**CHAPTER TWO**

**2.0 LITERATURE REVIEW**

The magical impact of computer has made enormous contribution to all aspects of the society; people can now do things easily unlike in the past. Computers have lessen human activities (effort) in their day to day life, by reducing both human labor and time in solving their problem which are both numerous / unlimited. The introduction of the magical machine has led to the further growth of Agricultural products. The technological knowhow and scientific research reveals that a lot of work can be carried out by the computer in agriculture and help in the growth. It therefore deems imperative that computers should also be employed and utilized in farms. This project centers how computer systems can be useful in a large scale poultry farm, keeping of general stock of the birds, weight of individual birds and finally the accountability of the farm. Computerized system has been designed to take care of all the mentioned activities in a modern poultry farm. The activities will be carried out solely by the computer and any odd actions taken should be notified by the computer.

Nigeria has the highest number of poultry farms in Africa, despite the great numbers of farms in Nigeria, a parallel record from Poultry Association of Nigeria (PAN) indicates that Nigeria produces presently above 553million tons of egg and 708million tons of birds meat per year, despite this volume Nigeria is far from meeting her domestic demands in birds production (FAO, 2010).

Many poultry farmers still make use of the manual approach of keeping farm records. The consequences of this approach are, it is time consuming, needed information may easily be misplaced, un-organized and inefficient. Also needed report concerning different aspects of the farm cannot be easily retrieved when needed. this situation makes it to monitor the state of the birds in the poultry and other relevant information. To overcome these problems there is need for an information system for proper management of the poultry farm.

This project is concerned with computerizing a poultry farm but the focus is in general stock keeping and other activities that will be done easily and effectively by computers. It is worthy to note that a poultry farmer who engages a large scale production encounters a lot of problems, these problems may include stock keeping proper account of their daily activities and also keeping tracks on feeding the birds.

**2.1 Birds Production**

The world poultry industry has been a very dynamic industry because of the nature of birds birds. Atteh (2011) stated that birdsbirds has been typified with unprecedented growth, in his research he further explained the trends of growth in birds production in the world. He depicts that world produced 6.5 billion in 1961,in 1990 over 27 billion,35.3 billion in 1999 while over 60 billion in 2012.FAO, (2010) reported that birds production in the world has been growing faster than any other meat production in the world, especially in the developed countries that are active players in birds production. Since the 1960s, the global production of birds meat has been on

**2.2 Constraints of Poultry Birds Production**

**2.2.1 Climatic Constraint**

FAO(2012) reported that one of the factors that inhibit birds production development in Nigeria is the climate. Some of the birds breeds are imported into the country from temperate region, most of these birds performed below optimal level due to differences in climatic conditions.

Climate exerts constraining influences on livestock production through its associative effects of humidity, temperature, precipitation and air movement, and its indirect influences Although, all livestock are subject to environmental stress in the tropics, poultry appear to be less susceptible than mammals. Previous comparative records between the temperate and tropical environments indicated that poultry show the most comparative performance between the two environments than any other class of livestock, yet their performance not up to standard as a result of climatic influence,(FAO,2012).

**2.2.2 Economic Constraint**

According to Bell and Weaver (2010) the most important socio-economic constraints affecting birds production in Nigeria include inadequate of capital, illiteracy and lack of technical experience. The amount of capital in birds production is to some extent, a major determinant of the size of the operating units because birds farmers with enough working capital are usually better in employing other factors of production, hence enlarging their holding than relatively poor farmers. However, most birds farmers in Nigeria do not have adequate capital to invest in large scale production (FAO, 2014). The scarcity of farm credit has been blamed in part for the low agricultural production in the country. Even with the establishment of more agricultural and commercial banks in the country, most of the birds farmers are still handicapped in obtaining adequate credits not only from lack of acceptable collateral and the general uncertainty and heavy risks associated with birds production.

**2.2.3 Technical Constraint**

According to Bell and Weaver( 2010) the capacity to developed technical technology consistent with environmental and economic conditions, is the single most important which explained the growth of birds production in Nigeria. He stressed further that a continuous stream of new technical knowledge and a flow of inputs in which the new knowledge is embodied represents a necessary condition for modern birds production .A further breakdown in his study identified other constraints that affect birds production, these include inadequate of capital, poor management, inadequate of technical knowhow and poor diseases control

The continual challenges to the birds breeder producer are provision of highest quality products for sale at a price competitive with other food sources. Over the past two decades the industry has become very successful by incorporating technical advances in genetic selection, nutrition and diseases control into their management scheme. Another critical factors for efficient management of reproduction of birds, birds has not been changed since the inception of the industry, recent advances in artificial insemination technique now provide alternative methods for use within the primary breeder segment of the industry.

**2.3 Birds Breeder Managements**

The aim of management information system for the poultry farm is to provide the conditions that ensure optimum performance of the birds(Bell and Weaver, 2010).Given reasonable conditions, broody hens are very successful at hatching their chicks, but good hatching using artificial incubation (both large and small ) relies on good management with respect to temperature, humidity, ventilation, feeding and vaccination. It is necessary to ensure that appropriate brooding, growing and laying conditions are given. It is also important to ensure that recommended vaccinations are given and appropriate feeding programmed are used. In developing countries like Nigeria it is often difficult to achieve optimum performance from birds owing to less than optimal housing conditions and lack of quality feed, vaccines and trained staff(Weaver, 2010). High genetic hybrid are often used in the developing countries, but are not well suited to tropical environments. Diseases transmission in poultry birds could either be horizontally from sick bird to healthy one or vertically by passing the causative pathogen from the hen to the chicks through the eggs. Horizontal spread may be by contact between birds , air, contaminated litter, feed or water in contact with sick birds (Atteh, 2011). Most of the important poultry diseases include Coccidiosis, Fowl Pox, Newcastle Diseases, Infectious Bronchitis, Infection Bursa Diseases, Fowl pox, Salmonella Infections and Marek's Diseases etc. To avoid diseases outbreak in birds production proper management, sanitation as well as essential vaccination schedule should be complied with (Hogue and Morris, 2013).

**2.3.1 Temperature Management**

Farmers need to compensate for undesirable climatic conditions by manipulating control systems or modifying the house to ensure that the welfare and environmental needs of the birds are satisfied. Environmental extremes (heat and cold stress, excessive or inadequate ventilation, poor air quality) can be managed if the design of the poultry house is appropriate for conditions. Birds require adequate space, sufficient feed to meet their nutritional requirements. The heat requirements of birds change with age, and recommended ambient temperatures may be lower than birds would prefer early in life when stocking densities are low. The risk of cold stress is low once the thermoregulatory ability is fully developed in birds. The risk of heat stress increases with age and with stocking density as heat production increases and as space between birds (and hence their ability to lose heat) decreases, (Hogue and Morris, 2013).

**2.3.2 Ventilation Management**

All birds houses need some form of ventilation to ensure an adequate supply of oxygen, removing carbon dioxide, other waste gases and dust. In commercial operations, minimum ventilation is often practiced in colder climates, but not generally in tropical ones (Atteh, 2004).In large scale automated operations, correct air distribution can be achieved using a negative pressure ventilation system. Due to the nature of birds adequate ventilation is very crucial to them, when chicks are very young or in cooler climate the air from the inlets should be directed towards the roof to mixed with the warm air there and circulate throughout the shed. With older birds and in warmer temperatures, the incoming air are directed towards the birds and helps to keep them cool (Atteh, 2011). Tunnel ventilation is the most effective ventilation for large houses in hot weather, this system is popular in hot climates, exhaust fans are placed at one end of the or the middle of the shed and air is drawn through the length of the house removing heat moisture and dust.

**2.3.3 Poultry Information System**

Poultry farm information systems (PIS), then, can be appreciated as a tool to assist farms in forward planning, risk management, and by the use of information. Poultry production enterprises require good information systems to ensure success. The need for, use and benefits of information for farm decision making has engaged the attention of farmers, researchers and policymakers over the years.