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Prediction of Blue Water Footprint Accounting for Water Treatment Plants in Kuantan River Basin

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Abstract

Water treatment plants (WTPs) in Kuantan river basin abstracts water from the blue water source, which is the Kuantan river. Therefore, by accounting the blue water footprint (WFb), the overall water consumption for all five WTPs namely; Sungai Lembing, Bukit Sagu, Panching, Semambu, and Bukit Ubi can be obtained. In order to predict the value, Backpropagation method is the best method to be used due to the historical data obtained from the WFb accounting for all five WTPs above. The objective of this study is to predict the overall blue water consumption for water treatment plants located along Kuantan river basin using Backpropagation method in artificial neural network. In this study, WFb has been accounted throughout all water treatment plants by using reference from water footprint manual. Then, the WFb will undergo a series of testing using application in MATLAB software in order to predict the future value based on historical data from 2015 until 2016. As a result, the total WFb accounting obtained was 190,543,378.2 m^3/day, while the total maximum capacity of the WTPs was 189,654,000 m^3/day. Hence, the prediction value that kept increasing will not be able to cater the future demand due to unstoppable urbanization.

Keywords: *Water Supply, Water Resources Management, Water Footprint, Backpropagation Method*