



A Water Balances Study of Klang River Valley for hydrological applications

Munira Mohammad (1) and András Bárdossy (2)

(1) Universität Stuttgart, Germany (munira.mohammad@iws.uni-stuttgart.de), (2) Universität Stuttgart, Germany (Andras.Bardossy @ iws.uni-stuttgart.de)

This study is to review the impact of climate change and land used on flooding through the Klang River and to compare the changes in the existing river system in Klang River Basin with the Storm water Management and Road Tunnel (SMART) which is now already operating in the city center of Kuala Lumpur. Klang River Basin is the most urbanized region in Malaysia. More than half of the basin has been urbanized on the land that is prone to flooding. Numerous flood mitigation projects and studies have been carried out to enhance the existing flood forecasting and mitigation project.

The objective of this study is to run the HBV-IWS conceptual hydrological model for the catchment lower temporal resolution data. In this study a monthly water balance will be checked for catchments under data limited conditions. The data used in analysis namely rainfall, pan evaporation and runoff data were obtained from the Department of Irrigation and Drainage Malaysia (DID). Unfortunately the measurement series of many stations are incomplete and unreliable.

The purposes of this paper are to setting up the water balance in order to generate inputs for the model and to check the consistency of the data. The water balance is calculated for the upstream area of the Klang River discharge gauging station at Sulaiman Bridge. The area is 414 km². The gauge measurements are most extensive from 1980 to 1997.

The double-mass curve was used to check the consistency of precipitation and discharge data. Precipitation data was filled and corrected by multiple regressions linear found to be consistent but breaks indicate in the double-mass curve of discharge data are caused by changes in the relation between the variables. These changes probably due to changes in the method of data collection or to physical changes.