Meeting Minutes of the Subcommittee on Disaster Reduction

6 January 2011, 10:00 a.m. to 12:00 p.m., White House Conference Center Lincoln Room

Italics indicate absent members. "T" indicate members participating via teleconference.

Officers

David Applegate (USGS), Chair
Margaret Davidson (NOAA), Vice-Chair (T)
Dennis Wenger (NSF), Vice-Chair

NSTC Liaison

Sarah Stewart Johnson (OSTP)

Designated Representatives

BLM *Edwin Roberson*
Daniel Lechefsky
CDC *Mark Keim*
DHS Bruce Davis
DHS/FEMA Stephen Carruth
DHS/USCG *Austin Gould*
DOD *Al Johnson*
DOE *Patricia Hoffman*
DOT *Kelly Leone*
Sheila Duwadi
EOP/OSTP Tamara Dickinson
Sarah Stewart Johnson
EDA *Audrey Clarke*
EPA Peter Jutro
Stephen Clark
FERC Pamela Romano (T)
HUD *David Engel*
NASA Craig Dobson
NGA *Chris Crosiar*
NGB *Daniel Bochicchio*
NIH Allen Dearry
NIST William Grosshandler
NOAA Margaret Davidson (T)
John Cortinas
NSF *Dennis Wenger*
OPHS Sven Rodenbeck (T)
State Nicholas Suntzeff
Brian Lieke
USACE *Steven Cary*
Dimitra Syriopoulou
USAID Sezin Tokar
USDA *TBD*
USFS *Carlos Rodriguez-Franco*
USGS Paula Gori

Other Attendees

BLM William Ypsilantis
DOE Patrick Willging
EPA Alona Bachi
Marcy Rockman (AAAS)
NASA Dalia Kirschbaum
NGA Carter Sturm
NOAA Nell Codner
Mary Erickson (T)
Maria Honeycutt (T)
Mary Ann Kutny
NSF Gregory Anderson
Bob O'Connor (T)
USAID Rhonda Davis Stewart
Secretariat Ross Faith
Barbara Haines-Parmele

Agenda

10:00 Welcome and Introductions
10:05 Approval of December Meeting Minutes
10:10 Report from the Chair
10:20 Report from the NSTC Liaison
10:30 Presentation: Disaster Risk Reduction, Resilience and Sustainability
11:25 Agency Discussion on Sustainability-Disaster Reduction Linkages
11:45 U.S. Delegation for ISDR's Global Platform Meeting
11:55 Close and Next Actions

Handouts

- Agenda
- December Meeting Minutes
- "Haiti One Year Later" - forum announcement
- ISDR Global Platform meeting announcement
- Summary of the ISDR North American Workshop

I. Call to Order and Introductions

Subcommittee on Disaster Reduction (SDR) Chair David Applegate (USGS) called the meeting to order at 10:00 a.m. and the participants introduced themselves.

II. Approval of December Meeting Minutes

The December Meeting Minutes were approved with no changes.

III. Report from the Chair

InterAction and the Business Leadership Civic Center will be hosting a forum on Haiti's reconstruction next week, marking the one year commemoration of the earthquake. The forum will be held from 4:00pm to 6:30pm on January 11th at the U.S. Chamber of Commerce in Washington, DC.

NASA's Earth Science Division/Applied Sciences Program is currently seeking a new Disasters Program Manager. The vacancy announcement closes January 11, 2011.

Applegate thanked agencies for sending summaries of their disaster risk reduction efforts to inform the U.S. contribution to the 2011 Global Assessment Report for Disaster Risk Reduction, which the UN International Strategy for Disaster Reduction (ISDR) will release later this year in advance of the Third Global Platform meeting (May 8-13, 2011). There is still time for agencies to provide input, which should be sent to Applegate (applegate@usgs.gov) and the Secretariat (ross.faith@mantech.com).

Applegate reported that there may be future opportunities to partner on sustainability issues with the National Academies Disasters Roundtable and the NSTC Subcommittee on Infrastructure, which falls under the Committee on Homeland and National Security.

IV. Report from the NSTC Liaison

Applegate thanked Sarah Stewart Johnson (OSTP) for serving as the NSTC Liaison to the SDR for the past year and welcomed aboard Tammy Dickinson (OSTP), who will be taking over the role.

Johnson stated that the White House Office of Science and Technology Policy (OSTP) was exploring possibilities for formally creating and linking the ad hoc SDR Coastal Inundation Working Group to the Subcommittee on Ocean Science and Technology (formerly JSOST) and the public-private insurance initiative of the Interagency Climate Change Adaptation Task Force. Specifically, there is interest in using the working group as a platform for implementing the task force's recommendation to create an open source risk assessment model to provide insurance companies and local city planners with better information about coastal flooding as well as other climate related hazards.

The next meeting of the Committee on Environment, Natural Resources, and Sustainability (CENRS) will be held on February 1st. The last CENRS meeting focused on overarching goals; this meeting will emphasize how sustainability will be incorporated into the work of the CENRS subcommittees. Each subcommittee will be given an opportunity to present on the links between sustainability and its portfolio, and Applegate stated that he has offered to give a 2-3 minute overview at the meeting on how the topic ties to disaster reduction. The committee will also consider a proposal to create two new subcommittees, focused on renewable energy and critical minerals, respectively.

Johnson reported that Pedro Espina, the new Executive Director of National Science and Technology Council, was revising the SDR's charter from a legal language standpoint. The revised charter, when complete, may also provide for more engagement with other parts of the Executive Office of the President, including the Office of Management and Budget and the National Security Staff.

Johnson also reported that OSTP's Associate Director for Environment, Shere Abbott, is interested in producing a deliverable for the President to announce on the anniversary of the Deepwater Horizon blowout that addresses the communication shortfall between the government and the academic community which occurred during the oil spill. The initiative would seek to improve collaboration between the two communities for disaster response in the future. Johnson noted that one activity that the SDR could take on would be the creation of a network of scientists to improve communication and capabilities for rapid response to man-made, technological disasters.

While much of the expertise in drilling, and particularly offshore oil drilling, lies in private industry, it was noted that significant subject matter expertise can also be found at academic institutions, such as the Department of Petroleum Engineering at Texas A&M University, and at oceanographic institutes. Johnson suggested that the SDR examine the recommendations contained in the National Commission's Report to the President on the BP Deepwater Horizon Oil Spill and Offshore Drilling, which is scheduled to be released on January 11th at http://www.oilspillcommission.gov/final-report. Ideas for the deliverable should be sent to Sarah Stewart Johnson (Sarah_S._Johnson@ostp.eop.gov) and Tammy Dickson (Tamara_L_Dickinson@ostp.eop.gov). It was noted that the any initiative would likely need a task of some sort to keep the group/network of experts engaged between disasters, so that when a disaster does strike, communication channels will be open and functional for rapid, effective response.

Mary Ann Kutny (NOAA) stated that NOAA's assessment of the oil spill response included an examination of the communication of information during the event and why that information in some cases was not released as expected, be it for legal or other reasons. The assessment will also examine how NOAA worked with its partners during the event. The assessment report is expected to be released in the next month or two.

Johnson also stated that the idea of expanding citizen science programs was being considered. Applegate noted that the concept seemed similar to FEMA Administrator Fugate's whole of community/social media initiatives. Applegate also suggested that it would be interesting to see a roll-up of the various types of social media activities that the federal agencies are engaged in.

Bruce Davis (DHS) stated that the DHS S&T Directorate, along with FEMA, has been engaged with the European Union to investigate social media both as a way of collecting information and disseminating it. The effort is in preliminary stages at the present and some priority areas for consideration have been identified. Those involved are currently awaiting the EU's response.

Paula Gori (USGS) stated that there were efforts within the USGS landslide, flood, and other programs to leverage social media. New initiatives typically require OMB sign-off. Gori stated that it would be a good time to have an interagency discussion on the subject of social media. She also recommended engaging with the Coalition of Organizations for Disaster Education, which is exploring initiatives along similar lines.

Applegate referenced an email sent from OSTP on Wednesday, January 5th announcing the creation of a new Earth Observations Task Force and suggested that the SDR engage with the group where its work overlapped with disaster issues.

Applegate also noted that the bill containing the reauthorization of NEHRP, WindHRP, fire administration, as well as multi-hazard charges to the SDR had passed the House but stalled in the Senate during the last session of Congress. The legislative process will therefore start from the beginning in the new session.

V. Presentation: Disaster Risk Reduction, Resilience and Sustainability

Applegate introduced Dr. Susan Cutter, the Carolina Distinguished Professor of Geography at the University of South Carolina. Cutter's presentation focused on the interrelationships among disaster risk reduction, resilience, and sustainability. She also spoke about the National Research Council's study on "Increasing National Resilience to Hazards and Disasters," which she is chairing, as well as the work of the Integrated Research on Disaster Risk (IRDR) program.

Cutter began her presentation with the proposition that the path from disaster risk reduction to sustainability leads through resilience. The resilience concept, though rooted in descriptions of natural systems, can and should frame discussions about strengthening several critical aspects of our society, including ecology, infrastructure, economy, organizations, social behavior, and community. The pursuit of resilience can be understood as the process of building local capacity across all of these aspects of society to withstand adverse impacts before, during, and after a hazard event. As an outcome, resilience is verified by the restoration of functioning social, economic, and natural systems. Achieving systems that are sustainable will require ensuring resilient outcomes not only in the context of current conditions and constraints, but also against the backdrop of uncertain and changing conditions implied by climate change, demographic shifts, and resource consumption.

Although resilience and sustainability are subjective terms that imply value judgments, difficult policy decisions, and the allocation of finite resources, Cutter stressed that the data and information that should ultimately help to guide these judgments is insufficient. Namely, disaster loss information and data about social, economic, and natural systems need to be more robust and widely available to provide a solid foundation for decision-making. One path which Cutter endorsed for achieving resilience and sustainability was implementation of the *Grand Challenges for Disaster Reduction*. She relayed to the subcommittee the disaster risk community's consensus opinion that progress has been good on understanding the natural processes that produce hazards and reducing the vulnerability of interdependent critical infrastructure (Grand Challenges numbers 1 and 4, respectively). She also noted, however, that progress on the other four Grand Challenges had been lacking and emphasized in particular the need for advancement in assessing disaster resilience using standard methods (Grand Challenge #5).

Cutter drew attention to the fact that the United States does not have a national, integrated database that measures natural hazard loss and endorsed the creation of such a database as a relatively easy way to advance the implementation of Grand Challenge #5. Without the database, decision-makers will continue to implement policies without critical information, like knowing how much disasters cost the Nation on an annual basis, where the losses are precisely occurring, and the complex social, economic, and natural system dynamics that are causing them. The closest thing to an integrated national loss inventory is a database developed by the University of South Carolina called SHELDUS (Spatial Hazard Events and Losses Database for the United States). Queryable and available online at www.sheldus.org, SHELDUS includes information for 18 different hazard events and approximately 650,000 records for the whole U.S. (excluding Puerto Rico, Guam, and the other U.S. territories) from the period 1960 through the end of 2009. SHELDUS draws from existing federal databases and is geo-referenced to the county level since that is the unit at which emergency management works.

The estimated losses provided by SHELDUS are probably low because losses for some hazards, like wildfires and landslides, are not kept on publicly accessible federal databases, and others, like flood losses, are not maintained in a single federal database. SHELDUS estimates are probably low for the added reason that the system can pull only the information that is reported in the federal databases,

which include direct reported losses but not uninsured, unreported losses. Despite these limitations, SHELDUS is the closest thing there is to a national, integrated hazard loss database.

SHELDUS was originally started approximately one decade ago as a National Science Foundation project and has proved to be such a valuable resource, as evidenced by its use in hazard mitigation plans across the country and other applications, that the University of South Carolina's Hazards and Vulnerability Research Institute has since kept it running without direct funding. Bruce Davis (DHS) asked if the University of South Carolina would be amenable to partnerships in order to maintain the database. Cutter stated that the university would welcome them. Cutter can be contacted at scutter@sc.edu.

Another approach to benchmarking the state of resilience across the country would be to invest in the Resilience and Vulnerability Observatory Network (RAVON), which was briefed at the April 2010 SDR meeting. One of the goals of RAVON is to provide long-term data on the nature and dynamics of social systems and their built environment for improved predictions of disaster risk reduction. The idea behind the network is to take advantage of local knowledge in disaster prone places to measure the economic, social, and demographic dynamics that are taking place at the local level so that longitudinal information, about patterns of business for example, is available when a disaster strikes and can inform recovery in the short-term and resilience and sustainability in the long-term. Although conceived as a distributed network with regionally-based observatory centers, an important element and strength of RAVON would be a sharing of protocols for information gathering so that data can be analyzed and compared across these regional observatories to provide a clearer picture of social resilience and vulnerability across the nation.

Cutter also recommended the development of consistent and comparable, locally-based vulnerability assessments. Currently, FEMA mandates hazard and vulnerability assessments as part of disaster mitigation, yet there is no consistency in how the assessments are carried out, making it difficult if not impossible to compare one state to another, and sometimes even two counties within the same state to each other.

The University of South Carolina's Hazards and Vulnerability Research Institute has developed the Social Vulnerability Index (SOVI, www.sovius.org), which pulls primarily from census information to enable uniform comparisons of how vulnerable U.S. counties are relative to one another. The Social Vulnerability Index is independent of the hazard threat, measuring vulnerability instead in terms of pre-existing conditions, such as prevalence of poverty, age demographics, female-headed households, etc., which adversely affect a population's ability to prepare for, respond to, and recover from disasters. The implication is that this information can provide a picture of how much outside assistance a community may need to successfully recover after a hazard event.

Cutter demonstrated that hazard risk and vulnerability maps can be overlayed to produce a composite map. As an example, she displayed a map encompassing the Southeastern U.S. and Gulf Coast States. The map user, guided by a three-by-three, color-coded matrix, can identify which areas have high, medium, and low social vulnerability, which have high, medium, and low hazard risk, and where these areas overlap for a potential "perfect storm" of hazard loss and painstaking recovery.

While there is some overlap between how one would measure vulnerability on the one hand and resilience on the other, the two concepts are distinct enough to require somewhat separate sets of indicators. The Hazards and Vulnerability Research Institute is therefore also working to develop evidence-based indicators to measure progress towards social, economic, institutional, infrastructure,

and community resilience in a systematic way. Such indicators would allow communities to gauge progress on an annual or semi-annual basis.

Another pathway towards sustainability would be to develop a science plan that is consistent with the international Integrated Research on Disaster Risk (IRDR) program. There is quite a bit of articulation between IRDR efforts and the Grand Challenges. The broad research objectives of IRDR are to categorize hazards, vulnerability and risk; to understand decision-making in both complex and changing conditions; and to reduce risks through knowledge-based actions. One of the projects that IRDR is current working on is forensic investigations of disasters, similar to those conducted by the National Transportation Safety Board (NTSB), which look at the root causes. The idea is to set up a number of these investigations across the globe and see if there are similarities in the stories and approaches. Another IRDR initiative is to establish a long-term database to reconcile differences between Centre for Research on the Epidemiology of Disasters (CRED) database, the Munich-RE and Swiss-RE databases, and SHELDUS. Cutter recommended that the SDR consider establishing a U.S. national committee for IRDR, which would include the SDR, the Disasters Roundtable of the National Academies, and the major multidisciplinary disaster research centers in the U.S., such as the Natural Hazards Center at the University of Colorado-Boulder, the Disaster Research Center at the University of Delaware, the Hazard Reduction and Recovery Center at Texas A&M, the Hazards and Vulnerability Research Institute at the University of South Carolina, and others.

Cutter also advised SDR members to be aware of upcoming reports. The International Panel on Climate Change is currently working on a special report entitled "Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation." The committee working on the report encompasses a broad range of experts, including climate adaptation researchers and practitioners, disaster researchers and practitioners, and climate scientists. There will be an opportunity for governments to review the draft report in the near future. Applegate stated that the SDR is looking forward to seeing the draft and noted that the subcommittee had a nice opportunity to work with the U.S. Global Change Research Program on vetting U.S. nominations to the committee.

Also of interest is a study being developed by the National Academies Committee on Science, Engineering and Public Policy (COSEPUP). The study, "Increasing National Resilience to Hazards and Disasters," will attempt to define national resilience and to frame the challenges to increasing it. The statement of task also charges the study committee with providing goals, baseline conditions, and performance metrics at the national level to describe what is known about resilience to hazards and disasters; to outline information gaps, knowledge gaps, and data gaps; and to present informed recommendations about what approaches might be best to elevate national resilience to hazards and disasters in the U.S. Several SDR member agencies are sponsoring the study, which is scheduled for completion by February 2012. Unlike typical studies conducted by the National Academies, the authors of this study will attempt to provide actionable recommendations.

VI. Agency Discussion on Sustainability-Disaster Reduction Linkages

Margaret Davidson (NOAA) stated that she was a major fan of SOVI and expressed concern that the 2010 Census, which used only the short form, would not provide the richness of information that past censuses have delivered. To Davidson's question of whether she had any ideas for a workaround, Cutter replied in the affirmative, stating that she had been looking at using the American Community Survey. The American Community Survey (ACS) is an ongoing statistical survey by the U.S. Census Bureau, sent to approximately 250,000 addresses monthly (or 3 million per year). It regularly gathers information previously contained only in the long form of the decennial census. It is the largest survey other than the decennial census that the Census Bureau administers.

Nick Suntzeff (State) noted that there is pressure to show how many lives were saved and the extent of economic losses avoided by disaster reduction initiatives in order to received continued funding for them. He asked if there were any studies that contained this type of information. Cutter replied that such a study did not yet exist, partly due to the fact that federal investment in resilience is ahead of the science and also because there are no benchmarks at the moment for baseline resilience indicators. Suntzeff asked who would be defining these baselines and noted that it was difficult to convince decision-makers at the Department of State to fund the International Strategy for Disaster Reduction (ISDR) without them.

Steve Carruth (FEMA) stated that studies by FEMA's Multi-Hazard Mitigation Council had shown that every dollar spent towards mitigation in the U.S. saves four in future losses. Suntzeff added that the ISDR had a similar yardstick, except with much cruder statistics, making the case for funding ISDR much weaker inside the Department of State. Sezin Tokar (USAID) noted that the World Bank had recently released a study in partnership with the ISDR called "Natural Hazards, UnNatural Disasters: the economics of effective prevention," which tries to determine the same thing. She added that dollars invested in mitigation in different countries probably had different payoff ratios than the 1-to-4 figure cited by the FEMA study. Applegate endorsed ISDR's partnership with the World Bank as a step in the right direction, that being a focus on the more tangible economic and financial aspects of disaster risk reduction.

Paula Gori (USGS) stated that comparative case studies would seem to be ample evidence to convince the economists who handle the purse strings to invest in disaster risk reduction. Cutter added that the IRDR forensic case studies might help convince the OMB to invest more in risk reduction.

Marcy Rockman (EPA/AAAS) asked whether there were any studies which sought to explain how certain populations are effective in communicating a culture of disaster risk reduction and resilience down through the generations while others are not. Cutter responded that such questions are being asked, but social scientists are not able to capture the answers well in all places. Part of what RAVON is attempting to do is to gather all that information for a variety of different places so that a much broader picture can be painted concerning the aspects of social memory that are important.

Dalia Kirschbaum (NASA) noted that despite having lived with and seen the effects of landslides year after year, many residents of Highland, California had failed to take preventive action in December when the risk of landslides was high, convincing themselves instead that they would not be impacted by the hazard – a rather dangerous mindset. Cutter commented that there is a lot of research in psychology about people's ability to estimate risk: disregard of known risks is referred to as cognitive dissonance.

Applegate asked Cutter and the group to explore at greater length the challenge of explaining the role that disaster resilience plays in the broader notion of sustainability. Cutter commented that it was important to strengthen resilience across several critical aspects of society, including ecology, infrastructure, economy, organizations, social behavior, and community. A community which may have high levels of infrastructure resilience may be lacking in some of the other areas, which would impede the pace of recovery after a disaster.

Bill Grosshandler (NIST) echoed the idea that resilience needs to be promoted across all of these societal aspects, but also added that people may be willing to accept a slower pace of ecological recovery if economic recovery, for instance, proceeds at a fairly rapid pace. Applegate stated that in thinking over the linkages between resilience and sustainability, he was continually drawn back to

the idea that one should not think about sustainability "on a sunny day." The game-changing events that disasters represent have the ability to cancel out progress towards achieving sustainable systems.

Cutter stated that the communities that enhance their resilience to disasters will also experience increased resilience to other kinds of shocks and stressors, such as economic or financial disruptions. Through capacity building a community is moved toward a more sustainable future.

Dimitra Syriopoulou (USACE) stated that the U.S. Army Corps of Engineers is co-chairing with NASA a climate change forum that is meeting quarterly in the Washington, DC area. The forum includes participation from the USACE Construction Engineering Research Laboratory at the University of Illinois at Urbana-Champaign and the Advanced Sustainability Institute. Syriopoulou invited Cutter to speak at the next forum, which will be held in March.

Bill Ypsilantis (BLM) cited wetlands loss in the Gulf Region as an example of economic pressures working to degrade the environment as a challenge for sustainability. Cutter stressed that these and all communities need to take a long-term view of land and resource use. One of the challenges is that the political election cycle tends to be shorter – every two to four years. She endorsed greater community participation in decision-making as a way to advance sustainability initiatives.

VII. U.S. Delegation for ISDR's Global Platform Meeting

The next UN International Strategy for Disaster Reduction (ISDR) Global Platform meeting is scheduled for May 8-13, 2011 in Geneva, Switzerland. The SDR sent a strong delegation to the 2009 Global Platform meeting, and Applegate encouraged agencies to consider sending a representative as part of the U.S. delegation. Those interested should contact Applegate (applegate@usgs.gov), copying the Secretariat (ross.faith@manteh.com). The meeting involves several concurrent sessions, so there will be an effort to ensure that the U.S. is represented in as many sessions as possible. The U.S. will also deliver a 2-3 minute statement.

Steve Carruth (FEMA) stated that FEMA had leaned on its representative to the EU, based in Europe, to attend the Global Platform in 2009, and noted that other agencies with representatives in Europe may find such an approach to be an economical way of sending someone to the meeting.

Suntzeff noted that the U.S. has also been asked to write a short article for a book on disaster reduction which the ISDR is producing in conjunction with the meeting.

VIII. Adjournment

The meeting adjourned at 12:00 p.m.

IX. Future Meetings

In 2011, the SDR will meet from 10:00 a.m. to 12:00 p.m. on the first Thursday of each month in the Lincoln Room of the White House Conference Center. The meeting dates are:

Thursday, February 3, 2011	Thursday, June 2, 2011	Thursday, October 6, 2011
Thursday, March 3, 2011	Thursday, July 7, 2011	Thursday, November 3, 2011
Thursday, April 7, 2011	*Thursday, August 4, 2011	Thursday, December 1, 2011
Thursday, May 5, 2011	Thursday, September 1, 2011	

*Subject to cancellation

X. Agenda Items and Other Communications with the Subcommittee

Please send proposed agenda items and any other items intended for distribution to the full Subcommittee to Ross Faith (ross.faith@mantech.com).

XI. Contact Information

SDR Leadership

David Applegate	Chair	703-648-6714	applegate@usgs.gov
Margaret Davidson	Vice Chair	843-740-1220	margaret.davidson@noaa.gov
Dennis Wenger	Vice Chair	703-292-8606	dwenger@nsf.gov

Secretariat

Ross Faith	703-388-0308	Ross.Faith@ManTech.com
Barbara Haines-Parmele	703-388-0309	Barbara.Haines-Parmele@ManTech.com

XII. Summary of January Actions

Action	Lead	By When
Send nominations for the U.S. delegation to the UN/ISDR Global Platform meeting (May 8-13, 2011) to Dave (applegate@usgs.gov), copying Ross (ross.faith@mantech.com).	SDR Member	ASAP
Send Sezin Tokar (stokar@usaid.gov) your ".gov" e-mail address to receive USG-only updates from USAID on global disaster response activities.	SDR Members	Standing
Contact Ross (ross.faith@mantech.com) to receive copies of the Grand Challenges for Disaster Reduction Implementation Plan packets or CD.	SDR Members	Standing
Let Dave (applegate@usgs.gov) or Ross (ross.faith@mantech.com) know how you use the implementation plans, including when you link to the plans from your agency websites. Send Ross or Dave additional distribution suggestions, including relevant contact information.	SDR Members	Standing