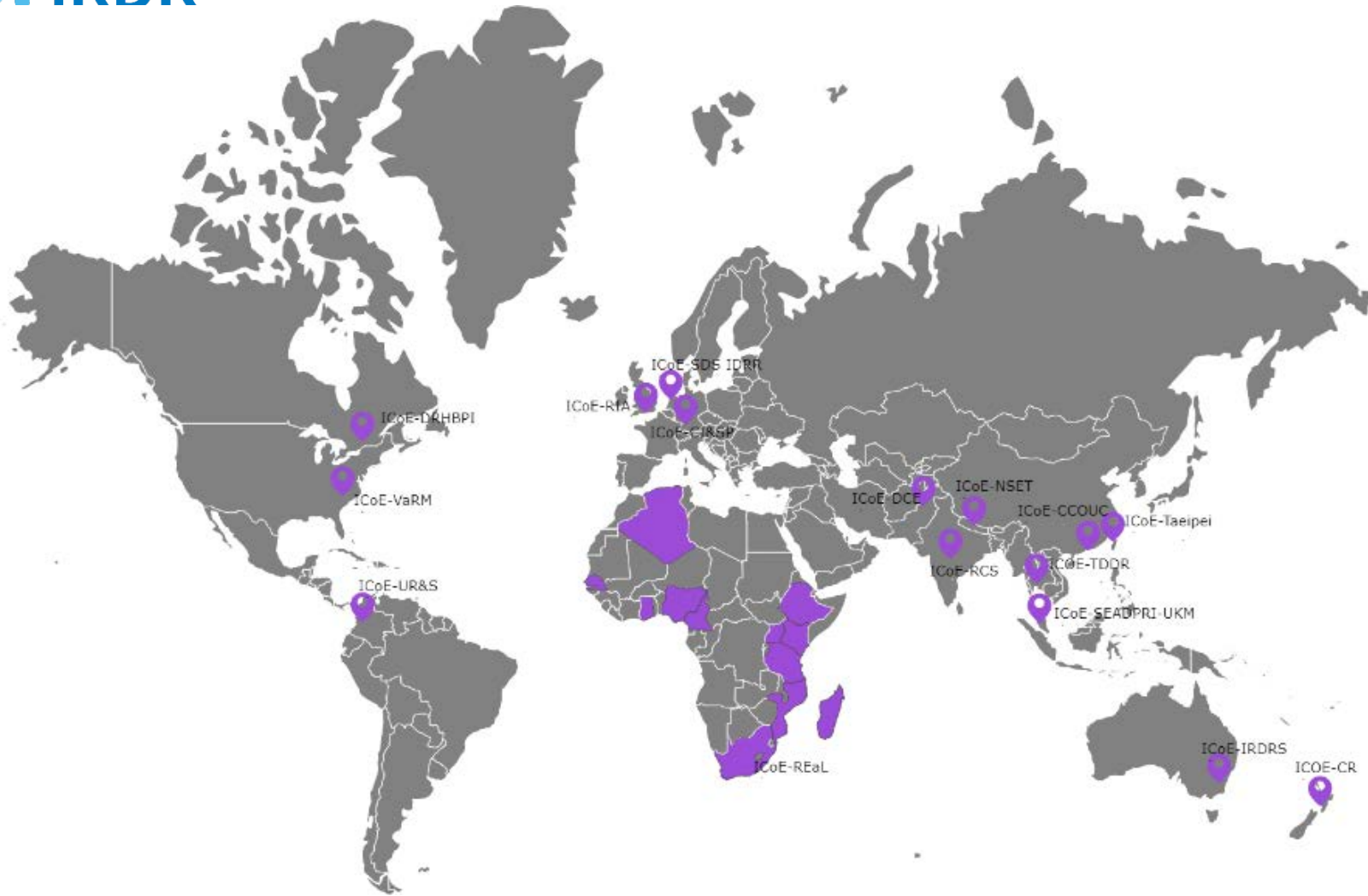
**To pursue steady implementation of the four priorities for action of the Sendai Framework.**

# IRDR China




- Data Streams
- From Data to Information
- Working Groups and Task Forces
- DBAR Foci
- Synthesis
- International Conventions






[Click for 16 International Centres of Excellence](#)



**IRDR ICoE**  
Integrated Research on Disaster Risk  
International Centre of Excellence

Scientific advice on reducing  
disaster risks

Transforming knowledge into  
DRR actions



Community-based Resilience, New Zealand	ICoE- CR	Risk Education and Learning, South Africa	ICoE- REaL
Risk Interpretation and Action, UK	ICoE- RIA	Capacity building, research, Taipei	ICoE- Taipei
Understanding Risk & Safety, Colombia	ICoE- UR&S	Vulnerability & Resilience Metrics, USA	ICoE- VaRM
Critical Infrastructure & Strategic Planning, Germany	ICoE- CI&SP	Disaster Resilient Homes, Buildings, and Public Infrastructure, Canada	ICoE- DRHBPI
National Society for Earthquake Technology, Nepal	ICoE- NEST	Disaster and Medical Humanitarian Response, Hong Kong	ICoE-CCOUC
Disaster Risk and Climate Extremes, Malaysia	ICoE-SEADPRI-UKM	Spatial Decision Support for Integrated Disaster Risk Reduction, the Netherlands	ICoE-SDS IDRR
Transforming Development and Disaster Risk	ICoE-TDDR	Integrated Research on Disaster Risk Science, Australia	ICoE-IRDRS
Resilient Communities & Settlements, India	ICoE-RCS	Disaster and Climatic Extremes, Pakistan	ICoE-DCE



Periperi U join new Af-STAG and AYAB



PERIPERI U PARTNERS ENHANCING RESILIENCE FOR PEOPLE EXPOSED TO RISKS



United Nations Educational, Scientific and Cultural Organization

# AFRICAN RISK METHODS SCHOOL

Focus on Urban Risks, Hazards & Vulnerabilities

28 Oct – 2 Nov 2019

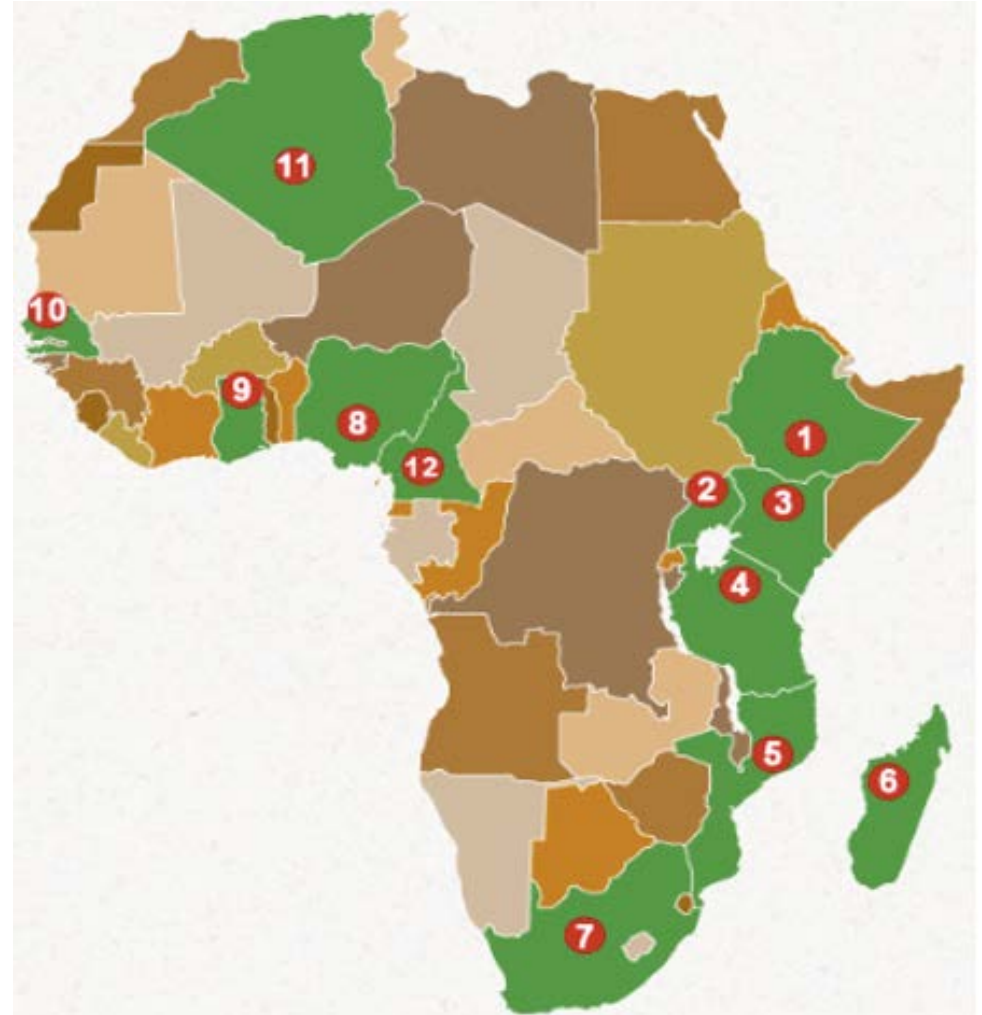
Addis Ababa, Ethiopia

# IRDR ICoE for Risk Education and Learning



PERIPERI U

PARTNERS ENHANCING RESILIENCE FOR PEOPLE EXPOSED TO RISKS





*Discussions during an ICoE workshop run in April 2019 to engage with stakeholders and inform WREMO's recovery framework.*



*Smart Seismic Cities Project initiated in 2019*

- Joint Centre for Disaster Research at Massey University
- Wellington Region Emergency Management Office (WREMO)

*Technical guide with multi language versions (16)*



**Your Earthquake Planning Guide**

**Pick this up and get prepared now**

**RIGHT NOW**

**1. Sign up for alerts and follow WREMO**

**Download the app**  
Download the New Zealand Red Cross' Hazards app. Make sure General Notifications are turned on so WREMO can notify you during a life-threatening emergency. WREMO will send alerts only when personal safety is at risk. Adjust the other notifications to receive only what you want. Remember, this is the Wellington region and you probably won't want to be notified about every wind warning.

**When you get an alert**  
Follow the advice and share the information on social media or by text with the people you care about.

**Good sources for information during an emergency are:**

- 📍 WREMO's emergency website  
**VISIT [www.WREMO.nz](http://www.WREMO.nz)**
- 📺 WREMO's Facebook page  
**LIKE [facebook.com/WREMONz](https://facebook.com/WREMONz)**
- 🐦 WREMO's Twitter feed  
**FOLLOW @WREMOinfo**
- 📍 VISIT Your local council website and their social media
- 📻 LISTEN TO Radio New Zealand and local stations

WE'RE PREPARED!  We've signed up for emergency alerts 2 3 4 5 6 7 8 9

# ICoE for Disaster and Medical Humanitarian Response



Collaborating Centre for Oxford University and CUHK  
for Disaster and Medical Humanitarian Response  
CCOUC 災害與人道救援研究所



Ethnic Minority Health Project



## TRAINING MANUAL ON

## Health and Disaster Preparedness

## in Rural China



**Editors:**  
Emily Ying Yang Chan, Kevin Sida Liu, Poyi Lee,  
Kelvin Wai Kit Ling, Chi Shing Wong

**Original Chinese Edition Authors:**  
Emily Ying Yang Chan, Crystal Yingjia Zhu,  
Poyi Lee, Kevin Sida Liu

# Some achievements of IRDR

- Science and Policy Dialogue and Interface
- Knowledge Products and Outputs
- New Partnerships for IRDR Mission
- IRDR Young Scientists Scheme





**International  
Science Council**

## Science and Policy Forum for the Implementation of Sendai Framework for Disaster Risk Reduction

Date: 13-14 May 2019

Venue: Assembly Hall, Palais des Nations, Geneva

*Co-organized by*

UNDRR Science Technology Advisory Groups (STAG)

International Science Council (ISC)

Integrated Research on Disaster Risk (IRDR)

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## POLICY BRIEF ACHIEVING RISK REDUCTION ACROSS SENDAI, PARIS AND THE SDGS

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**Authors:** John Handmer;  
Anne-Sophie Stevance,  
Lauren Rickards, and  
Johanna Nalau.

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**Reviewers:** Barbara Carby,  
Allan Lavell, Shuaib Lwasa,  
Virginia Murray and Markus  
Reichstein.

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## POLICY BRIEF DISASTER LOSS DATA IN MONITORING THE IMPLEMENTATION OF THE SENDAI FRAMEWORK

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**Authors:** Bapon  
Fakhrudin, Virginia Murray  
and Fernando Gouvea-Reis



## Priority 1

**Action 1** Enhance disaster loss and damage accounting, national and local disaster risk assessment and communication of disaster risk

**Action 2** Use space and disaster risk mapping technologies, and emerging technologies and strengthen the capacity

**Action 3** Strengthen regional exchange on disaster risk information and science

**Action 4** Develop a synthesis system under international cooperation

## Priority 2

**Action 5** Strengthen science-policy-practice nexus at all levels

**Action 6** Develop inter-disciplinary national science and technology plans to support implementation of the Sendai Framework

**Action 7** Enhance collaboration between local governments, academia and other partners to promote **local communities knowledge and traditions** and to sustain and replicate many good practices that exist locally for science-based decision making

## Priority 3

**Action 8** Make DRR an area of focus within **education** including networking between universities

**Action 9** Ensure risk-sensitive investments

**Action 10** Develop **young professionals** in the field of multi-disciplinary disaster risk reduction

**Action 11** Enhance and showcase projects that promote science and technology-based DRR and encourage governmental and social investment in disaster risk reduction

## Priority 4

**Action 12** Promote the role of inter-disciplinary science and technology in effective pre-disaster planning, preparedness, response, rehabilitation, recovery and reconstruction to build back better

**Action 13** Develop an efficient and effective cooperation among the science community and business sector by utilizing the advancements of the fast developing information and communication technology (ICT) including big data

**Action 14** Research into innovative solutions to promote the whole-of-society engagement

## 2016 and 2018 Asian Science and Technology Conferences for Disaster Risk Reduction

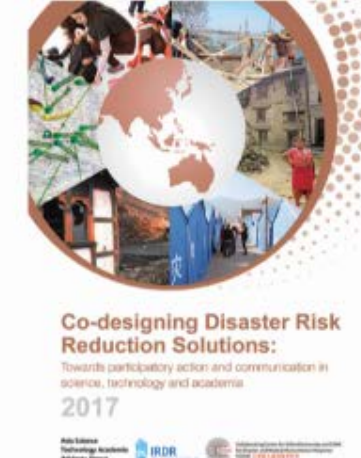
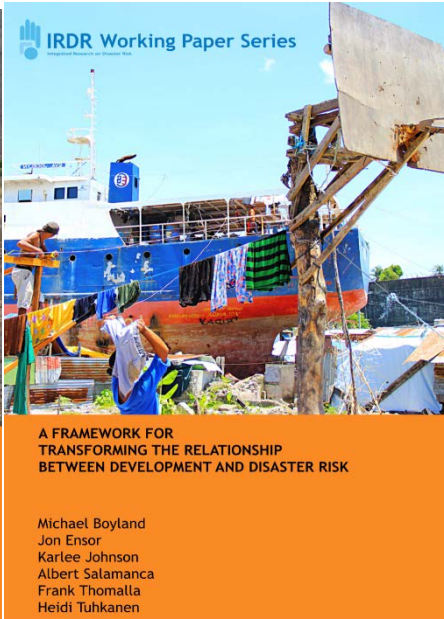
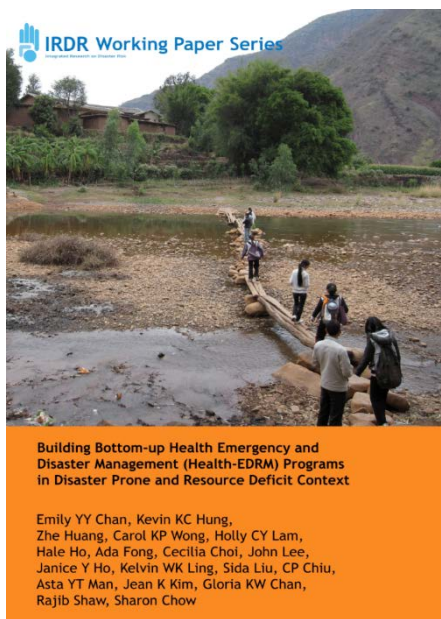
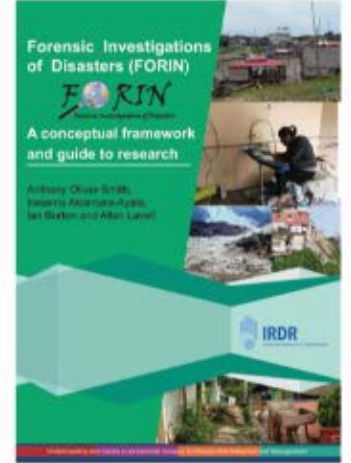
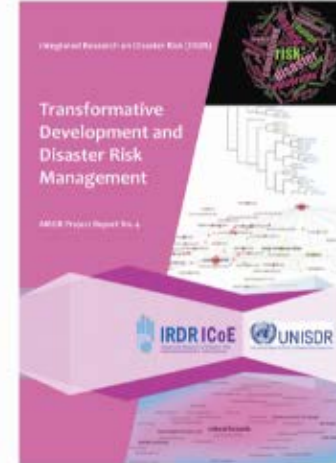
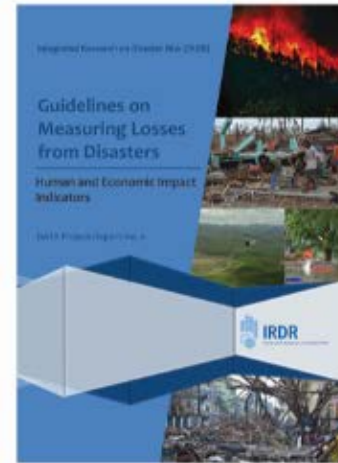
Contribute to the 2016 and 2018 AMCDRR



# Knowledge Products and Outputs

[Click for the list of IRDR Publications](#)

- Technical reports
- Scientific papers



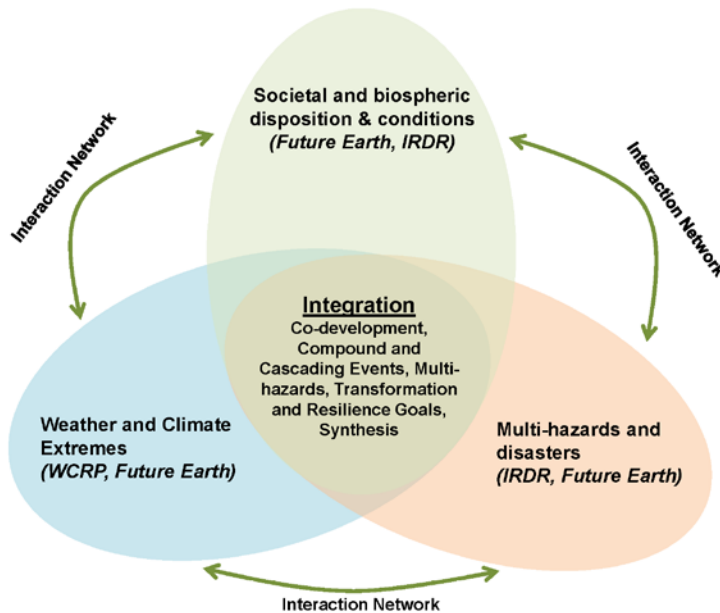


### **Future scenarios and applications**

- Active hazard warning and emergency response system for living environments
- Crowdsourcing supported disaster information system
- Disaster data quality assurance and control
- Disaster data standards and format

## Current and Future Events

- Herrenhausen Conference “Extreme Events: Building Climate Resilient Societies” (October 9th until 11th 2019, Hanover, Germany)
- WCRP summer school on extremes and risk management (October 21th until November 1st 2019, Nanjing, China)
- Book on “Climate extremes and their implications for impact and risk assessment” edited by Jana Sillmann, Sebastian Sippel and Simone Russo, to be published in 2019 by Elsevier



# ICL SENDAI PARTNERSHIPS 2015-2025 FOR GLOBAL PROMOTION OF UNDERSTANDING AND REDUCING LANDSLIDE DISASTER RISK



**The First Group of Signatories of the Kyoto Landslide Commitment 2020**  
18 September 2019, UNESCO, Paris

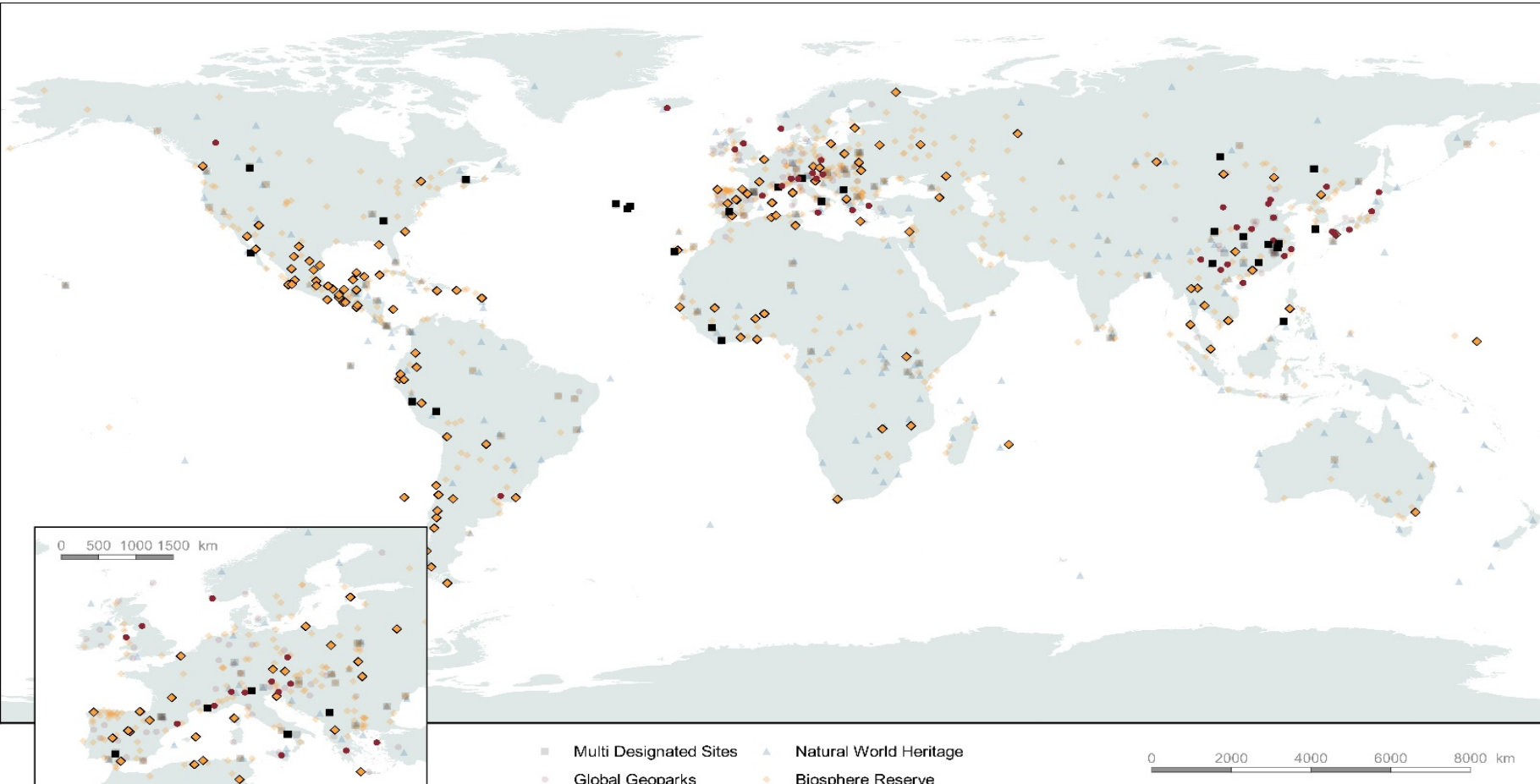


**4th WLF 2017**  
4<sup>th</sup> World Landslide Forum  
LJUBLJANA SLOVENIA EU

IRDR will have two sessions in **WLF5**, Kyoto November 2020 on integrated research on landslides, and at UNESCO designated sites.

# Risk prevention and mitigation at UNESCO designated sites

## Huangshan Dialogue 2018



**Less than 20% of all sites perform risk prevention and mitigation**





## IRDR Action Plan 2018-2020

- IRDR mid-term review in 2016, the panel recommended IRDR to develop a draft strategic plan of IRDR.
- The Coordination Group Meeting on 03-04 April 2018 in Paris. “Feedback from the co-sponsors on the IRDR draft strategic plan” suggested to further develop an IRDR Action Plan 2018-2020.
- At the 19TH SC meeting, SC decided to finalise the IRDR Action Plan. A draft team was established to finalise the action plan. The action plan was endorsed by the coordination group and SC.
- At the 20TH SC meeting, IPO reports on the implementation of the Action Plan.
- At the 21st SC meeting, IPO reports on the progress
- **At the 22<sup>nd</sup> SC meeting, IPO reports the continued implementation.**

# IRDR Action Plan 2018- 2020

	Action	
Improve Governance of IRDR	1	The Coordination Group meeting
	2	Annual donor reporting
Expand the IRDR Network and Scientific Outputs	3	Contributing toward the improvement of coherence between SFDRR, SDGs and the Paris Agreement
	4	Partnership development with G-STAG and Global ST partnership
	5	Working Groups research implementation with research team open to IRDR community and external partners
	6	WGs on SFDRR, CCA and SDG's
	7	New case studies on Integrated Research on Disaster Risk
	8	Continuation of Young Scientists Programme
	9	Expansion of IRDR base of experts by appointing "Associate Members" (name will be changed with prior agreed TOR by the co-sponsors)
	10	Support and partnership with IRDR associated projects
	11	Support for ST Roadmap

# IRDR Action Plan 2018- 2020

	Action	
Expand the IRDR Network and Scientific Outputs	12	Periodic synthesis case study. A selected team of authors to produce a short report as an exemplar of Tokyo statement outcome
	13	Support selected national DRR platforms as exemplars
	14	Contributing to ISC's leading role in the S&T Major Group for the 2019 Global Platform
	15	A specific task on operationalization of SFDRR indicators
	16	Contribute actively toward the development of Risk-KAN
	17	Regional DRR Events in all regions
	18	Co-organize Scientific Forum on Landslides
	19	IRDR International Conference (Resource to be identified and mobilised)
Improve the visibility of IRDR	20	Communication and outreach
	21	Special IRDR Journal Issue
	22	An IRDR Handbook
	23	Scientific/Policy Output 2020 per IRDR WG

Action	Progress	Lead Group
<b>Action 1</b> <b>The Coordination Group Meeting</b>	30 September, in Geneva	ISC, UNDRR
<b>Action 2</b> <b>Annual donor reporting</b>	A 2019 annual report of IRDR to the donor (CAST) will be prepared and submitted by IPO. - A list of activities has been updated with donor and co-sponsors	IPO
<b>Action 3</b> <b>Contributing toward the improvement of coherence between SFDRR, SDGs and the Paris Agreement</b>	<ul style="list-style-type: none"> <li>• 1<sup>st</sup> round of IRDR Working Paper Series has launched at the Science and Policy Forum of the UNDRR Global Platform 2019, Geneva. <b>Download Top 3: (5441)</b> <ul style="list-style-type: none"> <li>➤ Extraction and Analysis of Earthquake Events Information based on Web Text (5441)</li> <li>➤ A Framework for Transforming the Relationship Between Development and Disaster Risk (1363)</li> <li>➤ Emergency and Disaster Management Programs in disaster prone, resource deficit context (732)</li> </ul> </li> <li>• 2<sup>nd</sup> round of IRDR Working Paper Series has called for submission. Currently, there are following topic:               <ul style="list-style-type: none"> <li>➤ Infrastructure development as the new risk</li> <li>➤ Technology as a source of risk</li> <li>➤ Permafrost and climate change issues</li> <li>➤ Drought Management and Water Scarcity Adaption In Human Settlements</li> <li>➤ Biosafety</li> <li>➤ Big Earth DATA</li> <li>➤ ...</li> </ul> </li> </ul>	IRDR IPO IRDR SC ICoEs NCs
<b>Action 4</b> <b>Partnership development with G-STAG and Global ST partnership</b>	<ul style="list-style-type: none"> <li>• Science and Policy Forum in 2019 Global Platform on DRR, May of 2019</li> <li>• APSTAAG Meeting, 16-17 October 2019 in Kuala Lumpur</li> <li>• Asian Science and Technology Conference, March 2020, KL</li> </ul>	UNDRR UNDRR STAG UNDRR APSTAAG IRDR SC IRDR IPO ICoE SEADPRI-UKM

Action	Progress	Lead Group
<b>Action 5</b> <b>Working Groups research implementation with research team open to IRDR community and external partners</b>	<p>IPO circulated a call for NC, ICoE and young scientists participation in WGs WG chair and co-chairs provide specific research plans of WG and enhanced research teams.</p> <ul style="list-style-type: none"> <li>• <b><u>Jana as the new chair of RIA</u></b></li> <li>• <b><u>Alonso as the new chair of FORIN</u></b></li> <li>• <b><u>DATA newsletters</u></b></li> </ul>	WG Co-chairs IPO
<b>Action 7</b> <b>New case studies on Integrated Research on Disaster Risk</b>	<p>The action aims to develop case studies with reinforced WGs on integrated research for DRR policy and practice. To be reported by each working group.</p> <ul style="list-style-type: none"> <li>• <b>Hazard Terminology and Classification</b></li> <li>• <b>2<sup>nd</sup> Working Paper Series (Action 3)</b></li> </ul>	WG
<b>Action 8</b> <b>Continuation of Young Scientists Programme</b>	<p>Completed the 4th batch of IRDR young scientists, 166 +</p> <ul style="list-style-type: none"> <li>• IRDR Young Scientists Book (led by Riyanti)</li> <li>• IPO support IRDR young scientists to participate trainings</li> </ul>	IRDR IPO
<b>Action 10</b> <b>Support and partnership with IRDR associated projects</b>	<ul style="list-style-type: none"> <li>• SC and DATA WG contributed to CODATA meeting in Beijing, Sep 2019</li> <li>• Partnership with AoA on water related DRR (on going)</li> <li>• Partnership with Himalaya University Consortium to invest on young scientists (under discussion)</li> </ul>	IRDR IPO
<b>Action 11</b> <b>Support for ST Roadmap</b>	Register in the Sendai Voluntary Commitment (on going)	IRDR IPO
<b>Action 12</b> <b>Periodic synthesis case study. A selected team of authors to produce a short report as an exemplar of Tokyo statement outcome</b>		ISC IPO Risk-KAN development team

Action	Progress	Lead Group
<b>Action 13</b> <b>Support selected national DRR platforms as exemplars</b>		IPO
<b>Action 15</b> <b>A specific task on operationalization of SFDRR indicators</b>		CODATA Working Group IPO
<b>Action 16</b> <b>Contribute actively toward the development of Risk-KAN</b>	<ul style="list-style-type: none"> <li>• IRDR support the KAN-WMO-Future Earth to organise the <u>Summer School</u> in Nanjing.</li> <li>• Risk-KAN develop team: Jana update</li> </ul>	ICSU, IPO and SC members
<b>Action 17</b> <b>Regional DRR Events in all regions</b>	<ul style="list-style-type: none"> <li>• APSTAAG Meeting in Malaysia, Workshop on Building Disaster and Climate Resilience in Cities</li> <li>• International Symposium on Green Development and Integrated Risk Governance, 13-14 Oct 2019, Shenzhen</li> </ul>	IPO
<b>Action 18</b> <b>Co-organize Scientific Forum on Landslides</b>	IRDR will have two sessions in <b>WLF5</b> , Kyoto November 2020 on integrated research on landslides, and at UNESCO designated sites.	ICL, SC and IPO
<b>Action 19</b> <b>IRDR International Conference 2020 (Resource to be identified and mobilised)</b>	The resource and fund will be further discussed and identified	ISC IPO

Action	Progress	Lead Group
<b>Action 20</b> <b>Communication &amp; outreach</b>	New design of website; Increase the visibility of social medias.	IPO
<b>Action 21</b> <b>Special IRDR Journal Issue</b>	<b>Cancellation already decided. Papers will be published in the separated volumes of IJDRS.</b>	Guest Editorial Team: Shuaib, Joern, John, Victor
<b>Action 22</b> <b>An IRDR Handbook</b>	<u>IRDR handbook</u>  <u>IRDR young scientists book</u> : Riyanti leads to coordinate an edited book volume of the IRDR young scientists work with Springer.  <u>IRDR Compilation 2010-2020</u>	Lead Group: Riyanti, SC and the working groups
<b>Action 23</b> <b>Scientific/Policy Output 2020 per IRDR WG</b>	Combined into IRDR Compilation	WG