NOAA's Human Dimensions of Global Change Research Program

FY 2002 Information Sheet

Goal

The goal of the NOAA Human Dimensions of Global Change Research (HDGCR) program element is to advance our understanding of human response to and planning for the effects of climate variability. The Program has a distinct emphasis on the incorporation of evolving scientific information into ongoing decision making processes. There is an emerging emphasis on the consideration of climate variability, and information about climate variability, in the context of multiple and interacting social and environmental stressors. The Program supports investigation into how decision makers perceive the effects of climate and process new scientific insights and information relevant to climate and its effects. To ensure that society as a whole gains from the emerging knowledge and forecasting capabilities of global change science, we also encourage research directed toward the nature of participation in these decision processes and which practices, operations, individuals, and/or organizations, are affected or influenced by changed decisions. This Program is designed to advance the knowledge necessary to build local, regional, and national capacity to reduce vulnerability to climate related effects.

Rationale

In the mid 1980s, dynamical climate models designed to simulate the interaction of the ocean and atmosphere in the Tropical Pacific began to show skill in predicting the behavior of the El Niño phenomenon. The scientific community working on predictability was naturally enthusiastic about the potential that forecasts might have for reducing vulnerability to El Niño-related climate variability. There was even a tendency toward the premature assumption that predictive information would be, by its nature, useful information and therefore would result rather directly in better decisions.

NOAA's Climate and Global Change Program was heavily invested in the research that lead to forecast capability, and the Program remains committed to extending understanding of the climate system. In order to get to the point of realizing potential benefits associated with predictive insights into the behavior of the climate system, we recognized the need to advance our understanding of how humans experience climate, the nature and interaction of social, economic, and ecological vulnerability to problems affected by climate, and the constraints that influencing coping systems. Indeed, as expressed in the 1999 NRC Report, Making Climate Forecasts Matter, we do not yet have a comprehensive nor systematic picture of the potential or actual benefits of climate forecasts. (Easterling and Stern, 1999)

Global change science over the last few years has embraced the importance of decision relevance within the process of research planning (see Global Environmental Change: Research Pathways for the Next Decade, and Our Changing Planet FY 2001). Two very

recent NRC reports, Our Common Journey and The Science of Regional and Global Change: Putting Knowledge to Work, begin to chart the course toward global change science agendas designed specifically to inform society's pursuit of the sustainability. NOAA's Human Dimensions Program is fully consistent with and supportive of these developments.

Current Priorities

The current research priority is on improving our understanding of communication, dissemination, and evaluation of climate analysis and forecast information. The objective is to provide the knowledge that contributes to improving the relationship between the information delivery system and the social coping system such that societal welfare in its broadest sense is enhanced.

For several years, NOAA has been funding research projects and applications activities associated with the potential or actual use of climate forecast information. Many projects have investigated the potential benefits and costs of using forecast information as well as factors currently constraining their wide-spread use. Most of these have looked at the use of climate information in an event-specific context.

These earlier studies and experiences with the actual use of climate forecast information in real world settings provide an emerging foundation of knowledge and point to the need for a more systematic understanding of information systems appropriate to the delivery of climate information amenable to social coping systems. Appropriate areas for further study include:

- **The nature of participation (over time) in the development of information systems** (e.g. Who are the participants in the processes of communication, dissemination, and evaluation of information, including identification of critical intermediaries (the media, extension agents, NGOs, public and private agencies, etc.)? How is participation determined and how does it influence effective adaptation?)
- **The importance of scale (of information and of management)** (e.g. What are the issues and/or problems for which managers might consider climate information relevant, and what can be done to more effectively correlate the scale of climate information with the scale at which managers operate?)
- **The role of institutions**(e.g. What are the roles played by various existing and emerging institutions and how do these institutions influence the information system and what is the effect on overall societal welfare?) (For these purposes, institutions might include, but not be limited to NOAA, Regional Climate Centers, State climate offices, the International Research Institute for Climate Prediction (IRI), and a suite of emerging institutions such as the C&GC sponsored centers under the RISA Program (Regional Integrated Sciences and Assessment) that are attempting to integrate scientific inquiry and establish research endeavors well coordinated with decision-need)

- **Event -specific and between event use of information and response** (e.g. What are the differences between how an information system functions in preparation for and during a particular event? What has been learned in these instances about information systems and how do these lessons apply to building "between event " response and adaptation?)

Approach

Multidisciplinary teams of investigators are often needed to address the complex issues at hand. These teams can be comprised of different social science disciplines or across the disciplines of social and natural sciences. In the past, many of the successful proposed approaches have integrated social with natural or physical science components to form a more comprehensive analysis of the dynamics of climate-human interactions. (Please note that support for extensive modeling of the physical system is more appropriately handled through climate science programs both within the C&GC Program and other agencies.)

Studies can be focused on regions in the US or overseas where the impacts of climate variability are acute. If the US research team is undertaking a study outside the US, they must present evidence of strong collaborations with local researchers and institutions (e.g., NGOs, extension services, state and local governments, representative private sector organizations) in the region of study. Letters of support from local collaborators should be included with the proposal.

Investigators are strongly encouraged to collaborate with decision makers in the region or sector to be studied. Many projects have included focus groups, workshops with these communities to discuss project framework up front and conclude with workshop on research results.

An important objective of the program is to provide feedback to the climate science and forecasting community on the level of usefulness of the current information being produced and how the information could be more effectively communicated and disseminated. Thus, investigators are encouraged to consider developing a plan for determining how best to provide feedback on the insights/results from their research projects to members of the forecasting community, such as those at NOAA's Climate Prediction Center or the International Research Institute (IRI) for climate prediction.

Applicants whose proposals are chosen for funding will be expected to undertake an ongoing dialogue with NOAA's Climate and Societal Interactions group of which the Human Dimensions research program is one element. Part of this dialogue will consist of a Principal Investigators meeting of funded projects to discuss common questions and frameworks to be addressed in the new research projects.

Proposal submission

The full guidelines for proposal submission can be found in the NOAA FY 2002 call for proposals for its Climate and Global Change Grants Program (www.ogp.noaa.gov). However, investigators are advised to include the following information in their proposals.

Proposals should sufficiently build on what is already known from the published literature about the proposed topic (e.g., value of climate information, decision making under uncertainty, use/transfer of new scientific information, integrated modeling of natural and human systems, sectoral analyses.) Linkages to the use of specific information derived from climate prediction should be discussed explicitly; however, physical science components aimed at improving climate forecasts will not be supported.

Because of the interdisciplinary nature of the program and the proposals we receive, it is essential that investigators describe in extensive detail the proposed methodology and how it will be accomplished. Investigators need to be explicit about hypotheses to be tested, data to be collected, analyses to be performed, components of any proposed modeling, and expected output for theoretical advancement of the topic area. For proposals from a team of researchers, a plan which includes the roles of the investigators and how the team will interact and integrate the multiple components must be clearly specified.

Competition for funding in this program continues to be very strong. The program normally receives about seventy letters of intent for proposed research projects, and less than half of those are encouraged for submission of full proposals. Of the full proposals submitted, only about 10-15% are selected for funding. Program funds are expected to be extremely limited again. For further information, contact Claudia Nierenberg 1100 Wayne Avenue, Suite 1225, Silver Spring, MD 20910; telephone: (301) 427-2089, ext 151; or e-mail: claudia.nierenberg@noaa.gov

Funding availability

Contingent on the availability of funds through the FY 2002 budget process, up to $1 million may be available for new projects. Please note that the average funding level is about $100K per year, ranging from $50K - $140K per year. Applicants are encouraged not to exceed requests of $150K per year for multi-year projects.

Sources of background information for developing a relevant proposal

At the request of NOAA, the National Research Council (NRC) of the National Academy of Sciences recently developed a science plan for the area of the human dimensions of seasonal-to-interannual climate variability. The published NRC plan, Making Climate Forecasts Matter, lays out the state of knowledge and a series of critical research questions, and it provides a valuable set of references. All researchers interested in the NOAA Human Dimensions program are highly encouraged to read this book, particularly chapter six on Scientific Priorities. The full book is now available on the National Academy Press web site at http://books.nap.edu/catalog/6370.html

Abstracts from awards of projects in previous years and project summaries from a principal investigators meeting are available on the NOAA Human Dimensions' web site: http://www.ogp.noaa.gov/mpe/csi/econhd/index.htm

Other useful publications include, *Coping With Climate: A Way Forward* (this is a report of a review process and OGP will soon have website information), and two NRC publications: *Our Common Journey: A Transition Toward Sustainability*, and *The Science of Regional and Global Change: Putting Knowledge to Work.*

References

Coping With Climate: A Way Forward. Summary for Policymakers. A Multi stakeholder Review of Regional Climate Outlook Forums Conducted at an International Workshop; October 16-20, 2000; Pretoria, South Africa; 2001. Palisades, N.Y.: International Research Institute.

National Research Council

1999 *Making Climate Forecasts Matter*. Report of the Panel on the Human Dimensions of Seasonal-to-Interannual Climate Variability. P.C. Stern and W.E. Easterling, eds. Washington, D.C.: National Academy Press.

1999 *Our Common Journey: A Transition Toward Sustainability*: Report of the Board on Sustainable Development, National Research Council. Washington.D.C.: National Academy Press.

2001 *The Science of Regional and Global Change*: Putting Knowledge to Work. Report of the Committee on Global Change Research. Washington, D.C.: National Academy Press.

US Global Change Research Program 2001. Our Changing Planet: The FY 2001 Global Change Research Program: A Report by the Subcommittee on Global Change Research, Washington, D.C.: National Science and Technology Council