PROBLEMS AND PROSPECTS OF POULTRY VENTURES IN LAGOS STATE

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(APH/85/497)

MAY, 2001

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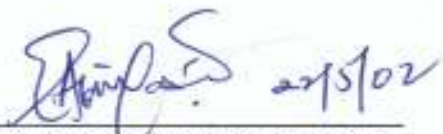
A PROJECT SUBMITED TO THE DEPARTMENT OF ANIMAL PRODUCTIONS AND HEALTH, SCHOOL OF AGRICULTURE AND AGRICULTURAL TECHNOLOGY

IN PARTIAL FULFILMENT FOR THE AWARD OF MASTER OF TECHNOLOGY IN AGRICULTURE AND AGRICULTURAL TECHNOLOGY,
ANIMAL PRODUCTION AND HEALTH,
FEDERAL UNIVERSITY OF TECHNOLOGY,
AKURE, NIGERIA.

MAY, 2001.

CERTIFICATION

We hereby certify that this research work was carried out by **AFOLABI, M.O.** in the Department of Animal Production and Health, Federal University of Technology, Akure under our supervision.



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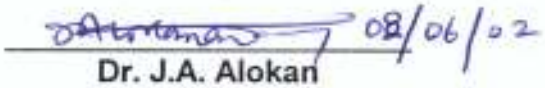

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DEDICATION

This work is dedicated to the most High **God** for His grace and faithfulness and to the blessed memory of my late parents, **Chief R. A. Afolabi** and **Mrs. Mary Afolabi**. May their souls rest in peace.

ACKNOWLEDGEMENT

First and foremost, I am grateful to the Almighty God for granting me this opportunity of a higher degree. To Him be glory and honour over this project.

I am grateful to my major supervisors Prof. (Canon) E.A.O. Laseinde and Prof. A.G. Daramola whose support, wealth of experience and encouragement gave me the impetus necessary to go through the rigours of the research.

My thanks also go to all my able lecturers in the Department; including Prof. R.A. Ogunsusi, Prof. V.A. Aletor, Dr. A.G. Ologun, Dr. J.A. Alokan, Dr. T.A.M. Awoniyi, Dr. G.E. Onibi, Dr. F.A. Igbasan, Dr. I.A. Adebayo and Dr. I.B. Osho. I also thank my friend and a lecturer in the Department, Dr. J. O. Agbede for his words of encouragement and support throughout the studies.

I wish to acknowledge the efforts of the following friends towards the success of this research: Dr. T.O. Adebayo, Dr. I. Ajibefun, Mr. S.A Oluwadare who analysed the data, Dr. L. Nwana and Mr. Adejare Iroko.

I want to say a special thank you to Mr. Ebenezer Olajuyigbe for his contributions morally and financially to the success of this research work.

I wish to express my gratitude to fellow brothers and sisters in the Gospel Pentecostal Assembly (Church) Lagos who by prayers, financial and moral support have contributed to the completion of this work. Particularly I wish to mention my senior Pastors - Rev. E. A. Oyeyemi, Rev. 'Diran Olubunmi and Pastor Ogunleye. Others worthy of my thanks are Bro. Tosin 'Lasekan, Elder Adeleye and Bro. Adegbite who out of his tight schedule volunteered to type the project for me. I am grateful to the zonal co-ordinators of the seven agricultural zones in Lagos State for their assistance in reaching the farmers within the State.

This acknowledgement would not be complete if I failed to thank all members of my family who stood by me in the course of this research. Here I will like to mention Mr. Segun Afolabi, Mr. Jimoh Afolabi, Mr. Joseph Afolabi, Mr. Biodun Afolabi, Mr. Oluwole Afolabi and Mrs. Ibifunke Olukini. I am grateful to my classmates for their moral and academic support during the period of the study.

Finally, I am indeed very grateful to my loving wife, Christianah Idowu Afolabi for her moral support, constant counselling and encouragement towards the successful completion of this project.

ABSTRACT

Investigation of problems and prospects of poultry ventures in Lagos State is the subject of this study. The closure of many renown poultry farms in the state is one of the principal factors that motivated the research.

Lagos State was divided into seven agricultural zones. The data were collected using a three tier methodological approach of questionnaire administration, unstructured oral interview and non-participant observation. The analysis which followed was done using the two-way Analysis of Variance.

Poultry farmers in Lagos concentrated mainly on poultry alone except for a few that combined crop production with poultry. The choice of about 80% of these farmers centred on raising layers for table-egg production. Some combined broiler production (meat production) in their operation. The cage system of operation was commonly adopted and mostly 70% of the farmers used open sided buildings.

The major problems encountered by farmers in Lagos State were high feed cost and disease prevalence. While the problem of feed revolved round the cost of the feed which was generally considered to be expensive by most farmers, diseases such as gomboro, fowl pox and coccidiosis were 30% in

the state. Drugs to combat these diseases were generally expensive to purchase.

Although labour was relatively cheap and easily available, their remuneration was low. This was possibly responsible for various vices practised by the poultry workers. Such vices included stealing and laziness at work.

Between 40% and 50% of poultry products were marketed through open markets and farm gate sales and demand was adequate and encouraging. Despite all the predicaments befalling the poultry venture, there existed prospects for the business in Lagos State.

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CHAPTER ONE

1.0 INTRODUCTION

Poultry refers to all domestic fowls raised for eggs, meat or both. This includes chickens, turkeys, ducks, guinea fowls and geese. Poultry industry is one very important component of livestock sector of this country's economy. The sector contributes substantially to the Gross Domestic Products (GDP) every year. According to David West (1983), the livestock sector contributed two billion Naira in 1981 to the Nigerian Gross Domestic Product. The egg from poultry supplies in particular protein, calcium, iron and vitamin A, D, E, and K and all elements which are highly indispensable for the young growing people. Standelman and Cotteril (1986) reported that egg is a natural source of vitamin D which ranks second only to fish liver oil.

Nigeria's food supply does not provide adequate nutrient for proper nutrition of the populace in terms of protein balance and calories (Igene, 1987). Oyedeji (1987) therefore recommended an egg a day to meet the minimum protein requirement of an average Nigerian. This according to him represent an average daily intake of 24kg of protein. Already there are several people who now engage in the rearing of one form of poultry or the other. This helps in reducing unemployment in the nation. Poultry also plays a significant role in promoting crop and fisheries production through the use of poultry waste and manure for both soil and pond fertility as well as feeding fishes.

Poultry production generates products which provide additional employment for Nigerians and reduces over-dependence on foreign manufactured livestock products. As wages in real terms increased in 1970s and 1980s, there was an inevitable and progressive demand for poultry meat which was regarded as a luxury in pre-war years. The adoption of intensive system, and the progressively greater use of mechanization favoured the emergence of large poultry units, and also the grouping of integration of these units. Today one can easily manage a flock of about 30,000 chickens in a properly mechanized cage layer house.

The basic problem occurring in the sector as in other livestock sectors is the inability to match production with supply. This emanated from the problems of:

a) Non-availability of breeding stock and day old chicks due to poor growth of some birds especially the local chicken (Nwosu 1989).

b) The Non availability of resources such as feed needed to sustain efficient growth and production. In many developing countries, the problem of inadequate production of conventional feed for livestock is very acute due to inadequate production of conventional feed ingredients. The inadequate feed ingredients that are produced and which are being competed for by human, coupled with increase in the population have complicated this problem (Tegbe et al, 1989). Babatunde et al. (1975) attributed the high cost of feeds and unsteady availability of feed ingredients to continuous growth

of the world population. This problem does not exclude constraint on land.

c) Ineffective veterinary service and unavailability of vaccines and drugs which in most cases jeopardized the poultry health.

d) Non-acceptability by surrounding neighbours which has led to closure of many poultry farms due to the menace of odour produced by poultry.

Inspite of these difficulties, success is still remarkable in the poultry industry. The prospect of achieving relative self sufficiency in poultry production is possible due to:

a) Short generation interval in poultry rearing. The period of emergence of one generation to another is about 22 weeks.

b) Prolificacy: Poultry are highly prolific. A hen can lay profitably for a year. Poultry is also characterized with high efficiency of nutrient utilization resulting in high quality animal protein.

c) High market demand: Poultry meat is the only single food of animal origin which is also eaten and relished by so many people in the world. Mourterieu (1975) claimed the reason why chicken appears in the diet of many people as a source of meat more than other livestock is that there are little or no social or religious stigmas attached to the use of chicken in the diet.

d) Adaptability of high producing exotic breeds to most environments. Poultry can survive in any environment provided necessary care and management required are properly observed.

e) Economy of rearing space. Poultry can be raised on a very small area of land and;

e) Integration of new techniques and technology to the venture.

1.1 POULTRY VENTURE IN LAGOS

Poultry venture for years has been a stable and prominent feature in Lagos State. Poultry was found in every corner of the state with supply of products satisfying more than 75% of the total demand. The ever growing population of the state indeed supported and encouraged this business by providing a stable and adequate market for the poultry products. Inspite of the growing nature of the state population, the tempo of this venture has recently reduced with many renown farms in the state turning into residential estates and commercial centres. The remaining farms still operating are doing so at low capacity.

1.2 OBJECTIVES OF THE STUDY

The objectives of this study include.

a. To identify the various problems faced by poultry farmers in Lagos State.

b. To explain why some renown farms in the State were closed down.

c. To suggest ways of solving the identified problems of the ventures.

1.3 JUSTIFICATION OF THE STUDY

Presently there is a serious campaign for farmers to intensify their efforts in boosting food production in all states of the federation. Lagos is

characterised by an ever growing population that makes land availability difficult for production of both plants and animal protein; an essential ingredient for growth and maintenance of life. Investigation of farming activities in Lagos reveals that only poultry farming which requires relatively little land could be a successful livestock venture. Recent development in the business and frequent diversion of funds by some old investors poses a threat to the business and discouragement to new investors.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 POULTRY MANAGEMENT SYSTEMS

Poultry refers is to a group of domestic birds reared for food and other purposes (Iwena 1998). These include domestic fowl, turkey, goose, guinea fowl and duck. Basically birds are raised under two major systems, 'Traditional poultry management system' (extensive system) and the modern poultry farming in enclosure (intensive system) (CAB, 1997).

2.1.1 Traditional Poultry Management System (Extensive System)

This has been known from time immemorial. Under this system poultry roam freely around dwelling places and in farm yard. This management system is characterized by free range during the day: the birds feed themselves on insects, seeds, kitchen waste, etc. Poor productivity is identified with these birds (Smith 1987). This is due to the fact that the hen does not lay much and the growth is slow. Eggs produced are rearly eaten, rather the chicken meat is sought for.

Production parameter recently studied in Burkina Faso shows that such hen lays about 50 eggs per year of which 27-28 eggs are incubated (CAB 1997). The hatching rate is about 60% on average allowing hatching of 16 to 17 chicks. The chicks suffer heavy losses up to 2 months. Causes of death vary from parasite and disease infection to predators and various accidents.

2.1.2 Modern Poultry Farming in enclosure or intensive System

This type of farming involves the use of rearing sheds where the poultry density is high and where birds are raised in cages or on litters. It is characterized by use of a complete feed prepared commercially under conditions which have undergone intensive research. Also identified with this type of poultry farming is the use of specialized poultry strains with the best possible performance which have been subjected to a selective breeding programme.

2.1.3 Semi-intensive system

This is a system which appears to be an improvement over the traditional system. This started in temperate region during the 19th century to the present time. The method features the use of outdoor fenced runs with refuges or night-time chicken houses. The distribution of feed which is able to meet the bird's need also characterized this system.

2.2 POULTRY PRODUCTION PROBLEMS

Poultry venture although lucrative, is faced with some problems which determine its profits and continuity. Some of the problems of poultry include feeding, environmental conditions, diseases and management problems.

2.2.1 High cost of Feeds

Poultry being an omnivore (plant and flesh eater) can not feed on roughages alone but on concentrates. The cost of feeding poultry has

been estimated to represent between 70-75% of the cost of production (Maxwell, 1997, World poultry, 1987). A survey of the intensive poultry industry in most of the tropics indicates that although there is widespread interest in poultry production, such enthusiasm has been greatly dampened by the phenomenal rise in the cost of the major energy and protein concentrates such as maize, guinea corn, fish meal, and oil seed cakes (RAAF, 1985). The net effect according to the report is an increased cost of finished feeds which in part reduces profit margin and hence discourages large scale expansion of poultry industry which depends on availability of good and relatively inexpensive conventional feed ingredients.

2.2.2 Poor Quality of Feed

Majority of the agro-industrial by-products used as part-replacement for the expensive feed ingredients are deficient in one mineral or the other. This, though reduces the cost of production but lowers the output which is the ultimate of the business. RAAF (1985), indicated that dried brewers grain used up to 37% depresses egg production. Permin et al. (1998), revealed that feeding birds with low dietary protein feed reduced the weight gain of the birds, though it had no effect on egg production. Nwokoro and Tewe (1996) reported growth depressed in birds fed the basal diet supplemented with methionine. Mortality has been reported to be on increase with replacement of fish meal with shrimp waste meal (SWM) in the diet at the starter phase (Fanimo et al., 1996). This problem according to the report was due to inability of chicks to cope with the chitin

level in SWM. Cases of leg problem occuring during the early stages of birds had been traced to mineral imbalance especially calcium: phosphorus ratio in shrimp waste meal diets (Fanimo et al., 1996).

2.2.3 Under - Feeding

Under - feeding of poultry birds in terms of quantity of feed provided by the farmers and frequency of feeding, which often results in starvation and mineral deficiency especially calcuim and phosphorous, is the commonest nutritional problem of poultry production (Tuikoek and Ayangbile, 1994). This has affected the development of birds and hence reduced the profitability of the business. The effect of controlled (restricted) feeding on layer performance appears to be less advantageous to egg producers. Feed restriction during rearing period reduced body weight, delayed sexual maturity and reduced carcass fat content. Feed restriction during egg production lowered egg production between 12 - 13% but increased egg size (Akinokun and Benyi, 1985).

2.2.4 Disease Problem

Disease is one of the most important constraints facing the poultry industry in Nigeria today (Abdu et al., 1988). The commonest diseases and parasites reported to afflict poultry are Newcastle (31.2%), gomboro (12.0%), ectoparasite (7.7%), fowl pox (6.8%), helminthiasis (6.6%) and coccidiosis (6.1%) (Halle et al., 1997). Increase in the incidience of poultry diseases despite vaccination was reported by Zaira Abdu et al., (1988). An outbreak of laryngo-tracheitis (ILT) disease infection was diagnosed

and reported in Western Nigeria by Akparie et al., (1990). According to the report, it was not clear how the disease was introduced but records showed that chickens had being imported from countries in which the disease was prevalent. In a similar report, an outbreak of infectious bursal disease was reported in Kano (Nwosu et al., 1989). Problem of poultry disease is not peculiar to Nigeria alone. Outbreak of coccidiosis was reported between 1985 to 1988 in Botswana (Binta et al., 1996). According to their report, collepticaemia, Newcastle disease, nutritional deficiencies, helminthiasis and ectoparasites were found to be the most important diseases of indigenous and exotic chickens. Earlier, Saidu et al., (1994) had reported the seasonality of these diseases in indigenous chickens and turkey.

The major helminths posing serious health problem to poultry is Ascaridia gali found in the small intestine of various domesticated and wild birds. The parasite occurred with higher worm burden in birds raised on deep litter with resultant decrease in both body weight and egg production (Fatihu et al., 1992). The report stated further that blood tinged diarrhea, voracious appetite, increased thirst and stunted growth in chicken are symptoms of *Ascarida gali*. Ntekim (1983) also stated that *Ascarida gali* was one of the major infestations responsible for decrease in egg production and loss of body weight. Pullorum infection and fowl typhoid are on the increase in hatchery and commercial operation in Nigeria (Adeniran et al., 1987). These two diseases are often hatchery transmitted.

2.3 ENVIRONMENTAL PROBLEM

2.3.1 Heat and Cold Stress

One of the major environmental problems identified with poultry is high temperature (Baillere, 1988). Li et. al. (1990) also reported the effect of high temperature on poultry as detrimental. According to the report it decreases metabolic rate of food taken i.e the rate at which ingested food materials are broken down to release energy. Banabdeljehi (1996) reported that depression in egg production and reduction in feed utilization are frequently observed during hot weather months, most especially with the brown egg shell layers. High temperature for prolonged period of time has been adduced for reduced hatchability (Antwi, 1993).

It has been noticed that high environmental temperature of poultry house affects growth rate of broilers. This is because for every 1°C rise above 21°C in the environmental temperature of the rearing pen feed intake falls by 1.5% (Poultry world, 1987).

In another development, very cold weather or low temperature that prevails during the raining season also affects poultry production. According to Abdu et al (1997), cold stress promotes the outbreak of diseases. Tauson and Abraham (1996) reported that cold environment predisposes laying hens to bumped foot disease.

2.3.2 Lighting

Lighting of poultry houses has constituted another problem of poultry industries. Exposing poultry to too long light increases mortality and ill

health of broilers. This is due to over activeness of the birds during the lighting period. Gordon and Tucker (1995) reported that lower mortality have been found in broilers receiving short or moderate daylight. While Classen et al. (1991) stated that improvement in leg health has been associated with an extended dark period in poultry houses.

The use of dim lighting in commercial broiler house has also been criticized as it is thought to reduce activity and predisposes broilers to poor leg health (FAWL, 1992) Birds have visual acuity and a greater interest in their environment when housed in brighter light.

2.4 MANAGEMENT PROBLEM

2.4.1 Housing

Housing of hens kept for table egg production has changed remarkably since the early part of this century (Craig 1982). Multiple hen cages have essentially replaced the floor pens. Cages were originally introduced for single laying hens to allow recording of individual egg and culling of poor layers (Appleby et al., 1992). Faults in design causing birds to become trapped and suffer injury or death was a major problem. Birds are trapped and some injured when their claws, toes, feathers, wings, beaks, wattles or head are held by various cage parts. Feather loss in cage is another problem which affect both appearance of the stock and their feed utilisation. Some combination of abrasion and feather - pecking appears to cause plumage deterioration (Arnold, 1985). Some cages were designed and constructed to have a 'V' shaped trap in between the cage

partition and the floor joins. Another trap is found where the anti-egg eating baffle plate does not quite reach the side of the cage. Birds tend to push their heads and necks and shoulders under the sloping plate, possibly trying to reach eggs in the collecting area. If they then move to the side of the cage and try to get out they are sometimes caught in the head region. Many hens in cages lay heavier eggs than their counterparts on deep litter. Although pullets housed on the floor have large initial body weights, caged birds have higher final body weight (Akinokun and Benyi, 1985).

2.4.2 Spacing/Stocking Rate

Overstocking of poultry houses constitutes another set back for the poultry farmer especially commercial poultry farmer. Heavily stocked birds insulate one another from heat loss which along with restriction in the movement of birds reduced caloric demand and appetite thus causing reduction in feed intake but higher efficiency of utilization (Agunbiade and Benyi, 1987). Although no clear effect of stocking rate on mortality was mentioned, lower stocking rate of 0.116 and 0.140m^2/ bird has been considered desirable for raising broiler under tropical condition.

2.4.3 Waste and Litter Problem

Waste management and associated environmental issues are problems facing the poultry industry. Poultry carcass disposal resulting from death by natural causes presents a major problem to poultry farmers (Blake et al., 1996). Build-up of manure lead to internal parasites and enteric

diseases especially when continuous manure built-up is allowed to return so that their underside forms the roof of the cages below. This has caused coccidiosis in cage birds which is clearly a welfare disadvantage (Arnold 1985). Heat generated by the biomass, litter and manure affects the vertical temperature profile in broiler houses.

The choice of litter material and the maintenance of such material posed threat to poultry welfare. Wood shaving is the popular choice of most Nigerian poultry farmers. This has been proved unattractive compared to peat and sand (Keer-Keer, 1996). This according to the report encouraged the development of feather pecking and cannibalism. Incidence of foot pad dermatitis has been reported to be higher when litters are wet. Also some other milder form of foot-pad lesion are associated with wet litter, especially when they are left for a longer period (Wang et al., 1998).

2.4.4 Poor Ventilation and Water Condition

Lack of sufficient air movement due to the type and location of building used in housing poultry creates the excessive ammonia build-up and drought which encouraged marginal problem with serious effect when in combination with contaminated water having high mineral content (Ademola, 1987).

2.5 CONSTRAINTS TO PROFITABILITY

Apart from major poultry management problems faced by poultry industry, there are other constraints that hamper the profitability of this industry. These include:

i. **Inadequate transport and communication facilities**:

Inadequate transport facilities are largely responsible for slow increase in marketing efficiency (Abbatt and Makeham, 1986). Handling of fragile products call for special care. Eggs for example can only be carried in soft containers and carefully piled in a cushioned vehicle. Loss through breakages add to the cost of transportation which when it gets to the consumer push up the price of the products. The reaction of consumers to the increase in price most often results in low demand with resultant effect of egg glotting. Deficient communication limit the range of marketing and confines sales to nearby consumers.

ii. **Poor quality of Stored Products**

Good storage practice prevents loss of products but the condition relative to environmental temperature and humidity greatly affects the storage life of such products. In other to understand the extent of loss resulting from storage, Antwi, (1993) stated that prolonged storage of eggs decreases hatchability. The taste and quality of frozen poultry product contested against by some consumers is due to physical and chemical changes taking place during storage. This affects the market value of such products.

iii. **Poor Egg Shell Quality**

Egg shell deformities are common occurrences in egg production enterprise (Oluyemi, 1987). The commonest imperfections are

(a) Soft shells

(b) Thin shells

(c) Wrinkled shells,

(d) Blood stained shells

(e) Soft tip shells and

(f) Light coloured shell.

The deepness of egg shell colour largely determine its external appearance and hence the quality (Oluyemi, 1987). Good quality egg shell minimizes the occurrence of cracks thereby increasing the number of wholesome eggs sold and ensuring more profit to the farmer. Losses due to broken egg shell estimated for United Kingdom, Germany and United States of America range from 6% to 8% of annual egg production (Adeniyi, 1987).

2.6 CHALLENGES FACING POULTRY INDUSTRY

2.6.1 Bridging the animal protein gap for Nigerians

The price of animal protein in Nigeria today is escalating, hence, its sub optimal consumption by a large percentage of Nigeria has been a major concern not only to poultry producers but also to other livestock producers. This problem is caused by the rising cost of animal feed occasioned by the shortage of grains; the major animal feeds stuff (Madubuke, 1992, Tegbe et al., 1984). In light of the above mentioned problem, most feed millers

can no longer produce up to a quarter of their production capacity (Akindele, 1989). This shows that animal protein supply gap can only be bridged when this problem is fully catered for.

Several suggestions have been offered as a short term measure to combat poultry meat shortage in Nigeria. These include importation of chicken and other poultry products (Idufueko, 1984), feed and grains. Unfortunately, each of these suggestions was hampered by political and other logistic problems. For instance, conflicting government policy which sometimes come by placing raw materials for feed production on open general license in one year and reverse it in the next year, scrapping poll tax on poultry birds and re-impose it few years later. Thus, a steady policy which will encourage production is needed.

Considering the present gloomy economic situation in Nigeria, poultry producers are hereby challenged to use the available local raw materials in solving the problem of animal protein shortage.

2.6.2 Making Poultry Meat All Seasons Meat For Nigerians

Poultry meat in general saw an increase in sales while beef purchase dropped by 1% and mutton slumped by 20% (Kempster, 1987). According to the report, the total amount of meat consumed remain unchanged in the last four years but constituent of the total amount has changed. The competitiveness of the meat industry depends on providing what the consumer wants: Quality meat at an "acceptable price". However, the consumer perception of quality are influenced by many factors. Principal

among these factors is price. The chicken market though showed higher increase does not match beef in sales value.

Poultry meat is considered ceremonial or festival meat by most Nigerians. A closer look at the trend suggests that poultry meat has been largely substituted for by other meat such as fish and pork. A downward shift in price of poultry products and increase in production of poultry meat will result in poultry meat becoming stable meat rather than luxurious or ceremonial meat. It is therefore a challenge to poultry producers to utilise the available factors of production in producing poultry meat within an acceptable price.

CHAPTER THREE

3.0 METHODOLOGY

3.1 STUDY AREA

The study areas comprise selected farms in all seven (7) agricultural zones in Lagos State.

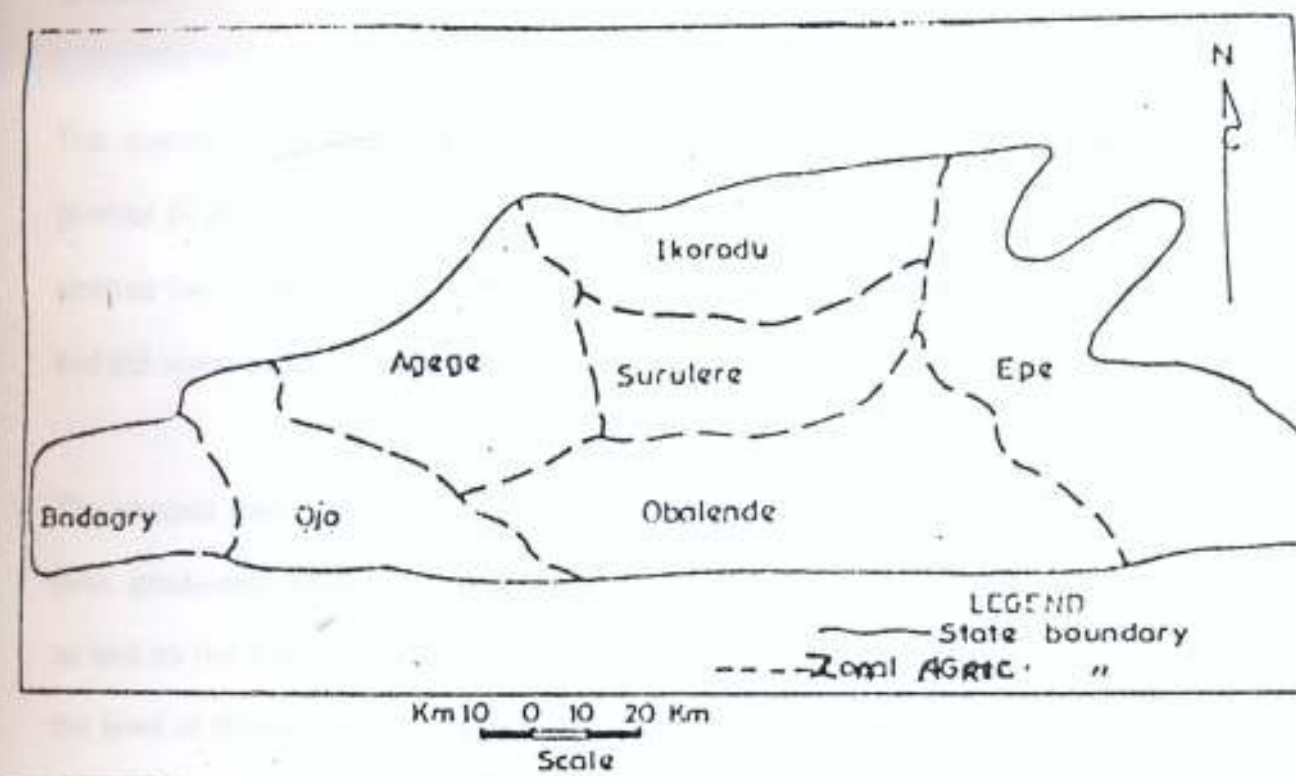

Fig. 3.1: Map of Lagos state showing the seven agricultural zones in the state

A two-pronged method was used for collecting the necessary data needed. The two-pronged method consisted essentially of questionnaire administration and unstructured oral interview. In addition non-participant observation was done. Data collected were subjected to analysis of variance (ANOVA) and Fisher's Least Significant Difference (LSD) follow-up procedure, according to Steele and Torrie (1986).

3.2 QUESTIONNAIRE ADMINISTRATION

Farmers in Lagos State were grouped into seven zones: Agege, Surulere, Obalende, Ikorodu, Epe, Ojo and Badagry. Uniform sampling method was employed in distributing the questionnaire effectively. Under this sampling technique each zone constituted a stratum. One third of every zone was given a questionnaire making the overall distribution of questionnaire uniform.

The questionnaire was divided into four parts. The first part was the general or personal data questions which were structured out to know whether the farmer is a full or part time poultry farmer. This part is also to find out some personal information about the farmer and the farm.

The second part contained questions on the type of enterprises on the farm, production status and problems associated with the farm business as well as the marketing of farm produce. This was aimed at ascertaining the level of diversification of the farmers and possible effect of problems encountered on production.

The third part applied to questions on hatchery, applicable only to farmers with hatchery as a subsidiary business.

The fourth part involved questions on feedmill for farmers operating feedmill.

The questionnaires were structured with close ended questions (Appendix I). This was purposely done for economy and easy analysis. Eighty four questionnaires were distributed with the assumption that half of the farmers sampled would be able to read and write. The response was ninety percent on which the analysis was made. However, to make up for the inadequacies of the structured nature of the questionnaires and thus to supplement the data so collected, a number of unstructured oral interviews were conducted.

3.2.1 Unstructured Oral Interview

The officers that were interviewed were chosen because of their strategic positions in poultry business in Lagos State and their relevance to the purpose of the study. Among those interviewed were the veterinary doctors coordinating each farming zone, managers of some of the closed down poultry farms, some illiterate poultry farmers who were not willing to collect questionnaires, few feedmillers and poultry drug sellers.

From these interviews, the data collected include general co-ordination of poultry farm in the state, the reasons of some farmers for closing their poultry business, various kinds of vices between the poultry attendants and their bosses, sources of drugs into the state for the poultry farmers, the effect of the government policy on the poultry farms and farmers.

3.2.2 Non Participant Observation

The observation made about the poultry environment was done while interviewing the farmers and retrieving the questionnaires from the respondents. The observations hung mainly on four things namely:

- The cleanliness of the poultry farms,
- Attitude of most workers towards their work,
- Dilapidating conditions of the laying cages and
- Attitude of respondents to the questionnaire.

3.3 DATA ANALYSIS

The data collected were subjected to analysis of variance (ANOVA) with two way blocking effect, using SPSS program. This was followed-up by Fisher's Least Significant Difference.

CHAPTER FOUR

4.0 RESULTS AND DISCUSSIONS

Table 1 presents data on frequency of enterprises carried out by farmers in the state. It reveals that the frequency of poultry alone had the highest mean value 4.142 followed by that of poultry + crop production, 2.142. There was significant difference between the poultry alone ($P < 0.05$) and other enterprises. There was no significant difference between other enterprises except the one between poultry + crop and poultry + processing.

Table 1: Frequency of enterprises by the poultry farmers

Enterprise	Agege	Surulere	Obalende	Ikorodu	Epe	Ojo	Badagry	Mean
Poultry alone	0	8	5	2	4	7	3	4.2857a
Poultry + Crop Prod.	3	2	2	4	0	1	3	2.1429b
Poultry + Fisheries	2	0	2	1	1	1	3	1.4286cb
Poultry + Feed mill	2	0	1	1	1	1	1	1.0000cb
Poultry + Hatchery	2	0	0	1	4	0	0	1.0000cb
Poultry + Processing	1	0	0	1	0	0	0	0.2857d
TOTAL	10	10	10	10	10	10	10	

This Table shows that the number of farmers engaged solely on poultry was four times over those that combine either fishery, feed mill or hatchery with poultry. The ratio of the number of those that combine crop production with poultry to those farmers operating poultry alone was 1:2. The reason might be due to the feasibility of raising poultry on a small piece of land and the fact that land was scarce and expensive in the state

(Table 9). It also requires extra expertise to combine other venture with poultry. The organisational demand for integrated venture can also be tasking, hence more farmers operate poultry alone.

Table 2: Poultry Types on the Farm

Type	Agege	Suruiere	Obalende	Ikorodu	Epe	Ojo	Badagry	Mean
Layer Alone	5	8	6	9	8	8	6	7.1429a
Layer/Broiler	4	1	3	1	2	2	3	2.2857b
Layer/Broiler/ Turkey	1	1	1	0	0	0	1	0.5714c
Broiler Alone	0	0	0	0	0	0	0	0.0000c
Turkey Alone	0	0	0	0	0	0	0	0.0000c
Mean	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000

In Table 2 there was significant difference ($P < 0.001$) between the farmers solely rearing layers and others rearing layers with other types of poultry. Combination of layers and broilers was significantly higher than others, though it was second to layers alone in term of mean comparison i.e. 7.142 vs 2.285.

Layer (egg production) alone appeared to be the favourites of many farmers in the State. More than seven times the number of farmers that combined broiler and turkey with layers engaged in layer production alone. This number was double those that incorporated broilers with the layers. The difference proved highly significant statistically. The choice of a particular type of poultry depends on individual interest and resources available and market of products. The secret behind it might be connected with the fact that Lagos is highly populated with elites who consume eggs daily for vitamins and protein balance (Standelman and Cotteril, 1986). Meat-type Poultry was more popular during festivals. This would be responsible for lower number of farmers producing broilers.

Table 3 presents the mode or system of poultry keeping practised within the state. There was a significant difference ($P < 0.05$) between those operating cage alone and cage plus deep litter. Similarly, the later was significantly higher than deep litter alone. The highest mean value of 5.8571 was observed with the use of cage alone. The slated floor system with 0.1429 mean value was rather unpopular. It was adopted only at Ikorodu among the seven zones sampled.

Table 3: Poultry-keeping Systems practised on Farms:

System Practised	Agege	Surulere	Obalende	Ikorodu	Epe	Ojo	Badagry	Mean
Cage	8	4	8	4	2	9	6	5.8571a
Cage/Deep Litter	0	6	0	5	4	1	4	2.8571b
Deep Litter Alone	2	0	2	0	4	0	0	1.1429c
Slatted Floor	0	0	0	1	0	0	0	0.1429d
Mean	2.5000	2.5000	2.5000	2.5000	2.5000	2.5000	2.5000	

This indicates that more farmers used cages than deep litter or slatted floor. The number of those that used cages alongside with deep litter was about half of those that used cages alone. This confirmed the report of North (1984) that 75% of all commercial layers in the world are kept in cages. This result has bearing with the report of Fatihu et al., (1992) that parasites occur with higher worm burden to birds raised on deep litter with resultant decrease in both the body weight and egg production. More people adopt the use of cages in Lagos because land is scarce. Cage rearing conserves space.

Table 4: Building Types on the Farms

	Open Sided House		Half Walled House	
	Frequency	%	Frequency	%
Agege	8	80	2	20
Surulere	7	70	3	30
Obalende	6	60	4	40
Ikorodu	4	40	6	60
Epe	8	80	2	20
Ojo	10	100	0	0
Badagry	8	80	2	20

The percentages of the frequency of usage between open-sided and half walled houses by respondents in the various zones are presented in Table 4. This ranged between 100% open sided in Ojo area to 40% of such building in Ikorodu. On the other hand, half walled houses ranged from 60% in Ikorodu to zero in Ojo.

This result shows that apart from Ikorodu where half walled buildings were popular, open sided buildings were widely used by the farmers in the State. The reason for this could be attributed to the report of Beilhare (1982), Clark and Gabert (1980, 1981), for fast growth and early sexual maturity. Since more people use cage which require open sided buildings for better cross-ventilation, therefore more open-sided houses will be in use.

Table 5: Nature of Farm Problems

Problems	Agege	Surulere	Obalende	Ikorodu	Epe	Ojo	Badagry	Mean
Feed Cost	6	3	3	3	4	3	3	3.5714a
Diseases	2	3	4	2	3	3	4	3.0000a
Labour	1	2	2	2	1	2	1	1.5714b
Drugs	1	1	1	2	1	2	2	1.4286b
Water Scarcity	0	1	0	1	1	0	0	0.4286c

Table 5 reveals that among the problems identified, those of feeds and diseases were highest. Both were not significantly different from each other but were significantly ($P < 0.05$) higher than other problems faced on the farm. Problems of labour and drugs were not statistically different but there was a significant difference between them and water problem.

These problems were significantly more acute than other problems. The mean value of feed (3.5714) was about twice that of drugs (1.4286) and water (0.4286) combined and twice that of labour (1.5714). This result substantiates the earlier report of Durojaiye (1982) that poultry industry had been plagued by some problems which included nutrition and disease.

Table 6: Type of Diseases

Disease Type	Agege	Surulere	Obalende	Ikorodu	Epe	Ojo	Badagry	Mean
Fowl Pox + Coccidiosis	4	2	3	3	2	2	3	2.7143a
New Castle + Coccidiosis	0	4	2	3	1	1	2	1.8571ab
Gomboro (New Castle)	1	1	1	1	2	1	1	1.1429bc
IBD	2	0	2	2	0	1	1	1.1429bc
Fowl Pox	0	1	0	0	2	2	2	1.0000c
Gomboro + Fowl Pox	1	0	0	1	1	2	1	0.8571cd
Coccidiosis	0	0	2	0	2	0	0	0.5714cd
IBD + Gomboro	2	1	0	0	0	0	0	0.4286cd
IBD + Coccidiosis	0	1	0	0	0	0	0	0.1429e
IBD + Fowl Pox	0	0	0	0	0	1	0	0.1429e

Table 6 highlights diseases that plague poultry farms in the state. There was significant difference ($P < 0.01$) between fowl pox + coccidiosis and other types of diseases excluding "New Castle + Coccidiosis". The mean

2.7143 was the highest followed by 1.8571 for Newcastle + Coccidiosis. IBD + cocciodiosis and IBD + fowl pox had the least occurrence.

The implication of this is that fowl pox and coccidiosis were quite common on most farms. Gomboro was also rampant. One may consider coccidiosis as the commonest disease on the farms. Combination of IBD + fowl pox appeared the least common. This result partially agrees with Abdu (1981) who stated that exotic breeds were susceptible to New castle disease and IBD infection. It also agrees with the report of Tong (1992) that improved breeds of chicken under confinement are about 3.5 times more likely to have IBD.

Table 7: Feed Assessment of Farms

Parameter	Agege	Surulere	Obalende	Ikorodu	Epe	Ojo	Badagry	Mean
Not scarce but expensive	10	9	10	10	10	8	8	9.2857a
Scarce and Expensive	0	1	0	0	0	2	2	0.7143b
Scarce not Expensive	0	0	0	0	0	0	0	0.0000b
Not scarce not expensive	0	0	0	0	0	0	0	0.0000b

Table 7 which assessed the feed availability and cost showed that the frequency of feed not being scarce but expensive was the highest with 9.4286 mean value and significantly different ($P < 0.05$) from scarce and expensive with mean value of 0.7143. There were no respondents for 'scarce not expensive' and 'not scare, not expensive'. The feed assessment confirms what Ogungbile et. al., (1990) reported, that a major cost item in livestock production, moreso broiler chicken is feed. High cost of feed was due to lack of adequate supplies of feed stuff and frequent

increases in their prices (Fetuga and Tewe, 1985). This increase in cost of feed will definitely lead to increase in cost of production.

Table 8: Drug Assessment

Parameter	Agege	Surulere	Obalende	Ikorodu	Epe	Ojo	Badagry	Mean
Not scarce but expensive	10	10	8	9	10	10	9	9.4286a
Scarce and Expensive	0	0	1	1	0	0	0	0.4286b
Not Scarce not Expensive	0	0	1	0	0	0	1	0.2857b
Scarce not expensive	0	0	0	0	0	0	0	0.0000b

Almost similar to Table 7 on feed situation, most respondents opined that drugs were available but expensive (Table 8). None felt the drugs were scarce and not expensive. In Table 8 the response 'not scarce but expensive' was significantly highest among the responses. There was no significant difference ($P > 0.01$) between the others.

Table 9: Sources of Drug

Source	Agege	Surulere	Obalende	Ikorodu	Epe	Ojo	Badagry	Mean
Open Market	8	8	8	9	9	9	9	8.5714a
Agro Allied Coy.	1	1	0	0	1	1	1	0.7143b
Designated Farm	0	1	1	1	0	0	0	0.4286b
Importation	1	0	1	0	0	0	0	0.2857b

Table 9 gives the frequency of source of drugs to the farmers. Open market significantly scored highest and it was higher than any other source followed by agro allied companies. There was no significant difference between those from designated farms and those imported.

More than 80% of drugs to the farmers were locally purchased in the open market. The government policy on importation which sometimes gives rebate and subsidies on livestock equipment and drugs for certain year

and withdrawn at another year and total ban sometimes placed on these materials has forced most farmers to patronise locally manufactured drugs and few imported drugs available at the open market. The poor bilateral relationship between Nigeria and veterinary drug producing nations such as Israel and some commonwealth nations made importation of drugs from these countries difficult, thereby confined the farmers to local market.

Table 10: Labour Assessment on the Farm

Parameters	Agege	Surulere	Obalende	Ikorodu	Epe	Ojo	Badagry	Mean
Not scarce not expensive	7	6	7	2	8	5	6	5.8571a
Not Scarce but expensive	2	2	3	8	1	1	2	2.7143b
Scarce and Expensive	1	2	0	0	1	3	2	1.2857c
Scarce not expensive	0	0	0	0	0	1	0	0.1429d

The assessment of labour (Table 10) revealed that labour was not scarce and not expensive. There was significant differences between this parameter and the others. Also there was significant difference ($P < 0.01$) between labour 'not scarce but expensive' and 'scare and expensive' as well as 'scarce and not expensive'.

The table shows that labour was redily available at affordable rate. The willingness of workers to stay on the job despite the poor wages (i.e cheap labour) is believed to be the effect of job scarcity in the country and the hard economic policy e.g Structural Adjustment Programme which led to the folding up of many production companies and forced many people out of their profitable jobs. They were therefore available to do less gainful jobs so as to keep their 'bodies and souls' together.

Table 11: Staff Incentives

Remunerations	Agege	Surulere	Obalende	Ikorodu	Epe	Ojo	Badagry	Mean
Staff Price	3	4	4	4	5	4	3	3.8571a
Credit facility	3	3	2	3	2	3	3	2.7143b
Annual Bonus	3	2	2	1	1	1	1	1.5714c
Leave Bonus	1	1	1	1	1	1	2	1.1429c
Medical/Hazard Allowance	0	0	1	1	1	1	1	0.7143d

Different incentives for workers were examined. Staff price appeared the highest followed by credit facilities and the least was medical/hazard allowance. There was significant difference ($P < 0.01$) between staff price and credit facility as well as between others (Table 11).

Table 12: Nature of Problems with Workers

Problems	Agege	Surulere	Obalende	Ikorodu	Epe	Ojo	Badagry	Mean
Stealing	5	5	4	4	6	4	5	4.7143a
Lateness to Work	2	3	3	3	2	2	1	2.2857b
Lazy Not Committed	2	1	2	1	1	3	3	1.8571ab
Absent without Permission	1	1	1	2	1	1	1	1.1429c

Table 12 shows the problems experienced with the labour (workers). Stealing was significantly different ($P < 0.05$) from all other problems while lateness to work was not significantly different from 'lazy not committed'. Absent without permission was significantly the least problem observed with workers.

The other problems with poultry workers ranged from stealing of poultry products to absenteeism (Table 12). Of all these problems stealing was outstanding. This problem one could say emanated from poor remuneration and high cost of living within the State.

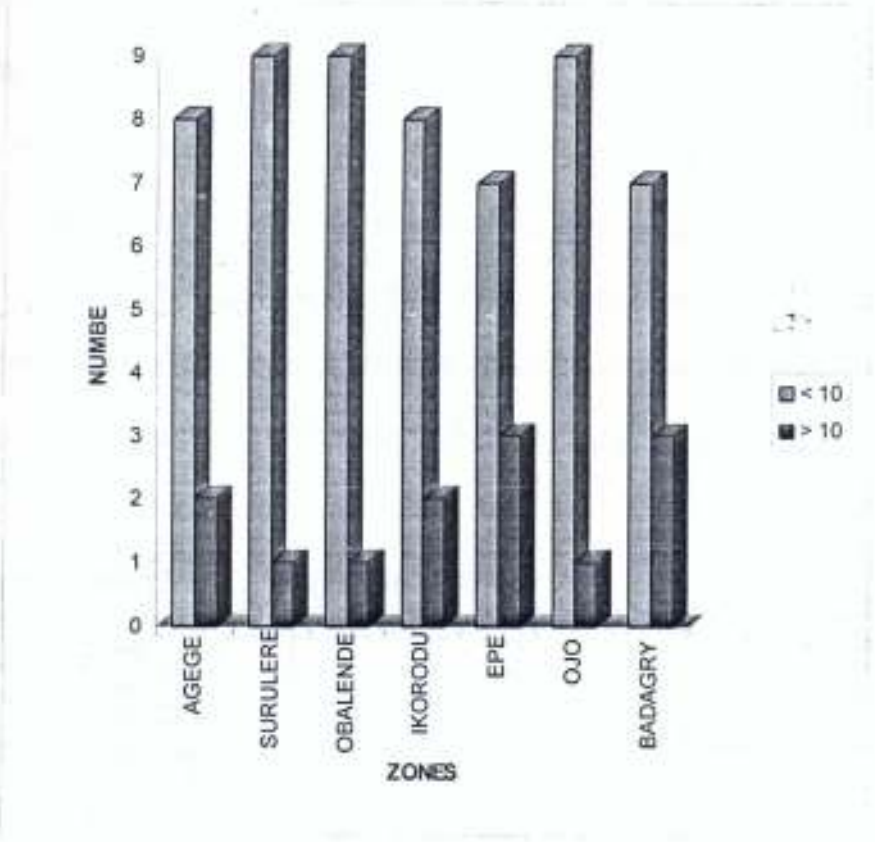

Fig. 4.1: Staff Strength (Non-professional)

The staff strength, especially non-professional was less than 10 people of the overall population in most farms. This number represents 80% of the total population of most farms. (Fig. 4.1).

Table 13: Land Assessment

Parameter	Agege	Surulere	Obalende	Ikorodu	Epe	Ojo	Badagry	Mean
Scarce and Expensive	8	8	8	7	6	7	6	7.1429a
Scarce not Expensive	1	2	1	2	2	1	1	1.4286b
Not Scarce but Expensive	1	0	1	1	1	2	3	1.2857b
Not scarce not Expensive	0	0	0	0	1	0	0	0.1429c

Table 13 shows a significant difference ($P < 0.01$) between land being 'scarce and expensive' and other options of assessment. There was

however no significant difference (P > 0.01) between 'scarce not expensive' and 'not scarce but expensive' despite the difference in their means. Lowest mean value 0.1429 was recorded with 'not scarce not expensive' while that of the scarce and expensive was highest with 7.1429. This result implies that there would be little or no room for future expansion of this type of venture, which could lead to excess demand for poultry products. The chain effect of this is high cost of product.

Table 14: Marketing Outlets

Marketing Sources	Agege	Surulere	Obalende	Ikorodu	Epe	Ojo	Badagry	Mean
Open Market	4	4	5	4	5	4	5	4.4286a
Middle Men	5	4	1	3	4	4	4	3.5714a
Farm Gate	1	2	3	3	1	2	1	1.8571b
Supermarket	0	0	1	0	0	0	0	0.1429c

Highly significant variation (P < 0.01) was observed between marketing through open market and other sources of marketing except for that of middle men. Likewise middlemen as a source of marketing was significantly (P < 0.05) better than marketing from farm gate and supermarket.

The marketing of the poultry products was mainly through local market and middlemen (Table 14). Many farmers preferred local market as the source of market for their products to farm gate and supermarkets. The number of farmers engaging the services of middlemen is commendable.

Table 15: Market Demand for Poultry Products

Demand	Agege	Surulere	Obalende	Ikorodu	Epe	Ojo	Badagry	Mean
Adequate Demand	6	3	5	6	6	4	6	5.1429a
Excess Demand	2	6	4	4	3	4	4	3.8571b
Low Demand	2	1	1	0	1	2	0	1.0000c

The frequency of demand for poultry and poultry products are shown in Table 15. Adequate demand was significantly higher ($P < 0.05$) than 'excess demand'. Respondents generally did not feel that demand for poultry products was low.

The implication of this result is that more people were in love with poultry and poultry products in Lagos State. This could be due to the fact that poultry and its products have little or no social or religious stigmas attached to their uses in diet (Mourterien, 1975).

OTHER FINDINGS MADE FROM INTERVIEWING THE FARMERS ESPECIALLY THOSE WITH CLOSED DOWN FARMS,

Closure was due more to lack of continuity than feed and diseases. Majority of these farmers (owners) had nobody to succeed them in their farming business. This emanated from their polygamous marital life. None of the owners of the visited privately owned farms was married to only one wife. So, when they died, their assets had to be shared among the children. Asset sharing was strengthened by the exorbitant price of land in Lagos. Most of these farms were located in the highly priced areas of Lagos.

The sale of most farm land apart from the desire to make quick money out of it got enhanced by the problem posted by the initial owners of the land

popularly called "Omo Onile". These people once they realised that any of their clients is dead, usually start to make trouble with the family of the deceased in order to reclaim the land or asking for repurchase of the land based on the current price of land. In an attempt to avoid this unwholesome behaviour and embarrassment from the so called 'omo onile', some farmlands had been disposed off or reduced to a very small farm thereby phasing out most of the activities of these farms which in most cases affected poultry production.

Observations made of most farm environment were as follows:
Most farms were not too clean and tidy. Some were half covered with weeds and tall grasses which could harbour dangerous pest such as snake and scorpion.

Workers were usually found loitering around, chatting away at the detriment of their work.

Many of the cages used by most framers were old. Eggs were dropping freely on the ground from some of the cages. No new cage was seen in any of the visited farms.

Most farmers expressed utter disillusionment with my mission. They said they were not used to researches of this nature and they could not see its benefit with respect to their general well being on the farm and business.

CHAPTER FIVE

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 CONCLUSIONS

The Poultry enterprise, though lucrative, is confronted with some problems. Unless these predicaments are fully tackled, the success might not be fully achieved. The case of Lagos State poultry venture was a point in view.

The choice of most of these farmers centered on raising layers for table bird and egg production. Poultry farmers in Lagos State also engaged in raising birds for meat and other products except few that combined crop production with raising birds. Some combined broiler production (meat production) in their operation. Cage system of operation was commonly adopted by the farmers, mostly used in open sided buildings.

The major problems encountered by farmers in Lagos State were problems of feed cost and disease prevalence. While the problem of feed revolved round the cost of the feed which was generally considered to be expensive by most farmers, diseases such as Newcastler, Gomboro, fowl pox and coccidiosis were more frequent in the State. Drugs to combat these diseases were equally expensive to purchase.

Although labour was relatively cheap and easily available, their remuneration still fell below standard. This was responsible for various

vices practiced by poultry workers. Such vices primarily included stealing and laziness to work.

Marketing of poultry products was mostly done through the open market and farm gate sales and demand was adequate and encouraging.

Despite all the predicaments befalling the poultry venture, there existed prospect for the business in Lagos State.

5.2 RECOMMENDATIONS

The poultry industry has a good prospect in Lagos State. For this to be realized, I hereby make the following recommendations.

More research should be carried out on some crops that are not edible by man, e.g. seeds of some ornamental crops such as *acacia*, *mucuna* and other wild legumes that are not edible by man. If these could be researched on, they could replace crop like soya beans, which is one of the sources of protein in man's food. This will reduce the competition between man and animals over the conventional feed stuff eaten by both man and livestock. This will reduce the cost of poultry feeds.

The government policy on importation should give concession to agriculture especially veterinary drugs. If possible the government should shoulder the responsibility of importing the drugs and make them available to the farms at subsidized prices.

Finally, poultry farmers should come together and form partners and cooperative societies. This will ensure the continuity of the business in case of the death of any member. They should also encourage some members of their families to develop interest in the business so that they could take over from them in future.

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APPENDIX I

THE FEDERAL UNIVERSITY OF TECHNOLOGY, AKURE

(DEPARTMENT OF ANIMAL PRODUCTION AND HEALTH)

PROJECT TOPIC: **Investigation Of Problems And Prospect Of Poultry Ventures In Lagos State**

NB: This questionnaire is for academic purpose. Your cooperation will be highly appreciated.

GENERAL INFORMATION

1. Name and Address of Farm: _____
2. Name of Proprietor: _____
3. Occupation of Proprietor: _____
4. Date of Establishment: _____
5. Name of Respondent: _____
6. Rank: _____
7. Enterprises on the Farm (Please tick the boxes as appropriate)

i) Poultry ☐ ii) Hatchery ☐ iii) Crop Production ☐

iv) Fisheries ☐ v) Poultry Processing ☐ vi) Piggery ☐

vii) Feed Mill ☐

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APPENDIX I

THE FEDERAL UNIVERSITY OF TECHNOLOGY, AKURE

(DEPARTMENT OF ANIMAL PRODUCTION AND HEALTH)

PROJECT TOPIC: **Investigation Of Problems And Prospect Of Poultry Ventures In Lagos State**

NB: This questionnaire is for academic purpose. Your cooperation will be highly appreciated.

GENERAL INFORMATION

1. Name and Address of Farm: _____
2. Name of Proprietor: _____
3. Occupation of Proprietor: _____
4. Date of Establishment: _____
5. Name of Respondent: _____
6. Rank: _____
7. Enterprises on the Farm (Please tick the boxes as appropriate)
   - i) Poultry ☐ ii) Hatchery ☐ iii) Crop Production ☐
   - iv) Fisheries ☐ v) Poultry Processing ☐ vi) Piggery ☐
   - vii) Feed Mill ☐
8. Type of Poultry on the Farm
   - i) Chicks ☐ ii) Growers ☐ iii) Layers ☐
   - iv) Parent Stock ☐ v) Broilers ☐ vi) Ducks ☐
   - vii) Turkeys ☐ Viii) Geese ☐ ix) Others ☐
9. System of poultry keeping practiced on the farm:
   - i) Cage ☐ ii) Deep litter ☐ iii) Slatted floor ☐
   - iv) Combination ☐ v) Others ☐

10. Production Status

Enterprise	No. Houses		Maximum Production Capacity		Initial Operating Level		Present Operating Level	
	Cage	Floor	Cage	Floor	Cage	Floor	Cage	Floor
Broiler Chicks								
Layers Chicks								
Broiler Grower								
Pullets								
Mature Broiler								
Layers								
Breeders								
Turkey								
Others								

11. How often do you crop your chicken?:

i) Broiler: _____

ii) Turkey: _____

iii) Others (e.g. point of lay chicken etc.): _____

12. What is your -

	Broiler	Turkey	Others
Average Bird Production?			
Daily Egg Production?			

13. What type of building do you have?

i) Open Sided ☐ ii) Uncompleted Residential Building ☐

iii) Half Wall ☐ iv) Others (Specify) ☐

14. What problems do you face on your farm?

i) Disease ☐ ii) Feed ☐ iii) Water ☐

iv) Drugs ☐ v) Housing ☐ vi) Labour ☐

vii) Space for Expansion ☐ viii) Others ☐

15. How do you assess the following?:

	Feeds	Drugs	Land	Labour	Water
Scarce not Expensive					
Not Scarce but Expensive					
Not Scarce, not Expensive					
Scarce and Expensive					

16. How many bags of feed do you use daily?

	Broiler	Layers	Turkey	Others
Chicks				
Growers				
Finishers				
Layers				

17. What are the sources of your feed supplies?

i) Livestock feed
ii) Guinea feed
iii) Animal care
iv) Sanders
v) Others

18. Where do you get your water?

i) From Tap Water ☐ ii) Borehole ☐ iii) Well ☐

iv) Stream ☐ v) Others (Specify)

19. How do you get your drugs on the farm? (tick as appropriate)

i) From Open Vet Store ☐ Ii) Importation ☐

iii) Agro Allied Companies ☐ Iv) Designated Farms ☐

20. How many workers did you have (number)?

	Livestock Professional	Non Professional
Educated		
Illiterate		

21. Do you have any problem with the workers? (tick as appropriate)

i) Stealing: _____

ii) Lateness to work: _____

iii) Lazy and not committed: _____

iv) Absent with permission: _____

v) Others (State if): _____

22. What other packages do you have for your workers apart from wages/salary? (tick as appropriate).

i) Medical/hazard allowance ☐ ii) Staff Price ☐

iii) Annual Bonus ☐ v) Leave and Leave Bonus ☐

Marketing

23. Where do you market your products?

i) In the open market ☐ ii) At farm gate store ☐

iii) Through Middlemen ☐ iv) Supplies to designated market ☐

v) Others

24. In what forms are your product sold? (tick as appropriate)

Product	Fresh/Life	Processed
Eggs		
Broilers		
Old Layer		
Cocks/Cockerels		
Turkey		
Others		

25. In marketing, do you have

i) Low demand

ii) Adequate demand

iii) Excess demand

26. Your relationship with your neighbour is:

i) Peaceful

ii) Not peaceful

If not, state your experience: _____

_____

Hatchery

27. Do you have a hatchery plant on your farm? (tick as appropriate)

i) Yes ☐ ii) No ☐

If yes, what is the capacity of the Hatchery?

- Below 5000 egg/setting
- Between 5000-7000 egg/setting
- Between 7000-15000 egg/setting
- Above 15000 egg/setting.

28. Where do you get your fertilized eggs?

i) From your farm

ii) From other farms

iii) Imported

iv) Open market

29. Are you operating at maximum capacity?

i) Yes ☐ ii) No ☐

If No, what are your reasons?

i) Shortage of egg supply

ii) Breakdown of some machines

iii) Lack of fund

iv) Low demand

v) Others (specify)

30. How do you market your chicks?

i) Solely on your farm

ii) Your farm and others

iii) Chick vendors

iv) Other farms only

v) Others

31. What is your current price for day old chicks?: _____

Do you have any other information to give? If yes, please state

Feed Mill

32. Do you operate a feed mill? (tick as appropriate)

i) Yes ☐ ii) No ☐

If yes, what is the capacity?

- Less than 500 tonnes/mill (specify)
- Between 500-1,000 tonnes/mill
- Between 1,000-5,000 tonnes/mill
- Between 5,000-10,000 tonnes/mill
- Above 10,000 tonnes/mill (specify)

33. Where do you obtain your raw materials?

i) Open market
ii) Suppliers
iii) Agricultural Agency e.g. ADP
iv) Importation
v) Others

34. Which of these raw materials/imputs do you prefer most in the order of preference? Indicate using 1st, 2nd, 3rd, 4th.

Imputs	Market	Agric. Agency	Supplier	Importation
Grains				
Concentrates				
Mixer/diluent				
Agrochemical				
Spare Parts				
Others				

35. What difficulties do you have in obtaining your raw materials?

i) Scarcity/inadequacy
ii) High price
iii) Untimeliness
iv) Other

36. How do these problems affect your production?

i) Reduced production

ii) Reduced profit margin

iii) reduced quality

iv) Other

37. Where do you market your feed?

i) In the farm feed store

ii) Through middle men

iii) Supplies to designated farms

iv) Through farmers cooperative society

v) Your farm consumption only.

Any useful information in any of the poultry aspects is highly appreciated. Feel free to supply below.

APPENDIX 2

ENTERPRISES

ANALYSIS OF VARIANCE

Source	D.F.	Sum of Square	Mean Square	F. Ratio	F. Prob.
Between groups	5	64.4762	12.8952	5.7413	0.0005
Within groups	36	80.8571	2.2460		
Total	41	145.3330			

FREQUENCY OF POULTRY TYPE

ANALYSIS OF VARIANCE

Source	D.F.	Sum of Square	Mean Square	F. Ratio	F. Prob.
Between groups	4	256.0000	64.0000	87.2727	0.0000
Within groups	30	22.0000	.7333		
Total	34	278.0000			

FREQUENCY OF SYSTEM OF POULTRY KEEPING

ANALYSIS OF VARIANCE

Source	D.F.	Sum of Square	Mean Square	F. Ratio	F. Prob.
Between groups	3	131.5714	43.8571	11.266	0.0001
Within groups	24	93.4286	3.8929		
Total	27	225.0000			

FREQUENCY OF FEED ASSESSMENT

ANALYSIS OF VARIANCE

Source	D.F.	Sum of Square	Mean Square	F. Ratio	F. Prob.
Between groups	3	432.1429	144.0476	318.4211	0.0000
Within groups	24	10.8571	.4524		
Total	27	443.0000			

FREQUENCY OF DRUG ASSESSMENT

ANALYSIS OF VARIANCE

Source	D.F.	Sum of Square	Mean Square	F. Ratio	F. Prob.
Between groups	3	444.1071	148.0357	518.1250	.0000
Within groups	24	6.8571	.2857		
Total	27	450.9643			

FREQUENCY OF LABOUR ASSESSMENT

ANALYSIS OF VARIANCE

Source	D.F.	Sum of Square	Mean Square	F. Ratio	F. Prob.
Between groups	3	128.4286	42.8095	15.4335	.0000
Within groups	24	66.5714	2.7738		
Total	27	195.0000			

FREQUENCY OF LAND ASSESSMENT

ANALYSIS OF VARIANCE

Source	D.F.	Sum of Square	Mean Square	F. Ratio	F. Prob.
Between groups	3	208.1429	69.3810	129.5111	.0000
Within groups	24	12.8571	.5357		
Total	27	221.0000			

FREQUENCY OF SOURCES OF DRUG

ANALYSIS OF VARIANCE

Source	D.F.	Sum of Square	Mean Square	F. Ratio	F. Prob.
Between groups	3	344.7143	114.9048	438.7273	.0000
Within groups	24	6.2857	.2619		
Total	27	351.0000			

FREQUENCY OF PROBLEMS

ANALYSIS OF VARIANCE

Source	D.F.	Sum of Square	Mean Square	F. Ratio	F. Prob.
Between groups	4	45.1429	11.2857	20.0847	0000
Within groups	30	16.8571	.5619		
Total	34	62.0000			

FREQUENCY OF TYPE OF DISEASES

ANALYSIS OF VARIANCE

Source	D.F.	Sum of Square	Mean Square	F. Ratio	F. Prob.
Between groups	9	40.0000	4.4444	6.6669	0000
Within groups	60	40.0000	6667		
Total	69	80.0000			

FREQUENCY OF PROBLEMS WITH WORKERS

ANALYSIS OF VARIANCE

Source	D.F.	Sum of Square	Mean Square	F. Ratio	F. Prob.
Between groups	4	45.7143	11.4286	33.3333	0000
Within groups	30	10.2857	.3429		
Total	34	36.0000			

FREQUENCY OF MARKET DEMAND

ANALYSIS OF VARIANCE

Source	D.F.	Sum of Square	Mean Square	F. Ratio	F. Prob.
Between groups	2	62.9524	31.4702	26.0921	.0000
Within groups	18	21.7143	1.2063		
Total	20	84.6667			