CHAPTER - II

REVIEW OF LITERATURE

2.1 INTRODUCTION

Once the topic is decided, it is essential to review all relevant materials, which are most important to define the problem of the study. In fact review of literature begins with the search for suitable topic and continues throughout the duration of the research work. Since a research report, either a dissertation or a thesis, is supposed to be a study of in-depth aim and contribution to knowledge, a careful check should be made that the proposed study has not previously carried out.

Analyzing the study in the field of Poultry has attracted much of the researchers and practitioners. Though some studies were undertaken on the Poultry Sector, “Production and marketing of poultry eggs” was not studied specifically. Hence, literature review related on subjects such as Entrepreneurship, poultry Sector, egg production, Poultry marketing and feed input industries are bound to be useful in identification and formulation of problems. The same may be used in analysis of data and in employment of statistical tools. The researcher has made an attempt to present a brief review of the literature available, which includes reports submitted by various Committees appointed by the Government of India from time to time, Articles, Books and Technical papers published in Journals.
2.2 EMPIRICAL STUDIES

This section of the chapter reviews the empirical studies associated with the research topics.

Baba (2007)\(^1\) studied the financial feasibility of investments in contract poultry farming in Tamil Nadu region. Fifty integrated poultry were selected randomly in Coimbatore district. He concluded that on an average, farmers received a growing coat Rs 2.36 per Kg of bird. The study also calculated the profitability per chick, which was found to be Rs 1.50 in the beginning. The study also estimated the returns on investment that was found to be 11.5% in the beginning and increased up to 20%.

Mehta and Nambiar (2007)\(^2\) in their study highlighted the major problems in poultry production in Pakistan and then focused to estimate the percentage share of different stakeholders in total profitability from poultry industry because inequitable distribution of profit share was assumed to be one of the major obstacle in the expansion of poultry industry. His results demonstrated that commission agents were earning 47% of the total profit in poultry industry, followed by retailers (28%) and producers (25%). This indicates that it would be impossible to improve the contribution of poultry in total nutrients uptake of human beings in the country without reversing the trends in profit share.

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\(^1\) Baba 2007, An overview of the Indian poultry and future scenario, All India Poultry Year Book, Special Millennium Issue. Delhi.

Emam and Hassan (2010)\(^3\) revealed that 58% from egg poultry producers whose main job are poultry breeding, and 60% of poultry producers have experience of more than five years. The feed cost was the main cost item in the egg farm in open-system that, it represented 90.2, 89.7 and 92.7% of total production cost in small, medium and large farm sizes of egg production, respectively, and about 75.8% in (4-5 months old) pullet farm. Also, the study revealed that the other factors of production such as price of day-old chicks, price of (4-5 months) hens, mortality cost, vaccines and drugs and labor cost represented the most total cost of production. The total cost of production and cost per dozen were lowest in large farm sizes than other farm sizes and type. Highest gross profit was obtained in large farm sizes, while the lowest ones were observed in pullet farms. However, all farms have CPP greater than unity. The study concluded that: feed cost was the main cost item in different farm types and sizes. High percentage of mortality cost and price of day-old chicks and (4-5 months) hens were also high. Also, it concluded that, the large size farm was more efficient than other sizes and type of the farms.

According to Gausi et al. (2004)\(^4\) small holder village chicken producers tend to ignore new technology even when it appears to be better than their current practices due to market limitations. This implies that that apart from meeting subsistence needs, engagement and level of investment of smallholder farmers in agricultural enterprises responds to existing market opportunities.

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Madkour, Mohmoud and Mohanna (1982)\textsuperscript{5} studied price spread, marketing cost and marketing margin for eggs with a sample of 50 respondents (comprising producers, wholesalers & retailers). Results revealed that the producer’s share of consumer price was higher in the producer consumer marketing channel than in other channels in which one or more middlemen existed.

Miah \textit{et al.} (1992)\textsuperscript{6} in their study on economic analysis of poultry marketing in Mymensingh district concluded that poultry was an important source of animal protein.

According to Pedersen (2002)\textsuperscript{7} it is difficult to design and implement poultry egg production programs that benefit rural people without understanding village poultry production and marketing systems.

Islam (2003)\textsuperscript{8} discussed about the existing poultry egg processing and marketing system, its problems and its potential solutions in Bangladesh. Egg grading and packing had not yet been developed. As a result producers were not getting remunerative price that is why middleman were being gainer. Therefore, modern poultry processing plant, preserving technology and proper marketing channels were suggested to establish.

\textsuperscript{7} Pedersen C V 2002 Production of semi-scavenging chickens in Zimbabwe. Ph.D Thesis. Royal Veterinary and Agricultural University, Copenhagen, Denmark.
Hellin et al. (2005)\(^9\) also reported that understanding of village poultry functioning and marketing structure are a prerequisite for developing market opportunities for rural households and could be used to inform policy makers and development workers in considering the commercial and institutional environment in which village chicken keepers have to operate. Efforts to improve management of village chicken should therefore be complemented by a supportive marketing system.

Islam (2003)\(^10\) in their study has indicated that the six major wholesale egg markets in India are co-integrated apparently due to performance of market intelligence functions by the National Egg Coordination Committee (NECC) which helps in transmitting price signals across the length and breadth of the country through print media on day-to-day basis. The high degree of co-integration amongst various markets indicates that these markets are competitive and efficient at the wholesale levels. However, it still remains to be examined whether the poultry farmers and traders at the grass-root level are able to realize the prices declared by the NECC.

Maqbool et al. (2005)\(^11\) in his study showed that marketing system of poultry eggs is traditional in nature. On an average, the profit margin in case of the commission agents was Rs.257.13 per 40 kg whereas in case of retailer, the profit margin was Rs145.2 per 40 kg .The profit margin in case of eggs


was 42.06% in case of salesmen, 33.07% in case of wholesalers and 48.5% in case of retailers. Marketing costs incurred by the commission agents was Rs.12.87 per 40 kg. It was also found that middlemen were exploiting poultry producers by exhorting a large portion of consumer’s rupee. Therefore, producers were not getting remuneration according to the value of their products. Minimizing role of middlemen, providing marketing information to producers, strengthening marketing infrastructure and facilitating producers with easy access to veterinary services are the important steps that should be taken immediately by policy makers and other concerned bodies to boost up poultry farming in Pakistan.

A study conducted by Kenea et al. (2003)\textsuperscript{12} on five selected poultry markets in East Shewa Zone (i.e. Debre Zeit, Modjo, Meki, Chefe Donsa, and Saris) revealed that the poultry marketing system is primarily characterized by local selling and buying. The study indicated that there are two major poultry marketing channels where farmers directly sell to consumers as well as directly to small retail traders who take the chicken to large urban markets. Accordingly, it was found that about 42% of all transactions reported were local farmers selling their chickens to local consumers whereas 39.4% of the transactions involved local farmers selling their chickens to traders who re-sold the chickens to urban consumers. Poultry buyers at all sample markets were traders, consumers, restaurants, farmers, and small-scale urban chicken farms.

Goutard and Magalhaes (2006)\textsuperscript{13} have identified the major marketing channels of poultry and poultry products. Here, the marketing channel shows that a large number of middlemen are involved in the marketing chain between producers and consumers. It was found that an average trader handles between 40 to 100 chickens per week while the middle man manages 2000 eggs per month. Moreover, it is estimated that the average number of birds that are sold at local markets ranges from 30 to 400 per day.

### 2.3 EGG QUALITY ASPECTS

As per FAO 2003\textsuperscript{14}, eggs are an important and fundamental foodstuff for small holder farmers of developing countries. In addition to other substances with biological functions, eggs are main sources of various nutrients such as; proteins, lipids, vitamins and minerals. Egg proteins contain all essential amino acids and therefore egg protein is used as standard for measuring the nutritional quality of other food products.

Sparks, 2006\textsuperscript{15} states that although eggs contain approximately 74\% water, they are potentially important and balanced source of essential fatty acids and as well as some minerals and vitamins. A typical egg would contribute 3-4\% of an adult’s average energy requirement per day and has approximately 6.5g of protein.

\textsuperscript{13} Goutard F. and R. S. Magalheas. 2006. Risk and consequence assessment of HPAI. CIRAD. February


As per Uluocak et al., (1995)\textsuperscript{16} the significance of the egg as a protein source for the nourishment of humans led the consumers to demand for some qualities in this nutrient. For many years the most important external and internal egg quality traits have been shown to be; egg weight, egg shape, shell thickness, breaking strength, specific gravity, size of air cell, albumen height, albumen weight, yolk color and yolk index.

Juliet (2004)\textsuperscript{17} in her study states that external and internal qualities of eggs are of major importance to the egg industry worldwide. However, they are not being given a due attention in the developing world, where the majority of the eggs are coming from free scavenging village chicken, as compared to that of the developed world.

### 2.3.1 External egg quality

Hamilton, (1982)\textsuperscript{18} states some of the external eggs quality traits included; egg shell color, shell thickness, dry shell weight, egg weight, egg shape index, which are highly affected by breed of chicken, age of chicken, molting, level of nutrition, prevalence of disease, the type of chicken production system.

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\textsuperscript{18} Hamilton, R.M.G. 1982. Methods and factors that affect the measurement of egg shell quality. Poultry Science, 61: 2002-2039.
As per the study conducted by Hammerle, (1969). Egg shell color may be monitored by visual comparison with a serious of graded standards and egg weight is easily measured by a suitable balance.

According to Mohan et al. (1991). egg weight and shell thickness measurements were higher in birds housed in cages than in birds kept on deep litter. Madkour et al. (1982) also reported that the average egg weight of RIR and Fayoumi pullets were 56.9g and 45.9g, respectively.

Aberra et al. (2007) reported an average egg weight of 42g and 49g for Ethiopian naked neck chicken and their F1 crosses with New Hampshire breeds, respectively, reared under improved management conditions.

According to Sezai (2008); the following equation, developed for Japanese quails, could be effectively used for predicting egg shell weight as:

\[ Y = 0.573 + 0.01532 (X_3) + 0.0238 (X_4) \]

Where:
- \( Y \) = eggshell weight,
- \( X_3 \) = egg length and
- \( X_4 \) = egg weight.

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22 Sezai Alkan, Kemal Karabag, Askin Galic and M. Soner Balcioglu. 2008. Predicting Yolk
2.3.2 Internal egg quality

Sinha and Giri (1989)\textsuperscript{23} states egg internal quality is measured in several ways including factors like; yolk color, albumen height, yolk height, Hough unit, yolk width and nutritive values. Egg’s internal quality could be influenced by factors like; genetic factors, environmental factors (such as temperature, relative humidity and the presence of CO\textsubscript{2}), hen age, nutrition status, egg storage condition and storage time. A good quality egg should be free from internal blemishes such as blood spots, pigment spots and meat spots.

Juliet (2004)\textsuperscript{24}. There are two components of yolk quality; the color of the yolk and the strength of the perivitel line membrane which surrounds the yolk, where yolk color is measured by using Roche color scale

Samli (2005)\textsuperscript{25} and Kirunda et al. (2000)\textsuperscript{26} reported that the poultry industry identified albumen quality not only to judge the freshness of an egg but also considered it as important for the egg breaking industry because albumen and yolk have different markets. Although various measures of albumen quality have been proposed, the Hough unit is used most commonly today (Silversides, 1994)\textsuperscript{27}.

\textsuperscript{27} Silversides, E.G. 1994. The Haugh unit correction for egg weight is not adequate for comparing eggs from chickens of different lines and ages. Journal of Applied Poultry Research, 3: 120-126.
Iposu et al. (1994)\textsuperscript{28} reported significant negative correlations between egg’s Hough unit and egg weight.

Pavlovski et al. (1981)\textsuperscript{29} cited in Shawkat (2002)\textsuperscript{30} reported that better albumen height and Hough unit was recorded in eggs from free-range birds than in battery cage conditions.

According to the report of Shawkat (2002) both albumen height and Hough units decreased over time. The color of the yolk is determined by the presence or absence of xanthophylls, some of which are precursor of vitamin A. If the fed has plenty of yellow-orange plant pigments, known as xanthophylls, it will be deposited in the yolk. Therefore, yolk color is influenced by nutrition and dark yellow yolks can be produced by feeding laying birds on green forage meal.

Gueye.EF (1998) in most cases of the developed world the diet is altered to produce egg yolks of the correct color for a particular market. In any consumer survey of egg quality yolk color ranks high but preference varies among countries. Some consumers prefer white-colored yolks while others prefer light-colored or darker orange yolks.

\textsuperscript{30} Shawkat, Md. Ali. 2002. Study on the effect of feed supplementation to laying hen under the rural condition of Bangladesh. M.Sc Thesis. The royal veterinary and agricultural university, Dyrlægevej, 1870 Frederiksberg C., Denmark
2.4 POULTRY EGG MARKETING

This section identifies the importance and current status of egg marketing. However it is also essential to acknowledge the basic concepts related to marketing in order to understand the efficiency of marketing of egg.

2.4.1 Market and marketing concepts

According to Acharya (1988) A market is traditionally defined as a specific geographical area where buyers and sellers meet for exchange of goods and services. The most common way we obtain goods and services we do not produce ourselves is to buy them from others who specialize in producing them. To make such purchases, buyers seek out sellers in markets. Markets are ways in which buyers and sellers can conduct transactions resulting in mutual net gains that otherwise would not be possible .

Kohls and Uhl, 1985 described market as how much to produce? What to produce? How to distribute production? A location, a product, a time, a group of consumers, or a level of the marketing system may define it. The choice as to which market definition to use depends on the problem to be analyzed. Market is an institutional and organizational arrangement to facilitate exchange of one thing for another. The most observable features of a market are its pricing and exchange processes.

N. Meganathan et al., (2010) in their study to identify the constraints in tribal livestock farming by collecting data from 900 sample tribal farmers in six hilly areas of Tamil Nadu, viz., Kolli hill in Namakkal district, Yercaud hill in Salem district, Ooty hill in The Nilgiris district, Kodaikanal in Dindigul district, Yelagiri hill in Vellore district and Sitheri hill in Dharmapuri district. The data were analysed by Garrett’s ranking technique. Lack of sufficient pasture land, lack of marketing facilities, lack of adequate credit facilities, unremunerative price for the livestock products and lack of scientific knowledge on livestock farming were observed to be the major constraints perceived by the tribal farmers. Establishment of more milk co-operative societies, enhancing fodder cultivation, provision of loans to needy tribal livestock farmers at reasonable interest rate and conducting awareness programmes among tribal farmers on various scientific livestock management practices will lessen the prevailing constraints in tribal livestock farming, which in turn improve the tribal livestock production.

According to Andargachew, 1990; Kochoa et al., 2011, a market is thought of as a meeting of buyers and sellers: a place where sellers and buyers meet and exchange takes place, an area where price determining forces (supply and demand) operate, and an area where there is a demand for good. But a market is more than a physical place. It is a mechanism or an institution through which buyers and sellers exchange information and transact. No need to meet physically for a market to operate especially in today’s information and communication technologies. Another basic concept that is closely related to market is marketing. This term came into use with division of labour and specialization and became common with urbanization and industrialization over many years.

34 Kebede Andargachew. 1990. Sheep marketing in the central highlands of Ethiopia MS thesis, School of Graduate Studies, Alemaya University, Dire Dawa, Ethiopia.
Solomon and Nigussie, 1983\(^{35}\); Teferra et al., (2011\(^{36}\)) Marketing is also an important aspect of any livestock system. It provides the mechanism whereby farmer’s producers/pastoralists exchange their livestock products for cash. The cash is used for acquiring goods and services, which they do not produce themselves, in order to satisfy a variety of needs including food clothing, medication, schooling, the purchase of breeding stock and other production inputs and supplies.

### 2.4.2 Marketing systems

According to Sandeep Saran and Gangwar\(^{37}\), marketing system is a collection of channels, intermediaries, and business activities, which facilitate the physical distribution and economic exchange of goods. A channel of distribution may be defined as a path traced in the direct or indirect transfer of the title to a product as it moves from a producer to consumer or industrial users. Every channel of distribution contains one or more of “transfer points” at each of which there is always either an institution or a final buyer of the product. In the process of marketing, legal title to the product always changes hands at least once. The concept of marketing system includes both the physical distribution of economic input and products and the mechanism of process or coordinating production and distribution.

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Rhodes and Dauve (1998) define the marketing system in terms of what is otherwise known as marketing channel. In broad terms, marketing system may be defined as the totality of product channels, market participants and business activities involved in the physical and economic transfer of goods and services from producers to consumers. Marketing system operates through a set of intermediaries performing useful commercial functions in chain formations all the way from the producer to the final consumers.

As per Acharya and Jogi (2003), the system comprises several, usually, stable, interrelated structures that, along with production, distribution, and consumption, underpin the economic process. A marketing system can be regarded as a multi-layered sequence of physical activities and of transfers of property rights from the farm-gate to the consumer. The efficiency with which a marketing system in an area or country operates can influence the living standards of people and the overall development of a nation and thus it is vital to make improvement in marketing efficiency to trigger economic development.

2.4.3 Marketing efficiency

As per Maietta and Sena, (2007) efficiency in marketing is the most commonly used measure of market performance. There are two aspects of market efficiency mostly mentioned in agricultural marketing literature are technical (operational) efficiency and pricing (allocative) efficiency. Technical
efficiency is attained when goods and services are provided at a minimum average cost that is, when the least cost combination of marketing activities are employed. Technical efficiency is achieved through technical improvement. Pricing efficiency is concerned with the price–making role of the market system. It concerns how accurately, how effectively, how rapidly, and how freely the marketing system makes price, which measure product values to the ultimate consumer and reflects these values through the various stages of the marketing system to the producer

Senthilkumar et al., (2009)\textsuperscript{41} conducted a study to know the knowledge level of commercial poultry (layer) farmers on scientific poultry farming among the farmers of Namakkal district in Tamil Nadu. It was revealed that the farmers with large flock size were having more knowledge than the small flock size holders. This could be due to their higher socio-economic status, more mass media exposure, cosmopolitaness, etc

According to Abbot and Makeham, 1981; Kishindo 2010\textsuperscript{42}, markets are efficient when the ratio of the value of output to the value of input throughout the marketing system is maximized. The output of marketing is the consumer satisfaction with the goods and service and the inputs are the various resources of labor, capital and management that marketing firms use in the process accomplishing particular job without reducing consumer’s satisfaction and with the output of improvement is efficiency. However, a change that reduces costs but also reduces consumer satisfaction with the end product might actually reduce marketing efficiency.

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Effective and efficient marketing system is the one that induces the production of those products and quantities which when sold to the consumer results in maximum returns after the deduction of minimum marketing charges and farm production costs (Kohls and Uhl, 1985; Jayne et al., 2001). However, consumer's satisfaction cannot be measured directly; changes can be analyzed in terms of “technical” efficiency and “pricing” efficiency.

### 2.4.4 Marketing channel

Kotler and Armstrong, (2003). Most frequently, a physical product transfer is involved but sometimes an intermediate marketing institution may take title to goods without actually handling them. Formally, a marketing channel is a business structure of interdependent organizations that reach from the point of product origin to the consumer with the purpose of moving products to their final consumption destination.

### 2.4.5 Market chain and business support services

According to Lundy et al. (2004) a market chain is used to describe the numerous links that connect all the actors and transactions involved in the movement of agricultural goods from the farm to the consumer. Supporting services include:

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these activities are services that enable the chain to operate. Agricultural goods and products flow up the chain and money flows down the chain.

Lunde et al., (2004)\textsuperscript{47} the efficiency of the market chain is generally a factor of how well information flows among these actors. Given the many challenges of the marketplace, it is vital to suggest that a practical starting point in developing a marketing strategy is to assist chain actors to visualize their market chain from beginning to end. Market chains operate cost competitively when they are supported by dedicated business organizations, both formal and informal, which participate in enabling produce to flow from the farm gate to the final consumer.

2.5 APPROACHES USED TO THE STUDY OF AGRICULTURAL MARKETING

Martinez, (2007)\textsuperscript{48} need for vertical coordination in poultry marketing: Vertical coordination refers to the synchronization of successive stages of production and marketing, with respect to quantity, quality, and timing of product flows. Methods of vertical coordination include open production (also referred to as open, or spot, market), contract production, and vertical integration. In open production, a firm does not commit to selling its output before completing production. Cash (or spot) prices coordinate resource transfer across the stages of production.

\textsuperscript{47} Karen Lunde, Heinz-Georg Belting and Wolfgang Driever, Zebrafish pou5f1/pou2, Homolog of Mammalian Oct4, Functions in the Endoderm Specification Cascade, Developmental Biology, Institute Biology 1, University of Freiburg, Hauptstrasse 1, D-79104 Freiburg, Germany.

\textsuperscript{48} Martinez AW, 2007;46(8):1318-20.Patterned paper as a platform for inexpensive, low-volume, portable bioassays. Department of Chemistry and Chemical Biology, Harvard University, 12 Oxford Street, Cambridge, MA 02138, USA.
Miah et al. (1992). Many study results indicated that research in promoting of egg production has concentrated on improvements in management while ignoring the potential role of socioeconomic issues, such as marketing. Economic analysis of poultry marketing in Mymensingh district concluded that poultry was an important source of animal protein. The study on marketing of poultry in district Jhang in India showed that those poultry producers got considerably less price than that of market.

Chohan, (1992), further concluded that in case of birds, marketing cost of collection agents and retailers were Rs.72.50 and 51.43 per 40 Kg, respectively. Marketing cost in terms of eggs included rent of shops, labour charges, electricity charges, loading, transportation, breakage, etc.

Gausi et al., (2004) It is difficult to design and implement chicken-based development programs that benefit rural people without understanding village chicken production and marketing systems. Small holder village chicken producers tend to ignore new technology even when it appears to be better than their current practices due to market limitations. This implies that that apart from meeting subsistence needs, engagement and level of investment of smallholder farmers in agricultural enterprises responds to existing market opportunities.

Kumar and Mahalati (2000)\textsuperscript{52}. The study on price spread, marketing cost and marketing margin for eggs with a sample of 50 respondents (comprising producers, wholesalers and retailers) revealed that the producer’s share of consumer price was higher in the producer consumer marketing channel than in other channels in which one or more middlemen existed.

Pedersen (2001)\textsuperscript{53} states it is difficult to design and implement chicken based development programs that benefit rural people without understanding village chicken production and marketing systems.

Islam, (2003)\textsuperscript{54} studied the existing poultry products processing and marketing system, its problems and its potential solutions in Bangladesh. Traditionally chickens were sold alive, because of lacking trust on slaughtering method (halal or not), fear of disease or dead birds slaughtered, lack of processing and preserving technology and skill man power. Egg grading and packing had not yet been developed. As a result producers were not getting remunerative price that is why middleman were being gainer. Therefore, modern poultry processing plant, preserving technology and proper marketing channels were suggested to establish.


\textsuperscript{53} Pederson, CV, Kristensen, AR & Madsen, J. 2001. On-farm research leading to a dynamic model of traditional chicken production systems. Department of animal science and 86, animal health, the royal veterinary and agricultural university. 2 Groennegardsverj, DK-1870 Frederiksberg C. Denmark.

Hellin et al. (2005)\textsuperscript{55} in his study reported that understanding of village chicken functioning and marketing structure are a prerequisite for developing market opportunities for rural households and could be used to inform policy makers and development workers in considering the commercial and institutional environment in which village chicken keepers have to operate. Efforts to improve management of village chicken should therefore be complemented by a supportive marketing system.

Alemu et al. (2006)\textsuperscript{56} in the study suggested that marketing problem is one of the constraints for the adoption of poultry technology and poultry products. Another study has indicated that the six major wholesale egg markets in India are co-integrated apparently due to performance of market intelligence functions by the National Egg Coordination Committee (NECC) which helps in transmitting price signals across the length and breadth of the country through print media on day-to-day basis.

Saran and Gangwar (2008)\textsuperscript{57} revealed that the high degree of co-integration amongst various markets indicates that these markets are competitive and efficient at the wholesale levels. However, it still remains to be examined whether the poultry farmers and traders at the grass-root level are able to realize the prices declared by the NECC.


Maqbool et al., (2005)\textsuperscript{58}. A study showed that marketing system of poultry is traditional in nature. On an average, the profit margin in case of the commission agents was Rs.257.13 per 40 kg whereas in case of retailer, the profit margin was Rs145.2 per 40 kg. The profit margin in case of eggs was 42.06\% in case of salesmen, 33.07\% in case of wholesalers and 48.5\% in case of retailers. Marketing costs incurred by the commission agents was Rs.12.87 per 40 kg. It was also found that middlemen were exploiting poultry producers by exhorting a large portion of consumer’s rupee. Therefore, producers were not getting remuneration according to the value of their products. Minimizing role of middlemen, providing marketing information to producers, strengthening marketing infrastructure and facilitating producers with easy access to veterinary services are the important steps that should be taken immediately by policy makers and other concerned bodies to boost up poultry farming in Pakistan.

Mlozi et al., (2003)\textsuperscript{59} Information obtained from analysis of village chicken production and marketing systems study is highly required to characterize, conserve and improve the indigenous chicken genetic resource and to justify resource allocation to rural poultry improvement and conservation projects.


Kenea et al., (2003)\textsuperscript{60} A study on five selected poultry markets in East Shewa Zone (i.e. Debre Zeit, Modjo, Meki, Chefe Donsa, and Saris) revealed that the poultry marketing system is primarily characterized by local selling and buying. The study indicated that there are two major poultry marketing channels where farmers directly sell to consumers as well as directly to small retail traders who take the chicken to large urban markets. Accordingly, it was found that about 42\% of all transactions reported were local farmers selling their chickens to local consumers whereas 39.4\% of the transactions involved local farmers selling their chickens to traders who re-sold the chickens to urban consumers. Poultry buyers at all sample markets were traders, consumers, restaurants, farmers, and small-scale urban chicken farms.

Hellin et al. (2005)\textsuperscript{61}. A study reported that understanding of village chicken functioning and marketing structure are a prerequisite for developing market opportunities for rural households and could be used to inform policymakers and development workers in considering the commercial and institutional environment in which village chicken keepers have to operate

Gondwe et al., (2005)\textsuperscript{62}. The main advantages of chicken marketing research are defining the needs and nature of customers and their ability and desire to buy, scanning the business environment, gathering needed

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information for decision-making, reducing risk, helping in production planning and monitoring and controlling marketing activities.

Goutard and Magalhaes, (2006)\textsuperscript{63} have identified the major marketing channels of poultry and poultry products. Here, the marketing channel shows that a large number of middlemen are involved in the marketing chain between producers and consumers. It was found that an average trader handles between 40 to 100 chickens per week while the middleman manages 2000 eggs per month. Moreover, it is estimated that the average number of birds that are sold at local markets ranges from 30 to 400 per day.

\section*{FIGURE 2.1}
\textbf{TRADE FLOW OF POULTRY AND POULTRY PRODUCTS IN ETHIOPIA}

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{trade_flow_graph}
\caption{Trade flow of poultry and poultry products in Ethiopia.}
\end{figure}

Source: Goutard and Magalhaes (2006)

Aklilu et al., (2007)\(^{64}\). Studies on marketing of free range chicken can also provide clues for management strategies of these chickens especially, in reducing chicken losses that smallholder farmers experience annually due to the threat of diseases, especially, Newcastle Disease. Access to markets affects the price and transaction costs and is influenced by access to infrastructure and information.

### 2.6 POULTRY EGG CONSUMPTION

De Janvry and Sadoulet (2008)\(^{65}\), highlighted that the majority of rural households in India are net buyers of food: based on data from the 59th NSS Survey, estimate that about 74 and 53.7 percent of the marginal and small farmers, and most probably a higher proportion of rural landless, are net buyers of food. But the average food intake is largely insufficient to provide adequate nourishment to all family members: according to a World Bank Report, in India the largest majority of pre-school children experience protein-energy malnutrition and micronutrient deficiency (World Bank, 2005).

GoI, (2005)\(^{66}\) Amongst the animal source foods, which are a major source of proteins and micronutrients, poultry meat and eggs provide more proteins than swine, cow milk, beef and lamb per unit of intake.

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greater availability and affordability of poultry meat and eggs could contribute to enhanced nutrition (and poverty reduction), given that rural and urban households allocate more than 15 and 19 percent of their food expenditure to animal source food respectively, although primarily to milk and dairy products.

Ravallion et al., (2007), Large commercial integrators are unable to consistently supply rural areas because live-bird sales dominate the poultry market in India and moving live birds over long distances is prohibitively costly, due to transport, shrinkage, and mortality costs. Low prices for poultry from large commercial integrators, therefore, primarily benefit urban consumers, which in India include about 107 million people living on less than US$ 1 a day or about 229 million people living on less than US$ 2 a day.

Rabobank, (2008), Improved infrastructure, availability of cold chain facilities, and changing consumer preferences, away from whole fresh chickens, could contribute to increasing the supply of ‘affordable’ processed poultry products in rural areas, for the benefit of the 316 million poor Indian rural consumers living below the international poverty line of US$ 1 a day, or the 668 million rural poor living on less than US$ 2 a day.

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2.7 CONCLUSION

The above quoted reviews describe the poultry industry and poultry entrepreneurs, but none of these studies covered the exclusively on production and marketing of poultry eggs in Tamil Nadu. Hence, the researcher found that this gap is more appropriate to tap in the current scenario. In this present study, an attempt was made by the researcher to assess the knowledge of poultry entrepreneurs in their industry and their management pattern in production and marketing of poultry eggs.