

# **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

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\* 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**

- 7:30 AM **Breakfast on Kona Promenade**
- 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**