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Projected Future Climate over Southeast Asia under the Unmitigated and Partially Mitigated Climate Change Scenarios

This presentation provides an overview of projected future climate over Southeast Asia based on the multi-model and high-resolution simulations of the CORDEX Southeast Asia. The ensemble mean shows appropriate reproduction of the SEA mean spatial precipitation pattern. For future changes of the 21st century, we consider early century (2011-2040), mid-century (2041-2070) and late century (2071-2100). Wetter conditions are projected throughout the century over Indochina and eastern Philippines during December-January-February (DJF) while over the Maritime Continent a drying tendency prevails. Over Myanmar, northern Thailand and Laos, rainfall increases as much as 20% are projected, while 5-10% increases are projected over northern Vietnam and eastern Philippines. For June-July-August (JJA), the projected condition is predominantly drier, particularly over the Indonesian region with rainfall decreases up to 20% in most regions (> 20% in Java). Analysis based on extreme precipitation indices indicated that significant and robust changes in extreme rainfall intensity, duration and frequency in most areas. Over Indonesian region, especially Kalimantan and Sumatra, the dryness and drought are projected to increase to a level similar to that of dryness induced by the El Nino in the current climate for the period of June to October. This implies that in future periods of unmitigated or partially mitigated climate change, especially during mid and end of 21st century, drought is projected to occur annually over Indonesia instead of inter-annually following the El Nino periodicity in the current climate. However, in years where El Nino occurs, a much severe drought is expected.

Biography

Fredolin Tangang is a professor of climatology and currently, he is a Chairman of the Center of Earth Sciences and Environment at The National University of Malaysia. Prof. Tangang is a Fellow of the Academy of Sciences Malaysia. Prof Tangang holds a PhD from the University of British Columbia, Vancouver, Canada. He has published more than 70 scientific articles in high-impact international journals. He was the IPCC WG1 Vice-Chair during AR5 cycle, also serves as SSC member of MAIRS-FE and CORDEX SAT member. He is the founding leader and currently leads the CORDEX Southeast Asia Project.