# Optimization of Water Resources Management of Depok City with Water Stress Index and SWOT Analysis

Firdaus Ali*, Dwi Lintang Lestari, Marsya Dyasthi Putri and Khalidah Nurul Azmi

*corresponding email: firdausali@ymail.com

**Abstract**

Excessive groundwater use is one of an impact from excesses of population growth that can give impacts to environment quality. Therefore, conversion to piped water needs to be carried out immediately. Depok City Government has to add water treatment plants (WTP) that will use the rivers that cross the city. The four rivers are Angke, Pesanggrahan, Ciliwung, and Cikeas River, which is the river infrastructure is not optimal. This research has several goals, namely analysis of the water needs, evaluation of the condition of the rivers, and provide recommendations to the stakeholder. Therefore, it can be seen that there is a combination of several methods to convert quantitative data into qualitative. This study uses the analysis method of water-stress indicators (WSI) and water balance calculations to determine the condition of water resources in the Depok area at this time. The results of the analysis show that there are 2 villages with very high WSI, namely Bojongsari and Cipayung. This is due to the absence of piped water lines in the two regions. Based on the results of the water balance analysis, it can be seen that the strategy in increasing the capacity of WTP has a significant impact until 2027, but there needs to be additional supply back in 2027 as an increase in water demand so that depletion in the water balance can be avoided. Based on the Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis, it is found that the management of water resources of Depok City is on quadrant IV. Thus, the strategy to be applied is Adaptive Strategy, which is reduce the weaknesses and avoid threats. Therefore, the management of water resources Depok City is recommended to control the internal performance from falling apart. This strategy is maintained while continuing to improve itself.

**Keywords**

water resources, water consumption, water policy