

Visualization of Global Chickens Farming and Their Production Systems

Josua Sahala¹, Agustinus Agung Dethan¹, Marselinus Banu¹, Maria Magdalena Kapitan¹,
Yusuf Leonard Henuk^{2*}

¹Faculty of Agriculture, Science, and Health. University Of Timor (Unimor)

²Animal Feed Technology Study Program, Department of Animal Husbandry, Kupang State
Agricultural Polytechnic

Email: profesorhenuk@gmail.com

Abstrak

Populasi ayam global telah mencapai 26 miliar yang mencengangkan pada tahun 2024. Angka ini terutama mencerminkan jumlah total ayam peliharaan di seluruh dunia, yang mencakup ayam stok yang dibesarkan untuk produksi daging dan telur di peternakan komersial, kawanan halaman belakang, dan pengaturan pertanian lainnya. Sementara itu termasuk yang dipelihara sebagai hewan peliharaan atau di peternakan kecil, umumnya tidak termasuk ayam liar atau liar, karena ini tidak dilacak secara sistematis dalam statistik pertanian. Ayam adalah salah satu hewan yang paling banyak ditemukan dan signifikan secara ekonomi di planet ini, berkembang biak di berbagai iklim dan wilayah. Peternakan Ayam Global dan Sistem Produksinya telah divisualisasikan: (1) Sistem Peternakan Unggas Global (ternak bebas tradisional, halaman belakang atau subsisten, semi intensif, intensif skala kecil); (2) Siklus Hidup Global Perkembangan Ayam dalam Berat Badan untuk Ayam Pedaging dari tahun 1957 – 2024: 1957 (905g); 1978 (1.808g); dan 2005-2024 (4.202g); (3) Industri Unggas Terpadu Global (operasi ayam pedaging dan operasi ayam petelur); (4) Produksi Daging Global Berdasarkan Spesies dan Harganya (unggas-babi-sapi-domba; \$3,01 vs \$3,70-\$3,15 vs \$3,87-\$6,24 vs \$7,48); (5) 10 Produksi dan Perusahaan Unggas Global Teratas (Tiongkok, Indonesia, Pakistan, Brasil, Amerika Serikat, Iran, India, Meksiko, Rusia, Vietnam – JBS S.A, Tyson Foods, Wen's Food Group, CP Group, Koch Food Inc, Industrias Bachoco; dan Gargil); dan (6) Peran Ekonomi Unggas Global untuk Banyak Negara (pendapatan, protein, pekerjaan, pajak, diversifikasi ekonomi, malnutrisi, status sosial, dan upacara keagamaan dan tradisional): (1) Amerika Serikat dan (2) Indonesia.

Kata kunci: Ayam, Daging, Global, Telur

Abstract

The global chicken population has reached an astounding 26 billion in 2024. This figure primarily reflects the total number of domesticated chickens worldwide, encompassing stock chickens raised for meat and egg production in commercial farms, backyard flocks, and other agricultural settings. While it includes those kept as pets or on small farms, it generally excludes wild or feral chickens, as these are not tracked systematically in agricultural statistics. Chickens are one of the most ubiquitous and economically significant animals on the planet, thriving in diverse climates and regions. Global Chickens Farming and Their Production Systems has been visualized: (1) Global Systems of Poultry Farming (traditional free range, backyard or subsistence, semi intensive, small-scale intensive); (2) Global Life Cycle of Chickens Development in Body Weight for Broiler from 1957 – 2024 : 1957 (905g); 1978 (1,808g); and 2005-2024 (4,202g); (3) Global Integrated Poultry Industry (broiler operation and layer operation); (4) Global Meat Production By Species and Their Prices (poultry-pork-beef-sheep; \$3.01 vs \$3.70-\$3.15 vs \$3.87-\$6.24 vs \$7.48); (5) Top 10 Global Poultry Production and Companies (China, Indonesia, Pakistan, Brazil, United States, Iran, India, Mexico, Russia, Vietnam – JBS S.A, Tyson Foods, Wen's Food Group, CP Group, Koch Food Inc, Industrias Bachoco; and Gargil); and (6) Global Poultry Economic Roles for Many Countries (income, protein, employment, taxes, economic diversification, malnutrition, social status, and religious and traditional ceremonies): (1) The United States of America and (2) Indonesia.

Keywords: Chickens, Ubiquitous, Global, Meat, Eggs

INTRODUCTION

The global chicken population has reached an astounding 26 billion in 2024. This figure primarily reflects the total number of domesticated chickens worldwide, encompassing stock chickens raised for meat and egg production in commercial farms, backyard flocks, and other agricultural settings. While it includes those kept as pets or on small farms, it generally excludes wild or feral chickens, as these are not tracked systematically in agricultural statistics. Chickens are one of the most ubiquitous and economically significant animals on the planet, thriving in diverse climates and regions. The demand for chicken meat and eggs has significantly contributed to the growth of their population, as chickens have become a cornerstone of the global food industry.

As the human population continues to rise, so does the reliance on chickens for protein and other nutritional needs, resulting in their burgeoning numbers across continents. China leads the world in chicken production, with a staggering population of over 5 billion chickens. The vast agricultural landscape and growing demand for poultry products have driven this large-scale production. Indonesia follows, with over 3.4 billion chickens, supported by its large population and strong domestic market for chicken meat. Pakistan, Brazil, and the United States also rank among the top five, each with populations exceeding 1.5 billion. These countries have well-established poultry industries, supported by advanced farming techniques, high domestic consumption, and significant export markets. In Brazil and the U.S., for example, chicken is a dietary staple, and the poultry industry plays a vital role in their economies. The expansion of commercial poultry farming and improvements in production efficiency have further contributed to the high chicken populations in these regions (FAO, 2024).

This paper will visualise Global Chickens Farming and Their Production Systems: (1) Global Systems of Poultry Farming; (2) Global Life Cycle of Chickens Development in Body Weight for Broiler from 1957 – 2024; (3) Global Integrated Poultry Industry; (4) Global Meat Production By Species and Their Prices; (5) Top 10 Global Poultry Production and Companies; and (6) Global Poultry Economic Roles for Many Countries.

DISCUSSION

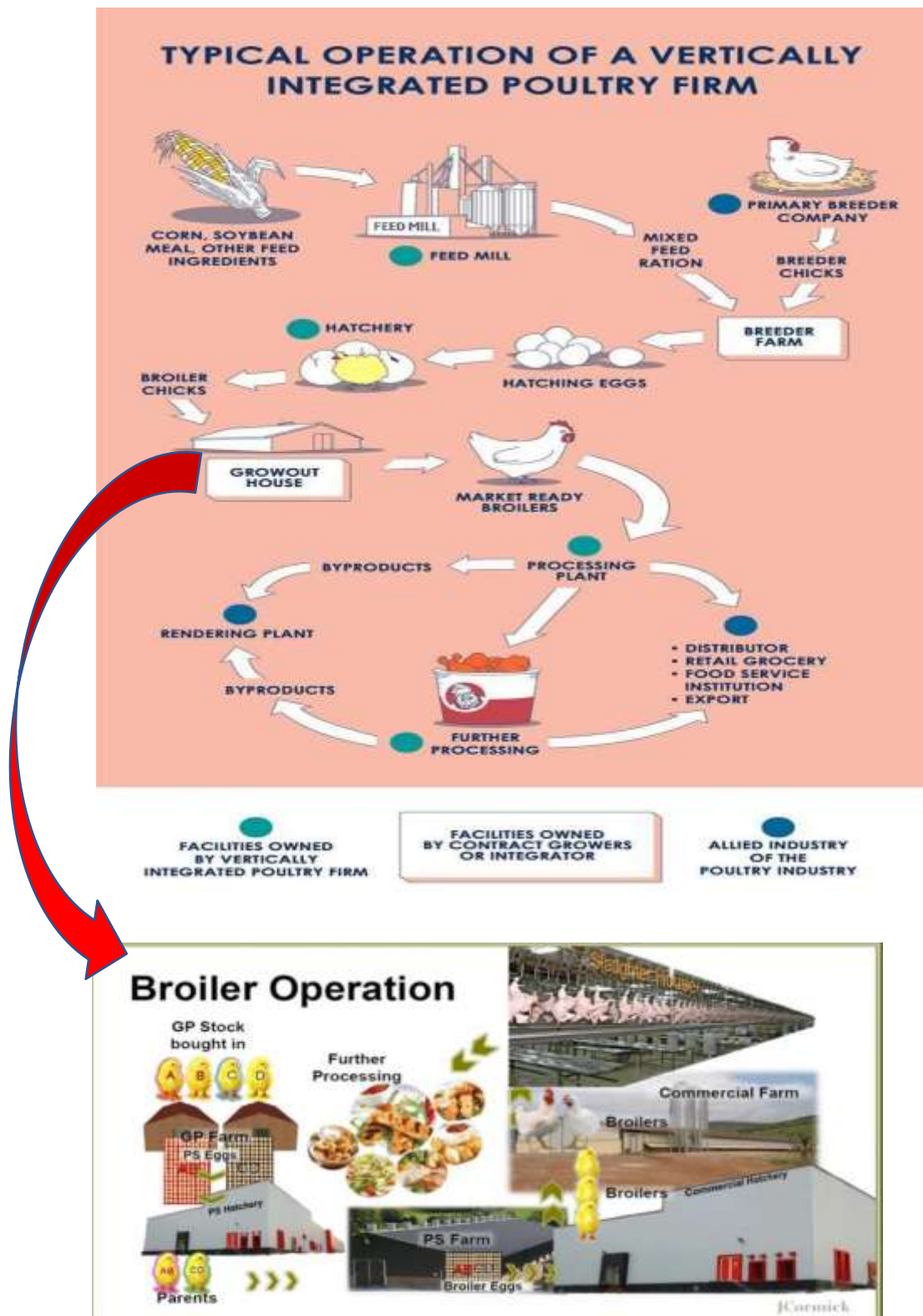
Global Systems of Poultry Farming



Systems of Poultry Farming

Characteristics	Traditional free range	Backyard or subsistence	Semi-intensive	Small-scale intensive
Flock size	1-10 birds	10-50 birds	50-200 birds	50-500 birds
Key rearers	Majority of rural families	Moderate number of rural families	Few rural families	Urban families
Ownership	Mostly women & children	Mostly women and family	Middlemen	Business men
Type of breeds	Indigenous breeds	Indigenous and few crossbreds	Local/improved	Layers or broilers
Feed resources	Scavenging	Scavenging and supplementation	Commercial/local	Balanced diets
Health status	No vaccination/medication	Vaccination and little medication	Vaccination	Full vaccination
Housing system	No specific housing	Simple and small houses	Medium & improved	Big and improved
Egg production	30-50 eggsyear ⁻¹ hen ⁻¹	50-150 eggsyear ⁻¹ hen ⁻¹	80-160 eggsyear ⁻¹ hen ⁻¹	250-300 eggsyear ⁻¹ hen
Growth rate	5-10g day ⁻¹	10-20g day ⁻¹	10-20g day ⁻¹	50-55g day ⁻¹
Mortality rate	High mortality	Moderate mortality	Low mortality	Low mortality
Use of products	Home consumption	Home consumption and sale	Family income	Business income
Profit	Small cash income	Family income	Family income	Business income
Socio-economic	Social and cultural	Social and micro-credit	Credit based assets	little social

Characteristic	Systems			
	Industrial	Commercial		Backyard
	Sector 1	Sector 2	Sector 3	Sector 4
Biosecurity	High	Moderate to high	Low to minimal	Minimal
Marketing system	Commercial	Usually commercial	Birds usually sold in live bird markets	Birds and products consumed locally
Market outputs	Export and urban	Urban/rural	Primarily live urban	Primarily rural
Dependence on market for inputs	High	High	High	Low
Dependence on goods roads	High	High	High	Low
Location	Near capital and major cities	Near capital and major cities	Smaller towns and rural areas	Everywhere. Dominates in remote areas
Birds kept	Indoors	Indoors	Indoors/Part-time outdoors	Out most of the day
Shed	Closed	Closed	Closed/Open	Open
Contact with other chicken	None	None	Yes	Yes
Contact with ducks	None	None	Yes	Yes
Contact with other domestic birds	None	None	Yes	Yes
Contact with wildlife	None	None	Yes	Yes
Veterinary service	Own veterinarian	Pay for veterinary services	Pay for veterinary services	Irregular; rely on government vets
Source – medications	Market	Market	Market	Government and market
Source – technical information	Company and associates	Sellers of inputs	Sellers of inputs	Government extension service
Source – finance	Banks and own	Banks and own	Banks and private	Private and banks
Breed of poultry	Commercial	Commercial	Commercial	Native
Owner food security	High	Good	Fair	Fair to poor



(Sources : Henuk *et al.*, 2015).

Global Life Cycle of Chickens Development in Body Weight for Broiler

From 1957 – 2024. The oldest chicken in the world was 22 years old when she died – but in the egg industry, millions of chickens die already as chicks. The fact is that in intensive animal husbandry, chickens are among the farm animals with the shortest lifespan of all. A laying hen is allowed to live the longest – it lives around 20 months, i.e., around 1.5 years. A broiler chicken, on the other hand, reaches its slaughter weight after 40 days. Broiler chickens are therefore not even 1.5 months old when they're slaughtered for meat (Anonymous, 2022).

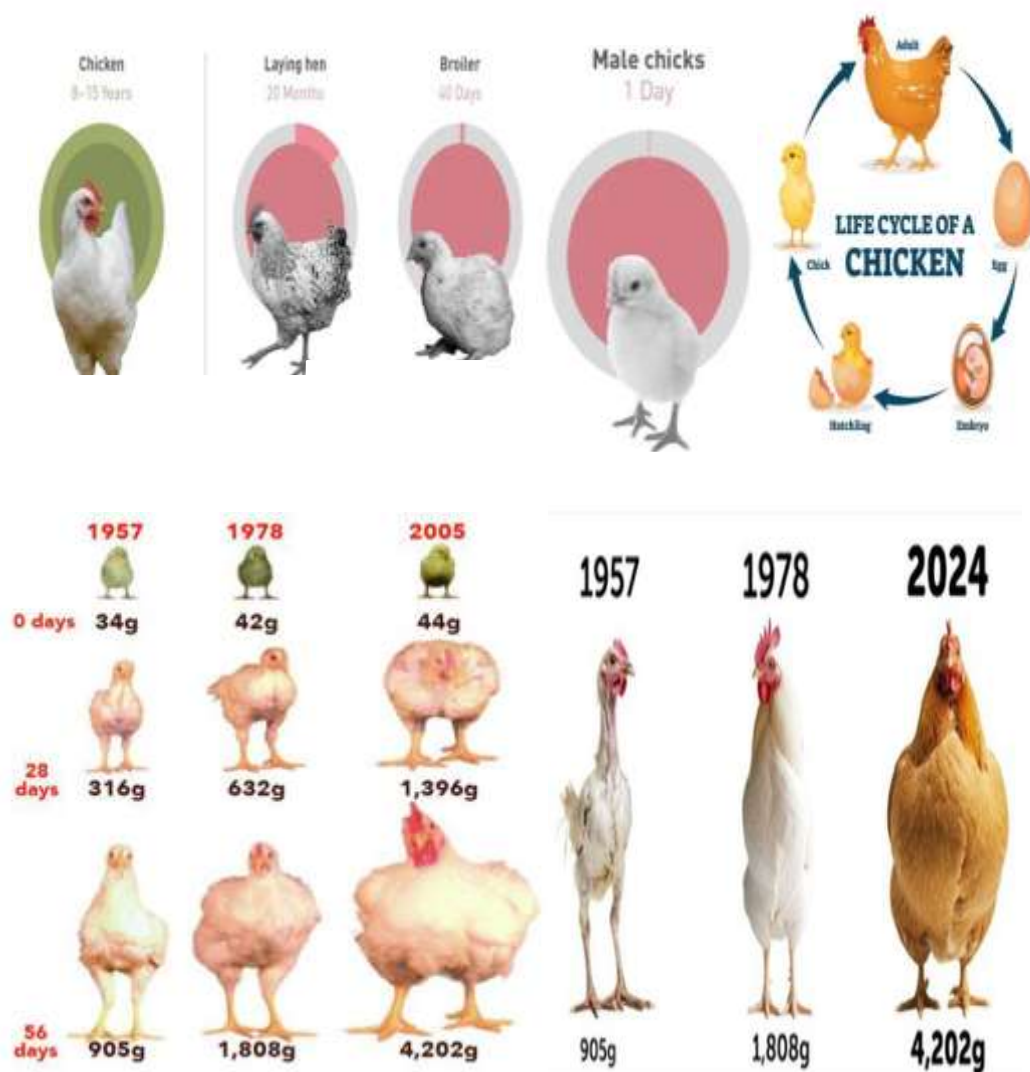
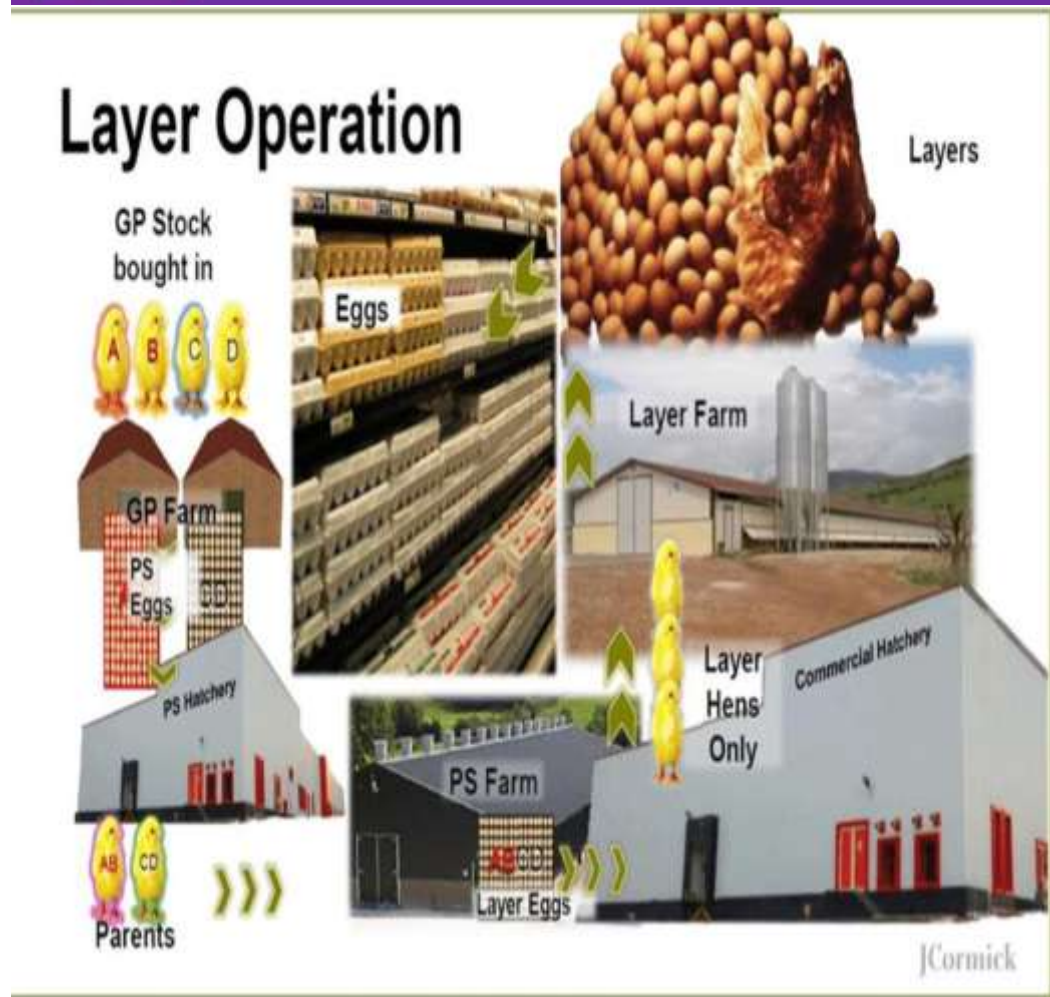
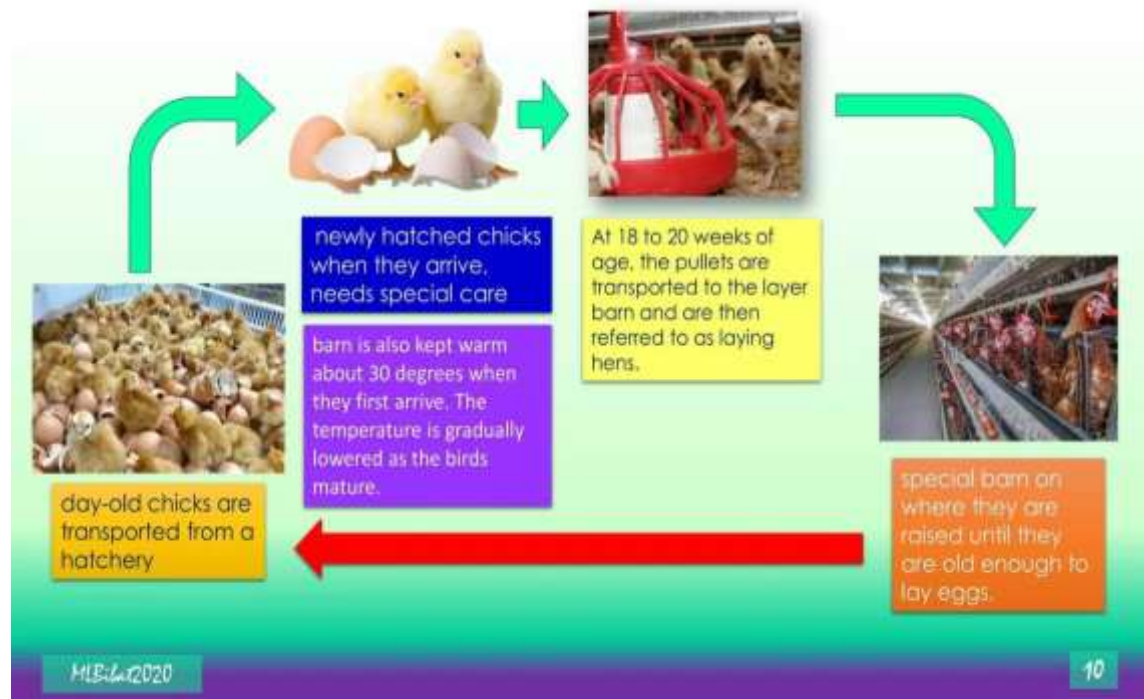


Figure 1. Natural Life Expectancy Vs Actual Life of Chickens and Their Weight From 1957 – 2024(Anonymous, 2022).

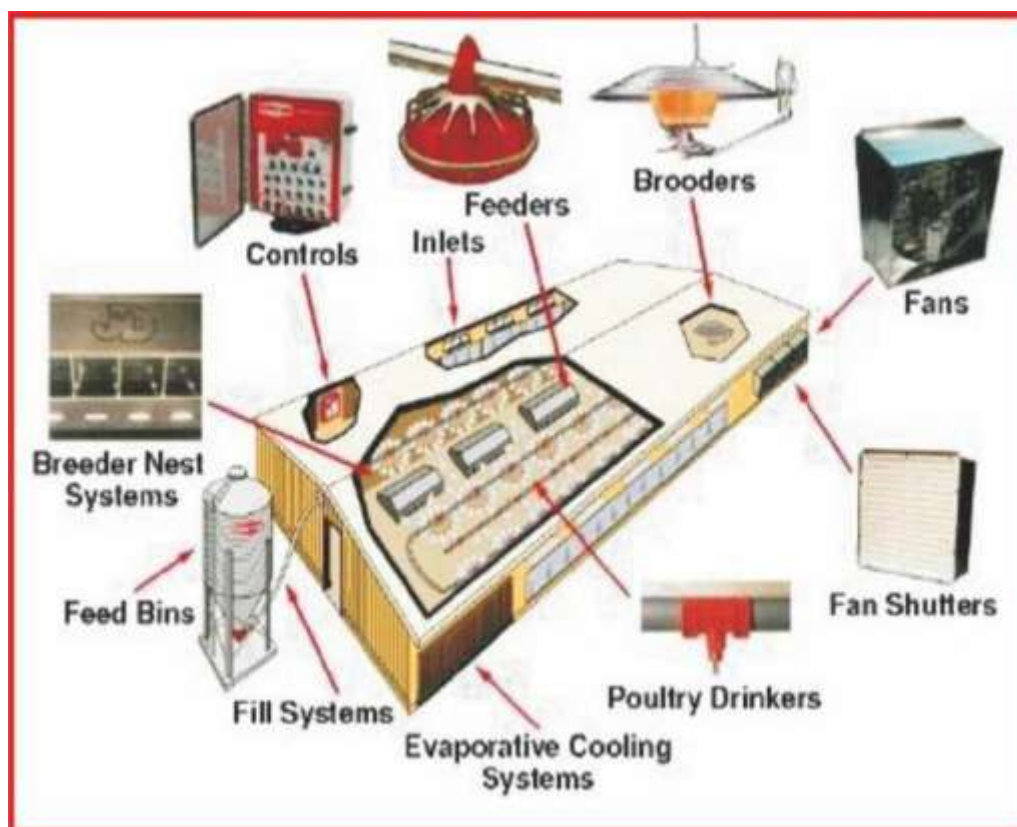
Global Integrated Poultry Industry





References

- | | | | |
|-------------------------|----------------------------|-----------------------|------------------|
| 1.Main Gate | 5.Dipping Pond | 9.Ground Tank | 13.Broiler Huose |
| 2.Security & Spray Room | 6.Warehouse(Out) | 10.Overhead Tank | 14.Layer House |
| 3.Warehouse(In) | 7.Office & Training Centre | 11.Inner Fencing Door | |
| 4.Fumigation Room | 8.Generator House | 12.Changing room | |



(Source: Anonymous, 2024).

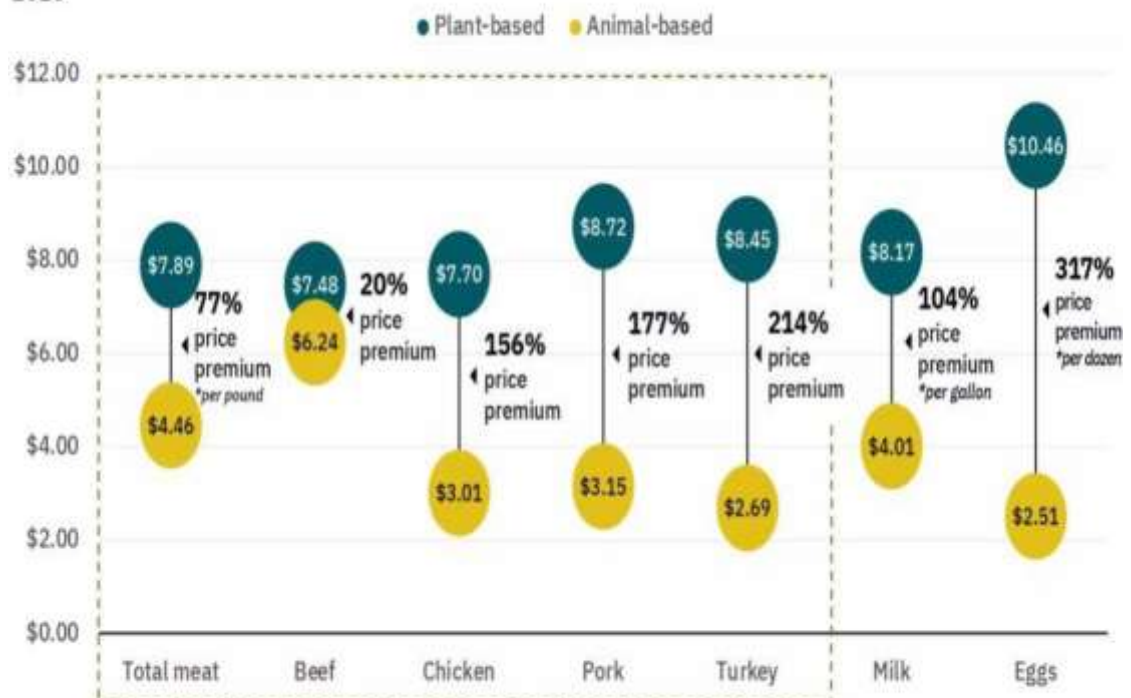
Global Meat Production By Species and Their Prices

Table 1. Global Meat Production by Species 2019 – 2024 and Their Prices Compared to Plant-based

	 POULTRY	 PORK	 BEEF/VEAL	 SHEEP
	IN MILLION METRIC TONS			
2019	125.64	117.84	70.38	15.04
2020	132.07	106.53	71.14	15.43
2021	135.07	112.86	70.37	16.17
2022	135.93	120.82	72.22	16.20
2023*	139.68	122.07	71.10	16.65
2024*	138.75	121.72	73.56	16.61

Plant-based versus animal-based price per weight comparison

2023

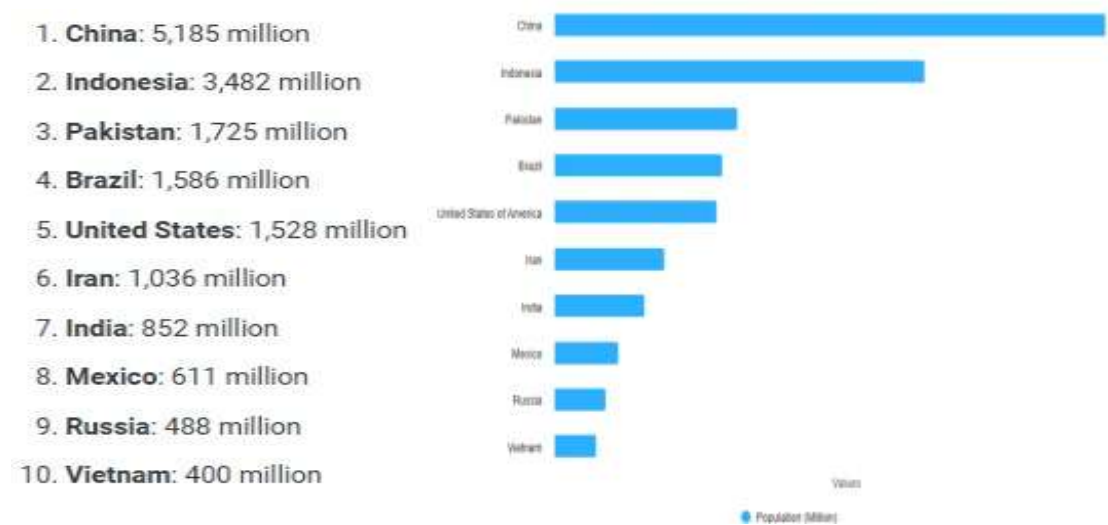


Source: Plant-based meat prices per pound are based on frozen and refrigerated plant-based meat subcategories from SPINS year ending 12/3/23. Animal-based meat prices per pound are based on data for fresh meat subcategories from the Circana year ending Dec 2023. Plant-based milk prices per gallon and plant-based egg prices per pound are based on the custom plant-based categories created by GFI & PBFA from SPINS data year ending 12/3/23. Animal-based milk and egg prices from US BLS statistics—December 2023 value.

SPINS Global Food Intelligence

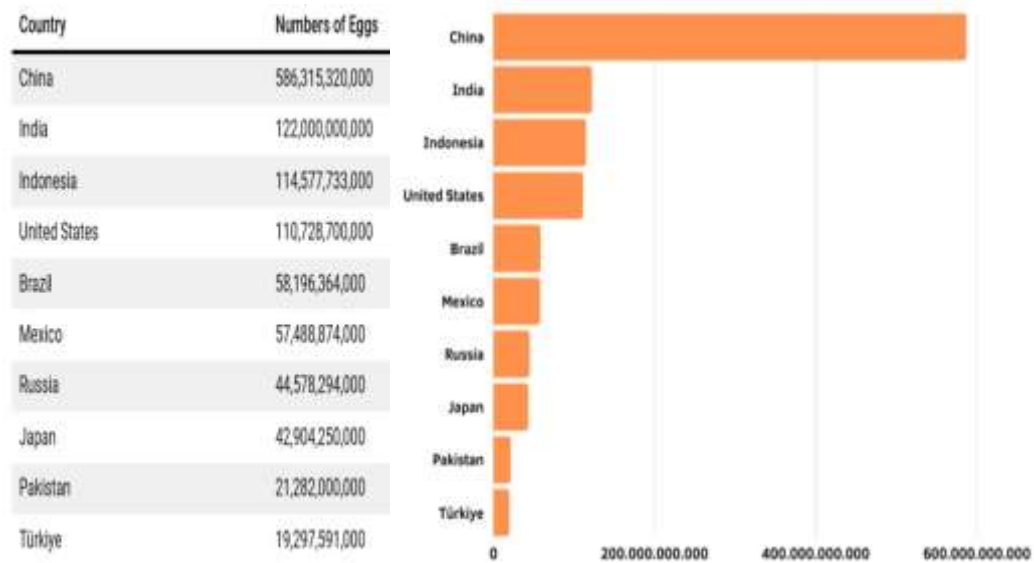
(Sources: Dawson, 2024; Mridul, 2024).

Top 10 Global Poultry Production and Companies



Country	Chickens per Resident
Brazil	28.88
United States	28
Russia	16.77
Indonesia	16.54
China	7.86
India	2

Broilers Slaughtered annually (millions)	Company	Countries
4426	JBS S.A.	Brazil, US, Mexico, UK
1900	Tyson Foods	US
1732	BRF	Brazil
1101	Wen's Food Group	China
695	Wellhope Agri-Tech	China
685	CP Group	Thailand
655	Koch Foods Inc.	US
635	Sanderson Farms Inc.	US
627	Industrias Bachoco	Mexico
625	Cargil	US, Honduras, Colombia, Honduras, Nicaragua, Costa Rica, Thailand, UK, China



Egg Layers (million)	Company	Country
46.8	Beijing Deqingyuan Agricultural Technology Co. Ltd.	United States
36	Proteina Animal (PROAN)	Mexico
27.6	Rose Acre Farms	United States
22	CP Group	Thailand
20.6	Beijing Deqingyuan Agricultural Tecynology Co. Ltd.	China
20	Hillandale Farms	United States
20	Ise Inc.	Japan
20	Versova Holdings L.L.P.	United States
15.3	Arab Company for Livestock Development (ACOLID)	Saudi Arabia
14.5	Daybreak Foods	United States

Figure 4. Top 10 Leading Egg-Chicken-Producing Countries and Companies in the World
 (CFET, 2023; FAO, 2024)

Chickens can have a significant economic impact on families and communities in many ways, including:

- **Income:** Chickens can be a source of income for farmers and the surrounding community. The amount of income from selling chickens depends on the price and quantity sold. ⓘ
- **Protein:** Chickens can provide a source of animal protein for the community. ⓘ
- **Employment:** The poultry industry provides jobs for many people. ⓘ
- **Taxes:** The poultry industry generates billions of dollars in taxes. ⓘ
- **Economic diversification:** Poultry production can help diversify a country's economy. ⓘ
- **Malnutrition:** Poultry meat and products can help address malnutrition. ⓘ
- **Social status:** Native chickens can affect the social status of breeders. ⓘ
- **Religious and traditional ceremonies:** Chickens can be used in religious and traditional ceremonies. ⓘ

(a) United States of America:



Chicken Industry Provides 1.5 Million Jobs and \$417 Billion in Economic Impact: New Study

November 1, 2022

The U.S. Poultry & Egg Association (USPOULTRY), National Chicken Council, National Turkey Federation and United Egg Producers have released an updated economic impact study that highlights the positive impact the poultry industry has on jobs, wages, and federal and state revenue in the United States.

The study breaks down poultry into three subcategories: chicken, turkey and eggs. The chicken industry provides 1,517,797 jobs, \$94.9 billion in wages, \$417 billion in economic activity and \$25.5 billion in government revenue.

(b) Indonesia:



(SOURCES: NCC, 2022; Byrney, 2022; CRIF, 2024; FAO, 2024).

Conclusions

Chickens are one of the most ubiquitous and economically significant animals on the planet, thriving in diverse climates and regions. Global Chickens Farming and Their Production Systems has been visualized: (1) Global Systems of Poultry Farming (traditional free range, backyard or subsistence, semi intensive, small-scale intensive); (2) Global Life Cycle of Chickens Development in Body Weight for Broiler from 1957 – 2024: 1957 (905g); 1978 (1,808g); and 2005-2024 (4,202g); (3) Global Integrated Poultry Industry (broiler operation and layer operation); (4) Global Meat Production By Species and Their Prices (poultry-pork-beef-sheep; \$3.01 vs \$3.70-\$3.15 vs \$3.87-\$6.24 vs \$7.48); (5) Top 10 Global Poultry Production and Companies (China, Indonesia, Pakistan, Brazil, United States, Iran, India, Mexico, Russia, Vietnam – JBS S.A, Tyson Foods, Wen's Food Group, CP Group, Koch Food Inc, Industrias Bachoco; and Gargil); and (6) Global Poultry Economic Roles for Many Countries (income, protein, employment, taxes, economic diversification, malnutrition, social status, and religious and traditional ceremonies): (1) The United States of America and (2) Indonesia.

REFERENCES

- Anonymous. (2022). *Life expectancy of chickens*. Retrieved June 27, 2025, from <https://www.fourpaws.org/campaigns-topics/topics/farm-animals/life-expectancy-of-chickens>
- Anonymous. (2024). *Welcome to Poul Tech!*. Retrieved June 27, 2025, from <https://www.cnpoultech.com/>
- Byrne, J. (2022). Rabobank expects decline in poultry feeds, but AI concerns remain. Retrieved June 27, 2025, from <https://www.feednavigator.com/Article/2022/09/28/Rabobank-expects-decline-in-poultry-feed-price-but-AI-concerns-remain>
- CFET. (2023). *Poultry industry statistics 2023: Meat & egg production*. Retrieved June 27, 2025, from <https://www.chickenfans.com/poultry-industry-statistics/>
- CRIF. (2024). The growth of the livestock industry is hampered by increasing production costs. What will this condition be like in 2024? Retrieved June 27, 2025, from <https://www.id.crifasia.com/resources/industry-insights/the-growth-of-the-livestock-industry-is-hampered-by-increasing-production-costs-what-will-this-condition-be-like-in-2024/>
- FAO. (2024). *Chicken population by country 2024*. Retrieved June 27, 2024, from <https://worldostats.com/chicken-population-by-country-2024/>
- Henuk, Y. L., Duangjinda, M., & Bailey, C. A. (2015, October 27–30). Family poultry farming systems in developing countries. In *Proceedings of the 5th International Conference Sustainable Agriculture for Developing Countries* (p. 17). Pattaya, Thailand.
- Mridul, A. (2024). Earth Day 2024: 10 things to know about our food system. Retrieved June 27, 2025, from <https://www.greenqueen.com.hk/earth-day-2024-food-climate-change-vegan-meat/>
- National Chicken Council. (2022). Chicken industry provides 1.5 million jobs and \$417 billion in economic impact: New study. Retrieved June 27, 2025.