

## THE IMPACT OF PDO ON SOUTH WEST MONSOON RAINFALL OVER SRI LANKA AND MONSOON-ENSO RELATION

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The variation in rainfall over Sri Lanka during past few decades are erratic and much attention has paid to decadal climate predictions due to the necessity for long-term decisions to adapt to the impacts of climate change. However the impact of Pacific Decadal Oscillations (PDO) on the south west monsoon variability has not been satisfactorily discussed so far and no study has explained the relation between PDO and the south west monsoon mechanism. In this study, we investigated the fluctuations of southwest monsoon rainfall over Sri Lanka in relation to PDO observed in the sea surface temperature (SST) of the North Pacific Ocean. . Rainfall from 22 meteorological stations in Sri Lanka over a period of 50 years was analyzed. During the period studied, there were three (03) cold phases, two (02) warm phases of PDO, ten (10) El-Nino events and sixteen (16) La-Nina events. Post maps were constructed for cold and warm phases of PDO in El-Nino and La-Nina events separately, using the monthly rainfall composites during the south west monsoon period. In the warm phase of the PDO, dry conditions and in the cold phase of the PDO, wet conditions are observed to develop over Sri Lanka respectively. Furthermore, during the warm phase of the PDO, the influence of El- Nino (La-Nina) on the south-west monsoon rainfall is increased (decreased). These associations indicate that the PDO extends its effect from the North Pacific Ocean to the tropical Pacific Ocean and changes the relation between the El-Nino Southern Oscillations (ENSO) and the south-west monsoon rainfall.

**Keywords:** *Pacific decadal oscillations, Cold phase, Warm phase, Sea surface temperature, El-Nino, La-Nina*