

From Reality 2010 to Vision 2020: Translating Remotely Sensed Data to Assets, Exposure, Damage, and Losses

National Research Council Disasters Roundtable Workshop

The Disasters Roundtable (DR) of the National Research Council's Division on Earth & Life Studies held a half-day workshop on July 8, 2010 in Washington, D.C. The objective of the workshop was to develop a strategy or "vision" to make better use of remote sensing capabilities before, during, and after disaster events and discuss ways to overcome potential impediments in realizing this vision.

Ray Williamson, Executive Director of the Secure World Foundation, provided the keynote speech, after which two panels looked at the suggestions and concerns of both the producer and user communities of remotely sensed data for disaster management. Issues of data delivery and sharing, clearer collaboration between public and private providers, closer engagement with the public, and bridging the gap – the so-called "valley of death" – between technologists and end-users, were discussed.

From Reality 2010 to Vision 2020

DR member Ron Eguchi facilitated the final panel, composed of Dr. Williamson and participants in the earlier workshop panels who were both providers and users of remote sensing data. He invited panel members to imagine a scenario in which President Obama asked them for specific recommendations for implementing a vision of better utilizing remote sensing capabilities in disaster management. He hypothesized a budget of \$500 million over a 10-year period with the goal of reducing the probability of future losses from disasters. With this scenario in mind, Eguchi asked the panel to discuss what they considered to be the priorities for the next 10 years.

Panelists expressed varying concerns and offered a range of suggestions. Some argued for data standards and sharing policies for specific technologies or data sources – such as full spectral capacity or sensor web capabilities — as well as finding ways to better utilize existing platforms. One area of considerable agreement was to pursue deeper integration of remote sensing data to reduce risks — what Don McKeown of the Rochester Institute of Technology called a "mitigation strategy" — so that disasters could not only be addressed, but potentially avoided. In this respect, Williamson referenced comments made earlier in the workshop by Stuart Gill from the World Bank that there is a need to "look at the entire disaster cycle," not just at using data to react to an event. Williamson then suggested that measures should be taken to "get communities to understand the risk they face." One example was to use such data to make people aware of the risks associated with building in certain locations, such as on a hill or too close to a river. Gill added that a "top-down modeling exercise" should be undertaken to understand risks, combined with "bottom-up community risk mapping" to get people involved and aware of their environments.

Eguchi then asked panel members to consider what elements of the strategy they just described were likely to fail to be implemented and why. After some hesitation, panelists focused on what they deemed a probable obstacle: policy.

Dan Cotter of the Department of Homeland Security said that judging by the current “convoluted” conditions of policy with respect to space and geospatial technology, he expected that there would not be “a rationalized [geospatial] policy” in 10 years. Vincent Ambrosia of the California State University at Monterey Bay said that the current plans for NASA and other government programs suggested that “we’re not going to have any of the new capabilities we have on our wish list” in the next 10 years. He said he expected that during this period while commercial companies “may step up” to provide the needed data, he did not “see government making major new investments.” Chris Vaughan of the Federal Emergency and Management Agency agreed that technology will keep moving forward, but the probability is that in “10 years we will still be behind the bus,” in terms of keeping up with it in terms of policy. Gill concluded that technology will not be the problem, that the “issues here are social.”

Pondering on the lessons of the workshop, Jack Harrald, Chair of the Disasters Roundtable, said the discussion had illuminated a number of challenges in building bridges between remote sensing data and disaster management. He concluded that in considering the policy, investment, and relationship issues among the various stakeholders, there is a “profound leadership challenge” to develop a vision and see it through. In his view, future discussions are necessary to continue bridging the gap between communities and to reach consensus on how to make better use of existing capabilities, assess the need for new ones and fully integrate their information to better manage disasters before and after they happen, and perhaps even to avoid them.