ABSTRACT

Freshwater fish farming is one of the agricultural commodities that has a competitive selling value. Freshwater fish farming, such as catfish and tilapia, has become one of the important sectors in the fisheries industry in Indonesia. This sector not only contributes to the fulfillment of people's animal protein needs but also as a source of livelihood for many fish farmers. Even so, fish mortality is inevitable. There have been quite a few cases of mortality in catfish and tilapia. These fish mortality cases occur because factors affecting water quality are not monitored properly, resulting in a degradation or decline in water quality in the pond which results in a decrease in the sustainability and quality of life of the fish in the pond.

The solution offered for related problems is to use a water quality monitoring system. The system, which is related to the field of telemetry, has various sensors to collect data from various physical parameters that will be monitored for a water area which is then submitted to a data processing device in the form of a microcomputer to acquire data from sensor devices and then convey various data to users in various ways, such as sending data processing results to users via android or website with the principle of IoT (Internet of Things) using Wi-Fi (Wireless Fidelity) connectivity.

Based on the tests carried out on the solution that has been made, it can be seen that the solution offered can solve related problems regarding the water quality monitoring system. Based on testing, the solution offered and created can monitor and read water quality parameters such as temperature, pH, and turbidity. Monitoring results show an average pH level of 7.17. The average temperature is 26.19°C and the average turbidity is 56.78 NTU for first pond. The pH showed an average of 7.17. The average temperature was 27.13°C and the average turbidity was 6.18 NTU for second pond, and the pH showed an average of 7.17. The average temperature was 25.92°C and the average turbidity was 136 NTU for third pond. So by looking at the quantitative data, it can be concluded that the solution offered is able to answer related problems.

Keywords : *Smart, freshwater fish farming, Monitoring System, IoT*