



ECONOMIC ANALYSIS OF POULTRY FORMS- A CASE STUDY OF HARIHARA TALUK

Dr.Hanumanthappa.K.M

Assistant Professor of Economics, Govt.First.Grade College, Harihara, Davanagere. (Dist),
Karnataka State-577601

ABSTRACT

Poultry farming in India, in spite of several constraints, has progressed considerably during the last decade. The present study has been undertaken to examine various aspects related to the growth and development of poultry production in the country. Poultry production in India was confined to backyards till recently. Local breed of birds were reared for the supply of eggs and meat. The increasing demand for poultry products necessitates augmenting the supply by importing improved breeds of poultry. In 1961, the proportion of hybrid populations in the total population of poultry was about 2 percent. Within a couple of decades, these birds have dominated the market sidelining the indigenous birds. The technological advances have revolutionized the role and the structure of poultry industry in India. It became one of the most specialized enterprises in many parts of the country. A general confidence has been created among the people that green revolution has ushered an era of self-reliance in the food grain production. The rapidly growing population has created some doubts in the said hypothesis. In fact, crop production alone may not solve the food problem of the country. The advances in cereal technology, of course, can fill the empty stomach, but it may not help in the balanced growth of the human body. The chief ingredients of balanced diet also comprise proteins, fats, minerals and vitamins, which are essential for growth. The supply of these items can easily be increased through increased production of livestock products.

KEYWORDS: Eggs, supply, production, technology, growth, population.

INTRODUCTION

The poultry sector accounts for about two per cent of the Gross Domestic Product (GDP) of India and about 10 per cent of the Gross National Product (GNP) attributable to livestock. The poultry industry has made great progress after Independence. It has grown rapidly at the rate of 4-6 per cent in layers and 8-10 per cent in broilers in the past two decades. With an annual output of 37 billion eggs and 1,000 million broilers, which yield 5.75 lakh tonnes of poultry meat, India is the fourth highest producer of eggs and eighth highest producer of broilers in the world. Poultry adapts easily to any agro-climatic condition, requires less land and capital and provides quick yields. This industry has provided direct employment to about nine lakh people and given rise to many allied industries like feed, equipment and pharmaceuticals etc. fisheries account for 50 per cent of the meat production, followed by 30 per cent through beef, eight per cent by sheep and goats and six per cent each by pig and poultry industries.

India is the fifth largest producer of eggs and ninth largest producer of poultry meat in the world. In 2004, it produced over 34 billion eggs and about 600,000 tonnes of poultry meat. In the overall market for poultry products, India was positioned 17 in

world poultry production. According to an estimate the poultry sector in India has been growing at a fast rate, along with other industries such as BPO and the securities market. Over the past decade the poultry industry in India has contributed US \$229 million to GNP. Several breakthroughs in poultry science and technology have led to the development of genetically superior breeds capable of higher production, even under adverse climate conditions that offer opportunities to expand the export of poultry products on a large scale. The average per capita poultry meat consumption is also estimated to increase from 0.69 to 1.28 kilogrammes, during 2000-2004. Overall, the total egg consumption is estimated to increase from 34 billion in 2000 and to 106 billion in 2020, while poultry meat consumption is expected to increase from 687 million kilogrammes to 1,674 million kilogrammes.

Poultry meat is an important source of high quality proteins, minerals and vitamins to balance the human diet. Specially developed breeds of chicken meat (broiler) that have ability of quick growth and high feed conversion efficiency are now available. Depending on the farm size, broiler farming can be the main source of family income or can provide subsidiary income and gainful employment to



farmers throughout the year. Poultry manure has high fertiliser value and can be used for increasing the yield of any crop. Broilers are marketed at an age of around 42 days. These are chickens reared for meat production. Broiler production is a short-term enterprise. Therefore, a number of batches can be raised within a year or it could be a part time job. A number of strains exist in various regions of the country for broiler production, which have a genetic potential to achieve 2.0 kg live weight at the age of 42 days. Although India has all the necessary inputs for the healthy growth of poultry farming, its contribution to the total livestock output is only about 10 per cent.

This indicates some crises in the activity. It would not be an exaggeration to say that the escalating demand for protein and growing unemployment in the country would definitely keep this industry on a high growth path. But the constraints under which it has been operating should be removed. In the livestock sector, poultry is the most efficient converter of plant products into high quality animal protein. The major component in poultry output is the meat. It accounts for two-thirds of the value of the output, while eggs account for the remaining one-third. Broiler meat is the major component in poultry meat. Although broiler meat was not acceptable to the Indian public initially due to its tender nature, people slowly realized that it has low fat, low calorie and high protein and is more cost effective and started consuming it. Now broiler meat finds ready acceptance not only in urban areas but also in rural areas. Also, Indian meat and meat products found a place in foreign markets. The export of meat and meat products, which recorded a growth rate of 0.3 per cent per annum during 1981-91, accelerated to 11.81 per cent during 1992-2001. In the post WTO period, it recorded a growth rate of 8.14 per cent, the fourth highest among meat exporting countries after Brazil, Canada and Thailand. So there is potential for developing the broiler industry in the country and it can be exploited to increase the employment and income in rural areas.

However, the development of poultry has been lopsided. Most of the poultry farms are concentrated near cities and metros where there are well-organized markets. Today 75-80 per cent of eggs and poultry meat are consumed by just 25 per cent of the population in urban areas. Presently, the consumption of poultry eggs and meat in urban areas is 100 eggs and 1.2 kg poultry meat per person per annum, whereas, in rural areas the respective consumption values are 15 eggs and 0.15 kg of poultry meat. Rapid industrialization, economic liberalization and monetisation of the rural economy have induced demand for poultry products in domestic markets.

REVIEW OF LITERATURE

Headley (1964) estimated the production functions for egg laying flocks of hybrid and leghorn hens, raised at Iowa state farms. The regression analysis indicated that flock size, housing area, corn equivalent labour and protein equivalents were significantly contributing to the gross returns.

Hunter (1981) studied the economic aspects of egg production on Australian poultry farms. This study revealed that feed costs occupy a major share of total cost of production of eggs followed by cost of chicks and labour.

Maheshwari (1993) found that the market imperfections were caused by the nexus between producers and commission agents. This study was conducted in Mysore, Davanagere and Hubli for three crops i.e. Paddy, Groundnut and Jowar. In Mysore, fragmented market and market sharing existed for all the crops. Cotton market in Davanagere was competitive while the other markets showed more imperfections. She suggested that mere regulation is not enough to make wholesale market more competitive and direct sales need to be promoted. Bhardwaj et al. (1996), in the study of broilers in Haryana, concluded that the supply of broiler was affected by the mortality and culling rates of broilers, which are governed by age of birds and size of poultry farms. The depletion rate decreases as the size of poultry farm increases. The study further showed that the marketing practices were influenced by the size of farms and seasons.

Pondey et al. (1996) studied the status of poultry production in India and also analysed the behaviour of production cost of poultry products in the selected areas. This study shows that poultry had become a vital component of the farm economy as it generates additional income and employment in the rural area. The cost estimates revealed that feed alone accounts for about two-thirds of the total cost. The study concluded that availability of feed at reasonable prices would provide an incentive to the producers for more poultry production.

Seetharaman (1996) studied the pattern of poultry development. He observed that out of 9 states with well-developed poultry industry, only in two states i.e., in Gujarat and Maharashtra, the poultry cooperatives were doing well. He recommended that poultry cooperative have to be extended in all the poultry producing states.

OBJECTIVES

1. To study the economic status of the poultry farms in the study area.
2. To study the problems faced by the poultry farms.
3. To study the increase employment in the poultry farms.
4. To suggest major policy based on the study.



METHODOLOGY

The present study was undertaken with the objective of analysing the economics of the poultry farms and the problems faced by them in the selected poultry farms in Davanagere district. Davanagere district was purposively selected because of the fact that it is one of the forefront districts in poultry farms in Karnataka state. From the sampling frame of these farm households, a random sample of 15 poultry farms was drawn using systematic random sampling method. The required information pertaining to the study was compiled by administering an interview schedule to the selected farm households.

STATUS OF POULTRY IN INDIA

Poultry enterprise in India can distinctly be grouped into two categories i.e. developmental poultry farms and commercial poultry.

1. **Developmental poultry:** It is referred to village/unorganised poultry because these enterprises operate on low scale using less amount of capital and traditional technology. The unit volume of production is low due to the above constraints. However, the concept of developmental poultry is very much relevant for our rural area to enhance the cash earnings of rural poor. The poultry was included various Central and State Government sponsored programmes such as Integrated Rural Development Programme (IRDP), Special Livestock Production Programme (SLPP), Tribal Development Programme (TDP) etc. to popularize poultry in rural areas. However, the growth of developmental poultry could not succeed at desired level.
2. **Commercial poultry:** Commercial / industrial poultry referred to large-scale enterprises where the number of birds per unit is large enough to reap maximum advantages of technological improvement. These enterprises enjoy various economies of scale of operation and thus are able to absorb the fluctuations in demand and supply and input cost etc. The growth of this sector remained highly significant over the years though it is confined to some pockets of the country.

The leading poultry producing states in different regions are Andhra Pradesh and Tamil Nadu in Southern Region, West Bengal and Bihar in Eastern Region, Maharashtra in Western Region and Punjab in Northern Region.

Productivity of Desi and Improved Birds i.e. eggs produced per annum also varies in different regions. Maximum productivity of desi birds i.e. 91 reported in Eastern Region and a minimum of 15 eggs per annum in Northern Region. In case of

improved birds, the productivity is highest in Southern Region 241, followed by 238 in Western Region, 209 in Northern Region and 204 in Eastern Region. State-wise, the productivity of desi birds was maximum in Himachal Pradesh i.e. 168 egg per annum and least i.e., 79 in Nagaland. In case of improved birds, the maximum productivity was 278 eggs per annum in Andhra Pradesh and minimum 180 eggs/ annum again in Nagaland.

Meat- Producing Chickens- Husbandry System

Indoor broilers

Meat chickens, commonly called broilers, are floor-raised on litter such as wood shavings or rice hulls, indoors in climate-controlled housing. Under modern farming methods, meat chickens reared indoors reach slaughter weight at 5 to 6 weeks of age. Broilers are not raised in cages. They are raised in large, open structures known as grow out houses. These houses are equipped with mechanical systems to deliver feed and water to the birds. They have ventilation systems and heaters that function as needed. The floor of the house is covered with bedding material consisting of wood chips, rice hulls or peanut shells. Because dry bedding helps maintain flock health, most grow out houses have enclosed watering systems (nipple drinkers) which reduce spillage.

Keeping birds inside a house protects them from predators such as hawks and foxes. Some houses are equipped with curtain walls, which can be rolled up in good weather to admit natural light and fresh air. Most grow out houses built in recent years feature "tunnel ventilation".

Traditionally, a flock of broilers consist of about 20,000 birds in a grow out house that measures 400 feet long and 40 feet wide, thus providing about eight-tenths of a square foot per bird. The Council for Agricultural Science and Technology (CAST) states that the minimum space is one-half square foot per bird. More modern houses are often larger and contain more birds, but the floor space allotment still meets the needs of the birds.

Because broilers are relatively young and have not reached sexual maturity, they exhibit very little aggressive conduct. Chicken feed consists primarily of corn and soybean meal with the addition of essential vitamins and minerals. No hormones or steroids are allowed in raising chickens.

Issues with Indoor Husbandry

In intensive broiler sheds, the air can become highly polluted with ammonia from the droppings. This can damage the chickens' eyes and respiratory systems and can cause painful burns on their legs (called hock burns) and feet. Broilers bred for fast growth have a high rate of leg deformities because the large breast muscles causes distortions of the developing legs and pelvis, and the birds cannot support their increased body weight. Because they cannot move easily, the chickens are not able to



adjust their environment to avoid heat, cold or dirt as they would in natural conditions. The added weight and overcrowding also puts a strain on their hearts and lungs and Ascites can develop. In the UK, up to 19 million broilers die in their sheds from heart failure each year.

Employment

Three decades ago, when egg and broiler production was 10 billion and 30 million respectively, the total employment numbers in the poultry sector were not so encouraging. As income and employment in the crop sector started diminishing, the non-crop sector, which includes dairy and poultry, underwent a significant shift. With the demand for poultry increasing and production reaching 37 billion eggs and 1 billion broilers, this sector now employs around 1.6 million people. At least 80 per cent of employment in the poultry sector is generated directly by these farmers, while 20 per cent is engaged in feed, pharmaceuticals, equipment and other services required by the poultry sector. Additionally, there may be a similar number of people roughly 1.6 million who are engaged in marketing and other channels servicing the poultry sector.

Constraints on the Growth of the Poultry Industry

A major constraint affecting the growth of the poultry industry in India is the lack of basic infrastructure such as strong and transportation, including cold chain. As a result, there are wild price fluctuations in the prices of poultry products i.e., eggs and broilers. Another constraint to growth is an inefficient marketing system. The presence of so many market intermediaries harms both the producer and the consumer. A third problem relates to the price availability of feed resources. Maize or corn plays a major role in broiler production, as it constitutes 50 to 55 per cent of broiler feed. As the broiler industry is growing at the rate of 15 per cent per annum, the demand for maize is thus likely to increase. Presently India grows only 11 million tonnes of maize and only 5 million tonnes are available for poultry, which is not sufficient if the current growth rate of the industry is to be maintained.

Policy Measures

The policy measures that are required to improve the poultry industry must involve: (a) improving infrastructure facilities, which will help not only to stabilize the price of poultry products in the domestic market, but will also make them available in remote areas (b) Creating an efficient marketing channel that will help to get remunerative prices the producers and (c) Increasing maize production, which will involve using GM (genetically modified) seed varieties or alternatively, will necessitate finding other sources of feed ingredients that can replace maize.

WORLD CHICKEN POPULATION

The Food and Agriculture Organization of the United Nations estimated that in 2002 there were nearly sixteen billion chickens in the world, counting a total population of 15,853,900,000. The figures from the *Global Livestock Production and Health Atlas* for 2004 were as follows:

1. China (3,860,000,000)
2. United States (1,970,000,000)
3. Indonesia (1,200,000,000)
4. Brazil (1,100,000,000)
5. India (648,830,000)
6. Mexico (540,000,000)
7. Russia (340,000,000)
8. Japan (286,000,000)
9. Iran (280,000,000)
10. Turkey (250,000,000)
11. Bangladesh (172,630,000)
12. Nigeria (143,500,000)

In 2009 the annual chicken population in factory farms was estimated at 50 billion, with 6 billion raised in the European Union, over 9 billion raised in the United States and more than 7 billion in China.

Poultry is one of the fastest growing segments of the agricultural sector in India today. While the production of agricultural crops has been rising at a rate of 1.5 to 2 per cent per annum that of eggs and broilers has been rising at a rate of 8 to 10 per cent per annum. As a result, India is now the world's fifth largest egg producer and the eighteenth largest producer of broilers. Driving this expansion is a combination of factors – growth in per capita income, a growing urban population and falling real poultry prices.

MAJOR FINDINGS FROM THE STUDY

1. In respect of the age level of the poultry farm owners, 56.25 per cent of the owners are fall in the age group of 40-60 years, 25 per cent owners 50-60 years age group and 18.75 per cent in the age range of 30-40.
2. The education level of the poultry farm owners, 68.75 per cent of the owners have done degree, 18.25 per cent of them have done PUC and only 12.50 per cent of the owners are the post graduates.
3. Majority of the poultry owners are Reddy community i.e., 93.75 per cent and 6.25 per cent of the owners are belonged to kamma community.
4. The marital status of the poultry farm owners, 93.75 per cent of them are married and only one poultry farm owner is unmarried.



5. 73.33 per cent of the farms are established in 1990-2000 and 26.67 per cent farms are established in 2001-2010 decade.
6. In 9 poultry farms (1-10) 60 per cent of the employees are female, in 5 farms (10-20) 33.33 per cent and in one farm (20-30) 6.66 per cent are the female workers.
7. Male workers are paid monthly 6000-7000 wages in 53.33 per cent of the farms, 7000-8000 wages are paid in 20 per cent of the farms and 8000-9000 wages are paid in 26.66 per cent of the farms. The workers are opined that the wages which is paid to them is less because it is very difficult for them to lead day today life with such wages.
8. Female workers are paid monthly 4000-5000 wages in 40 per cent of the farms, 5000-6000 wages are paid in 26.66 per cent of the farms, 6000-7000 wages are paid in 20 per cent of the farms and 13.33 per cent of the farms are paid 7000-8000 wages. There is a gender bias in paying wages. Women workers are paid lower wages when compared to male workers.
9. The education level of the workers in the poultry farm, 13.33 per cent of the workers are illiterate, 60 per cent workers had primary education and 26.66 per cent of them are had high school education.
10. 73.33 per cent of the poultry farms are having own building and 26.66 per cent of the farms are running in rented buildings. The rented building owners opined that because of high rent they are getting only meagre income.
11. 13.32 per cent of the farms in the study area are having 10000-30000 chickens, 26.66 per cent of the farms are having 30000-50000 chickens, 19.66 per cent of the farms are having 50000-70000 chickens, 19.66 per cent of the farms having 70000-90000 chickens and 33.33 per cent of the farms are having above 90000 chickens in their farms.
12. The monthly expenditure on each chicken till its growth, 20 per cent of the farms are spending Rs.140-160 per month, 53.33 per cent of the farms are spending Rs.160-180 per month and 26.66 per cent of the farm is spending Rs.180-200 per month for each chicken.
13. The monthly expenditure of the farm on electricity, 86.66 per cent of the farms are spending RS.5000-10000 per month on electricity and 13.33 per cent farms are spending Rs.11000-35000 per month.
14. 93.33 per cent of the farms eggs cost in the range of Rs.2.50-3.00 and 6.66 per cent of the farm eggs cost fall in the range of

Rs.2.00-2.50. The cost of eggs depend on the expenditure that is made on chickens.

15. When come to the egg production per day, 10000-50000 eggs were produced in 40 per cent of the farms, 50000-70000 eggs were produced in 33.33 per cent of the farms and 13.33 per cent of the farms produced 70000-90000 eggs and above 90000 eggs were produced in 13.33 per cent of the farms.
16. 40 per cent of the farms are spending Rs. 1,00000-2,00000 on medicine per month, 53.33 per cent farms are spending Rs.2,00000-3,00000 and 6.66 per cent of the farms are spending Rs.3,00000-4,00000 on medicine to protect the chickens from diseases.

CONCLUSION

One of the major findings of the study was that middlemen at various levels of poultry marketing system were exploiting the poultry farmers. The contribution of poultry in total nutrients uptake cannot be increased without lowering the prices of poultry products at the consumer level and by increasing the profit of producers. Hence, profit of middlemen should be decreased.

At the beginning of this report, five key questions were posed concerning the poultry industry in India. The analysis throughout this report reveals the following: the profitability defined as profits (excluding family labour wages) per unit of output dose not differ significantly between small-size and large-size farms, whether layer or broiler.in other words, profitability per unit is not significantly affected by scale of operations.

The main factors that determine profitability are the price of chicks (DOCs), price of labour (wage rate), price of feed, price of eggs/broilers, and Feed Conversion Ratio (FCR). Profitability is inversely related to the price of chicks, wage rate, price of feed and FCR, and is positively related to the price of eggs/broilers. (The FCR and wage rate are significant only for broilers).

Though profitability per unit dose not differs significantly between small farms and large farms, the efficiency of these two types of farms dose differ significantly. Small farms are relatively inefficient and the principal reasons for their inefficiency are high transaction costs and pollution abatement costs associated with policy induced distortion. This is especially true for layer farms. To be more precise, small producers enjoy fewer advantages compared with large producers in terms of obtaining information, marketing and transportation and storage facilities (transaction costs). At the same time, small producers on collecting, drying and transporting poultry manure (pollution abatement costs). Speculatively, this could be due to the lower opportunity cost of their own labour or perhaps to the



greater incentive to keep the surrounding household and neighbourhood environment clean in a close-settled smallholder setting.

BIBLIOGRAPHY

1. Hoffman, Paul and Edgar Kerkwijk (1999) "Integrated Poultry", *Special Feature, Poultry Times of India, June 1999.*
2. Jain, G.L. (2001) "Breeding Commercial Chickens under Tropical Conditions", paper presented at South Asian Regional Conference and Exhibition of Pune, 24-26 September 2001.
3. Reddy, C.V. (2001), "Sustainable poultry production for poverty alleviation and human development in South Asian countries". Paper presented at South Asian Regional Poultry Conference and Exhibition, Pune, 24-26 September 2001.
4. Soni B.K. (1994), "Asian Poultry Scene" in *Indian Poultry Industry Year book.*
5. Woodley, Jack man (1994), "What is wrong with Indian Poultry". *Indian Poultry Industry Yearbook.*
6. Williams, P. 1992. *Animal Production and European Pollution Problems. Photocopied manuscript. Rhone-Poulenc Animal Nutrition.France.*