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Research Paper

Outbreak Of Covid-19 and Performance of Poultry Sector in India

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ABSTRACT

The spread of the COVID-19 pandemic has been a major shock to the Indian economy. Due to the lengthy nationwide lockdown, global economic slowdown, and the disruption of demand and supply chains, the economy is expected to face a prolonged period of slow growth. India is the third-largest producer of eggs and the fifth-largest producer of broilers globally. The poultry sector has been growing at a rate of 8–10% annually. However, the growth rate of agricultural crop production has been much lower, at 1.5–2% per year. The past two years have been tough for the Indian poultry sector. The demand for poultry products dropped significantly, and prices fell due to false beliefs that consuming poultry could spread the virus. In the financial year 2019–2020, the export value of poultry products was 80.36 million US dollars. This value dropped by 26.95% to 58.7 million US dollars in 2020–2021 and further fell to 30.90 million US dollars in September 2021, a decline of 47.35% as per available data. This study aimed to examine the trade performance of the poultry sector. The lack of comprehensive nationwide data has been a major obstacle in understanding the impact of the prolonged lockdown on the poultry sector. A detailed analysis was conducted using secondary data from livestock census, FAO reports, and APEDA, among others. Time series data from 1961 to 2019 were used for the study. A tabular analysis helped in understanding the trends in exports, imports, and net trade. The study also provides an overview of the current situation in the poultry sector and presents a comprehensive view of its impact on trade performance.

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1. INTRODUCTION

We are currently in the middle of a global pandemic caused by the COVID-19 virus. This situation has caused significant concerns for countries around the world. It has created both a health crisis and an economic crisis. Because the virus is highly contagious, measures like social distancing, home isolation, closing schools and public places, restricting movement, and even national lockdowns have been taken to contain its spread. These actions have the potential to cause severe economic consequences around the globe. In other words, effectively managing the virus requires stopping the normal functioning of an economy. This has raised fears of a deep and prolonged global recession. India is the second most populous country in the world, with a population of 139.96 crores as of December 14, 2021 (based on latest UN data). The primary sector plays a major role in India's economy, with about 70% of the rural population depending on agriculture and related activities. India is the world's largest producer of milk, accounting for 25% of global production, and consumes 27% of the world's milk in the financial year 2017–2018. India is also home to the world's second-largest cattle population, with 190 million cattle in 2012. Agricultural achievements are essential for maintaining rural demand. Before the outbreak of the pandemic, the agriculture GDP grew at an average rate of 3.3% annually during the six-year period from 2014–15 to 2019–20, with some fluctuations. Provisional estimates from the National Statistical Office (NSO) show that agricultural GDP growth increased from 2.4% in FY 19 to 4% in FY 20. It also performed well at 3.5% in the third quarter of FY 20. However, the terms of trade for agriculture worsened during 2016–17 to 2018–19 due to high crop and horticultural production, which led to falling food prices. The terms of trade for agriculture improved in 2019–20 with an 11.4% increase in nominal agricultural GDP compared to 4% real growth. The impact of the pandemic on the agricultural sector has been less severe compared to manufacturing and the service sector. However, the initial lockdown disrupted agricultural activities and supply chains through various channels such as input distribution, harvesting, procurement, transport, marketing, and processing. Closure of restaurants and transport bottlenecks reduced the demand for fresh agricultural, poultry, and fisheries products, which affected producers and suppliers. According to a study by Narayanan (2020), the initial lockdown in March 2020 led to challenges for farmers as agricultural product market committees (APMC) mandis were chains caused problems. Media reports suggest that the closure of hotels and restaurants during the lockdown negatively impacted poultry producers, and many were unable to export

their products. As a result, some farmers discarded seasonal closed in various states, disrupting the supply chain from production to consumption. The irregular functioning of supply products like grapes. Poultry farmers faced a significant setback due to misinformation, especially on social media, where it was falsely claimed that chickens could spread the virus. Millions of small poultry farmers, particularly in states like Maharashtra, Karnataka, Odisha, and Andhra Pradesh, suffered heavily as sales dropped by 80% due to these false claims.

2. OBJECTIVE OF STUDY

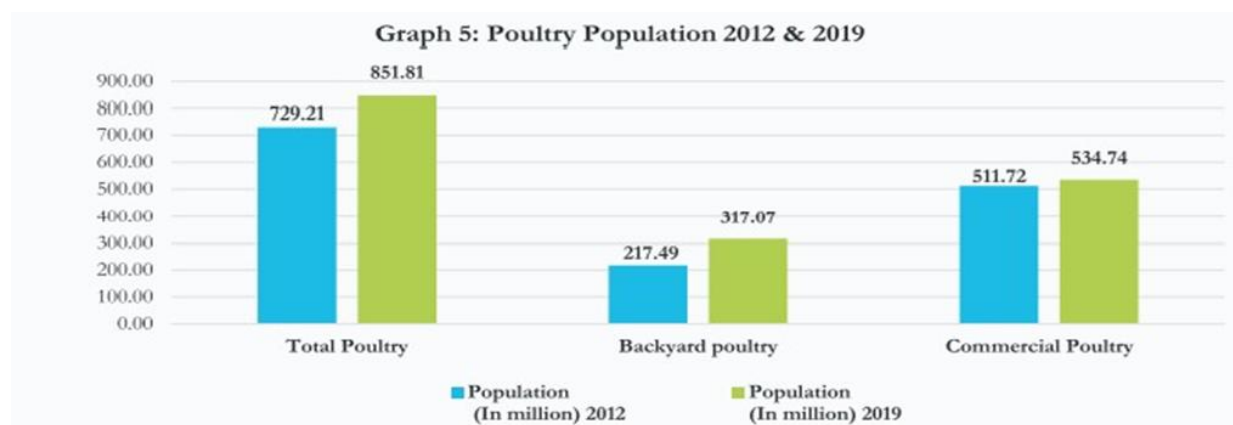
1. To assess the trade performance of the poultry sector in India.
2. To examine the situation of the poultry sector during the pandemic.

3. RESEARCH METHODOLOGY

This study is based on secondary data on production, consumption, poultry population, exports, imports, and other related factors. Data was collected from various published research papers, conference proceedings, annual reports, and data provided by the Department of Animal Husbandry, Dairying, and Fisheries (DAHDF), Livestock Census, Food and Agriculture Organization (FAO), Agricultural and Processed Food Products Export Development Authority (APEDA), Ministry of Commerce and Industry, and other government bodies. Time series data from 1961 to 2019 was used for the analysis. Data from 1961 to 2000 was collected on a decadal basis, and data from 2000 to 2015 was collected on a five-year basis.

POULTRY SECTOR: POPULATION, PRODUCTION AND CONSUMPTION

The total population of livestock is 535.78 million in 2019 with the increment of 4% followed by 2012, according the livestock census 20th (2019). India's livestock sector is one of the biggest in the world with ownership of 11.6% of world livestock population which dwell buffaloes (20.45%), cattle (35.94%), sheep (13.87%), goats (27.83%), camel (2.18%), equine (1.3%), pigs (1.69%). In India, the total population of poultry are 851.81 million with the expanded rate of 16.81% on compare 729.21 million in 2012. In the same period, the expansion of backyard and commercial poultry are 45.78% and 4.5% respectively. This shows that there is big scope in commercialization of poultry sector. Tamil Nadu, Andhra Pradesh and Telangana having (20.8), (107.9) and (80.1) million poultry with the decadal growth of (2.92%), (33.85%) and (-0.93%) respectivelyⁱ.

Figure 1: Poultry Population in the year 2012 and 2019 (In million)

Source- 20th Livestock Census, 2019 (GOI)

India ranked 3rd in egg production and 5th in broiler production in the world with yearly production of 88 billion eggs and 3.46 million tons broiler meatⁱⁱ. Mehta et al. (2003) reported that the production of traditional crops growing at rate of 1.5–2% annually, nonetheless, that of eggs and broilers has been flourishing at a rate of 8–10% per annum. It is estimated that end of this decade the poultry meat will be representing 41% of all protein from meat sources. The last two-year authenticated pandemic-led demand massacre. However, the poultry sector will recover as soon as incomes commence to recoverⁱⁱⁱ. Covid-19 bang the progression and dynamics of the world meat market, poultry sector has potential to recover more quickly due to

lessen time taken production cycles as compared with ruminants^{iv}. As we can analyze from the given Fig.2, the trend line of the both product is upward but the volume of egg production is much more than the chicken. Egg production has been rising speedily, having risen from 583 thousand ton in 1980 to 3378.1 thousand ton in 2010 and to 5775 thousand ton in 2019 with the 20-year growth rate of 479.4% and on 70% respectively. Simultaneously, poultry meat production, too, has been expanding from 113.04 thousand ton in 1980 to 2193 thousand ton in 2010 and 4187.7 thousand ton in 2019. Although the production has been increased but the growth rate were increased at a decreasing rate of both products.

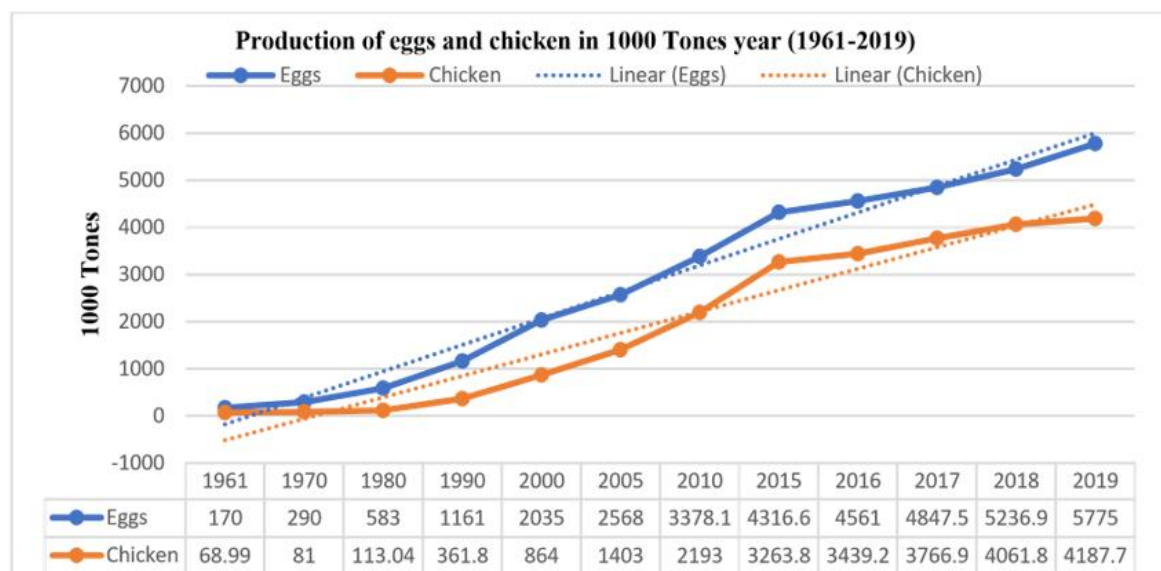
Figure 2: Production of Eggs and Chicken in India from year 1961 to 2019

Fig. 2 by the authors owns using Excel Source: <https://ourworldindata.org/meat-production> (in 1000 Tons)

World food and Agriculture- statistical year book (2020-2021) revealed that the average Indian family will spend 35.3% of the

total household budget on food in 2025, up by 2.1% percentage points from 33.2% in 2005. Household pay out on meat and

poultry will account for the biggest share at 30.7% of total food expenditure, up from 17.5% in 2005. During the same period, expenses on bread, rice and cereals will decline to 23.8% from 28.8%, while spending on fruits will go up to 16% from 6.4%^v. Highest egg consumption country in the world in terms of per capita egg consumption is Kuwait with 21.9 kg followed by Mexico and Japan by (19.5kg) and (19.1kg) respectively^{vi}. Top three poultry meat consuming countries are Israelis, USA and Malesia consume an estimated (58.5kg), (49.8kg) and (46.7kg)

of poultry meat each year^{vii}. As comparing to maximal poultry consuming countries India is way far away after 1980.

As we can see in the given Fig.3, the trend of egg consumption is higher than meat in India as in 1961, per capita consumption was 0.3kg/year of egg whereas of poultry meat was 0.17kg/year which increased to 3.25kg/year and 2.2kg/year of egg and poultry meat respectively in year 2017. The Indian poultry industry is audacious to benefit from the ongoing changes in lifestyles in general and eating behaviour in particular.

Figure 3: Per Capita Consumption of Eggs and Poultry Meat in India from 1961 to 2017 (in Kg/year)

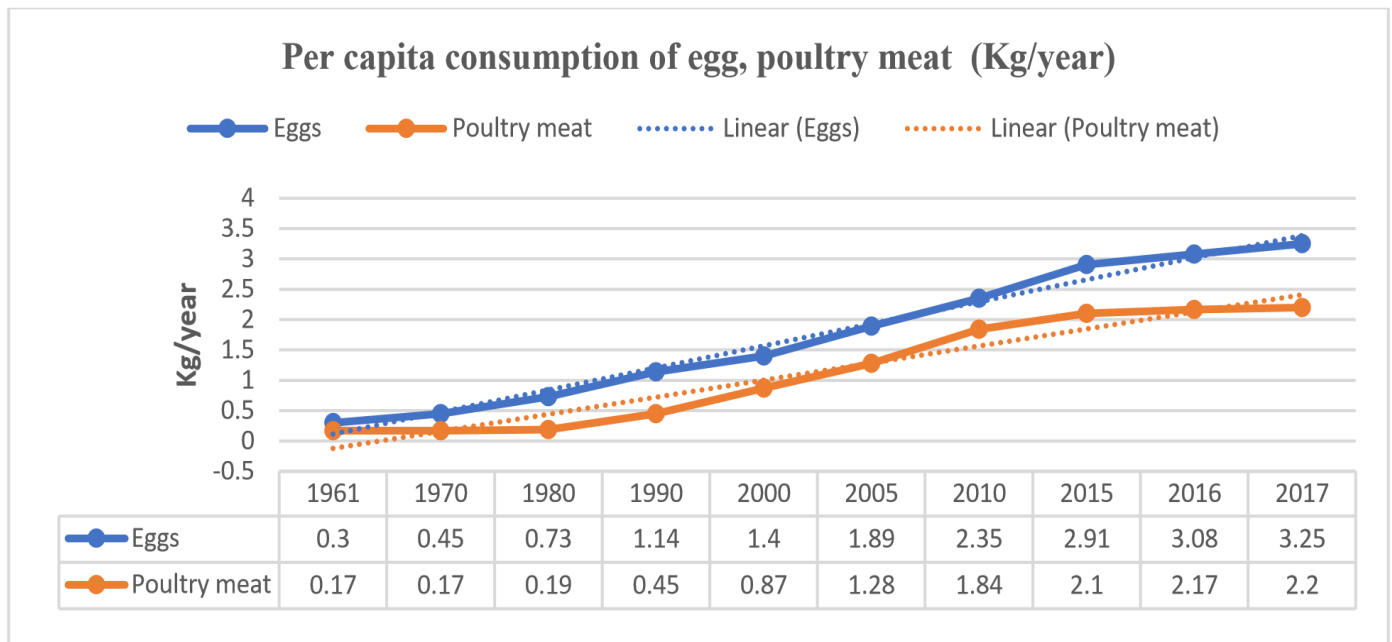


fig.3 by authors owns using excel Source: <https://ourworldindata.org/meat-production>

POULTRY SECTOR: FOOD SECURITY, INCOME AND EMPLOYMENT GENERATION

Eggs are economical and easily accessible source of protein, vitamin A, vitamin B12, riboflavin, iron and zinc (Drewnowski 2010). Eggs also have plentiful amount of folate, selenium, vitamin D and vitamin K (Applegate 2000). Poultry meat is a cheapest source of animal protein, vitamins and minerals such as iron, selenium, zinc, vitamins in addition to rich source of omega-3 fatty acids. From fig-4 Trend line are slightly downward but no of undernourished people increased in 2015 (14.7%) to (15.3%) in 2020 due to covid outbreak. In India, growth of poultry sector can assuredly contribute to poverty contraction because most of the poor and marginal farmers have limited resources and they can embrace poultry farming for their livelihoods only. likewise, reduction of poverty, it will help in

improvement of nutritional position of poor rural farmers as long as backyard poultry eggs and meat are low-priced and rich source of high-quality protein.

Poultry farming has astounding potential for Income and employment generation. Poultry sector can ingest competent manpower at a rate of above 6.5 per cent per annum. expansion in veterinary professional work force is around 2.5 per cent against the appropriate growth rate of 6.5 per cent per annum to meet demands of the overall livestock sector. According to the ICAR Vision 2025, an increase in per capita availability of one egg will bring out 50,000 more jobs^{viii}. Similarly, increase in employment generation is expected due to increasing broiler production, marketing of eggs and meat, processing, etc. So, increase in poultry production movement will help to create more employment.

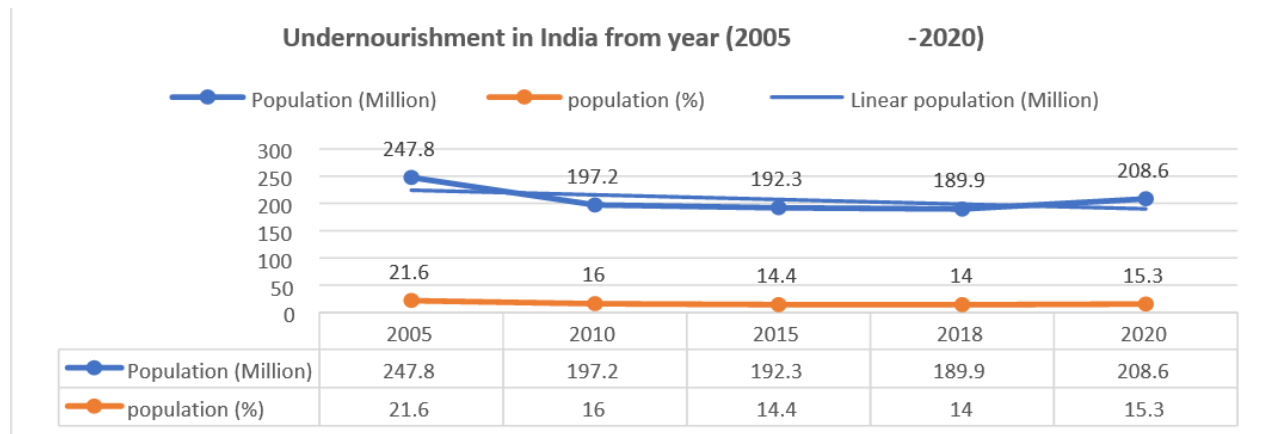
Figure 4: Undernourishment in India from 2005 to 2020 (in % and million)

fig.4 by authors owns using excel Source-
<https://www.fao.org/faostat/en/#data/FS>

PATTERN OF EXPORT, IMPORT AND BALANCE OF TRADE OF POULTRY PRODUCTS IN INDIA

In India, pattern of export, import and balance of trade of eggs and poultry meat are shown in fig. 5 and fig. 6. The dotted line shows import of eggs and meat and the scale of import are in million US\$ on right axis. From the fig. 5 the trend for export of eggs not significant till 1990 and then it increased exceptionally in 2000 and 2005 by 21.84 and 70.81 million US\$. The imports of eggs decreased in 2000 and then it started increasing 2015 and after that it slightly declined onward. However, between 2000-2015 imports & exports kept edging each other out and after 2017, it started falling down in export and variation in imports.

This could be due to rising urban population, enlarging middle class income, changing lifestyles and also growing insertion of hotel and restaurants. From the fig. 5 the trend for export of eggs not significant till 1990 and then it increased exceptionally in 2000 and 2005 by 21.84 and 70.81 million US\$.

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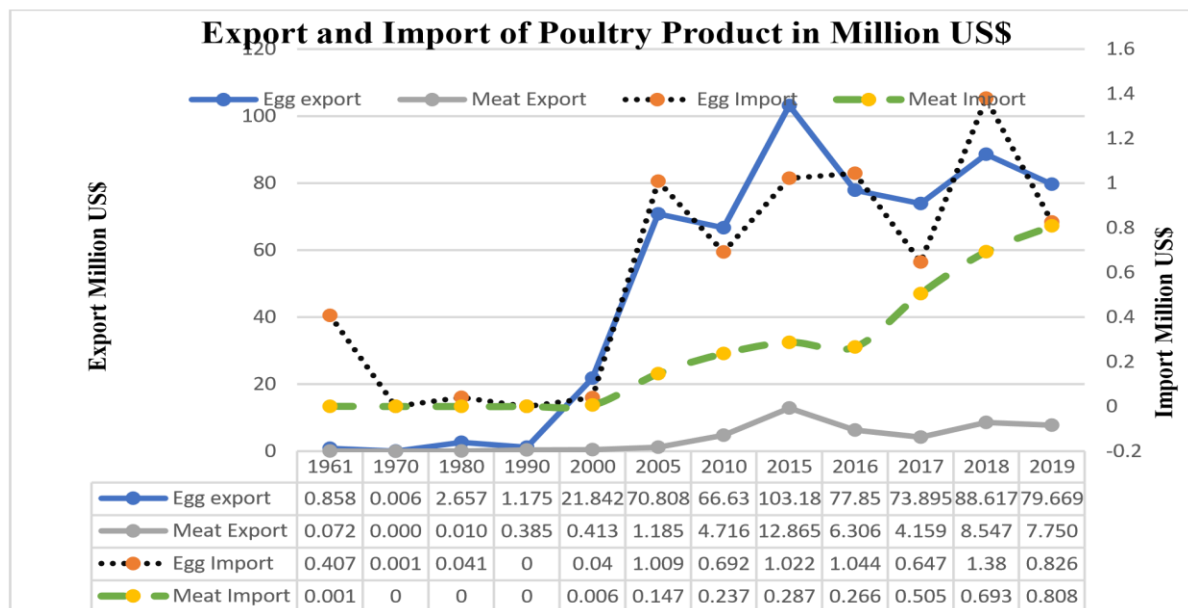
Figure 5: Export and Import of Poultry Product in India from 1961 to 2019

Fig. 5 by the authors owns using Excel Source-<https://www.fao.org/faostat/en/#data/FS>

The results also disclosed that the trend for export of poultry meat continued till 2005 and then it increased drastically in 2010 and 2015. Again, falling till 2017 and then speedily increasing 2019 onward. The trend for imports of poultry meat continued till 2019. However, between 2005- 2010 noticed slight fluctuations in the export trend for exports of poultry meat whereas in 2015, export of poultry meat was increased drastically and then start falling. India can emerge as a powerful exporter by subsidizing its exports to go up against in contest

with other world exporters or should negotiate in the WTO for considerable reduction in subsidies by their major exporters.

The total trade of poultry continues rising to 1.56 million US\$ to 1990 and then its shoot-up in 2000, 2005 and 2015 from 22.09 million to 70.837 and 114.74 million US\$ respectively and start fallen up to 2017 and then increasing onward 2019. The meat net trade increasing continues to 4.716 million US\$ till 2010. And then suddenly rise up to 12.86 million US\$ in 2015. Now in fallen up to 6.942 million US\$ in 2019.

Figure 6: Net Trade of Eggs and Poultry Meat and Combined Trade from 1961 to 2019 (in million US\$)

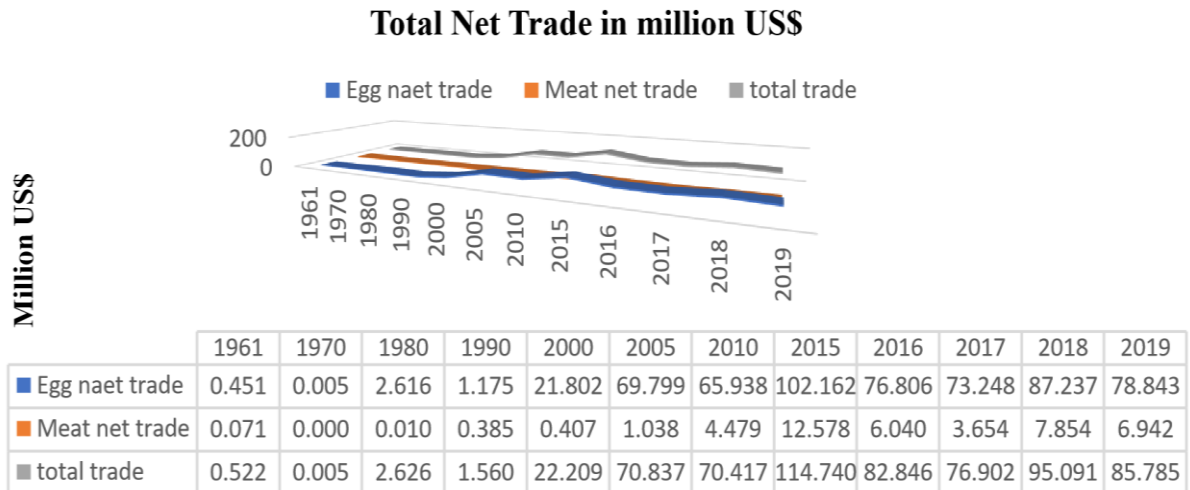


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fallen up to 6.942 million US\$ in 2019. The net trade of egg continues to 1.75 million US\$ in 1990. And rapid change in 2000 was 21.8 million US\$. It increases up to 276.8 million US\$ in 2016 followed by 69.79 million US\$ in 2005 and start falling up to 78.84 US\$ in 2019 [Fig 6].

Figure: 7 Top Five Export Destination of India's Poultry Product in year 2020-2021

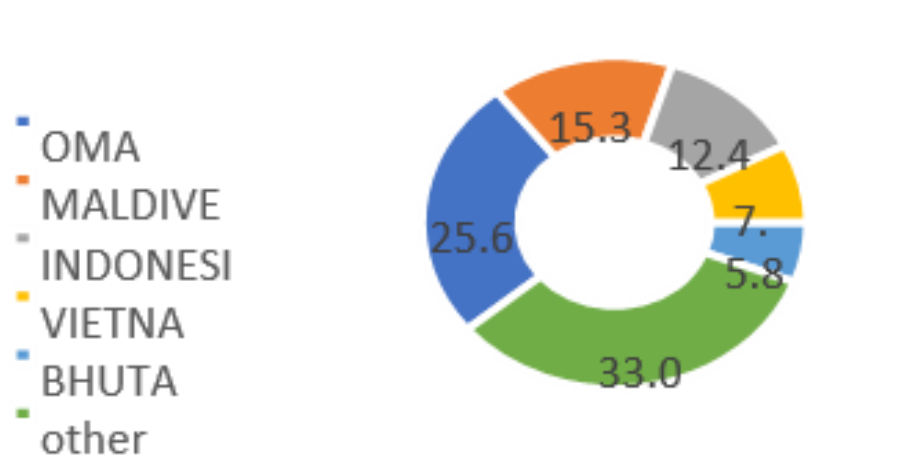


Fig 7: author's own using excels Source: <https://agriexchange.apeda.gov.in/IntTrade/TopDestinationAPEDA.aspx> (in percentage)

IMPACT OF COVID ON POULTRY SECTOR

In this section we have discussed the impact of COVID-19 on the poultry sector. The demand for poultry product heavily affected and prices were dragging down due to rumor linking poultry consumption as carrier of Covid-19 virus. As soon poultry consumption started recovering in the beginning of 2021, the poultry sector again pummeled by outbreak of Avian influenza, resulting drop down prices and demand. The COVID-19 second wave hit the country in April-May 2021, resulting in state lockdowns. The Indian government's prohibition was also on transportation that's why hens was disruptive to trade. As the poultry sector was getting better in early 2021, avian influenza outbreak Pummeled India's hotel-restaurant-institutional (HRI). This sector took a hard hit; observing demand for poultry plunge due to imposed closures. The major portion of running cost of poultry farming are feed and soyabean is one of crucial ingredient. The 2021 record spike in soybean meal prices has complex matters and its effect on poultry production costs. Beginning in early 2021, Indian domestic soybean meal prices rose unexpectedly, and prices in recent months have rocketed to bizarre highs (Vetrivel S. 2013). In the year 2019-2020 the export of poultry product was 80.36 million US\$ which drastically decline by (-26.95%) to 58.7 million US\$ in 2020-2021. And again, it fallen to 30.90 million US\$ with the negative growth of 47.35% in September, 2021.

KEY DRIVERS OF INDIA'S POULTRY SECTOR TRADE

Indian poultry Industry are now technology driven and self-reliant industry it transforms himself from backyard to commercial level in last two decade. Now in India there a large no. of integrator that playing key role in poultry sector. Some important key drivers are as follows: -

- ❖ Cold chain and refrigerated transport,
- ❖ Skill and training development,
- ❖ Supply processing machinery,
- ❖ Set-up of SEZ and new Port,
- ❖ New technology for maintaining the farm using AI, IOT and
- ❖ Traceability using blockchain technology.

CHALLENGES AND OPPORTUNITIES OF THE POULTRY SECTOR IN INDIA

The expected to 63.1 bn US\$ in 2024 it was 25.4 bn US\$ in 2018. But due to potential in poultry sector the CAGR was 16.25 % during 2019-2024^{ix}. There are a lot of opportunities in poultry sector because the sector is booming and come -out as the world's 2nd biggest market. The growth rate is growing at the outstanding rate of 12-15% every year. Poultry meat is accepted by everyone as there is no religious taboo associated with consumption and it is not that costly as other nutritional sources are. There are some major challenges that faces by poultry sector in India some of them are like-

- Disease outbreaks,
- Government food safety norms,
- Antibiotic misuse in poultry farms,
- lack of training and trained worker,

- Noticeable broiler price fluctuations,
- Competition from the international market,
- Lack of insufficient biosecurity standards taken by poultry keepers and
- Instability in the price of feed ingredients such as maize and soya.

4. CONCLUSION AND RECOMMENDATION

India lacks admittance to developed country markets due to stringent food safety and quality standards. Therefore, to abduction of higher share of world trade, much attention needs to be given on sanitary standard, standardization of packaging, grading, Basic infrastructure and elucidation facilities and simplification in export procedures so as to increase export of India. For rising export of poultry product, there is need to change the scenario, Government policy should aim at increasing productivity of birds, reducing cost per unit of production, bettering trade standards and meeting

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