

SUSTAINABLE STORMWATER MANAGEMENT BY PREDICTING CLIMATE CHANGE USING FNN AND GIS

*Iman A. Kebria*¹

*William Hogland*²

¹⁾ *Environmental Researcher, Linnaeus University, Växjö, Sweden*

²⁾ *Department of Biology and Environmental Science, Linnaeus University,
Kalmar, Sweden*

Abstract

Analysis of the urban climate changing is the basis for the implementation of stormwater management measures. Climate tensions such as changing precipitation patterns, fluctuations in temperature, and extreme events are already affecting water resources. For instance, precipitation pattern will be changed due to more water vapor in the atmosphere. Hence, it will be not evenly distributed. Some places will see more rain, others will get less snow. However, climate changes, such as the amount, timing, and intensity of rain events, in combination with land development, can significantly affect the amount of stormwater runoff that needs to be managed. Firstly, this essay will be discussed about prediction of climate change using fuzzy neural network (FNN) and it shows the accuracy of this method for anticipating stormwater. Secondly, based on results of the first phase, it determines the critical area for preparing stormwater systems with the application of GIS tools and technology.

Keywords: Stormwater management, Climate change, FNN, GIS