ASSESSMENT THE IMPACT OF DROUGHT IN VEGETATION AREA IN CENTRAL REGION OF THAILAND BY USING MODIS

Sahatsuparng Pipatsuntikul[1,*], Asst. Prof. Dr. Wutjanun Muttitanon[1]
[1] Faculty of Engineering, Mahidol University, Nakhon Pathom, Thailand.
Corresponding author address: Sahatsuparng.pia@student.mahidol.edu

Abstract

Many countries in the world against a mainly natural disaster like drought including Thailand. Thailand is an agricultural country. Especially in the central region that is a corrugated plain area suitable for agriculture. Causing the central region is an important agricultural area (Meteorological Development Bureau, 2015). Hence, the central region is interesting to assess the impact of drought. The objectives of this research were to obtain NDDI maps to compare them together and assess drought in the central region. This research aims to assess drought in vegetation areas in the central region of Thailand by using the Normalized Difference Drought Index (NDDI). NDDI was created by evaluating the index from satellite images of MODIS09 terra 500 m resolution. Satellite images 10 years from January 2010 to December 2019, Monthly data were used in this research, and cloud in every image was removed by using the conditional technique. The calculation of NDDI was based on Normalized Difference Vegetation Index (NDVI) and Normalized Difference Water Index (NDWI). NDDI maps were created to compare themselves each year. The research was shown in the form of a map of NDDI within the last 10 years, the assessment of drought using NDDI shown most of the drought is in 2010, 2014 to 2016, and 2018 to 2019. In 2010, there was an abnormally low rainfall due to El Nino at the beginning of this year. Since 2014, Thailand has had abnormally low rainfall and the rainy season was slower than usual, possibly as late as June and lightly than before.

Keywords: *Drought, MODIS, NDDI, NDWI, NDVI*