

Contribution of Internet of Things in Management of Smart Farm: Case of Poultry Farm

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The consumption of poultry meat is becoming more regular in our society. Containing a low amount of cholesterol, energy and a high amount of protein, poultry farming is an essential activity in the food industry of the States. In most cases, the management of a poultry farm requires devoting several hours of work, a qualified and sufficient workforce, and many human efforts leading to a considerable increase in the cost of production. Hence the use of innovative mechanisms to efficiently manage the farm. Smart farming appears to be a boom for the agricultural sector; it incorporates New Information and Communication Technologies in agriculture. The integration of the Internet of Things in agriculture should improve it, highlighting a diversity of smart farming practices. Internet of Things uses the Internet network to enable connection and information sharing between the physical and digital worlds. These improvements now make it possible to remotely control a farm, reducing the cost of labor and the cost of production. The objective of this thesis work is to develop an intelligent system capable of optimizing and modernizing chicken farming. This objective is consistent with modernizing the chicken farming system in Cameroon by proposing an application capable of automatically capturing the required parameters thanks to sensors and connected devices to provide real-time information on the state of humidity, ambient temperature, irrigation, and electric system of the farm, as well as chickens health conditions. To achieve this research objective, the main research question is asked, in particular, what could be the contribution of the Internet of Things in the management of a smart poultry farm. To better understand this central question, we have joined other secondary questions to it. What are the parameters to take into account in the management of a smart poultry farm? What are the locally adaptable and adequate technologies to manage a smart poultry farm? How to develop an intelligent system capable to better manage a smart poultry farm in the local context? What are the benefits of such a system for the smart poultry farm?The study uses a mixed-method approach. After the documentary review, we will conduct semi-structured interviews with certain farmers and farm managers to identify their daily problems. This will also make it possible to compare them with the problems observed in state of the art. Then, we will get to the ground in some farms and proceed to practical observation, which is crucial for the researcher. This will be the pilot phase of our work. Will we use guidelines from design science to develop our

software tool and then implement the proposed intelligent solution within a farm for validation. We hope to set up an intelligent system to allow a more efficient management of the poultry farm in the Cameroonian context.

Keywords: *Cameroon, Internet of Things, Management, Poultry Farm, Smart Farm*