



Enhancing seasonal climate prediction capacity for the Pacific countries

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Seasonal and inter-annual climate variability is a major factor in determining the vulnerability of many Pacific Island Countries to climate change and there is need to improve weekly to seasonal range climate prediction capabilities beyond what is currently available from statistical models.

In the seasonal climate prediction project under the Australian Government's Pacific Adaptation Strategy Assistance Program (PASAP), we describe a comprehensive project to strengthen the climate prediction capacities in National Meteorological Services in 14 Pacific Island Countries and East Timor. The intent is particularly to reduce the vulnerability of current services to a changing climate, and improve the overall level of information available assist with managing climate variability.

Statistical models cannot account for aspects of climate variability and change that are not represented in the historical record. In contrast, dynamical physics-based models implicitly include the effects of a changing climate whatever its character or cause and can predict outcomes not seen previously. The transition from a statistical to a dynamical prediction system provides more valuable and applicable climate information to a wide range of climate sensitive sectors throughout the countries of the Pacific region.

In this project, we have developed seasonal climate outlooks which are based upon the current dynamical model POAMA (Predictive Ocean-Atmosphere Model for Australia) seasonal forecast system. At present, meteorological services of the Pacific Island Countries largely employ statistical models for seasonal outlooks. Outcomes of the PASAP project enhanced capabilities of the Pacific Island Countries in seasonal prediction providing National Meteorological Services with an additional tool to analyse meteorological variables such as sea surface temperatures, air temperature, pressure and rainfall using POAMA outputs and prepare more accurate seasonal climate outlooks.