Abstract

In this final project discussed the analysis and simulation of clustering node applying the concept of Wireless Sensor Network (WSN) for monitoring of freshwater lake. In this case the reservoir is Kedong Ombo Reservoir located in Ngrambat Village, Geyer Sub-district, Grobogan Regency, Central Java Province. The problem of the reservoir is that many fish die suddenly causing huge losses to the fish farmers around the area. This simulation is analyzed 3 parameters namely energy, throughput, packet loss. The size for these parameters is lower energy, higher throughput and lower packet loss. Has 2 types of topology that is homogenous and heterogeneous topology. In the simulation work has a series of work that is set parameters, set area, random node sensor spread, cluster head formation, cluster member formation and data transmission up to base station. The simulation is made by applying clustering nodes on Wireless Sensor Network (WSN) and LEACH algorithm as a method that helps the energy efficiency process of each sensor node by utilizing cluster head in simulation. From the results of tests conducted using Matlab was more the number of sensors the more energy left in a region that has been scaled.

Keywords: simulation, reservoir, analysis, Wireless Sensor Network, clustering node, sensor node, cluster head.