



PREDICTABILITY OF MAY TO AUGUST (MJJA) SEASONAL RAINFALL IN NORTHERN PHILIPPINES

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ABSTRACT – A study on the predictability of May-August (MJJA) seasonal rainfall over northern Philippines was conducted by regressing it with sea surface temperature (SST) over the Niño3.4 region. Here, the skill of a probabilistic climate forecast three months ahead of the rice and maize growing season to inform better agricultural management was examined. The climate predictability tool (CPT) was used for evaluating the skill of observed SST and global circulation model (GCM) SST (Climate Forecasting System v2 (CFSv2) and ECHAM4.5) as predictors of MJJA rainfall at 6 selected weather stations consisting of 32-year reliable rainfall data. Results show that the predictive skills of the developed climate forecast models are satisfactory with an average goodness index (Pearson's correlation) of 0.62. The obtained average canonical correlation of 0.73 is also very sufficient. The skill of predictors comes mainly through the skillful rainfall anomaly forecasts during significant ENSO events. CFSv2-SST model, having a goodness index of 0.63 and canonical correlation of 0.79 provided the strongest rainfall predictor patterns that considerably mirror the rainfall characteristics of the 6 stations. Forecasted rainfall produced from this model is comparable with the actual rainfall from three diagnostic stations. The skill of seasonal climate forecast provides a basis on the utility of the advanced climate information for assessing and managing climate related risks in crop production using agricultural impact models.

Keywords: forecast skill, Climate Predictability Tool, SST, GCM, climate forecast, canonical correlation analysis, decision support



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