CHAPTER - I
INTRODUCTION AND DESIGN OF THE STUDY

INTRODUCTION

A business develops in course of time with complexities. With the increasing complexities, managing the business becomes a difficult one. Management is the art of getting things done by a group of people with the effective utilisation of available resources. Management is the group of activities which draft plans, prepare policies and arrange men, money, machinery and materials required to achieve the objectives. The management also rewards those who are engaged in the organisation’s operations and ensures an excellent performance. Management is must for every enterprise. The existence of management ensures proper functioning and running of an enterprise. The purpose of business enterprise is to serve the general welfare. The function of management is to see that the enterprise fulfils the objective through meeting the needs of its owners, its customers, its employees and the general public.

Every business unit has objectives of its own. These objectives can be achieved with the co-operative efforts of several personnel. Through the process of management, the work of a number of persons are properly co-ordinated to achieve the objectives of the organisation. The process of management involves the determination of goals and converting these goals into results. It is that process by which managers create, direct, maintain and operate purposive organizations through systematic, coordinated and co-operative human effort by performing certain operative functions. Operative functions include production, marketing, financing, personnel and office management.

The main purpose of any production system is to produce the desired goods and services effectively and efficiently. In order to achieve this purpose, it is essential to plan, organise, direct and control the production system which is the task of production management. Production management
ensures the conversion of various inputs into outputs which will satisfy the wants of the customers. The difference between the value of the inputs and the value of the outputs represent the contribution of the production system. Any production system must try to maximise the contribution of the value added to the inputs. Therefore production leads to creation of utilities. This creation of utilities takes place when raw materials are converted into finished products. Plant location and layout, production policy, types of production, plant facilities, material handling, production planning and control, repair and maintenance, research and development, simplification and standardization, quality control and value analysis etc., are the main problems involved in production management.

The production of goods has no meaning unless a firm is able to sell them to customers. The goods have to be transferred from the producers to the consumers. The availability of products at certain places must be made known to customers. It is through marketing that a manufacturer is able to satisfy the needs and wants of people in an economy. Marketing is a sum total of physical activities which are involved in the transfer of goods and services and which provide for their physical distribution. Marketing is of vital importance to any business. Marketing helps in the creation of place, time and possession utilities for the benefit of customers. Marketing makes goods and services more useful to the society. It also helps in improving the standard of living of people by providing wide variety of goods and services, to satisfy their needs.

Marketing Management refers to the planning, organizing, directing and controlling the activities of the persons working in the marketing division of a business enterprise with the aim of achieving the organization objectives. Market analysis, marketing policy, brand name, pricing, channels of distribution, sales promotion, sales mix, after sales service, market research, etc are various aspects in marketing management.

Marketing Management is goal directed. It attempts to satisfy the needs of customers by offering them want satisfying products and generate profits for
the business. It determines the appropriate marketing mix of the firm, product design, its promotion, its pricing and its distribution are synchronized so as to maximize the sales volume. Marketing facilitates exploitation of economic resources of the nation. Since a business earns profits by marketing goods and services, it will exploit the economic resources of the nation. This will also lead to an increase in employment opportunities.

**POULTRY FARMING**

The Poultry Industry has evolved in the 21st century from tens of thousands of small independent farms in the post-world war II period to an industry of relatively few large vertically integrated companies, each with multiple farm sites or contract growers, processing, marketing, feed milling and hatchery capabilities. This change has come about because of the many technologies that have been introduced over the past half century by the poultry industry with the help of supporting industries and various educational, research and governmental institutions. Poultry industry is a rapidly growing industry in the world. Poultry occupies a unique position in the livestock economy of India. With a vibrant indigenous industry compared to other developing countries, it is the world’s fastest growing poultry industry and one of the fast growing agri-business activities in India.

India occupies 3rd place in the world egg production and is among the twenty top producers in the world in broilers. Indian poultry industry provides direct and indirect employment to over 4 million people, particularly in rural areas, and contributes about Rs. 40,000 crores to the national GDP. Layers in India have registered an annual compounded growth rate of 7% to 8% for the past three decades. There are a number of small poultry dressing plants in the country producing dressed chicken. In addition to these plants, there are five modern integrated poultry processing plants producing dressed chicken, chicken cut parts and other chicken products. These plants also manufacture egg powder and frozen egg-yolk for export.¹
The poultry farming plays an important role in the rural economy of India. During the last two decades, the poultry industry in India has gained a tremendous momentum and has virtually reached a stage of self-sufficiency and specialisation. Rapid growth of poultry industry has been encouraging many farmers to adopt poultry farming as the main source of their income. Inspite of various developments in modern poultry farming, disease problems remain as a major constraint affecting its successful functioning.

There are few segments in poultry industry, comprising layers and broilers. Layers are chicken reared specifically, for production of eggs. These birds are kept in cages during their productivity life cycle of 72 weeks. Once their productivity declines they are sold in the market for consumption. Broilers are pumped with vitamins and proteins and are reared specifically for meat and have a life cycle of 10 weeks before they are sold as quality chicken for meat. Income from layer farm poultry products includes sale of eggs, cull birds, gunny bags and manure. India is marching ahead towards attaining nutritional security for its people. In this context, poultry eggs, which is highly nutritious and the cheapest source of high quality protein and the poultry meat that is comparatively less expensive than that of red meat.

Creation of public awareness is needed for the overall development of poultry industry. The egg, earlier treated as an non vegetarian item, is not being considered so by most now. Mahatma Gandhi has stated, “milk being an animal product cannot by any means be included in a strict vegetarian diet. In the medical language, milk can be classified as an animal food. On the other hand eggs are regarded by the layman as an animal food. In reality, they are not so, as sterile eggs are also produced and a sterile egg never develops into a chick. Therefore, those who take milk should have no objection to taking sterile eggs.”

Poultry business is attractive as any other business and is a home-farm enterprise. It plays an important role in converting grain and other products into eggs and poultry meat for the non-traditional benefit of mankind.
and poultry are interdependent as the cereals form part of feed for poultry and poultry wastages are inputs for agriculture. Poultry production can play a significant role to raise the economic status of the rural masses, improve their level of nutrition and also generate employment opportunities. Poultry farming is relatively easier and quicker and can be adapted to a wide range of climatic conditions and can generally be conveniently carried out with other farm activities like crop production, dairying and sheep rearing.

Introduction of some of the world’s best poultry breeds has made a major contribution to the development of the poultry programme in India. The commercial poultry farming has increasingly been taken up during recent years in almost all over the country. Commercial poultry production in India is 35 years old, although poultry raising dates back to prehistoric times.

The poultry sector in India reflects dual sources, i.e., commercial poultry and backyard poultry. Nearly 85% of total egg production and almost the entire commercial broiler production are from improved poultry birds in this organized sector. There are over 500 parent stock farms. Hatcheries have been established by private and Government sector all over the country. States of Karnataka, Kerala, Tamil Nadu, Andhra Pradesh and western region of Maharashtra account for more than 56% of total national egg production and 60% of total broiler production in the country. India’s broiler industry is highly unorganized specially in Northern India though in South India the players of the industry have come together for integrated operations. However layer industry is totally in hands of unorganized sector. Poultry sector, besides employment generation and subsidiary income provides nutritional security especially to the rural poor. Further landless labourers derive more than 50% of their income from livestock especially poultry.

Poultry industry in India is a vibrant fast growing and dynamic subsector of agriculture with an annual growth rate of 8-10% and production of 54 billion eggs and 2.63 million tones of chicken meat. It has also been recognized as a vital sector for sustainable generation of employment and
income that ensures food security through highly nutritious egg and meat for the ever growing human population of our country. The share of livestock and poultry sector together to the national gross domestic product is about 7% of which the contribution of poultry sector alone is about 2%. Changes in lifestyle and food habits, rapid urbanization and rising income are the critical driving forces for the growth of Indian poultry industry. Indian Poultry Science Association in order to encourage and carry out quality research in all areas of poultry production has been continuously and successfully organizing annual conferences and national symposia at regular intervals with a conglomeration of poultry scientists from all over India. The challenges of global warming and consequent climate change receive the immediate attention of the scientists across the world. Forecast suggests that average temperature could increase by another 1.4 to 5.80°C by 2100. It is estimated that accumulated global anthropogenic methane production is 320 million tonnes per year. Such global warming results in changes in weather patterns including an increase in global warming results in change in the severity or frequency of extreme levels. Even though intensive poultry production is also considered as one of the causative factors, poultry production itself stands to suffer directly or indirectly because of climatic change. Changes in short fall of agricultural production will indirectly lead to shortage of feed ingredients and escalation of costs while global warming will have a direct bearing on poultry production, productivity and profitability.\textsuperscript{4}

In India, for the survival of any poultry farm the most important factor that have to be taken into account is Raw material or Poultry Feed. Feed cost is the most important element of poultry cost, accounting for more than 60% of cost. The main feed ingredients are maize, soya, rice bran and other cereals. In India the feed is mainly maize and India is still dependent on monsoon for its agriculture. Any problem in monsoon can lead to fluctuation of maize cost thus affecting the profitability of poultry farms.
Consumption pattern

Both eggs as well as the meat of chicken is marketed and consumed in fresh form. Urban population accounts for around 75% of the total poultry consumption in the country. Egg consumption is largely in the bakery sector, confectionery sector and in eggitarian households. The annual per capita consumption in India is 41 eggs and 630 grams of poultry meat. This is much lower as compared to the world average of 124 eggs and 5.9 kg meat. The National Egg Co-ordination Committee projected a poultry plan for the year 2015, keeping in view the target as 180 eggs and 9 kg chicken meat per annum. The domestic poultry meat consumption is expected to triple by 2020.5

Government support to poultry industry

Government has now recognized the poultry industry as one of the growth engines for Indian economy. Government fund the research activities related to the sector either directly for poultry breeding and health maintenance or indirectly through APEDA (Agricultural and Processed Products Exports Development Authority) and also provides infrastructural support and subsidies for poultry exports. Government also supports the sector by assisting the National Egg Coordination Committee (NECC) for promotion of egg marketing and consumption. Government has now recognized the poultry industry as one of the growth engines for Indian economy. The processed poultry meat constitutes only 5% of the total poultry meat consumption in the country. Egg powder manufacturers consume around 1% of the total egg production in the country. However the poultry has been very responsive in providing for the consumer’s convenience needs.6

Constraint for export of Indian Poultry

Presently India exports table eggs and hatching eggs to middle east to cater to NRI population. India is exporting egg powder, frozen egg yolk and albumen powder to Europe, Japan and other countries. Poultry exports are mostly to Maldives and Oman. Indian poultry meat products have good market in Japan, Malaysia, Indonesia and Singapore. Lack of infrastructure facilities
such as poultry disease diagnostic laboratories, feed analytical laboratories, meat testing laboratories, processing, packaging of broilers including developing cold chain for storage and transportation at airports and sea-ports and speedily handling of cargo etc are major constraints affecting badly the Indian exports. Brand building is yet another area which is not only expensive but also time consuming. The cost of export is also alarming compared to developed countries. The high incidence of customs and excise duties, absence of incentives for exports and levy of Income Tax on poultry are other major inhibiting factors hurdling the export growth of India.

NAMAKKAL DISTRICT

Nammakkal District is an administrative district in the state of Tamil Nadu, India. The district was bifurcated from Salem District with Namakkal town as Headquarters on 25.07.1996 and it started to function independently from 01.01.1997. The district is bounded by Salem on the north, Karur on the south, Trichy and Salem on the east and Erode on the west. The geographical area of the district is 3363.35 K.M. which lies between 11.00 and 11.360 North Latitude and 77.280 and 78.300 East Longitude.

The Rock Fort in Namakkal is a special feature of the town. The fort covers an area of one and half acres of flat surface and is accessible from south west by a flight of narrow steps. Namakkal was in the hands of Atikula King called Gunasila who had married with pallava dynasty. Later the taluk was ruled by the cholas in the Kongu Mandalam which as over run by the Cholas in the 9th century and passed on the Vijayanagar under the Viuroylutry of Madura. Namakkal held by Killedhar (caption) on Hyder Ali Unit was captured by British in 1768.

The famous Tamil poet “Namakkal Kavingnar Ramalingam Pillai” was born in this district. In memory of the poet the state government established an Arts and Science College for Women. One of the most famous Government Veterinary College is also situated near by Namakkal Town. More and more private educational and technical institutions are coming up in recent years.
which is blossom for the district. The famous Anjaneyaswami Statue which has its height of 6.7 mts. was built in 996 AD. The Narasimma Samy Temple along with Amman Temple are situated behind the west of the Rock Fort in the heart of the town.

For administrative purposes the district has been divided into 2 Revenue Divisions, 4 Taluks, 30 Revenue firkas and 454 Revenue Villages (including group villages). For local arrangements, the district has been divided into 5 municipalities, 15 panchayats unions, 19 Town panchayats and 331 village panchayats. It is also known as Thiruvaraikkal as it is mentioned in the inscription found on the north west and south walls of the deserted temple on the Hill.

**Demographics**

According to the 2011 censes Namakkal district has a population of 1,721,179. The district has a population density of 506 inhabitants square kilometer (1,310/sqmi) Its population growth rate over decade 2001-2011 was 15.25%. Namakkal has a sex ratio of 986 females for every 1000 males, and a literacy rate of 74.92%.

**Industry**

The main occupation of the district is agriculture. The cultivation generally depends on monsoon rains, wells and tanks. Nearly 90% of the cultivated area is under food crops. The principal cereal crops are paddy, cholam, cumbu and ragi and the millets cultivated are panivaragu, kuthianally, samaivaragu and thinai. Among pulses, the major crops are redgram, blackgram, greengram and horsegram. Among oilseeds groundnut, castor and sesame occupy important places. Of the commercial crops, sugarcane, cotton and tapioca are some of the important crops. Tapioca is used for the manufacture of sago.

Namakkal District is noted for Truck and Lorry external body building which dates back to 1956. Throughout India Tiruchengode is known for its
body building industry for Trucks, Trailers, Tankers and Rig unit. Finished Trucks and Rig units are even exported to foreign countries from Nammakal.

Poultry development has been rather phenomenal in the district of Namakkal. The district is also well known for its poultry and dairy industries, accounting for a bulk of supply of poultry products to neighbouring industries. In fact it produces about 65% of the egg output of Tamilnadu.

Since Namakkal produces major part of eggs sent to all over the parts of our country, and is also called “Poultry Town” as it contains quite a number of poultry farms that it is now called as “Egg City”.

Rasipuram is another important taluk in Namakkal District. The chief industry of the town is weaving. Another important aspect in the taluk is the sago production. Nearly 176 sago factories are located in and around the Rasipuram Taluk. Tiruchengode is a town of cultural and historic importance. Arthanareeswarar temple in Tiruchengode is one of the Pilgrimage centre. The large number of powerloom and handloom industries function in this Taluk. One sugar mill and one paper mill are functioning under private sector. Tiruchengode is famous for Rig Vehicles. More than 2000 vehicles are engaged in digging of borewells all over India. The famous Cauvery river flows in Paramathi Velur Taluk. It helps more irrigation of lands in Paramathi and Mohanur Blocks. The Mohanur Co-operative Sugar Mills is also situated in Paramathi Taluk in Mohanur Block.

POULTRY FARMING IN NAMAKKAL

India carves a niche in the poultry industry of the world by securing third and fifth place in global chicken egg and broiler production respectively. Among its states, Tamil Nadu holds the lions share by being second in the country’s egg production and fourth in broiler production by producing about 4400 million eggs and 250 million broilers per annum. Namakkal, the egg town has an area around 200 sq.km glisten well by contributing 80% to the egg production and also to a cognizable level in broiler production. Namakkal accounts for 90% of the total egg exports from the country. Thus, this area
alone has an overall daily turnover of Rs.170 to 200 million (US$3.4 to 4.0 million) from poultry industry. Poultry farming had a modest beginning in early seventies and had grown magnificently with 50 million layer stock with a production of 40 million eggs per day in about 550 poultry farms with the co-ordinated efforts of Tamil Nadu Veterinary and Animal Sciences University. More than 1000 entrepreneurs like feed manufacturers, marketing organizations, hatcheries and service personnel function in this area. The poultry producers with their unflinching patience and perseverance in this region are readily adopting latest technologies, in poultry farming and further processing. Thus they are achieving more than the production standards prescribed. One lakh people are employed either directly or indirectly in this industry. The estimated annual requirements of inputs at this region alone are 2.64 million tonnes of poultry feed ingredients, 700 tonnes of feed enzymes; 1320 tonnes of toxin binders; 2600 tonnes of synthetic amino acids, 390 tonnes of vitamins and vaccines worth of Rs.70 million.\(^7\)

They have established network in terms of Broiler Co-ordination Committee and National Egg Co-ordination Committee for fixing day-to-day market prices for broiler birds and eggs respectively. They are disseminating latest techniques among themselves. In addition to meeting out the national demand for poultry egg, meat and its products, a considerable proportion is being exported as table egg, processed chicken, egg, powder, hatching eggs and chicks etc. This has been the resultant efforts of advanced scientific techniques of nutrition, health management and disease diagnostic and control measures practiced by the poultry farmers. The magnificent growth of poultry farming had resulted in the establishment of the second Veterinary College in Tamil Nadu at Namakkal during the year 1985 for augmenting the human resources development in the field of Veterinary Education and Research and for improving poultry production.
STATEMENT OF THE PROBLEM

Namakkal District in Tamil Nadu was chosen for the study because this area has made a remarkable progress in commercial layer farming. Poultry farming in Namakkal is the backbone of the farmers in the district. As there is a systematic process of production of eggs and integrated marketing system prevailing here, any study on production and marketing pattern of eggs and other products may be useful to the farmers to analyse the pros and cons of the existing production and marketing system of the poultry units. Against this background it was proposed to conduct a study on the production and marketing of poultry products and their problems and to analyse the factors influencing the process of production and marketing.

REVIEW OF THE PREVIOUS STUDIES

Maxton while making an economic study of poultry farms has included feed cost, labour cost, auto truck cost, use of building, equipment, cost of yards and ranges, depreciation of flocks, interest and miscellaneous charges for working out the cost of an egg.8

According to Morrison the feed cost, the largest item of expense in egg production, includes the cost of pullets upto the laying point, feed, labour, electricity charges, depreciation, interest on capital etc.9

Tandon and Dhaudyal defined net farm income as the difference between receipts and total expenses. Net farm income is derived by subtracting cost from the gross income. He also stated that selection of right breed is a pre-requisite for successful poultry keeping. The selection of suitable breeds is not merely a matter of individual preferences and requirements but a choice hedged in by such factors as the environment, husbandry conditions, marketing facilities and local prejudices.10

According to Singh and Patel fixed costs includes the cost of chicks, depreciation and interest on fixed capital and rent. Variable cost include the feed, labour, medicine, litter costs, miscellaneous costs and interest on
operating capital. The total cost of production vary from farm to farm and also it is influenced by climatic and soil conditions.\textsuperscript{11}

Kumar opined that cost of production of egg / poultry should include establishment charges, supervisory charges, labour charges, expenditure on feeds, medicine, miscellaneous expenses, depreciation on poultry bird building, poultry house, implements and furniture and interest on working and fixed capital.\textsuperscript{12}

Singh has included feed cost, veterinary charges, labour, capital service, interest and depreciation under cost of production.\textsuperscript{13}

Parkale and Karar in their study of economics of egg production, worked out that the share of the working cost and fixed cost is the total cost at the overall level.\textsuperscript{14}

Kumar who attempted to analyse the cost structure of egg production concluded that land requirement for poultry farming is low, the amount of capital investment need not be high, the gestation period for capital is short and poultry can utilize by-products of food-grains which are unfit for human consumption.\textsuperscript{15}

Singh and Gaikward included cost of birds, depreciation on building machinery equipment, interest on investment, cost of litter, feed, medication, labour charges, marketing charges and miscellaneous costs in the cost of production of eggs.\textsuperscript{16}

According to Singh and Gaikward the large size farms are earning more as compared to small and medium size farms in Anand Taluk of Gujarat State.\textsuperscript{17}

Thiagarajan made a study on egg buying attitudes of consumers and to find out the influence of income on consumption of eggs. 1397 respondents were selected for the study. The study revealed that egg consumption pattern change with income changes. High consumption was associated with higher income.\textsuperscript{18}
According to Madhavi net income is obtained by subtracting the total cost (cost during laying + cost of rearing upto laying) from the total revenue from all birds. The total cost includes rearing cost up to laying and also the cost incurred after started laying. The total revenue includes sale of eggs, culled birds and manure. The net income from the poultry farm is influenced by number of eggs per bird and marketing rate of birds. The feed price fluctuates often and the income is affected by feed cost. The egg price varies from place to place and also varies according to the season and so also the net income.\textsuperscript{19}

Arputharaj and Kamaladevi included depreciation of building and equipments, the cost of chicks, electricity and fuel, litter, labour charges in cost of production.\textsuperscript{20}

Velusamy used linear programming to find out the least cost of feed mix under nutrition requirements of fat, fibre, protein and minerals specified for laying stock with the feed stuff available like maize, rice polish, wheat, grain, fish meal and groundnut cake.\textsuperscript{21}

Gupta and others attempted to analyse various cost components and their relative contribution to the total cost of production, return from egg production per bird and investment practices followed by poultry farmers in adjoining areas of Kanpur City.\textsuperscript{22}

Adeyemu examined the economics of egg production of forty co-operative farms in South-western Nigeria. Cost functions were analysed by the use of ordinary least squares and weighted least squares. In this study the relationship between cost per bird and number of birds was estimated by fitting curves.\textsuperscript{23}

The study by Ranga Reddy and Shanmugam on ‘egg marketing’ analysed the price spread pattern in TamilNadu egg marketing. For this study 30 poultry farmers in Namakkal were selected randomly. 10 traders from Namakkal, 10 wholesalers and 30 retailers from Madurai were selected. The main marketing channel involved in marketing of eggs between Namakkal and Madurai comprised-Producer-Trader – Wholesaler – Retailer – Consumer. The
net share of the producers in the consumer’s rupee was 82.95% indicating the largest portion of the consumer price. The net margin retained by the wholesaler amounted to Rs.1.92 per 100 eggs and for the retailer it was Rs.4.10.\textsuperscript{24}

Verma and others while studying the economics of poultry farms included depreciation on building and equipments, cost of chicks, cost of feeding, cost of electricity, cost of labour, insurance charges of birds, cost of medicines, cost of repairs and maintenance of house and equipments in the cost of production of egg.\textsuperscript{25}

According to Ravindra Reddy, cost of construction of shed, cost of equipment, cost of chicks, cost of feed, cost of medicines and cost of labour are to be included in the cost of production of egg.\textsuperscript{26}

According to Satyanarayanan Soni and Verma cost refers to expenses incurred on production services and the total cost incurred in the production process of eggs comprises of fixed cost plus variable cost. Fixed cost includes depreciation on fixed capital, mortality, repairing of equipments, interest on fixed capital and interest on working capital and variable cost includes cost of chicks, cost of feed, labour charges, cost of medicines, electric charges, litter charges and insurance charges.\textsuperscript{27}

Sekar and Srinivasan attempted to analyse the egg-feed prices and index of parity between egg and poultry feed price. Egg and feed prices were collected from TAPCO. The egg price was increased continuously from Rs.36.70 per hundred in 1979 to Rs.47.00 per hundred in 1984. The price of feed was continuously increasing from Rs.142.25 per quintal to Rs.226.47 per quintal. The magnitude of increase of feed price was much higher compared to the increase in egg price. The egg-feed parity ratio clearly showed a continuous unfavourable price ratio for the egg producers over the last six years.\textsuperscript{28}

Bhat conducted a study to analyse the problems of marketing poultry and poultry products. The problems disclosed were the monopoly of middleman, low consumption of poultry meat, lack of pregrading, poor market
research, seasonal fluctuation and market intelligence. The solutions suggested against the problems were proper planning and execution of price support operations, development of storage facility, effort to remove religious misconception and grading of dressed birds.²⁹

A study by Sekar and Srinivasan on existing functioning of the marketing system of eggs in Namakkal and the problems in marketing, identified four channels of distribution.

Channel I: (Producer – Wholesaler – Secondary Wholesales – Retailer – Consumer). 13.79% of the consumer’s rupee was absorbed by various intermediates services. Margin charged by the retailers were the highest.

Channel II: (Producer – Wholesaler – Retailer – Consumer). The intermediary services involved in Channel II was less; the ultimate consumer’s price was comparatively less. The net share of the producer was 89.28% of the consumer’s rupee.

Channel III: (Producer – TAPCO – Consumer) Channel III was most efficient since cost of intermediary services is the least. Consumer were able to buy the eggs at least cost.

Channel IV: (Producer – Consumer) Both producer and consumer were benefited because of no intermediaries. The study concluded that price can be reduced by cutting down the number of intermediaries and strengthening the role of TAPCO in marketing eggs.³⁰

Mitra in his study observed that as a routine disease-preventive measure, most of the people compromised with vaccination, which cannot be a substitute for sanitation or bio security. An effective vaccination may protect the flock against a specific disease, but lack of bio-security, poor sanitation or poor management can expose the birds to numerous health problems. Also he recommended a few management practices for sanitation and disinfection.³¹

Rakshit and Rao observed that the rising cost of feed was particularly hard on small farmers as it eroded their profitability. Since they constituted the
base of poultry in the country, the urgent need was to reduce the feed cost by evolving alternative approaches.\textsuperscript{32}

Surat Singh analysed the marketing of poultry products - broiler marketing, and the marketing aspects of the industry in terms of marketing costs, margins and behaviour of prices. According to the study the marketing costs incurred and margin earned by the retailers were 10.47\% and 6.74\% respectively of the consumer price in Gurgaon district and it was 10.43\% and 7.58\% respectively in Ambala district. Market structure was analysed through the concentration ratio. The indices revealed absence of monopoly in the broiler market. The impact of seasonality was found rather weak.\textsuperscript{33}

Chandrasekaran in his article on Egg Sales at Namakkal area, listed various problems such as increasing cost of production and disproportionate increase in selling price of egg, lack of grading and branding, food habits of the people and regional imbalances.\textsuperscript{34}

Mohan in his article on lighting management in poultry farm for increased egg production, discussed the intensity and duration of lighting required for the birds in different stages. Also pointed out, the early sexual maturity and loss in production efficiency of birds were caused by improper lighting.\textsuperscript{35}

Gueye observed that the high incidence of disease is one of the major constraints to small holders of poultry systems in Africa. In order to control various poultry diseases Ethno Veterinary medicine was widely practiced by poor village farmers. Natural products, which were locally available were used. Though the village poultry farmers claimed that these practices were effective there was an urgent need for applied research to substantiate their assertions.\textsuperscript{36}

Chandrasekaran emphasized the importance of water management in poultry farming. He stated that the supply of pure water to the birds plays a significant role in disease prevention and mortality of birds. The expense of water management were comparatively less than the loss due to the water borne diseases and consequent mortality.\textsuperscript{37}
Lewits and Morris observed in their study that intensity of light during the growing stage has significant effect on the sexual maturity of birds. Also they observed small but significant effects of light intensity on egg size, food intact and mortality.\textsuperscript{38}

Mohan explained the necessity for adopting latest techniques to face the present situation in poultry farming. Also, he has discussed the management procedures for better performance and higher profit, under 3 heads namely, general maintenance procedures, feed and water management and disease control.\textsuperscript{39}

Meganathan in his study on 'Importance of records in poultry management' pointed out that no better attention was given by the poultry farmers on the records management. He listed out the various records and suggested maintenance of proper records to assess the results of the poultry-farming activities.\textsuperscript{40}

Bharadwaj’s study on ‘marketing of poultry products in Ambala district of Haryana’ was an attempt to evaluate the marketing pattern of broilers during different seasons. During the summer season the small and large poultry farms sold their entire produce in the wholesale markets while the medium farmers sold about 75%, the balance was sold to contractors. During monsoon season small, medium and large farms sold 75%, 79% and 31% respectively of their produce in the wholesale market. The balance was sold to the contractors.\textsuperscript{41}

Mathialagan observed that the poultry industry was facing severe disease outbreaks. In addition to preventive vaccination, disinfection and sanitation were highly essential to prevent and control the spread of diseases. He conducted the study in Namakkal and listed various problems.\textsuperscript{42}

Mani and et.al. made an analysis of egg production and wholesale egg price in Salem district of Tamil Nadu. The data on egg production were collected from the annual reports of “Integrated Sample Survey Scheme for estimation of Animal Products”. The data were collected separately for three seasons viz. summer, rainy and winter. The seasonal index for the three seasons
were 116.5965, 103.9061 and 79.4874 respectively which revealed higher production in summer. Higher egg price prevailed during June followed by November. The ratio-to-moving average decomposition method was found to be appropriate since it possessed minimum mean square error.43

Ashutosh Shrivastava, Gupta and Mishra conducted a study to find out the cost of production of broilers and their marketing channels in Jabalpur district of Madhya Pradesh. They identified three channels of distribution as

1. Producer - Consumer
2. Producer - Retailer - Consumer

They found out that the producers’ share in consumer’s rupee was highest in Channel I (99.70%) and that Channel was used by the broiler farmers especially small farmers who sold their produce (broiler) directly to consumers, because they operated within the thickly populated areas like residential area or hotels etc. Due to increase of intermediaries like retailers and wholesalers, the share of broiler farmers decreased in Channel II (80.00%) and it further declined to 79.09% in Channel III, which is the most active Channel and commanded 90% share of the total broiler market. They also concluded that the producer received roughly the same price and it does not vary due to marketing channels in the marketing of broilers. On the other hand, the consumers could purchase at less price if they approached the farmers directly.44

Samarendu Mohanty and Rajendran conducted a study to estimate the demand for egg and poultry meat for India in 2020. Income elasticity approach was used to estimate urban and rural demand projections. The income elasticities for five different income groups in urban and rural areas were prepared using secondary data. Percapita egg consumption in rural area was projected to increase from 30.4% in 2000 to 69% in 2020 where as the consumption growth for the urban was projected to rise from 48% to 106% during the same time. Percapita poultry meat consumption of the lowest income group was projected to rise from 0.47 kilogram in 2000 to 0.8 kilogram
in 2020 whereas for the highest income group it was projected from 1.18 kilogram to 2.08 kilogram. The total egg consumption was projected to increase by 200% from 34 billion in 2000 to 106 billion in 2020. Total poultry meat consumption is likely to expand from 687 million kilograms to 1,674 million kilograms.\textsuperscript{45}

Syed Mohamed Sulta Ibrahim conducted a study on broiler farming in Tamil Nadu. In their study three channels of distribution were identified. Channel I: (Integrator – Retailer – Consumer). 28.36% of broiler was distributed through Channel I. In the study twelve small integrators and eight large integrators were linked. 33.68% and 66.32% of total quantity were moved through this channel by small and large integrators respectively.

Channel II: (Integrator – Wholesaler – Retailer – Consumer). In the study area 58.3% of broilers were distributed through Channel II where 37 integrators were absorbed. The market share of small and large integrators under this channel was 38.27% and 61.73% respectively.

Channel III: (Integrator – Commission Agent – Wholesaler – Retailer – Consumer). In Channel III seven small integrators and four large integrators were involved. Only 13.34% of broilers were moved through this channel. The share of small and large integrators out of total quantity moved was 34.79% and 65.21% respectively. It was found that, out of the total quantity of boiler sold, the share of urban and rural retailers were 78% and 22% respectively.\textsuperscript{46}

Radhakrishnan, Rajesh Kumar and Serma Saravana Pandian made a study to know the broiler meat – marketing situation in Chennai. A total number of 50 broiler meat shops were randomly selected consisting of wholesalers and retailers. Two marketing channels were identified. In Channel I the producer directly sold the products to the wholesaler and the gross price spread was 23.05%. In Channel II the wholesaler himself acts as a retailer and the gross spread in this channel was 20.04%. The Bains classification indicated that the prevailing marketing structure in Chennai city is moderately concentrated.\textsuperscript{47}
Mahapatra and Sahoo conducted a study on status of poultry production in different parts of Orissa during the last decade. There was an increasing poultry population in each part during the period. However, in south and north zones the increase was more pronounced. Egg production was highest in south and followed by East, West and North zone respectively. Percapita availability of eggs in the state increased from 13 eggs in 1989 - 90 to 24 in 98 - 99. However, in South zone the percapita availability of eggs was 44 which was possible due to introduction of commercial poultry farming in addition to backyard poultry. Strategies for further increase in poultry production was discussed.48

Senthilkumar and Nitakhandeker carried out a study in Namakkal District of Tamilnadu with an objective to ascertain the constraints perceived by the poultry entrepreneurs. For this, purposive sampling was adopted to select two taluks having more poultry population and the same criterion was used to select two blocks each from two taluks. By stratified random sampling with proportionate allocation a total of 200 respondents were selected from four blocks. The study revealed that financial constraint was major constraint followed by raw materials marketing, electricity and labour constraints.49

Koli in his study entitled 'poultry' opined that poultry has influenced human civilization in many ways. Egg and meat of birds have been consumed since pre-historic times. Compared to eggs, there is no other single food of animal origin which is eaten and realized by many people in the world over and none is served in such a variety of ways. Its popularity is justified not only for its easy availability and use in cookry, but also it is almost an unsurpassed product in nutritive value. Poultry meat is also used extensively as a delicious food and it is served to please the god and goddesses.50

Totally 43 studies have been reviewed. Most of the studies were related to the analysis of cost of production and channels of distribution in marketing the poultry products. Only a very few studies have on problems of poultry farming. No study has not so far been done with reference to
production, marketing and financial performance of poultry farms. The present study systematically analyses the production, marketing and financial performance of poultry farms in Namakkal District by applying various statistical tools. The study is unique in nature in this aspect and a pioneer in analysing production, marketing and financial performance of poultry farms along with problems of poultry farms and factors influencing the production and marketing of eggs.

**IMPORTANCE OF THE STUDY**

Poultry farming is undertaken by thousands of rural as well as semi-urban masses. Poultry farming with low capital investment generates employment opportunity for rural and semi-urban people and the standard of living has come up considerably creating social impact. Poultry farming has also helped in developing many ancillary industries such as hatcheries, processing of poultry products and production of poultry equipments. More than a million people in our country are dependent directly or indirectly on poultry farming for their livelihood. There are about half a million people engaged in allied operations like feed mills, vaccine and medicine, transportation and retailing of eggs. Egg is also used for preparation of a variety of products such as medicines, paints, varnishes, printer ink, soaps, shampoos etc. Poultry manure is an extremely rich source of nitrogen and organic material and is in demand as agricultural input.

Agricultural marketing involves a series of business activities associated with the transfer of agricultural commodities including poultry products from the producers to the consumers. Poultry meat and eggs are highly valued in most cultures and religions. This is mainly due to the high quality protein of chicken meat, convenient and excellent taste of chicken products. About 45% of the world’s population is potential customers of chicken meat and poultry is the second or third most commonly consumed meat, world wide after beef, veal and pork. Since the overall success of any economic activity depends on the efficient marketing and distribution of what is produced there is need for
greater concentration of efforts on the improvement of marketing activities and associated socio-economic variables of the poultry farmers in Namakkal District.

The present study focuses its attention on the production efficiency and marketing potentialities of the poultry units and their related problems. The production and marketing of poultry farming products depends on several factors but the price of the egg is fixed by National Egg Co-ordination Committee (NECC). So the egg producers are not in a position to estimate the profit or loss in egg production under the highly fluctuating nature of prices of eggs. A study on production, marketing of eggs and other poultry products like cull birds, gunny bags and manure and the factors influencing production and marketing of poultry products and their problems in the process of production and marketing will bring out the cost of production of eggs, demand for eggs, price for eggs, profit in poultry farming and ways to solve the problems in the units.

OBJECTIVES OF THE STUDY

The main objective of the present study is to conduct detailed investigation on the performance of poultry farms and their problems in Namakkal District. To achieve this main objective the following specific objectives have been set forth.

1. To study the profile of respondents and the poultry farming management practices adopted by the respondents.
2. To assess the performance of poultry farms in the area of production, finance and marketing of poultry products.
3. To identify the problems of poultry farms and predict future prospects of poultry industry.
4. To analyse the factors influencing performance of poultry farms.
5. To suggest measures to overcome the problems in production and marketing of eggs and financial problems faced by poultry farmers.
HYPOTHESES

Keeping in view the above objectives of the study, the following hypotheses have been formulated and tested.

1. There is no significant relationship between the size of farms and problems in the area of production.
2. There is no significant relationship between demographic factors of the respondents and problems in the area of production.
3. There is no significant relationship between the size of farms and problems in the marketing of eggs.
4. There is no significant relationship between the demographic factors of respondents and problems in the marketing of eggs.
5. There is no significant relationship between the factors influencing the production of eggs and the size of farms and demographic factors of the respondents.

METHODOLOGY

The validity of any research depends on the systematic method of collecting the data and analysing the same in a logical and sequential order. In the present study, extensive use of both primary and secondary data has been made. The present study is an empirical research based on the survey method. Data have been collected from both primary and secondary sources.

Sampling Design

In the present study, data have been collected from 278 sample poultry farmers. The area selected for this study is Namakkal District in Tamilnadu. There are 2,780 poultry farms as per the records of the poultry wing of the Animal Husbandry Department in Namakkal District in 2012. There are 2 revenue divisions. They are Namakkal and Tiruchengode. The district has 15 panchayat unions. They are Namakkal, Mohanur, Puduchatram, Sendamangalam, Erumaipatti, Paramathi, Kabilarimalai, Rasipuram, Vennanthur, Namagiripetttai, Kollimalai, Tiruchengodu, Elachipalayam,
Mallasamudram and Pallipalayam. For the purpose of classification, the farms with bird strength between 1,000 to 10,000 are taken as small size farms, bird strength between 10,001 to 50,000 are taken as medium size farms and the farms with bird strength above 50,001 are treated as large size farms. As per this classification, there are 740 small size farms, 960 medium size farms and 420 large size farms in Namakkal Division and 280 small size farms, 270 medium size farms and 110 large farms in Tiruchengode Division. The farms are stratified according to their size. A sample of around 10% (278 farms) farms in each size is selected at random. Thus 74 small size farms, 96 medium size farms and 42 large size farms are taken as sample farms from Namakkal Division and 28 small size farms, 27 medium size farms, 11 large size farms are taken as sample farms from Tiruchengodu Division for the present study under stratified random sampling basis.

### SELECTION OF SAMPLE FARMS

<table>
<thead>
<tr>
<th>Size</th>
<th>No. of birds</th>
<th>Total No. of farms in Namakkal</th>
<th>Total No. of farms in Tiruchengodu</th>
<th>Sample farms selected</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Namakkal</td>
</tr>
<tr>
<td>Small</td>
<td>1,000-10,000</td>
<td>740</td>
<td>280</td>
<td>74</td>
</tr>
<tr>
<td>Medium</td>
<td>10,001-50,000</td>
<td>960</td>
<td>270</td>
<td>96</td>
</tr>
<tr>
<td>Large</td>
<td>Above 50,001</td>
<td>420</td>
<td>110</td>
<td>42</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td><strong>2120</strong></td>
<td><strong>660</strong></td>
<td><strong>212</strong></td>
</tr>
</tbody>
</table>

Source: Records relating to the number of farms in the poultry wing of the Animal Husbandry Department, Namakkal District.
DATA COLLECTION

Primary Data

The study utilized both primary and secondary data. Primary data was collected by using a well framed questionnaire that was duly filled in by the respondents. The respondents with varying background were selected based on the important aspects of their age, education, occupation, and so forth from the poultry farm owners of Namakkal District.

Secondary Data

The primary data were supplemented by a spate of secondary sources of data. Secondary data pertaining to the study was gathered from the records published by various poultry manufactures. Latest information was gathered from well equipped libraries and from internet web resources. Further, the secondary data were also collected from various leading journal inclusive and exclusive of poultry. A number of standard text were studied to obtain pertinent literature on poultry farming.

SCOPE OF THE STUDY

The scope of the present investigation is restricted to an analysis of the various functional areas of the layer poultry industrial units functioning under private sector in Namakkal District. The study excludes working of broiler poultry industrial units in the Namakkal District. The study attempts to review the poultry management practices followed by the units. The study also analyses the factors influencing the process of production and marketing of poultry products. Further the assessment of performance of the units in the areas of production and marketing of poultry products and identification of the problems in these functional areas also come under the purview of the present study.

A study on the performance of poultry farms will help the producers to take appropriate investment decisions and make reliable estimates of the cost of production and maintenance of layer farms. This may also help to frame a
suitable price policy and avoid the influence of intermediaries and middlemen. The significance of this study is its analysis of the problems faced by the poultry farm owners in their production and marketing of poultry products and it will help them to realise and take timely measures to prevent the problems.

**PERIOD OF STUDY**

A four year period from 2008-09 to 2011-12 was taken up for this research. However a longer duration has also been considered whenever necessary. The primary data were collected during the year 2011-12.

**TOOLS USED FOR THE ANALYSIS**

In the present study various statistical tools like Percentage, Arithmatic mean, Coefficient of variation, Average Annual Growth Rate (AAGR), Linear Annual Growth Rate (LAGR), Compounded Annual Growth Rate (CAGR), Garrett Ranking Techniques, ANOVA, Chi-square test, Friedman’s test, Factor analysis and Discriminent function analysis have been used to analyse the data.

**LIMITATIONS OF THE STUDY**

1. The area of the study is limited to the Namakkal District of Tamilnadu.
2. The research has been undertaken based on the views, opinions and information provided by the farmers. As they furnished some information from their memory, the accuracy is subject to the recall bias. However efforts have been taken to minimize the error through checks and cross checks at the time of interview.
3. To ascertain cost, revenue and profit the average of the value furnished by the respondents have taken into account. As the results are arrived on the basis of average values the results may not have so much accuracy as in the experimental studies.
4. Estimates of the total profit or loss for the previous years was difficult. Most of the farmers did not keep correct accounts of their receipts and expenditures or any other statistical data. Most of the data was given by
the respondents, only from their memory which may not be accurate. However every effort has been taken by the researcher to collect the data as accurate as possible.

5. The survey was conducted only in Namakkal District, Tamilnadu State. Hence, the results arrived from the study may or may not be applied to other states of India. Further, the survey which was adopted for collecting the data in the study has got its own limitations.

OPERATIONAL CONCEPTS USED IN THE STUDY

The operational definition of different concepts of this study are:

Poultry

Poultry a common term is used to refer to different aspects of birds like chicken, turkeys, quails, pheasants and sea fowls. But in this study the term has been used to refer only to the commercial layer chickens which are reared for the production of eggs.

Poultry farming

According to the first Nation-wide Census of Agriculture, “a farm is defined as all the land on which source agricultural operations are performed by a person either by his own labour or with the assistance of members of his household or hired employees.

In this study, poultry farming is defined as the science and art of production and distribution of poultry products by a person or a group of individuals either by his own labour alone or with the assistance of his household or hired labourers.

Poultry farm

Any farm keeping the hens for the purpose of producing eggs to be sold on commercial basis is called a poultry farm. It does not include poultry farms maintained for meeting domestic needs and hatcheries maintaining parent birds.
**Small size farm**

A farm with a flock of less than 10000 birds have been referred to as small size farm.

**Medium size farm**

A farm with flock strength of 10,001 and above but less than 50,000 birds has been referred to as medium size farm.

**Large size farm**

A farm with flock strength of above 50000 birds has been referred to as large size farm.

**Hen Housed Egg production**

It refers to the percentage of egg production which is calculated by taking into account the number of eggs produced on a particular day and the number of birds housed in the 20\(^{th}\) week of age.

**Pullet Egg**

It refers to the small size of eggs usually laid in the early week of hen’s laying cycle.

**NECC rate**

It refers to the price of egg fixed by the National Egg Co-ordination Committee.

**Working capital**

The term ‘working capital’ has been used to refer to the cost of rearing chicks from a day old to the point of lay. The money spent, in connection with purchase of chicks, feed vaccines, medicines, payment of wages, electricity charges and other maintenance expenses up to 20 weeks of age are grouped under this head.

**Capital investment**

Capital investment in poultry farms denotes cost on buildings, cages, equipment, water and variable costs on chicks, feed and management.
Fixed cost

In the present study depreciation on building and equipment and interest on fixed capital like investment on poultry shed and equipment are included under fixed cost.

Variable cost

In poultry industry, the costs incurred on day-old chick, feed, labour, medicine, vaccine and veterinary charges, electric charges, repairs and maintenance charges and interest on working capital are treated as variable costs.

Total cost

Total cost comprises fixed and variable costs in egg production.

Returns from eggs

Sales records maintained by the farmers indicated the total number of eggs sold and the prices at which eggs were sold. Every week sales value was calculated by multiplying number of eggs sold and weekly egg prices which were fixed by NECC for the Namakkal zone.

Returns from culled birds

The actual disposal value of the culled birds was taken into consideration to calculate the return from culled birds.

Returns from the manure

The total weight of the manure per batch was calculated in tones and it was multiplied by the sale price per ton to work out the total return from the manure.

Returns from empty gunny bags

It is a miscellaneous income to the poultry farmers from the purchase of commercial feed. The actual price realized on the sale of empty gunny bags was taken into account. The number of gunny bags sold was multiplied by the sale price to arrive the returns from gunny bags.

Large farmers who produced own feed used the gunny bags three to four times and then sold them. Hence the result price was low.
Period of profit

In order to ascertain the profitability the researcher has taken into account the entire 72 weeks life cycle of birds. The total income earned and expenditure involved during this period have been considered for arriving at profit and loss.

CHAPTER SCHEME

The Thesis has V Chapters.

Chapter I contains Introduction, statement of the problem, objectives, hypotheses, tools of analysis and limitations.

Chapter II exhibits Socio-economic characteristics of poultry farmers in Namakkal district and their poultry farm Management Practices.

Chapter III presents the Analysis of Performance and Problems of poultry farms.

Chapter IV deals with the Analysis of factors influencing the production and marketing of eggs.

Chapter V presents the key Findings, Suggestions and Conclusion of the study.
NAMAKKAL DISTRICT MAP

Namakkal District

Blocks

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REFERENCES


