ABSTRACT

Shrimp cultivation is part of the fisheries sub-sector that has the potential to increase the country's foreign exchange. Indonesia has adequate facilities, climate, and resources for shrimp farming so that the opportunities for developing shrimp farming are quite large. One of the problems in shrimp farming is crop failure caused by lack of water quality maintenance and uncontrolled feeding. Maintenance of water quality in shrimp ponds needs to be done in real time. This is because the parameters that exist in the water in the pond environment can change at any time depending on the environmental conditions around the pond. In addition to water quality, feeding is a very important factor in shrimp farming. The problem that exists in the feeding process is irregular feeding. This can have a negative impact on shrimp, the environment and also have an impact on the income from aquaculture. Therefore, it is necessary to have technology that can monitor water quality in real time and can control feeding that can be done remotely by farmers.

In this study, resulted in a system that can monitor the value of pH, temperature, and TDS in pond water by using sensors then the the sensors data is sent to microcontroller and processed. The data that has been processed by the microcontroller then sent to Antares IoT Platform so the data can be displayed on Android smartphone application. The system is also able to detect the weight of the remaining feed in pond using the load cell sensor in the same way as the water quality monitoring system and also can provide feed when the android smartphone application give data to Antares IoT platform and then the data is sent to microcontroller and processed so the actuators can provide feed to the pond.

The output of this research is a system that can monitor the water quality and feed weight with accuracy of each sensor are 97,63% on pH sensor, 97,24% on temperature sensor, 92,76% on TDS sensor and 99,84% on weight sensor and also can turn on and off the feeding valve when the ”deploy” button pressed.

Keywords: *Shrimp, IoT, Pond, Feed, Monitoring*