United States Department of State

Washington, D.C.

Intergovernmental Preparatory Meeting
UN Commission on Sustainable Development -17
Thematic Discussion: Drought
Intervention for February 25, Afternoon Session

Extended Remarks Upon Which Intervention Is Based

Intervention Delivered by: **Greg Crosby**, National Program Leader, Cooperative State Research, Education, and Extension Service, U.S. Department of Agriculture.

While drought is a recurring phenomena that has plagued civilizations throughout history, today it is one of the world's most costly and far-reaching natural hazards. A quick glance at the news in just the past week shows us numerous examples of drought conditions and their impacts around the world.

In the United States, drought affects more people than any other natural hazard and it is one of the most costly, with direct losses averaging between $6-8 billion each year. Drought is a historical and current concern across large portions of the United States. : Reviewing Past Palmer Drought Severity Index Maps by Week for 1998 - 2006 (year to date in February, 2009) there has been no part of the United States that has not been affected by drought--East , West , North and South. Current views of the US Drought Monitor (http://www.drought.unl.edu/dm/monitor.html) and the North American Drought Monitor (http://www.ncdc.noaa.gov/oa/climate/monitoring/drought/nadm/index.html) show Northern California, Nevada, Texas, Wisconsin, Southern Appalachia and parts of Florida moving into continual severe drought conditions from 2008 to 2009.

There are warnings of potential increases in the frequency and intensity of droughts as a consequence of changes in drought climatology, coincident with population increases and other factors such as health crises, conflict, and unsustainable use of natural resources (especially water) which will combine to magnify drought's impacts.

Advances in seasonal and annual forecasting and predictions allow us to plan and act ahead of extreme events. Just as weather forecasts help us plan our weeks, seasonal-to-interannual forecasts can help plan for the next growing season, or the next years' crop. If we know a pronounced drought is coming, we can encourage farmers to switch to drought tolerant crops for the year – for instance from maize to sorghum. Our improved understanding of Earth systems has allowed us to design specific tools that will enable us to make better planning decisions to prepare for droughts, such as the normalized difference vegetation index and the water resource satisfaction index, calibrated to the predominant regional crop.

Just over 10-years ago, the United States instituted its **national drought policy**, recognizing the need to prepare for and lessen the severe impacts of drought on the American people and the environment. In 2000, the National Drought Policy Commission, established pursuant to the Act, issued a groundbreaking report, *Preparing for Drought in the 21st Century*.

That report documents the U.S. view that we need to shift from an emphasis on drought relief to a forward-looking stance of preparedness—especially drought planning, plan implementation, and proactive mitigation--- to reduce all nations' vulnerability to the impacts of drought.

The guiding principles of this approach are:

1. Favor preparedness over insurance, insurance over relief, and incentives over regulation.
2. Set research priorities based on the potential of the research results to reduce drought impacts.
3. Coordinate the delivery of national services through cooperation and collaboration with private and local entities.

About 22 U.S. federal programs have some responsibility for drought monitoring/prediction and research. In relation to monitoring and prediction, these include programs that focus on weather patterns, climate, soil conditions, and streamflow measurements in many cases regional and transboundary in scope.

The following three examples of current networks that provide the observations, modeling and forecasting required to address the issue are indicative of the range and breadth of the U.S. effort:

- the U.S. Department of Agriculture's Soil Climate Analysis Network (SCAN)/Snow Telemetry Network (SNOTEL),
- the National Oceanic and Atmospheric Administration/National Weather Service's Cooperative Observer Network (COOP), and
- the U.S. Geological Survey's streamgaging and groundwater monitoring network.
- the U.S. Army Corps of Engineers: It both uses and supports non-Corps federal monitoring systems and has developed its own remote data sensing network to manage its reservoirs.

In 2006, the United States established the National Integrated Drought Information System (which we call NIDIS (NEYE-Dis)), within the U.S. National Oceanic and Atmospheric Administration, as an interactive, and interagency delivery system for drought information. It offers a framework for interacting with and educating those affected by drought using a web portal environment. The NIDIS Drought Portal (www.drought.gov) is already providing access to drought monitoring, forecasting, research, planning, and education information by integrating information across agencies from the federal to state and local levels.

The National Drought Policy Commission Report called for several proactive measures, among them the following:

1. Preparedness measures, particularly comprehensive drought planning and proactive mitigation measures, reducing the need for future emergency financial and other relief. Effective drought plans that have clearly identified objectives and performance standards, and that should be flexible to avoid a "one size fits all" approach and allow for social, cultural, and religious differences.

2. A regional, transboundary approach with support from satellite and remote sensing would be most effective where there is insufficient area coverage or recorded history for stream gage, soil moisture and temperature, and climate data. Drought-related data can be better marshaled, interpreted, and disseminated to all parties with an interest in drought, including the media and public at large; so that citizens and experts in drought management alike can gain the knowledge they need to help lessen the impacts of drought. The NIDIS Drought Portal is a good example of this policy in action and is avaialable for all to access by internet.

3. Drought programs need to identify and address priority environmental impacts and improve proactive mitigation of drought's impacts on the environment through training, incentives, technical assistance, research, and public education. Effective plans should consider the allocation of water so as to protect the environment, and meet immediate human needs.

4. Individuals, businesses, local/county/state governments, tribes, and nongovernmental organizations with an interest in or responsibilities for drought management would benefit from training and technical assistance to plan for and reduce the impacts of drought.

Partnerships among governments and private interests can go far in developing the tools and strategies for formulating and carrying out appropriate drought preparedness strategies. Proactive mitigation activities such as water conservation, science-based forest management, reuse of wastewater, desalination, pricing strategies, and the identification of back-up water supplies—when initiated before an emergency—can reduce vulnerability to drought events. There are a number of success stories in the United States in drought preparedness and proactive mitigation at the individual, local, state, regional, and federal levels that would make excellent models for use in training and technical assistance.

One example of successful implementation is the drought-prone Metropolitan Water District of Southern California's Integrated Resource Plan which balances growing population with maintaining local agricultural resources. The Metropolitan Water District of Southern California's Integrated Resource Plan (IRP) emphasizes local responses such as conservation, water recycling and groundwater recharge. The IRP places increased emphasis on less energy consuming local water resources and use of financial incentives

and rebates. Conservation has occurred in both residential and business sectors, with Metropolitan offering guidance and financial incentives to use more water-efficient technologies. In recent years, Metropolitan has helped foster more than 85 water recycling and groundwater recovery programs by providing financial incentives to its member agencies. Metropolitan has invested about $215 million through 2006 into these projects, which recover 128,000 acre-feet per year, equivalent to the water needs of over 600,000 people.

U.S. International Responses and Actions:

Internationally, the United States has several active programs that extend our collective capability to understand and predict drought and its related impacts. Principal among these effort are FEWSNET, SERVIR, and the North American Drought Monitor.

In addition, the United States is working with our colleagues through the Group on Earth Observations (GEO) and the Global Earth Observing System of Systems (GEOSS) to establish a **global drought index**.

The **Famine Early Warning Systems Network (FEWS NET)** is a USAID-centrally funded activity that collaborates with international, national, and regional partners to provide timely and rigorous early warning and vulnerability information on emerging or evolving food security issues so that key decision makers have ample time to prepare and take preventive action.

Operating in Africa, Central America and Afghanistan, FEWS NET is an important tool to advance disaster readiness for humanitarian assistance and can guide economic growth interventions, particularly in agriculture.

FEWS NET has interagency agreements with USGS, NASA, NOAA and USDA that provide information to the U.S. government, local governments and a variety of other regional and international partners to assist in averting famine. www.fews.net

The **SERVIR** system is web-based (www.servir.net) and makes available previously inaccessible earth observation data; decision-support tools for interpreting the data; online mapping; and, a three-dimensional, interactive visualization of the earth (known as SERVIR-Viz).

SERVIR's decision support tools address issues related to climate change, biodiversity, disasters, ecosystems, health, water, and weather. Based in Panama at the Water Center for the Humid Tropics of Latin America and the Caribbean (CATHALAC), SERVIR serves all seven countries of Central America and southern Mexico. The system is being used to monitor the weather, forest fires, and ecological changes, as well as respond to severe events such as red tides, tropical storms, and flooding.

While not designed to integrate drought information, this system is well positioned to provide decision support tools for drought monitoring, forecasting, and planning purposes.

As a parallel to efforts to establish the U.S. drought monitor, the United States, Mexico and Canada are working together to establish a North American Drought Monitor (NADM), bridging agencies and expertise within the three governments to produce a valuable and viable real-time product.

The centerpiece of the NADM is a group of drought experts and database specialists from across the continent working together in an ongoing operational capacity to carefully compile and analyze disparate climate observations at multiple scales. Processes have been established to facilitate the open exchange of data and information across borders, and the transfer of scientific expertise and data management principles between countries is a key element to building the capacity to monitor drought conditions on an ongoing basis across the continent.

While this effort was successful in improving the delivery of drought information to end users, it also established a precedent for how nations, when working together, can turn disparate observing systems and limited individual resources into an integrated program to enhance decision making.

Drought is clearly an issue with widespread impacts which faces all of our countries. It is also an area that will benefit from collective efforts – from improving our understanding of drought, to monitoring it, predicting it, planning for it, and mitigating its devastation.