POULTRY INDUSTRY - BROILER MEAT AND TABLE EGG

Analyst Contact

Anjan Ghosh
aghosh@icraindia.com
+91-22-3047 0006

Subrata Ray
subrata@icraindia.com
+91-22-3047 0027

Ravi Kabra
ravi.kabra@icraindia.com
+91-20-2556 0195/96

Relationship Contact

L. Shivakumar
shivakumar@icraindia.com
+91-22-3047 0005

Overview

- The domestic poultry market size is estimated at more than Rs. 47,000 crore and the growth trend is likely to continue for the present decade as demand has been growing steadily on back of favourable socio economic factors like healthy GDP growth, rising purchasing power, changing food habits, and increasing urbanization.
- The poultry sector in India has undergone major shift in structure and operation during last two decades transforming from a mere backyard activity into a major commercial activity with presence of large integrated players with successful implementation of contract poultry farming on a large scale. This transformation involved sizeable investments in breeding, hatching, rearing and processing activities.
- Farmers in India have moved from rearing country birds in the past to rearing hybrids such as is Hyaline, Shaver, Babcock, Ross, etc which ensure faster growth of chicks, low mortality rates, excellent feed conversion and sustainable profits to the poultry farmers. The industry has been supported by indigenous advancements in genetic capabilities, veterinary health, poultry feed, poultry equipment, and poultry processing sectors. India also leads in producing specialized products like Specific Pathogen Free (SPF) eggs in Asia, which act as key inputs for manufacturing poultry vaccines and health products.
- Indian poultry sector has been growing at around 8-10% annually over the last decade and at more than 15% in last three years. The production capacity has responded with increased integration and increased penetration of contract poultry farming.
- ICRA's assessment based on industry feedback indicates that the domestic broiler meat demand is expected to grow at around 15-18% while table egg demand is expected to grow at 5-7% over medium to long term.
- Key challenges faced by industry include high feed costs combined with supply shortage of corn, inadequate cold chain and transportation infrastructure, high vulnerability to disease outbreaks and highly volatile realizations affecting cash flows. The realisation pressures stem from the low entry barriers, which leads to oversupply situation. Further the marginal penetration of processed chicken (less than 5%) in overall poultry market limits the value-add potential and adds to the volatility of cash flows for the key players in the industry.
- There have been concerted efforts in recent years from large integrators as well as Government bodies to promote increased processing of poultry products (in form of frozen/chilled chicken) and at the same time increasing acceptability of dressed chicken in domestic market. The processed chicken market is expected to grow at a much stronger pace of more than 25% albeit on a low base. Transition from a predominantly live bird/wet market to a chilled/frozen market is crucial for the future expansion of domestic poultry industry as well as to increase presence in international trade.

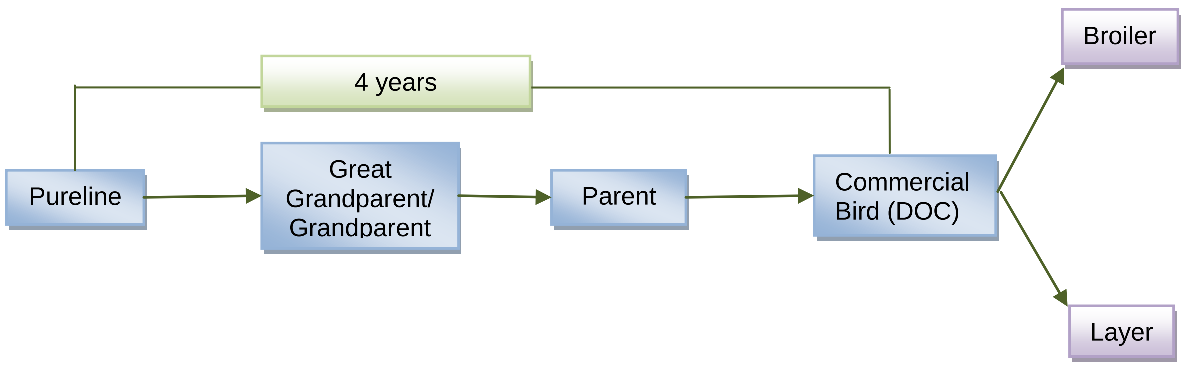
Website
www.icra.in

Domestic poultry industry has matured from a backyard activity to large scale integrated poultry farming with wide spread adoption of modern technology

Though poultry farming is an age old business in India, modern poultry breeding started in 1970s and large scale integrators have become prominent in last decade. The modern poultry farm methods are based on total separation between chicken bred for meat production (broilers) and those bred for table egg production (layers). This is to take advantage of negative genetic correlation in chicken between growth and reproductive traits. For broilers, males are selected for growth and carcass quality while in females emphasis is on egg production and hatchability. For layers, males are bred for high egg weight while females are bred for high rate of egg production. The commercial poultry farming is based on hybrids that are produced on a selection and multiplication pyramid by crossing male and females of selected breeds which combine desired traits in final commercial bird.

The DOC (day old chick) is the final product of cross breeding done starting from Purelines. Pureline are crossed to get Great Grandparent (GGPs) and then Grandparents (GPs). GPs are further crossed to get parents and the offspring of parents are sold as DOC. The properties of chicken in terms of weight and other attributes depends largely upon the attributes what the Purelines posses and thus, becomes the critical criteria for poultry business. A complete cycle from crossing a Pureline to the last product DOC takes around four years, with different Pureline being used for broiler and layer. A broiler DOC takes six weeks to grow into live bird with average body weight of 1.8-2.0 kg with timeline and body weight varying based on feed quality, weather conditions and general farm management for a given Pureline. A layer DOC takes 18-20 weeks before its starts laying eggs and egg production usually happens till 72nd week of layer's life with an average production of 300-320 eggs (250-260 table eggs and rest hatching eggs) during its lifetime.

Figure 1 : Poultry Lifecycle



Domestic poultry industry has few large scale integrated players like Venkateshwara Hatcheries (VH) group, Suguna Poultry Product Limited, Godrej Agrovet Limited, Charoen Pokphand (India) Private Limited, Arambagh Hatcheries Limited, etc having their own GP and parent breeding farms, hatcheries, feed mills, in house veterinary services, and marketing set up. The key players have also moved into vertical integration by setting up retail chains, processing, branding and aggressively marketing their products under frozen/chilled and ready to cook categories. While these large players have their own parent breeding farms, DOC breeding is usually done through contract farming model which is spread across country with farm sizes typically ranging in 2,000-10,000 of DOCs though there are few larger farms also. The strong growth in Indian poultry industry is attributed to the successful implementation of large scale contract poultry farming model. In this model, integrators provide farmers with DOCs, feed, medicines, necessary training and standard growing fee while farmer needs to provide farm space, labour and power. The growing fee usually have a minimum guaranteed fee plus bonus based on weight gain with typical per kg growing fee in the range of Rs. 3.5 per kg. Poultry farming provides a healthy source of alternative income for large rural population of the country and has been growing strongly across the country especially in Southern India, and in states of Maharashtra, Haryana and Punjab.

India primarily imports its grandparent stock, as Pureline breeding is an expensive affair with sizeable R&D involved. Further global Pureline breeders usually won't supply their Pureline stock and most of domestic poultry players start from grandparent breeding. VH group is the only domestic entity to have Pureline breeding. The group started with an imported Pureline breed in 1970s (Vencobb for broiler and BV 300 for layer) and has invested significantly over the years to make it suitable for Indian weather conditions. Other major Purelines used in India are ‘ROSS’, ‘Shaver’, ‘Lohmann’, etc with domestic breeders importing GP stock of these Purelines.

Overall domestic poultry market size is estimated at ~Rs. 47,000 crore with broiler meat and table eggs contributing more than ~95% of the market. Broiler meat market is estimated at ~Rs. 30,000 crore while table egg market size is ~Rs. 15,000 crore with products like animal health care, egg powder, SPF (Specific Pathogen free) eggs and other poultry birds forming rest of the market. Globally India ranks fourth in broiler meat production with annual production of ~2.9 million metric tons (MMT) of broiler meat. USA and China leads with annual production of 24.0 MMT and 12.3 MMT respectively. Indian is ranked third in table egg production after USA and China with annual production of 57 billion eggs.

Economies of an individual poultry farm are driven by feed conversion ratio and mortality rates; size of operations, geographic diversity of revenues and extent of integration are other key factors for an integrated player

Key performance metrics for a poultry farm include –

- ✓ feed conversion ratio (FCR), i.e., amount of feed consumed to gain per unit weight
- ✓ time taken to attain desired weight (for broiler)
- ✓ rate of laying eggs (for a layer)
- ✓ Mortality rate and disease resistance

Feed costs (maize and soya) forms more than ~60% of raw material costs for a poultry farm. The FCR and other performance metric depend on inherent traits of Purelines and kind of feed mix used. Existing FCR in domestic industry is around 1.8-2.0 (i.e. every 2 kg of feed consumed results in 1 kg weight gain) though companies strive to reduce the same through advances in veterinary science and improved feed mix. Another important aspect is to increase resistance against various diseases like bird flu (avian influenza) to reduce mortality rates. Typical mortality rates in Indian farms are 8-10% while developed countries have less than 5% mortality rates providing potential for further improvement in domestic industry.

For corporates engaged in poultry industry, size of operations and geographic diversity helps in gaining economies of scale and protecting against seasonal variations in consumption across geographies. The geographic spread of operations also helps in protecting against local outbreak of diseases like bird flu. The growing trend is towards increasing value addition in form of processed chicken which can be marketed as frozen/ chilled product or can be further processed to cater to ready to cook/convenience food market. The processed chicken industry though in its nascent stage provides tremendous growth potential with healthy margins.

Large variations exist within domestic market in terms of production and consumption pattern with Southern India being the leading producer; further considerable seasonal variation exist within each geography; resulting volatility in prices has sizeable impact on profitability for the industry

Though no authentic numbers are available, 20-25% of Indian population is estimated to be vegetarian. For non vegetarians meat option varies between fish (and other sea foods), mutton, poultry, pork and beef with fish, mutton and poultry being the preferred options due to religious connotations associated with pork and beef consumption though they are relatively cheaper alternatives. On the back of considerable advances in poultry farming as compared to cattle farming, availability and affordability of poultry meat has increased over the years. Production and consumption of poultry (broiler meat and egg) has increased throughout the country, though Southern and Western India are the major beneficiaries of commercial poultry farming developments.

There are large variations in production and consumption of poultry meat and egg in India across various states. The consumption is affected by various factors including taste preferences, religious practices, per capital income, urbanization, etc. Higher urbanization and relatively stronger presence of organized players has supported rapid gains in commercialization of poultry farming in South and West region. South India produces more than ~45% of total domestic poultry output led by state of Andhra Pradesh, while another 20% comes from Western region. Tamil Nadu leads in terms of poultry consumption closely followed by other southern states. The egg consumption in these states are also benefitted from inclusion of eggs in various Mid Day meal programmes.

There is considerable seasonality associated with poultry consumption for each geographic region based on religious beliefs, weather conditions and festivities. For example, Hindu month of 'Shravan' (July-August) results in considerable decline in consumption especially in Maharashtra and certain parts of Northern India. Similarly, Tamil month of 'Puratassi' in Sep-Oct and 'Sabarimala Pilgrimage' in Dec-Jan results in decline in meat consumption in Tamil Nadu and 'Lent[1]' season results in decline in consumption in Kerala in months of March-April. On the other hand, consumption increases during festive period of October-December (combined with winter season) and during marriage season in various parts of the country. Generally, meat production and consumption is lower in summer season than in winter.

Wide geographic and seasonal variations combined with poor cold storage infrastructure limiting transportation and storage results in wide fluctuations in prices of various poultry products across geographies at a given time and during a year for given geography.

Chart 1: DOC Broiler Price Trend (Rs. / Chick)

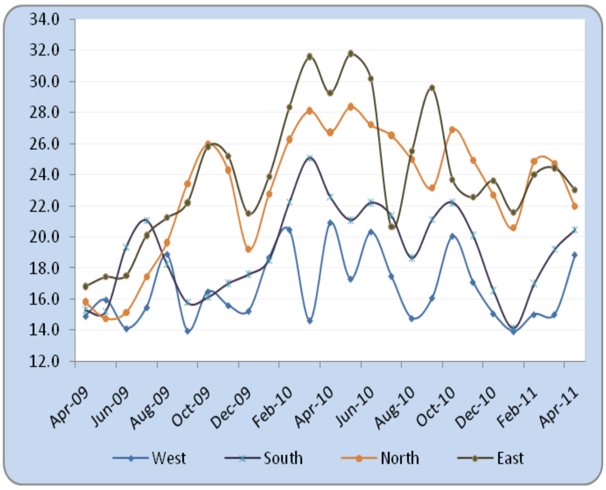


Chart 2: DOC Layer Price Trend (Rs. / Chick)

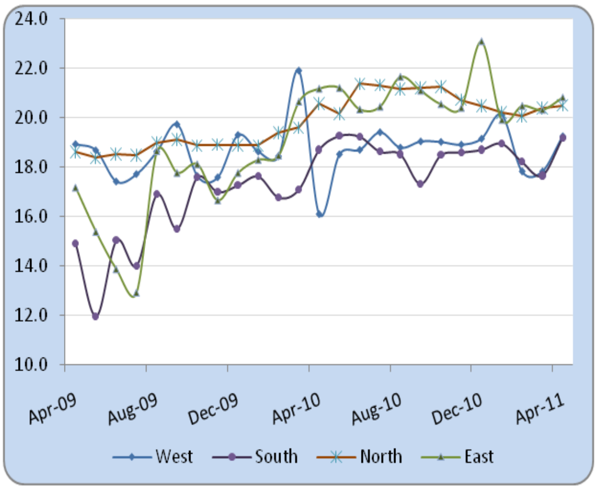
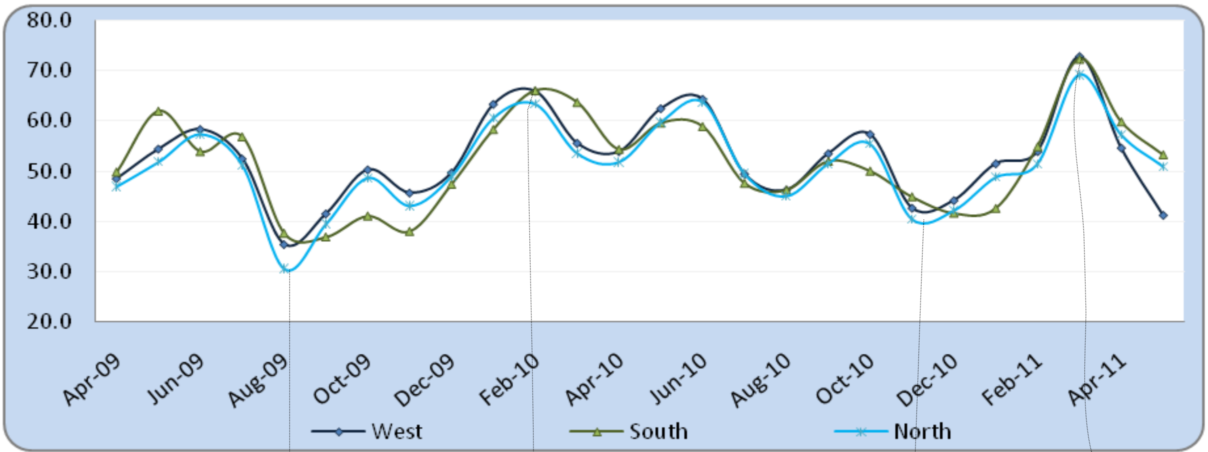


Chart 3: Broiler Price Trend (Rs. / kg) – Representative Wholesale Prices in three major zones



Source: Industry Estimates

Sharp decline due to 'shravan' and 'bird flu' scare in Eastern India

Demand recovery from 'bird flu' scare was much sharper than supply

Seasonal correction of 'navratri' and 'puratassi' combined with low feed prices

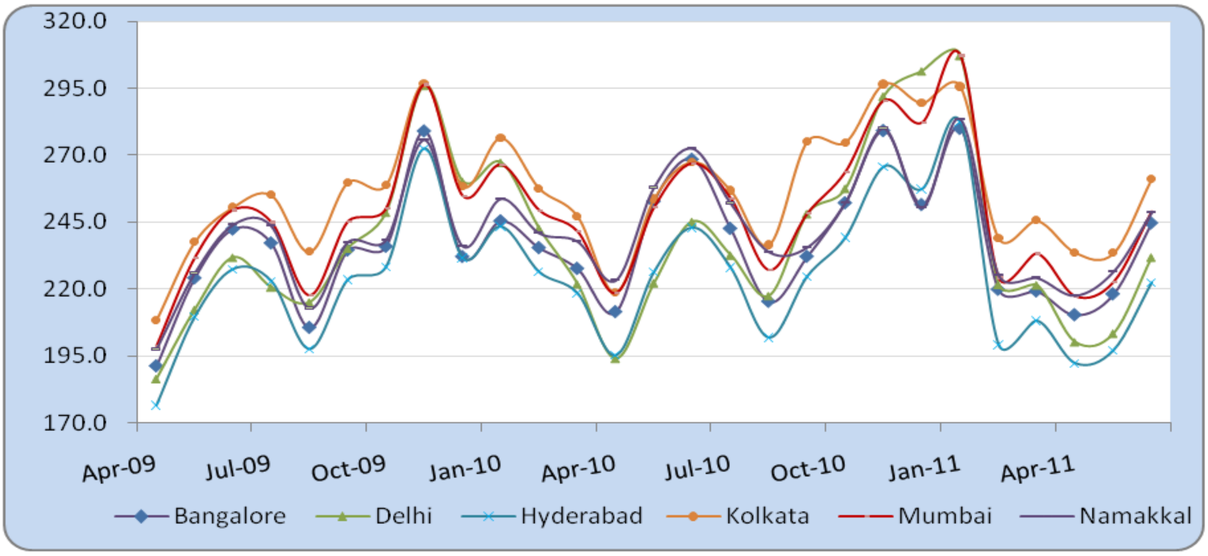
High feed prices combined with strong demand off take

[1] Forty day austere period observed in certain sects of Christianity before Easter

There is considerable seasonality on back of above mentioned factors and same is seen in price trend represented in Chart 3. Further factors like outbreak of 'bird flu' in certain regions also affects prices though same has been marginal in last two years. The broiler prices have strengthened considerably in Feb-Mar'11 to reach peak prices of Rs. 70-72/kg at wholesale level on back of high feed prices though have moderated since then with the onset of summer season.

The Broiler Coordination Committee (BCC) at Palladam, Coimbatore sets the broiler price for different regions and the price moves daily. The BCC rate is considered the benchmark rate for Broiler prices in India. For table eggs, NECC (National Egg Co-ordination committee) publishes daily prices for each of the major production and consumption centres. Table egg prices also follow seasonal pattern along with sizeable variation in prices across geographies as depicted in chart below:

Chart 4: Table Egg Price Trend (Rs. / 100 eggs)



Source: NECC

Table egg prices are usually high during cold wave duration in Northern India (Nov-Jan) as the consumption peaks during this time. The prices usually come down with the onset of summer season with prices usually bottoming out in April and then again getting affected by lower consumption in 'shravan' months of July-August. 'Bird Flu' outbreaks has relatively lesser impact on egg prices though ban on poultry imports from India by Middle East and SAARC countries in past has affected realizations. Feed price volatility affects egg prices in long term only though profitability of hatcheries is strongly affected by any unfavourable movement in feed prices.

Poultry feed prices has been on uptrend on back of high maize prices; Continued strong demand from poultry sector combined with limited supply expected to keep prices on uptrend

Feed costs form more than 60% of costs for a poultry farm with maize and soybean meal being the key feed ingredient. Adequate feed availability and feed prices are very crucial in sustainable operations of a poultry farm. The feed industry is evolving from being a fragmented sector to an organized one with integrated poultry players having their own feed mills though still sizeable production happens in home mixers and unorganized sector.

Maize is the primary source of energy for the Indian poultry industry and constitutes 60% of compound feed, while soybean is the main source of protein and forms 30-35% of the feed. Maize has remained a relatively small crop in the country, which has led to supply shortages. Maize is primarily rain-fed and competes with crops such as wheat and paddy which has assured prices from the Government. Hence any monsoon failure is a threat for the crop as was evident in drought year 2009-10, when maize production fell by 12-15% although it recovered in crop year 2010-11 with an estimated production of 19 million tones. Still maize prices are expected to remain high on back of strong demand from poultry and starch sector and limited supply available. Poultry sector consumes 52% of domestic maize production and demand from poultry sector is expected to outstrip supplies in near future. India needs to double its maize production in next ten years to meet the growing domestic demand from the feed industry. In case of soymeal, India manufactures exportable surplus and hence adequate availability of soymeal is there though prices remain volatile on back of fluctuation in international prices and domestic production.

Chart 5: Maize Price Trend (Rs. / quintal)

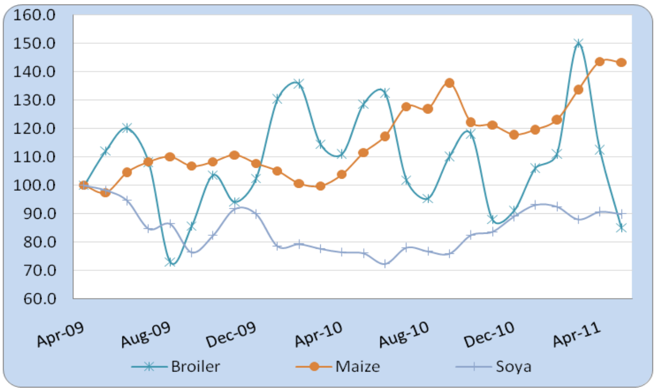
Chart 6: Soybean Price Trend (Rs. / quintal)

Source: NCDEX

The maize prices have largely been on an uptrend on back of limited production and increasing demand from poultry and starch sector. With no major forward booking done by poultry industry players, the profitability remains exposed to volatility in feed prices and is largely determined by relative price movement in broiler realization and feed prices.

As indicated in Chart-7, price variations in broiler prices and feed prices are not in sync and poultry players are usually not able to fully pass on rise in feed prices. Further with a production cycle of 6-7 weeks for broiler DOC, rise in broiler prices comes with a lag effect. A broiler farm is typically more sensitive to short term fluctuations in feed price movement compared to layer farm where production cycle is much longer. Relative variations in realization and feed costs have a strong impact on the profitability and cash flows of commercial poultry farms.

Chart 7: Relative Price Movement of Broiler, Maize and Soya



Source: ICRA Research[2]

Processed chicken industry though in nascent stage expected to provide strong growth momentum on back of favourable socio-economic factors

Poultry meat is primarily sold through fresh markets in India and consumers prefer to buy live poultry and get it dressed in their presence. The average poultry purchased is fresh chicken meat, mostly slaughtered in small establishments with wet markets accounting for nearly 95% of sales. This is due to the fact that consumers believe such meat are healthy and germ free. A lot of effort is required to change that attitude and consumer confidence has to be gained that dressed poultry is hygienic, healthy and from disease-free birds. Further low penetration of modern retail establishments with back end infrastructure for freezing has limited the growth of this market.

There is a growing market for dressed or processed chicken with increasing proportion of working women, changing lifestyles and food habits. Also with increasing penetration of modern retail and Quick Service

[2] Assuming April 2009 prices as base prices for Maize, Soya and Broiler meat

Restaurants (QSRs), sales of dressed chicken are expected to gain momentum. Processed chicken can be in two forms either as raw/deboned chicken sold in chilled/frozen form or it can be processed further to make ready to eat convenience food in form of nuggets/patties, etc. The market for processed chicken can be segmented into retail segment, QSRs and institutional clients in form of hospitality chains. As of now, QSRs and institutional clients contribute major proportion of sales with retail segment limited to wet market. Two major players in processed segment are VH group and Godrej Tyson Foods (previously part of Godrej Agrovet) who sell under brand name 'Venkys' and 'Real Good chicken, Yummies' respectively. Further players like Suguna, Aarambaug, Amrit group also have regional presence in processed chicken category. The value addition potential is strong in processed chicken industry with demand expected to shift from whole chicken to boneless chicken meat, portions and easy to cook/ready to eat products.

The market is still in its nascent stage though with favourable socio economic factors, expected to grow strongly at more than 20% in medium to long term. There is increasing investment in processing plants and a growing offering of value-added ready-to-eat snacks. Government has provided incentives like benefits under EPCG scheme for processed chicken machinery and priority sector status to backend cold chain equipment manufacturers which provides added impetus to investments in this sector. Also processed chicken can also cater to large export market especially in Middle East segment where Brazil and China are the key players. The National Meat and Poultry Processing Board (NMPPB) set up by the Government of India in February, 2009 with the objectives of streamlining the meat and poultry processing industry is expected to give much required fillip to the processed chicken industry. The NMPPB plans to modernize abattoirs within five years by standardizing size, technologies, equipments and benchmarking and establishing a consultancy division.

India has marginal presence in poultry exports market though Middle East and Africa provides strong potential

India's poultry export is marginal with current exports estimated at less than Rs. 500 crore annually. India's poultry exports are dominated by table eggs, mainly to the Middle East and Africa, with minimal sales of processed items. Intermittent outbreaks of bird flu in pockets of India since 2006 have hampered exports. Further with domestic demand outstripping supplies, manufacturers were not required to look for export segment. Outbreak of 'bird flu' in one corner of the country affects export of poultry from whole of India, as India is considered as one zone for disease out breaks. Bird flu cases occur frequently after a gap of six to eight months and the industry has been urging the government to mark out bird flu-prone areas to avoid any bans on poultry products in case of an isolated outbreak.

With India becoming one of the largest poultry producers and increasing investments in processed chicken manufacturing along with focus on improving cold chain infrastructure, Middle East, Africa and SAARC nations provide strong export potential. Further value added items like egg powder and SPF eggs are already well accepted in European markets though production for these items remains limited. The poultry sector is expected to remain focussed on domestic market.

Outlook

The annual per capita poultry meat consumption in India though increasing from 0.7 kg in 2001 to 2.5 kg in 2010 remains one of the lowest globally with vast gap even between NIN (National Institute of Nutrition) recommended levels of 180 eggs and 11 kg of poultry meat per person. This offers a tremendous opportunity for further integration and growth in industry. The domestic broiler meat demand is expected to grow at around 15-18%, while table egg demand is expected to grow at 5-7% in medium to long term.

In the past, chicken was considered to be a delicacy but with the strong gains in poultry production over the years, poultry prices are now lower than other meat prices and consumption among middle-class consumers is expanding rapidly. With increasing urbanization and higher levels of disposable income, poultry meat is increasingly seen as less of a luxury product and more as a daily staple. Further with changing food habits and increasing exposure to global cuisines, population is increasingly converting to a non-vegetarian diet. Poultry meat is preferred over other meat products as it is considered more hygienic and is available year around throughout the country at relatively lesser prices than fish/mutton. All these factors have led to strong growth in broiler meat and table egg consumption in past few years and the growth trend is expected to continue going forward. Even stronger growth, albeit on a small base, is expected from processed chicken segment and other value added items like fortified eggs, egg powder, etc.

Modern poultry production has remained largely limited to Southern India and Western Maharashtra though States like Haryana, Punjab and some parts of West Bengal have seen increased adoption of poultry farming as alternative source of income for largely agrarian economy. Further with industry moving from fragmented structure to large scale integrators, contract poultry farming is expected to grow strongly across India. This is expected to provide further production efficiency and scale to the industry though bigger impediment to the growth and profitability in poultry sector is marketing efficiency. The profitability for the key players in the industry has been healthy during last two fiscals and is expected to remain comfortable over short to medium term though increasing feed prices are putting some pressure on margins. Developing efficient distribution system with large investments required in cold chain infrastructure and increasing market acceptability of frozen chicken are going to be the key industry drivers in long term. Integrated players having presence in value added segments like processed chicken, fortified eggs, etc are expected to grow strongly in long term.

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ICRA Limited

An Associate of Moody's Investors Service

CORPORATE OFFICE
Building No. 8, 2nd Floor, Tower A; DLF Cyber City, Phase II; Gurgaon 122 002
Tel: +91 124 4545300; Fax: +91 124 4545350
Email: info@icraindia.com, Website: www.icraratings.com, www.icra.in

REGISTERED OFFICE
1105, Kailash Building, 11th Floor; 26 Kasturba Gandhi Marg; New Delhi 110001
Tel: +91 11 23357940-50; Fax: +91 11 23357014

Branches: **Mumbai**: Tel.: + (91 22) 24331046/53/62/74/86/87, Fax: + (91 22) 2433 1390 **Chennai**: Tel + (91 44) 2434 0043/9659/8080, 2433 0724/ 3293/3294, Fax + (91 44) 2434 3663 **Kolkata**: Tel + (91 33) 2287 8839 /2287 6617/ 2283 1411/ 2280 0008, Fax + (91 33) 2287 0728 **Bangalore**: Tel + (91 80) 2559 7401/4049 Fax + (91 80) 559 4065 **Ahmedabad**: Tel + (91 79) 2658 4924/5049/2008, Fax + (91 79) 2658 4924 **Hyderabad**: Tel +(91 40) 2373 5061/7251, Fax + (91 40) 2373 5152 **Pune**: Tel + (91 20) 2552 0194/95/96, Fax + (91 20) 553 9231