

A perspective on the challenges and opportunities faced by the climate research community in taking the next steps towards developing climate services for Latin America and the Caribbean

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This is an exciting and critical time for all those interested in developing, linking and applying climate knowledge. From the foundations laid at the World Climate Conference-3 in 2009 and the subsequent establishment of the Global Framework for Climate Services (GFCS), the need to provide climate information to support decision making is now central to many research agendas, including those of the WCRP. This change in emphasis and even in mindset is reflected in the final conclusions and report of the International Conference on Regional Climate (ICRC-2013) held in Brussels in November 2013. Amongst other things, the more than 400 regional climate scientists attending this conference, including many from Latin America and the Caribbean (LAC), recognised the need to establish a two-way dialogue with the end users of regional climate information so as to ensure an appropriate tailoring of the CORDEX output to the decision makers' needs.

While such intentions are now clearly stated in many strategic plans, policy and vision statements and white papers, there are many challenges, as well as opportunities on the road to implementation. From the perspective of a co-chair of the WCRP Working Group on Regional Climate (WGRC) and somebody involved in research activities informing the development of European, and in particular Mediterranean, climate services, some of these challenges and opportunities will be outlined.

While the climate science research community has a central role to play, it is evident that a multi-disciplinary approach is needed. Identifying user needs and their decision making context, for example, is a complex process benefitting from sectoral knowledge and social science expertise. Assessing whether information is indeed useful or usable, and the value of climate services, are also complex tasks.

It is inevitable that user needs are very varied though a requirement for high-spatial resolution and tailoring to local scales is a common refrain. This inevitably raises specific and challenging climate modeling needs which will be different for urban zones and coastal environments, for example. These differing requirements need to be reflected in initiatives such as the WCRP Grand Challenge on Regional Climate Information and taken into account in identifying research priorities for WCRP projects such as CLIVAR and GEWEX.

The expressed user needs for high-spatial resolution clearly pose challenges for climate modeling and for the development of observational data sets. How far these challenges can be met, requires further assessment – as indicated by the ICRC-2013 emphasis on exploring the real added value of downscaling.

Climate science research agendas tend to make a clear distinction between seasonal forecasts, decadal prediction and longer-term climate change projections. Yet for many users these distinctions are unimportant or not understood. From a user perspective, the important thing is

to have information on the future timeframes important for their operational and strategic decision-making needs – whether that is the next season, the next few years, the next couple of decades or longer. Communicating the specific issues associated with predictability and uncertainty on these different timeframes remains a challenge.

The development of climate services also requires confronting some organizational and structural issues that can be sensitive for the research community. What can and should be done at the national level? What should be done at the regional level? What is the role of the private sector in delivering climate services? Is some form of accreditation or certification necessary or inevitable?

Finally, the growing emphasis on climate services raises some fundamental questions about the working relationships between the climate research community and the user/stakeholder community. In particular, how far down the path of truly collaborative research is it desirable or feasible to go, i.e., to what extent should the latter community be involved as partners in the design, planning, monitoring and management of research?