

CORRESPONDENCE:

Pragmatic disaster loss assessment

To the Editor — Reliable, comparable data on climate-related disaster losses is essential to provide the evidence base for identifying priorities for, and assessing progress with, climate-change adaptation and disaster risk reduction (DRR). This need has become urgent following recent global agreements on monitoring progress in DRR and assessing climate-change impacts through the ‘loss and damage’ mechanism¹.

A single, global approach for both disaster data and climate-change impacts may seem desirable. In their Commentary, Cutter and Gall² offer a potential solution in the form of a good practice approach to collecting disaster data developed by the IRDR³ (Integrated Research on Disaster Risk). The IRDR is one of a number of influential international groups active in the development of new approaches to disaster data, alongside the OECD⁴ and a collaborative effort by the United Nations Development Program, Tohoku University and Fujitsu Ltd⁵. Efforts to create new global standards also confront the fact that there are already many groups with well-established data and approaches to assessing disaster loss, such as EM-DAT⁶, DesInventar⁷, global reinsurers, the World Bank, and the Red Cross and Red Crescent, as well as national-level approaches. Given this reality, a single agreed approach seems a distant possibility.

We suggest that instead of a single approach, negotiation and collaboration between the various groups working on existing and new approaches could save much-duplicated effort, identify gaps, and importantly produce agreements to improve transparency and comparability. This could improve loss assessment and disaster data for all those working in the field. Those working in adaptation could draw on decades of experience within disaster impact assessment, and those working in disaster risk reduction could gain insights from considering the loss and damage mechanism concern with irreversible impacts, slow-onset events such as permafrost thawing, and equity and climate justice.

However, while we await this improvement and agreement, there is an immediate need for usable disaster impact data. One way forward would be to adopt a pragmatic approach that focuses on achieving the best measurement with whatever information is available, while accepting that it will not be perfect. The aim would be to develop a database of disaster losses through time as quickly as practicable, with quality controls matched to the available data⁸. An alternative would be to derive losses synthetically⁹. Synthetic losses are developed from inventories of what is exposed to the

hazard in question, combined with the estimated susceptibility to damage of the exposed items and activities, to give average expected losses. This alternative would be a radical departure from the emphasis of all current international disaster data efforts, with their focus on accurate measurement of specific events. But synthetic methods have the potential advantages of lower cost, consistency, and greater equity between areas of different wealth.

The pragmatic approach provides a rapid solution to the issue of loss assessment for disaster risk reduction and adaptation investment while the world seeks agreement on an ideal. Both pragmatic and synthetic approaches can assess past and future events, and readily include heatwaves, which are virtually certain to increase with climate change, but which have generally not been included in disaster loss datasets. These approaches could be part of the suggested negotiation for transparency and comparability in disaster datasets. □

References

1. *Warsaw International Mechanism for Loss and Damage Associated with Climate Change Impacts* (UNFCCC, 2013); <http://go.nature.com/2ticvxX>
2. Cutter, S. L. & Gall, M. *Nat. Clim. Change* **5**, 707–709 (2015).
3. *Guidelines on Measuring Losses from Disasters: Human and Economic Impact Indicators* DATA Project Report 2 (IRDR, 2015).
4. *Improving the Evidence Base on the Costs of Disasters: Towards an OECD Framework for Accounting Risk Management Expenditures and Losses of Disasters* (OECD, 2014).
5. UN development program, Tohoku University, and Fujitsu start joint project to mitigate major natural disaster damage. *Fujitsu* (9 March 2017).
6. *The Human Cost of Natural Disasters 2015: a Global Perspective* (CRED, 2015).
7. *DesInventar* (Corporación OSSO, 2016); <http://go.nature.com/2shyznp>
8. Ladds, M., Keating, A., Handmer, J. & Magee, L. *Int. J. Disaster Risk Reduct.* **21**, 419–429 (2017).
9. Penning-Rowsell, E. C. et al. *Flood and Coastal Erosion Risk Management: a Manual for Economic Appraisal* (Routledge, 2013).

J. Handmer^{1*}, M. A. Ladds² and L. Magee³

¹Centre for Risk & Community Safety, RMIT University, School of Science, 360 Swanston Street, Melbourne, Victoria 3000, Australia.

²School of Mathematics, Statistics and Operations Research, Victoria University of Wellington, Kelburn, Wellington 6012, New Zealand. ³Institute for Culture and Society, University of Western Sydney, Parramatta South Campus, Rydalmere, New South Wales 2116, Australia.

*e-mail: john.handmer@rmit.edu.au



TIM GAINERY / ALAMY STOCK PHOTO