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Lahsen, M.

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Disasters, Intransigence and Transformation

Myanna Lahsen

Editorial

In this volume, Susan Cutter discusses how best to characterize “cascading disasters” - catastrophic chain events triggered by extreme events such as earthquakes, tsunamis and volcanic eruptions. In all of their dimensions, such developments are ill-captured by the still common term of “natural” disasters. This is a misnomer because human decisions are of central importance as to whether or not connected impacts escalate to become catastrophes with deep and geographically far-reaching consequences. It is the interaction of foreseeable but (in their timing and intensity) unpredictable extreme events with ill-prepared and often culpable social and technological systems that make them cascade into larger social and “natech” disasters. These are disasters intensified by accompanying technological and regulatory failures dependent on human decision making. In a world dependent on massive, planet-spanning infrastructures vulnerable to extreme events, cascading disasters are akin to sociologist Charles Perrow’s “normal accidents” in that they demand recognition of risks and vulnerabilities of social and technological systems. Cutter notes that the overwhelming attention in research has been on the physical causes of cascading disasters, and suggests that it would be intellectually and societally beneficial to focus more on the social dimensions, closing gaping knowledge gaps and improving management responses. In this way it is possible to search for pre-disaster natural and socio-economic circumstances which contribute to the cumulative damage and overall peril.

Gordon McBean discusses how research programmes traditionally overwhelmingly dedicated to natural science are responding to urgings that they join forces with the social sciences to better support the Global Agenda 2030 - a package of international agreements embracing Sustainable Development Goals, the Paris Agreement derived under the UN Framework Convention on Climate Change, the Third UN World Conference on Disaster Risk Reduction, and the Sendai Framework on Disaster Risk Reduction 2015-2030. Repeating a central insight of sustainability science, he posits the need also for broad societal collaboration in the definition of problems and solutions, thus learning from, and in turn informing, stakeholders’ values, views and ways of knowing.

Past independent reviews of the global environmental change research programmes that McBean describes yielded the overarching evaluation that the natural science dominated science agenda was of high quality but insufficient societal effectiveness considering the formidable challenges of achieving transformations towards sustainability with social justice and quality of life for the many. The reviews generated a push for more action-oriented research and calls for greater inclusion and funding for social science research to help produce it. This set in motion discussions and events that eventually led to the

creation of *Future Earth* (<http://www.futureearth.org>), an evolving international research program that McBean also introduces.

The purpose of Future Earth is to create a comprehensive sustainability science perspective as to how humans can gradually avoid institutional inflexibilities and reach their higher human potential through compassionate farsightedness. Optimistic (if not obfuscating) rhetoric aside, processes of programmatic change and greater inclusion are always wrought with tensions and conflicts, including the formation of Future Earth (Lahsen, 2016). McBean illustrates the impossibility of perfect consensus. To him, as to many members of the natural science communities most closely associated with global environmental change, enhanced prediction and uncertainty reduction are the obvious goals of collaboration with social scientists. Like cascading disasters, however, social phenomena are inherently unpredictable. In research on social phenomena, learning is two-way: human subjects are capable of changing their behavior in light of learning or other stimuli such as ill-designed lack of preparedness. But even if prediction were possible, many social scientists see their mission to lie elsewhere, not least holding up a mirror to society permitting critical reflection upon dominant institutions, wrongful and avoidable harms, and better futures possible. Indeed, that is also why the social sciences – along with the humanities and arts - are crucial to achieving the Global Agenda 2030. Total agreement is, fortunately, not needed, nor is it even the most productive. Coexistence of a diversity of views in creative tension and dialogue is a more realistic goal, and it can help achieve greater resilience and sustainable resource use with justice and equity.

Many now substitute the term “science” with “research” or, even, “knowledge” to acknowledge the value of contributions from the non-positivist social sciences, humanities, law, the arts and traditional ways of understanding. However, it is difficult to overcome the biases that continue to favor STEM disciplines (science, technology, engineering and mathematics). Funding bodies and some of the same institutions that McBean discusses continue to privilege these disciplines. This tends to advantage fact-finding through numbers, thereby sidelining if not negating other means of knowing and engaging that are just as needed if we are to grasp the fuller dimensions of the problems we face and encourage the needed social transformations. When policy makers predominantly hear advocacy from STEM disciplines and economics, as they do when it comes to grappling with climate change, this fatefully limits both problem framing and perceived solutions (Hulme, 2011). It centers effort on improving predictions and broadening economic incentives, as opposed to re-thinking the ethics and sanity of current financial systems and the factors that drive (over)consumption, or creating new insights into how to inspire the needed transformations. The jury is out: it remains to be seen whether *Future Earth* will be given the centrality and resources needed to bring to fruition a fuller research agenda more capable of supporting the Global Agenda 2030.

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