

# **Spatial-Temporal Distribution of Malaria Risk and Its Association With El Niño Southern Oscillation (ENSO)**

## **ABSTRACT**

Sarawak recorded the second-highest number of cases since 2013 until 2017 after Sabah. Sarawak is the largest state in Malaysia and needs to provide spatial information, especially to the ministry of health. The objective of this study was to examine the impact of El Niño-Southern Oscillation (ENSO) on the distribution of malaria risk maps. To achieve the objectives of this study requires Oceanic Niño Index (ONI) data, Visible Infrared Imaging Radiometer Suite (VIIRS), daily temperature, and secondary data on the number of malaria cases in Sarawak. The results of the study clearly show that the occurrence of La Niña and El Niño affects the total distribution of Malaria risk maps. The number of malaria cases is also related to the ONI value. The lower the ONI value causes the malaria case value to decrease. The results of this study suggest that most of the hot spots in the forest, forest fringe, and inland areas of Sarawak. This clearly shows the lack of knowledge and knowledge causing the rural population to be prone to malaria. The Ministry of Health needs to focus on the interior in disseminating teachings and knowledge in dealing with malaria mosquitoes.