**CHAPTER I**

**INTRODUCTION**

* 1. **Rationale**

Agriculture is undoubtedly one of the greatest inventions men have ever made. In a journal study conducted by **[Johnston 2018]** in the emergence of agriculture it is stated that throughout civilization it has been the source of food, fabric, and the practice of business trade throughout countries. Nowadays, farming is still one of the most popular businesses to venture into in the Philippines, it gives profit not just to the farm owners but also to the country’s economy. According to the Bohol Poultry Livestock Association (BPLA), the poultry industry in Bohol is a significant contributor to the local economy. A study conducted by the BPLA revealed that the total chicken production in poultry farms in Bohol is estimated to be around 2.5 million birds annually. Of this figure, broilers make up the majority of production with 70%, while layers and native chicken comprise 20% and 10% of the total production, respectively. This shows that broiler production plays a crucial role in the poultry industry in Bohol. With the increasing demand for chicken meat in the Philippines, it is essential for the government and local authorities to provide support to the poultry farmers in Bohol to ensure the sustainable growth of the industry. In addition, based on a journal article on shared economic sectors of GDP in the Philippines by **[O’Neill 2021]** it discussed that in 2020 the share of agriculture and farming in the Philippines' gross domestic product was 10.18 percent.

Poultry farming, specifically chicken farming involves raising of chicken for meat and egg production. In the journal publish by **[Hamra 2010]**,In the past, it only involves the raising of chickens in backyards for daily egg production and family consumption. However, as of the present, it has become one of the most profitable sectors of livestock agribusiness. According to the Philippines Statistics Authority [2020] it is stated that the total chicken egg production in the Philippines from July to September 2020 was estimated at 154.30 thousand metric tons which was 6.0 percent higher than the previous year’s same quarter output of 145.54 thousand metric tons. In the study published by **[Conroy et al. 2004],** Research on meat production worldwide also indicates that poultry is the fastest-growing livestock sector, especially in developing countries hence the Philippines is no exemption.

Just like other businesses, poultry farming also faces challenges such as limited resources and farm activity mismanagement. A study by **[Attia 2020]** states that poultry immunity, health, and production are several factors that challenge the future growth of a poultry farm such that an increased number of flocks without proper monitoring leads to farm mismanagement specifically due to the increasing amount of chicken population and egg production.

Nowadays, poultry farms and companies in Bohol have integrated technological tools and systems to avoid mishandling and inefficient monitoring of chicken flocks. The rise of technology to properly monitor farms has prompted Arlin’s Farm the idea of implementing a web-based farm management system specifically for poultry.

Arlin’s Farm is a poultry farm that offers free-range chicken meat and eggs. It is jointly owned by Mr. Joel B. Ramos and his wife, Arlin B. Ramos. Arlin manages the farm operations, hence the farm's name, along with family members, making it a family-owned business. The farm has various integrated roles within its organization for its farm operations. These roles include the farm inventory manager, who is responsible for managing chicken production, egg production, as well as farm inventory such as vaccines and medicines. The farm employee is in charge of managing medicine administration, while the administrator handles the same task as well as creating reports. The position of the farm inventory manager is assigned to Mrs. Arlin B. Ramos, who is also a co-owner of the farm. In addition, there are currently several employees in charge of feeding and monitoring chicken and egg production, as well as an administrator who is the owner's son. The farm is located in Taytay, Cawayanan, Mabini, Bohol. At first, the owners tried to venture into other livestock such as swine and goats. In 2018 they decided to change to poultry farming which has expanded over the years. The chicken breeds that the farm have included are BPR, Sussex, and Rhode Island Reds.

Due to the increasing chicken population on the farm, mismanagement has become inevitable. The farm relies on limited technological methods, such as data entry in Excel spreadsheets and manual recording of chicken and egg production in record books and notepads. The farm operations include feeding activities, chicken meat and egg collection, and monitoring the health and administration of medicine to chicken batches. The inventory manager, who is in charge of the farm’s inventory, record the number of eggs collected, chicken meat butchered, feeds per sack, medicines per batch available, the number of chicken flocks per breed, and the number of batches separated for culling. The increased farm population has made it difficult to keep track of the inventory, making it more time-consuming.

These problems have prompted the researchers in the development of the web-based farm management system that enables the farm management of Arlin’s farm to monitor the inventory of chicken production, egg production, chicken breeders, feeds, and medicine. The system is web-based and hosted on the cloud, enabling the user to access the system remotely when they are on a business trip, attending a meeting, taking care of personal concerns, and especially if one of the farm owners is working abroad.

The implementation of the new system had significant effects on the farm's operations. Firstly, it has improved efficiency by providing a more convenient and organized way of recording specific details in the farm inventory. This has also saved time and resources that can be redirected toward other essential activities. Secondly, the new system enabled the business to use or view records in a beneficial manner, such as using the data to secure a business loan or create a financial report. This had also enhanced the farm's financial management and planning capabilities, leading to better decision-making and potential growth opportunities. Overall, the effects of the system had been positive and have contributed to the long-term sustainability and success of the farm. The benefits of this system include:

* inventory tracking and stock control, the user can easily track chicken and egg productions and inventory
* automate manual tasks such as calculating and making reports. The system reduces errors from manual calculations and frees staff from repetitive tasks.

This had enabled the farm to avoid mismanagement of the farm's available resources.

**1.2 Objectives of the Study**

The study's main objective is to develop a web-based farm management System for Arlen’s Farm located in Mabini, Bohol, enabling farm owners and workers to monitor chicken production and farm inventory efficiently and accurately. The specific objectives of the study are the following:

1. To determine an accurate and easier way to record important information on chicken production and farm inventory.
2. To determine the processes involved in monitoring and managing the chicken and egg production and farm inventory.
3. To gather and identify relevant poultry farm data such as chicken production, egg production details, harvested and culled chicken or eggs, scheduling of vaccines and medicines, and farm activities which are done on the farm.

**1.3 Scope and Limitations of the Study**

The study developed a web-based farm inventory management system that has improve the inventory management for Arlin’s Farm in Mabini, Bohol. The study had focused on the following farm operations: monitoring the inventory of chicken production, egg production, chicken breeders, feeds, and medicines; monitoring and scheduling of medication administration; and generating reports on chicken and egg production and farm inventory specifically for the feeds, medicine, and vaccine.

The group conducted an interview with the owner of Arlin's farm and the worker in charge of inventory management to gather important information regarding the processes of recording and monitoring farm data. At Arlin's Farm, the process of counting eggs and harvesting poultry meat for sale is a crucial part of their business operations. The farm staff manually collects eggs from the chicken coop daily and counts them before entering the number into an Excel spreadsheet for record-keeping. This process ensures that the farm keeps track of the number of eggs produced by each breed and their overall productivity. Similarly, the farm's poultry meat production is also carefully monitored. The staff records the number of chickens that are sold or butchered for meat each day in a logbook, which is later used to generate sales reports and monitor profitability. The logbook also contains information about the weight and breed of each chicken to ensure consistent quality for customers. By using Excel and manual entry for both egg counting and poultry meat production tracking, Arlin's Farm ensures that they have accurate records for their business operations. The group also conducted document analysis to select relevant studies which may help and give us, the researchers, valuable insights that would benefit in developing the present system.