CHAPTER - III

AN OVERVIEW OF POULTRY INDUSTRY AND ENTREPRENEURS

3.1 INTRODUCTION

This chapter presents an overview about poultry farming, structure of poultry production, problems faced by the poultry industry, Role of poultry in employment, live stock and poultry population in India, regional variation in poultry production in India, poultry development in Tamilnadu, establishment of cold storage unit facility for storage of eggs in Tamilnadu, assistance to state poultry farms, avian influenza, Tamilnadu poultry development corporation limited, poultry disease diagnostic laboratory and trade scenario in India’s poultry exports.

3.2 POULTRY FARMING

India’s poultry industry represents a major success story. While agricultural production has been rising at the rate around 2 percent per annum over the past two to three decades, poultry production has been rising at the rate of around 8 percent per annum, with an annual turnover of US$ 7 500 million. In what follows, an attempt is made to describe the trends and features of development in the Indian poultry industry over the last ten years; probe the underlying factors; and predict what lies ahead, including the threats posed to smallholders. Specifically, the study seeks to:
describe the structural changes in the poultry industry from (approximately) 1995 to 2005;

identify and evaluate the relative importance of the drivers that have caused this structural change;

predict future scenarios and assess possible consequences for income and employment, bio security and public health, environmental pollution, animal welfare, food supply and demand; and

speculate as to how smallholders are likely to be affected by the ongoing structural changes.

Poultry farming is the practice of raising domestic birds like chickens, turkeys, ducks and geese, as a subcategory of animal husbandry for meat or eggs for food agriculture (World watch, 2006). Over 50 billion chickens are raised each year as a food source for both their meat and eggs. The eggs collected are called laying hens while the chickens bred for meat are called broilers. Laying hens can produce over 300 eggs a year. Chicks will naturally live in 6 years or more. After 12 months, hen's productivity begins to decline. That's when most commercial laying hens are slaughtered. Most poultry are raised in intensive farming techniques. Seventy four percent of poultry meat in the world and 68 percent of eggs are produced in this way.

Trends in poultry egg production for the period 1995-96 to 2004-2005 are shown in Table 3.1. For eggs, there are three alternative estimates of data: the first from FAO; the second from the United States Department of Agriculture (USDA); and third from the GOI.
The data show several striking points:

- Columns (1) and (3) show a big increase in egg production. In 2004-2005, India produced 45.2 billion eggs compared to 27.1 billion eggs in 1995-1996. This represents a 66 percent increase over the ten year period. The table also shows that growth has been faster after 2000 than before. Overall, the data suggest that poultry industry has grown at the rate of around 14 percent per annum.

**TABLE 3.1**

<table>
<thead>
<tr>
<th>Year</th>
<th>Egg Production</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>FAO estimate</td>
<td>USDA estimates</td>
<td>GOI estimates,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(1 000 tonnes)</td>
<td>(million eggs)</td>
<td>(million eggs)</td>
<td></td>
</tr>
<tr>
<td>1995-1996</td>
<td>1 496</td>
<td>28 000</td>
<td>27 198</td>
<td></td>
</tr>
<tr>
<td>1996-1997</td>
<td>1 512</td>
<td>29 100</td>
<td>27 496</td>
<td></td>
</tr>
<tr>
<td>1997-1998</td>
<td>1 579</td>
<td>32 000</td>
<td>28 689</td>
<td></td>
</tr>
<tr>
<td>1998-1999</td>
<td>1 621</td>
<td>34 000</td>
<td>29 476</td>
<td></td>
</tr>
<tr>
<td>1999-2000</td>
<td>1 675</td>
<td>35 000</td>
<td>30 447</td>
<td></td>
</tr>
<tr>
<td>2000-2001</td>
<td>2 015</td>
<td></td>
<td>36 631</td>
<td></td>
</tr>
<tr>
<td>2001-2002</td>
<td>2 130</td>
<td></td>
<td>38 729</td>
<td></td>
</tr>
<tr>
<td>2002-2003</td>
<td>2 190</td>
<td></td>
<td>39 823</td>
<td></td>
</tr>
<tr>
<td>2003-2004</td>
<td>2 222</td>
<td></td>
<td>40 403</td>
<td></td>
</tr>
<tr>
<td>2004-2005</td>
<td>2 468</td>
<td></td>
<td>45 201</td>
<td></td>
</tr>
<tr>
<td>2005-2006</td>
<td>2 539</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Growth rate</td>
<td>6.18</td>
<td>6.24</td>
<td>6.18</td>
<td></td>
</tr>
<tr>
<td>(% per annum) *</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Growth rate</td>
<td>8.78</td>
<td></td>
<td>8.79</td>
<td></td>
</tr>
<tr>
<td>1998–2004</td>
<td>(% per annum) *</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*based on regression equations.


USDA estimates are from Foreign agricultural Service GaIN Report, India Poultry and Products annual, various issues.
The upward trend is even stronger in value terms (Table 3.2). Egg production appear to have registered a 100 percent growth in value terms (current prices in local currencies) over the 1995 to 2005 period. There is significant difference between the growth rate of the value (at constant price) and the growth rate of the quantity of egg production. This may be due to change in the balance between desi fowl and imported fowl in the production of eggs.

**TABLE 3.2**

**VALUE OF OUTPUT FROM POULTRY EGGS**

<table>
<thead>
<tr>
<th>Year</th>
<th>Current prices for Eggs (Rs crores)</th>
<th>Constant prices for Eggs (1993-1994 prices)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995-1996</td>
<td>2834</td>
<td>2515</td>
</tr>
<tr>
<td>1996-1997</td>
<td>3168</td>
<td>2536</td>
</tr>
<tr>
<td>1997-1998</td>
<td>3419</td>
<td>2682</td>
</tr>
<tr>
<td>1998-1999</td>
<td>3516</td>
<td>2708</td>
</tr>
<tr>
<td>1999-2000</td>
<td>3874</td>
<td>2817</td>
</tr>
<tr>
<td>2000-2001</td>
<td>4587</td>
<td>3222</td>
</tr>
<tr>
<td>2001-2002</td>
<td>4874</td>
<td>3396</td>
</tr>
<tr>
<td>2002-2003</td>
<td>4956</td>
<td>3571</td>
</tr>
<tr>
<td>2003-2004</td>
<td>5013</td>
<td>3623</td>
</tr>
<tr>
<td>2004-2005</td>
<td>5567</td>
<td></td>
</tr>
<tr>
<td>Growth rate</td>
<td>8.74</td>
<td>5.51</td>
</tr>
<tr>
<td>(%) per annum*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Growth rate</td>
<td>7.62</td>
<td>6.55</td>
</tr>
<tr>
<td>1998–2004 (%) per annum*</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Based on regression equations.

Sources: GOI, national income accounts statistics, various issues
3.3 STRUCTURE OF POULTRY PRODUCTION

Poultry farming involves breeding and raising chicks for various purposes. Breeding farms hatch and raise poultry for sale to other farms. Broiler farms rear chickens for their meat, procuring day-old chicks and keeping them for around six weeks. Layer farms keep hens to produce eggs. Another category of operators, which can loosely be termed “integrators”, keep breeding stock and also operate hatcheries and commercial broiler farms. There are estimated to be roughly one lakh layer farmers and an equal number of broiler farmers. About 70 percent of these are small-scale (3,000 – 10,000 birds) and medium-scale (10,000 – 50,000 birds) farmers. Only 10 percent are large-scale farmers with units varying from 50,000 to 4 lakh birds. Large farms require a good level of automation. Automation has become necessary for a number of reasons, such as hygiene and sanitation, disease prevention and, in the case of hatchery operations, to produce a greater number of chicks in a single hatch and to ensure better quality chicks. The whole organized poultry sector uses hybrid varieties of poultry and has adopted cages. The small and marginal farmers generally operate on the deep litter system. In terms of technology, farmers have adopted new feeding and water systems and new management, healthcare and hygiene practices.

A distinctive feature of Indian poultry production is that it is self-sufficient, supported by a very broad and strong genetic base in which the productivity level (feed conversion ratio – FCR) of broilers and layers is equal, if not superior, to those found in developed countries such as the United States of America and the European Union. India is also one of the few countries of the world, which has put into place and a sustained
specific pathogen free (SPF) egg production project, which can be described as the last word in poultry technology.

There are a dozen processing units for broilers and about three units for egg processing (a further three are not producing at present). All egg-processing units, such as Balaji Foods of Venketeswara Hatcheries and SKM of Erode, have put in place the hazard analysis and critical control point (HACCP) system in their processing units.

The poultry processing industry in India is still at a nascent stage and is growing at a very slow pace. Most chickens in Thailand, Indonesia and Malaysia are processed and branded. However, in India only 2 to 3 percent of the total poultry meat is processed. The major impediments to the poultry processing are as follows:

- Indian consumers mostly prefer live and fresh chicken butchered before their eyes, which results in 95 percent of chickens being slaughtered by the retailers in a very unhygienic manner.
- a lack of cold chain facilities, exacerbated by power shortages, which makes it difficult to make frozen, freshly chilled chicken available to the consumer; and
- a lack of promotional campaigns for chicken products, as some sections of society are opposed to non-vegetarian food.

An alternative to intensive poultry farming is free range farming. The friction between the two main methods has resulted in long-term
problems of ethical consumption. Opponents of intensive agriculture argue that it damages the environment and create health risks, and abuse of the animals themselves. Proponents of intensive agriculture say their systems are highly efficient to save land resources and food due to increased productivity and said that the animals are cared in the state of the art environmentally controlled facilities. Some countries have banned the cage system of housing, including Sweden and Switzerland. Consumers can still buy cheaper eggs from other countries via the intensive poultry farms. When poultry is allowed to roam freely instead of containing it in any manner is termed as free range poultry farming. In United Kingdom, the Department for Environment, Food and Rural Affairs has a regulation that the free range chicken should have access to outdoors during the day for at least half of their lives.

The European Union regulates marketing standards for egg farming which specifies a minimum condition for Free Range Eggs states that "hens have continuous daytime access to open-air runs, except in the case of temporary restrictions imposed by veterinary authorities" (EU marketing standards for eggs, 2010). In free-range broiler systems, the chickens are given continuous access to an outdoor range during the daytime and sheds where they are housed at night. Free-range chickens grow more slowly than intensive chickens. They live at least 56 days. In the EU each chicken must have one square meter of outdoor space.

Free range poultry production requires that the poultry have access to the outside. In some cases this means the poultry are raised on pasture, enabling the poultry to move around, forage for their natural diet and live in cleaner conditions than those in batteries. In some farms, the manure from free range poultry can be used to benefit crops. The benefits are also increased
growth rate and opportunities for natural behavior such as pecking, scratching, foraging and exercise outdoors, as well as fresh air and daylight. Because they grow slower and have opportunities for exercise free-range chickens have better leg and heart health and a much higher quality of life. Finding suitable land with adequate drainage to minimize worms and coccidial oocysts, suitable protection from prevailing winds, good ventilation, access and protection from predators can be difficult. Excess heat, cold or damp can have a harmful effect on the animals and their productivity (DEFRA, 2007). Unlike battery farms, free range farmers have little control over the food their animals come across which can lead to unreliable productivity. Some free range farming in the UK, which accounts for 26% of production, has also come under criticism concerning animal welfare (VEGA, 2007). This is due to some large scale free range farms where social abnormalities arise due to having large numbers of birds in an outdoor space. Beak trimming due to cannibalism and infighting is common in this form of poultry farming as well as in batteries. Diseases are common and the animals are vulnerable to predators. In South-East Asia, a lack of disease control in free range farming has been associated with outbreaks of Avian influenza (WSPA International, 2007).

In organic systems, chickens are also free-range. Organic chickens are slower growing, more traditional breeds and live typically for around 81 days. They grow at half the rate of intensive chickens. They have a larger space allowance outside (at least 2 square meters and sometimes up to 10 square meters per bird). While often confused with free-range farming, yarding is actually a separate method of poultry culture by which chickens and cows are raised together. The distinction is that free-range poultry are either totally unfenced, or the fence is so distant that it has little influence on their freedom of movement. Yarding is common technique used by small farms in the Northeastern US. Daily releases out of hutches or coops allow for
instinctual nature for the chickens with protections from predators. The hens usually lay eggs either on the ground of the coop or in baskets if provided by the farmer. This technique can be complicated if used with roosters though, mostly because of difficulty getting them into the coop and to clean the coop while it is inside. This territorial nature is apparent while outside in which they have a brood of hens and sometimes even informal land claims. This can endanger people unaware of the existence of the territories who are attacked by the larger birds.

In egg-producing farms, birds are typically housed in rows of battery cages. Environmental conditions are automatically controlled, including light duration, which mimics summer day length. This stimulates the birds to continue to lay eggs all year round. Normally, significant egg production only occurs in the warmer months. Critics argue that year-round egg production stresses the birds more than normal seasonal production. Meat chickens, commonly called broilers, are floor-raised on litter such as wood shavings or rice hulls, indoors in climate-controlled housing. Poultry producers routinely use nationally approved medications, such as antibiotics, in feed or drinking water, to treat disease or to prevent disease outbreaks arising from overcrowded or unsanitary conditions. In the U.S., the national organization overseeing chicken production is the Food and Drug Administration (F.D.A.). Some F.D.A.-approved medications are also approved for improved feed utilization.

In egg-producing farms, cages allow for more birds per unit area, and this allows for greater productivity and lower space and food costs, with more efforts put into egg-laying (VEGA, 2007). Modern poultry farming is very efficient and allows meat and eggs to be available to the consumer in all
seasons at a lower cost than free range production, and the poultry have no exposure to predators.

The cage environment of egg producing does not permit birds to roam. The closeness of chickens to one another frequently causes cannibalism. Cannibalism is controlled by de-beaking (removing a portion of the bird's beak with a hot blade so the bird cannot effectively peck). However, de-beaking does not prevent cannibalism it just reduces the damage. Most battery chickens are missing 30-70% of plumage by the time that they are spent. Another condition that can occur in prolific egg laying breeds is osteoporosis. This is caused from year-round rather than seasonal egg production, and results in chickens whose legs cannot support them and so can no longer walk.

During egg production, large amounts of calcium are transferred from bones to create eggshell. Although dietary calcium levels are adequate, absorption of dietary calcium is not always sufficient, given the intensity of production, to fully replenish bone calcium. Under intensive farming methods, a meat chicken will live less than six weeks before slaughter. This is half the time it would take traditionally. This compares with free-range chickens which will usually be slaughtered at 8 weeks, and organic ones at around 12 weeks (Compassion in world farming, 2007).

3.3.1 Producers’ Association in India

The National Egg Coordination Committee (NECC), which has a membership of more than 25,000 farmers, is probably the largest association of poultry farmers in the world. Its genesis goes back to 1981 (GOI, 2006). Around this time, the Indian poultry industry was going through an unprecedented crisis. The intermediaries controlled trade and forced prices
down. As a result, farmers were being paid less than their production costs (FAOSTAT, 2009). The scenario looked quite bleak. Over 40 percent of farmers had stopped operations because the business had become economically unviable – feed costs had more than doubled, but egg prices remained static at 35 paisa. Determined to do something, the late Dr B.V. Rao, along with a group of farmers, started a mass movement – they travelled across the country holding meetings with farmers and traders (GOI, 2006). Their objective was to unite poultry farmers from all over India, and see that they get better prices by eliminating intermediaries from the trade. Thus, NECC was born. Since then, NECC has played a significant role in the betterment of poultry farmers, and the egg industry in general, through its various programmes such as market intervention, price-support operations, egg promotion campaigns and consumer education. The manifold activities of NECC include (FAOSTAT, 2009):

Price declaration; Deciding a reasonable price for eggs that ensures a reasonable return for the farmer, decent margins for the intermediary and a fair price for the customer; Monitoring the egg stock levels in different production centers; managing stock levels and regulating the movement of stocks from surplus to deficit regions so as to maintain a balance between demand and supply; market intervention through Agro Corpex India Ltd; organizing and uniting poultry farmers across the country; creating a dependable distribution network so that eggs can reach every household in every village; generating employment by encouraging people to take up egg farming and egg trading; promoting exports and develop export markets; making available technology and information for increased production of eggs; obtaining governmental support and financial aid from banks for various schemes in rural India; creating awareness among customers; undertaking egg promotion campaigns to increase the consumption of eggs; conducting market research, identify
potential market and develop new markets; and preparing and submitting position papers to the government on issues affecting the poultry industry (GOI, 2006).

NECC is a completely voluntary body created by farmers, and runs on cooperative spirit. It makes no profits and subsists mainly on contributions from its members. Most of today’s egg production comes from NECC members (FAOSTAT, 2009).

3.4 PROBLEMS FACED BY THE POULTRY INDUSTRY

The following problems were observed in poultry sector.

a) Technological obsolescence & small size of farms with fragmentation
b) Commercial power tariffs with uncertain power supply
c) Lack of credit availability & Poor marketability
d) Low HRD skill levels and poor farm maintenance consciousness
e) Problems in export of eggs & bird flu virus

3.5 ROLE OF POULTRY IN EMPLOYMENT

In 1980, when the poultry sector produced 10 billion eggs and 30 million broilers, respectively, total levels of employment in the sector were not very encouraging. As the income and employment in the crop sector started to diminish, there was a big shift to the non-crop sector, which includes poultry and dairy. With demand increasing and the production level reaching 37 billion eggs and around 1 billion broilers in 1999-2000, the sector is estimated to employ around 1.6 million people (Mehta et al., 2002). Whereas 80 percent
of the employment is generated directly by the farms, 20 percent is generated in the provision of feed, pharmaceuticals, equipment and other services required by the poultry sector. Additionally, there may be a similar number of people who are engaged in marketing and other channels servicing the sector. By 2005, the total egg production in the country had passed 46 billion, and with higher broiler production, the estimated employment was 2.5 million (Desai, 2004). Employment statistics for 1999-2000 and 2005 are not comparable, as there are no reliable time-series data. The statistics for these two years are based on the estimates of industry experts. However, GOI provides data on employment by usual-activity status for a few sectors including livestock.

Presently, India’s per capita annual consumption is 42 eggs and 1.6 kg of poultry meat. The National Institute of Nutrition recommends that a balanced diet should contain 30 grams of eggs/day (i.e. 180 eggs per annum) and 30 grams of meat (11 kg per annum). Assume that out of this at least 9 kg would be met by poultry meat, given the constraints affecting growth of other forms of meat such as beef. Thus, the gap between the present per capita and the recommended per capita consumption is 138 eggs and 7 kg of chicken meat. As and when the gap in production is bridged and the industry grows to the desired level, it can be expected to provide employment to over 9 million people (ibid.).

### 3.6 SOCIO-ECONOMIC IMPORTANCE OF POULTRY PRODUCTION

For smallholder farmers in developing countries (especially in low income, food-deficient countries [LIFDC]), family poultry represents one of
the few opportunities for saving, investment and security against risk. In some of these countries, family poultry accounts for approximately 90 percent of the total poultry production. In Bangladesh for example, family poultry represents more than 80 percent of the total poultry production, and 90 percent of the 18 million rural households keep poultry. Landless families in Bangladesh form 20 percent of the population and they keep between five and seven chickens per household. In LIFDC countries, family poultry-produced meat and eggs are estimated to contribute 20 to 30 percent of the total animal protein supply taking second place to milk products (38 percent), which are mostly imported. Similarly, in Nigeria, family poultry represents approximately 94 percent of total poultry keeping, and accounts for nearly four percent of the total estimated value of the livestock resources in the country. Family poultry represents 83 percent of the estimated 82 million adult chickens in Nigeria. In Ethiopia, rural poultry accounts for 99 percent of the national total production of poultry meat and eggs.

Poultry are the smallest livestock investment a village household can make. Yet the poverty-stricken farmer needs credit assistance even to manage this first investment step on the ladder out of poverty. Poultry keeping is traditionally the role of women in many developing countries. Female-headed households represent 20 to 30 percent of all rural households in Bangladesh and women are more disadvantaged in terms of options for income generation. In sub-Saharan Africa, 85 percent of all households keep poultry, with women owning 70 percent of the poultry.

Income generation is the primary goal of family poultry keeping. Eggs can provide a regular, albeit small, income while the sale of live birds provides a more flexible source of cash as required. For example, in the
Dominican Republic, family poultry contributes 13 percent of the income from animal production. Assuming an indigenous hen lays 30 eggs per year, of which 50 percent are consumed and the remainder has a hatchability of 80 percent, then each hen will produce 12 chicks per year. Assuming six survive to maturity (with 50 percent mortality), and assuming that three pullets and three are cockerels, the output from one hen projected over five years would total 120 kg of meat and 195 (6.8 kg) eggs. A study on income generation in trans migrant farming systems in East Kalimantan, Indonesia showed that family poultry accounted for about 53 percent of the total income, and was used for food, school fees and unexpected expenses such as medicines. Flock composition is heavily biased towards chickens in Africa and South Asia, with more ducks in East Asia and South America. Flock size ranges from 5-100 in Africa, 10-30 in South America and 5-20 in Asia. Flock size is related to the poultry farming objectives of:

- Home consumption only;
- Home consumption and cultural reasons;
- Income and home consumption; and
- Income only.

In Bangladesh, the average production rate per local hen of 50 eggs/year was regarded by some as low productivity. However, if it is considered that 50 eggs per hen per year represents four hatches from four clutches of eggs laid, incubated and hatched by the mother hen, and the outcome is 30 saleable chicken reared per year (assuming no eggs sold or eaten, 80 percent hatchability and 25 percent rearing mortality), then it is a remarkably high productivity.
Nearly all rural families keep a small flock of poultry and rearing of poultry has practiced for many generations for different social and cultural reasons. However, the most common purpose for keeping chickens and eggs were primarily as source of income and for hatching, respectively. According to the study conducted in the Central Highlands of Ethiopia, about 50, 27 and 23% of the egg produced are used for hatching, sale and home consumption, respectively. In another study conducted in southern parts of Ethiopia, about 71.4% of chickens raised by the rural community were used for egg production while the rest 28.6% were used for meat production purposes.

There are fewer religious or social taboos associated with poultry production than there are with pigs and cattle. Poultry keeping rather has a symbolic importance within the context of social cultural and religious function. For most of these social and cultural functions or sacrifices, a specific sex and plumage color of poultry are prescribed. For instance, a report revealed white and red cock sacrificed for the purposes of good harvest wishes and red and black spotted cock sacrificed for the purpose of Ethiopian New Year.

In general, rural poultry plays a significant role in cultural and social life of rural people in the following ways: as gifts for relatives and for religious ceremonies, cock as alarm clock, to cure a sick person, staring capital to youth and for special guests' invitation. For instance, farmers in rural area invite special guests to partake of the popular dish "doro wat", which contains both chicken meat and eggs. The importance of rural poultry in national economies of developing countries and its role in improving the nutritional status and incomes of many smallholder farmers and landless communities has been recognized by various scholars and rural development agencies in the last
two or three decades. However, rural poultry does not rate highly in the mainstream national economies because of the lack of measurable indicators of its contribution to macroeconomic indices such as gross domestic product. Per capita consumption of these products is also very low relative to the world and African standards. In addition to their contribution of high quality animal protein and as a source of easy desirable income for farm households, rural poultry represent a significant part of the rural economy. This segment of production in Africa as a whole represents an asset value of US$5.75 billion. Moreover, rural poultry integrate very well and in sustainable way into other farming activities, because they required little in the way of labor and initial investment as compared with other farm activities. A further advantage is that small area of land is required to keep chickens. Findings confirmed that women owned most chicken flocks and that income generated from chicken production belongs to them. Ninety two percent of the interviewed women kept the income from selling of eggs and chicken in their own hands and they sent more of their children, especially girls, to school. Experiences from Bangladesh showed that improved chicken productions increased farmer's livelihood and Women empowerment.

The participation of women in rural poultry improvement programs contributes to human development both by increasing access for rural women to income and knowledge, and by increasing production efficiency.

For household poultry production to be economically sustainable, an enabling economic environment needs to be established. In order to provide an enabling environment for smallholder poultry production in communities, there should be sufficient institutional capacity in both the public and private sector (NGO’s) so that gender based extension interventions that could
address rural resource poor women and children, and appropriate technology could be administer. Evaluation reports from a number of integrated development projects in developing countries also indicate that scavenging village chickens play a significant role in poverty alleviation and enhancing gender equity among the disadvantaged communities.

In most African countries, the rural chicken population accounts for more than 60% of the total national chicken population. In Ethiopia, chicken are widespread and almost every rural family owns chicken, which provide a valuable source of family protein and income. The proportional contribution of poultry to the total animal protein production of the world by the year 2020 is believed to increase to 40%, the major increase being in the developing world. Most communities lack the required husbandry skills, training and opportunity to effectively improve their household chicken production. The economic status of poultry farming enterprises in Andaman and Nicobar Islands is studied by Kumar and Rai (2004). The study compared the investment patterns, Labour utilization pattern, cost and returns and efficiency measures of small (300 birds), medium (900 birds) and large (1500) farms. The total cost per bird was found to be Rs 68.84, Rs 65.85 & Rs 63.07 respectively. The net returns per bird were Rs 8.36 for small farms and were Rs 11.35 and Rs 14.13 for medium and large farms respectively. The study revealed that the BC ratio of all three categories was even and was 1.13, 1.19 and 1.24 respectively. The study concluded that the broiler farming was a profitable enterprise and a main source of income to a sizable number of farmers.

The rural poultry in Africa believed to be a viable and promising alternative source of cash income for the rural resource poor women. In most of the cases, the earnings from the sale of eggs and chickens had spent in
direct relation to nutrition, health and education of the family. According to smallholder farming families, landless labourers and people with incomes below the poverty line are able to raise chicken with low inputs and harvest the benefits of eggs and meat via scavenging feed resources.

The financial feasibility of investments in contract poultry farming in Tamil Nadu region is investigated by many. 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%. According to the 2006 National Sample Survey (NSS) Report on Livestock Ownership the landless, marginal and small scale farmers, which account for about 90 percent of the 107 million agricultural households in India, keep about 85 percent of the poultry stock of the country.

Statistically, a landless/marginal/small-scale agricultural household keeps 1.2 non-descript low yielding local birds in the backyard, which would translate into an average flock size of 8 to 9 birds per poultry keeping household. Such backyard flocks only make a very minor contribution to rural livelihoods, as the net income per bird per month ranges from Rs 4 to 13 (US$ 0.10 to 0.30), vis-à-vis a rural poverty line set by the Government of India at Rs 356 per month (US$ 8.2).

Increasing the productivity of and returns to poultry birds, therefore, does not to represent a pathway out of poverty for a typical rural farmer,
unless flock size is significantly increased. For instance, report that units below 20,000 birds are too small to generate enough income to sustain a family, although units with some hundreds of birds can be financially viable and can significantly contribute to the support of rural livelihoods. However, the overall ability of the traditional backyard poultry systems to expand production is limited by the availability of the scavenge-based feed resource.

Given that landless, marginal and small scale farmers lack the resources, including poultry birds, to ‘farm their way out of poverty’, they depend heavily on earnings from supplying unskilled wage labour to other farm or non-farm enterprises. ‘The ability to generate an adequate number of productive employment opportunities will [therefore] be a major factor on which the inclusiveness of growth will be judged’ (GOI, 2007). The Government of India estimates that about 2 million people are employed, fully or partly, along the poultry value chain and that an increase in annual per caput availability of one egg or 50 gm or poultry meat generates about 20,000 to 25,000 full time jobs (GOI, 2007).

This translates into different levels of incremental labour demand depending on anticipated consumption trends: for instance, the baseline scenario of the IFPRI IMPACT model predicts that about 35,500 and 30,000 jobs will be created along the poultry meat and egg value chains between 1997 and 2020 the OECD-FAO COSIMO model concludes that about 27,000 additional broiler-related jobs will be generated between 2008 and 2017, the FAPRI International Livestock Model estimates an additional demand for 22,000 full time workers along the broiler value chain between 2007 and 2017.
Whichever demand projection may be most accurate, the predicted growth of the poultry sector, even if very fast, will not generate significant employment opportunities for the 423 (898) million Indians living on less than US$ 1 (2) a day.

Finally, even though the poultry and egg markets are dominated by small retailers – in India over 99 percent of food and grocery is sold by traditional retailers (kirana stores, street hawkers, and wet market stall operators) and only 5 percent of all poultry output is marketed in processed form – few jobs are created downstream along the poultry supply chain.

At Gazipur wholesale poultry market in New Delhi, India’s biggest, in a usual business day about 80 to 100 trucks–each carrying 90 to 100 crates containing 8 to 15 birds from the 32 poultry farms located around Delhi as well as from farms in Haryana, Uttar Pradesh, Punjab and Rajasthan– deliver between 80,000 to 100,000 poultry birds to around 90 wholesalers who, in turn, sell them to thousands of small retailers.

Assuming that the wholesale-retail marketing margin is about Rs 15/kg (US$ 0.35/kg) live weight– in the first months of 2009 the live weight price for broilers ranged between 45 and 55 Rs/kg (US$ 1-1.25/kg) in Gazipur wholesale market and was about 60-65 Rs/kg (US$ 1.40-1.50/kg) for final consumers in Delhi– between 9,000 to 12,000 individuals could earn the minimum wage of a semi-skilled worker, which is set at Rs 3,799/month (US$ 97/month) by the Delhi authority, through selling poultry birds in Delhi, a city with over 15 million inhabitants.
The major problems in poultry production in Pakistan and then focused to estimate the percentage share of different stake holders 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.

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.

The role and importance of poultry for rural livelihoods has emerged as a critical issue following the outbreaks of HPAI in Asia and Africa. Some
countries aim at controlling HPAI by increasing the concentration of the poultry sector in integrated production systems with high bio-security standards and reducing or eliminating free-range production. This has fuelled discussions regarding the effects of such policies on rural livelihoods. These developments call for a clearer picture of the role of poultry in the livelihoods of Sector 3 and 4 producers. Knowledge of the socio-economic and socio-cultural roles of poultry in rural livelihoods is to a great extent based on, or related to, project interventions and reported in project related formats such as baseline studies, progress reports or project impact studies.

Such studies struggle with the methodological problems posed by confounding factors associated with the various support activities that are included in many development projects. In contrast, academic research on village poultry tends to focus on disease-related issues. In comparison, knowledge of the socio-economic and socio-cultural roles of poultry in the livelihoods of smallholders is, unfortunately, less robust and less diversified.

The market for poultry meat is growing faster than that for any other meat product, and is projected by the International Food Policy Research Institute (IFPRI) to maintain this position in the coming decades. Rising demand has fuelled a structural change in the production and supply of poultry meat, with production for the global market concentrated in the hands of relatively few large companies, characterized by vertically integrated production and marketing. Smallholders in rural areas of developing countries face severe constraints to taking advantage of market opportunities and must pay high costs to overcome market imperfections brought about by poor physical and institutional infrastructure.
There is a considerable degree of market segregation between broiler meat and meat from chickens from scavenging or semi-scavenging flocks. Meat from village chickens sells at a premium price, often in the range of 50-100 percent higher than broiler meat on a per bird basis, i.e. the premium may be even higher when measured in terms of weight, as the carcass weight of village chickens is often lower than that of broilers. However, smallholders have limited means and market access with which to capture new market share, and face increased competition as a result of increasing efficiency in broiler-meat production and marketing, the elimination of trade tariffs, etc. Smallholders in general and the poor in particular, face problems accessing credit, obtaining market information or new technologies, purchasing inputs and accessing product markets. Price fluctuations and asymmetric power relations in the market add to the list of constraints that smallholders face.

These processes potentially lead to the marginalization of smallholder poultry producers, but there may also be opportunities for smallholders to benefit from the surge in demand. In the Bangladesh Poverty Reduction Strategy Paper, for instance, contract farming is regarded as a promising opportunity for smallholders to escape poverty.

Elimination of trade barriers exposes commercial and semi-commercial producers to competition from cheap imports and affects the local commercial smallholder sector. An example from West Africa may illustrate the effect. Small-scale commercial poultry producers’ associations in West Africa (e.g. Senegal and Cameroon) complain about the harsh effects of dumping cheap subsidized frozen chicken cuts from the European Union following the removal of import tariffs. It is claimed that the elimination of import tariffs has wiped out hundreds of thousands of jobs in the small-scale
poultry sector in West Africa. In Cameroon alone, more than 110,000 jobs were lost over a seven year period between 1996 and 2003, and national broiler-meat production fell by almost 40 percent between 2000 and 2003. Obviously, these developments affect the livelihoods of smallholders who seek to market chicken products. The elimination of trade barriers is also regarded as a considerable risk factor for poultry producers in the Philippines and in Indonesia.

The outbreak of HPAI/H5N1 constitutes a recent, but serious, threat to the poultry sector, although the nature of the threat to Sectors 1 and 2 is very different from that affecting Sectors 3 and 4. While Sector 1, and to some extent Sector 2, are threatened by export bans related to reported outbreaks in the national industry, Sector 3 and 4 producers are mainly threatened by disease-control measures that impose bans or restrictions on Sector 3 and 4 production systems.

3.7 LIVESTOCK AND POULTRY POPULATIONS IN INDIA

Growth of the poultry sector depends partly on the size of the poultry population and partly on productivity. The annual growth rate of the livestock population (excluding poultry) in India was 0.93 percent during the period 1950–1956, rising to 2.60 percent by 1977–1982. However, it recorded a negative growth rate of -0.01 percent during 1997–2003. Growth in the poultry sector was 5.22 percent in 1951–1960, fell to 0.21 percent in 1961–1966, rose to 5.79 percent in 1982–1987, and to 5.85 percent in 1997–2003 (GOI, 2006).
The population of layers increased from 166.07 million to 215.07 million between 2000-2001 and 2005-2006, indicating a growth of 29.5 percent over five years. Production of eggs increased from 28 443 million to 43 647.7 million during the same period, indicating a growth of 53.45 percent. The number of eggs produced per hen increased from 171 to 203 per annum, indicating a growth of 18.71 percent (GOI, 2006). Thus, productivity growth accounted for 35 percent of the growth in egg production. However, this productivity measure does not take into account the incremental cost of inputs. If the incremental cost becomes higher than the average cost, the farmers may start another cycle of production.

Table 3.3 Growth in numbers of layers and eggs produced in India

<table>
<thead>
<tr>
<th>Year</th>
<th>Type</th>
<th>Number of layers (million)</th>
<th>Number of eggs (million)</th>
<th>Eggs per layer (yield)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000-2001</td>
<td>Desi (local)</td>
<td>84.08</td>
<td>8,825.5</td>
<td>104.96</td>
</tr>
<tr>
<td></td>
<td>Improved</td>
<td>81.99</td>
<td>19,617.5</td>
<td>239.26</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>166.07</td>
<td>28,443.0</td>
<td>171.27</td>
</tr>
<tr>
<td>2005-2006</td>
<td>Desi (local)</td>
<td>81.28</td>
<td>9,083.0</td>
<td>111.7</td>
</tr>
<tr>
<td></td>
<td>Improved</td>
<td>133.79</td>
<td>34,564.7</td>
<td>258.3</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>215.07</td>
<td>43,647.7</td>
<td>202.95</td>
</tr>
</tbody>
</table>

Source: GOI, 2006

Assuming that the productivity of hens is the same throughout the country, the level of development of poultry production in a given region has to be judged on the basis of number of fowls per unit of population. The national average of the number of fowls per 100 persons is 47. The highest density is observed in the Southern region (62 fowls per 100 persons) followed by Eastern region (44 birds per 100 persons). The North and Central regions have the lowest densities (16 and 17 fowls per person, respectively). The annual growth rate of total poultry population during the period from 1997 to 2003 was 5 percent per annum (GOI, 2006).
3.7.1 Regional variations in poultry production in India

Yet another striking feature of the Indian poultry industry is the presence of significant regional variation. Figures 3.1 and 3.2 illustrate these regional variations in egg production for 1997-1998 and 2005-2006. Both the Eastern and Northern regions accounted for about 13 percent of total production (the share of the Eastern region has fallen from 19.60 to 13.45 between 1997-1998 and 2005-2006) respectively. The West and the Central regions accounted for 10 percent or less of total egg production in 2005-2006 (GOI, 2006).

Figure 3.1: Share of various regions in egg production, 1997-1998

![Pie chart showing regional distribution of egg production in 1997-1998](image)


Figure 3.2: Share of various regions in egg production, 2005-2006

![Pie chart showing regional distribution of egg production in 2005-2006](image)

Eight states account for bulk of egg production in India – Andhra Pradesh, Gujarat, Haryana, Karnataka, Maharashtra, Punjab, Tamil Nadu and West Bengal. Andhra Pradesh is the largest egg producing state, accounting for nearly 40 percent of egg production in the country. After Andhra Pradesh comes, Tamil Nadu – the share of the state in all India production increased from 11.21 percent in 1997-1998 to 13.46 percent in 2005-2006 (GOI, 2006).

One district, of Tamil Nadu – Namakkal – alone accounts for more than 30 percent of total egg production. Although, a major portion of poultry production is concentrated in clusters, this is one of the most concentrated districts in India. There are several reasons that may account for this concentration, including the presence of an egg powder plant and availability of feed mills nearby. Per capita egg and chicken meat availability is also highest in the southern states, followed by the northern and western states, and least in the eastern and central states (GOI, 2006). The cost of production is also lowest in the southern region for both eggs and meat, largely because of: i) vertical integration in the sector; ii) lower variation in temperature in the southern states; iii) easy availability of medicines, vaccines and veterinary services; and iv) the fact that the poultry revolution was started in the south by Dr B.R. Rao, who is commonly known as father of poultry sector in India. Though the distribution of poultry production is much greater in rural than that in urban areas, the markets are predominantly urban (GOI, 2006).

3.8 POULTRY DEVELOPMENT IN TAMILNADU

Poultry farming has undergone a transformation from being mere backyard unit to the present vibrant and dynamic commercial enterprise. Poultry farming took a step ahead with the introduction of deep litter system
during the late 1960's. The introduction of new scientific techniques, new strains of poultry, California cage system have revolutionized the industry.

The process was speeded up with the help of Poultry Extension Centres, which acted as demonstration farms and extension centers providing training to farmers to take up poultry farming. Moreover, widespread immunization against Ranikhet disease and easy availability of quality feeds, all contributed to development of poultry rearing as an industry. Poultry rearing which had been a cottage industry all along has now became a big industry by itself in many places in the districts of Namakkal, Salem, Erode and Coimbatore.

There is a good potential for export of eggs, egg products and frozen chicken meat from our State to Gulf countries, Russia etc. Hence, as per the suggestions and format prescribed by Export Inspection Council of India, the Department has issued a number of health certificates to commercial poultry farms thereby facilitating export of eggs.

In Tamilnadu, poultry rearing is practiced since time immemorial as a profitable traditional backyard enterprise. It still continues to be the livelihood preposition of several poor farmers in the rural areas and contributes to 5% of the total egg production in the State. Backyard poultry rearing has distinct advantages over other vocations, as the land requirement is small; returns are faster with little initial capital investment. Though the initial investment is minimum, the landless agricultural labourers find it very difficult even to invest this little amount. Hence, for the economic upliftment of this category of people and to improve the household nutrition, Giriraja
birds were provided to be reared as backyard units under Western Ghat and Hill Area Development programmes (HADP). This backyard poultry development is being taken up in the districts where poultry rearing is not practiced on commercial basis.

During 2007-08, 200 farmers in the Nilgiris district were supplied with Giriraja birds under HADP at 25% subsidy. It is proposed to provide Giriraja birds and training on poultry keeping to farmers in Dindigul, Madurai, Theni, Tirunelveli and Virudhunagar districts under Western Ghat Development Programme. Since these birds are on free range, they are very susceptible to the highly fatal Ranikhet disease. To protect the poultry from this disease, the department is providing vaccination against this disease on specified days at the veterinary institutions and subcentres every week. The department is also conducting a statewide vaccination programme against Ranikhet disease during the month of February every year and also in the camps conducted under 'Kalnadai Padukappu Thittam'. During 2007-08, 38.40 lakhs of poultry have been benefited by this Special bi-weekly vaccination camp.

3.9 ESTABLISHMENT OF COLD STORAGE UNIT FACILITY FOR STORAGE OF EGGS IN TAMILNADU

It is a long felt need of the Tamil Nadu poultry industry to have a cold storage unit to store excess quantity of eggs produced in flush season and to avoid losses in times of disturbances in transport and Ban on export of eggs in time of out breaks of Avian Influenza in India, which leads to stagnation of large quantities of eggs. To fulfill the long-standing demand, it
is proposed to construct a Cold Storage Unit for storage of eggs at Namakkal at a cost of Rs.10.00 crores as a Joint Venture project under public-private partnership. For this the Government have released Rs.1.00 crore as Government's equity to TIDCO and the work has been initiated by TIDCO.

3.10 ASSISTANCE TO STATE POULTRY FARMS

To improve the economic conditions and living standards of rural people by encouraging them in poultry rearing, to create additional avocations, employment opportunities and supplement the income of marginal farmers, landless labourers, self help groups and other socially backward sector of the society, the Department is implementing a Centrally shared scheme (80:20) at Poultry Farm, Kattupakkam with a total outlay of Rs.74.69 lakhs and at District Livestock Farm, Hosur with a total outlay of Rs.85.00 lakhs.

Under this programme, poultry sheds are being constructed, besides strengthening the farms' infrastructure. In addition, Vanaraja / Giriraja parent stock have been added to these farms. Apart from this, the beneficiaries are selected and given one day training on poultry rearing. The beneficiaries will be given poultry units consisting of ten females and one male. For 2007-08, the above programme is extended in District Livestock Farms, Orathanad and Chettinad at a total cost of Rs.85.00 lakhs in each farm.
3.11 AVIAN INFLUENZA

From 2003 onwards, Avian Influenza, the deadly disease caused by the virus H5N1 has spread to 45 countries in Africa, Asia and Europe and besides killing more than 250 million birds, has also killed more than 220 persons in 14 countries. The disease has caused five outbreaks in India - the first 2 outbreaks in Maharashtra, Gujarat & Madhya Pradesh in Feb-Apr 2006, the third outbreak in Manipur in July 2007, the fourth outbreak in West Bengal in Jan-Feb 2008 and the fifth outbreak in Tirupura. The Department of Animal Husbandry is undertaking intensive surveillance in all poultry farms, backyard poultry and also in bird sanctuaries to look for any unusual sickness or death in poultry or in migratory birds. The State is also fully prepared to face any emergency of an outbreak and swing into immediate action to prevent spread of the disease. The following actions have been taken by the Government:

A State Level Task Force, headed by Chief Secretary to Government of Tamil Nadu is monitoring the surveillance and preparedness of the State for Avian Influenza. Besides Animal Husbandry, the Committee is represented by Departments of Home, Public Health, Forests, Rural Development and Tamil Nadu Veterinary and Animal Sciences University. A State Level Co-ordination Committee formulates strategies and Action Plans whenever an emergency arises. In all the districts a District Level Task Force headed by District Collector and represented by District Level officers, monitor the surveillance and preparedness for Avian Influenza in the districts.

Government Veterinary Assistant Surgeons visit all poultry farms to check for any unusual sickness or death in birds as part of the surveillance
work. All the birds' sanctuaries in the State are constantly monitored by wildlife officials and Veterinary Assistant Surgeons to check the health of migratory birds. Every month serum samples are collected from 800 birds randomly selected from all over the State and sent to Government of India laboratory at Bangalore to test for Avian Influenza. Two hundred Rapid Response Teams have been formed in the State and adequately trained to combat any outbreak of Avian Influenza and prevent spread of the disease by culling of birds and disinfection.

All veterinarians in the State also have been imparted training in control and containment of Avian Influenza. Action Plan books of Government of India for control and containment of Avian Influenza have been distributed to all veterinarians. Awareness campaigns are conducted for the poultry farmers and public about Avian Influenza. Wide publicity has been given by means of pamphlets and banners about bio-security measures to be followed in poultry farms to prevent entry of infection into farms. All materials like Personal Protective Equipment kits, sprayers, flame guns, disinfectants etc., required for preparedness to meet an outbreak have been purchased and supplied to field staff. An amount of Rs.50 lakh is kept in bank to give immediate compensation to owners of poultry, which have to be culled forcibly in an outbreak to prevent the spread. Whenever there is an outbreak of Avian Influenza in any other State, check posts are immediately installed at State borders to prevent entry of poultry birds, eggs, poultry feed, poultry manure etc from affected State. Vehicles from other States are allowed only after thorough checking and spraying with disinfectants. Railways and major airports are also alerted in this regard to prevent entry of infection.
3.12 TAMIL NADU POULTRY DEVELOPMENT CORPORATION LIMITED

Tamil Nadu Poultry Development Corporation Limited was incorporated on 12th July, 1973 under Companies Act. Due to continuous loss, the Government have decided to close down the operation of this Corporation. The Commissioner of Labour, who is the competent authority accorded permission under section 25 (0) of the Industrial Disputes Act to close down this Corporation with effect from 29.12.2000. As per orders of Government all the movable and immovable properties of TAPCO located at various places have been handed over to Animal Husbandry Department. A proposal is under consideration to write off a sum of Rs.8,52,35,844/- repayable by TAPCO to Government towards loans and advances sanctioned from the inception of the Corporation including interest due there on. Action will be taken for liquidation of TAPCO as per Companies Act.

3.13 POULTRY DISEASE DIAGNOSTIC LABORATORY

To cater to the needs of the farmers in areas of high poultry production, Two Poultry Disease Diagnostic Laboratories, one at Andagalurgate in Namakkal district and the other at Erode are functioning. These are mainly involved in conducting post-mortem, testing of droppings, blood samples and other specimens for accurate diagnosis of poultry diseases. In addition, they render technical advice to farmers for prevention, diagnosis and control of various infectious and parasitic diseases. During 2007-08, 1,292 poultry farms and 1,097 villages have been visited and 8,238 samples have been examined. The Government of India have sanctioned Rs.44.00 lakhs during 2007-08 to upgrade the existing two Poultry Disease Diagnostic
Laboratories (PDDL) to Bio Safety Level II under the World Bank assisted project "preparedness, control and containment of Avian Influenza".

3.14 TRADE SCENARIO IN INDIA’S POULTRY EXPORTS

The trends in India’s poultry exports for the period 1996-1997 to 2005-2006. It can be seen that eggs and egg-based products account for 90 percent of India’s poultry exports. Exports of hatching and table eggs have increased dramatically – from Rs 196 million in 1996-1997 to Rs 408 million in 2005-2006. Similarly, exports of egg powder have increased from Rs 351 million in 1996-1997 to Rs 1126 million in 2005-2006 (there was a drastic fall in exports of egg powder between 1997 and 2000 because of the ban imposed by the European Union (EU) on egg powder imports from India, but there was a recovery from 2001 onwards). Another egg item that shows a rapid increase is “egg dried, frozen”; exports of this item have gone up from Rs 49 million in 1996-1997 to 107 million in 2005-2006. India’s exports of genetic stock and feed (maize and soybean) are not very significant (FAOSTAT, 2009).
### TABLE 3.4
**INDIA’S POULTRY EXPORT**

<table>
<thead>
<tr>
<th>Year</th>
<th>Live poultry</th>
<th>Eggs in shell</th>
<th>Egg powder</th>
<th>Egg dried and frozen</th>
<th>Poultry meat</th>
<th>Total value (Rs lakhs)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Q (Q)</td>
<td>V (V)</td>
<td>Q (Q)</td>
<td>V (V)</td>
<td>Q (Q)</td>
<td>V (V)</td>
</tr>
<tr>
<td>1996-1997</td>
<td>-</td>
<td>630.36</td>
<td>4080.00</td>
<td>1526.42</td>
<td>2407.00</td>
<td>3519.02</td>
</tr>
<tr>
<td>1997-1998</td>
<td>-</td>
<td>125.88</td>
<td>2223.00</td>
<td>3907.1</td>
<td>1955.00</td>
<td>2927.00</td>
</tr>
<tr>
<td>1998-1999</td>
<td>-</td>
<td>324.30</td>
<td>6123.00</td>
<td>3503.02</td>
<td>800.00</td>
<td>1301.88</td>
</tr>
<tr>
<td>1999-2000</td>
<td>2725.2</td>
<td>256.04</td>
<td>3445.00</td>
<td>3400.00</td>
<td>1057.00</td>
<td>1054.00</td>
</tr>
<tr>
<td>2000-2001</td>
<td>4598.0</td>
<td>518.46</td>
<td>5741.00</td>
<td>4021.00</td>
<td>1946.00</td>
<td>2551.00</td>
</tr>
<tr>
<td>2001-2002</td>
<td>4047.0</td>
<td>347.75</td>
<td>-</td>
<td>5083.02</td>
<td>1774.00</td>
<td>2353.99</td>
</tr>
<tr>
<td>2002-2003</td>
<td>4448.0</td>
<td>535.21</td>
<td>-</td>
<td>4395.68</td>
<td>3365.00</td>
<td>4224.32</td>
</tr>
<tr>
<td>2003-2004</td>
<td>3843.0</td>
<td>465.58</td>
<td>-</td>
<td>7223.36</td>
<td>3238.00</td>
<td>4989.26</td>
</tr>
<tr>
<td>2004-2005</td>
<td>2967.0</td>
<td>474.46</td>
<td>-</td>
<td>5731.23</td>
<td>2246.00</td>
<td>2873.95</td>
</tr>
<tr>
<td>2005-2006</td>
<td>594.0</td>
<td>96.78</td>
<td>-</td>
<td>4073.33</td>
<td>7700.00</td>
<td>11261.30</td>
</tr>
</tbody>
</table>

Q = quantity in tonnes (for live poultry Q = number x 1000); V = value in Rs lakhs.
Sources: All India Poultry Directory, Year Book; 2002-2004 and CMIE, India’s Trade.

At the same time, imports of genetic stock, compound feed, maize, soybean and poultry products have been negligible, this can be attributed to several reasons. First, India’s import policy restricted or banned imports of poultry genetic stock, feed and products through quantitative restrictions. Although, from the early 1990s, India has sought to dismantle quantitative trade restrictions, this has so far by-passed the livestock sector except in some exceptional cases. Second, the tariffs are still very high on poultry products. Third, Indians prefer fresh rather than processed poultry meat. Kuwait, Oman, Saudi Arabia, the United Arab Emirates and Yemen have been major importers of India’s table and hatching eggs. Similarly Germany, Austria, Japan, the Netherlands and the Republic of Korea have been the most important markets for India’s egg powder. Due to a slump in sales in the EU and a decline in demand in Japan, egg powder exports declined sharply in 1998 (GOI, 2006). The slump continued till 2000, after which it started to recover. India also exports live poultry in the form of day-old chicks (DOCs). The main export markets for India’s live poultry are countries of the SAARC (South Asian Association for Regional Cooperation) region (FAOSTAT, 2009).

3.15 CONCLUSION

This chapter presented an overview to the area being focused on by the study. This chapter covered reports pertaining to poultry farming, poultry egg industry, overview of Indian poultry market, poultry sector growth in India, structure of poultry production, poultry egg marketing, poultry egg consumption and trade scenario India’s poultry exports.