

## **Simulation of streamflow for Sungai Ketil catchment using SWAT model**

### **ABSTRACT**

Climate change influences over years clearly can affect a catchment area in terms of quantity and quality of water. High annual rainfall in Malaysia does not solve water scarcity problems during the El Nino phenomenon and can cause severe flooding during La Nina. A simulation from year 1980 to 2006 has been done at Sg. Ketil streamflow station at Kuala Pegang, Kedah in the North region of Malaysia according to availability of data. The monthly streamflow later has been calibrated and validated using SWAT-CUP. Water level data was obtained from an inventory water level station recorded at the station. Land-use, soil type and slope are taken account to produce a number of hydrologic response units (HRU). This study used developed gridded daily hydrometeorological data set for Peninsular from 1980-2006 using interpolation technique. The results shown that the calibrated model is able to simulate the flow for the river basin successfully with the  $R^2 = 0.65$  and  $NSE=0.52$  and validated value of  $R^2 = 0.5$  and  $NSE=0.43$ . A recommendation is purposed to simulate the catchment using hydrometeorological data set in the stations located in the area to compare the results for further study.

**Keyword:** Streamflow; SWAT; SWAT-CUP