

Analysis Of Several Hydrological-Drought Duration Parameters In Mengalong River Basin, Sipitang, Sabah

ABSTRACT

Drought is a phenomenon of water shortage that will impact the wellbeing of human life. The hydrological drought is a situation of water shortage compared to normal conditions. The degree of severity of drought events can be explained via duration and water deficits of drought events. The duration is an important parameter in understanding the event of drought. Duration refers to a period in which the value of river discharge remains below a certain threshold level. This study attempts to identify the severity of drought based on two drought duration parameters namely the duration of drought event (DE) and the inter arrival time (IAT). In the context of this study, the Q90 percentile value was obtained from the flow duration curve and the minimum drought period (MDP) of drought events for 45 days is used as a threshold level of drought events. The 39 year discharge data for Mengalong stations is used to determine the Q percentile value. From the analysis, the cumulative period of the drought events is recorded around 390 days covers 3.6% of the entire record. There were four drought events throughout the record that is in 1992, 1998, 2015 and 2016. The lowest duration was 59 days recorded in 1992, while the longest was 135 days recorded in 1998. This long period is associated with the presence of extreme weather phenomena such as El-Niño.