ABSTRACT

Failures in the fisheries sector, particularly in tilapia ponds, stem from factors such as extreme weather, poor water quality, and the use of traditional pond management practices. This study develops a monitoring system for the water quality in tilapia ponds, employing Internet of Things (IoT) technology that is integrated with a website and notification system. The system utilizes various sensors, including pH sensors, temperature sensors, and turbidity sensors, which are connected via IoT to collect real-time and historical water quality data. This data is monitored through the website, and the system sends notifications if abnormal data is detected.

The sensor calibration process in this system involves comparing the sensors used with industry-standard measuring instruments to obtain accurate and precise values. With a pH accuracy of 96% and precision of 0.2, temperature accuracy of 99% and precision of 0, and turbidity accuracy of 80% and precision of 11.97, these sensors are shown to effectively identify the water quality in tilapia ponds. This system is anticipated to significantly aid tilapia farmers by enabling early interventions to prevent future crop failures.

Keywords: IoT, Website, Notification Warning, Accuracy, Monitoring