LONG TERM (GLOBAL WARMING) AND SHORT TERM (ENSO) CLIMATE VARIABILITY IN MALAYSIA

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ABSTRACT

This study addresses the effects (if any) of global warming on certain meteorological parameters – temperature, evaporation, sea level pressure and insolation (hours of sunshine), in West (Peninsular) Malaysia. Data collected in five principle meteorological stations from 1965 to 1996 were used.

The results show a tendency towards increasing values annual temperature and sea level pressure while evaporation displays a decreasing trend. This is largely attributed to global warming. These results correspond with the results obtained in East Malaysia by Camerlengo et al. (1999). From these findings, it can be stated that global warming has a greater influence in East Malaysia as compared to West Malaysia.

The effects of El Niño Southern Oscillation (ENSO) on the variability of temperature, evaporation, sea level pressure as well as insolation on stations located in the West Malaysia is also considered in this study.

The results show that ENSO years are often warmer than, or slightly warmer than non ENSO years. The correlation between ENSO years and the following non ENSO years show that a hot ENSO year is often followed by a cooler non-ENSO year.

ABSTRAK

Kajian untuk mengenalpasti perhubungan (jika ada) diantara peningkatan suhu bumi (*global warming*) dengan parameter kaji cuaca – suhu, sejatan permukaan bumi, tekanan pada paras permukaan laut dan jangkamasa sinaran matahari, di Malaysia Barat (Semenanjung). Data yang dikumpul dari lima stesen kajicuaca diantara tahun 1965 dan 1996 telah digunakan.

Keputusan kajian ini menunjukkan bahawa terdapat kecenderungan peningkatan suhu tahunan serta peningkatan tekanan pada paras permukaan laut tahunan, manakala terdapat kecenderungan untuk penurunan nilai tahunan bagi sejatan di permukaan bumi. Kejadian ini berkaitan rapat dengan peningkatan suhu permukaan bumi. Keputusan yang diperolehi didalam kajian ini bersamaan dengan keputusan yang diperolehi dalam kajian di Malaysia Timur (Borneo) oleh Camerlengo et al. (1999). Daripada keputusan ini, dapat diperhatikan bahawa Malaysia Barat kurang menerima kesan daripada peningkatan suhu muka bumi berbanding dengan Malaysia Timur.

Kajian ini juga menunjukkan bahawa tahun yang mengalami ENSO biasanya lebih panas daripada tahun yang tidak mengalami ENSO. Korelasi diantara tahun yang mengalami ENSO dan tahun yang berikutnya yang tidak mengalami ENSO menunjukkan bahawa jika suatu tahun yang mengalami ENSO mempunyai suhu yang tinggi maka kebiasaannya tahun yang berikutnya akan menunjukkan suhu yang lebih rendah.