

Monitoring of changes in rainfall and NDVI links with ENSO over basin in Northeast Thailand

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Abstract : Vegetation and precipitation have been altered continuously due to the global climate change. In this study, therefore, aims to discuss about changes in vegetation and rainfall link with ENSO in the Northeast basins, Thailand, from the year 2000 to 2012. The multi-temporal Terra MODIS-NDVI, TRMM-rainfall and El Niño–Southern Oscillation (ENSO) data were use to analyze trend and relationship by using geographic information system (GIS) and regression model. The results found that the NDVI and rainfall in this area has been fully changed; the NDVI has increased for the whole Northeast basins of 0.0016/year and for Mun river basin has increased the most by 0.0035/year in rainy season. While rainfall from TRMM has decreased for the whole Northeast basins by 37 mm./year, the Mun river basin has decreased the least by 5.97 mm./year in rainy season. These results were influenced from the ENSO variation. However, trend of the ENSO has increased by 0.057/year as related to decreasing in rainfall in this area, and gave a negative correlation coefficient by 0.56 ($p < 0.05$) while rainfall and NDVI also gave a negative correlation by 0.159 ($p < 0.05$).

Keyword : Terra MODIS-NDVI, TRMM-rainfall, ENSO and Northeast basin of Thailand