

An analysis on the growth path of the ‘Egg Industry’ in India. Its impact on various macroeconomic indicators of the economy with special emphasis on reduction in children’s malnutrition and unemployment, as well as its impact on increasing export revenues

Isshaan Goel

Shiv Nadar School, Noida

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ABSTRACT

The egg industry has showed tremendous growth potential. It has its production in both the organized, the unorganized as well as the cooperative sector. The big companies in India have resorted to contract farming that not only helps in increasing income levels of the rural sector, but also provides them with productive employment opportunities. The increase in demand both domestic and external has led to a phenomenal increase of the industry. The government has helped this sector by providing finances, marketing avenues as well as aiding in the control of various widespread diseases to help this industry reach its full potential.

Keywords: Poultry Framing, Avian Influenza, Linkage Effect, Nutritional Value, Egg Powder, Intangible cost

Research Question: Is the ‘Egg Industry’ a labour intensive one? How far would the promotion of this industry help in achieving macroeconomic indicators of the economy? What is the role of this industry in achieving high levels of health indicators? How important is the impact of this industry on the reduction of children’s malnutrition? What is the extent of export earnings that this industry has and can achieve? Does this industry come under the micro and small industry segment? What are the benefits that are and can be provided for the growth of this sector?

1. Introduction

The Indian poultry industry and especially the egg processing industry originated in 1996 with the establishment of the first processing plant at Hyderabad. Since then, a number of egg processing plants have mushroomed. The total investment in these projects is close to ₹150

crores with a capacity of producing more than 15000 tonnes of egg powder annually. These plants are constructed with the EU and the USDA standards.

This industry is growing as the GDP of the economy increases. An increase in income leads to a change in food habits resulting in the realization about the importance of proteins in one's diet. Eggs have proven to be the most wholesome protein provider in a diet more so for children and young adults. This is promoted by both the central and state governments as the realization of the importance of proteins has been articulated.

The credit for the poultry as a business in an organized sector goes to Mr. B.V. Rao he founded Venkateshwara Hatcheries Pvt Ltd. Who is also known as the father of the Indian poultry industry.

India, in recent years has made considerable progress in egg production, with the introduction of high-quality chicks, equipment, vaccines and medicines. Technically and professionally competent guidance and advice is available to the farmers. Over the years management practices have improved, leading to a reduction in the incidents of disease and mortality. This has led to a huge increase in egg production of 6.83% (1992-1997) and since then it has been growing at 7.4% per annum (department of scientific and industrial research).

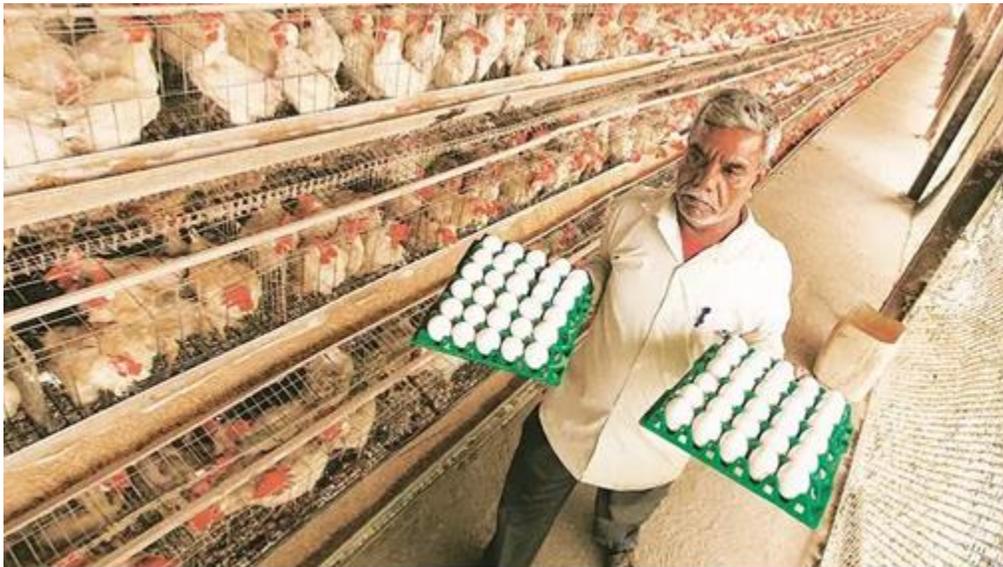
Poultry farming is defined as a term for rearing and keeping of birds such as fowl, duck and hen for eggs and meat. The popularity of this occupation is because it is comparatively easy to start, maintain, and does not require a skilled workforce. It is a natural progression in the rural domain. It gives a quick return within one to six months of investment, is easily manageable and requires less space and labour. The growth In this industry has taken place in spite of the high risk involved in terms of high price fluctuation in both poultry inputs and ingredients, disease exposure and rumor that spreads among the public with respect to the birds being inflicted by debilitating diseases like Avian Influenza, Fowl pox, Chicken Anaemia to name a few.

India being an agrarian economy, it is important that the population engaged in the agriculture sector finds employment within that sector. Poultry farming is a natural progression that can be easily understood and adopted by the rural workforce in the agrarian sector.

Besides just the provision of eggs, this industry has a number of linkage effects in the form of employment and income which spans across poultry feed and other related industries like veterinary services as well as those who relate to logistics with respect to transportation and marketing, this leads to an increase in employment opportunities that add to achieving macro-economic goals of reduction in unemployment for the economy.

Besides of all of the above, this industry has a huge potential for exports thereby increasing the export earnings for the economy.

Figure 1: Image of egg production



Source: The Indian express

2. Impact of the egg industry on the export of revenues of a country

The world's poultry industry is expanding, primarily due to an increasing population and increasing incomes. An increase in per capita consumption leads to an impetuous to those countries that may not have been traditional poultry growers to develop their poultry industry.

There has been various crisis that have impacted developed countries with respect to diseases that have impacted the animals. Among these, the known ones are 'Salmonella' and 'Cholesterol'. Due to the outbreak of such diseases, millions of chickens had to be destroyed resulting in a huge loss for the poultry growers. Hong Kong and Taiwan poultry industry faced the above problems and the only way out was to destroy their chickens; Belgium poultry industry faced a different crisis due to the contamination of chicken feed.

Export of this product requires a high-quality standard. Very often to meet these strict standards, the profit margin of the poultry industry might have to decrease. Given the high investment that is undertaken for such industries, exporting at low profits becomes a necessity. To counter this, Governments safeguard their industry by imposing an import ban. This protects the small farmers who then sell in a protected domestic environment.

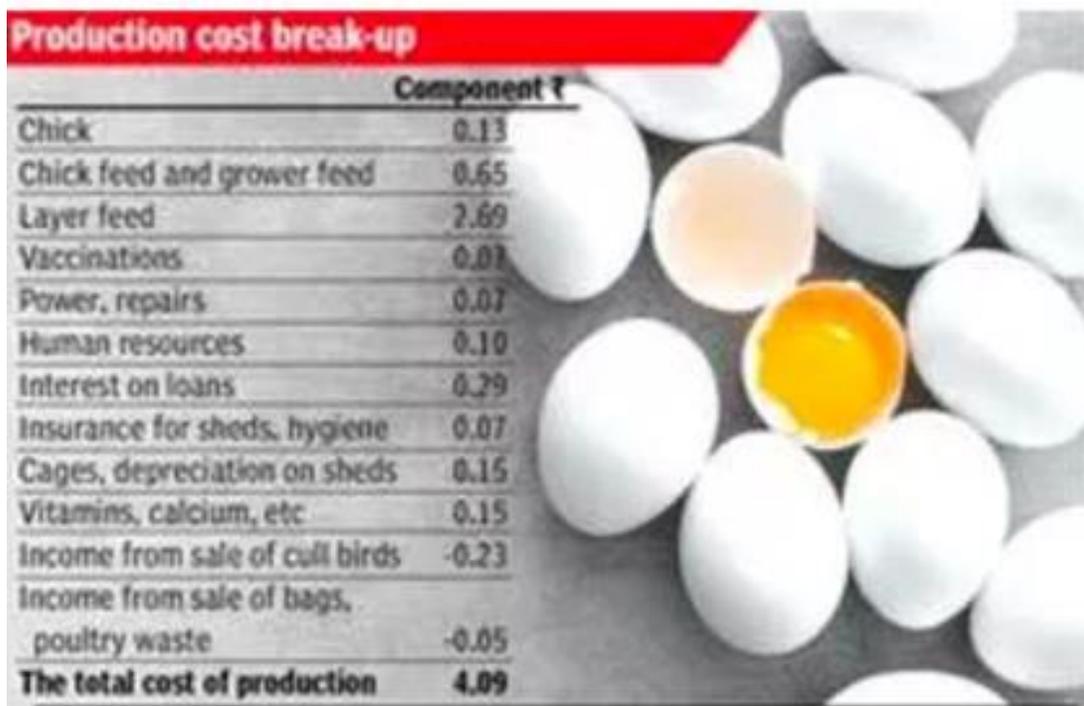
3. The Importance of an ‘Egg Export Industry’

The egg export industry is economically important for several countries due to the following factors:

1. Employment and Income
2. Nutritional value
3. Protein rich diet

The nutritional benefit of the egg in the form of proteins, vitamins and carotene helps in healthy eyes are extremely well documented and recognised. The egg at the nominal price at which it is sold, is the best source of nutrients. The problem arises in the production of eggs. In 2019, India was faced by a harsh reality by farmers who were producing eggs mainly from Tamil Nadu, Andhra Pradesh, Telangana, West Bengal and Haryana, that the cost of production or the farm gate price of an egg in 2019 was ₹4.09 while the retail prices ranged from ₹5 to ₹6. The breakup indicated that the highest component was the feed.

Figure 2 (breakup of production costs for egg manufacturers)



Source: k.v. kurmanath

There are also intangible costs such as the losses that occur due to the death of birds on the lower production by a bird.

The NECC (National egg coordination committee) which is the apex body for the coordination and production of eggs in India. It took cognizance of this fact and worked alongside the government in providing various schemes and incentives to the poultry farmers.

4. Export of different items related to the poultry industry

The main items of export are;

1. Poultry Meat:

India's poultry Industry has achieved major success. Agricultural production has been increasing at the rate of 2% per annum over the last 2-3 decades (2024), while poultry production has been increasing at 8% over the same time period (2024). In fact, poultry meat has outpaced its two major competitors, beef, veal, and buffalo meat.

2. Eggs:

Shell table eggs, eggs for hatching, egg products in liquid, frozen or dried forms. India is currently the world's 3rd largest egg producer. (2007)

3. Broiler Meat:

Indian production of broiler has increased many-fold both in southern and western India. India is the world's 8th largest broiler producer. (2007).

4. Manure:

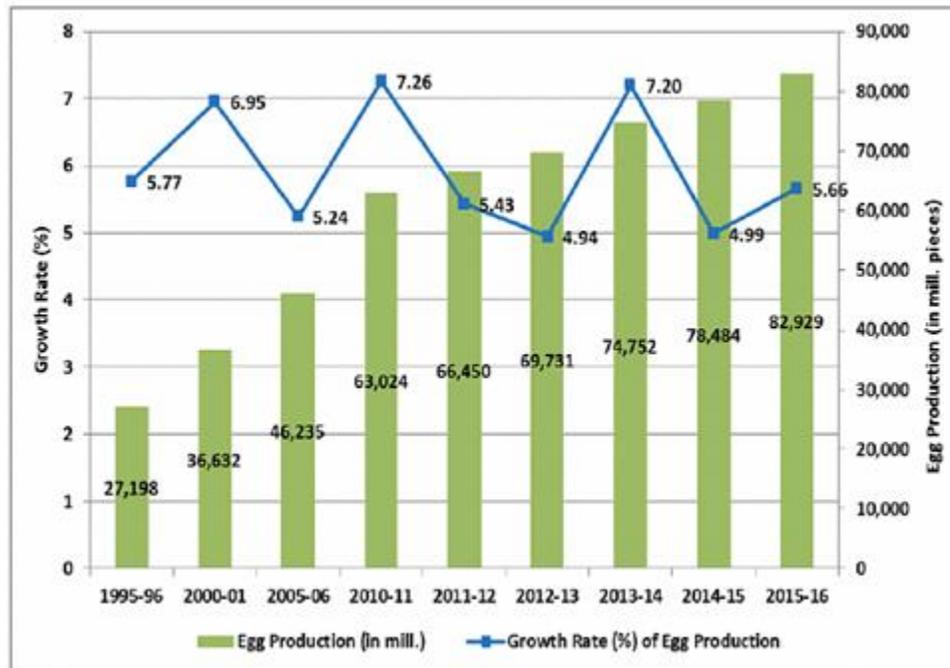
A bi-product of the poultry industry which can be used or sold by farmers on their crops.

5. Down and feathers

These products are used for insulation and filling in products like bedding, clothing and outdoor gear.

The reason for the increase in this sector, is the spread of integration, high per capita income growth, and relatively low prices for the above product, have played a catalytic role, there has also been a moderate shift in the consumption pattern, from vegetarianism to non-vegetarianism, that has helped increase the demand for the products of this industry.

Figure 3: Growth of the Poultry industry



Source: *zootenica international* 2007

High mutton prices, religious restrictions, on beef and pork and the scarcity of fish outside the coastal areas, have contributed to poultry meat becoming India's most preferred and consumed meat.

5. Reasons for the growth of India's poultry industry

Before the reform of 1991, the government had implemented the All-India Poultry Development Programme, which increased the number of commercial farms, and made poultry farming a leading component of the livestock sector. Imports of poultry products were banned or restricted by tariffs and quantitative restrictions to protect the domestic industry.

Since 2000-2001, this industry has experienced a significant shift in the scale of operations leading to the Red Revolution. There were many policy innovations that were adopted, like:

- Liberalisation of imports of grandparent poultry stock
- Vertical integration of poultry operations
- Contract farming model between large integrator and small farmers
- Increase in per capita income in rural areas especially after 2000 (Devi et al)

- Growth in urban population
- Falling Poultry prices
- Lowering of production and marketing costs

The above have transformed the poultry sector from a backyard activity into an organised commercial one. The integration of large and small farmers has economised the quantity of urea required as well as improved the nitrogen use efficiency of soil. Besides the farmers who are responsible for raising poultry birds such as chicken and duck for meat and egg production, another important stakeholder is the feed industry. It is the nutritious and balanced feed formulations, which have resulted in the healthy growth of poultry birds.

The egg production has primarily grown due to it taking advantage of economies of scale. This means that any investment in village production systems, are unlikely to be economically efficient. Which is why the small producers have to tie up or integrate with the large ones, so that they grow together. Rapid growth in egg production is basically from medium, and large-scale firms. Not only has production increased, but the movement of the product to the market, has also catapulted. This is basically due to low investment and requirement of small area to set up poultry shops. The above has further increased employment opportunities that are generated from this industry. It is the transition from the production of live birds to chilled and frozen products that have increased the production of poultry in the country. Along with technology it is the supplies of competitively priced corn and soybeans which are important feed for the chickens that have increased their production.

5.1 Main Countries that import from the Indian poultry sector are:

- Oman
- Maldives
- Qatar

One of the main forms of export of eggs is to reduce it to Egg Powder.

India is presently the fifth largest producer of egg primarily due to the growth in poultry and egg producing facilities. The major egg powder producing states are:

- Andhra Pradesh
- Tamil Nadu
- Telangana

- West Bengal
- Karnataka

Increasing export of Egg Powder from India

Table 1: Export of Egg Powder

Year	2021-22	2022-23	2023-24
Egg powder export from India	\$million12.58	\$25.27million	\$26.02million

Source: export import data from India.

Eggs are obtained from spray drying fresh eggs. The technique used is to dry liquid eggs quickly with the help of hot gasses. The final product is a fine dry powder. This technology helps in retaining a large portion of the nutritional content as well as the usefulness of a fresh egg. The main uses of egg powder are in :

- bread, cakes, cookies, and muffins
- casseroles, quiches, omelette, and scrambled eggs
- camping excursions,
- last-minute food emergencies
- Used in mayonnaise or sauces like Hollandaise
- Puddings ranging from custards to ice creams etc.

Egg Powder has a long shelf life that makes it a suitable export product.

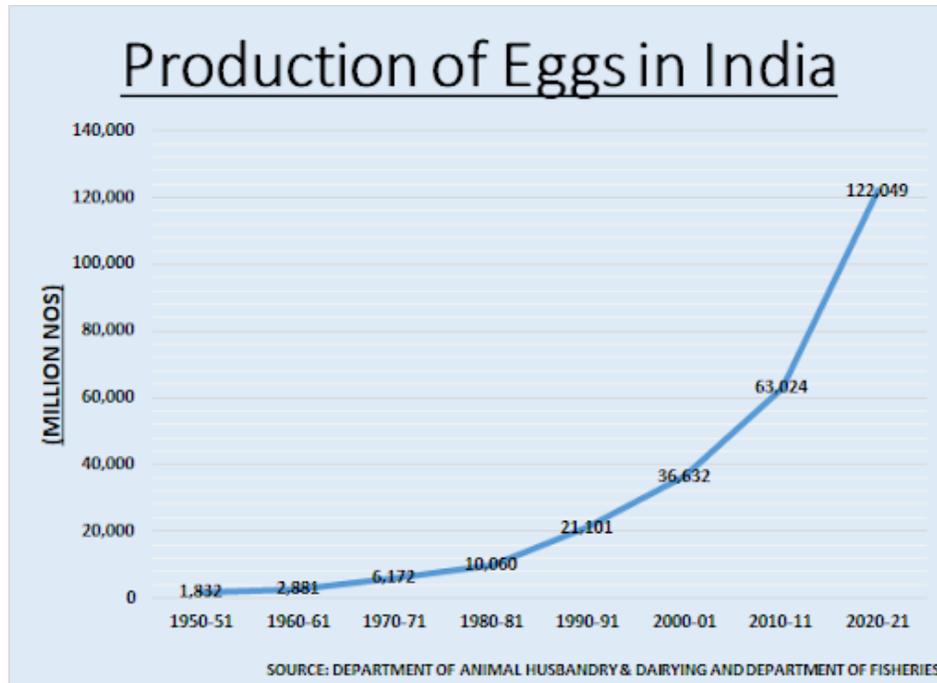
Reasons for India increasing its standing as a major exporter:

- Cost effective production technology
- Growing production Volume
- Strategic Export Destinations
- Strong Domestic Demand
- Improved egg quality
- Government support

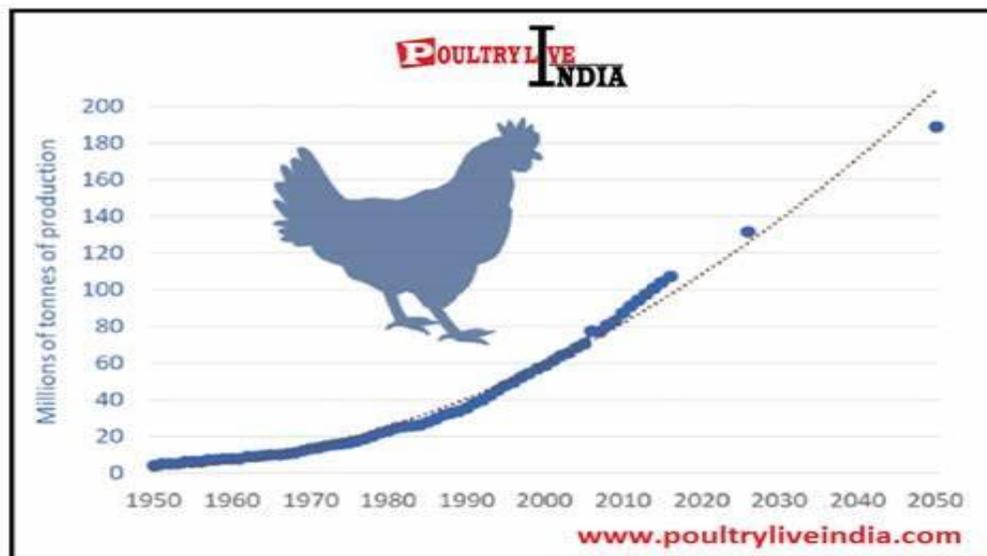
- Cost effective technology for processing Egg products.

6.2 Forecast of the Growth of Egg Production in India

Graph 1



Graph 2: Growth of poultry over time



7. Impact of the Egg Industry on Employment and GDP potential of the Economy

The poultry business in India provides employment to around 1.6 million people, in which 80% are directly employed and the balance 20% is engaged in allied areas like:

- Feed
- Pharmaceuticals
- Equipment, and other services.

The major states in India that are contributing to egg production are Andhra Pradesh, Haryana, Tamil Nadu, Punjab, Maharashtra, West Bengal. They account for over 60% of the eggs produced in the country. (2024)

Farmers are paid for rearing birds, based on agreed upon prices when integrators collect the broilers at roughly 42 or 45 days of age, they receive a bonus if the feed conversion ratio, or mortality rate is better than the contracted level. Farmers benefit from the guaranteed profits,

There are no middle men to contend with, as there is only the integrator, farmer, and wholesaler more than 85% of total egg production, and 60% of broiler production are from improved poultry birds.

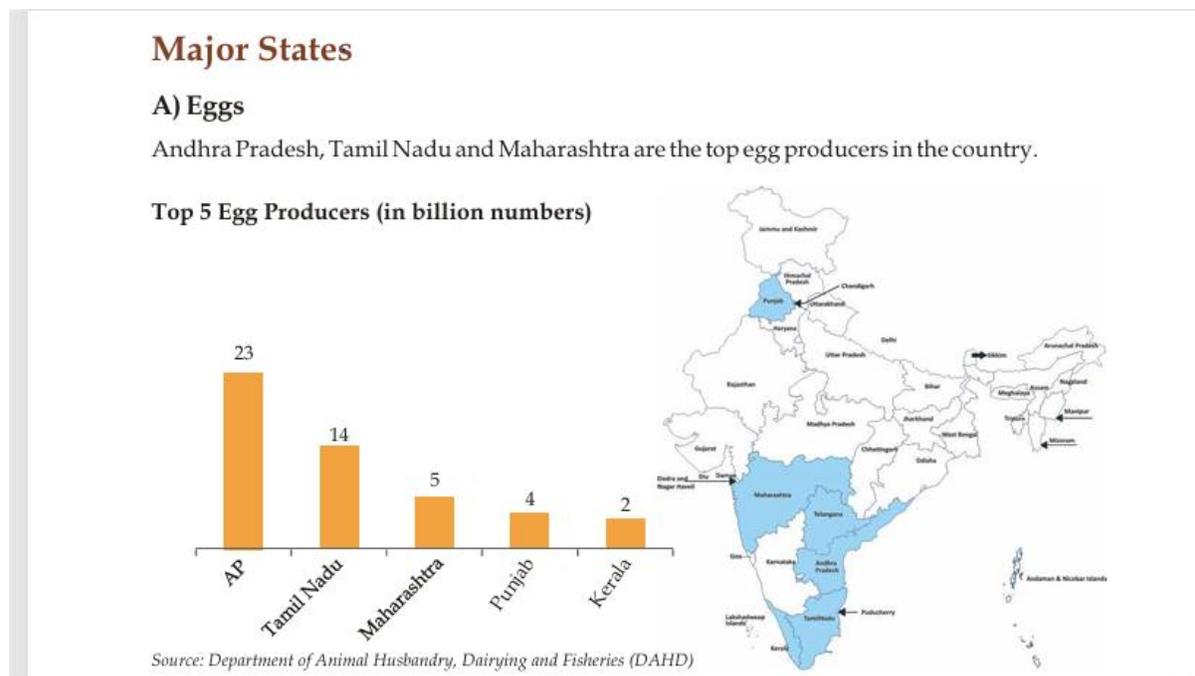
The egg industry has grown phenomenally and has transformed from backyard production to sophisticated dynamic agri-based industry. A large number of breakthroughs in technology have led to the growth of this industry.

The commercial activity is primarily in the urban and semi- urban areas of the country. The growth in this industry has led to a strength of 230 million layers and 3500 million broilers that employ 5 million persons and contributes over Rs. 1, 20, 000 crores to GNP. (ICAR 2019).

Table 2: State wise break up of percentage of eggs produced

STATES	Percentage of Eggs produced
Andhra Pradesh	20.13%
Tamil Nadu	15.58%
Telangana	12.77%
West Bengal	9.93%
Karnataka	6.51%
CAGR	7.4%

Source: ICAR 2019.



The total egg production from commercial poultry is 118.16 billion numbers and backyard poultry are 20.20 billion numbers contributing 85.40% and 14.60% of total production of egg respectively. (Source: BAHS Statistics 2023 DAHD-Govt. of India)

7.1 Employment Contribution: The poultry sector, including egg production, supports **over one million direct and indirect jobs**. The **egg industry in India** plays a significant role in employment generation, particularly in rural areas. Th employment linkage is divided into:

- a) direct employment: The industry supports employment in logistics, packaging, retail, and veterinary services.
- b) indirect employment: The industry supports employment in logistics, packaging, retail, and veterinary services

The five main Egg production units in India are:

- 1) Sugana Foods; the directly employ over 8000 people. They encourage contract farming whereby the farmer gets an assured demand for his product along with both monetary and financial assistance.
- 2) Venkateshwara Hatcheries directly employ 800 employees but also assist in contract farming. They pioneered in the use of SPF eggs in vaccine production, besides the production of egg powder.

- 3) C.P Foods Pondicherry India are also involved in direct and indirect employment opportunities.
- 4) Sneha Hatcheries in Hyderabad, employing over 500 employees.
- 5) Shalimar Company based out of Kolkata. Specializes in the production of chicken feed to maximize productivity and minimize disease.

Besides Direct and indirect employment this industry it is broadly divided into two sub-sectors –

- One with a highly organized commercial sector with about 80% of the total market share (Rs. 64,000 crore)
- Other being unorganized with about 20% of the total market share of Rs. 16,000 Crore (2015-16). The total poultry population in the country is 851.81 million in 2019. The total poultry population in the country has increased by 16.8% over the previous census (DAHD, 2019)
- The total Backyard Poultry in the country is 317.07 million in 2019, increased by 45.8% over previous census.
- The total Commercial Poultry in the country is 534.74 million in 2019, increased by 4.5% over previous census.
- Nearly four million tons of broiler meat and about 103.32 billion of eggs are produced annually in India.
- Broiler production is mainly concentrated in the states of Tamil Nadu, Andhra Pradesh, Maharashtra, Uttar Pradesh, and Telangana Broiler production is mainly concentrated in the states of Tamil Nadu, Andhra Pradesh, Maharashtra, Uttar Pradesh, and Telangana. The total egg production from commercial poultry was 118.16 billion and backyard poultry are 20.20 billion numbers. (BAHS Statistics 2023 DAHD-Govt. of India). Besides eggs it is the breeding of broilers which has gained momentum. The size of the poultry farms varies significantly from small farms with just 200 birds to large farms of more than 50,000 birds.
- The broilers in India are usually reared for 35-40 days to a market weight of 1.8 to 2.2 kg.

8. Government Initiatives: The Indian Government has been extremely supportive and proactive to achieve the numbers stated above. Programs like the **National Egg Coordination Committee (NECC) initiatives** have boosted employment and egg consumption. Other schemes like the **Production Linked Incentive (PLI) Scheme for Food Processing Industry (under the Atma nirbhar bharat abhiyan umbrella)** aim to enhance employment opportunities by promoting value-added products, including **free-range eggs and egg-based products.**

9. Problems facing the industry

The main set of problems that this industry faces are with respect to:

Increasing price of the feed; The price of soya bean and maize prices have been continuously on the rise. The Indian poultry industry is set to see a decline of profitability due to an increase in feed costs, even though the demand for poultry products is increasing. Soya being the main ingredient has witnessed a decline in acreage; maize which makes up about 60% of the feed cost is likely to become more expensive due to increasing demand for the product for ethanol production. Anticipated that with recent tariff talks with USA, the possibility of declining import duties, will lead to a larger number of imports affecting the domestic industry.

The other factors that adversely impact this industry is the spread of diseases like 'Global Bird Flu' and localized outbreak as witnessed in Kerala (December 2022), Jharkhand (February 2023), *Seasonal nature of consumption* leads to volatility in demand and supply of the product. The government and the industry also requires the frequent use of 'cold chain technology', to safeguard producers from facing abnormal losses due to the perishable nature of their product.

10. Growth prospects of the Egg and Poultry Industry

With increasing demand for eggs, employment in the sector is expected to rise, particularly in processing and export-oriented businesses. India's poultry product exports are mainly confined to eggs and egg powder, which are growing due to cost competitiveness and logistical advantages. India's per capita consumption of broiler meat just 3.35 Kg per person per year as compared to 45 Kg in Brazil. The National Institute of Nutrition has recommended 180 eggs and 11 kg of meat per capita consumption for our country • There are no restrictions on exports of poultry and poultry products and India at present has only five egg powder plants which is inadequate considering the fact that export demand for different categories of powder viz., whole egg, yolk and albumen are increasing.

ICRA (Information and Credit Rating Agency) expects the poultry industry in India to grow at a pace of 8-10% in the FY 2024. There has been a gradual shift from backyard poultry to large scale commercialisation over the years. Key entities in the industry are vertically integrated and have own hatcheries, feed mills, and primary processing facilities. They also primarily source from contract farmers to whom they provide credit and provide access to the veterinary medicines. Farmers in India have moved to rearing of brands like Cobb, Ross, Sunbro, Marshall, Hubbard, Hybro Avian etc. that will earn them better operating parameters as well as higher profits.

11. Conclusion

The Poultry industry and in particular the egg industry has a huge potential of growth in India. Not only is there a domestic gap between demand and supply, but there is a huge market for export. A large number of these countries are logistically viable leading to an increased and

increasing profits for this industry. The promotion of this area will lead to an adequate outlet for the employment of workers in the rural areas. This fulfills the macro-economic objectives of the government. The Indian government has promoted this industry through its various schemes under 'Atma Nirbhar Bharat', it is even allowing facilities from the Production Linked Investment schemes, to make this industry enhance its profit earning capacity and spread its linkage effect.

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