

UNLOCKING THE POTENTIAL OF INDIA'S POULTRY SECTOR

for Viksit Bharat@2047



Copyright © 2026 Confederation of Indian Industry (CII). All rights reserved.

No part of this publication may be reproduced, stored in, or introduced into a retrieval system, or transmitted in any form or by any means (electronic, mechanical, photocopying, recording or otherwise), in part or full in any manner whatsoever, or translated into any language, without the prior written permission of the copyright owner. CII has made every effort to ensure the accuracy of the information and material presented in this document. Nonetheless, all information, estimates and opinions contained in this publication are subject to change without notice, and do not constitute professional advice in any manner. Neither CII nor any of its office bearers or analysts or employees accept or assume any responsibility or liability in respect of the information provided herein. However, any discrepancy, error, etc. found in this publication may please be brought to the notice of CII for appropriate correction.

Published by Confederation of Indian Industry (CII), The Mantosh Sondhi Centre; 23, Institutional Area, Lodi Road, New Delhi 110003, India,
Tel: +91-11-45771000 | Email: info@cii.in | Web: www.cii.in



Table of Contents

List of Figures	05
List of Tables	05
List of Abbreviations	06
Executive Summary	08
Introduction	13
Indian Poultry Sector: Current Status & Demand-Supply Dynamics	16
2.1 Overview of Poultry Sector in India	16
2.2 Poultry Meat: Production, Consumption, and Trade	20
2.3 Egg: Production, Consumption and Trade	24
2.4 Feed Demand and Availability	28
Contribution of Poultry Sector to Economic Growth, Nutritional Security and Environmental Sustainability	33
3.1 Economic Growth: Livelihoods, Income, and Rural Inclusion	33
3.2 Nutrition and Affordable Protein Security	37
3.3 Environmental Sustainability	42
Future Outlook	47
4.1 Demand and Supply Projections of Poultry Meat	47
4.2 Projections for Feed	49
4.3 Key Challenges to Growth of the Indian Poultry Sector (Towards Viksit Bharat)	50
4.4 Strategic Opportunities	54
Conclusion and Policy Recommendations	61
5.1 Poultry in Viksit Bharat 2047: A Roadmap for Inclusive Growth	61
5.2 Policy Recommendations	65
Annexures	70
References	74

Acknowledgements

This report is a product of primary and secondary research, based on interactions with stakeholders across the poultry industry. CII is grateful to individual experts and specialists for valuable inputs and insights during the preparation of this report. Their support is appreciated and acknowledged. The report has been made possible through the efforts of many dedicated staff members. We extend our deepest gratitude to all these members.

Our special thanks to the following members / stakeholders for their participation and contribution towards this report:

Prof (Dr) P K Shukla

President, Indian Poultry Science Association and Head, Department of Poultry Science, College of Veterinary Science and A.H., DUVASU, Mathura

Mr Suresh Chitturi

Chairman, CII National Committee on Animal Agriculture and Managing Director Srinivasa Farms

Mr O P Singh

Managing Director Huvepharma SEA (Pune) Pvt Ltd

Dr Harshakumar Shetty

General Manager - Technical Venkateshwara Hatcheries Group

CII FACE Study Team

Research and Report Writing

Dr Pragya Joshi

Study conceptualization and execution

Ms Roli Pande, Ms A V Rajamany, Ms Kavery Ganguly*

*Former colleague

List of Figures

Figure 1: Role of Poultry Sector in India	14
Figure 2: AAGRs of Production and Value of Output of Key Agricultural Sectors	17
Figure 3: Poultry Chicken Production and Rate of Growth (RoG) in India	21
Figure 4: State-wise Poultry Meat Production in India (2024-25)	21
Figure 5: Per capita Poultry Meat Consumption	23
Figure 6: Poultry Meat Exports from India	24
Figure 7: Egg Production and Rate of Growth (RoG) in India	25
Figure 8: State-wise Egg Production in India (2024-25)	25
Figure 9: Species-wise Egg Production in India (2024-25)	26
Figure 10: Per capita Egg Consumption	26
Figure 11: Egg Exports from India	28
Figure 12: Poultry Feed Requirements	28
Figure 13: All India Egg and Poultry Meat Production in Comparison to Maize	29
Figure 14: Area, Production and Yield of Maize (All India)	30
Figure 15: Area, Production and Yield of Soybean (All India)	31

List of Tables

Table 1: Poultry Population in India	18
Table 2: Estimated Poultry Population in 2024-25	18
Table 3: Industry Estimates for Feed Requirement by Poultry Category (2024-25 and 2025-26)	32
Table 4: Derived Maize and Soy Cake Requirement (Based on Feed Composition)	32
Table 5: Feed, Maize & Soy Cake Demand Projection (2025-2047)	50

List of Abbreviations

A-F

AAGR	Annual Average Growth Rate
AHIDF	Animal Husbandry Infrastructure Development Fund
AMR	Antimicrobial Resistance
APEDA	Agricultural and Processed Food Products Export Development Authority
ASTM	American Society for Testing and Materials
BAHS	Basic Animal Husbandry Statistics
CAGR	Compound Annual Growth Rate
CBG	Compressed Bio-Gas
CIS	Commonwealth of Independent States
COP	Cost of Production
COVID-19	Coronavirus Disease 2019
DAHD	Department of Animal Husbandry and Dairying
DDGS	Dried Distillers Grains with Solubles
DOC	De-Oiled Cake
E30	30% Ethanol Blending in Petrol
EU	European Union
FAO	Food and Agriculture Organization of the United Nations

F-I

FAOSTAT	Food and Agriculture Organization Statistical Database
FCR	Feed Conversion Ratio
FOM	Fermented Organic Manure
FPO	Farmer Producer Organisation
FSSAI	Food Safety and Standards Authority of India
GCC	Gulf Cooperation Council
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GST	Goods and Services Tax
HACCP	Hazard Analysis and Critical Control Points
HS	Harmonized System (trade classification code)
ICAR	Indian Council of Agricultural Research
ICAR-DPR	Indian Council of Agricultural Research - Directorate of Poultry Research
INR	Indian Rupee
IoT	Internet of Things
ISO	International Organization for Standardization
ISS	Integrated Sample Survey

I-P

ITC	International Trade Centre
MDM	Mid-Day Meal (Scheme)
MMT	Million Metric Tonnes
MoAFW	Ministry of Agriculture and Farmers Welfare
MoFAHD	Ministry of Fisheries, Animal Husbandry and Dairying
MoSPI	Ministry of Statistics and Programme Implementation
NAAS	National Academy of Agricultural Sciences
NAS	National Accounts Statistics
NDDB	National Dairy Development Board
NECC	National Egg Coordination Committee
NFDB	National Fisheries Development Board
NIFTEM	National Institute of Food Technology Entrepreneurship and Management
NPK	Nitrogen, Phosphorus, and Potassium
OECD	Organisation for Economic Co-operation and Development
PCB	Pollution Control Board
POSHAN	Prime Minister's Overarching Scheme for Holistic Nutrition (Poshan Abhiyaan)

P-V

PSL	Priority Sector Lending
QSR	Quick-Service Restaurant
R&D	Research and Development
RBI	Reserve Bank of India
RoG	Rate of Growth
SAF	Sustainable Aviation Fuel
SATAT	Sustainable Alternative Towards Affordable Transportation
SDG	Sustainable Development Goal
SHG	Self-Help Group
SPS	Sanitary and Phytosanitary (Standards)
TE	Triennium Ending
TNAU	Tamil Nadu Agricultural University
UAE	United Arab Emirates
US / USA	United States of America
USD	United States Dollar
USDA	United States Department of Agriculture
UT	Union Territory
VoO	Value of Output



Executive Summary

Introduction and Context

India's poultry sector has emerged as one of the fastest-growing and most strategically important segments of the country's agricultural economy. Contributing approximately INR 2.7 lakh crore, or about 16 per cent of total livestock output in 2023-24, the sector is a critical pillar of India's food system, rural livelihoods, and nutritional security. Poultry meat alone accounts for nearly half of India's total meat production, at roughly 5 million tonnes out of 10.25 million tonnes, making it the country's single-largest meat segment. India is also the world's third-largest egg producer, with output crossing 149 billion eggs in 2024-25.

The significance of the poultry sector extends beyond production alone. It supports livelihoods for around five million people across production, processing, and ancillary services. It delivers the most affordable animal-source protein available to Indian consumers on a cost-per-gram basis. It carries a comparatively low greenhouse gas footprint relative to other livestock systems. Further, it operates across a wide spectrum, from large vertically integrated commercial enterprises to smallholder backyard systems that remain a lifeline for rural nutrition and supplementary income, particularly for women and marginal households.

It is within this context that this report examines India's poultry sector as a key contributor to the goals of Viksit Bharat @2047, a vision centred on inclusive growth, nutritional security, employment generation, climate resilience, and sustainable rural livelihoods.

Objectives and Approach of the Study

This report examines the contribution of India's poultry sector to the objectives of Viksit Bharat @2047. Specifically, it analyses the current

India's poultry sector contributes around INR 2.7 lakh crore (about 16% of livestock output) and has become the country's largest meat segment, with ~5 million tonnes of production. Egg output has crossed 149 billion, making India the third-largest producer globally. The sector has expanded rapidly over two decades, though industry estimates suggest actual meat production may be significantly higher than official figures. It supports nearly 5 million livelihoods while delivering affordable protein with a relatively low environmental footprint, positioning it as a key pillar for achieving Viksit Bharat @2047.

structure and performance of poultry meat and egg value chains, evaluates their role in economic growth, livelihoods, nutrition, and sustainability, and assesses future demand-supply dynamics and policy requirements.

The report draws primarily on official statistics from the Department of Animal Husbandry and Dairying (DAHD), and supplemented by consultations with poultry industry, integrators, feed manufacturers, industry associations, and policymakers. Stakeholder consultations with industry members highlighted notable differences between official and industry estimates of poultry population, production, feed consumption, and sector value. The report presents both

perspectives and examines their implications for sector planning, investment, disease surveillance, and policy formulation. The findings underscore the need for more robust, transparent, and regularly updated data systems to support evidence-based decision-making.

The report is structured across five sections: an introduction; a review of current status and demand-supply dynamics covering poultry meat, eggs, and feed; an assessment of economic, nutritional, and environmental contributions; a future outlook covering projections, challenges, and strategic opportunities; and a concluding section with a policy roadmap.

Key Highlights



Scale and Growth

India's poultry sector has grown more than fivefold over two decades. Poultry meat production rose from under 1 million metric tonnes (MMT) in the early 2000s to over 5.2 MMT by 2024-25, and egg production has nearly quadrupled over the same period, from fewer than 40 billion eggs in 2001-02 to over 149 billion in 2024-25. The sector has consistently outperformed other agricultural subsectors in growth, with poultry meat value output growing at 9.3 per cent AAGR, well above milk, horticulture, cereals, and oilseeds. However, industry-based estimates derived from placement data suggest significantly higher actual production, at approximately 8.69 MMT of chicken meat, pointing to a large gap with official figures that has important consequences for planning and investment.



Economic and Livelihood Contributions

The sector directly employs around five million people and generates strong ripple effects across feed manufacturing, hatcheries, veterinary services, cold-chain logistics, processing, and retail. The integrator-contract-farming model has been particularly effective at reducing market risks for smallholders, while also enabling participation by women's self-help groups and rural youth. Poultry is one of the shortest-cycle and most accessible livestock enterprises in Indian agriculture, with broiler operations reaching market weight in 5-7 weeks and layers beginning egg production within 18-20 weeks.



Production Structure and Regional Concentration

India's commercial poultry is dominated by integrator-led models, accounting for an estimated 60-70 per cent of broiler production. Southern states, particularly Tamil Nadu, Andhra Pradesh, and Telangana, contribute nearly 58 per cent of organised poultry output. Egg production is even more geographically concentrated, with these three southern states together contributing nearly half of national egg output. Namakkal district in Tamil Nadu alone accounts for over 95 per cent of export-ready eggs.



Nutritional Significance

Eggs and poultry meat are the most affordable animal-source proteins available in India and are widely accepted across cultural and religious groups. Despite improvements, per capita egg consumption at around 90-105 eggs per year remains well below the National Institute of Nutrition's recommended level of 180 eggs per year. Per capita poultry meat consumption at 6-7 kg per year is a fraction of the global average of 20-25 kg. This gap represents the sector's most important growth opportunity, particularly through greater integration into the Mid-Day Meal Scheme, POSHAN Abhiyaan, and other public nutrition programmes.



Feed Dependency and Forward Projections

Feed accounts for 65-75 per cent of total poultry production cost, with maize and soybean meal as the two dominant ingredients. Current demand for maize from the poultry sector alone is estimated at 20-25 MMT annually. Under a 6 per cent compound annual growth scenario, total poultry feed requirements are projected to reach 54 MMT by 2030 and 144 MMT by 2047, with corresponding maize requirements rising to 72 MMT by 2047. These projections point to a structural feed gap of 10-20 MMT by 2047 if supply-side constraints, particularly the growing diversion of maize to ethanol and stagnant soybean yields, are not addressed.



Environmental Performance

Poultry has among the lowest greenhouse gas emissions per unit of protein produced across all livestock species, at approximately 5.7 kg CO₂-equivalent per 100 g of protein for chicken meat and 4.2 kg for eggs, compared to 49.9 kg for beef. This positions poultry as a climate-resilient protein source within India's broader food systems and net-zero strategy. However, challenges around nitrous oxide emission from poultry litter, localised groundwater contamination, and antimicrobial resistance risks in smaller and backyard farms require systematic attention.

Major Challenges

Several structural challenges could impede the long-term growth of the poultry sector.



Feed Security

The most pressing structural challenge is feed supply. Maize prices have risen from INR 23-24 per kg to INR 30-32 per kg in recent years, driven by growing competition from ethanol blending mandates, with maize-for-ethanol use rising from 0.8 MMT in 2022-23 to 7.5 MMT in 2023-24. Soybean meal availability is subject to sharp seasonal and export-driven price swings. Together, these pressures compress margins across all production categories and threaten the affordability of poultry products for consumers.



Food Safety, AMR, and Biosecurity

Food safety and biosecurity practices vary sharply across production systems. While large integrators maintain robust, centrally monitored protocols, small-scale and backyard farms routinely rely on self-medication with antibiotics, inadequate vaccination coverage, and informal waste disposal, creating significant antimicrobial resistance risks and disease transmission pathways.



Data Gaps

A fundamental challenge is the wide and persistent gap between official production estimates and industry-based figures, with the industry estimating approximately 5.71 billion birds slaughtered annually versus the official figure of 3.39 billion, and total chicken meat production estimated at 8.69 MMT against the official 5.2 MMT. This gap distorts planning for feed demand, infrastructure investment, disease surveillance, and export promotion.



Climate Vulnerability

Rising temperatures are increasing heat stress in open-sided poultry sheds, reducing growth rates and egg production. Climate variability is also disrupting maize and soybean supply, raising mycotoxin contamination risks in stored grain, and expanding the geographic range of disease vectors. The sector's dependence on climate-sensitive feed crops makes it structurally exposed to climate-related shocks.



Infrastructure Deficits

Cold-chain networks, hygienic slaughter facilities, processing capacity, and export-grade infrastructure remain inadequate relative to the sector's size and growth ambitions. Live-bird markets still account for an estimated 98 per cent of chicken sales, creating persistent food safety, zoonotic disease, and hygiene risks.



Regional Imbalances

Poultry production is heavily concentrated in southern and western states, leaving large parts of eastern, central, and north-eastern India dependent on long-distance inter-state supply chain. This raises logistics cost, increases spoilage, and limits market development in underserved regions.

Policy Recommendations

To unlock the full potential of the poultry sector and align its growth with the objectives of Viksit Bharat @2047, the report recommends a comprehensive policy agenda.

In the near term, the most urgent priorities are: establishing a joint government-industry standing committee to reconcile official and industry production data and develop real-time monitoring system; strengthening animal health and disease surveillance system; developing a transparent framework to balance maize use between the feed and ethanol sectors, with formal recognition of poultry feed as a strategic food-security use and rationalising GST on soya de-oiled cake and value-added poultry products.

Over the medium term, the report recommends launching a National Poultry Innovation Programme for research and development on feed alternatives, heat-tolerant breeds, and digital farm management; creating a National Poultry Skill Development Programme; promoting vertically integrated and cooperative-farming models alongside a trust-based certification framework for biosecurity and food safety; and expanding

dedicated national missions for maize and soybean productivity.

For the long term, the report calls for establishing a dedicated national-level poultry sector institution, similar to NDDDB or NFDB, to provide sustained policy coordination, research, and market promotion; building an integrated national poultry data and planning infrastructure linked to Viksit Bharat 2047 targets; mandating digital traceability across the value chain; and embedding feed security formally into national agricultural planning frameworks. The report also proposes positioning poultry litter-based biogas and compressed biogas as a contribution to India's energy transition and net-zero commitments.

The overall vision is of a poultry sector that by 2047 not only triples production to meet domestic protein needs, but does so sustainably, inclusively, and competitively, with India emerging as a credible exporter of traceable, welfare-certified, and antibiotic-responsible poultry products to GCC, South Asian, African, and East Asian markets.





1. Introduction

Significance of the Poultry Sector in India's Economy

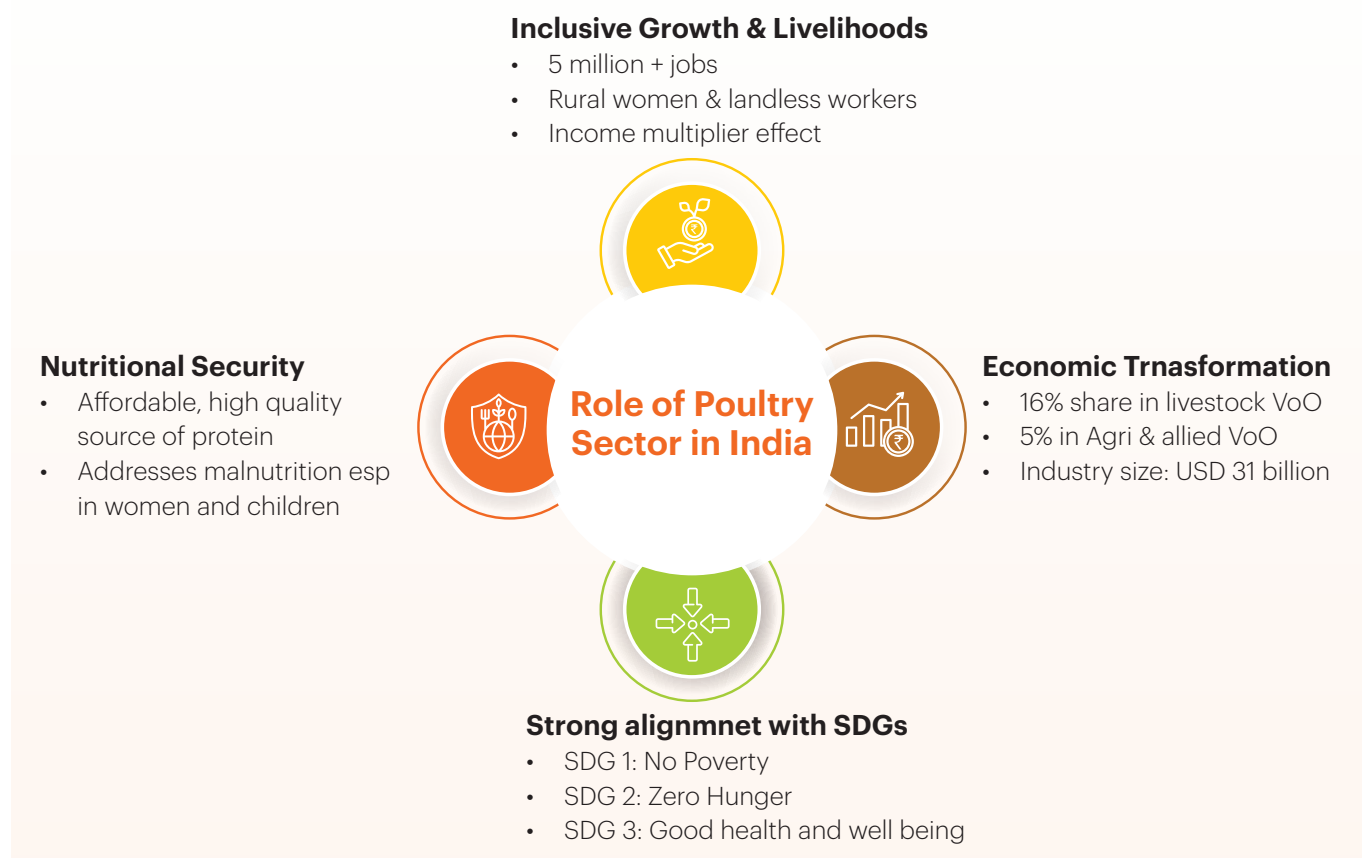
India's vision of Viksit Bharat @2047 places strong emphasis on inclusive growth, nutritional security, employment generation, climate resilience, and sustainable rural livelihoods. Within this framework, the poultry sector has emerged as one of the most dynamic and scalable segments of Indian agriculture, with the ability to simultaneously deliver on income, nutrition, and sustainability outcomes. The sector makes significant contribution to the growth and development of India's livestock economy.

Today, it represents a critical pillar of India's livestock economy, contributing approximately INR 2.7 lakh crore or 16 per cent of the total livestock output (2023-24) (MoSPI, 2025). Poultry meat alone accounts for nearly half of India's total meat production, amounting to nearly

5 million tonnes out of 10.25 million tonnes (MoFAHD, 2025), making it the largest segment of the country's meat industry.

India's poultry sector plays a key role in the country's economy by supporting nutrition, employment, and rural livelihoods. It is one of the fastest-growing sectors within agriculture and provides affordable animal protein to millions. The sector is closely integrated with crop production through its dependence on feed ingredients such as maize and soybean meal, creating strong linkages across agricultural value chains. However, this dependence also makes the sector sensitive to fluctuations in crop availability and feed prices. As a result, the poultry sector represents both a significant growth opportunity and an important area for policy intervention.

Figure 1: Role of Poultry Sector in India



Beyond its economic significance, the poultry sector aligns closely with India's commitments under the Sustainable Development Goals, contributing directly to Zero Hunger, No Poverty, Good Health and Well-being, Gender Equality, and Climate Action (Figure 1). Eggs and poultry meat are culturally acceptable, relatively affordable, and nutrient-dense sources of high-quality protein, making them an important part of the diets aimed at reducing malnutrition, particularly among women and children.

Linkages with Crop Agriculture

The poultry sector is deeply interlinked with the crop agriculture, particularly through its dependence on feed. Feed accounts for 65-70 per cent of total poultry production costs (TNAU, 2024), with maize and soyabean meal being the major components. Nearly 60 per cent of India's maize output is consumed by the livestock sector, of which poultry alone accounts for about 47 per

cent (NIFTEM, 2022). This linkage creates a symbiotic relationship between crop and livestock farmers influencing demand for feed grains and offering diversified sources of income.

At the same time, these strong interdependencies, also expose the poultry sector to volatility in feed availability and prices. Rising diversion of maize towards ethanol production and fluctuations in soybean meal prices have intensified cost pressures in recent years. This growing competition for feed resources highlights the importance of alternative feed ingredients, improvements in feed efficiency, and innovations in feed formulation, including the use of broken rice, millets, and emerging protein sources. From a sustainability perspective, enhanced feed efficiency and better feed management offer significant scope to further reduce the carbon footprint per unit of protein produced, which is already among the lowest within the livestock sector.

Role of Poultry in achieving the Goals of Viksit Bharat @2047

Within the Viksit Bharat @2047 framework, the poultry sector occupies a multidimensional role that extends beyond production growth alone. Economically, it supports income diversification and stability for farmers, particularly in regions characterised by small and fragmented landholdings. The integrator-driven model in commercial poultry has facilitated contract farming and value-chain integration, fostering rural entrepreneurship and reducing market risk for producers. Socially, poultry contributes significantly to smallholder and women's participation and improves household-level nutrition outcomes. Environmentally, its relatively low greenhouse gas emissions per kilogram of protein position poultry as a key component of India's climate-resilient livestock strategy.

Scope, and Structure of the Report

This report provides a comprehensive assessment of India's poultry sector, with a forward-looking focus on sustainability, resilience, and inclusive growth. The objective is to examine the current structure and performance of poultry meat and egg value chains, assess their contribution to income, employment, and nutrition, and analyse future demand-supply dynamics in the context of evolving resource and policy constraints.

The report draws primarily on government statistics (specifically Department of Animal Husbandry and Dairying) to present a consistent and credible picture of the poultry sector. These are complemented by extensive stakeholder consultations involving farmers, integrators, feed manufacturers, industry associations, and policymakers, which help contextualize cost structures, production risks, and market constraints. However, Industry consultations

indicate a substantial divergence between official data and industry estimates for poultry population, production volumes, and overall sector value. Industry stakeholders consistently argued that rapid commercialization, shorter production cycles, increasing integration, and the dynamic nature of modern poultry production may not always be fully captured through conventional livestock census-based approaches. As a result, significant differences persist between official and industry assessments of the sector's scale and growth trajectory. This divergence is not merely a statistical issue but has important implications for estimating feed demand, infrastructure requirements, disease surveillance capacity, export potential, investment needs, and the sector's contribution to rural livelihoods and economic growth.

To provide a balanced and transparent assessment, the report presents both official and industry-based estimates where relevant and explicitly discusses the implications of these differences for future planning. Consultations with government officials also indicated a willingness to explore refinements in estimation methodologies in collaboration with industry stakeholders, with the objective of developing data systems that more accurately reflect the evolving structure and scale of India's poultry sector.

The report is organised into five sections. Following this introduction, Section 2 presents an overview of the poultry sector, covering poultry meat, eggs, feed linkages, and production structures. Section 3 examines the sector's role in economic growth, nutritional security, and environmental sustainability. Section 4 discusses the future outlook, including projections, key challenges, and emerging opportunities. Section 5 concludes with policy recommendations and a strategic roadmap for strengthening the poultry sector in alignment with the Viksit Bharat agenda.



2. Indian Poultry Sector: Current Status & Demand-Supply Dynamics

2.1 Overview of Poultry Sector in India

The poultry sector in India has emerged as one of the fastest growing segments of the agriculture and allied sectors with an estimated market size of around USD 31 billion in TE2023-24 (Annex Table 1). Over the past two decades, the sector has undergone a structural transformation from a predominantly backyard activity to a modern, market-oriented industry, driven by commercial farming, contract integration, and strong domestic demand. This transformation has been supported by technological progress in breeding, feed efficiency, and disease management, alongside expanding urban consumption and organised retail channels.

In value terms, the output of poultry meat and eggs increased from about INR 56,200 crore in

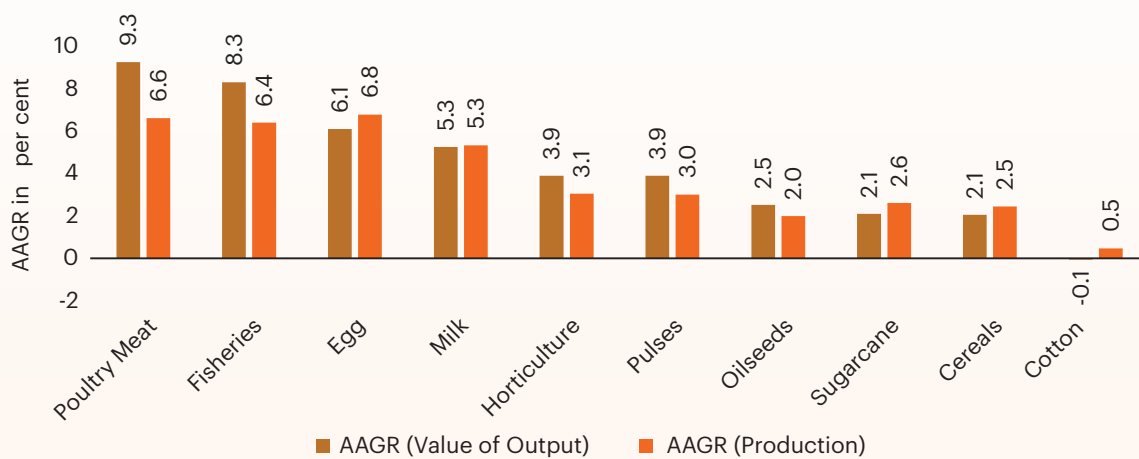
2011-12 to nearly INR 2.67 lakh crore in 2023-24. Poultry's share in livestock output rose from around 12 per cent in 2011-12 to about 16 per cent in 2023-24, while its share in the overall agriculture and allied sector increased from 2.9 per cent to 5.0 per cent over the same period. This reflects a broader shift in India's food system towards high-value, protein-rich commodities.

Compared to other agricultural sectors in India, poultry meat recorded the highest growth, reflecting the rapid structural transformation of the country's food system toward high-value products. The value of output from poultry meat grew by 9.3 per cent, against 6.6 per cent in production, indicating significant price gains and value addition within the sector. Egg production and value

expanded at a steadier pace of 6.8 per cent and 6.1 per cent, respectively, pointing to efficiency-driven growth. The annual average growth rate (AAGR) of poultry meat and eggs were well above the growth rates of other major agricultural commodities such as milk (5.3 per

cent), horticulture (5.3 per cent), cereals (2.1 per cent), and oilseeds (2.5 per cent). This sustained outperformance underscores the poultry sector's resilience and its capacity to drive agricultural diversification and income growth (Figure 1).

Figure 2: AAGRs of Production and Value of Output of Key Agricultural Sectors



Source: Compiled using data from MoSPI, MoAFW, MoFAHD

Poultry Population and Production Structure

The expansion of the poultry sector has been accompanied by significant changes in its population structure, characterised by the coexistence of a highly productive commercial segment alongside a resurgent backyard system. While the sector has structurally transformed from a predominantly backyard activity to a commercialised, technology-driven industry, recent trends indicate a revival of backyard poultry in terms of population growth. Between 2012 and 2019, the total poultry population jumped from 729 million to 852 million (a 17 per cent growth). This expansion was largely driven by backyard poultry,

which grew by 46 per cent (from 217 million to 317 million birds) raising its share in the total flock from 30 per cent to 37 per cent. In contrast, commercial poultry grew just 4 per cent (from 511.7 to 534.7 million), with its population share falling slightly from 70 per cent to 63 per cent (MoFAHD, 2020).

However, this shift in population composition does not translate into a similar shift in production. Owing to significantly higher productivity levels, the commercial segment continues to dominate in terms of egg and meat output as well as overall economic value, while backyard poultry remains critical for rural livelihoods and nutritional security.

Table 1: Poultry Population in India

	2012 Population (Million)	% Share (2012)	2019 Population (Million)	% Share (2019)	Rate of Growth
Backyard Poultry	217.49	30%	317.07	37%	46%
Commercial Poultry	511.72	70%	534.74	63%	4%
Total Poultry	729.21	100%	851.81	100%	17%

Source: BAHS Various Issues

According to more recent industry estimates¹, a total of 6.03 billion poultry birds are placed annually in India. At any given point in time (2024-25), the standing poultry population is estimated at 1.23 billion birds. This estimate is broadly consistent with trend-based projections from official government data. As per the Livestock Census (MoFAHD, 2020), India's total poultry population increased from 729 million in 2012 to 852 million in 2019, implying an annual growth of about 2.2 per cent. Extrapolating these trends suggests a standing population of roughly 993 million birds by 2025, driven primarily by rapid growth in backyard poultry, which is projected to rise from 317 million in 2019 to about 438 million in 2025. Commercial poultry, in contrast, has grown more modestly, from 535 million in 2019 to an estimated 555 million in 2025. The higher industry estimates for 2024-25 likely reflects post-census expansion, faster replacement cycles in commercial operations, and improved reporting of smallholder and backyard systems.

Table 2: Estimated Poultry Population in 2024-25

Category	Population (crore)
Layer (0-95 weeks)	50
Broiler (0-40 days)	63
Breeder Birds	5.1
Backyard Birds	4.5
Total	122.6

Source: Industry estimates

Poultry Value Chain Models and Regional Distribution

The diversity of India's poultry sector is reflected not only in its population structure but also in the organisation of its value chains. Poultry production in India operates through a diverse set of value chain models that differ in scale, degree of integration, and market orientation. Broadly, these range from highly integrated commercial systems to smallholder backyard production. This diversity is also reflected spatially. Southern states (Tamil Nadu, Andhra Pradesh, Telangana, Karnataka, and Kerala) dominate commercial poultry production, accounting for nearly 58 per cent of organised poultry, supported by established feed industries, breeding infrastructure, and integrator presence. In contrast, Northern, Central, and Eastern regions (West Bengal, Assam, Maharashtra, Odisha, Jharkhand, Bihar, Madhya Pradesh) account for over 59 per cent of backyard poultry, reflecting traditional, low-input production systems.

The poultry value chain in India can be broadly classified into four models:

- **Large-Scale / Integrator-Driven Model:** The large-scale or integrator-driven model in India's poultry sector is characterised by dominant poultry companies that manage the entire value chain from breeding and hatcheries to feed milling, veterinary care, and processing while farmers participate mainly through contract farming. The major integrator

¹ Data provided by leading poultry industry members

companies include Venkys, Suguna, IB Group, Sneha Farms, Skylark Hatcheries, SKM Feeds etc. Under this structure, farmers typically rear 3,000-10,000 birds on behalf of the integrator, who supplies day-old chicks, feed, vaccines, and technical guidance, while farmers provide sheds, labour, electricity and routine management. The integrator also guarantees buyback at pre-agreed prices, substantially reducing market and price-related risks. This system accounts for an estimated 60-70 per cent of broiler production of the country.

- **Organized Large-Scale Independent Farms (Non-Contract):** These are large farms that operate independently, owning their feed mills, hatcheries, and marketing channels, without engaging in contracts with integrators. Concentrated in states such as Andhra Pradesh, Telangana, and Tamil Nadu, these types of farms have greater autonomy, flexibility in market operations, and potential to innovate, but require substantial capital and management capacity, thereby faces higher market risk.

In the layer segment, a significant share of production comes from large independent farms, many of which manage 1 Lakh to over 10 Lakh birds throughout the year. These farms operate autonomously, with their own production, input procurement, and marketing systems. However, these independent farms are increasingly linked through a form of market-level integration facilitated by the National Egg Coordination Committee (NECC). While NECC does not directly control production, inputs, or farm operations, it plays a pivotal indirect role in coordinating the market. NECC announces daily egg prices in different regions, which act as a benchmark for market transactions. This creates a form of price-based integration, aligning market behaviour even without formal contractual arrangements.

- **Semi-Integrated / Small-Scale Commercial Farms:** Small-scale commercial poultry farms typically rear more than 500 birds and operate with moderate inputs and higher outputs, positioned between backyard systems and large integrator-driven farms. Unlike backyard poultry, which can be taken up even by landless labourers because birds depend on scavenging, small-scale commercial farming requires some land for constructing sheds and managing birds. These farms procure day-old chicks from hatcheries, buy commercial feed and medicines from the open market, and rear commercial high-performance breeds, unlike backyard systems that rely on desi or low input technology birds. Vaccination for day old bird is often completed at the hatchery, but subsequent vaccinations and health management are the farmer's responsibility, with limited access to veterinary services. Small-scale farms face higher production costs, weaker biosecurity, and significant vulnerability to disease outbreaks and market intermediaries, yet they offer an important entry-level entrepreneurship opportunity for rural youth.
- **Backyard / Traditional Poultry:** Backyard poultry refers to smallholder, household-managed flocks typically 10 to 100 birds reared in scavenging or semi-scavenging conditions, largely by women farmers. This system provides household nutrition and supplementary income while relying on low external inputs and inherently low output, as the birds depend primarily on scavenging, household leftovers, and naturally available feed resources. Backyard farmers mostly rear low input technology birds or desi breeds, which are hardy, adaptable, and require minimal management. A key characteristic of backyard poultry is that its produce seldom enters the formal market. Eggs and meat are primarily consumed within the household or sold locally in the same rural area, forming a

self-contained village-level ecosystem. Although backyard production once contributed around 21 per cent of national egg output (MoFAHD, 2025), it now accounts for about 23.13 billion eggs, or 15.51 per cent of India's total egg production, while commercial poultry contributes 125.98 billion eggs (84.5 per cent) (MoFAHD, 2025). Except for a few emerging examples, such as Sikkim's aggregation and branding of backyard eggs, this segment generally remains outside organized value chains, reflecting localised

consumption patterns, where production is consumed near its origin.

Overall, the poultry sector exhibits substantial heterogeneity across production systems and regions. Broiler production is dominated by vertically integrated commercial models, while egg production reflects a mix of large commercial farms and widespread backyard systems. This dual structure has important implications for efficiency, inclusiveness, and regional development, which are examined in subsequent sections.

2.2 Poultry Meat: Production, Consumption, and Trade

India is the fifth-largest producer of poultry meat globally, reflecting rapid expansion of its commercial broiler industry since the early 2000s. Poultry meat has emerged as the dominant segment of India's meat sector due to its short production cycle, high feed conversion efficiency, relatively lower consumer prices, and wide cultural acceptability. In 2024-25, poultry meat production stood at around 5.2 million tonnes, accounting for nearly half of India's total meat production of 10.5 million tonnes (MoFAHD, 2025).

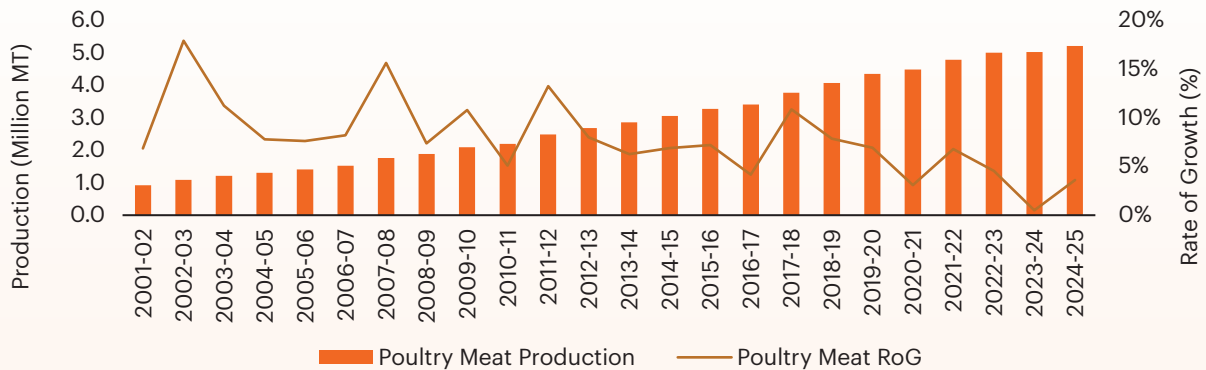
Production Growth and Scale

India's poultry meat output has increased more than fivefold over the past two decades, rising from less than 1 million metric tonnes (MMT) in the early 2000s to over 5.2 MMT by 2024-25 (MoFAHD, 2025). Growth was particularly strong during the late 2000s and early 2010s, supported by increasing demand, improvements in genetics and feed, and the growth of vertically integrated poultry enterprises across states like Andhra Pradesh, Telangana, Tamil Nadu, and Maharashtra. The only minor slowdowns were during shocks such as the avian influenza episodes or disruptions during the COVID-19 pandemic. The rate of growth (RoG) was often in the double digits

in the first decade of the 2000s, and in some years exceeded 15 per cent. Over time, the pace of growth moderated. By 2017-18, the annual growth rate had declined to around 8 per cent, and to about 7 per cent in 2018-19. By 2023-24, growth had slowed further to roughly 1-2 per cent due to large base production levels.



Figure 3: Poultry Chicken Production and Rate of Growth (RoG) in India



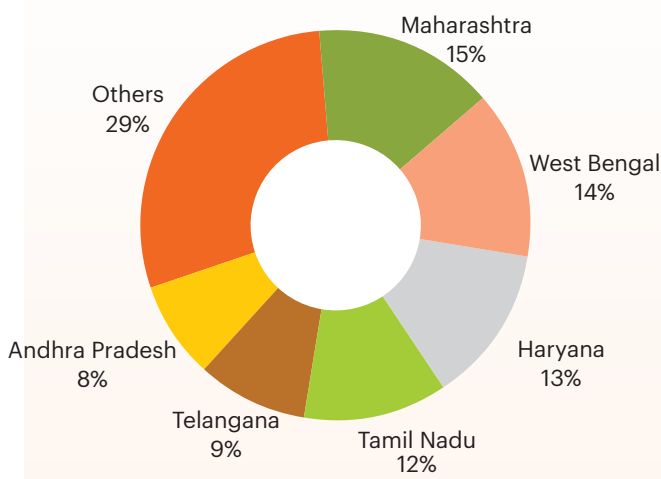
Source: BAHS 2025

Regional Concentration and Production Structure

Poultry meat production in India is highly regionally concentrated, driven by feed availability, integrator presence, and proximity to large consumption centres. Southern and western states dominate national output, reflecting the spatial distribution of integrator-led commercial production.

Maharashtra alone contributes roughly 15 per cent of total broiler output, followed by West Bengal (14 per cent), Haryana (13 per cent), Tamil Nadu (12 per cent), Telangana (9 per cent), and Andhra Pradesh (8 per cent). Together, these six states contribute about 71 per cent of total poultry meat production, while the remaining share is distributed across Punjab, Uttar Pradesh, Gujarat, Odisha, and other states (Figure 3).

Figure 4: State-wise Poultry Meat Production in India (2024-25)



Source: BAHS, MoFAHD

This spatial pattern highlights a gradual diversification of production beyond traditional southern centers. The western and northern regions have benefited from integrator-led expansion, better market access, and growing local demand. The eastern region, particularly West Bengal and Bihar, has leveraged dense rural consumption markets to build new layer and broiler clusters, though productivity remains lower than in the southern states.

India's poultry industry is dominated by a few vertically integrated companies that manage the entire production and distribution chain, from breeding and hatching to feed milling, grow-out farms, and marketing. This model has ensured economies of scale, biosecurity compliance, and consistent product quality, although it also raises questions about inclusivity and the viability of smallholder participation in high-value poultry chains.

Slaughtering and Production Intensity

The rapid expansion of poultry meat production in India is reflected in the sharp rise in the number of birds slaughtered annually. Poultry slaughter increased from about 1.47 billion birds in 2007-08 to over 2.16 billion by 2012-13, and crossed 3 billion birds for the first time in 2021-22. This upward trend continued, with total poultry slaughter reaching a record 3.35 billion birds in 2023-24, as reported in official statistics.

Industry estimates, however, suggest significantly higher volumes. These are derived from placement data adjusted for average liveability rates. For 2024-25, commercial broiler placements are estimated at around 470 million birds per month. With an average liveability of 92 per cent, about 432 million broilers reach market weight each month, translating into roughly 5.19 billion birds slaughtered annually. In the case of country chicken, annual placements are estimated at 45 million birds. Assuming a higher liveability of 96 per cent, nearly 43 million birds are available for slaughter on an annual basis. Taken together, industry estimates suggest that about 5.71 billion poultry birds are slaughtered each year. This is substantially higher than the official estimate of 3.39 billion birds for 2024-25 (MoFAHD, 2025), implying an absolute gap of about 2.32 billion birds, or nearly 70 per cent.

Using industry assumptions on bird placements, liveability, average live weight, and dressing yield across commercial broilers, breeders, layers, and country chicken, India's chicken meat production in 2024-25 is estimated at about 8.69 MMT. Commercial broilers account for the bulk of output, contributing nearly 7.99 MMT, supported by high placement volumes and an average livability rate of 92 per cent. Country chicken contributes around 0.39 MMT, based on annual placements of 45 million birds, livability of 96 per cent, and a dressing yield of 50 per cent.

Meat from broiler breeder males, breeder females, and culled commercial layers contributes a further 0.31 MMT.

These industry-based estimates are substantially higher than the official government estimate of around 5.2 million tonnes for 2024-25 (BAHS). The divergence between official and industry estimates is not merely a statistical issue but has important policy implications. Planning for feed demand, processing capacity, cold-chain infrastructure, logistics, disease surveillance, and export promotion is highly sensitive to assumptions regarding sector size. If production volumes are substantially higher than currently reflected in official estimates, future investment requirements may also be considerably larger than presently anticipated.

The magnitude of this divergence also affects assessments of sectoral growth and competitiveness. A larger production base implies greater demand for feed grains, veterinary services, logistics, processing infrastructure, and cold-chain investments than suggested by official estimates. It may also indicate a larger domestic protein contribution and greater export potential. Consequently, understanding the true scale of the sector becomes essential for designing appropriate policies and investment strategies.

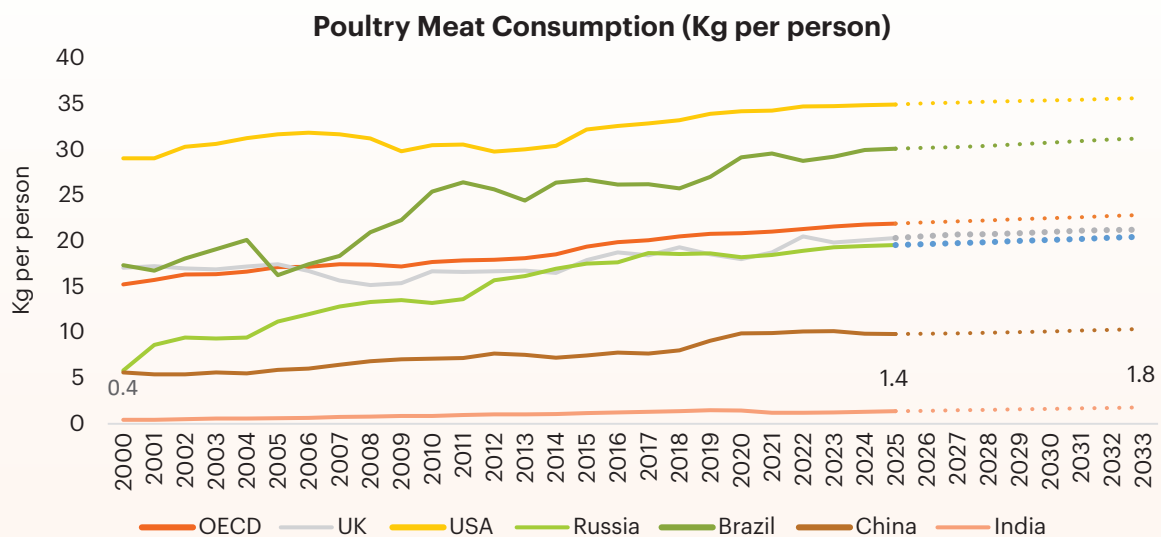


Consumption Trends

Per capita poultry meat consumption in India increased from less than 1.5 kg in 2000 to about 6-7 kg in 2023, driven by income growth, urbanisation, and the expansion of organised retail and quick-service restaurant (QSR) chains. Despite this progress, India's per capita consumption remains among the lowest globally. In comparison, major producers and consumers such as the United States and Brazil report consumption levels exceeding 25-35 kg per capita per year, while even China records significantly higher levels.

Domestic consumption absorbs over 99 per cent of poultry meat production, making the sector overwhelmingly inward-oriented. High feed costs, supply-chain inefficiencies, and persistent vegetarian preferences continue to constrain consumption growth, although the medium-term outlook remains positive. The COVID-19 pandemic temporarily disrupted demand due to misinformation and logistical bottlenecks, but consumption rebounded strongly from 2021-22 onwards, supported by rising health awareness, greater preference for hygienic and processed products, and improvements in cold-chain distribution.

Figure 5: Per Capita Poultry Meat Consumption



Source: OECD-FAO Agricultural Outlook 2025-2034

Export Demand

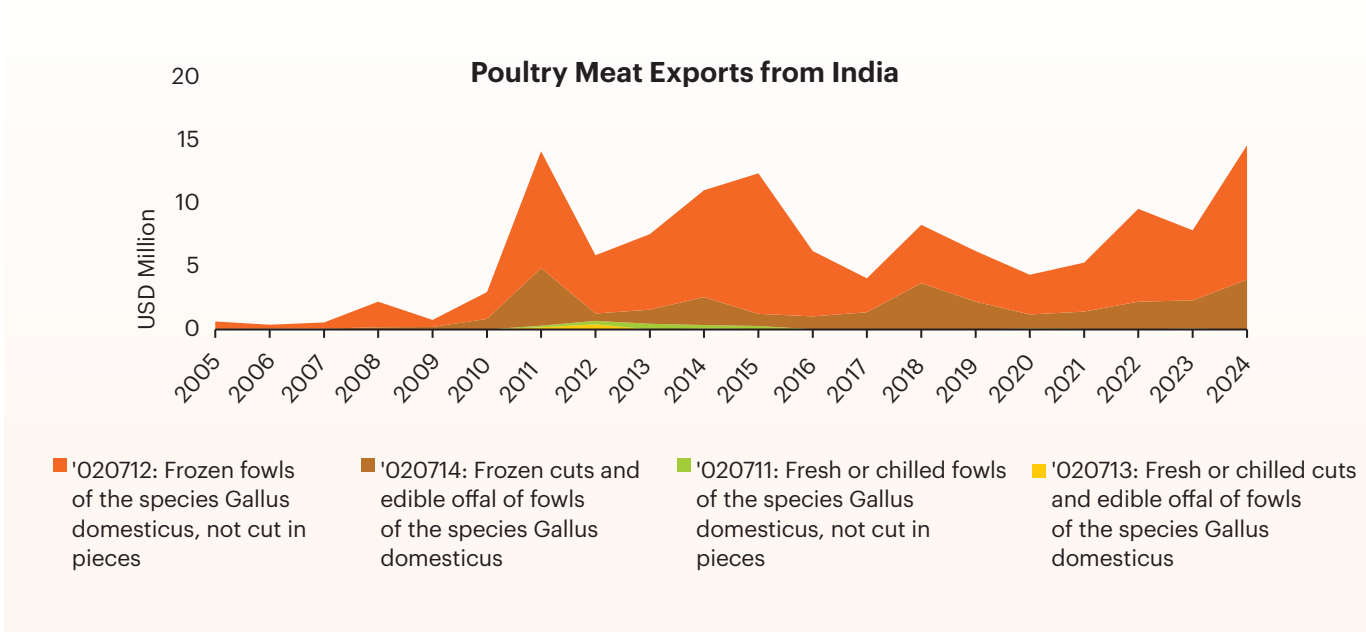
Despite its large production base, India's poultry meat exports remain marginal, accounting for less than 1 per cent of total output. Export revenues have fluctuated widely, ranging from USD 0.6 million in 2005 to nearly USD 14.6 million in 2024. Exports are dominated by frozen products, particularly whole frozen chickens (HS 020712) and frozen cuts and offal (HS 020714), while fresh and chilled products remain negligible due to logistics and shelf-life constraints.

Despite the global dominance of frozen poultry trade, India remains structurally uncompetitive in bulk frozen chicken exports due to higher feed costs, limited scale efficiencies relative to major exporters such as Brazil and the USA, and gaps in export-grade cold-chain and processing infrastructure. As a result, poultry meat exports are highly volatile and largely opportunistic, responding to short-term disruptions in importing countries rather than sustained market penetration.

Total poultry exports have varied from as low as USD 615 thousand in 2005 to highs exceeding USD 14 million in 2024 (ITC Trademap, 2025b). GCC countries leads demand for Indian poultry meat, with the UAE, Oman, Kuwait, Qatar, and Saudi Arabia as major buyers. South Asian neighbours, Maldives, Nepal, and Bhutan, alongside new exploration in Africa and CIS regions, are other importers of Indian chicken meat.

From a strategic standpoint, India’s poultry meat exports are better positioned in value-added, processed, and ready-to-cook or ready-to-eat formats rather than bulk frozen chicken. Leveraging India’s culinary strengths, diaspora demand, and growing domestic processing capabilities could enable a gradual shift towards higher-value poultry exports, supported by targeted investments in SPS compliance, processing infrastructure, and branding.

Figure 6: Poultry Meat Exports from India



Source: ITC Trademap

2.3 Egg: Production, Consumption and Trade

India is the third-largest producer of eggs globally, with egg production expanding rapidly over the past two decades. National output increased from fewer than 40 billion eggs in 2001-02 to over 149 billion eggs in 2024-25, representing nearly a fourfold increase. This expansion has been driven primarily by the growth of commercial layer farming, genetic improvement, and steady gains in productivity.

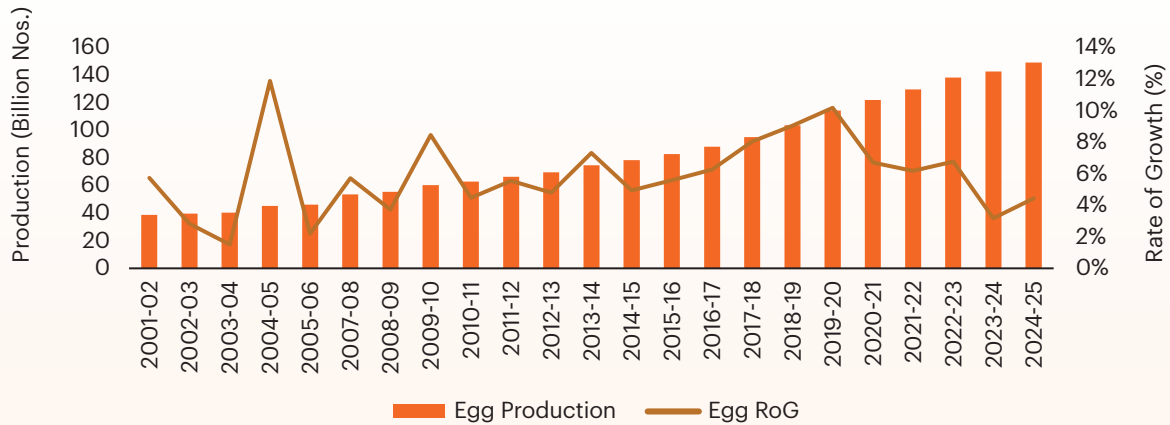
Production Growth and Scale

India’s egg production has experienced robust and accelerating growth since 2001-02. From a baseline of fewer than 40 billion eggs in 2001-02, national production has soared to over 149.1 billion in 2024-25, a nearly fourfold increase. The chart shows consistent annual increments with only occasional dips, and a few remarkable surges when output grew by nearly 8-12 per cent

year-on-year, such as after investments in commercial layer flocks or policy support under nutrition missions. Growth rate in egg production have fluctuated over the years from periods of moderate 4-6 per cent increases to phases of higher jumps above 8 per cent.

While the per centage rate of growth slows as the base expands, the actual volume added each year continues to rise, reflecting both an increase in the number of laying birds and improvements in average annual yields per layer across commercial and backyard systems (MoFAHD, 2025).

Figure 7: Egg Production and Rate of Growth (RoG) in India



Source: BAHS 2025

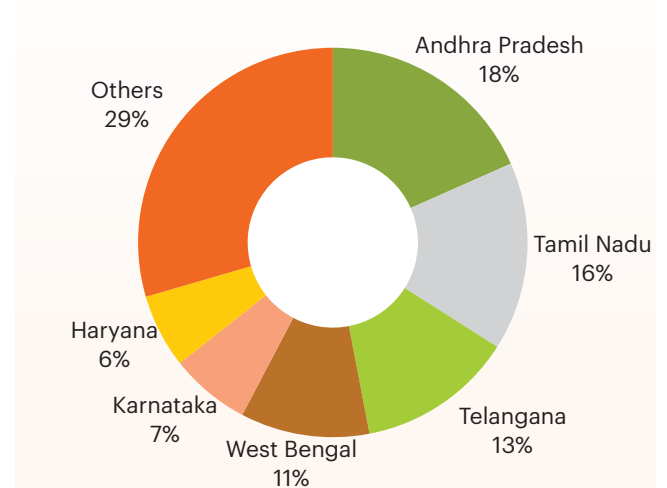
Regional Concentration of Egg Production

Egg production is geographically more concentrated than poultry meat, with southern states dominating national output. Andhra Pradesh alone accounts for around 18 per cent of India's egg production, followed by Tamil Nadu (about 16 per cent) and Telangana (ar 13 per cent). Together, these three states contribute nearly half of total egg output, while West Bengal contributes an additional around 11 per cent. Other producing states include Karnataka, Maharashtra, and Haryana.

This regional concentration reflects the historical development of large-scale layer clusters, particularly in Tamil Nadu and Andhra Pradesh, supported by strong feed linkages, specialised breeding infrastructure, and efficient marketing networks.

The high degree of spatial clustering has enabled economies of scale and supply-chain integration, but also increases regional vulnerability to disease outbreaks and feed price shocks.

Figure 8: State-Wise Egg Production in India (2024-25)



Source: BAHS, MoFAHD

Production Systems and Productivity

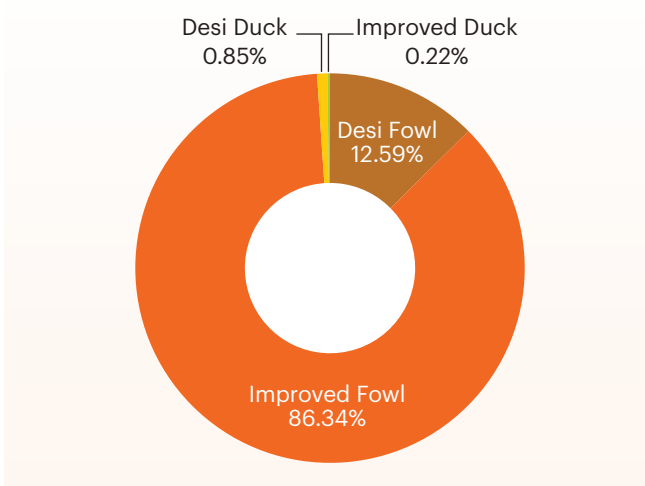
India’s egg sector is characterised by a dual production structure comprising a dominant commercial segment and a widespread backyard system. Commercial poultry accounts for about 85-86 per cent of total egg production, with backyard poultry playing a critical role in rural livelihoods and household nutrition but contributing a smaller share to aggregate output.

Productivity differentials between the two systems are stark. Commercial layers achieve annual yields of 260-290 eggs per bird, compared with 100-120 eggs for desi and improved backyard fowls, while improved ducks produce 160-190 eggs per year. The number of commercial layers increased sharply from 241 million in 2015-16 to over 439 million by 2024-25, raising the commercial sector’s share in total egg production from around 79 per cent in 2015-16 to nearly 85 per cent by 2024-25.

In absolute terms, improved (commercial) fowls contributed about 123.3 billion eggs (86 per cent share) in 2024-25, while desi fowls produced

around 18 billion eggs (13 per cent) and ducks contributed roughly 1.4 billion eggs (1 per cent). The growing dominance of the organised sector reflects rapid adoption of high-yielding breeds, expansion of integrated farms and contract farming, improved feed formulations, stronger biosecurity, and closer linkages with organised retail, processing, and food service channels.

Figure 9: Species-Wise Egg Production in India (2024-25)



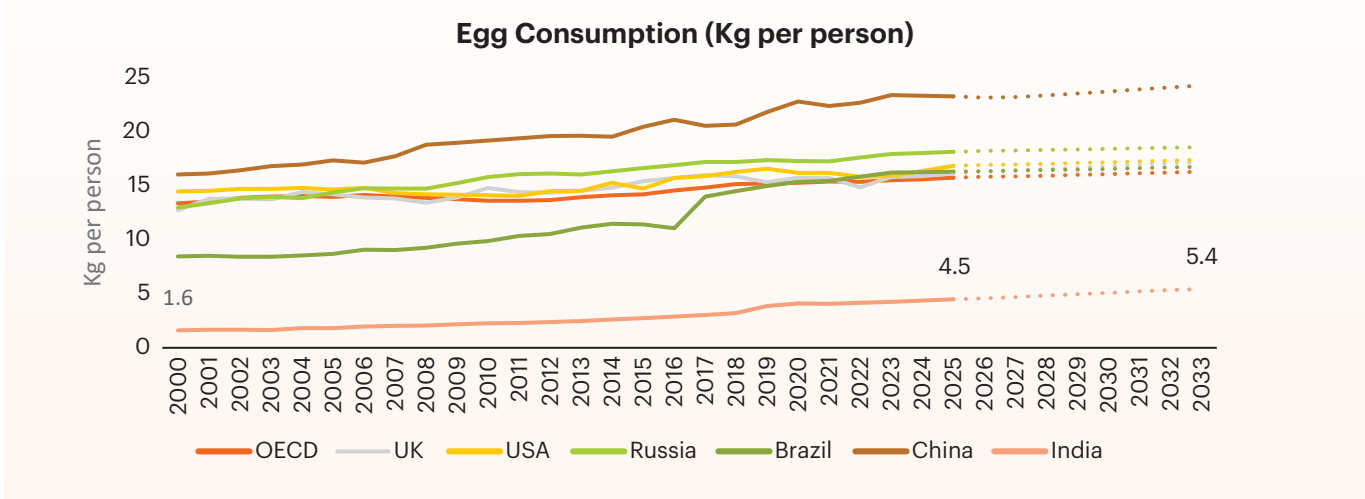
Source: BAHS 2025

Consumption Patterns and Nutritional Gap

Per capita egg consumption in India has risen steadily from 35-40 eggs per person per year in 2000 to over 90 eggs by 2023, supported by income growth, urbanisation, rising protein awareness, and inclusion of eggs in public

nutrition schemes such as Mid-Day Meal in several states. Despite this progress, consumption remains well below the National Institute of Nutrition’s recommended level of 180 eggs per capita per year and significantly lower than levels observed in most major economies.

Figure 10: Per Capita Egg consumption



Source: OECD-FAO Agricultural Outlook 2025-2034

Countries such as China, the United States, and Russia consume over 15 kg of eggs per capita annually, equivalent to more than 240 eggs per person, while India's average remains around 5.5-6 kg per year (OECD-FAO, 2025). Projections from the OECD-FAO suggest that although India's per capita egg consumption will continue to rise through 2033, the gap with high-consuming countries is likely to persist. This sustained consumption gap indicates substantial scope for future demand expansion, particularly through nutrition-focused policies and affordability-led growth.

Trade and Export Performance

Eggs represent India's most competitive poultry export segment, despite exports accounting for only 0.5-1 per cent of total domestic production. In 2023-24, India's poultry exports, including eggs and egg products, generated around USD 170-185 million, with eggs contributing a significant share. The sector's export strength lies in relatively lower cold-chain dependence, cost-efficient production, and the ability to supply both fresh and processed products.

Indian egg exports encompass a comprehensive range of products:

- Fresh table eggs (in shell)
- Hatching eggs (fertilized for incubation), a high-potential export segment for Southeast Asia and Gulf markets
- Dried eggs, egg powders, and yolks (processed and value-added categories)
- Preserved, cooked, or otherwise specially prepared egg exports

According to export data from ITC Trademap, the share and value of fresh, in-shell eggs have sharply increased since 2011, jumping from near zero to over USD 76-77 million in 2023-2024. At the same time, dried eggs and yolks, as well as egg powders, have shown strong, fluctuating contribution, often

reaching or exceeding USD 12-30 million per year. This diversification towards processed and specialty egg products reflects India's ability to move up the value chain and respond to global demand for longer shelf-life and industrial-use egg products.

India's primary export destinations for eggs are concentrated in GCC countries (Oman, UAE, Qatar, Bahrain, Saudi Arabia), South Asia (Maldives, Nepal, Bhutan, with periodic demand from Sri Lanka), and increasingly, in Africa and certain CIS/European markets. The export market is highly dynamic with spikes often coinciding with crises in partner countries. For instance, Oman alone accounted for over USD 32 million in Indian egg imports in 2023-24, and Sri Lanka became a top buyer during periods of local deficit.

Over 95 per cent of export-ready eggs originate from Namakkal, the "Egg City" of Tamil Nadu, highlighting strong regional specialization and supply-chain integration. India's competitive strengths include low-cost production environments, high feed-conversion efficiency in layer poultry, and consistent product supply. The growing role of domestic QSRs, organised retail, and processed food chains has also improved standardisation and quality compliance, indirectly strengthening export readiness for value-added egg products.

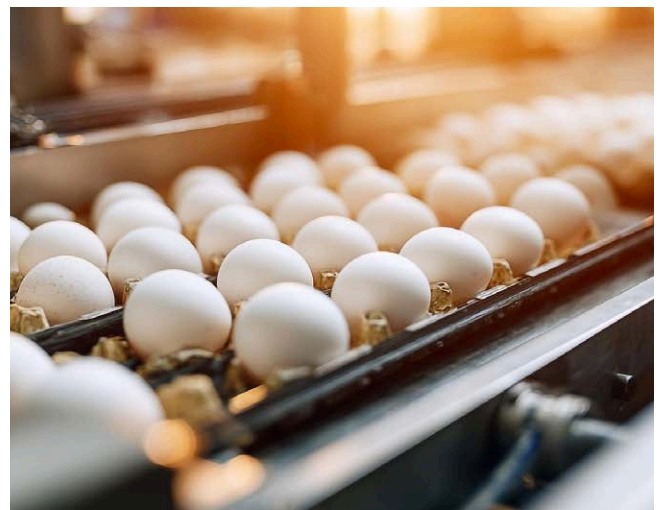
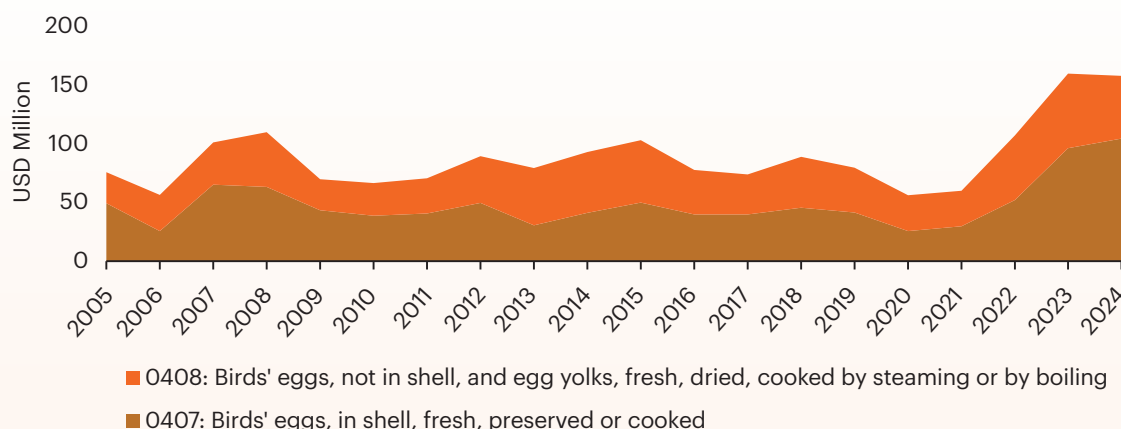


Figure 11: Egg Exports from India



Source: ITC Trademap

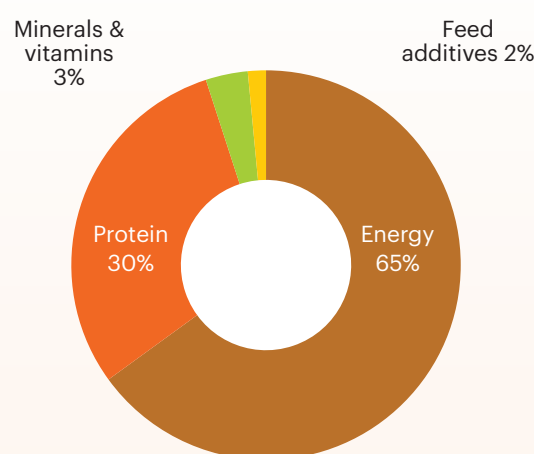
2.4 Feed Demand and Availability

Feed availability and price volatility are critical factors determining the stability of poultry supply, since feed accounts for as much as 65-75 per cent of the total cost of production (COP) in broiler meat and around 68-70 per cent in egg production, making it the single most important cost driver in the sector. Some industry estimates place feed costs even higher for layer operations, underscoring that poultry profitability is managed largely through feed efficiency and feed price control. The two most important components of poultry feed are energy and protein, with energy requirement met primarily by maize (corn) and protein requirements met mainly by soybean meal. The poultry industry is therefore highly dependent on these inputs, consuming approximately 60-65 per cent of India's maize output and nearly 30 per cent of its soybean meal production, linking its growth closely to cereal and oilseed market dynamics.

In poultry feed formulations, energy sources such as maize account for the largest share, around 65 per cent of total diet composition, while protein sources like soybean meal comprise another 30 per cent. The remainder consists of small but essential contributions from minerals (2 per cent) and vitamins and feed additives (3 per cent). Industry stakeholders highlight that chick costs account for roughly 20-25 per cent of broiler COP, while vaccination and medication represent a

relatively small but critical share for risk management costs. The dominance of energy (maize, wheat) and protein (soybean, groundnut cake) in the feed basket highlights why even small shifts in grain and oilseed markets can have an outsized impact on the costs, margins, and expansion decisions of India's poultry sector (Figure 12). The nutritional mix thus makes the sector vulnerable to the volatility of grain (energy) and oilseed (protein) prices, directly linking feed market fluctuations to poultry industry economics and growth.

Figure 12: Poultry Feed requirements



Source: Poultry Federation of India

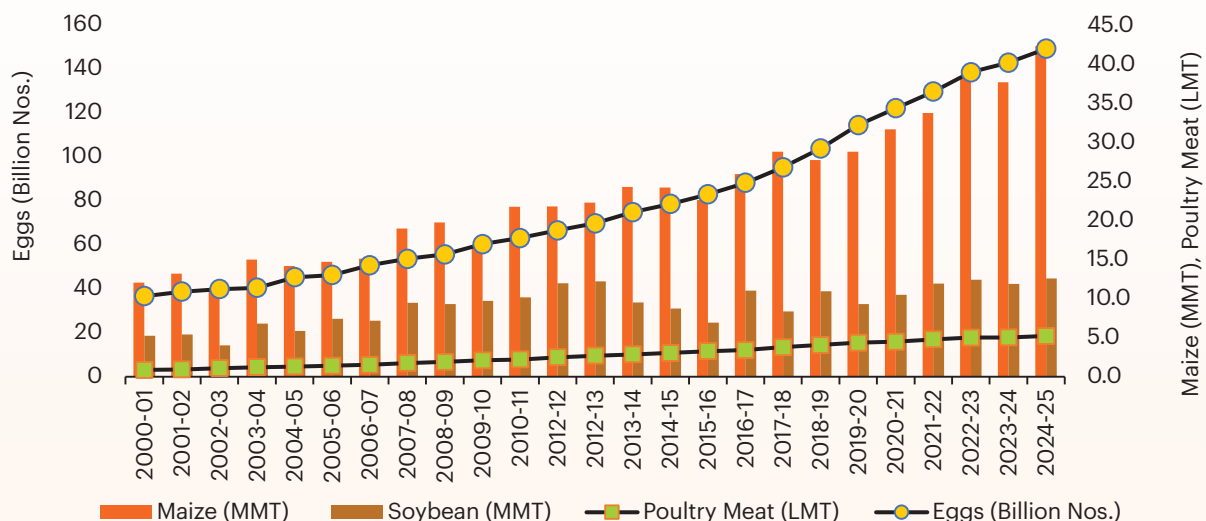
The following figure (Figure 13) shows a strong and sustained growth in India's production of eggs and poultry meat over the past two decades, with both keeping close pace with the domestic supply of key feed ingredients, maize and soybean. Average annual growth rates (AAGR) for eggs (6.3 per cent) and poultry meat (8.0 per cent) are robust, highlighting rapid structural expansion in the sector. However, stakeholders pointed out that growth in feed grain production is increasingly struggling to keep pace with the faster expansion of poultry output, particularly for maize and soybean, where competing uses are intensifying.

With egg production rising from 37 billion in 2000-01 to 149.1 billion by 2024-25, and poultry meat expanding even faster, from 0.9 million

tonnes to 5 million tonnes in the same period, were generally higher than the corresponding growth rates for maize (5.8 per cent AAGR) and soybean (6.1 per cent AAGR) output, suggesting that while feed production has increased substantially, demand from the fast-growing poultry sector, especially for protein (soybean) and energy (maize), has been even stronger at times.

According to industry stakeholders, maize availability is likely to tighten further over the next 3-4 years due to a combination of rising ethanol demand, climate variability, and relatively low per-hectare yields compared to global benchmarks.

Figure 13: All India Egg and Poultry Meat Production in Comparison to Maize



Source: BAHS 2025, USDA

Short-term fluctuations are also apparent. Years of especially high growth in poultry meat or eggs (such as 2002-03, 2007-08, 2009-10, 2016-17, and 2018-19) often coincide with or are followed by surges or dips in maize/soybean production. For example, while poultry meat grew by 18 per cent in

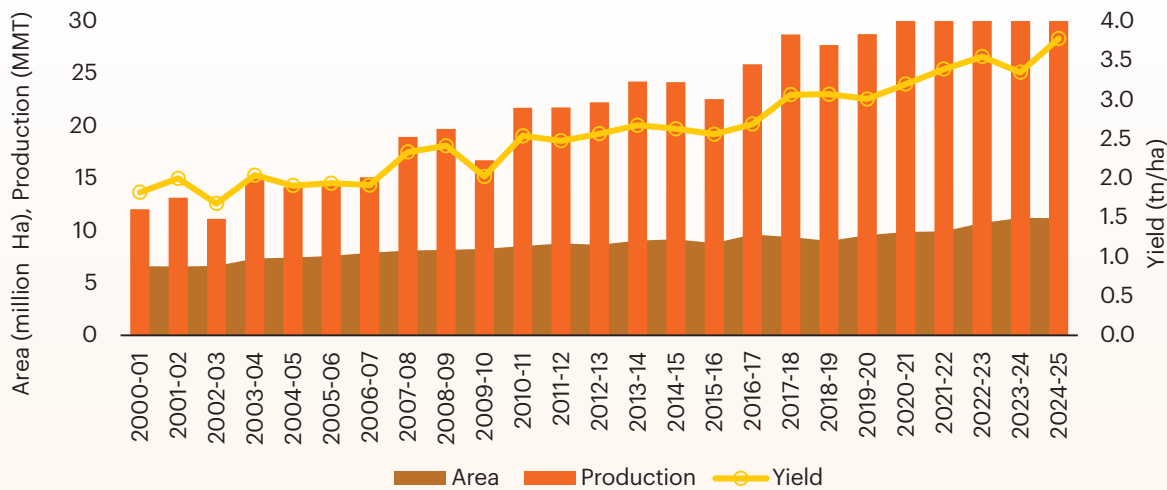
2002-03, maize and soybean output declined sharply, exposing feed-resource vulnerabilities. Conversely, years of strong maize growth (2003-04, 2016-17) provided relief from tight feed markets, enabling more efficient poultry expansion.

The long-term sustainability and profitability of poultry growth will continue to depend on securing stable, affordable supplies of both maize and soybean, which form the overwhelming majority of feed requirements.

Maize: Maize serves as the primary energy source in poultry feed formulations, making it indispensable for the sector. The annual maize requirement of India’s poultry industry is currently estimated at 25-28 million tonnes and is increasing at a robust rate of 6-7 per cent per year to keep pace with expanding egg and broiler production. With total national maize output at around 35-37 million tonnes, the poultry sector is by far the largest consumer of Indian maize, accounting for about 60 per cent of all maize harvested, while also competing with the starch, ethanol, and export industries for supply.

Despite notable improvements in average maize yield, which have risen steadily to about 3.5-3.8 tonnes per hectare in recent years, India still trails major global maize producers like the US and Brazil, whose yields is double Indian levels. As a result, while maize production has thus far largely met the needs of India’s dynamic poultry sector, supply remains finely balanced and vulnerable to shocks. Seasonal fluctuations in maize availability, particularly during the transition between the rabi and kharif harvests, frequently put forward pressure on feed prices, posing a recurring challenge for poultry producers and potentially impacting profit margins and sector growth. Sustained progress in maize productivity and supply chain management will be critical if India’s poultry sector is to maintain stable cost and support further expansion.

Figure 14: Area, Production and Yield of Maize (All India)



Source: USDA

A major emerging constraint is the rapid diversion of maize towards ethanol production as a key driver of recent feed cost inflation. Maize use for ethanol is estimated to have increased sharply from about 0.8 million tonnes in 2022-23 to 7.5 million tonnes in 2023-24 and is projected to exceed 12 million tonnes in 2024-25, significantly

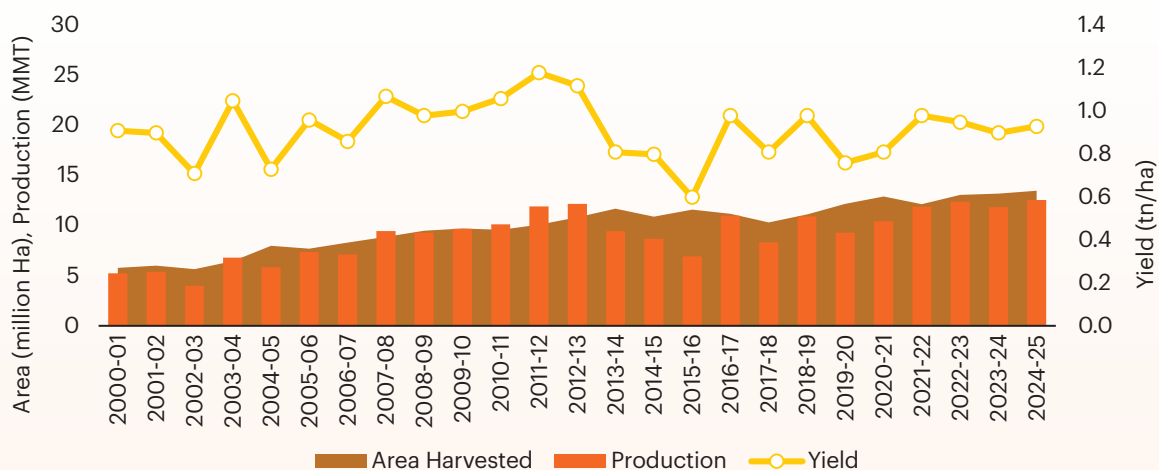
tightening feed availability. This shift has disrupted the demand-supply balance, with stakeholders reporting that maize prices have risen from INR 23-24 per kg to INR 30-32 per kg, increasing poultry feed costs by 15-20 per cent in some periods. As a coping response, some producers have resorted to alternative energy grains, often at

the cost of lower feed efficiency and higher overall production costs.

Beyond quantity constraints, stakeholders repeatedly flagged feed quality issues, particularly for maize and soybean meal. Problems include aflatoxin contamination due to improper drying and storage, high level of damaged grain during rain-affected harvests, adulteration in soybean DOC, and inconsistent supply quality, all of which directly affect bird health, productivity, and mortality rates. Unpredictable government interventions and procurement pressures from biodiesel and ethanol industries were also cited as adding to market uncertainty.

Soybean: Soybean is the principal protein source for India's poultry industry, making up about 25-30 per cent of typical poultry feed formulations. The supply of soybean meal is directly tied to the output of the soybean crop and the volume processed by domestic oilseed crushers. As shown in Figure 15, India's soybean production and area have both grown in a rough pattern over the past two decades, reflecting high year-on-year volatility due to erratic weather and price cycles. Yield, while somewhat improved, remain well below international benchmarks, oscillating around 1 tonne/ha, limiting the sector's ability to reliably expand supply.

Figure15: Area, Production and Yield of Soybean (All India)



Source: USDA

The availability of soybean meal for poultry feed is closely linked not only to harvest size but also to market incentives. When global soybean meal prices rise, Indian crushers are incentivized to export, diverting supplies away from the domestic poultry feed sector. This competition, combined with short harvest windows and occasionally weak yields, leads to sharp and often unpredictable swings in the price and availability of soybean meal for Indian poultry producers. Small and medium enterprises are especially vulnerable to these fluctuations, as they lack bargaining power and inventory capacity, making feed price spikes a major constraint for the growth and profitability of

India's poultry sector. Ensuring stable and affordable soybean meal availability thus remains a central challenge for maintaining steady expansion in both egg and broiler output.

Emerging Alternatives: In response to these pressures, there is a growing interest in alternative feedstocks, though with important limitations. Potential substitutes for maize include sorghum (jowar), pearl millet (bajra), broken rice, wheat, and rice-based DDGS (Distiller's dried grains with solubles), while alternative protein sources include sunflower meal, rapeseed/mustard meal, groundnut cake, and DDGS. However, stakeholders

cautioned that most alternatives have lower energy density, digestibility constraints, or higher anti-nutritional factors, often requiring enzyme supplementation and precise feed formulation to avoid productivity losses. While locally available and by-product-based feeds offer scope to reduce feed-food competition and support circular economy principles, they are unlikely to fully replace maize and soybean in the near term without yield improvement and quality assurance.

Overall, feed demand and availability emerge as a central structural constraint for the poultry sector, with rising competition from biofuel, industrial, and export market likely to intensify price volatility. Addressing these challenges will require productivity gain in maize and soybean cultivation, improved post-harvest management, rationalisation of feed-fuel trade-offs, and greater investment in alternative feed ingredients. More fundamentally, feed security must increasingly be viewed as a strategic pillar of poultry-sector development. As poultry production expands over the coming decades, the availability of affordable and reliable feed resources is likely to become a more binding constraint than consumer demand itself. Ensuring adequate feed supplies will therefore be critical not only for producer profitability but also for national protein security and the long-term competitiveness of India's poultry sector.

Industry Estimate of Poultry Feed Requirement (Maize-Soya Demand)

As discussed in earlier sections, feed costs dominate poultry production expenditure, accounting for 65-70 per cent of total costs, with maize and soybean meal (soy cake) forming the core energy and protein sources. Building on that discussion, this section presents industry estimates of feed demand and the implied requirement of maize and soy cake, which are critical for assessing future supply pressures. Based on industry formulations, maize typically accounts for 30-40 per cent of layer feed and 60-65 per cent of broiler feed. When aggregated across layers, broilers, and breeders, the poultry industry uses approximately 50 per cent maize

and 17-18 per cent soy cake in total compound feed production. In 2024-25, the poultry sector produced 40 MMT of compound feed, which consumed approximately 20 MMT of maize and 7 MMT of soy cake.

Table 3: Industry Estimates for Feed Requirement by Poultry Category (2024-25 and 2025-26)

Category	2024-25 Feed Production (MMT)	2025-26 Feed Projection (MMT)
Layer	18	19
Broiler	20	22
Breeder	2	2
Total Poultry Feed	40	43

Source: Industry Estimates

Table 4: Derived Maize and Soy Cake Requirement (Based on Feed Composition)

Year	Total Feed (MMT)	Maize Requirement (50%) (MMT)	Soy Cake Requirement (~17%) (MMT)
2024-25	40	20	7.0
2025-26 (Est.)	43	21	7.5

Source: Industry Estimates

With continued expansion in poultry production, total feed output is projected to rise to 43 MMT in 2025-26, implying maize and soy cake requirements of roughly 21 MMT and 7.5 MMT, respectively (Tables 3 and 4).

The implications of the poultry data gap are particularly significant in the context of feed planning. Feed demand projections are highly sensitive to assumptions regarding bird population and production volumes. If industry estimates more accurately reflect current sector realities, future maize and soybean requirements may be considerably higher than projections based solely on official statistics. This suggests that underestimation of poultry production could inadvertently result in underinvestment in feed production, storage, logistics, and feed research infrastructure. Strengthening data systems is therefore a prerequisite for effective feed-security planning.



3. Contribution of Poultry Sector to Economic Growth, Nutritional Security and Environmental Sustainability

3.1 Economic Growth: Livelihoods, Income, and Rural Inclusion

The rapid expansion of egg and poultry meat production, eggs growing at over 6 per cent annually and poultry meat at around 8 per cent, has significantly widened the sector's employment and value-chain footprint across states and districts. Poultry production is relatively labour-intensive compared to many crop enterprises, offering year-round income opportunities and lower entry barriers for small and medium farmers through integrator-led contract farming models.

Importantly, the sector has demonstrated strong potential to absorb women and youth, especially in activities such as hatchery operations, feed handling, grading, processing, and retailing.

From a policy perspective, the poultry sector aligns closely with India's broader goals of rural diversification, non-farm job creation, and structural transformation of the agricultural workforce. Targeted interventions, such as skill development and training programmes, veterinary and extension

support, entrepreneurship promotion in processing and feed manufacturing, and investment in cold chains and biosecure infrastructure, could significantly amplify the employment and income gains from poultry. Strengthening these linkages would not only enhance sector resilience and productivity but also position poultry as a key driver of inclusive rural growth and agribusiness-led employment generation.

Emerging as one of the most dynamic segments of Indian agriculture, the poultry sector contributes ~INR 2.7 lakh crore (16% of livestock GVA) and produces ~5 MMT of meat annually. Its rapid growth is driven by efficient production cycle and strong integrator model that support nearly 5 million livelihood. Deep dependence on feed-accounting for 65–70% of cost-anchors it to crop agriculture while simultaneously exposing it to input price volatility.

Role in Livelihoods and Employment Generation

India's poultry industry has emerged as one of the most dynamic segments of the agricultural economy, with over 3.3 billion birds slaughtered annually, producing about 5 million tonnes of poultry meat and nearly 150 billion eggs in 2024-25 (MoFAHD, 2025), supporting livelihoods for around five million people across production, processing, and ancillary services. Over the past two decades, the sector has undergone a rapid structural transformation, from predominantly backyard and subsistence activity to a semi-industrialised, vertically integrated value chain characterised by commercial farms, specialised hatcheries, feed mills, improved genetics, contract farming models, and organised marketing channels.

Employment generation extends well beyond farm-level labour. The poultry value chain creates substantial jobs in feed manufacturing and raw material supply (maize, soybean meal, broken rice, DDGS), hatcheries and chick supply, veterinary services, pharmaceuticals, vaccines and diagnostics, construction of poultry sheds and equipment, transport and cold-chain logistics, processing (dressed chicken, frozen, processed and ready-to-eat products), and wholesale and retail distribution. The feed ecosystem alone is a major employment and income generator, with feed accounting for 65-70 per cent of total production costs in broiler and layer operations, thereby linking poultry growth directly to maize and oilseed farming, feed milling, transport, storage, and quality testing services.

The sector also exhibits a strong multiplier effect. Income earned by poultry farmers, contract growers, feed mill workers, transporters, and retail staff circulate within rural and peri-urban economies, stimulating demand for services such as housing, retail trade, education, and healthcare. In poultry-dense clusters such as Namakkal in Tamil Nadu, Pune-Satara belt in Maharashtra, parts of Telangana and Andhra Pradesh, poultry-led growth

have supported non-farm employment and rural enterprise development, particularly in regions with limited alternative livelihood options.

Role in Enhancing Rural Incomes and Entrepreneurship

The poultry sector offers one of the shortest production cycles in Indian agriculture, with broiler operations reaching market weight within 5-7 weeks and layers beginning egg production within 18-20 weeks. Combined with relatively modest entry capital requirements, particularly for backyard, semi-commercial, and contract-farming models, poultry is among the most accessible livestock-based enterprises for smallholder farmers, women's self-help groups (SHGs), landless households, and rural micro-entrepreneurs. Stakeholder consultations indicate that integrator-led models and input-output contracting have further reduced entry barriers by limiting price and market risks for small growers.

Sustained growth in demand for eggs and poultry meat, driven by rising incomes, urbanisation, changing food habits, and increasing protein awareness has created favourable market conditions for small-scale poultry enterprises



(OECD-FAO, 2025). Egg production, for instance, has expanded steadily over the past two decades, supported by rising per-capita consumption and declining real prices, which have improved affordability across income groups. The persistence and gradual expansion of backyard poultry systems, despite rapid commercialisation elsewhere, suggests that poultry continues to play a critical role in supplementary income generation, household nutrition, and livelihood diversification, particularly in rainfed and marginal regions.

At the same time, poultry production in India remains regionally concentrated, with the top five egg-producing states accounting for nearly 65 per cent of national output, reflecting strong clustering in states such as Tamil Nadu, Andhra Pradesh, Telangana, Maharashtra, and Karnataka. While such clustering enhances efficiency through scale economies, integrated supply chains, and specialised services, it also highlights significant untapped potential in under-served eastern, central, and north-eastern regions. These regions offer scope for targeted policy interventions to promote poultry entrepreneurship as a pathway for rural income growth, especially where alternative non-farm employment options are limited.

However, income sustainability for small and micro-entrepreneurs is increasingly constrained by high and volatile input costs, particularly feed. Indian poultry producers face significantly higher feed costs than many global competitors, with maize prices typically in the range of INR 23-25 per kg in India, compared to INR 13-15 per kg in major exporting countries, directly compressing producer margins. For rural micro-entrepreneurs with limited working capital, feed cost management, access to quality inputs, and risk mitigation are therefore critical determinants of viability.

Policy measures aimed at reducing input cost burdens, such as feed-grain aggregation and bulk procurement through Farmer Producer Organisations (FPOs), promotion of regionally available alternative feed ingredients, and improved storage and quality control, can significantly enhance profitability at the smallholder level. Equally important are interventions that strengthen market access, including linkages with aggregators and integrators, expansion of cold-chain and local processing infrastructure, and facilitation of assured offtake through institutional buyers. Targeted support for women and youth entrepreneurs, through training, credit access, and entrepreneurship development programmes can help convert poultry's inherent scalability and fast returns into sustained income growth, enterprise development, and inclusive rural transformation.

At the same time, many small and medium poultry producers continue to face challenges related to fragmented input procurement, limited access to affordable finance, weak bargaining power, and dependence on intermediaries for marketing. Strengthening producer aggregation through Farmer Producer Organisations (FPOs), cooperatives, and cluster-based institutions can improve access to inputs, veterinary services, working capital, and assured markets. Such collective approaches can also facilitate compliance with traceability, food-safety, and quality standards that are increasingly becoming important in modern retail and export-oriented value chains.



Economic Viability Across Production Models

Economic outcomes vary sharply across poultry production systems.:

- **Integrator-driven models:** Integrators supply major inputs, including chicks, feed, medicines, and technical supervision, reducing market price, and procurement risks for farmers, who receive stable, predictable income tied to performance, along with protection from disease-related mortality. Farmers provide housing and labour, earning consistent but modest returns per batch, making this system economically viable for those seeking assured income. Integrators also generate substantial employment across hatcheries, feed mills, logistics, extension services, and processing facilities.
- **Large-Scale Independent Commercial Farms:** They achieve profitability through bulk purchasing of inputs, in-house feed milling, strong backward and forward linkages, diversified markets, daily sales volumes, and investment in automation, biosecurity, and value-added processing (e.g., egg powder plants in Namakkal). They can average out market fluctuations and earn higher margins, though farmers bear full production and price risks. Employment generation is moderate because mechanisation reduces labour per bird, yet indirect jobs are created in feed supply, transport, marketing, and value-added processing.
- **Semi-Integrated / Small-Scale Commercial Farms:** They face the greatest economic vulnerability due to volatile feed cost, lack of bulk buying power, weak bargaining capacity, inadequate veterinary access, higher mortality risk, and full exposure to disease outbreaks and local trader exploitation. Their cost of production is significantly higher, profitability inconsistent, and access to credit extremely

limited, making long-term sustainability difficult. Employment potential is low: these farms depend heavily on family labour, struggle to retain skilled workers. While they create local employment for youth and small entrepreneurs, they also face higher operational risks from disease outbreaks, fluctuating feed prices, and market exploitation by intermediaries. Their economic viability is therefore more variable, with profit margins strongly influenced by local market dynamics and the farmers' managerial capacity.

- **Backyard / Traditional Poultry:** These operate as a low-input, low-output system providing nutritional support and small supplementary income rather than functioning as an economically viable enterprise. Birds scavenge freely, require little investment, and are usually desi or low-input-technology breeds, making the system ideal for landless and marginal households, particularly women. Backyard poultry offers minimal employment but serves as a critical livelihood buffer, enhancing household nutrition (especially protein intake) and generating occasional income from surplus eggs or birds, and holding cultural value in many communities.



3.2 Nutrition and Affordable Protein Security

Poultry in India's Nutrition Transition

India's rising demand for poultry products reflects a broader nutrition transition driven by income growth, urbanisation, and changing dietary preferences. As per capita incomes increase and urban consumers seek affordable, high-quality protein, poultry meat has emerged as a preferred option due to its relatively low price, ease of preparation, and wide availability. Poultry meat now accounts for over 50 per cent of total meat consumption in India (MoFAHD, 2025), while eggs have become a regular component of household diet as well as public nutrition programmes such as the Mid-Day Meal Scheme, in several states.

On a cost-per-gram basis, poultry products are the most economical animal-source protein available in India. Their widespread cultural acceptability and availability even in remote and rural markets further strengthen demand. Rising protein awareness, a large youth population, steady GDP growth, and the rapid expansion of organised retail, quick-commerce platforms, and modern food-service channels have reinforced these trends. Together with global shifts towards low-cost animal protein, these factors indicate that poultry consumption in India is likely to continue its upward trajectory.

Despite this progress, significant nutritional gaps persist. Per capita egg consumption has reached around 100-105 eggs per year, still well below the National Institute of Nutrition's recommended level of 180 eggs (ICAR-DPR, 2015). Per capita poultry meat consumption stands at only 6-7 kg per year, compared with a global average of 20-25 kg. This gap represents substantial scope for dietary upgrading, particularly among children, adolescents, pregnant women, and low-income households.



Role in Public Nutrition and Health Programmes

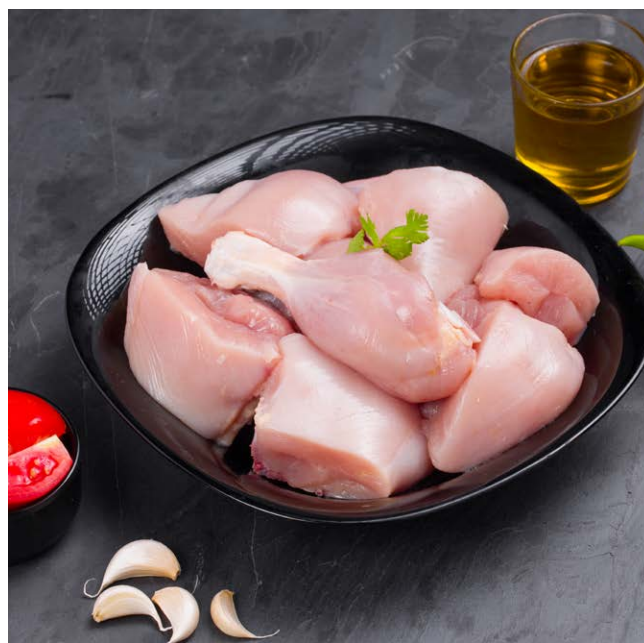
Eggs and poultry meat are rich sources of high-quality protein, essential amino acids, and critical micronutrients such as vitamin B12, iron, zinc, and choline. These nutrients are central to addressing widespread deficiencies in India, particularly among rural, low-income, and nutritionally vulnerable populations. Chicken and eggs are the most affordable animal-source proteins on a cost-per-gram basis and are widely available even in remote and underserved regions. Their high availability, ease of preparation, and "secular" acceptability across religious and cultural groups further enhance their suitability as mass nutrition foods in a diverse country like India.

From a nutrition policy perspective, increasing egg and poultry consumption directly supports SDG 2 (Zero Hunger) and SDG 3 (Good Health and Well-being) by improving diet quality rather than merely increasing calorie intake. Stakeholders consistently highlighted poultry products as the fastest and least-cost pathway to improved protein intake for vulnerable groups.

Eggs also has a critical role in public nutrition programmes, especially the Mid-Day Meal (MDM) Scheme and allied state nutrition initiatives, where eggs have emerged as a cost-effective, logistically feasible intervention to improve child nutrition outcomes. The inclusion of eggs in school meals has been associated with improvements in protein intake, attendance, and dietary diversity, particularly in states that have adopted regular egg provisioning. Given their high biological value and ease of distribution, stakeholders argued that eggs are uniquely positioned to strengthen POSHAN Abhiyaan objectives, especially in addressing protein-energy malnutrition, anaemia, and micronutrient deficiencies among children, adolescent girls, pregnant women, and lactating mothers. Expanding egg inclusion in government nutrition programmes can therefore contribute significantly to improving nutritional security and human capital outcomes, particularly among vulnerable and low-income populations.

While large-scale, rigorous impact evaluations linking poultry consumption directly to outcomes such as reductions in child stunting or maternal anaemia remain limited in India, available evidence and stakeholder experience suggest strong indirect effects. Rising incomes, urbanisation, and increased protein awareness, particularly among younger populations, are driving sustained growth in poultry consumption, improving access to animal-source food across income groups. Stakeholders also noted that the expansion of poultry-based livelihood in rural areas enhances household income, which in turn enables greater dietary diversification, reinforcing nutrition gains through both consumption and income pathways. These dynamics align closely with the Viksit Bharat vision of nutrition security driven by productivity growth, market integration, and income enhancement rather than dependence on subsidies alone.

While these circular economy opportunities highlight the sector's potential to align production growth with environmental and energy goals, realising the full nutritional and public health benefits of poultry expansion requires an equally strategic approach to food safety, biosecurity, and responsible production practices. Stakeholders consistently cautioned that expanding poultry production for nutrition must be accompanied by robust public health safeguards. The dominance of live-bird markets, accounting for an estimated 98 per cent of chicken sales in India, poses challenges related to hygiene, zoonotic disease risks, and uneven food-safety standards. Stakeholders highlighted growing urban demand for antibiotic-free chicken, cage-free eggs, and safer processed formats as a signal of rising consumer awareness around food safety and public health. At the same time, the feed-intensive nature of poultry production and the accumulation of waste and litter necessitate better environmental management to avoid adverse health externalities, linking poultry sector growth to SDG 12 (Responsible Consumption and Production).



Beyond conventional waste-management approaches, poultry litter increasingly presents an opportunity to support circular-economy and renewable-energy objectives. Poultry litter can serve as a feedstock for anaerobic digestion systems that generate biogas, which can subsequently be upgraded into compressed biogas (CBG) or biomethane. The resulting digestate can be utilised as an organic fertilizer, creating an additional revenue stream while reducing the environmental footprint of poultry production. In regions characterised by high poultry density and integrated production systems, litter aggregation can support commercially viable waste-to-energy projects, transforming what is often perceived as an environmental liability into a productive resource contributing to rural incomes, renewable energy generation, and climate mitigation.

Maximising the nutrition and public health benefits of poultry therefore requires a holistic and aligned strategy, as emphasised by stakeholders: expanding the supply and affordability of eggs and poultry meat for vulnerable population;

strengthening disease surveillance, food-safety regulation, and responsible antibiotic use; integrating poultry more systematically into nutrition programmes such as POSHAN Abhiyaan and the Mid-Day Meal Scheme; and promoting sustainable waste-management practices. Such an approach ensures that poultry sector expansion delivers lasting gains in protein intake and nutritional outcomes without imposing avoidable public-health or environmental cost, thereby supporting India's broader commitments under the SDGs and national nutrition missions.

From a nutrition-policy perspective, accurate measurement of poultry production is equally important. Underestimation of poultry output may lead to an incomplete assessment of the sector's contribution to national protein availability and nutrition security. Improved measurement systems would therefore strengthen evidence-based planning for programmes aimed at improving access to affordable animal-source protein.



Food Safety and Biosecurity Standards across Poultry Production Models

Food safety and biosecurity practices vary significantly across India's poultry value chain, reflecting differences in scale, integration, veterinary oversight, and production intensity. Large-scale and integrator-driven systems are best positioned to maintain high standards, while semi-integrated, small-scale, and backyard systems face persistent structural constraints.

- **Large-Scale / Integrator-Driven Model:**

Integrator-driven poultry systems maintain the strongest and most consistent food safety and biosecurity standards in India. Their ability to implement stringent measures arises from scale, professional management, and control over nearly all stages of production. Integrators supply day-old chicks, standardized feed, vaccines, medicines, and technical veterinary oversight, allowing them to enforce uniform health and hygiene practices across contracted farms.

Integrator-led poultry systems typically maintain high standards of biosecurity and food safety through centralized control and standardized protocols. These include restricted farm access, clear separation of clean and contaminated zones, and controlled movement of people, vehicles, and birds to minimize disease risk. Integrators implement uniform vaccination schedule and continuous health monitoring through company veterinarians, ensuring early detection and timely intervention while limiting unsupervised antibiotic use. Feed and water quality are tightly regulated, with integrators supplying nutritionally balanced feed and monitoring water safety to reduce contamination risks. Regular sample testing, record-keeping, and traceability systems support compliance and transparency across production cycle. Continuous farmer training, strict enforcement of standard operating procedures, and

performance-linked incentives further strengthen adherence to biosecurity norms and improve overall flock health and productivity.

Gaps and Constraints

Even in this high-performing model, following challenges exist:

- » Compliance varies from farm to farm, monitoring is periodic, not continuous.
- » Small contract farmers may cut corners due to cost or labour shortages.
- » Traceability and audit systems remain weaker than international (EU/US) standards.
- » Antibiotic misuse still occurs where farmers self-medicate to prevent mortality.
- » Dense poultry regions face risks of cross-contamination from neighbouring farms.

Despite these gaps, integrators are the only model capable of implementing full-chain food safety from live bird production to processing and market due to scale, veterinary support, and centralized control.

- **Organized Large-Scale Independent Farms (Non-Integrated):** Large independent layer or broiler farms often housing tens of thousands to over a million birds in the layer sector follow more advanced biosecurity practices compared to small-scale farmers. These farms usually implement structured sanitation, access control, and vaccination. However, unlike integrators, they operate autonomously without centralized oversight, leading to variability in execution.

Core Strengths of Organized Large Scale Independent Farms include

- » Physical barriers such as single-entry gate, vehicle disinfectant, footbaths, and controlled visitor movement.
- » Standard vaccination schedules for major poultry diseases; sourcing chicks from certified hatcheries.
- » Testing of feed raw material, finished feed, and periodic monitoring of water quality.

- » Quarantine, sanitation, and “all-in/all-out” flock management in many farms.
- » Geographic virus/bacteria surveillance practiced by several organized players.

Implementation Gaps include

- » Biosecurity is strong in principle but inconsistent in practice especially when labour lapses occur because of biosecurity fatigue.
- » Traceability, residue testing, and record-keeping are weaker than in integrator systems.
- » Trader vehicles often move across multiple farms without proper cleaning, leading to cross-contamination.
- » Disposal of dead birds and litter management are sometimes inadequately performed.
- » Many large farms still lack full automation or high-quality quarantine facilities.
- » Dependence on human labour makes standardization more difficult.

Large independent farms thus possess the framework for strong food safety and biosecurity, but variability in adherence and documentation creates vulnerabilities.

- **Semi-Integrated / Small-Scale Commercial Farms:** Small-scale commercial poultry units procure chicks, feed, and medicines from the open market and manage production independently. These farms struggle the most with biosecurity due to resource limitations, lack of technical knowledge, and inadequate public veterinary services.

Common Food Safety and Biosecurity Risks associated with Semi-Integrated/ Small Scale Commercial Farms include

Inadequate vaccination

- » Vaccination schedules are inconsistently followed after the initial hatchery vaccines.
- » Farmers often skip doses due to cost, labour shortage, or lack of veterinary support.

Poor farm hygiene

- » Irregular cleaning of sheds, feeders, and waterers supports pathogen survival (Salmonella, E. coli).
- » Wet litter, poor ventilation, and high stocking density increase disease pressure.

Weak access control

- » No fencing, minimal visitor control, and unrestricted movement of people and animals.
- » Footbaths, rodent control, and vehicle disinfection are rarely practiced.

High dependence on self-medication

- » Farmers frequently use antibiotics prophylactically to prevent disease.
- » This contributes to antimicrobial resistance (AMR) and residues in meat and eggs.

Poor waste and carcass management

- » Open disposal of dead birds or litter spreads pathogens to nearby farms and water bodies.
- » Lack of composting pits, incinerators, or scientific disposal systems.

Wet market-related hazards

- » Birds are often sold live or dressed at informal markets with poor hygiene.
- » No cold chain, mixing of species, and exposure to contaminated surfaces heighten risks.

These farms present some of the most significant food safety challenges in the value chain. Their vulnerability magnifies disease transmission risks and creates a larger reliance on antibiotics, directly affecting human health and product safety.

- **Backyard / Traditional Poultry:** Backyard poultry systems operate on a low-input, low-output scavenging model where birds roam freely around households. This makes biosecurity extremely weak and contributes to high zoonotic and disease transmission risks.

Key Vulnerabilities associated with Backyard/Traditional Poultry includes

Free-ranging exposure

- » Birds mix with wild birds, rodents, other livestock, and neighbouring flocks.
- » High exposure to pathogens such as avian influenza, Newcastle disease, Salmonella, and E. coli.
- » Difficult to trace or control disease spread due to unrestricted movement.

Minimal vaccination and veterinary care

- » In government-supported schemes, chicks are raised in mother units for four weeks before distribution, but post-distribution vaccination is rare.

- » Veterinary care is not at all available or minimal.

Informal slaughter and handling

- » Birds are slaughtered at home or village-level without sanitation measures.
- » Contaminated surfaces increase foodborne risk.

Poor waste and carcass disposal

- » Dead birds are often disposed of openly, attracting predators and spreading pathogens.

Backyard eggs and meat rarely enter formal markets; they are consumed within rural households or villages. This limits large-scale food safety risk but keeps rural families vulnerable to zoonotic infections.

3.3 Environmental Sustainability

Low Greenhouse Gas Emissions and Environmental Footprint

The poultry sector, comprising poultry meat and eggs, has a significantly lower greenhouse gas (GHG) footprint compared with other livestock subsectors, making it one of the most climate-efficient sources of animal protein. Globally, livestock contributes around 14-15 per cent of anthropogenic GHG emissions, but these emissions are highly uneven across species. Beef

production alone accounts for the largest share, contributing approximately 2.9 gigatonnes of CO₂-equivalent emissions, or 41 per cent of total livestock emissions. This is followed by cattle milk at 1.4 gigatonnes (20 per cent), pig meat at 0.7 gigatonnes (9 per cent), buffalo milk and meat at 8 per cent, chicken meat and eggs at around 8 per cent, and small ruminant milk and meat at 6 per cent. The remaining emissions arise from other poultry species and non-edible livestock products (FAO, 2013).



When emissions are assessed on a protein-equivalent basis, poultry performs even more favourably. Poultry meat emits around 5.7 kg CO₂-equivalent per 100 g of protein, while eggs emit approximately 4.2 kg. In contrast, beef emits nearly 49.9 kg, lamb and mutton 19.9 kg, and dairy milk around 9.5 kg of CO₂-equivalent per 100 g of protein (Poore & Nemecek, 2018). This large differential reflects poultry's superior feed conversion efficiency, shorter production cycle, and absence of enteric methane emissions that dominate ruminant livestock system. From a climate policy perspective, these characteristics position poultry as a key component of low-emission dietary transition and climate-resilient food system.

In the Indian context, where demand for animal protein is rising rapidly, poultry offers a pathway to meet nutritional needs while moderating the growth of agricultural emission. However, while methane emission from poultry is negligible, environmental sustainability challenges arise primarily from nitrous oxide emission, waste management, and localised pollution associated with high-density production clusters.

Poultry Litter, Nitrous Oxide, and Waste-Related Externalities

Indian livestock systems contribute a relatively small but environmentally significant share of nitrous oxide (N₂O) emission, largely linked to manure management and land application practices. Poultry accounts for an estimated 86.1 per cent of total livestock-related N₂O emission in India, reflecting the concentration of nitrogen-rich waste in intensive poultry system (Chhabra, Manjunath, Panigrahy, & Parihar, 2013). Improper handling of poultry litter leads to emissions of ammonia and nitrous oxide, leaching of nitrates into soil and groundwater, and contamination of surface water bodies.

Poultry litter, which includes bedding material, manure, spilled feed, and feathers, cannot be applied directly to fields without treatment due to

its high pathogen load and nitrogen concentration. Research indicates that thermochemical conversion of poultry litter into biochar offers a promising and economically viable solution. Biochar production stabilises nutrients, reduces GHG emission during land application, improves soil fertility, enhances water-holding capacity, and increases nutrient retention (Shakya & Agarwal, 2017). While still limited in scale, such approaches demonstrate the potential for aligning poultry waste management with circular economy and climate mitigation objectives.

Environmental Performance across Poultry Production Models

Environmental outcomes vary significantly across poultry production systems, depending on scale, degree of integration, access to capital, and regulatory oversight.

- **Organized Large-Scale Independent Farms:** Organized large-scale independent poultry farms handle substantial volumes of manure, litter, and mortality, which needs them to invest in structured and capital-intensive waste management system. Due to the scale of operations, these farms are better equipped to adopt scientific practices for disposal, recycling, and environmental control.



Litter and Manure Management

Large farms with deep-litter systems collect litter (bedding material and droppings) accumulate during the rearing cycle. At the end of the production cycle the entire litter is removed and processed. The processing involves drying and composting, which reduces moisture, stabilizes nutrients, and minimizes pathogen load. Aeration during composting helps convert the litter into a usable manure product, and several farms sell this processed material as organic fertilizer to agricultural users. Some large operations also explore integrating litter into biogas plants. Although still limited in India, there are increasing references to the use of poultry waste as feedstock for biogas plants.

Dead Bird / Mortality Disposal

Mortality management is conducted more systematically than in smaller systems. Dead birds are removed promptly from sheds to prevent disease spread. Disposal methods include deep burial in pits, composting, and less commonly incineration due to its higher cost. The guiding principle across all methods is that dead birds must not be dumped openly, as they represent a significant disease risk.

Circular and Reuse Models

Large farms engage in several circular economy practices based on the waste streams they generate. Processed litter and manure are sold as organic fertilizers, which are valued for improving soil fertility and moisture retention. Some farms use poultry droppings/litter as pond fertiliser in fish cum poultry models.

Key Challenges and Gaps

Despite their scale and improved capacity, large farms still face environmental management challenges. Odour, ammonia, and hydrogen sulphide (H_2S) emissions around manure piles are common concerns, alongside vector issues such as flies and rodents. Not all farms invest fully in composting or biogas structures, as these require substantial capital expenditure. Traceability of nutrient composition or chemical residues in manure used as fertilizer may be inadequate. During disease outbreaks, inconsistencies in mortality disposal practices elevate biosecurity risks. Additionally, storing large volume of litter in close proximity to poultry sheds without proper ventilation or piling methods can increase pathogen load, odour, and risks of disease spread.



- **Large-Scale / Integrator-Driven Model:** In integrator-driven poultry system, environmental sustainability is shaped by the strong emphasis on brand reputation, regulatory compliance, and community expectations. Large operators must coexist responsibly with surrounding neighbourhood, which compels them to manage litter, manure, and dead birds in a highly scientific manner while meeting all Pollution Control Board (PCB) norms. This level of compliance is largely driven by the need to protect corporate image and maintain trust within integrated supply chains. Integrators cannot risk improper disposal because failures in waste handling can lead to serious environmental, public health, and biosecurity consequences.

Litter and Manure Management in Integrator Systems

Integrator farms generate substantial volumes of litter consisting of bedding material, manure, spilled feed, and feathers. Their systems prioritise structured and rule-bound management practices. Composting is commonly used, where litter is piled and allowed to decompose aerobically, reducing pathogens and producing a saleable organic fertilizer. In some locations, processed litter is marketed in one kilogram or half-kilogram packs by ancillary units, especially in southern India, after being standardised for NPK content. Controlled storage is also practised, allowing litter to dry and lowering ammonia emissions and odour. Some integrators have experimented with using litter as feedstock for biogas, though broader adoption remains limited due to high capital requirements.

Dead Bird / Mortality Disposal

Dead birds are removed promptly from sheds to prevent spread of infection and are disposed of through burial in deep pits, composting, or incineration. Incineration ensures complete pathogen destruction but is costly; composting is

increasingly favoured as it converts carcasses into nutrient-rich material in an environmentally safer way. In some integrator models, carcass collection is organized centrally, ensuring regulatory compliance and preventing dumping.

Environmental and Public Health Risks

Even with strong systems in place, large-scale operations inherently carry environmental and public health risks when waste is not handled correctly. High stocking density lead to odour, dust, and ammonia emission; poor litter treatment can create fly nuisance and neighbourhood discomfort; and improper disposal of litter or carcass can contaminate soil and alter soil fertility. Groundwater contamination becomes likely when burial pits are shallow, or litter is dumped unsystematically. A particularly critical risk arises if litter or dead birds contain residues of resistant bacteria, which can enter soil systems and contribute to antimicrobial resistance (AMR), affecting both livestock rearing and agriculture. Integrators typically mitigate these risks through strict biosecurity, monitoring, and adherence to PCB norms, though smaller independent operators with similar scale may not maintain the same standards.

- **Semi-Integrated / Small-Scale Commercial Farms:** Small-scale commercial farms generate significantly more waste than backyard units, yet waste management practices remain largely informal and inconsistent.

Unlike large integrator-driven farms, these units have limited financial resources, lower regulatory oversight, and weaker technical capacity. As a result, both liquid and solid waste systems often operate in ways that pose risks to public health, animal health, and the surrounding environment.

A major concern is the disposal of liquid waste from sheds, cleaning operations, and slaughter/wet market units. In many villages and peri-urban locations,

wet market effluent and shed washing are released directly into drainage system. These drains often carry both liquid waste and small amounts of solid waste (feathers, intestine remnants, blood clots, bedding fragments), which accumulate and eventually clog the drainage network. Clogged drains become hotspots for foul odour, mosquito and fly breeding, bacterial contamination, and possible leaching into nearby water bodies. This is a serious sanitation concern.

Solid waste (litter, manure, offal and dead birds) handling is also generally unscientific. Litter and manure are often dumped in open areas or applied directly on fields without composting.

Small solid waste from wet markets (blood clots, gut content, trimmings) is also sometimes flushed into drains, worsening clogging and microbial load. Dead birds are commonly buried informally in shallow pits or given to pigs/dogs that increase disease transmission. This creates risk of odour nuisance and vector (flies, rodents) breeding, leaching of nutrients and pathogens into soil, contamination of groundwater, persistence of antibiotic residues and antimicrobial-resistant (AMR) bacteria in the environment, circulation of pathogens between farms, markets, and backyard units.

Small-scale commercial farms face several constraints that limit their ability to adopt scientific waste management system. These units often have capital limitations which prevents investment in composting structures, biogas units, or proper carcass disposal facilities. Technical knowledge gap further compound the issue, as many farmers have limited understanding of pathogen load, antimicrobial resistance risk, composting protocols, and groundwater contamination concerns. Enforcement of environmental and biosecurity regulations is also weak in this segment, meaning that improper practices

often go unchecked. As a result, farmers continue to rely on traditional, low-cost methods that are inexpensive but carry significant environmental and public health risks.

- **Backyard / Traditional Poultry:** Backyard poultry generates very small volumes of waste because the system is low-input, low-output, and birds primarily depend on scavenging. As a result, the environmental burden is naturally limited, and most households reuse solid waste especially manure directly on agricultural fields, recognizing its nutrient value. However, waste handling remains entirely informal, and both solid and liquid waste are often discharged directly into the surrounding environment without any treatment. This open waste can become a host for pathogens. Typical practices such as leaving droppings in open yards, reusing untreated water in troughs, or discarding offal by burying it shallowly, feeding it to dogs, or throwing it away may attract rodents, wild birds, and insects. Such interactions increase the risk of pathogen transmission and can lead to contamination of soil and nearby water bodies. Thus, while backyard systems offer a naturally sustainable model with low resource use, the absence of structured waste handling and scientific disposal still poses hygiene and disease-related risks.





4. Future Outlook

4.1 Demand and Supply Projections of Poultry Meat

Poultry Meat Outlook

According to the OECD-FAO Agricultural Outlook 2025-2034 (OECD-FAO, 2025), India's poultry meat sector is expected to maintain strong growth momentum over the coming decade. Poultry meat production is projected to increase from approximately 5.47 million metric tonnes (MMT) in 2025 to about 7.78 MMT by 2034, driven by sustained income growth, rapid urbanisation, changing dietary preferences, and growing consumer demand for affordable animal-source protein. It is important to note that these projections are calibrated against officially reported production data; as discussed earlier, industry-reconciled estimates place current production at approximately 8.69 MMT, already higher than the OECD-FAO's 2034 projection, suggesting that the official-data trajectory significantly understates the sector's actual scale and future investment requirements. As poultry continues to remain one of the most cost-effective

and widely accepted sources of animal protein, domestic demand is expected to expand steadily across both urban and rural markets.

Under the baseline scenario, domestic consumption is projected to absorb nearly the entire increase in production, accounting for around 99.9 per cent of total output throughout the projection period. This figure reflects historical trend extrapolation from official data,

India's poultry sector is entering a tightly balanced growth phase, with nearly ~99.9% of output absorbed domestically, leaving little buffer in the system. While projections estimate poultry meat production at ~7.78 MMT by 2034, current industry levels are already higher-signalling under-recognised scale. This demand intensity keeps the sector highly sensitive to disruptions, with feed demand emerging as the key constraint on future growth.

not a structural ceiling on export potential; if actual production is 65–70 per cent higher than officially reported, as industry placement data indicates, the absolute volumes available for export and value addition are proportionally larger. This reflects the large and growing domestic market, where rising incomes, demographic change, expansion of organised retail, food-service establishments, and increasing awareness of protein-rich diets continue to support consumption growth. Consequently, poultry meat is expected to consolidate its position as the most widely consumed animal protein in the country. The high degree of domestic absorption also implies that market conditions will remain sensitive to supply-side disruptions, including feed-price volatility, disease outbreaks, climatic shocks, and other structural constraints affecting production.

The projected dominance of domestic consumption, however, should not be interpreted as indicating limited export potential. Rather, the baseline outlook largely reflects the continuation of prevailing market conditions and existing structural constraints that have historically restricted India's participation in global poultry trade. These include recurring disease-related market access challenges, limited processing and cold-chain infrastructure, inadequate traceability systems, evolving certification frameworks, and compliance gaps with international sanitary and phytosanitary standards. As a result, export volumes have remained modest despite the sector's rapid expansion and increasing production capabilities.

Looking ahead, the development trajectory of the sector could extend beyond the baseline scenario if these constraints are progressively addressed. A strengthened disease surveillance system, implementation of compartmentalisation and disease-free zones, improvements in traceability and residue-monitoring systems, and greater investments in processing and export

infrastructure could facilitate the emergence of export-oriented poultry value chains. Such growth is likely to complement, rather than substitute for, continued domestic demand expansion.

India possesses several structural advantages that could support this transition. Competitive production costs, improvements in biosecurity practices, a large production base, and a comparatively lower carbon footprint per unit of poultry protein provide a foundation for enhanced participation in international markets. Beyond traditional destinations in South Asia and the Middle East, opportunities may emerge in higher-value segments such as processed poultry products, antibiotic-responsible poultry, traceable products, and other premium market categories. The gradual development of such value chains could diversify market opportunities, stimulate investment across the poultry ecosystem, strengthen farmgate price realization, and enhance the sector's contribution to agricultural exports while continuing to support India's growing domestic protein requirements.

Egg Production and Consumption Trajectory

In the egg sector, OECD-FAO projections show a similar pattern of robust growth in production and near-matching consumption over 2025–34. Egg production in India is forecast to rise from around 7.19 MMT in 2025 to about 9.72 MMT by 2034, accompanied by consumption increasing from roughly 7.10 MMT to 9.64 MMT over the same period. While production slightly outpaces consumption in early years, the gap tightens by the early 2030s, indicating a steady domestic demand-supply balance with only modest residual capacity. This reflects not only expanding domestic demand driven by affordability and rising protein awareness across income groups but also the relatively limited scope for bulk egg exports given strong domestic requirements.

Indian data on current production already shows that output has grown from about 138 billion eggs

in 2022-23 to over 149 billion in 2024-25, confirming an upward trajectory in the recent baseline. When converted to weight terms², this figure of 149 billion equates to approximately 7.45 MMT of eggs in 2024-25, highlighting how egg production volumes align with and underpin the OECD-FAO egg projections.

Overall, the projections point to structurally high domestic absorption in both poultry meat and eggs, leaving little room for large stock accumulation or trade-driven adjustments. As a result, future price dynamics are likely to remain

sensitive to supply-side shocks such as feed cost volatility, disease outbreaks, or disruptions in production cycle. The near-equality of production and consumption also implies that sustaining output growth through productivity improvements and efficient value chains will be critical for containing price pressures as demand continues to expand. In this context, the projected trajectories reinforce the importance of feed management, disease control, and investment in modern poultry infrastructure to ensure that supply growth keeps pace with India's evolving consumption patterns.

4.2 Projections for Feed

Assuming a 6 per cent Compound Annual Growth Rate (CAGR) in poultry feed production, in line with industry expectations, the total feed requirement could increase to 54 MMT by 2030, 96 MMT by 2040 and 144 MMT by 2047. Of the total maize produced in the country, which stood at 43.3 MMT in 2024-25, nearly 50 per cent (21.7 MMT) is currently consumed by the poultry sector, while the remaining 50 per cent is utilized across ethanol production, pharmaceutical industries, and direct human consumption. Looking ahead, poultry sector demand for maize is projected to surge due to rising per capita protein intake (chicken/eggs from 2-3 kg/person currently to 5-6 kg by 2030). Estimates peg poultry feed needs at 27-31 MMT by 2030 (8-9 per cent CAGR per NAAS/ICAR models) and 50-60 MMT by 2047 under Viksit Bharat targets, as meat production doubles to 21-29 MMT and eggs to 16-21 MMT. This growth outpaces overall crop expansion (6 per cent historical AAGR), with feed efficiency (FCR improvements to 1.5-1.6) offering partial relief but insufficient against population/diet shifts.

A likely shortage of about 2-5 MMT by 2030 (demand 55 MMT vs. production 52-60 MMT, ethanol-feed competition acute) and 10-20 MMT

by 2047 (demand 80-95 MMT vs. 70-86 MMT target) is projected. This could push maize prices and raise poultry costs (feed 70 per cent of expenses). Ethanol taking 20 MMT for E30 makes it worse, but DDGS leftovers from ethanol plants (25-30 per cent of maize used, high in protein) could cover 10-12 per cent of feed if quality improves.

India's soybean production in 2024-25 stands at 15.3 million metric tonnes (MMT) as per Ministry of Agriculture and Farmers Welfare (MoAFW, 2025) estimates. From this, after extracting oil (about 18% yield), around 12.5 MMT of de-oiled soybean cake (meal) becomes available, mainly for animal feed. Right now, poultry uses a big share of this meal (20-25% inclusion in feed mixes), along with shrimp feed, cattle feed, and fish meal.

Industry estimates indicate that soybean cake demand will increase rapidly as poultry and livestock production expand. By 2040, poultry alone may require 17 MMT of cake, while other sectors (shrimp, cattle, fish) add 6 MMT, for a total of 23 MMT. This aligns with rising protein demand, as per capita chicken and egg consumption is projected to double by 2030-47.

² Assuming an average egg weight of 50 g

Production may rise to 22 MMT by 2030 (with yields improving to 1.7 tonnes per hectare) and 40 MMT by 2047 (supported by a target yield of 3 tonnes per hectare through hybrid adoption in Madhya Pradesh and Maharashtra but low current yields (1.2 t/ha now) and rainfed farming continue to constrain growth. Total demand could hit 25-30 MMT meal by 2030 and 45-50 MMT by 2047 (70% for feed), creating gaps of 5-8 MMT by 2030 and 10-15 MMT by 2047 if area stays flat. Shortage risk higher prices (soy meal at INR 40-50/kg) and poultry cost (feed 60-70% of expenses).

Table 5: Feed, Maize & Soy Cake Demand Projection (2025-2047)

Year	Feed Requirement (MMT)	Maize Requirement (MMT)	Soy Cake Requirement (MMT)
2025	40	20	7.5
2030	54	27	9.5
2040	96	48	17
2047	144	72	26

Source: Industry Estimates

4.3 Key Challenges to Growth of the Indian Poultry Sector (Towards Viksit Bharat)

Overall Sector-Level Challenges for Growth & Viksit Bharat

Input Availability vs. Rising Demand

As India progresses toward Viksit Bharat, rising incomes and greater nutritional awareness will sharply increase the demand for eggs and poultry meat. Meeting this expanded requirement will necessitate almost doubling broiler placements over the next decade. However, this growth hinges on consistent availability of key feed components, especially maize and soybean, which already face supply constraints, competition from alternative uses (like for maize for ethanol, pharma companies, and soyabean for fish, shrimp, cattle feed etc.) and seasonal price volatility. Without an available and affordable feed base, the sector’s ability to scale production sustainably remains limited.

Rising Quality Expectations

In coming years, consumers will increasingly seek hygienic, traceable, residue-free, and antibiotic-free poultry products. The sector will be required not only to expand production volumes but also to improve the quality and safety attributes of poultry meat and eggs. This shift places pressure on farms and integrators to modernize farm practices, strengthen biosecurity systems, enhance feed quality, and upgrade

processing infrastructure. Meeting volume and quality demands simultaneously creates a dual challenge for the industry.

Uneven Regional Production and its Impact

Poultry production in India is concentrated in a few regions, leaving several states dependent on inter-state transport of birds, eggs, feed, and chicks. This imbalance leads to higher logistic expenses, greater supply-chain risks, and inconsistent market development in underserved regions. States with difficult terrain such as northeastern and hill states face higher operational costs, limited access to raw materials, and weaker distribution networks, making it challenging to achieve uniform national growth in the sector.

Data and Measurement Challenges

One of the most fundamental challenges identified during stakeholder consultations relates to the quality, frequency, and reliability of poultry sector data. While issues relating to feed availability, disease management, infrastructure, and market access receive considerable policy attention, all of these areas are influenced by assumptions regarding sector size and growth. As discussed before, significant differences persist between official statistics and industry estimates relating to poultry population, production, and

overall sector value. These differences influence assessments of feed requirement, infrastructure gaps, disease surveillance needs, and future growth potential. Addressing this challenge will be important for ensuring that policy interventions and investment decisions are aligned with actual sector dynamics.

Infrastructure and Land-Related Challenges

Land, Space & Expansion Constraints

As demand for poultry meat and eggs increases, India will require a substantial expansion of farm capacity. However, land availability is limited, and securing new spaces for poultry farms especially near consumption centres has become increasingly challenging due to competition with urban development, rising land prices, and zoning restrictions. To address these constraints, farmers will need to shift from traditional open-shed systems toward environmentally controlled houses and multistorey structures. These systems can accommodate more birds in less space, but they require significant investment and technical expertise, creating barriers for small and medium producers.

High Cost of Modern Housing & Equipment

Upgrading to climate-controlled sheds, automated feeders, ventilation system, and mechanized waste-handling units is essential for improving productivity, product quality, and environmental compliance. However, the capital investment required for such systems is often beyond the reach of most smallholders. The cost of modernization becomes a major deterrent, resulting in a widening gap between large integrators who can adopt advanced technologies and small farmers who continue to operate with basic infrastructure and lower efficiency levels.

Energy and Utility Constraints

Poultry farming, particularly environmentally controlled housing depends heavily on reliable electricity and water supply. In many parts of India, inconsistent power availability leads to poor

temperature regulation, higher mortality, and reduced feed conversion efficiency. Farmers are often compelled to invest in generators or alternative energy sources, increasing operational costs. As the industry scales, the pressure on rural energy and water infrastructure will intensify, making resource availability a critical factor in sectoral growth.

Regulatory, Certification, and Compliance Challenges

Strengthening Food Safety and Quality Standards

As consumers become more quality-conscious, the government's focus on food safety, antibiotic stewardship, and residue-free production will intensify. For producers, this means complying with stricter standards related to hygiene, biosecurity, antibiotic use, toxin levels, and processing practices. Meeting these expectations will require continuous monitoring, documentation, and traceability systems, which are easier for integrators but difficult for small-scale farms that lack resources and technical know-how.

Labour Welfare and Compliance Requirements

Regulatory frameworks increasingly emphasize labour welfare, including fair wages, job security, safe working conditions, and access to essential amenities. Compliance with labour regulations will require financial investment and organizational restructuring, adding another layer of complexity for small and medium farms striving to remain competitive.

Certification Gaps for Domestic and Export Markets

For India to expand poultry exports, producers must meet stringent international standards related to disease control, biosecurity, environmental compliance, and product traceability. Many farms lack the necessary certification systems such as HACCP, ISO, or international residue monitoring protocols. This creates a mismatch between global market requirements and current domestic practices, limiting India's ability to tap into high-value export destinations.

Climate, Environmental & Waste Management Challenges

Rising Environmental Pressures with Scaling Up

As production expands, the environmental footprint of poultry farms, particularly waste generation, will increase significantly. Managing manure, litter, dead birds, and wastewater requires scientifically designed systems. However, small-scale farms often rely on traditional, low-cost disposal methods that pose risks of groundwater contamination, odour issues, and pathogen spread. Without systematic planning, the sector's environmental risks will grow alongside production. Technical knowledge gaps and limited regulatory oversight mean that compliance is inconsistent. As India moves toward Viksit Bharat, the pressure to enforce environmental norms, particularly in manure management and public health, will increase, requiring both capacity-building and stricter enforcement.

Climate Change & Heat Stress Vulnerability

Climate variability and rising temperatures increase heat stress in poultry, leading to reduced growth rates, lower egg production, and higher mortality. Open-sided poultry sheds are especially vulnerable to temperature fluctuations. To maintain productivity, farms will need to adopt heat-resilient infrastructure, insulation, ventilation, and cooling systems. But the cost of such adaptations remains a major constraint, particularly for farmers in hot and humid regions.

Vulnerability of Feed Systems

The commercial poultry sector is highly dependent on climate-sensitive crops such as maize and soybean. Climate-driven events like droughts, floods, and extreme heat disrupt global and domestic supplies of these feed grains, resulting in price volatility and raw material scarcity. Changes in temperature and rainfall patterns can reduce the protein and mineral content of feed crops. This decline in nutritional quality forces farmers to invest in additional supplements to maintain bird health, growth, and production efficiency.

Increased Mycotoxin Contamination

Hot and humid conditions favour the growth of molds in stored feed grains, leading to high levels of mycotoxins, particularly aflatoxins. Contaminated feed compromises feed safety, weakens immunity, and causes severe health problems in poultry.

Rising Disease Pressure

Climate change also intensifies disease risks. Warmer and wetter climate expand the distribution of disease vectors and increase the frequency of outbreaks such as avian influenza. This heightened disease pressure poses a significant threat to both commercial and backyard poultry systems.



Human Resource, Skill & Technology Adoption Challenges

Labour Shortages and Increasing Automation Needs

The poultry sector faces an acute shortage of skilled and willing labour. Farm work is physically demanding and often perceived as low status, making it less attractive to younger workers. As labour availability declines, automation will become essential for feeding, watering, egg collection, and data monitoring. However, adopting such technologies requires capital, training, and digital literacy, which many farmers currently lack.

Limited Technical Knowledge at Farmer Level

A large segment of poultry farmers operates with limited exposure to scientific feed formulation, disease diagnosis, ventilation control, and hygiene management. As quality and safety standards tighten, these knowledge gaps become critical constraints. Strengthening extension services, skill development programs, and farmer advisory systems will be necessary to enable quality-centric and sustainable production.

Inequitable Technology Adoption Between Integrators and Small Farms

Large integrators are able to invest in data-driven management, IoT monitoring, precision nutrition, and advanced processing facilities. In contrast, small farmers struggle to adopt even basic mechanization. This widening technology divide affects productivity, efficiency, and market competitiveness, potentially marginalizing smaller players unless policy and financial support mechanisms are strengthened.

Market, Consumption & Supply Chain Challenges

Demand Growth vs. Market Variability

While long-term demand for poultry products will rise with income growth, short-term consumption patterns remain affected by cultural norms, misinformation, seasonal variations, and periodic disease outbreaks. These fluctuations create uncertainty for farmers and integrators, making it difficult to plan production cycles and investment decisions. The challenge is to ensure stable, confidence-based consumption across regions.

Logistics, Cold Chain & Distribution Gaps

Although poultry products increasingly reach rural and semi-urban markets, cold-chain infrastructure remains uneven across states. Inefficient transport, high spoilage risks, and inconsistent storage conditions limit the ability to supply high-quality, value-added poultry products nationwide. Strengthening cold-chain systems is essential for expanding processed-chicken consumption, improving hygiene standards, and supporting exports.

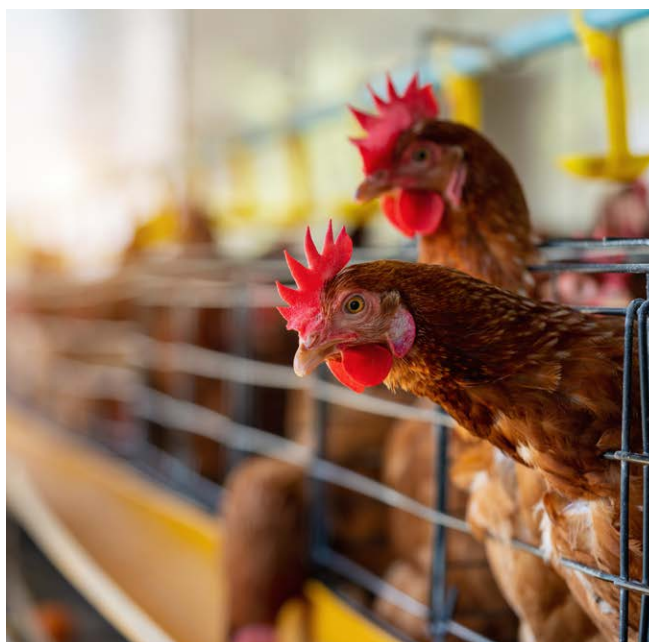
Value Addition and Product Diversification Barriers

India's poultry sector is still dominated by fresh chicken and table eggs, with limited penetration of processed, branded, ready-to-cook, or ready-to-eat products. As consumers become more aspirational, demand for convenience foods will rise, but the industry needs better processing capacity, advanced packaging technology, and stronger retail linkages. Enhancing value addition is essential for improving farmers' income and increasing sector resilience.

4.4 Strategic Opportunities

Exploring Opportunities for Developing and Marketing Sustainable Poultry Production

Sustainable poultry production encompasses a set of evolving attributes that make the sector more environmentally responsible, welfare-conscious, and market-competitive. In practice, “sustainable poultry” refers to systems that minimise environmental footprints through improved feed efficiency and scientific waste management, ensure higher animal welfare through practices such as reduced density, eliminate the routine use of antibiotics, and maintain traceability across a clean and transparent supply chain. It also includes adherence to certified standards, responsible sourcing, and low-carbon transport and logistics. These attributes are increasingly important because consumer behaviour particularly in higher-income and export markets is shifting toward premium products that explicitly demonstrate safety, welfare, and environmental responsibility. Such consumers are willing to pay more for certified, traceable, and sustainably produced poultry, creating a distinct value segment globally. For India, this shift presents both an opportunity and a competitive challenge.



Demand for Sustainable Poultry Products

In India, the conversation on sustainable poultry must begin with a clear recognition that the country’s foremost priority remains ensuring access to affordable, good-quality protein for its own population. However, this does not diminish the fact that demand for sustainable poultry, including antibiotic-free, organic, traceable, and animal-welfare-certified products is steadily expanding. What was once a small 2 per cent niche is now estimated to be approaching 10%, driven by rising consumer awareness, evolving retail formats, and growing concern for health, food safety, and ethical production practices. Across urban India, consumers are increasingly conscious of antibiotic residues in meat and the broader implications for antimicrobial resistance; this mirrors global trends where “clean label” attributes such as “no antibiotics ever” are becoming important purchase drivers. At the same time, welfare considerations, including more humane production systems and avoidance of practices like male chick culling, are gradually shaping preferences among affluent and metro consumers.

The domestic market is therefore expected to bifurcate, conventional poultry will continue to dominate volumes due to price sensitivity, while a premium sustainable segment grows faster, supported by organised retail, e-commerce platforms, and stronger cold-chain networks. Globally, markets for organic and welfare-certified poultry are already mature and projected to expand rapidly.

Major Destination Markets for Sustainable Poultry Products

India’s poultry export footprint is expanding, and several regions present strong opportunities for positioning sustainably produced poultry especially antibiotic-free, welfare-certified, or traceable products as premium offerings.

The Middle East and West Asia remain India's most established destinations, with Oman, the UAE and Qatar already importing significant volumes of Indian poultry products. These markets are evolving from live-bird or low-processed imports toward higher-quality chilled and frozen products with clear traceability and hygiene standards. Given India's geographic proximity and logistical advantage, this region offers a natural platform to scale volumes while gradually introducing sustainability-linked differentiation such as certified antibiotic-free or farm-assured poultry.

Neighbouring South Asian and Indian Ocean markets, particularly Sri Lanka and the Maldives, have shown sharp increases in poultry imports from India in recent years. These destinations are less saturated with premium or "sustainable" branded poultry, presenting an opportunity for Indian exporters to enter early and establish credibility. Entry barriers are relatively low, and India can leverage both price competitiveness and sustainability credentials to secure a premium positioning. Beyond these, emerging markets in Southeast Asia and Africa such as Nigeria, Uganda and Senegal are registering rapid growth in poultry and egg imports. Although India's presence in these markets may currently be modest, the high growth trajectory and relatively low competition in specialised sustainable categories make them

promising future destinations, provided that supply-chain reliability and certification systems are strengthened.

At the higher end of the value spectrum, Japan and other East Asian markets represent strategic but demanding opportunities. These markets operate under stringent food safety, animal welfare and traceability requirements, implying that Indian producers must invest significantly in certification, compliance, and process management to qualify. However, if these standards are met, East Asia offers substantial unit-value premiums for sustainable poultry products and can become a valuable long-term niche for India.

From a strategic perspective, India's most promising near-term opportunities lie in South Asia (particularly Sri Lanka and the Maldives) and selected Middle Eastern markets such as the UAE and Qatar, where familiarity with Indian supply and growing demand for high-quality products create space for premium sustainable segments. Fast-growing African import markets offer medium-term potential, especially for eggs and processed poultry lines, while Japan and East Asia should be viewed as high-value but investment-intensive opportunities for exporters aiming to position themselves in the global sustainable poultry category.



Positioning India as a Competitive producer and Exporter of Sustainable Poultry Products

India can position itself as a strong and competitive producer and exporter of sustainable poultry products but doing so requires a multidimensional transformation across the value chain from genetics and feed to farm systems, certification, logistics, and international market alignment. Sustainability in poultry is not a fixed state but a dynamic and evolving process, shaped by climate conditions, resource availability, changing consumer expectations, and global regulatory standards. Sustainability is viable only when every stakeholder including hatcheries, feed companies, farmers, pharmaceutical and vaccine suppliers, processors, logistics providers, exporters, regulators, and certification bodies consistently upgrades systems in response to changing conditions. True sustainability is not achieved by one-time compliance but through continuous improvement, circularity, and coordinated value-chain participation.

Strengthening India's Genetic Base and

Climate-Resilient Breeding: A critical starting point is strengthening India's genetic base. Sustainable poultry begins at the hatchery, with high-quality germplasm and breeding programmes capable of adapting to changing climates and production environments. A bird that performs today may not remain optimal tomorrow; therefore, India needs climate-resilient breeding strategies that regularly update germplasm, improve heat tolerance, enhance disease resistance, and maintain productivity without excessive resource use.

Sustainable & Low-Carbon Feed System:

Alongside breeding, sustainability depends heavily on feed. Feed formulation changes continuously with price fluctuations, energy requirements, and nutrient availability, but sustainable systems must ensure that birds receive balanced nutrition at reasonable cost while reducing environmental pressure. This requires responsible sourcing of



maize and soybean, innovations in alternative protein, and a shift toward feed materials with lower carbon footprint.

Strengthening Animal Health System, Vaccines

& Disease Governance: Equally important are pharmaceuticals, vaccines, and biologicals. Export markets insist on predictable animal health systems, low-residue production, and stringent monitoring of antimicrobial use. This makes it essential for India to strengthen vaccine quality, expand disease surveillance, and improve emergency response mechanisms, including rapid recognition of new viruses and faster vaccine approval, which directly affects India's export reputation. Weak biosecurity or slow response to avian influenza can immediately close international market, making disease governance a cornerstone of export competitiveness.

Infrastructure Modernisation and Sustainable

Farm Design: Infrastructure and value-chain management form another pillar of India's export potential. Sustainable, export-oriented units must adopt modern farm designs, climate-controlled housing, scientific waste management, renewable energy, and circular-economy principles such as manure recycling, composting, and water reuse. Locating processing hubs and export units closer

to coastal areas or major ports can significantly reduce transportation cost, carbon footprint, and spoilage risk, making India more competitive.

Upgrading Inspection, Certification & Global Compliance System: On the regulatory front, India must upgrade its inspection, certification, and equivalence framework to match the stringent requirements of developed market. Countries such as the US, EU, and Japan require robust HACCP systems, pathogen testing, residue monitoring, and traceability from farm to fork. India therefore needs globally trusted inspection mechanisms, internationally recognised testing laboratories, clearer export standards for packaging and labelling, and regular audits of export plants. Establishing compartmentalised, disease-free zones will also be crucial for continuity in trade.

Embedding Sustainability, Animal Welfare & Low-Carbon Credentials: Sustainability credentials covering animal welfare, environmental responsibility, and reduced antibiotic dependence must become a visible part of India's export proposition. Markets increasingly prefer higher-welfare poultry, sustainably fed birds, and low-carbon production systems. For India to enter premium categories, producers must implement

better stocking density, waste management system, and renewable energy adoption. Precision farming, digital monitoring, and AI-based welfare sensors can strengthen India's credibility and help maintain consistent quality across farms.

Strengthening Supply Chain Integration & Smallholder Inclusion: Supply chain integration is equally essential. To remain cost-competitive while meeting sustainability standards, India must promote large integrated operations as well as cooperative and contract-farming models that enable small farmers to participate. Training, veterinary support, and shared infrastructure can help smallholders upgrade to sustainable practices without bearing prohibitive cost. Vertical integration improves efficiency, reduces losses, strengthens disease control, and ensures consistent supply of quality that export markets prioritise.

Enhancing Trade Diplomacy, SPS Compliance & Global Engagement: India must reinforce trade diplomacy and compliance system. This includes proactively engaging importing nations on sanitary and phytosanitary requirements, negotiating equivalence agreements, ensuring rapid communication during disease events, and monitoring global regulatory changes.

Challenges in Certification, Branding, and Market Access for Sustainable Poultry Products

Sustainable poultry products are gaining traction in both domestic and global market. However, producers, especially small and medium-scale farmers, face complex challenges in obtaining credible certification, building effective branding, and accessing premium market. These challenges arise from financial constraints, technical gaps, fragmented regulations, limited consumer awareness, and weak supply chain, which collectively restrict the sector from scaling sustainable poultry production.



Certification Challenges

Certification for sustainable poultry is a demanding and often expensive process. Producers must comply with requirements relating to feed quality, animal housing, welfare, traceability, and the prohibition or controlled use of antibiotics. These processes involve detailed record-keeping, periodic audits, documentation, and inspections, making certification a costly undertaking especially for small-scale farmers who operate with narrow margins. Many farmers are not fully aware of certification procedures, standards, and documentation requirements, and often lack the technical capacity to maintain biosecurity systems or traceability protocols needed for certification. The regulatory framework further complicates the process. In India, certification is governed by multiple agencies such as FSSAI, APEDA, and various state authorities, each having different standards and compliance requirements.

Branding Challenges

Building a strong brand for sustainable poultry products is another major hurdle. Consumer awareness of concepts like antibiotic-free or welfare-certified poultry remains limited in India, with understanding concentrated mainly in urban centers. While there is a rising interest in safe and

traceable food, this awareness has not yet translated into mass-market demand. Brands must invest in consumer education, trust-building, and communication strategies to explain why sustainable poultry commands a premium price. Sustainable poultry products are often 20-50 per cent more expensive than conventional products due to higher production costs, certification expenses, and the need for specialised feed or biosecurity system. Without strong and clear branding, consumers may not perceive sufficient value to justify the higher cost.

Market Access Challenges

Market access for sustainable poultry is restricted by supply chain limitations and infrastructural gaps. Small and medium-scale farmers often cannot ensure the consistency, quality, and supply volumes required by institutional buyers or exporters. Cold-chain infrastructure, which is essential for maintaining freshness, quality, and food safety, remains underdeveloped in many parts of India. Without reliable cold storage and temperature-controlled logistics, sustainable poultry products cannot compete in premium, domestic or international markets. Fragmentation of producers and supply chains also weakens bargaining power, making it difficult for



smallholders to enter long-term contracts or guarantee traceable supply demanded by retail chains or exporters. The absence of strong cooperatives or producer organisations restricts aggregation, standardisation, and the ability to negotiate better market terms.

Financial, Technical, and Policy Barriers

Sustainable poultry production requires significant financial investment in biosecurity, climate-resilient sheds, renewable energy systems, waste management innovations, and precision monitoring technologies. For many producers, the upfront capital cost is too high, especially when returns on investment are uncertain or delayed. Technically, a large share of producers lack knowledge about sustainable technologies, composting standards, welfare-friendly housing, feed formulation, or environmental compliance. High-end technologies available globally are often designed for large industrial farms and may not be easily adapted to the small-scale common in India. Policy fragmentation exacerbates these issues. Weak coordination between agriculture, animal husbandry, and environmental agencies results in regulatory gaps, inconsistent monitoring, and poorly targeted support schemes.



Enhancing Value Chain Efficiency by Adopting Climate Resilience across Poultry Value Chain

The most effective interventions for reducing the environmental footprint of poultry farming focus on three major hotspots, feed production, manure management, and on-farm energy use.

Improving feed sustainability offers the greatest impact, as precision nutrition and feeding based on stage of growth of poultry reduces the amount of feed required per unit of output, while enzyme supplements such as phytase improve nutrient digestibility and significantly lower phosphorus and nitrogen excretion. Replacing high-impact ingredients like imported soybean meals with locally available by-products, insect meal or algae-based proteins further reduces emissions associated with land-use change and long-distance transport. Alternative feed resources including rice bran, maize germ, cassava meal, and various oilseed cakes, offer viable options to reduce reliance on conventional grain-based feed. These ingredients help diversify the feed basket, making poultry nutrition less vulnerable to climate-induced fluctuations in grain availability and prices. Lowering crude protein levels and balancing diets with synthetic amino acids also directly decreases nitrogen losses and ammonia emissions from manure.

Complementing feed innovations, poultry farms can substantially reduce their carbon footprint by adopting renewable energy systems such as solar energy to power lighting, ventilation, and pumping, thereby cutting reliance on fossil fuels. Manure-to-energy solutions, including anaerobic digestion, converting poultry waste into biogas, capturing methane that would otherwise be emitted. Larger farms can adopt mechanized composting or integrate waste management into biogas operations. These practices support soil health and reduce reliance on chemical fertilizers.

A major opportunity for strengthening climate resilience in India's poultry sector lies in scaling temperature-adaptive housing systems that protect birds from rising heat stress and erratic weather. Improved structures such as well-ventilated sheds, reflective roofing, thermal insulation, and evaporative cooling have already helped large and medium farms maintain optimal temperatures during extreme heat, reducing mortality and stabilizing productivity. However, adaptation pathways differ significantly by scale. Large commercial farms can invest in capital-intensive solutions such as controlled-environment housing, automated ventilation, and evaporative cooling systems, which require substantial upfront investment but prevent major economic losses from heat-induced production drops. In contrast, small and backyard farmers rely on low-cost, locally adaptable measures such as using indigenous heat-tolerant breeds, constructing east-west oriented open-sided sheds with high roofs, and planting shade trees to reduce heat load are strategies that require minimal expenditure but still enhance resilience. Integrating these scale-appropriate solutions, combined with targeted financing and

technical support, can ensure that climate-resilient housing becomes accessible across all segments of the poultry sector, making climate-resilient housing a central pillar of India's pathway to sustainable and competitive poultry production.

Water-saving measures such as rainwater harvesting, advanced filtration, wastewater recycling, and automated drinking systems further lessen freshwater use, prevent runoff, and improve overall environmental efficiency.

Enhancing efficiency in poultry production requires an integrated approach where productivity gains, cost control, and environmental performance reinforce each other rather than compete. The most effective strategies focus on optimizing input, reducing losses, and improving system resilience. Overall, balancing productivity, competitiveness, and sustainability is achieved by focusing on measures that deliver multi-dimensional benefits, better feed efficiency, resilient housing, genetics, preventive health, and circular resource use. These interventions strengthen long-term profitability while reducing climate risks.





5. Conclusion and Policy Recommendations

5.1 Poultry in Viksit Bharat 2047: A Roadmap for Inclusive Growth

India's poultry sector is well-positioned to play a central role in meeting the protein needs of a growing and increasingly affluent population. However, a key finding emerging from this study is that the pace of structural transformation within the sector may be outstripping existing measurement systems. Stakeholder consultations consistently highlighted substantial differences between official statistics and industry estimates regarding poultry population, production volumes, and overall industry value. These differences have important implications for feed planning, infrastructure development, disease surveillance, export promotion, and investment decisions.

Strengthening the quality and credibility of poultry sector data should therefore be viewed as a foundational requirement for achieving the goals of Viksit Bharat 2047. Against this backdrop, demand for eggs and poultry meat is expected to

rise steadily in the coming decades. Achieving the goals of Viksit Bharat 2047 will require a dual focus: enabling rapid expansion of the organised commercial sector while strengthening the sustainability of backyard systems that remain vital for rural nutrition and livelihoods.

India's poultry sector is poised to anchor Viksit Bharat 2047, with per capita availability already at ~106 eggs and growth sustaining at 8-10% annually. Yet, current industry estimates exceed official production baseline, signalling a significant underestimation of scale and future demand. Bridging this data gap, while strengthening the infrastructure, will be critical to sustaining high-growth momentum and enabling both domestic expansion and export readiness.

Growth Pathway for the Commercial Poultry Sector

The commercial poultry sector will continue to drive scale, efficiency, and organised value-chain development. Key trends over the next decade include:

Rapid Expansion Driven by Domestic Demand

Per capita egg availability has reached 106 eggs per annum, placing India among the world's largest producers. If the industry maintains 8-10 per cent annual growth, egg and broiler production could triple by the early 2030s, helping India narrow the gap with global leaders such as China.

Shift towards Processed and Value-added Products

Urbanisation and rising hygiene awareness are accelerating the shift toward chilled, frozen, marinated, and ready-to-cook poultry products. Consumer preferences for safety (antibiotic-free, hormone-free), traceability, and welfare standards will increasingly shape branding and market positioning.

Export-linked Production Opportunities

Niche demand such as fish-meal-free eggs for markets like Japan, offers specialised export potential. With improved biosecurity, disease control, and feed cost rationalisation, India can tap niche export markets while continuing to serve a strong domestic base.

Circular Economy Integration

Poultry litter and manure management presents both a challenge and an opportunity. Composting and biogas can create value-added products while reducing environmental risks. By 2047, circularity in poultry waste could become a mainstream differentiator for sustainable producers. Integrating these systems can not only lower operational costs but also create new employment opportunities in local processing, handling, and distribution, making waste management an increasingly important pillar of sustainable and economically viable poultry production.

Future of Backyard Poultry: Inclusive with Better Hygiene and Efficiency

Backyard poultry will continue to play an important role in rural households, supporting nutrition, income and social functions. The system is expected to evolve gradually, with improvements rather than large-scale replacement.

Shift from Purely Scavenging Systems to Low-input, Improved Backyard Units

Backyard birds today are largely indigenous or low input technology birds kept under scavenging conditions. Over the next decade, slow but steady transitions will occur toward: basic vaccination routines, minimum hygiene and biosecurity measures, small enclosures or night shelters, and better feeder/waterer systems. These changes will improve bird survival, productivity, and household nutrition.

Improved Breeds and Germplasm Supply

Enabling supply of climate-resilient, dual-purpose breeds developed to suit local agro-ecologies will strengthen productivity for rural households.

Continued Policy Support for Smallholders

Backyard poultry has immensely benefited from government support, further continued focus on veterinary services, vaccination, extension services, and credit-linked incentives will be essential to enable gradual transition from backyard to small-scale commercial units where possible.



The Future Trajectory of the Sector will be Shaped by Several Interconnected Pillars Outlined Below.

Demand Growth and the Strategic Importance of Poultry

As incomes rise and dietary patterns shift toward higher protein intake, demand for poultry meat and eggs is expected to increase significantly. To meet future needs, broiler placements will need to double within the next 8-10 years, requiring proportional expansion in feed resources, particularly maize and soybean. Ensuring stable feed availability will be one of the most crucial responsibilities of the government and industry stakeholders in the coming years.

Strengthening Supply Chain

Despite strong demand, the penetration of eggs and poultry meat in rural pockets remains limited. While products like ice cream have reached deep rural pockets, eggs and chicken often remain unavailable or reach consumers in poor condition due to weak cold chain systems. Many table eggs sold in rural markets are sourced from cold storage and often lose freshness before consumption. As India advances toward 2047, infrastructure development including clean production systems, hygienic and efficient transport, packhouses, aggregation points, rural cold storage, and modern retail linkages must become a priority. For both the domestic market and export, quality parameters such as freshness, biosecurity, packaging, and traceability will determine market competitiveness.

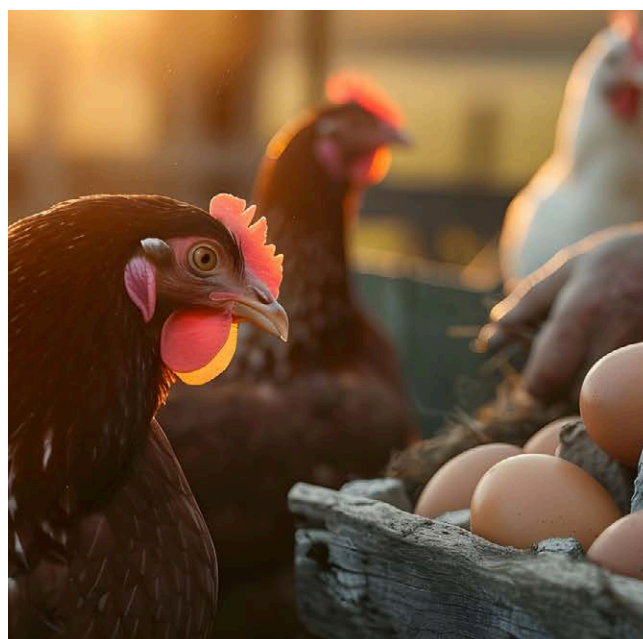
Rural Market Integration and Poultry Entrepreneurship

A significant gap exists between production potential and rural market availability. While farmers want to expand their market reach, infrastructure and distribution remain weak. To bridge this, micro-entrepreneurship models that support rural youth with small refrigerated vans, mobile kiosks, or small slaughter units could dramatically improve last-mile delivery.

Cluster-based marketing, where farmers aggregate production and market collectively, can improve scale, reduce risks, and strengthen price realization. Such models also support standardization, enabling farmers to adopt uniform and effective biosecurity practices. Overall, this approach enables small and medium producers to achieve economies of scale, reduce production and marketing risks, enhance competitiveness, ensure more stable income, and integrate seamlessly into modern poultry value chains. For Viksit Bharat 2047, cluster-based marketing can support the national goals of inclusive growth, improved rural livelihoods, and a stronger domestic protein supply system.

Addressing Consumption Barriers

Despite expanded availability, consumption remains uneven due to cultural norms, seasonal preferences, and regional food habits. Although rising incomes will drive further uptake, the trajectory of growth is expected to remain uneven across states. This variation complicates long-term planning for industry players and policymakers, particularly in areas of investment, production forecasting, and ensuring balanced regional development.



A critical challenge is India's persistent focus on calories rather than protein. For Viksit Bharat 2047, shifting this narrative is essential. Government-led initiatives must actively promote eggs and poultry meat as affordable, high-quality protein sources, especially for children, adolescents, and low-income households.

To further support consumption and expand market opportunities, India must invest in value addition and product innovation. Perishable products like eggs can be converted into whole egg powder, enabling longer shelf life, easier storage, and greater export potential. With rapid urbanization and evolving lifestyles, the demand for convenient, ready-to-cook and ready-to-eat poultry products is rising. The shift, already visible in metropolitan markets where, consumers prefer packaged, "two-minute chicken" signals strong future potential for convenience-driven, hygienic, and safe poultry products. In the coming years, products like shelf-stable egg powders, protein beverages, and fortified poultry-based snacks may become mainstream, offering new domestic and global market opportunities.

Strengthening Certification and Export Facilitation

India needs credible, and internationally aligned sanitary and phytosanitary certification systems, including for organic, antibiotic-free, and specialty poultry products. A streamlined convergence between the poultry industry, APEDA, and the Export Inspection Council is essential to ensure efficient inspection, certification, and export readiness.

Institutional Strengthening

To drive coordinated sectoral development, address emerging challenges, and enable sustained growth, the creation of an autonomous body like National Dairy Development Board (NDDB) and the National Fisheries Development

Board (NFDB) is a forward-looking institutional reform. It could provide focused leadership, facilitate research and innovation, strengthen value chains, improve farmer integration, and engage with global markets.

Way Forward

For poultry to realize its full potential under Viksit Bharat 2047, the focus must shift from simply improving production to building a resilient, demand-driven, protein-conscious ecosystem. India must invest simultaneously in feed security, quality infrastructure, cold chain, biosecurity, waste management, and rural entrepreneurship, ensuring that both commercial and backyard systems grow sustainably and inclusively.

Strengthening public awareness, enabling value addition, improving certification systems, and establishing a dedicated institutional mechanism will together ensure that the poultry sector becomes a cornerstone of India's nutritional security, rural livelihoods, and economic growth.



5.2 Policy Recommendations

India's poultry sector is already among the world's largest by production volume and has the structural foundation to become a significant exporter of sustainably produced, high-welfare poultry products by 2047. Even a shift from the current export share of under 1 per cent to 3-5 per cent of output would represent USD 1.5-3 billion in annual export revenues, making India a substantial player in global premium poultry trade. However, achieving this requires strong environmental standards, competitive pricing, and globally trusted supply chains. The following policy interventions are recommended to achieve this goal:

Short-Term Priorities



Strengthening Poultry Sector Data Systems

- Adopt broiler placements as a complementary real-time indicator for monitoring sector growth and production trends. Strengthen the collection and dissemination of placement-based data at the regional and national levels.
- Establish a joint government-industry standing committee to reconcile official and industry estimates relating to flock size, production, feed demand, and market trends, and develop harmonised reporting standards and methodologies across institutions.



Strengthen Animal Health System, Vaccines, and Disease Governance

- Strengthen the national animal health system with a strong focus on vaccine quality, availability, and rapid deployment to meet export market expectations of predictable, low-risk production systems.

- Expand the disease surveillance network, early warning system, and real-time reporting for priority poultry diseases, including avian influenza.
- Establish faster regulatory pathways for vaccine approval and emergency use authorisations to respond quickly to emerging and evolving pathogens.
- Strengthen antimicrobial stewardship framework to ensure low-residue production, transparent monitoring, and compliance with international norms, critical for protecting India's export reputation and preventing trade disruptions.



Upgrade Inspection, Certification, and Global Compliance System

- Modernize inspection and certification framework to align with stringent international requirements such as HACCP, residue monitoring, pathogen testing, and farm-to-fork traceability.
- Invest in internationally accredited testing laboratories, standardized inspection protocols, and digitally enabled certification systems trusted by key markets including the EU, US, Japan, and the Middle East.
- Develop clear export standards for processing, packaging, and labelling, supported by regular audits.
- Promote compartmentalization and establishment of disease-free zones to ensure continuity of exports during disease outbreaks and enhance market confidence.



Strengthen Smallholder Integration and Market Access

- Establish single-window mechanisms through FPOs, producer collectives, cooperatives, and contract-farming arrangements to facilitate access to finance, quality inputs, veterinary services, technical assistance, and assured market linkages.
- Promote collective procurement of feed, vaccines, medicines, and other production inputs to reduce costs and improve the competitiveness of small and medium poultry producers.



Secure Feed Supply for Sustainable Poultry Growth

- Develop a transparent framework for balancing maize use between feed and ethanol sectors and recognise poultry feed as a strategic food-security use of maize.
- Establish quality standards for DDGS and other feed substitutes to improve their adoption.



Poultry Litter-to-Energy and Circular Economy

- Recognise poultrylitter-based CBG plants as eligible infrastructure under AHIDF and Priority Sector Lending.
- Develop viability support mechanisms for litter-derived organic fertilizer, including market development and pricing support.
- Facilitate pilot projects in major poultry clusters to demonstrate commercial viability of litter-to-energy systems.



Provide Targeted Financial Incentives

- Implement **GST rationalization to reduce production costs and support value addition. Lower taxation on critical feed ingredients and processed poultry products can create a more efficient value chain, enabling benefits to be passed on to producers, including small-scale farmers.**
 - Reduce **GST on soya de-oiled cake from 5 per cent to 0 per cent**, lowering feed costs and stabilizing production economics.
 - Reduce **GST on ready-to-eat, ready-to-cook, and other value-added poultry products from 5 per cent to 0 per cent**, boosting domestic consumption, formalization, and value-chain competitiveness.
- Introduce export incentives, insurance schemes, and government-backed guarantees to encourage global market participation.

Medium-Term Priorities



Scale Research, Innovation, and Climate-Resilient Technologies

- Launch a National Poultry Innovation Program to support R&D on feed alternatives, heat-tolerant breeds, and digital monitoring systems.
- Promote digital extension platforms for real-time advisories, disease alerts, and market linkages.
- Provide incentives for mechanization, automation, and technology adoption, focused especially on small and medium producers.



Expand Human Resource Development and Extension Services

- Establish a National Poultry Skill Development Programme to train farmers, farm managers, processors, and veterinarians on modern, sustainable practices.
- Strengthen on-ground extension services to support biosecurity, feed optimization, climate resilience, and welfare compliance.
- Promote farmer-industry-academia collaboration for technology transfer and continuous learning.



Deepen Supply Chain Integration and Build a National Trust-Brand

- Promote vertically integrated poultry systems alongside cooperative and contract-farming models to improve efficiency, biosecurity, and market consistency.
- Enable small and medium farmers to participate in sustainable and export-oriented value chains through access to training, veterinary services, finance, and shared infrastructure.
- Develop a monitored trust-based certification framework for poultry products covering biosecurity, traceability, residue monitoring, and food-safety standards, aligned with HACCP systems and export-quality requirements.



Enhance Feed Productivity and Ingredient Diversification

- Launch dedicated national missions for maize and soybean productivity enhancement through improved seeds, climate-resilient varieties, mechanisation, extension support, and integrated

feed-security planning to ensure a stable and affordable supply of key feed ingredients.

- Promote R&D, commercialisation, and adoption of alternative and region-specific feed resources, including broken rice, millets, sorghum, oilseed meals, agro-industrial by-products, insect protein, and algae-based feeds, while strengthening feed processing, storage, quality testing, precision nutrition, and innovative feed technologies to improve feed efficiency, reduce cost, and enhance sustainability.



Scale Poultry Litter-to-Energy through Cluster Aggregation

- Integrate poultry-litter CBG projects into the SATAT (Sustainable Alternative Towards Affordable Transportation) framework through assured offtake arrangements and transparent biomethane pricing mechanisms.
- Promote cluster-based aggregation models whereby litter from multiple farms is channelled to common biogas upgrading facilities, particularly in regions dominated by integrator-led production systems.

Long-Term Priorities



Build an Integrated National Poultry Data and Planning Infrastructure

- Create an integrated national poultry database covering production, feed demand, disease surveillance, processing infrastructure, and trade.
- Ensure that Viksit Bharat 2047 planning for feed security, infrastructure, exports, and disease management is based on regularly updated and industry-validated datasets.



Build Modern Infrastructure and Export-Ready Value Chains

- Expand the cold chain network, establish hygienic slaughter and processing facilities, and strengthen quality and safety protocols.
- Develop specialized poultry export clusters with integrated logistics, certification support, and tax incentives.
- Mandate refrigerated transport and standardized packaging for long-distance movement to reduce spoilage and maintain product quality.



Create a Dedicated Institutional Mechanism for Long-Term Sectoral Leadership

- Establish a national-level body similar to NDDB or NFDB dedicated to poultry sector development, sustainability, and market expansion.
- Mandate this body to coordinate research, standards, farmer integration, infrastructure development, and export promotion.



Establish a National Poultry Sustainability and Standards Framework

- Develop national standards covering environmental management, animal welfare, biosecurity, and responsible antibiotic use. Introduce phased targets for stocking density reduction.
- Mandate digital traceability across the value chain (feed sourcing, health records, input use, processing).

- Align domestic regulations with international export standards and strengthen periodic audits and certification systems.



Integrate Small Producers into Premium Value Chains through FPO-Led Aggregation

- Use FPO-led clusters and certified trust brands to integrate small and medium producers into premium domestic, institutional, and export markets.
- Ensure that value addition and quality premiums are shared across the supply chain, thereby supporting inclusive sectoral growth.



Embed Feed Security in National Agricultural Planning

- Integrate feed security into long-term livestock, agricultural, and food-security planning frameworks, ensuring that feed-grain production, resource-use policies, and infrastructure development are aligned with projected poultry-sector growth under the Viksit Bharat 2047 vision.
- Promote a diversified and resilient feed ecosystem through greater utilisation of locally available agricultural by-products, alternative protein sources, and innovations in feed technology to reduce dependence on conventional feed ingredients.
- Encourage environmentally sustainable poultry production through circular-economy approaches, including composting, biogas generation, renewable energy adoption, water-efficient technologies, and precision nutrition practices that improve resource-use efficiency while reducing environmental emissions.



Position Poultry Waste as a National Energy-Transition Asset

- Encourage the development of integrated, SAF-ready bioenergy facilities capable of producing high-purity biomethane and carbon dioxide streams suitable for future Sustainable Aviation Fuel (SAF) pathways, while supporting investments in biogas upgrading, carbon capture, waste aggregation, and downstream processing infrastructure to create new revenue streams from poultry waste.
- Position poultry waste utilisation as a measurable contribution of the livestock sector to India's net-zero emissions and Viksit Bharat 2047 goals by promoting circular economy models, reducing methane emissions from unmanaged waste, generating renewable energy and biofertilisers, and establishing robust monitoring and reporting frameworks to quantify environmental and climate benefits.



Annexures

Annex 1: Value of Output of Poultry Meat and Eggs

Value of output (current prices in Rs cr.)				Value of Output (USD)	
Year	Poultry meat	Egg	Total	Exchange Rate (INR to USD)	Total in USD
2011-12	39583	16633	56216	47.9	12
2012-13	47740	19690	67430	54.4	12
2013-14	59620	22708	82328	60.5	14
2014-15	65313	24382	89695	61.1	15
2015-16	74793	26657	101450	65.5	15
2016-17	95660	29777	125437	67.1	19
2017-18	104320	32513	136833	64.5	21
2018-19	119137	36592	155729	69.9	22
2019-20	137750	41895	179645	70.9	25
2020-21	150788	47805	198593	74.2	27
2021-22	171928	54691	226619	75.6	30
2022-23	187522	60189	247711	80.4	31
2023-24	201669	65808	267477	82.7	32

Source: NAS, MoSPI and RBI

Annex 2: Poultry Distribution in India: Commercial Poultry

State	Commercial Poultry Population	% of Total Commercial Poultry	Backyard Poultry Population	% of Total Backyard Poultry
South India (Commercial Poultry Dominance)				
Tamil Nadu	99516530	18.61	21264570	6.71
Andhra Pradesh	85595190	16.01	22267962	7.02
Telangana	62455487	11.68	17543917	5.53
Karnataka	48448596	9.06	11045885	3.48
Kerala	14985843	2.80	14786062	4.66
Total	311001646	58.15	86908396	27.40

Source: 20th Livestock Census Report

Annex 3: Poultry Distribution in India: Backyard Poultry

State	Backyard Poultry Population	% of Total Backyard Poultry	Commercial Poultry Population	% of Total Commercial Poultry
Other than Southern India (Backyard Poultry Dominance)				
West Bengal	59106353	18.64	18216249	3.41
Assam	45993612	14.51	718729	0.13
Maharashtra	22113195	6.97	52184570	9.76
Jharkhand	20623289	6.50	4209617	0.79
Odisha	16617050	5.24	10822207	2.02
Madhya Pradesh	9435506	2.97	7224392	1.35
Bihar	9074414	2.86	7450935	1.39
Total	182963419	58.69	100826699	18.85

Source: 20th Livestock Census Report

Annex 4: Projections of Egg Production and Consumption from OECD-FAO Outlook

Year	Egg Production (MMT)	Prod (Billion Eggs)	Egg Consumption (MMT)	Cons (Billion Eggs)
2025	7.19	143.8	7.10	142.0
2026	7.48	149.6	7.39	147.8
2027	7.80	156.0	7.71	154.2
2028	8.08	161.6	7.99	159.8
2029	8.36	167.2	8.27	165.4
2030	8.65	173.0	8.56	171.2
2031	8.92	178.4	8.84	176.8
2032	9.19	183.8	9.11	182.2
2033	9.46	189.2	9.38	187.6
2034	9.72	194.4	9.64	192.8

Source: FAO-OECD Outlook

Annex 5: Methodology for Estimating Poultry Population, Egg Production, and total birds Slaughtered under BAHS

This study draws on official data from the Basic Animal Husbandry Statistics (BAHS) published by the Ministry of Animal Husbandry and Dairying, Government of India. BAHS production estimates are generated through the Integrated Sample Survey (ISS), a continuous, large-scale sample survey designed to estimate annual output of livestock products including eggs and poultry meat at the national and State/UT levels.

Integrated Sample Survey (ISS): The ISS follows a stratified three-stage sampling design. In the first stage, villages in rural areas and wards in urban areas are selected within each district using simple random sampling without replacement, based on the sampling frame derived from the latest Livestock Census. In the second stage, households, enterprises, poultry farms, and butcher shops are selected from the sampled villages and wards. The third stage involves

enumeration of animals or birds within the selected units. Approximately 15 per cent of villages or wards are covered annually, divided equally across three agricultural seasons, namely summer, rainy, and winter.

Estimation of poultry population is based on complete enumeration of all poultry birds in sampled villages and wards at the beginning of each season. This includes backyard poultry, institutional units, and commercial farms. For egg production, the survey combines household-level primary data with administrative returns. In sampled villages and wards, two clusters of five households owning layer birds are selected per season, and average egg yield per layer is recorded separately for desi and improved birds. Commercial poultry farms, defined as units with more than 1,000 birds, are covered through complete reporting by State Animal Husbandry Departments, which provide data on the number of layers and average productivity. Seasonal estimates are aggregated to obtain annual egg production.

Estimation of meat production and birds slaughtered is carried out through complete enumeration of households and butcher shops in sampled villages and wards, supplemented by administrative returns from all registered slaughterhouses within the district. Data on slaughter numbers are collected on a monthly basis and aggregated season-wise. Yield rates for meat conversion are estimated through physical sampling in selected slaughterhouses and applied to slaughter numbers to derive production estimates.

Livestock Census: The Livestock Census is conducted quinquennially as a complete enumeration exercise, provides species-wise poultry and livestock population at a point in time and serves as the benchmark sampling frame for ISS. While the Census captures population stocks, ISS and BAHS focus on estimating production flows over the agricultural year. Together, these systems constitute the core statistical framework for poultry population and production estimates in India.

Annex 6: Systematic Overview of Baseline Database Construction in OECD-FAO Agricultural Outlook

The OECD-FAO Agricultural Outlook's baseline projections, including for poultry meat and eggs, rely on historical databases compiled primarily from OECD and FAO sources, which aggregate national statistics on production, consumption, trade, stocks, and prices up to the end of the prior year (e.g., 2024 for the 2025-2034 edition). These databases form the "starting values" for model runs in Aglink-Cosimo, ensuring consistency before projections begin in November of the preceding year.

Data Sourcing and Compilation (Pre-Baseline):

Historical data primarily come from OECD and FAO databases, which compile national statistical sources reported by governments (e.g., USDA, Eurostat, India's MoA). For OECD countries and select partners (e.g., Brazil, China), data align with official notifications; FAO fills gaps for other

nations using its FAOSTAT system and commodity specialist inputs. Poultry-specific metrics, such as slaughter numbers, carcass weights, egg output per hen, and feed use, draw from national ministries, industry reports, and FAO's livestock statistics, ensuring consistency in units (e.g., carcass-weight equivalent for meat, shell-egg equivalent for eggs).

- **Production:** Derived backwards from slaughter numbers, carcass/live weights, and yields; e.g., poultry output = marketing numbers × average weights, calibrated to reported totals. Eggs use layer flock sizes × eggs per hen/year.
- **Consumption:** Total domestic use (food + feed + other), split via per capita estimates adjusted for population, loss/waste shares (post-2022 inclusion), and price/income elasticities.

- **Trade/Prices:** Extra-regional flows (e.g., EU as block); producer prices indexed to feed costs (FEI: maize/soy + GDP deflator for non-tradable) + exogenous trends (no trade/stocks modelled for eggs).

Discrepancies are reconciled via expert judgment to minimize global imbalances before model input. Calculation and Reconciliation Process Prior to Projections include following steps:

Compilation (November prior year): OECD circulates annual questionnaires to member/non-member administrations for recent data updates, policy changes, and initial medium-term views. FAO generates provisional series via model simulations and expert consultations for remaining countries. Macro data (GDP, population) integrate from IMF, UN, World Bank.

Initial Baseline Build: Country/regional "starting values" feed into Aglink-Cosimo for global reconciliation. The model minimizes trade

imbalances, matching world production to consumption plus net trade/stocks, while deriving equilibrium prices. For poultry/eggs, this adjusts domestic balances using elasticities (e.g., price responsiveness of feed demand, short-run supply from flock cycles).

Review and Refinement (Dec-Feb): Bilateral checks with countries resolve discrepancies (e.g., questionnaire vs. model outputs). Poultry baselines incorporate productivity trends (e.g., FCR, yields) from segmented equations, separating slaughter/live trade where applicable. FAO/OECD experts apply judgment for anomalies like disease impacts.

Final Pre-Projection Baseline: Post-model, a consensus baseline emerges by February/March, reviewed at OECD Committee meetings. This "plausible equilibrium" serves as the projection launchpad, with livestock modules emphasizing non-ruminant efficiency (e.g., 2024 revisions linking inventories to weights/feed).

References

Chhabra, A., Manjunath, K. R., Panigrahy, S., & Parihar, J. S. (2013). Greenhouse gas emissions from Indian livestock. *Climate Change*, 329-344.

FAO. (2013). Tackling climate change through livestock – A global assessment of emissions and mitigation opportunities. Rome: Food and Agriculture Organization of the United Nations (FAO).

ITC Trademap. (2025b). Trade statistics for international business development. Retrieved from ITC Trademap:
<https://www.trademap.org/Index.aspx?nvpm=1%7c%7c%7c%7c%7c%7c%7c%7c%7c%7c%7c%7c%7c%7c%7c%7c%7c%7c>

MoFAHD. (2020). 20th Livestock Census- 2019- All India Report. New Delhi: Animal Husbandry Statistics Division, Department of Animal Husbandry & Dairying, Ministry of Fisheries, Animal Husbandry & Dairying, Government of India.

MoFAHD. (2025). Basic Animal Husbandry Statistics (BAHS) 2025. New Delhi: Ministry of Statistics & Programme Implementation, Government of India.

MoSPI. (2025). National Accounts Statistics 2025. New Delhi: Ministry of Statistics & Programme Implementation (MoSPI), Government of India.

NIFTEM. (2022). Reading Manual for Maize Under PM FME Scheme. Sonipat: National Institute of Food Technology Entrepreneurship and Management. Retrieved from <https://niftem.ac.in/newsite/pmfme/wp-content/uploads/2022/07/maizeprocessingwriteup.pdf>

OECD-FAO. (2025). OECD-FAO Agricultural Outlook 2025-2034. Paris: Organisation for Economic Co-operation and Development (OECD) and Food and Agriculture Organization of the United Nations (FAO).

Poore, J., & Nemecek, T. (2018). Reducing food's environmental impacts through producers and consumers. *Science*, 987-992.

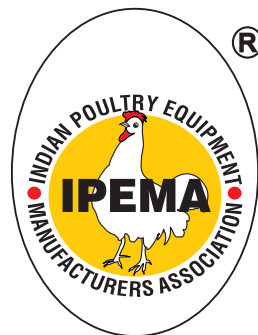
Shakya, A., & Agarwal, T. (2017). Poultry Litter Biochar: An Approach towards Poultry Litter Management – A Review. *International Journal of Current Microbiology and Applied Sciences*, 2657-2668.

TNAU. (2024). Conventional Poultry Feeding. Retrieved from Tamil Nadu Agricultural University (TNAU): https://agritech.tnau.ac.in/animal_husbandry/ani_chik_conventional.html

The Confederation of Indian Industry Food and Agriculture Centre of Excellence (FACE) would like to thank the following companies for their funding and inevitable support through the process.



Organised by:





Confederation of Indian Industry

The Confederation of Indian Industry (CII) works to create and sustain an environment conducive to the development of India, partnering Industry, Government and civil society through advisory and consultative processes.

For more than 130 years, CII has been engaged in shaping India's development journey and works proactively on transforming Indian Industry's engagement in national development. With its extensive network across the country and the world, CII serves as a reference point for Indian industry and the international business community.

In the journey of India's economic resurgence, CII facilitates the multifaceted contributions of the Indian Industry, charting a path towards a prosperous and sustainable future. With this backdrop, CII has identified "Accelerating Competitiveness: Growth, Resilience, Inclusion, Sustainability, Trust" as its theme for 2026-27, prioritising five key pillars. During the year, CII will align its policy advocacy, institutional initiatives, partnerships, and outreach to support Indian industry in strengthening these five interconnected pillars of competitiveness.

Confederation of Indian Industry

The Mantosh Sondhi Centre
23, Institutional Area, Lodi Road, New Delhi – 110 003 (India)
T: 91 11 45771000 | E: info@cii.in • W: www.cii.in

Follow us on:



[cii.in/facebook](https://www.facebook.com/cii.in)



[cii.in/twitter](https://twitter.com/cii.in)



[cii.in/linkedin](https://www.linkedin.com/company/cii.in)



[cii.in/youtube](https://www.youtube.com/cii.in)

Reach us via CII Membership Helpline Number: 1800-103-1244



FACE is CII's Centre of Excellence dedicated to building efficiencies across the agricultural value chain from farm to fork. FACE is charged with the mission of improving competitiveness of India's agriculture and food sector by catalyzing innovation, building capacity and enhancing productivity across the value chain. FACE works with farmers, companies, development institutions and the government to

- Improve on and off-farm productivity through the dissemination of best practices and technological innovation
- Invest in capacity building initiatives and skill development for supply chain participants across the value chain
- Strengthen linkages across the value chain through market access initiatives, thereby reducing losses and increasing farmer incomes

FACE's service portfolio comprises commodity specific value chain assessments and supply chain advisory services for food and agri businesses, training and consulting services in the area of food safety, and sectoral research across different market segments. FACE also works on projects in PPP mode, to develop business models that are scalable and replicable across geographies.

CII - Jubilant Bhartia Food and Agriculture Centre of Excellence (FACE) Confederation of Indian Industry

Andhra Association Building, 4th Floor
24-25 Institutional Area, Lodi Road, New Delhi-110003, India
T: +91 45771000 | E: face-info@cii.in | W: www.face-cii.in/