

comparison that uses the improved land models and considers uncertainty in the $\delta^{15}\text{N}$ -inferred values.

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COMMENTARY:

Expertise and policy-making in disaster risk reduction

Colin Walch

The third UN World Conference on Disaster Risk Reduction ended with an agreement lacking ambition. The conference showed that better communication between the scientific community and decision-makers is needed to develop informed frameworks.

Between March 14 and March 18, 2015, state delegates met in Sendai, Japan, and agreed on a new framework for disaster risk reduction for the years 2015–2030 (www.wcdrr.org). The Sendai Framework for Action 2015–2030 (SFA)¹ replaced the existing Hyogo Framework for Action 2004–2015. Adopted by consensus, this framework, which is not legally binding, aims to reduce the impact of natural disasters on society by providing guidance on how to better mitigate and manage natural disasters.

Given that climate change is likely to increase the frequency and intensity of a range of natural disasters², the conference was directly linked to the negotiations under the UN Framework Convention on Climate Change. Laurent Fabius, president of the upcoming Conference of the Parties (COP21), declared during the opening ceremony (of the World Conference on Disaster Risk Reduction) that the negotiations on disaster risk reduction and the upcoming climate change negotiations in Paris were “inseparably linked” and that “disaster risk reduction, and combating climate change should go hand in hand because the solutions are so often the very same” (<http://go.nature.com/pAscBj>).

The Conference, similar in form to the Rio Summit 2012, was attended by

more than 6,500 accredited participants, including government representatives, UN agencies, international and local non-governmental organizations (NGOs), civil society groups, private sector representatives and scientists. Hundreds of events on disaster risk reduction were organized alongside the formal negotiations, and the United Nations International Strategy for Disaster Reduction (UNISDR) publically welcomed the participation and expertise from all of these actors.

Despite their presence, NGOs, civil society groups, and scientific experts were not allowed to participate in the formal negotiations. Diplomats would have benefited of the expertise from the scientific community and civil society groups as the delegates showed a very limited understanding of disaster risk reduction (DRR) and the broader concept of resilience during the negotiation.

Many delegates seemed most interested in promoting their national interests, suppressing wording that cemented commitments, rather than discussing the substance of the proposed framework. For example, the principle of common but differentiated responsibilities and the importance of addressing climate change in the framework created tensions between

developed and developing countries. The inclusion of armed conflict and foreign occupation as underlying risk drivers to natural disasters further bogged down negotiations.

The deadlock was broken by delegates from Japan, who seemed eager to see an agreement forged in Sendai. These efforts made the text even more technical, however, suppressing mention of both conflict and foreign occupation as contributors to natural disaster risk. Previous research clearly documents links among armed conflict, displacement of people and vulnerability to natural disasters³, although none of these findings seem to have informed decision-makers.

In general, much of the research done by the scientific community and NGOs — research that was centralized in the Global Assessment of Disaster Reduction 2015 (GAR)⁴, and presented at the conference specifically to inform decision-makers — was widely neglected in the final agreement. As a result, the Sendai Framework lacks scientific substance, contains many loosely conceptualized targets, and poorly represents the amount of research presented during the conference.

These formal negotiations were closed to both the public and conference participants,

and probably reduced the pressure on diplomats to integrate the suggestions from the immediately available expertise. While exclusion of these actors in the formal process may make formal agreements easier to reach, the result is a framework that lacks ambition, especially considering that it is not legally binding.

So what could be done differently to get a better-informed agreement? Is there any way to align national interests, scientific research and successful negotiations? There are three approaches that could be used to combine scientific expertise with successful negotiations, mainly to do with communication.

First, there must be direct participation of the scientific community in the negotiation. Scientific delegates should provide understandable briefs during the negotiation to inform diplomats about the importance of some aspects of the text for disaster risk reduction. While these briefs would only be consultative, they may influence and guide diplomats in their decisions. As policymakers tend

to have very limited time to specialize in every topic they negotiate, this interactive relationship between the scientific community and decision-makers could lead to better information filtering into the decision process.

Second, there is a need to make the GAR more central to the negotiations, in a similar manner to the IPCC, to make it harder for decision-makers to ignore it. Whereas the IPCC has a clear mission to provide understandable scientific information on climate change to policymakers, the GAR lacks this mandate and authority. The GAR should make its role more visible and better communicate with the audience it is supposed to influence.

Third, more opportunities for communication and mutual learning should have been provided at the conference. Most heads-of-state and diplomats did not attend any public forums due to their busy schedule, negotiating day and night. There were therefore few good chances to exchange ideas with policymakers and

indirectly influence the negotiation. This further increased conference attendees' feelings of detachment.

These suggestions could lead to a more creative and less antagonistic engagement between the scientific community and decision-makers. This in turn could lead to ambitious and better-informed agreements. □

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COMMENTARY:

Sendai targets at risk

Susan L. Cutter and Melanie Gall

How can we measure disaster loss reduction in the absence of reliable loss data on the economic and human impacts? Existing loss accounting systems vastly underestimate the true burden of disasters, both nationally and globally.

Extreme weather events such as Cyclone Pam, which devastated the Republic of Vanuatu in March 2015, and the prolonged drought now affecting the western US highlight two issues: the increased risk from extreme events due to climate change, and our insufficient monitoring and understanding of their societal impacts. Fatality estimates for Cyclone Pam range between 11–24 deaths and the estimates for the storm's economic impact fluctuate between US\$300–570 million. For the drought-stricken state of California, analysts estimate direct agricultural impacts in the billions of US dollars, although an exact figure is unavailable — despite the fact that the drought is entering its fourth year.

These examples underscore the uncertainties surrounding loss estimates

for climate-sensitive hazards and other disasters such as earthquakes. Although there have been advances in observing and documenting the physical parameters of extreme events (wind speed, rainfall amounts and so on), the quantification of socioeconomic impacts is often lacking. Impact figures vary depending on when and where the event took place and the source of the information. The disparities in death toll reports are particularly disconcerting given that death is a readily defined measure of human losses and often far easier to determine than economic losses. These examples serve as a backdrop for understanding what the recently adopted Sendai targets on disaster risk reduction face in their implementation: measuring and monitoring economic and human impacts of

disasters and extreme events in the absence of reliable loss data.

The Sendai Framework for Disaster Risk Reduction (SFDRR) was adopted on 18 March 2015 by 187 UN member states. Recognizing that disasters continue to exact a heavy toll despite the efforts of the Hyogo Framework for Action (2005–2015), the SFDRR lays out policies and goals for risk reduction for the next fifteen years and stresses the importance of disaster risk reduction measures for adapting to climate change and sustainable development¹. The difference between the SFDRR and its predecessors is the inclusion of specific measurable targets, which will be difficult to quantify given that empirical data are either missing or severely skewed, as the examples above illustrate.