

## Efforts to underpin regional climate prediction and services in Southern South America

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WMO has established a regional climate centre for southern South America led by the National Weather Services of Argentina and Brazil. Currently, several projects are being implemented to underpin climate services in the region in an interdisciplinary and intersectoral framework.

In the first part of the talk, the scientific background for the development of climate monitoring and prediction tools in southern Southern South America being done in the context of CLIMAR and CLIMAX projects, will be presented. In particular, I will show the main outcomes of the predictability studies on seasonal timescales, included prediction skill assessment, obtained for surface air temperature and precipitation from an ensemble of climate models. Southeastern South America and the Central Andes region show the highest levels of skill and predictability, related to the remote influence of tropical ocean variability. On subseasonal timescales, I will describe the influence of MJO over the region, and in particular over the activity of the leading pattern of rainfall variability. This influence is exerted not only by the MJO passage over the tropical region but also through energy propagation along extratropical arc-shaped wave trains. During the rainy season - October to April- the phases of the MJO can be clearly associated to the wet or dry phase of the leading pattern. Then, I'll introduce the techniques we are implementing to develop monitoring and prediction tools for Southern South America on subseasonal and seasonal timescales. Finally, I will present the efforts done to involve different societal actors in the development climate prediction tools with focus on the agricultural sector. In particular, I'll introduce the co-design and co-production approach we are implementing with small farmers living in Southeastern South America and the collaborations established with the Argentine National Weather Service and Regional Climate Service for Southern South America to improve the social appropriation of the new climate products.