TRENDS AND CHALLENGES IN POULTRY INDUSTRY IN INDIA

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ABSTRACT

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 percent per annum, which of eggs and broilers has been rising at a rate of 8 to 10 percent per annum? The potential in the sector is due to a combination of factors - growth in per capita income, a growing urban population and falling real poultry prices. Poultry meat is the fastest growing component of global meat demand, and India, the world's second largest developing country, is experiencing rapid growth in its poultry sector. In India, poultry sector growth is being driven by rising incomes and a rapidly expanding middle class, together with the emergence of vertically integrated poultry producers that have reduced consumer prices by lowering production and marketing costs. Integrated production, market transition from live birds to chilled and frozen products, and policies that ensure supplies of competitively priced corn and soybeans are keys to future poultry industry growth in India. There are number of small poultry dressing plants in the country. These plants are producing dressed chickens. In addition to these plants, there are five modern integrated poultry processing plants producing dressed chicken, chicken cut parts and other chicken products. These plants will manufacture egg powder and frozen egg-yolk for export.

KEYWORDS

INTRODUCTION

India is the fifth largest producer of eggs and ninth largest producer of poultry meat in the world, producing 34 billion eggs and about 600,000 tons of poultry meat in 1999 (Mehta, 2002). As a result, India is now the world’s fifth largest egg producer and the eighteenth largest producer of broilers. Poultry sector in India has been growing at a much faster rate than other sectors of the Indian economy and accounts for 100 billion rupees to the Gross National Product (GNP). Despite such amazing growth in last two decades, annual per capita consumption of egg and poultry meat in India is disappointingly low with approximately 36 eggs and 0.7 kilograms of poultry meat in 2001 (Mehta, 2002). These levels are too low as compared to the world average of 147 eggs and 10.9 kilograms of poultry meat on a per capita basis (FAOSTAT). These low levels of per capita consumption of eggs and poultry meat have been mostly attributed to lower purchasing power (Gandhi and Mani, 1995). However, purchasing power of Indians is likely to grow at a much higher rate in the future due to strong liberalization initiated in early 1990s. Macroeconomic forecasters such as World Bank, and Standard and Poor’s DRI are now projecting average annual growth of 6 to 8 percent in India’s real GDP in the next decade. In addition to strong income growth, consumption pattern is also likely to be influenced by population growth, significant urban-rural population composition and other urban demographic variables. Although it is extremely important to understand the future consumption growth in poultry meat and eggs.

Both from policy and industry perspective, it has received little attention from the researchers (Sharma and Yeung, 1985; Sinha and Giri, 1989; Gandhi and Mani, 1995) groups both in India and abroad. However, most of these studies except Gandhi and Mani (1995) have ignored how difference in the consumption behavior across income groups is likely to evolve in the future with the rise in income. Even Gandhi and Mani (1995) estimated separate income elasticity’s for different income groups both in the urban and rural area; they didn’t extend their analysis in projecting future demand for livestock and its products. Hence an attempt has been made to measure future growth in poultry meat and egg demand by taking into account urbanization and varying consumption behavior across different income groups.

Trends in Poultry Sector

Trends in the poultry sector provide a graphic example of how sector growth does not necessarily go hand in hand with poverty reduction. While the production of agricultural crops has been rising at a rate of 1.5-2 % per annum that of eggs and broilers has been rising at a rate of 8-10 % per annum. The growth of the poultry sector in India has also been marked by an increase in the size of the poultry farm. For example, in earlier years broiler farms used to produce a few hundred birds (200-500 chicks) per cycle on average; whereas now units with less than 5,000 birds are becoming rare, and units with 5,000 to 50,000 birds per week cycle are common (ibid).
Family poultry, which is based almost entirely on native birds, has been by-passed by the poultry revolution, and appears to be a stagnant low-productivity sub-sector: in other words, the poultry sector is, in effect, a dualistic one. The percentage of native birds in the total poultry population has dropped from 50% about 30 years ago to about 10% now (Rangnekar and Rangnekar, 1999). Whether industrial poultry production has undermined family production is unclear, but it cannot have helped. On the positive side, the meat of family-produced scavenging chickens is much more highly valued than that of industrially produced birds, with prices per kg live weight being 50-100% higher for the former.

There are two options here – one is to improve the traditional scavenging system, and the other is to promote an intermediate, semi-intensive system. Recent work in south Rajasthan by BAIF, Scottish Agricultural College and the Natural Resources Institute suggests that it is realistic to expect simple, low cost improvements to the traditional scavenging system in this region to:

- Halve the number of eggs not hatching;
- Reduce the mortality rate of growing birds by 25%; and
- Increase the number of eggs available for consumption by 25%.

The experience of LIFE, a network of NGOs working in Tamil Nadu, is that technological improvements such as these, combined with health-related and capacity development interventions, results in almost a doubling of the bird populations. Productivity and production impacts like these would result in substantial increases in sales and household incomes.

**Macroeconomic Assumptions**

The Indian food processing industry has seen rapid development over the years and is a significant contributor to the country’s GDP. The increase in demand for processed food in the country is mostly because of the increase in disposable incomes and urbanization.

Poultry meat is the fastest growing component of global meat production, consumption, and trade, with developing and transition economies playing a leading role in the expansion. In addition to providing opportunities to increase poultry exports, rising poultry production spurs growth in global import demand for feeds and other inputs and in investment opportunities in these sectors. India, the world’s second largest developing economy, now has a large and rapidly expanding poultry sector. Expansion in India is being driven by rising incomes and a shift in industry structure toward integrated ownership and coordination of the input, production, and marketing operations involved in poultry production (vertical integration).
Incomes, Changing Market Structure, Drive Growth

Most Indians do not have strict vegetarian dietary preferences, income and price are likely to continue to influence rising demand.

The expanding role of poultry integrators, primarily in South and West India, has contributed to declining poultry prices. Integration, typically encompassing enterprises ranging from breeding, feed milling, and contract growing to wholesale and retail marketing, appears to have increased production efficiency and significantly reduced marketing margins and consumer prices. Future industry expansion may depend on the pace at which integrated poultry operations spread in the West, East, and particularly, the affluent North.

Expansion of poultry sector integration, in turn, may depend on the pace of transition in India’s poultry sector from a live-bird market to a chilled/frozen-product market. Live-bird sales now dominate the market, preventing exploitation of regional comparative advantages in production, or the use of storage, domestic product movements, and international trade to stabilize supplies and prices. A shift to mechanical, and more hygienic, processing that would be an integral part of a transition to a chilled/frozen-product market may also have public health benefits, although there is little evidence that current practices are creating health problems.

Competitive Production Costs

Poultry production in India benefits from improved management practices and the availability of local supplies of corn and soybean meal at internationally competitive prices. Competitive local prices, combined with high tariffs, poorly defined phytosanitary requirements, and a limited market for frozen poultry, are constraints to significant poultry meat imports in the near term. If recent trends in poultry and egg production in India are sustained, growth in demand for corn and soybean meal is likely to outpace gains in domestic production. For corn, variable domestic production, expanding feed use, and tariff and quota restrictions on corn imports could combine to constrain growth in both the poultry and egg industries, raising production costs and consumer prices and slowing consumption. For soybean meal, the Indian poultry and egg industries benefit from local surpluses and ready availability, although rising internal demand may erode exports.

The production of agricultural crops has been rising at a rate of 1.5 to 2 percent per annum that of eggs and broilers has been rising at a rate of 8 to 10 percent per annum. Eggs and broiler meat are the major end products of the poultry sector in India. Presently production of eggs is estimated to number about 37 billion, that of broilers 895 million, and that of poultry meat 735,000 tonnes. In addition, organized facilities have been set up over the years for the manufacture of egg powder and frozen,
processed broiler meat essentially to cater to export markets and markets in the metropolitan areas of India.

**Increasing Scale of Operation**

The growth of the poultry sector in India is also marked by an increase in the size of the poultry farm. In earlier years broiler farms had produced on average a few hundred birds (200-500 chicks) per cycle. Today units with fewer than 5,000 birds are becoming rare, and units with 5,000 to 50,000 birds per week cycle are common. Similarly, in layer farms, units with a flock size of 10,000 to 50,000 birds have become common. Small units are probably finding themselves at a disadvantage because of high feed and transport costs, expensive vaccines, and veterinary care services and the non-availability of credit. Some small units are reported to be shifting from layer to broiler production because output in broiler units can be realized in six weeks.

**Low Per Capita Consumption**

Even though India is the world's fifth largest egg producer and the eighteenth largest producer of broilers, its per capita consumption of these products is poor - 37 eggs and 1 kg. of poultry meat per capita per annum. Here, again, there is considerable variation in per capita consumption between rural and urban areas and also across the region. Per capita consumption of eggs is only 7.7 per annum in rural areas compared with 17.8 per annum in urban areas. In seven states, per capita consumption is less than 3.5 per annum. Similarly, per capita consumption of poultry meat is 0.24 kg. in rural areas and 1.08 kg. in urban areas.

**Position of Indian Poultry Industry**

India is the fifth largest producer of eggs and ninth largest producer of poultry meat in the world, producing over 34 billion eggs and about 600,000 tons of poultry meat in 2004. In the overall market for poultry products, India was positioned 17 in World Poultry Production. And analysts estimate that the poultry sector in India has been growing at a much faster rate, along with other industries such as BPO and Securities market. Over the past decade the poultry industry in India has contributed approximately US $229 million, to the Gross National Product (GNP).

Several breakthroughs in poultry science and technology have led to the development of genetically superior breeds capable of higher production, even under adverse climatic conditions that offer opportunities for overseas entrepreneurs to expand export and import 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 kilograms, during the 2000-2004. Overall, analysts studies that the total egg consumption is estimated to increase from 34 billion in 2000 and to 106 billion in
2020, while poultry meat consumption is predicted to increase from 687 million kilograms to 1,674 million kilograms.

"Vision for Indian Poultry Industry Highlights"

Current Scenario and Future Prospects" predicts a relatively strong growth for the egg and poultry meat industry, in both the urban and rural areas, in the next two decades. It has been found that egg consumption has grown at a much faster pace, than the consumption of poultry meat. With the continual rise in income, it is estimated to nearly triple by 2020. The consumption pattern of egg and poultry meat for 2010 by taking into account urbanization and differences in consumption patterns across various income groups, both in urban and rural areas are taken care.

Obstacles and Challenges in Implementing New Technologies in the Poultry Industry in Global Environment

The first of these obstacles is management level organizational decision making. This long term is simply stated as when a new technology requires the approval of numerous management levels, for example, more than three groups or levels and 9 to 12 people; it’s very difficult to get approvals to use that technology or to test the new technology for an extended time. For instance, current broiler production modeling programs that define every step of the production process, from breeder strain to yield of the final cut-up product to size of the marketed package, are very difficult to adopt. There are many obstacles in each management group that must be approved before the modeling program can be adopted. The “buy-in,” i.e., the approval and cooperation of many individuals at all levels, of live production, processing, marketing, sales, and upper management is necessary.

With these obstacles, two problems are evident. One is the number of people involved, and the other is the cost of the new technology to each group.

This first obstacle is that many people must be convinced of the model’s benefits. Usually, at least three people in each management division must be convinced that the benefits of trying the model in these areas are greater than the costs of the technology and also greater than the lost opportunity costs of trying a different technology. In a typical broiler company, a model program at all levels could involve as many as 12 or more people. To convince 12 people of the benefits of a product is a formidable obstacle.

A second problem is the cost to each group or production level to adopt the new technology. For instance, the live production group may implement the model’s plan for increased yield with the result of a higher live cost per pound of meat for live production but with a higher yield of saleable meat. If the marketing, sales, and
management groups do not acknowledge this higher cost or doubts the model’s ability to predict this cost and the increased yield, then the model will not be tested or, if tested, will not be tested for any extended period of time, and possibly will not be adopted.

A second type of obstacle is the economics—cost versus return. In each area of broiler production, there is a cost of implementation for the new technology in which the manager of the area can test the new technology without approval from upper management or from other production colleagues.

A third obstacle is the difficulty of transferring technology that has been demonstrated to work in the laboratory to the field and to get an economical return from this technology in the field. An example that I have personally tried is the use of probiotics. The laboratory research data is very convincing for their use in commercial broiler production. With the laboratory data, a profitable economic return can be calculated. However, I have been unable to demonstrate a profitable return in commercial production. The inability to demonstrate a profit in commercial production creates an obstacle to adopting a new probiotic that has been developed. Before adopting a new probiotic technology, more research data in more laboratories would be required before the new product would be considered for a trial in commercial broiler production.

A fourth obstacle is human inter-relationships. Within any company, there are teams of people who run the company. For a new technology to be sold and adopted, the salesman must be aware of these teams of people and how they relate to one another. There are key people on each team who must approve a new technology and be aware of its benefits before it is tried, and they must be aware of the progress of increasing profits/returns as the new technology is implemented. Without the approval and knowledge of these key decision makers, the adoption of new technology will be slowed or delayed until its benefits have been proven by other companies.

The fifth obstacle is success-risk. Success risk prefers to the situation in which the person who is making the decision to adopt or try a new technology has been very successful in his career to achieve his position of decision making within his company and to the concurrent situation where the performance of the company is at or near record highs. In this situation, the improvement that would be gained by many new technologies is reduced when compared to the improvement that could be gained at a company where the performance or managerial ability was below average.

An instance of this type of situation would be a nutritionist who is recognized nationally for his expertise and in which the broiler performance of his company is within the top 10 best companies in the U.S. Typically, new technologies would be extensively evaluated (sometimes for years) before being adopted. Additionally, in this situation, in which the competitive performance of this company’s operations are at all
time highs, there is a slower adoption of technology because there is a greater risk that competitive performance may decline with the adoption of a new technology.

Reduced competitive performance could be caused by two factors:

- The new technology does not work as well as the program that is currently in place.
- The adoption of the new technology requires too much management time.

The two external obstacles are government regulatory and consumer preference. There are many government-regulatory obstacles to technology adoption. An example of a government regulatory obstacle would be the use of a phosphate rinse in the processing plant. The use of a phosphate rinse on poultry greatly reduces the bacterial count on the poultry, but the use of this rinse causes the phosphorus content of the water to increase beyond the allowable discharge limits of many plants. Thus, the technology cannot be adopted until further waste water treatment modifications are made or until government regulations are changed.

Consumer preferences are also an obstacle to adopting new technology. An example is the use of genetically modified organisms (GMO) and, specifically, the use of GMO-derived corn and soybean meal. The concerns over GMO-modified grain and soybeans in the press have caused poultry buyers to question whether the poultry has been fed feeds containing GMO-derived corn or soybeans. This concern has caused a slower adaptation of GMO corn and soybeans by the agricultural industry.

**CONCLUSION**

Rapid growth in the Indian poultry industry is being driven by a combination of rising incomes, a young and urbanizing population, and declining real poultry prices. The expanding role and influence of poultry integrators, primarily in southern and western India, have been key factors in both boosting production and reducing prices. The integrators appear to have helped increase production efficiency and significantly reduce marketing margins and consumer prices. The pace at which integrated poultry operation spread in the West, East, and North will be a key to the future expansion of India’s poultry industry. The pace of transition from a live-bird market to a chilled/frozen product market will likely be a factor in the future expansion of poultry sector integration. At present, live-bird sales dominate the market, limiting the scope for exploiting regional comparative advantages in production within the country, and for using storage, domestic movements, and international trade to stabilize supplies and prices. A shift away from live-bird sales to mechanical and more hygienic processing may also have public health benefits, although there is little evidence that current practices create health problems.
Available data on production costs and prices in India and other countries suggest that India is an internationally competitive producer of poultry meat. Producer prices of whole birds in India, while higher than in Brazil, compare favorably with those in the United States and in other Asian countries. In this regard, Indian producers have generally benefited from improved poultry management practices and, particularly, ready local supplies of corn and soybean meal at internationally competitive prices. If recent trends in poultry and egg production are sustained, growth in feed demand, primarily corn and soybean meal, is likely to outpace gains in domestic production. For corn, variable domestic production, expanding feed use, and tariff and quota restrictions on corn imports could combine to constrain growth in both the poultry and egg industries, raise consumer prices, and slow consumption. For soybean meal, the Indian poultry and egg industries benefit from local surpluses and ready availability, but rising internal demand is likely to erode exports. The expansion of the poultry industry opens a new set of policy issues to be addressed by the government, ranging from public health issues, to tradeoffs between poultry producers, feed producers, and consumers, to appropriate tariff and nontariff policies for imports of poultry and industry inputs. Although the traditional policy priority has been to promote self-reliance, it is unclear how future policy will weigh the competing interests of, among others, poultry and egg producers, consumers, and feed producers.

At present, analysis of developments in India’s poultry sector is made difficult by the poor availability of reliable and timely official data on such variables as production, consumption, feed use, and production and marketing costs. If the Indian poultry industry is expanding as rapidly as industry sources indicate, poultry will quickly become an important component of both farm income and urban and middle-class diets. The consequent expansion of demand for poultry inputs, particularly feeds, may soon pressure local supplies, providing opportunities for production or trade in these products. The implications of this growth are likely to create demand for better data and information to support public and private sector decision making. The analysis in this study suggests that the process of poultry sector integration yields substantial potential benefits for the sector and, particularly, consumers of poultry meat. However, when shortages of feed emerge, there are likely to be significant adverse effects on producers and consumers of poultry meat and, particularly, eggs. Although domestic corn producers may gain from higher prices associated with import restrictions, these gains must be weighed against losses to producers and consumers of poultry meat and eggs, as well as to the potential international competitiveness of Indian poultry production. Development and adoption of technology or competitive domestic feed production would allow all producers and consumers to benefit from poultry sector expansion.

Expansion of the poultry industry in India creates potential trade and investment opportunities for U.S. agriculture. Although the potential for poultry meat imports appears limited, growth in demand for corn and soybean meal will likely outstrip gains in local production, creating demand for corn imports and reduced exports of soybean
meal. Corn import policy and productivity gains in these crops will help determine the size of the trade impacts. Although foreign direct investment has not been significant so far, India’s fast-growing, competitive, and potentially large industry offers investment opportunities in such activities as breeding, medicines, feed, and equipment, as well as integration and processing. Foreign investment in these activities is permitted but is constrained by market and policy uncertainty and poor infrastructure. Developments in the Indian market carry potentially useful lessons for understanding the emergence of poultry markets in other developing countries. Income growth and indigenous meat demand preferences are obviously key elements in gauging potential. But cost reducing integration of production and marketing activities can also be important in spurring demand and output. Finally, availability of corn and soybean meal at competitive prices, either through local production or imports, is a key to growth and competitiveness.