THORPEX

Societal and Economic Applications in Mexico.

Jorge L. Vazquez

The major risks to cope with are related to climate variability and weather extremes.

Disasters in agriculture 1995-2003 related to climate extremes (based on info by SAGARPA).
As outlined by Brian Mills and David Parsons, from the SERA workshop (August 2006, Boulder) five broad areas emerged:

1. Understanding the use of weather forecast information in decision making;

2. Communication of weather forecast uncertainty;

3. User-relevant verification forecasts;

4. Estimation of the economic value of weather forecasts; and

5. Development of decision support tools and systems.
Despite we are enthusiastic about the project, some issues

- The THORPEX committee in Mexico had not had a previous meeting until today.
- All the activities have been developed as ‘volunteers’ (no funding except for attending meetings).
- Given the weaknesses of the Weather Service (less than 150 employees total) to provide specific products to all the socioeconomic sectors in Mexico, several institutions had created their own ‘weather services and observation networks’.
- The role of the Mexican Weather Service is becoming limited to be the representative of WMO in Mexico with less recourses as time goes by. One could say that the interest of the government of Mexico in the value of weather and climate information is scarce, even though the users require and use the available information.
Facts

• In Mexico, decision makers and users in general look for the weather and climate information, no matter its quality or format.
• Regarding long-term predictions, a consolidated users group exist, which twice a year keeps discussions on the predictions usefulness and provides feedback.
• It seems to be a growing interest in having research projects developed including a component about human dimensions and applications in the Americas.
• Other projects related to drought motivated studies about how different communities respond to weather information (e.g. gender studies).
• Major risk management lead to the use of Early Warning Systems (such in the case of Tropical Cyclones). This experience might be taken to other sectors.
• Knowledge and experience from other regions around the world might be usefull for offering solutions.
What is a good forecast?

A forecast acquires value only when it makes a change for taking some decision.

Making climate (weather) forecasts matter.

**Social, economic, behavioral, etc.**

**MODELS**

**Direct interaction with**

**USERS**

**Feedback**

**Cases of study**
2 DO

- Capacity building:
  - infrastructure: clusters, display systems, communications.
  - human resources: capability of data qc, data assimilation, and specially persons prepared as ‘bridges’ between users and producers of forecasts.
- NWS strengthen through multi-institutional cooperation and additional resources.
- Begin evaluation of current forecasts (do the Mx WS –and other- has a MOS, bias estimator, etc.?)
- Workshops or short courses with the media along the country.
- Users identification; education and periodical feedback.
- Involvement of the social and economic research communities into the process of forecasting (begin to end).
- Work on showing the value of the information not only in terms of mony or economix indexes but also in processes.
Examples of current forecasts issued at several institutions in Mexico

- *Weather Service of the National Water Commission (MxNWS)
- *Mexican Navy
- *Meteorological Center of the Electricity Commission

- **Hydrometeorological Center in the state of Queretaro
- **Center for Short Term Predictions of the Gulf of Mexico
- National Center for Disaster Preparedness – Secretary of the Federal Government
- **Government of the city of Mexico.
Hydrometeorological Center
State of Queretaro

Herramientas

Red de Estaciones Automáticas
Hidroclimatológicas y Meteorológicas

Radar Meteorológico

Estaciones Hidroclimatológicas
Estaciones Meteorológicas

Red pluviométrica de la Ciudad de Querétaro
(12 puntos)
Operational Information on Weather for Central America provided by NASA and regional agencies.
Modelos Numéricos
Weather and Research Forecast
MM5

Datos de superficie
Biodiversidad
Hidrológicos
Meteorológicos

Información satelital
Biodiversidad
Meteorológica

Condiciones locales
Topográfica
Uso de suelo
Condiciones socioeconómicas

Para
Tomadores de
decisiones

Mejores respuestas

Mejores programas nacionales de prevención y atención de emergencias

Mejor adaptación