

## Comparative methods in measuring the irrigation water needs at muda irrigation scheme, Kedah

### Abstract :

The assessment of irrigation water needs at Muda Irrigation Scheme, Kedah, Malaysia due to climate change can lead to better irrigation water management for the operating systems of Pedu-Muda Reservoir in the future. Therefore, the objective of this study were to measure the irrigation water requirement of Pedu-muda reservoir for paddy plantation (two seasons) at this catchment area using two different methods, (Blaney Criddle method and CROPWAT model), to compare the capability of both methods, and to evaluate the reliability of CROPWAT version 8.0 model in predicting future trend of irrigation water. In this study, the SDSM tool was used to simulate future climate trend from the year 2010 to 2099 and revealed that the temperature and rainfall are estimated to increase in the future year. In effort to measure the irrigation needed at the region, CROPWAT model was found to be more reliable and capable compared to the Blaney-Criddle method. From year 2010 to 2099, the annual irrigation requirement is estimated to slightly decrease at every interval year even though the  $ET_{crop}$  is expected to increase due to the effect of rising temperature in the future.