

# **ICoE-Vulnerability and Resilience Metrics (VaRM)**

Report on Activities: January-June 2015

**Formerly Established August 2013**

**Location:** Hazards & Vulnerability Research Institute,  
University of South Carolina



**External Advisory Committee:** Kathleen Tierney (University of Colorado, Director, Natural Hazards Center, and Chair, IRDR USA National Committee), Walter Peacock (Texas A&M University, Director, Hazard Reduction and Recovery Center, USA), David Johnston (Massey University, Director, Joint Centre for Disaster Research, and Director IRDR ICoE in Community Resilience, New Zealand), Omar Darío Cardona (Universidad Nacional de Colombia, Director IRDR ICoE in Understanding Risk & Safety), Jörn Birkmann (University of Stuttgart, Director Institute for Spatial Planning and Regional Development)



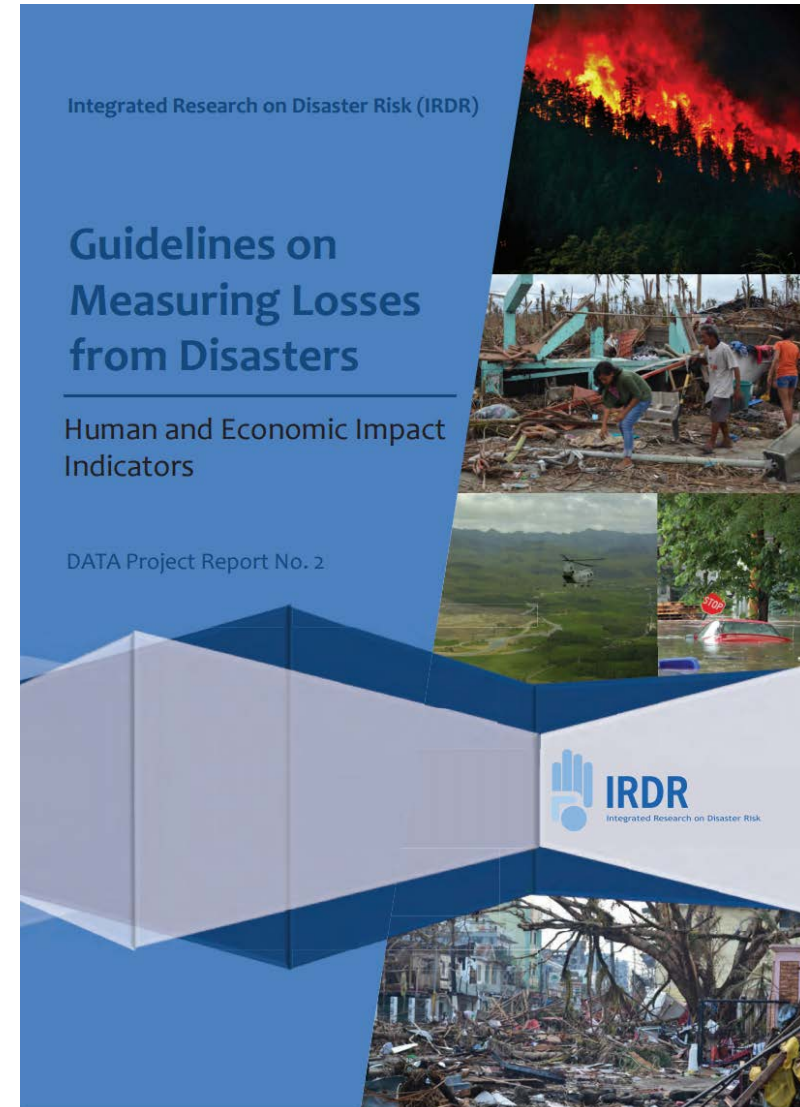
# Mission Statement

- Provides leadership in the development of science-based models, methods, and metrics of vulnerability and resilience in order to provide empirically-based support for disaster risk reduction policies and practices
- Provide leadership in improving sub-national hazard event and loss databases.
- Support via scientific expertise, the existing research projects of IRDR—DATA, AIRDR, and FORIN.
- Assist in building capacity through training the next generation of disaster scientists and encouraging international students (pre- and post-doctoral) and scientists to take up short-term study visits

# Activities

## 1. Support DATA WG

- edited IRDR DATA publication
- implement peril classification in  
SHELDUS
- establish ftp site for document  
exchanges



## 2. AIRDR support

-worked with ICSU-ISSC Ad Hoc  
Group on Disaster Risk Assessment



### Disaster Risks Research and Assessment to Promote Risk Reduction and Management

**Authors:**

Irasema Alcántara-Ayala (Mexico), Orhan Altan (Turkey), Daniel Baker (USA), Sálvano Briceño (France/Venezuela), Susan Cutter (USA), Harsh Gupta (India), Ailsa Holloway (South Africa), Alik Ismail-Zadeh (Germany/Russia), Virginia Jiménez Diaz (Venezuela), David Johnston (New Zealand), Gordon McBean (Canada), Yujiro Ogawa (Japan), Douglas Paton (Australia), Emma Porio (Philippines), Rainer Silbereisen (Germany), Kuniyoshi Takeuchi (Japan), Giovanni Valsecchi (Italy), Coleen Vogel (South Africa), Guoxiong Wu (China), and Panmao Zhai (China)

**Reviewers:**

David Alexander (UK), Reid Basher (New Zealand), Bronwyn Hayward (New Zealand), Ilan Kelman (UK), Allan Lavell (Costa Rica), Alberto Martinelli (Italy), Omar Perez (Venezuela), Roger Pulwarty (USA), and Ester Szein (USA)

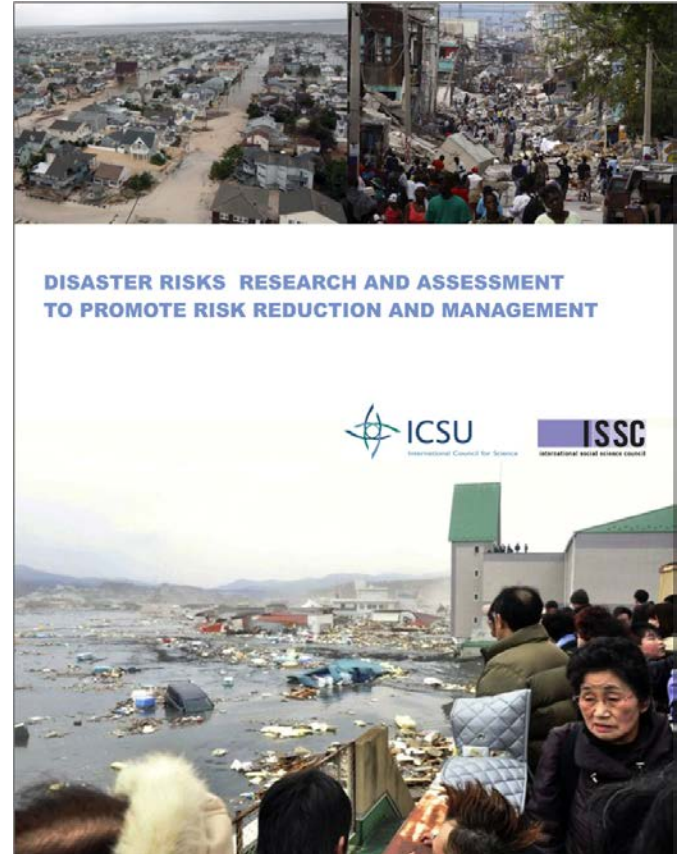
**Editors:**

Alik Ismail-Zadeh (Germany/Russia) and Susan Cutter (USA)



MARCH 12, 2015

ICSU-ISSC AD-HOC GROUP ON DISASTER RISK ASSESSMENT



### 3. Consultations

- US Housing and Urban Development/Rockefeller Foundation on National Disaster Resilience competition
- Rockefeller Foundation/ARUP on 100 Resilient Cities index
- US National Institute of Standards and Technology (NIST)-American Society of Civil Engineers (ASCE) Workshop on the Economics of Community Disaster Resilience
- US National Weather Service, Living with Extreme Weather Workshop (use of social indicators)
- Participate as a Sendai Jury Member for the MunichRe Foundation Risk Award 2015
- Peer reviews Natural Hazards Research Platform Contestable Round, New Zealand
- Provided input on SHELDUS to white paper under preparation by the Linked Open Data for Global Disaster Risk Research (LODGD) of a CODATA task force

## 4. Presentations

- Tokyo Conference on International Study for Disaster Risk Reduction and Resilience (interdisciplinary perspectives)
- US Army Corps of Engineers webinar (SHELDUS)
- World Congress on Disaster Risk Reduction Side Event, Sendai (loss databases)
- European Geosciences General Assembly, Vienna (geocoding loss databases)
- Norwegian University of Science and Technology, Trondheim (*Doctor Honoris Causa* lecture)
- Building Blocks for a National Resilience Scorecard Workshop, Washington DC (resilience metrics)

## 5. Publications

- Gall, K. H. Nguyen, and S. L. Cutter, 2015. Integrated research on disaster risk: Is it really integrated? *International Journal of Disaster Risk Reduction* 12: 255-267.
- Gall, M., C. T. Emrich and S. L. Cutter, 2015. Who Needs Loss Data? Background Paper for the Global Assessment Report on Disaster Risk Reduction 2015 (GAR15). Geneva, Switzerland: UNISDR. Available <http://preventionweb.net>  
Excerpts included in GFDRR, 2014. Understanding Risk in an Evolving World: Emerging Best Practices in Natural Disaster Risk Assessment. Washington, D.C.: The World Bank, 224 p.
- Guha-Sapir, D., R. Davis, M. Gall, P. Wallemacq, and S. Cutter 2015. Exploring the potential of geocoding the impact of disasters: The experience of global and national databases. *Geophysical Research Abstracts* 17, EGU-2015-15109.
- A. Ismail-Zadeh and S. Cutter (editors), 2015. Disaster Risks Research and Assessment to Promote Risk Reduction and Management. Authors: Irasema Alcántara-Ayala, Orhan Altan, Daniel Baker, Sálvano Briceño, Susan Cutter, Harsh Gupta, Ailsa Holloway, Alik Ismail-Zadeh, Virginia Jiménez Díaz, David Johnston, Gordon McBean, Yujiro Ogawa, Douglas Paton, Emma Porio, Rainer Silbereisen, Kuniyoshi Takeuchi, Giovanni Valsecchi, Coleen Vogel, Guoxiong Wu, and Panmao Zhai. ICSU-ISSC Ad Hoc Group on Disaster Risk Assessment, Paris: ICSU, March 12, 2015. [http://www.icsu.org/science-for-policy/disaster-risk/documents/DRRsynthesisPaper\\_2015.pdf](http://www.icsu.org/science-for-policy/disaster-risk/documents/DRRsynthesisPaper_2015.pdf)
- S. L. Cutter, A. Ismail-Zadeh, I. Alcántara-Ayala, O. Altan, D.N.Baker, S. Briceño, H. Gupta, A. Holloway, V. Jiménez Díaz, D. Johnston, G. McBean, Y. Ogawa, D. Paton, E. Porio, R.K. Silbereisen, K.Takeuchi, G.B. Valsecchi, C. Vogel, and G.Wu, Assess disaster risk science to help reduce losses, *Nature*, forthcoming, June 18, 2015.
- S. L. Cutter and M. Gall, The Sendai targets for disaster risk reduction: what and how to measure, *Nature Climate Change*, under review.



# Future Activities

(July-December 2015)

- Assist DATA project activities including revision of Peril Classification
- Conduct sensitivity analyses of Rockefeller/ARUP city resilience index (July-October 2015)
- Plan for external advisory committee meeting in early 2016