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# Remodeling and Flood Forecasting due to Climate Change and Land Used:

Munira Mohammad and András Bárdossy

Stuttgart, Institute of Hydraulic Engineering, Civil EngineeringHydrology and Geohydrology, Stuttgart, Germany (munira.mohammad@iws.uni-stuttgart.de, +49 -711 / 685 - 64681)

This study is to review the impact of climate change and land used on flooding through the SMART Project. It also simulate the Flood Forecasting in Klang River Basin in order 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.The catchment area of the Klang River basin is 1,288 square kilometers (km2), and it is the most urbanized region in Malaysia, encompassing the Federal Territory of Kuala Lumpur and part of the state of Selangor. The basin spreads over nine local government authorities and faces serious environmental degradation and flooding problems from urbanization, industrialization, and population growth. More than half of the basin has been urbanized, and much of this continuing urban development has taken place on land that is prone to flooding. Flooding problem in Klang River Basin is still exist even measures and numerous flood mitigation projects and programs has been carried out by many parties. Even though that the new drainage guideline has been proposed since year 2000, flood reduction for Klang River basins is not successful enough. This problem contributed to the needs of this research to enhance the existing flood forecasting and mitigation project. This study analyzed and quantified the spatial patterns and time-variability of daily, monthly and yearly rainfall in Kuala Lumpur. An overview of rainfall patterns will be obtained through the analysis of 12 point data sources. Statistical properties of annual, monthly, and daily rainfall were derived. Spatial correlation fields for the annual and monthly rainfalls were studied.