

Support of Wireless Sensor Networks Technology in Agriculture

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ABSTRACT

Agriculture is one of the major sectors that influence economic system and plays a vital role in overall development of the country. Majority of the people in India still nurture agriculture for their livelihood. It offers employment opportunities and serves as a best resource for different kinds of food materials, medicines etc. It provides bio feed stocks that help to manufacture significant value added products. Traditional agricultural methods may not meet the increasing demand for food and other products due to population problems and changing environmental factors. So there is a need for modern technology that increases productivity by facilitating farm operations and post harvest management. In this context, Wireless Sensor Networks (*WSNs*) could be utilized for screening the environment factors in the farm level such as ambient temperature, humidity, barometric pressure, ambient light, soil humidity and temperature etc. which are significant in view of quality and crop productivity. In this paper, a novel, low cost and energy efficient device, capable to interface with various up scalable things is proposed. Data related to different environment factors in the field is collected by deploying various sensor nodes placed on a microcontroller board and moved to cloud through an aggregator using ZigBee protocol. Required analytics can be performed on cloud data to facilitate farm operations.

Keywords: *Agriculture, Crop production, Environmental parameters, Wireless Sensor Networks (WSNs), Zig Bee.*