High impact weather in Mexico

During the summer (May-Oct), nearly 80% of the total annual precipitation is observed in the region. Tropical cyclones are the most frequent high-impact weather phenomena. Other high-impact weather types are related to the dynamics of easterly waves, the North American monsoon system, the inter-tropical convergence zone meridional displacement, orographic precipitation and local convection.

Availability of weather forecasts

Several forecast systems are available in Mexico, though none of them uses ensemble predictions yet. Community mesoscale models such as MM5 and WRF have been implemented in various institutions and are run operationally as single-model runs. However, NWP in the country is still on its way to make the most of it. At present, operational weather prediction in Mexico mainly relies on forecasters' empirical expertise, the use of satellite images and traditional meteorological charts. An Early Warning System to cope with tropical cyclone impacts is in place at the Civil Defense headquarters.

User involvement from weather and climate communities

Most of societal and economic research in relation to atmospheric sciences has been developed for seasonal and monthly time-scales. This resulted in a well-conformed group of climate information users: the Climate Prediction Forum community that meets twice a year to discuss possible applications of seasonal forecasts. A new group has been convened in 2009, aimed to use information on extremes into decision-making processes. Recent studies on the economics of climate change could provide a base platform for SERA in shorter time-scales.

Use and perception of weather forecasts

At the end of winter 2008-2009, an electronic survey was conducted on how weather-forecast information is perceived and used in Mexico. Twenty questions were published in the National Meteorological Service (SMN) webpage which were answered by people across all the Federal States in Mexico with the exception of two (Zacatecas and Tlaxcala). Respondents were 32% female and 68% male; 57% hold a bachelor’s degree. One of the questions revealed that 48% of the sample hardly makes a difference between the terms ‘weather’ and ‘climate’. More survey results are shown in the graphics.

Next THORPEX-SERA steps in Mexico

- Capacity building activities in cooperation with U.S. and Canadian institutions.
- Design and execution of the Implementation Plan for Mexico.
- Prediction enhancements by using TIGGE/NAEFS products operationally.
- Demonstration projects, research and operational developments.
- Exploration of linkages between weather and climate communities.
- Incorporation of the SERA framework (Mors et al., 2007) in various initiatives.