The CRCES Workshop on Societal Impacts of Decadal Climate Variability in the United States

**Venue:** The Hilton Waikoloa Village, Waikoloa (near Kona), Hawaii

**Dates:** 26-28 April 2007

**Scientific Organizing Committee:**
Vikram Mehta (Center for Research on the Changing Earth System (CRCES))
Rolf Olsen (Army Corps of Engineers - Institute for Water Resources)
Norman Rosenberg (CRCES)
Hans von Storch (Institute for Coastal Research, GKSS Research Center, Germany)
Robert Varady (Udall Center for Studies in Public Policy, University of Arizona)
Donald Wilhite (National Drought Mitigation Center, University of Nebraska - Lincoln)

**Co-sponsors:**
The NOAA-Climate Office/Sectoral Applications Research Program
The US Geological Survey
The US Army Corps of Engineers - Institute for Water Resources

**Co-ordinator:**
Ms. Janet Wood (Center for Research on the Changing Earth System (CRCES))

**Desired Outcomes:**
1. An initial qualitative (quantitative if possible) assessment of societal impacts of decadal climate variability (DCV) on the U.S.;
2. Identification of users of DCV and impacts information, the products that best serve their needs, and the means to convey such products to the users;
3. A plan to organize DCV impacts research and applications, with some specificity for important sectors;
4. Identification of issues for the DCV climate research community; and
5. A plan to identify and mobilize sources of funding.
Workshop Program*

**Thursday, 26 April 2007**

7:30 AM  Breakfast and Registration on Kona Promenade  
8:30 AM  Welcome and Purpose of the Workshop  
          Vikram M. Mehta  
          Center for Research on the Changing Earth System, Columbia, Maryland  
8:45 AM  Importance of the Workshop  
          Nancy Beller-Simms  
          NOAA Climate Office, Silver Spring, Maryland  

**Session I:** Characteristics of DCV Phenomena (Chairman: Vikram Mehta, CRCES)  
9:00 AM  The Observed Decadal Climate Variability  
          Vikram M. Mehta  
          Center for Research on the Changing Earth System, Columbia, Maryland  
9:30 AM  Droughts, Tropical Pacific Sea Surface Temperatures, and Climate Change  
          Gerald Meehl  
          National Center for Atmospheric Research, Boulder, Colorado  
10:00 AM  Decadal and Multidecadal Climate Variability in the Atlantic Sector - Observational Analyses, Modeling Studies, and Impacts over Continental Regions  
          Thomas Delworth  
          NOAA-Geophysical Fluid Dynamics Laboratory, Princeton, New Jersey  
10:30-11:00 AM  Break  

**Session II:** Societal Sensitivity to Climate (Chairman: Cesar Izaurralde, JGCRI)  
11:00 AM  Vulnerability, Resilience, and Adaptation: Societal Causes and Responses  
          Elizabeth L. Malone  
          Joint Global Change Research Institute, University of Maryland, College Park, Maryland  
11:30 AM  Societal Impacts of Climate in the Southwest and U.S.-Mexico Border Region  
          Robert G. Varady, Gregg Garfin, Barbara Morehouse, and Margaret Wilder  
          Udall Center for Studies in Public Policy, University of Arizona, Tucson, Arizona  
12:00 PM  Decadal Variability and Societal Impacts of Climate  
          Roger Pielke  
          University of Colorado, Boulder, Colorado  
12:30 PM  Enhancing Adaptive Capacity of Latin American Cities  
          Paty Romero Lankao  
          Institute for the Study of Society and Environment  
          National Center for Atmospheric Research, Boulder, Colorado  
1:00-1:45 PM  Lunch (provided)  
1:45 PM  Building Adaptive Capacity in Water-Scarce Environments: Governance, Knowledge and Institutional Change  
          Maria Carmen Lemos  
          School of Natural Resources and Environment, University of Michigan  
          Ann Arbor, Michigan  
2:15 PM  Discussion  
3:15-3:30 PM  Break  

**Session III:** Climate Impacts Inventory (Chairman: Michael J. Hayes, NDMC)  
3:30 PM  Modeled Effects of Moderate and Strong Los Niños on North American Crop Productivity and on U.S. Water Resources  
          Cesar Izaurralde, Norman J. Rosenberg, and Allison Thomson  
          Joint Global Change Research Institute and Center for Research on the Changing Earth System, Columbia, Maryland  

* Last updated on 20 April 2007
4:00 PM  Decision Support for Agriculture in Southeast US
         James J. O'Brien
         Center for Ocean-Atmosphere Prediction Studies, Florida State University
         Tallahassee, Florida

4:30 PM  An Impacts Overview: Experiences from the National Drought Mitigation Center
         Michael J. Hayes
         National Drought Mitigation Center, University of Nebraska
         Lincoln, Nebraska

5:00 PM  End of the Day's Play

6:30 PM  Icebreaker on Lagoon Lanai
**Friday, 27 April 2007**

**Session III:** Climate Impacts Inventory (Continued) (Chairman: Michael J. Hayes, NDMC)

8:30 AM  
**A European Approach for Assessing Ongoing and Future Storm Climate Change**  
Hans von Storch  
Institute for Coastal Research, GKSS Research Center  
Geesthacht, Germany

9:00 AM  
**Climate and Human Health: Experiences in Africa**  
Pietro N. Ceccato  
The International Research Institute for Climate and Society, Columbia University  
Palisades, New York

9:30 AM  
Discussion

10:30-11:00AM  
Break

**Session IV:** Case Studies of DCV Impacts (Chairman: Rolf Olsen, USACE)

11:00 AM  
**Decadal Climate Variability and Food Security**  
Mannava V.K. Sivakumar  
Agricultural Meteorology Division, World Meteorological Organization  
Geneva, Switzerland

11:30 AM  
**Decadal Climate Variability and Water Resources Management**  
J. Rolf Olsen  
U.S. Army Corps of Engineers, Institute for Water Resources  
Alexandria, Virginia

12:00 PM  
**Decadal Climate Variability Impacts on Water Resources and Agriculture in the Missouri River Basin**  
Vikram M. Mehta, Norman Rosenberg, and Katherin Kullgren  
Center for Research on the Changing Earth System  
Columbia, Maryland

12:30 PM  
**Decadal Climate Variability and the Operation of Water Resource Systems**  
Francisco de Assis de Souza Filho, Upmanu Lall, and Hyun-Han Kwon  
International Research Institute for Climate & Society  
Columbia University, Palisades, New York

1:00-1:45 PM  
Lunch (provided)

1:45 PM  
**Integrated Assessment of Climatic Impacts on Agriculture and Water Resources: From MINK to the Conterminous USA**  
Cesar Izaurralde and Norman J. Rosenberg  
Joint Global Change Research Institute and Center for Research on the Changing Earth System  
Columbia, Maryland

2:15 PM  
**Multidecadal Regimes of US Hurricane Losses**  
Eberhard Faust  
Department of Geo Risks Research, Munich Reinsurance Company AG  
Munich, Germany

2:45 PM  
Discussion

**Session V:** Economic Impacts and Implications of Improved DCV Forecasts (Chairman: Robert Varady, UCSPP)

3:15 PM  
**Lessons from the Economic Impacts of Drought**  
Michael J. Hayes  
National Drought Mitigation Center, University of Nebraska  
Lincoln, Nebraska

3:45-4:00 PM  
Break

4:00 PM  
**Loss Estimations on the Basis of a Reinsurer's Loss Data Base**  
Eberhard Faust  
Department of Geo Risks Research, Munich Reinsurance Company AG  
Munich, Germany
4:30 PM  Economic and Social Impacts on Engineering Adaptations to Climate Variability and Change
Charles Chesnutt
U.S. Army Corps of Engineers, Institute for Water Resources
Alexandria, Virginia
5:00 PM  Discussion
6:00 PM  End of the Day’s Play

Saturday, 28 April 2007
7:30 AM  Breakfast on Kona Promenade
Session VI:  What Have We Learnt? (Chairman: Hans von Storch, GKSS)
8:30 AM  Summaries by Session Chairs, followed by discussion
10:30-10:45 AM  Break
Session VII:  Recommendations (Chairman: Vikram Mehta, CRCES)
10:45 AM  Summary of recommendations by the Session Chair, followed by final discussion
1:00 PM  Lunch (provided)
End of the Workshop