CHAPTER IX

SUMMARY AND CONCLUSIONS
9.1 Summary

The genesis of poultry industry in Chittoor district can be traced back to the poor performance of agriculture and growing unemployment in the district. Wells and tanks are the main sources of irrigation. The frequent failure of monsoons makes the wells and tanks to dry off. The cultivation of dry crops became gamble in the monsoons. Stagnant and fluctuating prices for many agricultural commodities along with rapidly increasing wages and other input costs made the cultivation of agricultural crops unremunerative. Consequently, farmers in the district have undertaken other allied and off-farm activities. Among other off-farm activities, poultry farming has become more popular. Many small and marginal farmers who were hit hard by agriculture resorted to poultry farming. Comparatively less labour input, availability of bank finance, easy availability of managerial and technical guidance, good transport facilities and above all growing urban market in the district and neighbouring districts gave fillip for the rapid development of poultry industry in Chittoor district.
However, in recent years the industry is confronted with multifarious problems. The prices of poultry feed, the major input in poultry production, have been steadily increasing relative to prices of eggs and poultry meat. Sudden and frequent depression in the market upset and put the entire industry in doldrums. There are no systematic studies to analyse and understand these problems of poultry industry especially in Chittoor district. Accordingly, an attempt was made in the present study to systematically analyse the working of poultry units and problems confronting them with the following specific objectives.

1. To study the sources of capital investment in poultry farming in Chittoor district.

2. To estimate the egg and chicken yield per bird.

3. To assess the income and employment generated by poultry farming.

4. To study the channels and problems of egg/chicken marketing.

5. To analyse the variations in egg and feed prices and to examine price parity of eggs and feed over years.
6. To estimate the profits/losses earned by the poultry farmers.

The study was based on primary data collected from all 162 registered working layer units and 38 registered working broiler units in Chittoor district. These units were classified into marginal, small, medium and large units based on the number of birds of 0-4,000, 4,000-8,000, 8,000-12,000 and 12,000 above respectively. Though the establishment of layer poultry farms began as early as 1972, the real spurt was during the period 1976-1985. Thereafter there was a slow down in the establishment of layer units. The establishment of broiler units began in 1982 but maximum number of units was established during the years 1989 and 1990. Out of 162 layer units, deep litter system was in vogue in 124 units and cage system was in vogue in 38 units. Out of 38 broiler units, deep litter system was used in 31 units and cage system was in operation in 7 units. The cage system requires more investment but it economises the use of poultry feed which helps to reduce cost of production.
Non-institutional sources like relatives, friends, money lenders provided a major portion of total loan finance to majority of layer and broiler poultry farm owners in Chittoor district. Substantial number of poultry farm owners also invested out of own resources. In the case of two institutional sources, viz., private financial corporations and commercial banks, the former was more important than the latter in providing finance to the poultry owners. Large and medium size layer farmers seemed to have more access to institutional sources particularly commercial banks than marginal and small poultry farmers.

Regarding the ownership pattern, it was noted that more than 82 per cent of layer units and about 80 per cent of broiler units were run under sole tradership and the rest under partnership. The analysis of the occupational pattern of poultry farm owners revealed that about 40 per cent had poultry farming as main occupation. Moreover, agriculturists (about 30 per cent), retired employees (about 13 per cent), businessmen and employees in private concerns also established layer units to
supplement their incomes. Similarly about 50 per cent of broiler units had poultry farming as main occupation while about 26 per cent had agriculture as main occupation. Moreover, many retired employees, businessmen and employees in private concerns also take up the poultry farming. The study also indicated that almost every poultry owner possessed some amount of land, the precious asset in rural India. However, about 80 per cent of layer and broiler poultry farm owners possessed land below 10 acres only. The analysis of social status of poultry owners revealed that about 50 per cent of layer units and 74 per cent of broiler units were run by forward caste people and the rest by backward classes and minorities. The analysis of educational status of poultry owners revealed that about 79 per cent of layer owners and 66 per cent of broiler owners were educated. It should be noted that even some post-graduates and technically qualified personnel had taken up the poultry farming in Chittoor district.

The discussion on the capital structure of poultry farms revealed that variable capital constituted major
portion of total capital both in layer and broiler units. It varied between about 76 per cent in marginal to about 90 per cent in large layer farms and between 83 per cent in marginal to about 91 per cent in large broiler farms. Feed cost accounted for a lion's share in variable capital which varied between 64 per cent of total capital in marginal and 78 per cent in large layer units and between 49 per cent of total capital in marginal and 52 per cent in large broiler units. The other types of variable capital like cost of day old chicks, labour, veterinary and miscellaneous expenditures varied between 2 per cent to about 6 per cent in various size groups of layer units and between one per cent to about 34 per cent in various size groups of broiler units in the district. Among two types of fixed capital, viz., expenditure on buildings and machines, the former accounted for a major portion. The latter was considerably high in medium and large size layer and broiler units where cage system was used.

In the total cost of egg production, variable costs like feed cost, cost of day old chicks, labour charges, veterinary and miscellaneous charges constituted about 82
per cent while the fixed costs like rate of interest on fixed and variable capital, asset and flock depreciation constituted about 18 per cent in layer units. In the case of broiler units overwhelming portion of total cost amounting to about 98 per cent was accounted for by variable costs and the fixed cost constituted only about to two per cent of total costs. The cost of rearing a layer bird was worked out to about Rs.120. It varied between Rs.125 in the case of marginal farms to about 119 in the case of large farms. The cost of rearing a broiler bird varied between Rs.27.51 in marginal farms and Rs.21.00 in large farms. Thus, there were economies of scale in rearing both layer and broiler birds.

The number of eggs produced per bird varied between 242 in marginal size farms and 262 in large size layer farms. Revenue from eggs was the major source of revenue to layer units amounting to about 78 per cent which marginally varied between different size groups of farms. Revenue from culled birds was about 15 per cent and that from manure and gunny bags was about 4 per cent and 2 per cent respectively. There were marginal variations in
these sources of revenue realised by different size groups of layer units. In the case of broiler units, revenue from broiler meat was the major source. It varied from about 91 per cent in marginal farms to about 96 per cent in large farms. Revenue from manure varied between 5 per cent and one per cent and that from gunny bags between 4 per cent and about one per cent in various size groups of broiler farms. The study revealed that in the case of net layer units profit per bird was Rs.6.49 in marginal, Rs.8.97 in small, Rs.11.43 in medium and Rs.13.75 in large size farms. In the case of broiler units, net profits per bird was Rs.6.42 in marginal, Rs.9.03 in small, Rs.9.86 in medium and Rs.14.41 in large farms. It could, thus, be seen that rate of profit was considerably high in broiler units than in layer units. This conclusion was even more clear if net profit per rupee of investment was considered. The poultry units also generated considerable amount of employment and income to both family and hired labourers in the district.

The results of the Cobb-Douglas Cost Function used to estimate the elasticities of output with respect to various inputs used in poultry production indicated that
feed cost was the most significant variable influencing output of layer units. The elasticity coefficient of feed was greater than unity in the case of medium size layer units and was close to zero in the case of small size units. In other size groups of farms the coefficients varied between 0.15 to 0.61. The next important variable influencing output was the cost of day old chicks followed by interest rates and veterinary and miscellaneous expenditures. The $R^2$ values were considerably high indicating the fact that the variables included in the model adequately explained the variations in the output of layer units.

In the case of total broiler units, the results of the regression model indicated that all the variables except veterinary and miscellaneous expenditures were statistically significant in influencing output. The $R^2$ value was also very high indicating the goodness of the fit of the model to the field data.

The growth rates of various inputs and output of poultry production indicated that the average annual growth rate of egg prices was 4.39 per cent while that of
feed prices and chick prices was 5.58 per cent and 5.35 per cent respectively. The average annual growth rate of broiler chicken prices was 3.13 per cent while that of broiler feed and broiler chick prices were 8.21 per cent and 6.56 per cent respectively. These growth rates clearly indicated the disparity between growth rates of input and output prices. As a result of disparity, the growth of production slowed down and the eggs increased by only 2.55 per cent and that of broiler chicken increased by only 4.49 per cent.

There are four types of egg marketing channels in Chittoor district. The first one is marketing of eggs directly to local consumers at farm sites. The second channel of marketing is through retailers to local consumers. The third channel of marketing is through wholesaler or commission agent, poultry agency, retailers and finally to consumer. The last channel of marketing of eggs is through local commission agent, commission agent or wholesaler in cities, retailers and finally to consumers. The broiler chicken is also marketed through the first three channels. The study revealed that about 99 per cent of total production of
eggs was marketed to consumers through middlemen. Personnel consumption, direct sale to consumers and loss due to breakages barely accounted for one per cent of total production.

Marketing of eggs through middlemen at various levels leads to escalation of egg prices. The high prices lead to confrontation in demand on the one hand, and unremunerative prices to the producer on the other. The analysis of price spread in egg marketing during the last ten years clearly revealed that middlemen have reaped a considerable portion of final price of eggs and broiler chicken paid by the consumers. Due to multiplicity of middlemen, the prices of eggs sometimes rise to Rs.100 per 100 eggs whereas producer gets only half the total price paid by the consumer.

The monthly indices of egg prices fluctuated widely particularly in the downward direction during the period 1982-1991 which clearly indicate the effect of seasonal variations on egg prices. The yearly indices of egg prices though fluctuated had shown an increasing trend over the years. However, the analysis of price parity
indices clearly indicated that egg index relative to both feed and chick indices had shown a decreasing trend during the period 1982 to 1991. Between the two indices, viz., feed index and chick index, the former increased more rapidly than the latter.

The monthly price indices of broiler chicken during the period 1982-1991 also fluctuated. However, the fluctuations in process of broiler chicken were very less compared to prices of eggs. During summer, prices of broiler chicken come down and rise during winter season. The yearly price indices of broiler chicken, however, had shown an increasing trend during the period 1982-1991. The coefficient of variation of monthly prices of broiler chicken also had shown decreasing trend during the period 1982-1991 indicating the fact that the price fluctuations had narrowed down over the period.

The analysis of price parity indices in the production of broiler chicken presented a gloomy picture. The chicken indices relative to both feed index and chick index had fallen steadily during the period 1982 to 1991 which greatly increased the plight of poultry producers.
Between feed indices and chick indices, the former increased more rapidly than the latter.

The price parity indices clearly indicated that over the years the feed prices increased more rapidly than the increase in egg or chicken prices. Since feed is the major input cost in poultry farming amounting to 60 per cent to 90 per cent, the rising feed cost put a heavy strain on the producers. There are a number of reasons for the spurt in feed prices. Maize, the major constituent of poultry feed is in short supply relative to growing demand in Andhra Pradesh. The production of maize also fell down shortly in the country. So far the government was not taken any initiative to import maize from other countries. Other constituents of poultry feed, viz., groundnut, sunflower seed and soyabean have also increased considerably.

The essential medicines used in poultry production, viz., methinna and resine have to be imported and a very high customs duty of about 70 per cent is levied on it resulting in price hike. The prices of A.D.B. vitamine, the another essential medicine used in poultry farming,
have also been increasing steadily and they have doubled during 1991-1992.

Marketing of poultry products is considered to be a herculean task. Eggs have to be disposed off as early as possible because cold storage facilities are not available in Chittoor district. Similarly, broiler birds have to be disposed off between six to eight week period during which the birds get maximum weight. Otherwise the birds take more feed but get reduced in weight. This perishable nature of poultry products is the main reason for the low and fluctuating prices. In the process of marketing of poultry products through multiple middlemen, the prices are marked up considerably which the consumer is not afford to pay. As a result, poultry products are not within the reach of many poor and middle income groups who constitute majority of the population. Mushrooming of poultry units without taking into account the demand conditions on the one hand and rising input cost, on the other, greatly eroded the profitability of poultry industry.

Added to the above problems, the government tax and administrative policies also adversely affected the
prospects of poultry industry. In Andhra Pradesh poultry is not given a status of either agriculture or industry. As a result the concessions offered to either or not available for poultry industry in Andhra Pradesh. Poultry feed is subject to heavy excise and sales taxes both in the hands of Central and State governments. Moreover, the doubling of prices of A.D.B. vitamins was mainly due to upward revision of excise duty on this item. Some argue that government, instead of granting tax concession on poultry income and investing on R & D, should concentrate on providing market support and processing facilities.

So far the rising input costs were counter-balanced by the increased productivity of birds. But there is a limit to how many eggs a hen can lay or how much meat a bird can get. The industry is fast reaching that plateau though some predict a danger of virtual collapse of the industry if the tendency of rising input cost vis-a-vis the niggardly growth of demand and prices of eggs and meat continues any longer.

9.2 Testing of Hypotheses

1. According to the findings of the study there is no
significant difference in the per bird egg/chicken production in marginal, small, medium and large farms. Hence, the first hypothesis that there is no correlation between size of farm and yield of eggs/chicken per bird cannot be rejected.

It follows that there are no significant variations in the revenue realised per bird by the different size groups of farms. In other words, the profit earned by the poultry farms can be attributed to the differences in the input costs rather than that of in revenue receipts.

2. The study has revealed that cost of feed constituted major component in the total cost of production in all size groups of poultry farms. Hence, the second hypothesis that the cost of feed is not a major component of the total cost in egg/chicken production stands rejected. Hence, it can be noted that scientific mixing and efficient use of feed with minimum wastage would go a long way in reducing the cost of production and hence in increasing profit.

3. According to the study, prices of eggs and chicken are subjected to fairly wide seasonal fluctuations. The
third hypothesis that there are no seasonal fluctuations in egg/chicken prices cannot be sustained. The seasonal fluctuations in prices are not only caused by changes in the weather conditions but are also influenced by traditions and religious faiths which prohibit the consumption of non-vegetarian food during certain days and months in a year.

4. The price parity indices clearly indicated that there were wide disparities between egg/chicken prices and feed prices. The increase in price of feed is faster than that of egg and chicken. Therefore, the fourth hypothesis, that 'there is no disparity in the price indices of eggs/chicken and feed' is rejected.

5. The poultry industry is experiencing persistent and faster increase in the costs of inputs especially feed and medicine compared to the increase in the prices of output, viz., eggs and chicken resulting in the secular deterioration in the profits of poultry farmers. Hence, the fifth hypothesis that there is no decline in the profit margins of poultry farmers over the period of time is nullified.
9.3 Other Major Findings and Suggestions

1. Poultry farmers who took poultry farming as main occupation are getting more profits compared to those who took it as subsidiary occupation. This is because the former bestowed their complete attention on the poultry farming and made it more successful.

In Chittoor district in the case of poultry farming, sole trader type of ownership is successful and partnership type of organisation is a failure as in the case of any other business.

2. In the total finance, self finance accounted for 29 per cent and the commercial banks provided 4 per cent. The rest 67 per cent came from private financial corporations, relatives, friends and money lenders who usually charge high rates of interest. Therefore, there is a great need for government and commercial banks to come forward with a scheme to provide the much needed funds for the poultry farmers in adequate quantity at reasonable rates of interest without which it is not possible for the poultry farms to sustain in the business.
3. For agriculturists and non-agriculturists who own land, acquisition of sites for construction of poultry farms is not a problem. But for other types of poultry farmers, securing a site is not only a difficult task but also expensive. Therefore, as industrial estates and industrial development areas were developed to assist small scale industries, poultry development areas with sheds and other needed facilities can be developed and allotted to the poultry farmers.

4. Feed is an important input in poultry production and it constituted a major part in the total cost of production. At present the supply of feed is in the hands of private traders who charge usually high price. In addition the prices of feed also are increasing very rapidly. Therefore, as supply and prices of fertilizers are regulated, the supply and prices of poultry feed can also be regulated in order to ensure the adequate supply of feed at reasonable rates.

The large poultry farmers in the district purchase the ingredients and mix the poultry feed in their own plant thereby they are able to reduce the feed cost
approximately by 20 to 25 per cent. The small and marginal farmers get feed from the feed merchants and large farmers on credit and in turn supply eggs to them at reduced prices. In order to overcome these problems, the marginal and small poultry farmers can collectively install feed mixing plant thereby they can also reap the benefits of lower cost of feed. The government should assist them in installing the feed mixing plant on the lines of assistance provided to small scale industrial units.

Maize, oil seeds - the major constituents of poultry feed, are in short supply. Therefore, the government should take necessary steps not only to import but also to increase domestic production of maize and oil seeds in the country to ensure adequate supply of poultry feed to the growing poultry farms.

5. In order to ensure supply of essential medicines like methinone, resine (amino acids) at reasonable prices, the customs duty on their imports should be reduced from the present level of 70 per cent. Likewise the hike in the excise duty on A.D.B vitamine which is responsible
for spurt of prices in recent months should be reduced so as to ensure their supply at reasonable prices.

6. Lack of organised and regulated markets in the poultry marketing has resulted in too many middlemen who exploit both producers and consumers by underpaying the former and overcharging the latter. Further the local retailers and wholesalers are also not paying the amount to the poultry farmers immediately, causing in turn great inconvenience. By establishing the regulated markets, the exploitation by the middlemen can be reduced. Moreover, wherever possible, direct sale of eggs and chicken by the producers to the consumers should be encouraged.

7. The poultry industry is exposed to seasonal fluctuations in prices due to changes in weather conditions and religious factors. The installation of cold storage facility would help to preserve the eggs/chicken during slack season and market during peak season.

8. The serious malady of poultry industry is the occurrence of sudden crash in prices causing a slump in the market and thereby threatening the very existence of
poultry industry. The crisis results in insolvency of many units and a general crisis of confidence among poultry farmers. To tackle such situations insurance coverage should be extended to the poultry farming.

9. To improve the profitability of poultry farmers government should purchase eggs/chicken directly from poultry farmers for their requirements in social welfare hostels, primary schools, fair price shops, colleges and university hostels, railway and military canteens, etc. Model egg/chicken retail shops should be opened by AGROs and Meat and Poultry Development Corporation for marketing poultry products.

10. Nutrition values of eggs and chicken should be popularised to the public through mass media like TV, radio, newspapers, etc., in order to create and expand market for poultry products. Efforts should also be made to export eggs/chicken to Gulf and 'other neighbouring countries' through providing container facilities and duty concessions.

11. The government should declare poultry industry as