# DEVELOPMENT OF AN INTELLIGENT AQUACULTURE CONTROL SYSTEM FOR FISH FARM

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## Abstract
*Fish farming has become an important practise worldwide and it has been existence for many years. The growing and cultivation of fish which is an important branch of agriculture has served as a source of protein, vitamin and oil for mankind. Manual method of feeding at any choice of time and inadequate water level monitoring device has been identified to be a limitation affecting the survival of fish in the pond. To this extend, there is a need to constantly monitor water level in the pond due to the fact that water can be lost as a result of seepage and inadequate watershed area which also interferes with fish movement to see and capture prey. In this research, an intelligent aquaculture control system using a fuzzy logic approach has been developed. The developed system is capable of providing feed to fishes at a selected time interval and also detecting and maintaining the level of water in the fish pond by pumping water if the need arises. The overall system performance was achieved base on system response from generated rules of the fuzzy logic system. This research can further be improved by using the internet and data transmission system for further analysis and remote monitoring of the fish pond.*

Keywords: *Feed, Water, Pond, Fuzzy Logic, Membership Function*.

## Introduction
World fisheries have grown dramatically in over 50 years. From production of few million tonnes within the early fifties, fisheries manufacturing in 2006 was cited to have risen to 143.6 million tonnes. This clearly indicates that fisheries sector continues to grow more rapidly than any other livestock growing activities. Demand for fish products continues to increase to meet the needs of consumers, reflecting recognition of the dietary benefits of fish in both developed and developing countries. The oceans of the world have a finite supply of environmental produce which assist human activities and needs. (Alagappan & Kumaran, 2013).

Aquaculture practice in terms of fish farming plays a first rate role in agricultural activities. In Nigeria, the technique of cultivating fish varies from using natural habitat to an artificial method which might also perhaps result to increase in studies for various existing situation that can enhance the high-quality of fish productiveness (solomon, 2010). The quality of fish production also depends on the availability of water, space and nature of fish pond in use as shown Fiure 1.1 (Nene & Aduabobo, 2015).