

4.6 Asia

4.6.1 Regional Demographics and Poultry Stocks

The Asian poultry industry has 56.0 million farms with 47.8 million (85%) of those being household or micro-producer chicken farms. An estimated 6.8 million (12%) poultry farms are duck farms. Commercial chicken farms account for 1,457,508 or 3% of Asia's poultry farms. Less than 1% or 13,074 of Asia's poultry farms are turkey farms. The average size of the household or micro-producer chicken farm is 31 head. The average size of a duck farm is 153 head. Commercial chicken farms have an average 9,520 head. The average turkey farm has 1,196 head (Figure 209).

Asian broiler farms have stocks of 15.4 billion chickens with 90.7% being on commercial farms and 9.3% being on household or micro-producer farms. Asia has duck stocks of 1.03 billion head and turkey stocks of 15.6 million head.

Overall poultry stocks have increased since 2010. Chicken stocks have increased 38.4%, duck stocks have declined 3%, and turkey stocks have increased 38.5% (Figure 210).

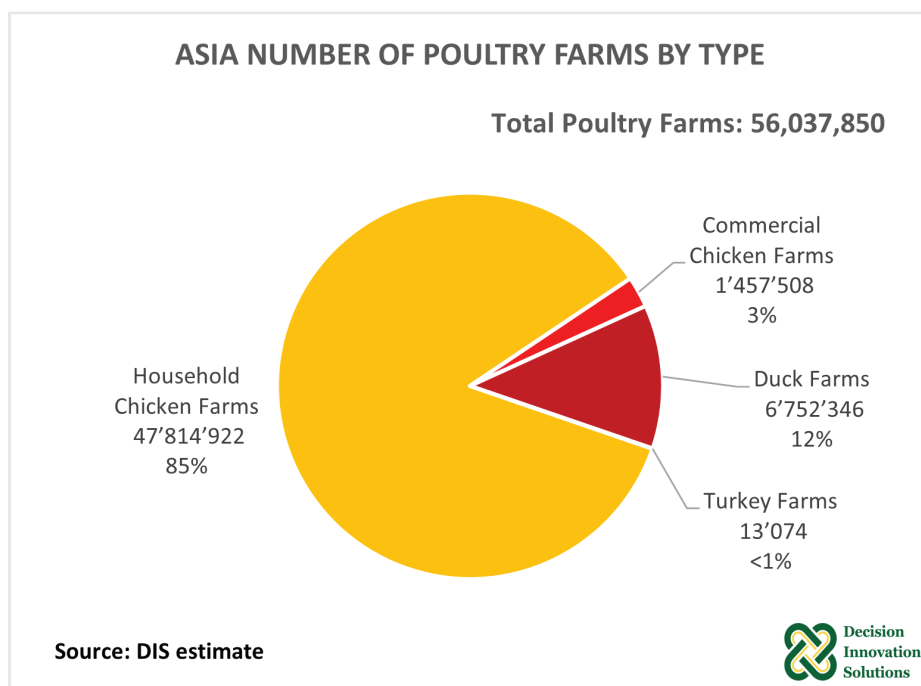


Figure 209. Asia number of poultry farms by type

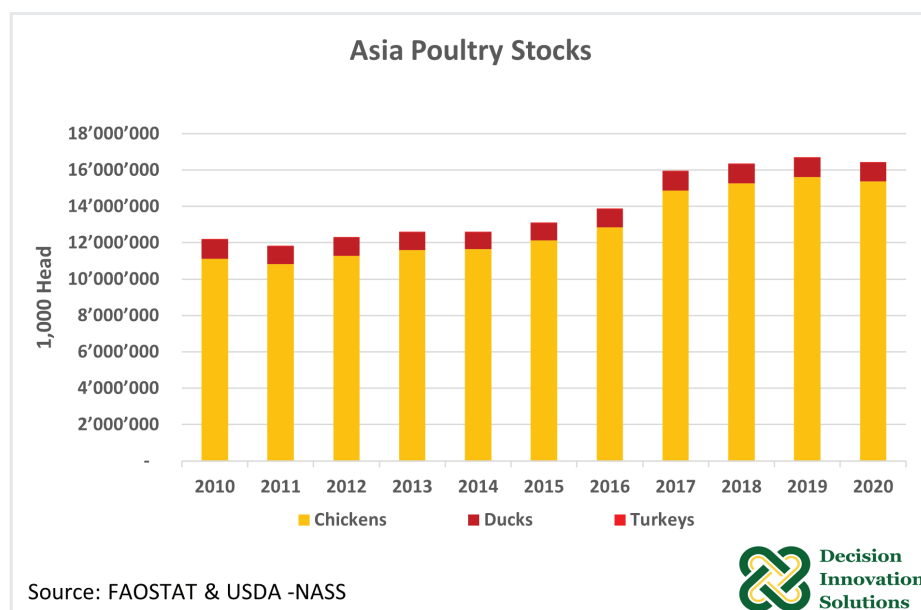


Figure 210. Asia poultry stocks

4.6.2 Regional Economics

Asia's total GDP was an estimated \$31.5 trillion in 2020. Agricultural production was approximately 6% of the total GDP. Crop production was 5% or \$1.4 trillion. About 1%, or \$457.6 billion, of Asia's total GDP was derived from red meat production. Poultry production was less than 1% of the total Asian GDP (Figure 211).

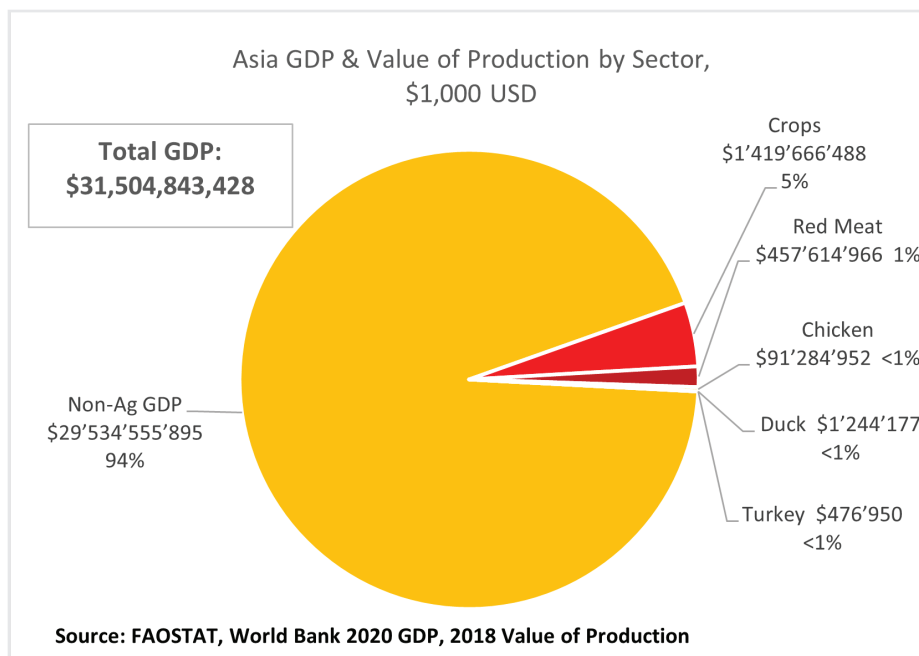


Figure 211.

Asia GDP & value of production by sector

4.6.3 Regional Poultry Production Volume and Value

Asia produced 47.9 million metric tons of poultry meat in 2020 with 91% being chicken meat, 9% being duck meat, and less than 0.5% being turkey meat (Figure 212).

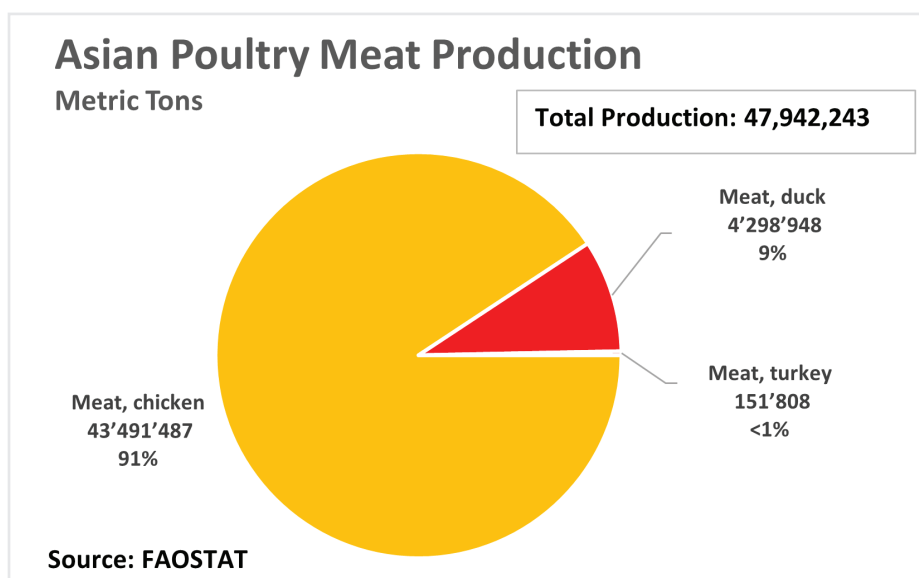


Figure 212.

Asia poultry meat production

Asian poultry production has increased 33.7% since 2010. Asian value of poultry production in 2020 was \$93 billion with 98% due to chicken production, 1% due to turkey production, and 1% due to duck production (Figure 213).

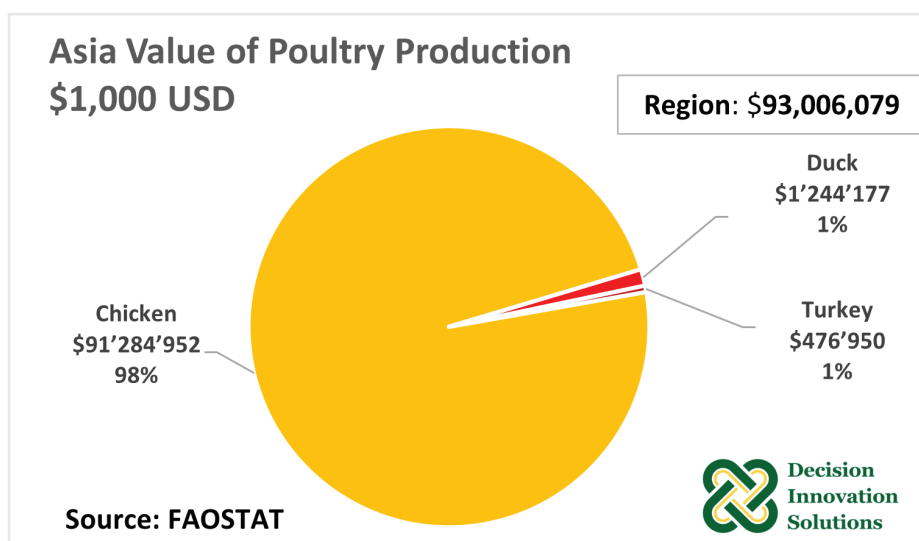


Figure 213.

Asia value of poultry production

4.6.4 Regional Cost of Production

As Figure 214 indicates, the share of feed cost relative to total cost of poultry production for countries in the Asian region represented the largest share of total cost despite differences in years of data included. In China the cost of feed for broilers production in 2020 had a share of total cost equal to 67%, while for Russia in 2017, 62% of total cost of poultry production was due to feed cost. In 2021, Turkey's share of feed cost represented 80% of total costs. For India (2016) and Thailand (2017) the cost of feed represented 70% and 67% of total production cost, respectively (see Figure 214).

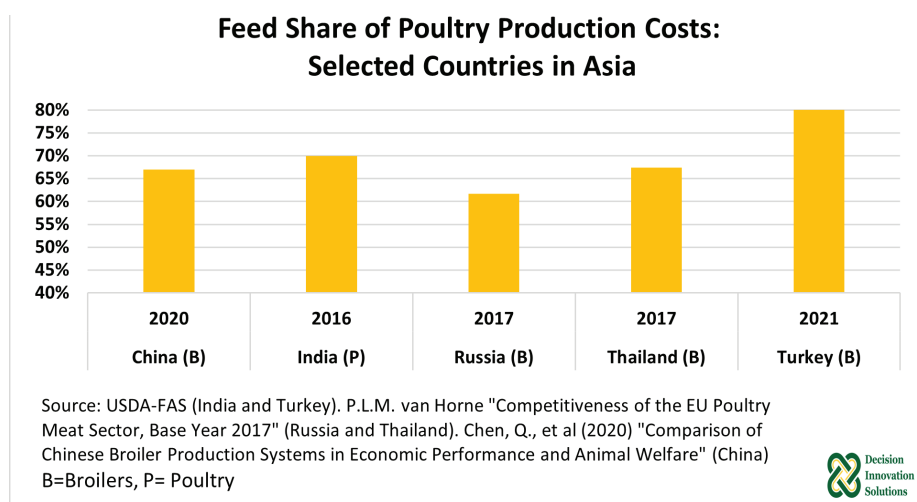


Figure 214. Feed share of poultry production costs: Asia

4.6.5 China

4.6.5.1 Demographics

In 1985, production was dominated by more than 150 million small-scale poultry farmers, each keeping a few birds to supplement other farming activities. At the time, there were virtually no large-scale operations. Since then, there has been a rapid increase in intensification, with a trend towards fewer, larger, privately owned operations. Between 1996 and 2005, some 70 million small-scale poultry farmers left the sector, mostly in the more economically developed east of the country and around major cities. Over the same period, large-scale operations (with annual output of more than 10 000 birds) expanded their share of production from about one-quarter to one-half.

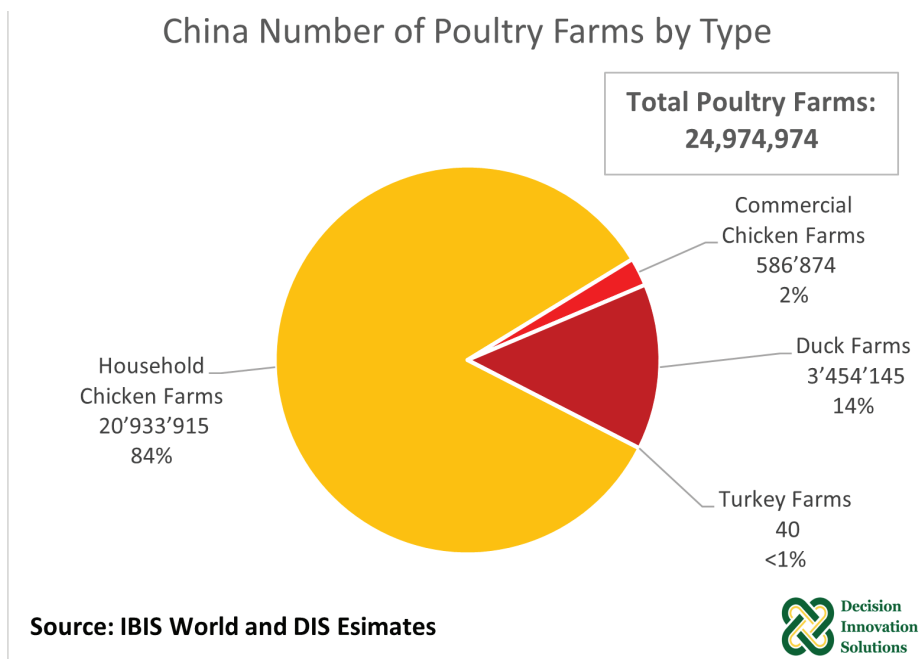


Figure 215. China number of poultry farms by type

Today, the commercial broiler market is dominated by large, integrated companies that control the entire production and marketing chain: feeding, breeding, fattening and processing. One large, integrated operation in Fujian Province, for example, produces 50 million broilers a year and employs 4 000 employees – one job for every 12 500 birds produced annually. Extrapolating this ratio to the national level suggests that the integrated broiler sector provides around 800 000 jobs (Bingsheng and Yijun, 2008).

Between 1985 and 2005, the proportion of farming households that kept poultry fell from 44% to less than 14%. However, more than 34 million rural households still keep backyard poultry, and poultry remain an important source of income and food for poor households, especially in the less-developed western part of the country. The number of household poultry producers continues to decline and a current estimate is that 10% of broiler production in China is by household producers.

However, backyard producers play a continuing reduced role in meeting burgeoning market demand. As food marketing channels extend their reach ever further into the rural areas, and non-farm employment options increase, the need for rural households to keep poultry is declining (Bingsheng and Yijun, 2008).

It is estimated that in 2020, there were about 25 million poultry farms in China. About 84%, or 20.9 million poultry farms were household or micro-producer chicken farms (Figure 215). These micro-producer farms contained an estimated 23 chickens, on average. The total number of duck farms was estimated at 3.5 million or 14% of poultry farms in China. The average size of these duck farms was 200 head. Commercial chicken farms represented the remaining 2% or 586,874 poultry farms. The average number of chickens per commercial farm was 7,442 head. FAO estimates that there were 85,000 turkeys in China with most of those on commercial farms.

Ibisworld.com reports that they expect there to be 529,231 poultry farming businesses in China in 2022. They report an average annualized negative 2% growth rate in poultry businesses in China for the period 2017 – 2022.

Both poultry production and consumption have had an upward trend from 2010 to 2021 (Figure 216). China's poultry production was about 24.0 million metric tons in 2021, which was up 45% from the level in 2010. China's poultry consumption in 2021 (25.0 million metric tons) was 1.5 times higher than the volume consumed in 2010.

For the most part, the level of poultry produced has been lower than the level of poultry consumed; therefore, poultry imports from several countries, particularly Brazil and the USA, have complemented domestic poultry consumption in China. The USDA FAS notes the shift from pork consumption to poultry meats such as chicken/duck, and the expansion of chicken-related fast-food restaurants as drivers in increased poultry consumption¹⁵. In 2021, poultry production was down about 4% from poultry consumption in China.

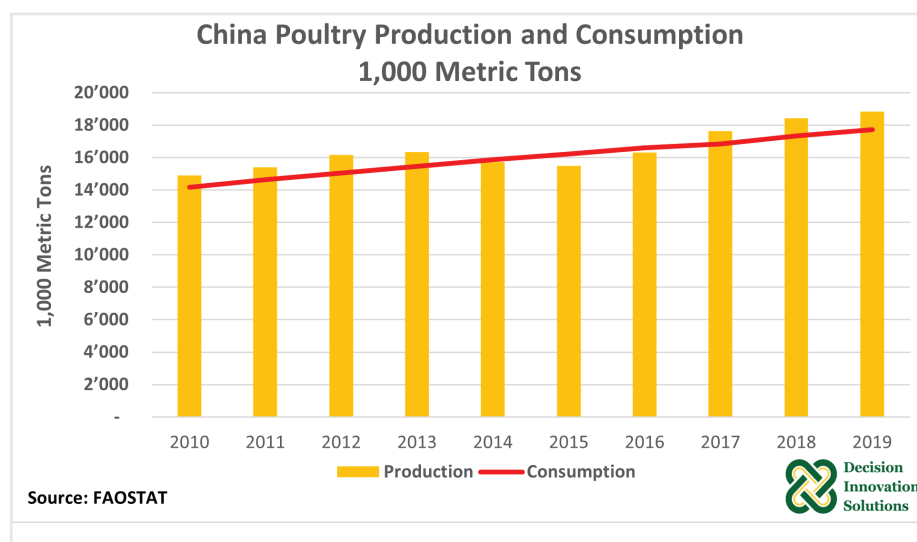


Figure 216. China poultry production & consumption

| CHINA POULTRY STOCKS, SLAUGHTER, AND PRODUCTION | | | | |
|---|-----------|-----------|---------|------------|
| 1,000 head | Chickens | Ducks | Turkeys | Total |
| Stocks | 4'748'080 | 682'946 | | 5'431'026 |
| Producing Animals/Slaughtered | 9'287'900 | 2'173'330 | | 11'461'230 |
| Production (1,000 MT) | 15'144 | 3'431 | | 18'575 |

Sources: FAO, 2020

Table 63. China poultry stocks, slaughter & production

China is the second largest chicken producer in the world. The estimated total number of China's poultry stocks was more than 5.4 billion head in 2020 (Table 63). Nearly 4.8 billion head of chickens, and 682.9 million ducks comprised the total poultry stocks. In 2020, China's poultry slaughter totaled 11.5 billion head. Chicken slaughter was estimated at 9.3 billion head. Duck slaughter was an estimated 2.2 billion head. Poultry production included 15.1 million metric tons of chicken and 3.4 million metric tons of duck.

4.6.5.2 GDP and Value of Production

The GDP in China was valued at \$14.7 trillion in 2020. An estimated 94% of the total GDP was derived from non-agricultural sectors. Agricultural production represented 6% of the total GDP with crop production valued at \$681 billion and 5% of the total GDP. The share of red meat production was valued at \$174.7 billion. Chicken meat production was valued at \$27.8 billion, duck production at \$3.6 billion, and turkey production at \$4.5 billion (Figure 217).

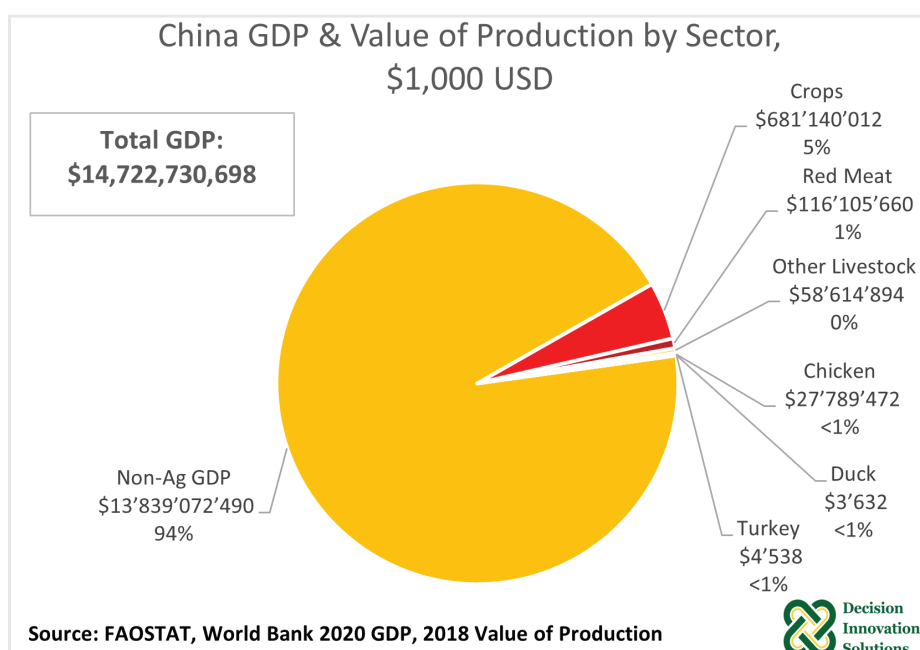


Figure 217. China GDP & value of production by sector

15 USDA FAS, Poultry and Products Annual- People's Republic of China, Sept. 31, 2029

The combined (direct and indirect) effects of agricultural production in China are estimated to be \$2.1 trillion. Of this amount, \$82.7 billion comes from the poultry industry, with chicken meat production being responsible nearly all of that amount. Agriculture receives a net subsidy of \$4.5 billion in taxes. The poultry industry is estimated to pay a net tax of \$8 million (Table 64).

| ECONOMIC EFFECTS - CHINA (\$1,000 USD) | | | | |
|--|---------------|-----------------|-----------------|---------------|
| | Direct | Indirect | Total | Taxes paid* |
| All agriculture | \$883'658'208 | \$1'226'618'762 | \$2'110'276'970 | \$(4'496'905) |
| Livestock | \$202'518'196 | \$281'118'442 | \$483'636'638 | \$(1'030'608) |
| Poultry | \$27'793'104 | \$54'974'760 | \$82'767'864 | \$7'954 |
| Chicken | \$27'789'472 | \$54'967'576 | \$82'757'048 | \$7'953 |
| Duck | \$3'632 | \$7'184 | \$10'816 | \$1 |
| Turkey | - | - | - | - |

Source: FAOSTAT, OECD Input-Output Tables. *Taxes is equal to total taxes net of subsidies

Table 64. Economic effects - China

4.6.5.3 Labor

In 2020, China's labor force employed an estimated 792.4 million people (see Table 65). Of that total, nearly 439.6 million individuals were males, and 352.8 million were females.

More than 602.1 million individuals worked in non-agricultural sectors. Another 190.3 million worked in the agricultural sector. Of that total, 6.1 million individuals worked in poultry production.

| AGRICULTURAL LABOR FORCE CHARACTERISTICS - CHINA | | | |
|--|-------------|---------------------|-------------|
| | Total | Female | Male |
| Total Country Labor | 792'401'719 | 352'848'259 | 439'553'460 |
| Non-Agricultural Labor | 02'074'513 | 270'091'895 | 331'982'618 |
| Agricultural Labor | 90'327'206 | 82'756'364 | 107'570'842 |
| Total Non-Poultry Agricultural Labor | 184'188'787 | | |
| Total Poultry Labor | 6'138'418 | | |
| Chicken Labor | 6'137'616 | | |
| Turkey Labor | - | | |
| Other Poultry Labor | 802 | | |
| | | Wages (\$1,000 USD) | |
| Total Meat Processing Labor | 4'937'000 | \$6'934'790 | |
| Livestock Processing Labor | 3'983'325 | \$5'595'204 | |
| Poultry Processing Labor | 953'675 | \$1'339'586 | |

Source: ILO 2020, World Bank 2020, UNIDO Database, INDSTAT 4 2021, ISIC Revision 3

Table 65. Agricultural labor force characteristics - China

Meat processing labor in China accounted for 4.9 million jobs and \$6.9 billion in wages earned. Livestock meat processing was the largest share of meat processing with 4.0 million jobs and \$5.6 billion in wages earned. Poultry meat processing accounted for 953,675 jobs and \$1.3 million in wages earned.

4.6.5.4 Costs of Production

China's feed cost accounted for 67% of broiler total production cost in 2020. Eighteen percent of total broiler production costs was due to day-old chick costs, which was the second largest production cost in China. Next was health cost at 5% followed by labor at 3%. Transportation and building costs each was 2% of total production cost. General cost represented about 1% (see Figure 218).

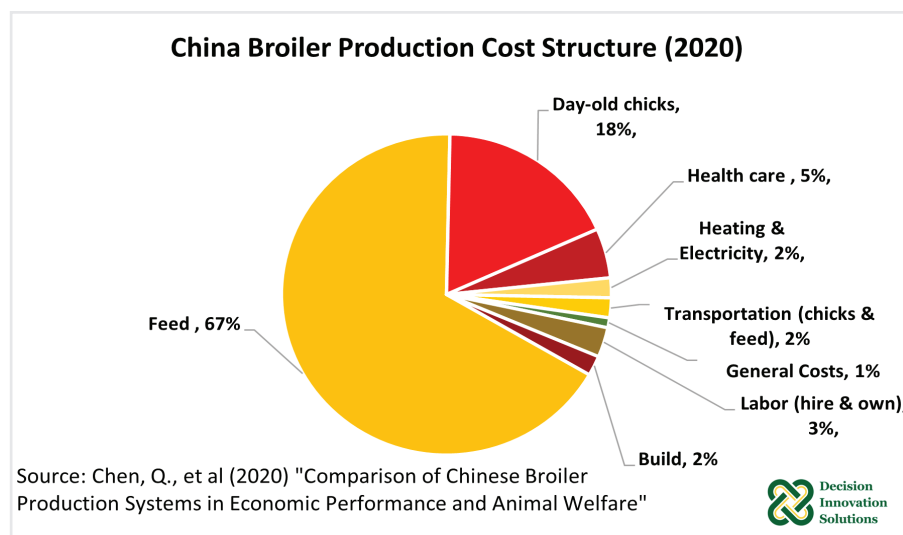


Figure 218. China broiler production cost structure

4.6.5.5 Trade

China exported about 428,401 MT of poultry meat valued at \$1.5 billion in 2020. Thirty eight percent of the poultry meat volume exported was shipped to Japan. Poultry meat exports to Japan were estimated at \$679.4 million (Figure 219 and Figure 220). Over 60% (\$913.8 million) of China's total value of poultry exported was made up by prepared poultry products.



Figure 219. China top 10 poultry exports, trade value

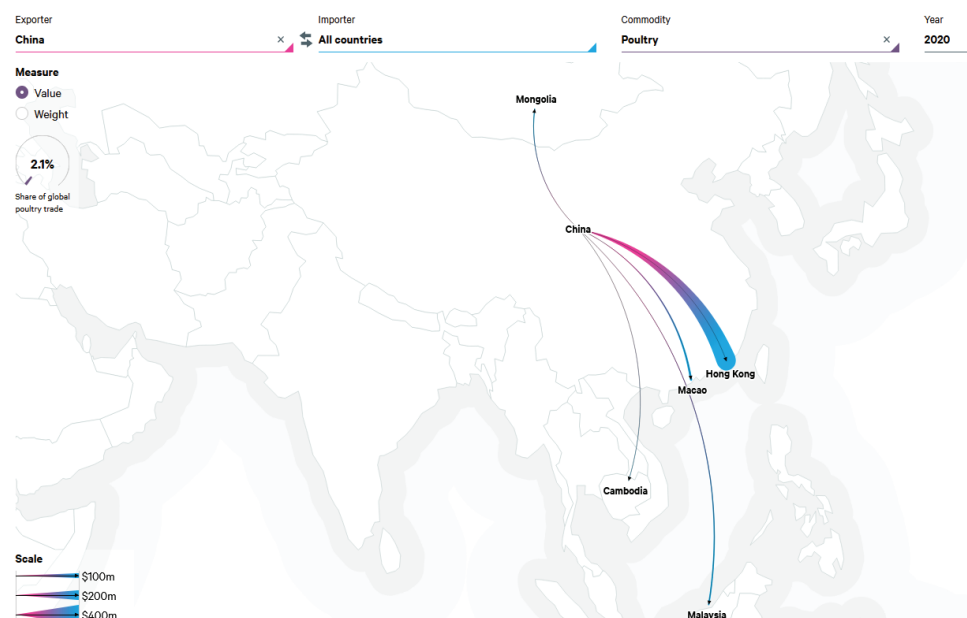


Figure 220. China poultry export flows

China Top-10 Poultry Imports Trade Value (\$1,000 USD)

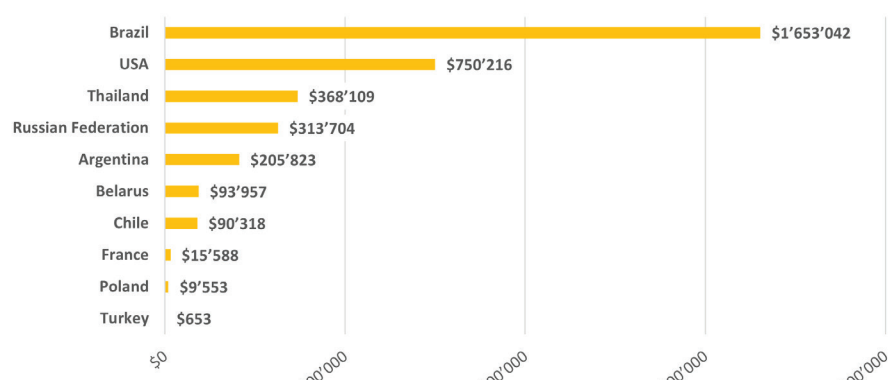


Figure 221. China top 10 poultry imports, trade value

In 2020, China's largest supplier of poultry meat was Brazil with an estimated value of \$1.7 billion and 47% share of the poultry import market in China. The USA followed with \$750 million and 21% share of the poultry import market. In addition to chicken meat, the USA primarily exports chicken paws to China¹⁶. China imported \$368.1 million in poultry meat from Thailand in 2020 (Figure 221 and Figure 222).

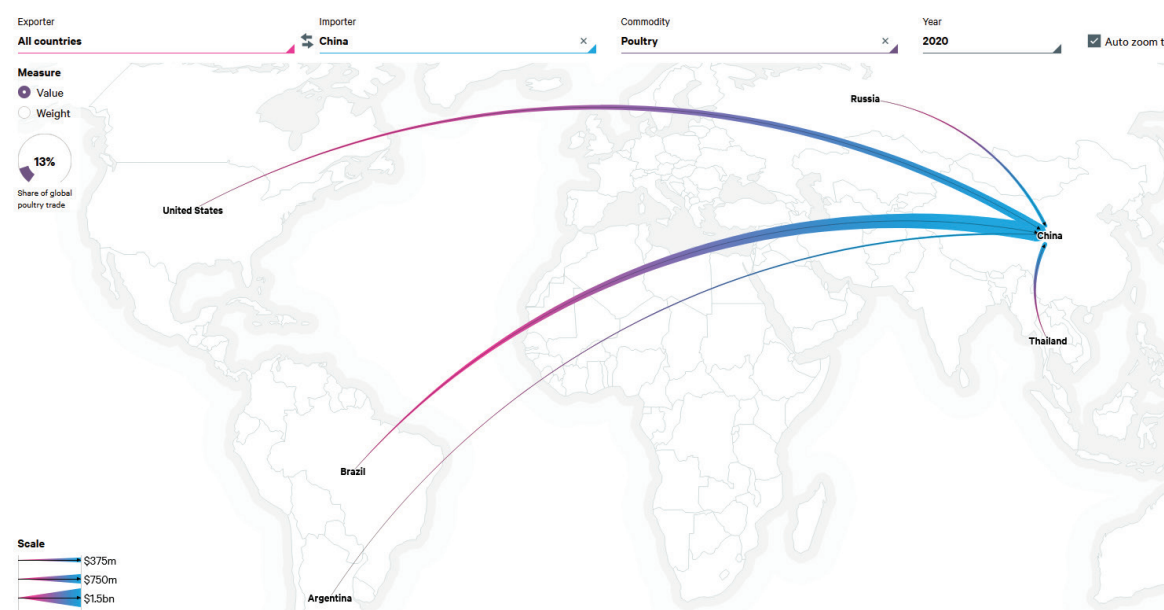


Figure 222. China poultry import flows

¹⁶ USDA FAS, Poultry and Products Semi-Annual- People's Republic of China, Jan. 28, 2022

4.6.6 India

4.6.6.1 Demographics

In India, an estimated 124,000 farms were poultry farms¹⁷. About 70%, or 86,800 poultry farms were household or micro-producer chicken farms (Figure 223). On average, a micro-producer chicken farm in India had 750 head. Commercial chicken farms represented the remaining 30% or 37,200 poultry farms with an average 19,514 head.

India's poultry production and consumption consistently increased between 2010 and 2019. In 2019, both poultry production (4.2 million metric tons) and consumption (4.2 million metric tons) were twice as large their corresponding volumes in 2010. India's poultry production and consumption have declined since 2019, but both remained higher than their volumes in 2010. Poultry production and consumption each rose 64% from their levels in 2010 (see Figure 224).

According to FAO, poultry stocks of India totaled 826.5 million with 791 million chickens, and 35.5 million ducks. Since 2010, poultry stocks increased 20%, overall (Table 66). Chicken stocks increased 19%, and duck stocks increased 40% compared to 2010.

India's poultry slaughter was nearly 2.7 billion head in 2020. An estimated 2.6 billion head were chickens. The remaining 35.8 million head in poultry were ducks. Chicken and duck slaughter increased 45% and 40%, respectively. Chicken production totaled 3.6 million metric tons, and duck production totaled 47,000 metric tons in 2020. Compared to 2010, chicken and duck production increased 62% and 40%, respectively.

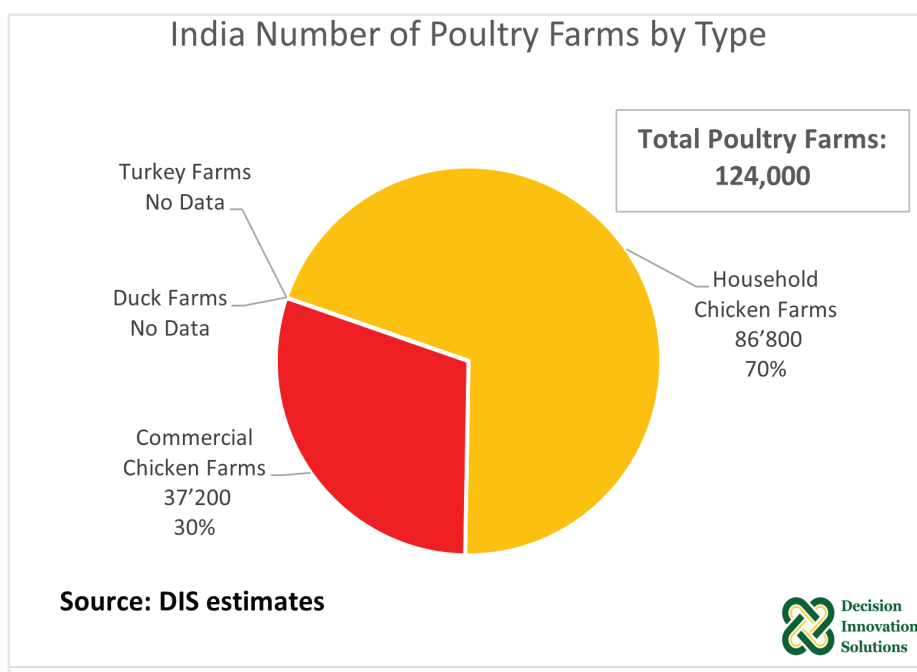


Figure 223. India number of poultry farms by type

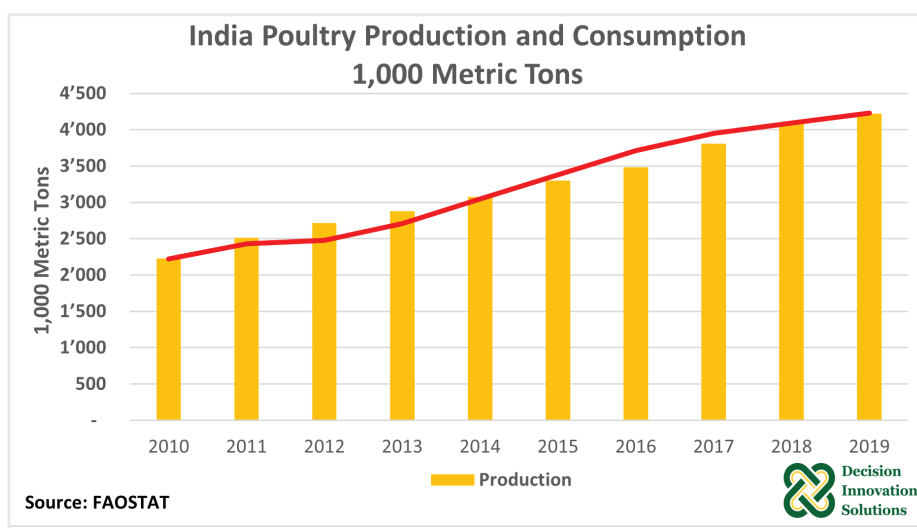


Figure 224. India poultry production & consumption

| INDIA POULTRY STOCKS, SLAUGHTER, AND PRODUCTION | | | | |
|---|-----------|--------|---------|-----------|
| 1,000 head | Chickens | Ducks | Turkeys | Total |
| Stocks | 791'032 | 35'507 | | 826'539 |
| Producing Animals/Slaughtered | 2'625'635 | 35'799 | | 2'661'434 |
| Production (1,000 MT) | 3'551 | 47 | | 3'597 |

Sources: FAO, 2020

Table 66. India poultry stocks, slaughter & production

¹⁷ LMIS Report on Poultry Sector, Agricultural Skills Council of India

4.6.6.2 GDP and Value of Production

The estimated value of GDP in India was \$2.6 trillion in 2020. Non-agricultural production sectors represented about 84% or \$2.2 billion of the total. An estimated \$301.7 billion or 12% of India's total GDP was derived from the crop production sector. Red meat production was valued at \$105.3 billion and represents about 4% of the total GDP. An estimated \$11.4 billion or 0.4% of total GDP was represented by chicken production. About 0.01% or \$136.1 million of the total GDP in India was represented by duck production (Figure 225).

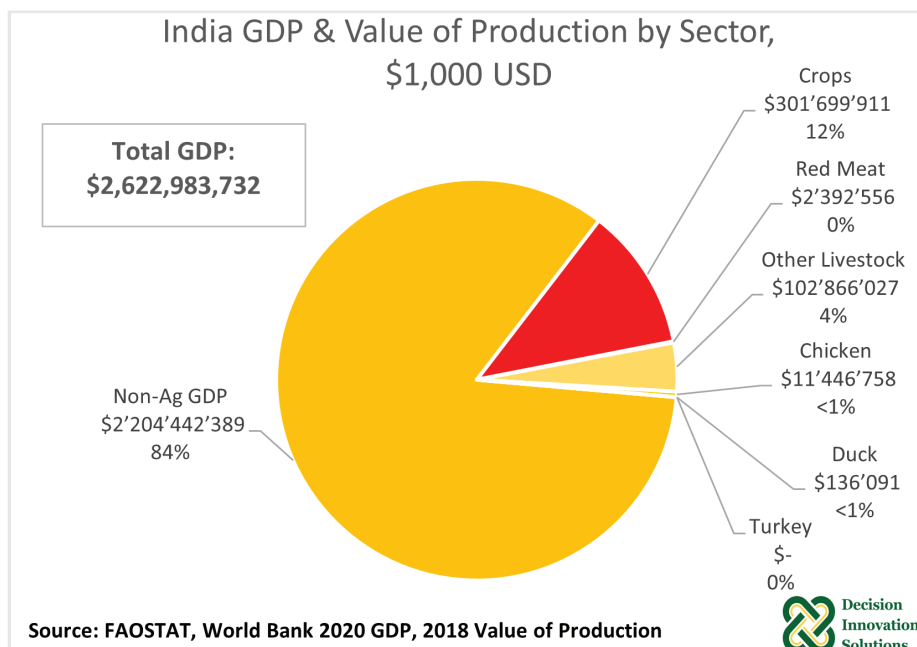


Figure 225. India GDP & value of production by sector

The combined (direct and indirect) effects of agricultural production in the India are estimated to be \$680.0 billion. Of this amount, \$27.1 billion comes from the poultry industry, with \$26.8 billion from chicken meat production and \$318 million from duck production. Agriculture pays a net value of \$2.8 billion in taxes, \$43 million of which is estimated to be from the poultry industry (Table 67).

| ECONOMIC EFFECTS - INDIA (\$1,000 USD) | | | | |
|--|---------------|---------------|---------------|-------------|
| | Direct | Indirect | Total | Taxes paid* |
| All agriculture | \$418'541'343 | \$261'446'286 | \$679'987'629 | \$2'838'701 |
| Livestock | \$116'841'432 | \$72'986'239 | \$189'827'671 | \$792'462 |
| Poultry | \$11'582'849 | \$15'509'435 | \$27'092'284 | \$43'636 |
| Chicken | \$11'446'758 | \$15'327'209 | \$26'773'967 | \$43'124 |
| Duck | \$136'091 | \$182'226 | \$318'317 | \$513 |
| Turkey | - | - | - | - |

Source: FAOSTAT, OECD Input-Output Tables. *Taxes is equal to total taxes net of subsidies

Table 68. Economic effects - India

4.6.6.3 Labor

Nearly 457.8 million people were employed in India's labor force in 2020 (see Table 68). Approximately 366.4 million of the total labor force were male and 91.4 million were female. The total number of people working in non-agricultural sectors was 267.4 million compared to the 190.4 million working in the agricultural sector. Approximately 5.4 million people worked in India's poultry production sector in 2020.

| AGRICULTURAL LABOR FORCE CHARACTERISTICS - INDIA | | | | |
|--|-------------|---------------------|-------------|--|
| | Total | Female | Male | |
| Total Country Labor | 457'779'812 | 91'395'433 | 366'384'379 | |
| Non-Agricultural Labor | 267'375'308 | 35'104'226 | 232'271'081 | |
| Agricultural Labor | 190'404'504 | 56'291'207 | 134'113'298 | |
| Total Non-Poultry Agricultural Labor | 185'037'500 | | | |
| Total Poultry Labor | 5'367'005 | | | |
| Chicken Labor | 5'303'946 | | | |
| Turkey Labor | - | | | |
| Other Poultry Labor | 63'059 | | | |
| | | Wages (\$1,000 USD) | | |
| Total Meat Processing Labor | 26'878 | \$88'685 | | |
| Livestock Processing Labor | 4'601 | \$15'183 | | |
| Poultry Processing Labor | 22'277 | \$73'502 | | |

Source: ILO 2020, World Bank 2020, UNIDO Database, INDSTAT 4 2021, ISIC Revision 3

Table 67. Agricultural labor force characteristics - India

The total number of meat processing jobs in India was 26,878 in 2020. Wages earned in meat processing totaled \$88.7 million. Poultry meat processing dominated the sector with 22,277 jobs and \$73.5 million in wages earned. Livestock meat processing accounted for 4,601 jobs and \$15.2 million in wages earned.

4.6.6.4 Trade

India’s leading export market for poultry meat was Bhutan in 2020. The share of the value of poultry exported to Bhutan represented almost 60% of the total value of poultry meat exported by India. The second largest market for India’s poultry exports was Bahrain with a total value of exports equal to \$1.2 million (Figure 226 and Figure 227).

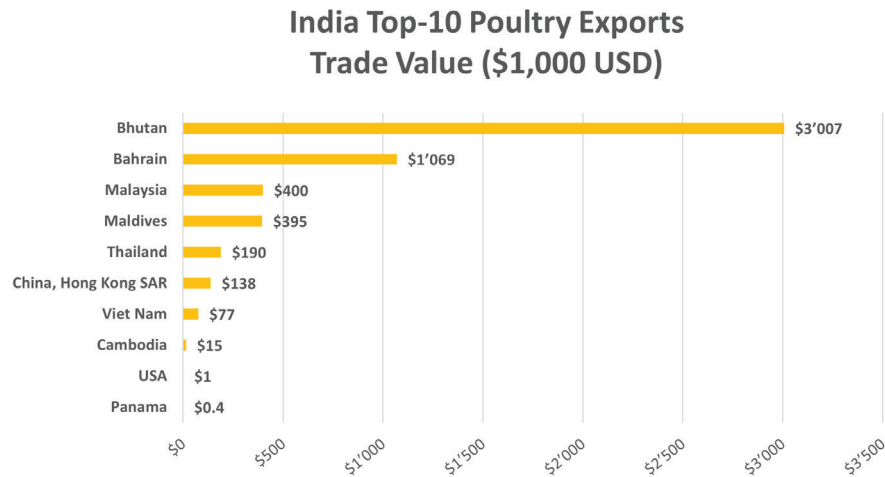


Figure 226. India top 10 poultry exports, trade value

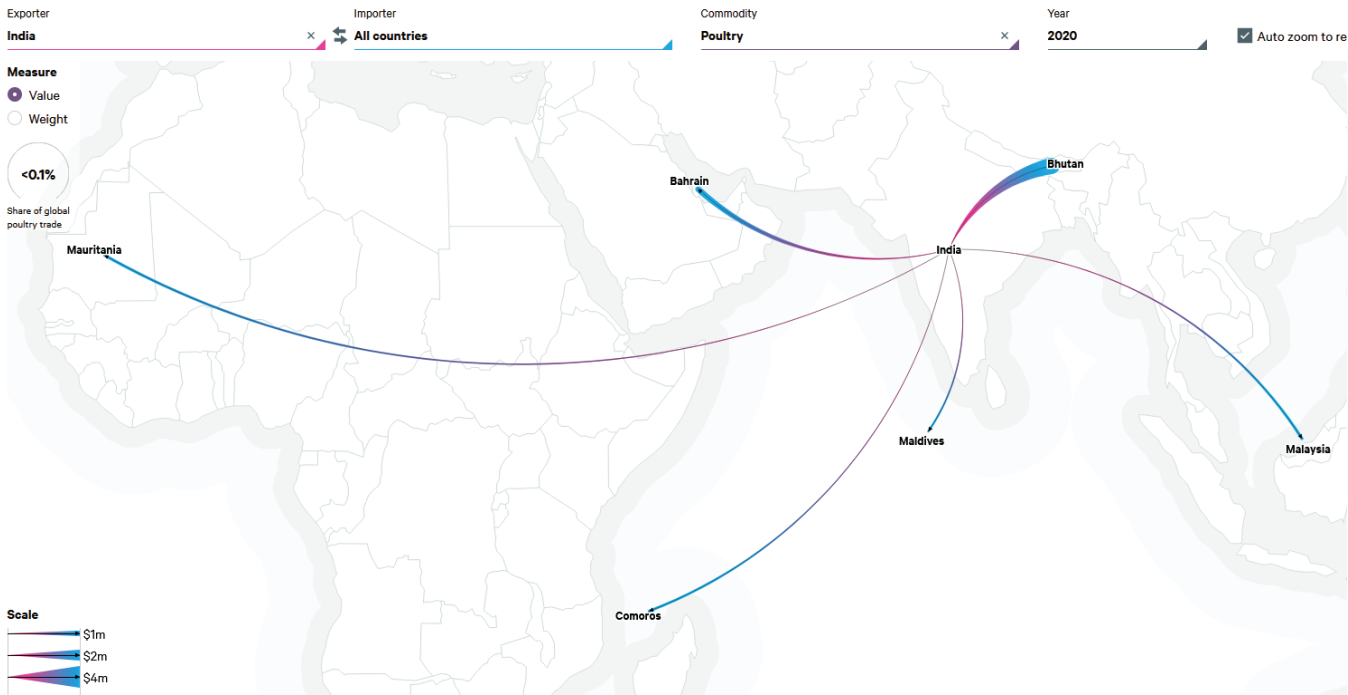


Figure 227. India poultry export flows

India imported \$261,780 of poultry meat in 2020. Almost 40% (\$103,409) of the total value of poultry meat imported by India was shipped by the USA. Imports of Poultry meat from Malaysia and Thailand were assessed at \$56,601 and \$53,447, correspondingly (see Figure 228 and Figure 229). The USDA notes market access is limited due to trade restrictions, high tariffs, and other challenges in regulation¹⁸.

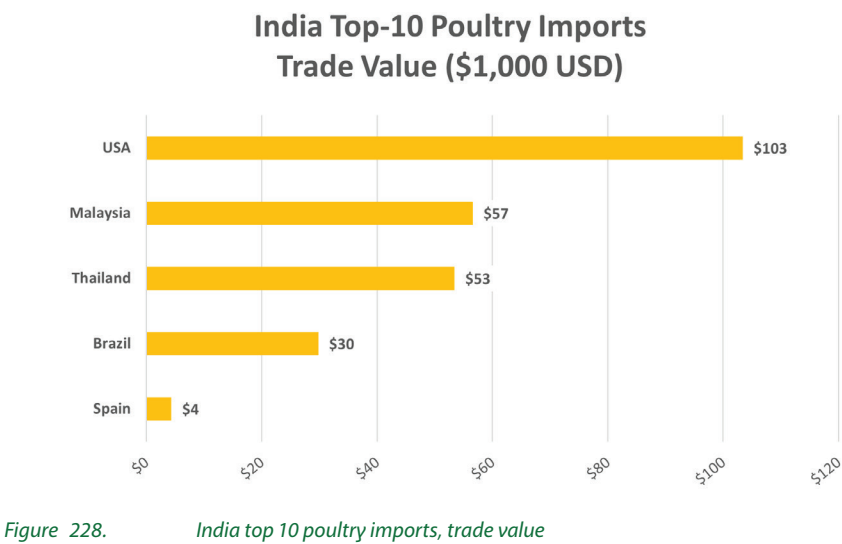


Figure 228. India top 10 poultry imports, trade value

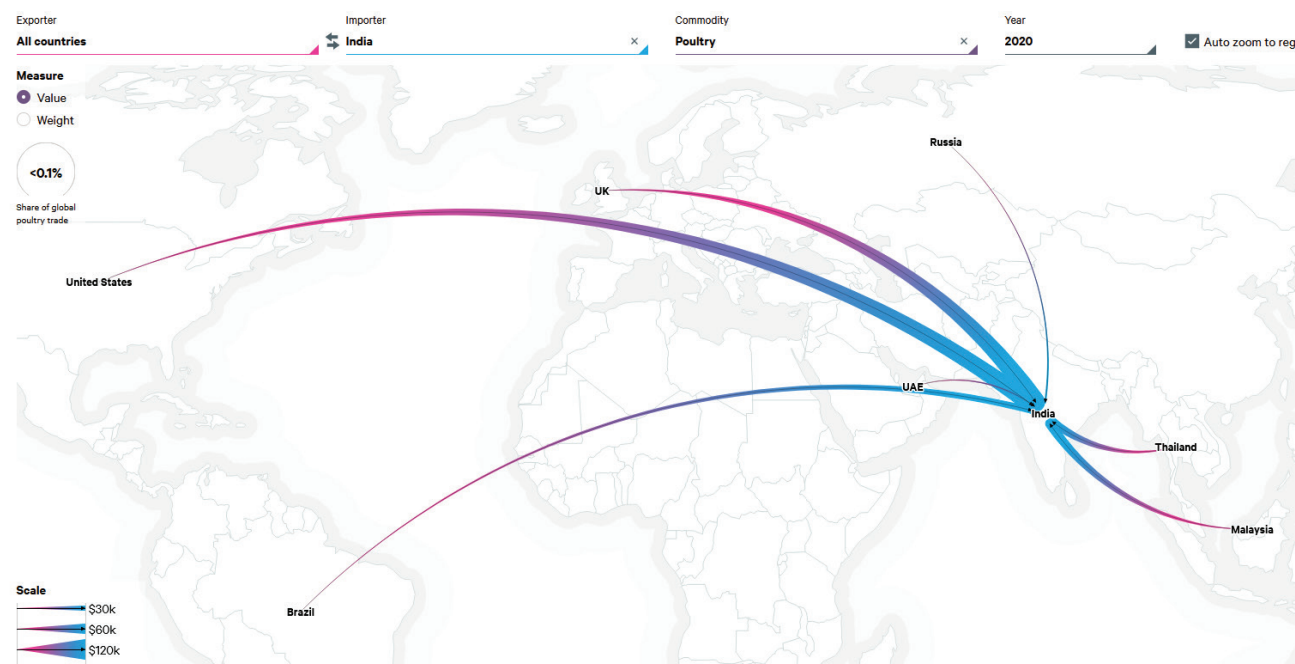


Figure 229. India poultry import flows

18 USDA FAS, Exporter Guide- India, Jan. 4, 2022

4.6.7 Russia

4.6.7.1 Demographics

The total number of poultry farms in Russia was estimated at 111,553. About 98%, or 110,418 poultry farms in Russia were household or micro-producer chicken farms (see Figure 230). Micro-producer farms contained an estimated 765 head, on average. Commercial chicken farms represented about 1% or 1,135 of the total number of poultry farms. On average, commercial chicken farms are estimated to have had 363,419 chickens.

Representing less than 1% of poultry farms in Russia were duck farms with an estimated 657 farms. The average duck farm size was 32,606 head. Turkey farms were also less than 1% of Russia's poultry farms with 276 turkey farms in total. The average size for a turkey farm was 31,812 head.

Poultry production in Russia increased 79% from 2010 to 2017 but has been relatively stable since then, increasing another 4% in the past 4 years. Production in 2021 was estimated to be 4.63 million metric tons. Poultry consumption increased 42% from 2010 through 2017 and has declined by 1% in the past 4 years. Poultry consumption in Russia was estimated to be 4.56 million metric tons in 2021.

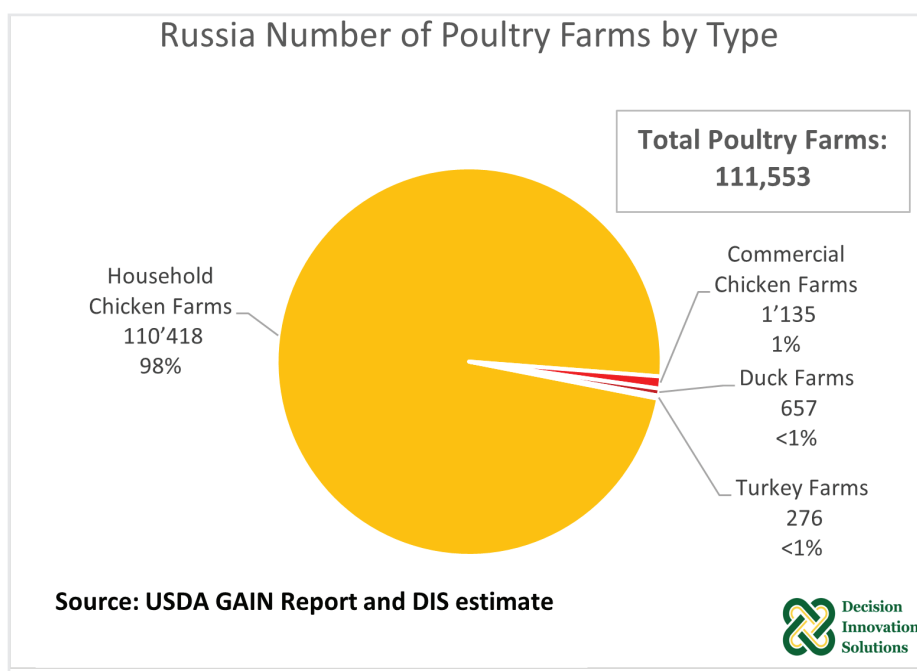


Figure 230. Russia number of poultry farms by type

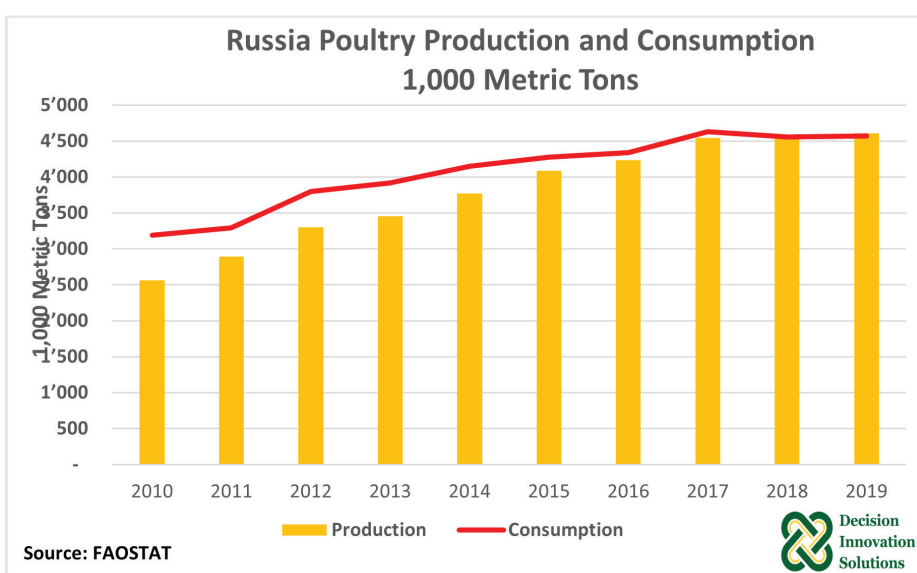


Figure 231. Russia poultry production & consumption

As of January 1, 2020, total poultry inventories in Russia were 544.691 million head. Eighty-three percent of all fowl are raised on commercial farms, 15 percent are "backyard production" and 2 percent are on small subsistence ("peasant") farms. Broilers and layers account for approximately 96 percent of total poultry inventories.

| RUSSIA POULTRY STOCKS, SLAUGHTER, AND PRODUCTION | | | | |
|--|-----------|--------|---------|-----------|
| 1,000 head | Chickens | Ducks | Turkeys | Total |
| Stocks | 496'964 | 21'422 | 8'780 | 527'166 |
| Producing Animals/Slaughtered | 2'497'984 | 4'072 | 27'500 | 2'529'556 |
| Production (1,000 MT) | 4'432 | 9 | 273 | 4'715 |

Sources: FAO, 2020

Table 69. Russia poultry stocks, slaughter & production

Twenty companies accounted for 70.5% of poultry production in 2019 and the market share of these twenty companies continues to grow. Russia ranked number five in the world for chicken production in 2020.¹⁹

An estimated 94% or 497.0 million head of poultry stocks were chickens. Ducks accounted for 4% or 21.4 million head of poultry stocks. The remaining 2% or 8.8 million head of poultry stocks were turkeys (Table 69). The total number of reported poultry slaughter was an estimated 2.5 billion with chickens accounting for 98.8% of poultry slaughter. DIS estimated slaughter numbers for ducks and turkeys. Poultry stocks contained chickens, ducks, and turkeys, according to FAO. Since 2010, chicken stocks increased 27%, while chicken slaughter increased 51%. Duck stocks decreased 13%, and turkey stocks increased 301% compared to 2010.

4.6.7.2 GDP and Value of Production

In 2020, the estimated GDP of Russia was \$1.5 trillion. Non-agricultural production sectors represented about 95% or \$1.4 trillion of the total GDP. Crop production was the largest agricultural production sector, valued at nearly \$38.0 billion and representing about 3% of the total GDP. The next largest agricultural production sector was red meat production which represented about 2% or \$30.0 billion of the total GDP of Russia. Chicken production was valued at \$7.1 billion, an estimated 0.5% of the country's total GDP. Duck production represented an estimated 0.1% of the total GDP. Turkey production was the smallest of the agricultural production sectors representing about \$417.0 million or 0.03% of Russia's total GDP.

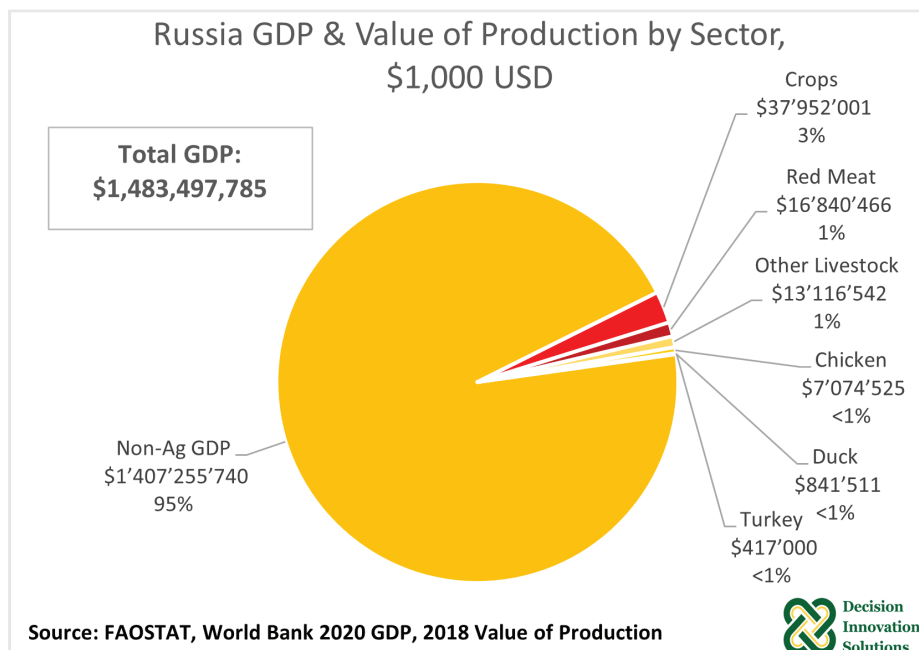


Figure 232. Russia GDP & value of production by sector

The combined (direct and indirect) effects of agricultural production in the Russia are estimated to be \$158.1 billion. Of this amount, \$20.4 billion comes from the poultry industry, with \$17.4 billion from chicken meat production, \$2.1 billion from duck production, and \$1.0 billion from turkey production. Agriculture pays a net value of \$2.5 billion in taxes, \$330 million of which is estimated to be from the poultry industry (Table 70).

| ECONOMIC EFFECTS - RUSSIA (\$1,000 USD) | | | | Taxes paid* |
|---|--------------|--------------|---------------|-------------|
| | Direct | Indirect | Total | |
| All agriculture | \$76'242'045 | \$81'877'387 | \$158'119'432 | \$2'553'611 |
| Livestock | \$38'290'044 | \$41'120'208 | \$79'410'252 | \$1'282'467 |
| Poultry | \$8'333'036 | \$12'116'235 | \$20'449'271 | \$330'167 |
| Chicken | \$7'074'525 | \$10'286'359 | \$17'360'884 | \$280'303 |
| Duck | \$841'511 | \$1'223'557 | \$2'065'068 | \$33'342 |
| Turkey | \$471'000 | \$606'318 | \$1'023'319 | \$16'522 |

Source: FAOSTAT, OECD Input-Output Tables. *Taxes is equal to total taxes net of subsidies

Table 70. Economic effects - Russia

¹⁹ USDA GAIN Report Number RS2020-0042, September 21, 2020, Poultry and Products Annual, Russian Federation.

4.6.7.3 Labor

The number of people working in Russia's labor force was estimated at 70.0 million in 2020 (Table 71). Of that total, 68.6 million people worked in non-agricultural sectors.

The agricultural sector employed an estimated 1.4 million people. Approximately 396,228 individuals people worked in the poultry production, specifically, chicken production. In 2020, an estimated 257,972 people were employed in Russia's meat processing sector. The total wages earned from meat processing was \$1.5 billion.

| AGRICULTURAL LABOR FORCE CHARACTERISTICS - RUSSIA | | | |
|---|------------|---------------------|------------|
| | Total | Female | Male |
| Total Country Labor | 70'002'269 | 35'523'524 | 34'478'745 |
| Non-Agricultural Labor | 68'556'486 | 34'080'551 | 34'475'935 |
| Agricultural Labor | 1'445'783 | 1'442'973 | 2'810 |
| Total Non-Poultry Agricultural Labor | 1'049'555 | | |
| Total Poultry Labor | 396'228 | | |
| Chicken Labor | 396'228 | | |
| Turkey Labor | - | | |
| Other Poultry Labor | - | | |
| | | Wages (\$1,000 USD) | |
| Total Meat Processing Labor | 257'972 | \$1'509'644 | |
| Livestock Processing Labor | 172'577 | \$1'009'916 | |
| Poultry Processing Labor | 85'395 | \$499'729 | |

Source: ILO 2020, World Bank 2020, UNIDO Database, INDSTAT 4 2021, ISIC Revision 3

Table 71. Agricultural labor force characteristics - Russia

Livestock meat processing was the largest share of meat processing with 172,577 jobs and \$1.0 billion in wages earned. Poultry meat processing accounted for 85,395 jobs and \$499.7 million in wages earned.

4.6.7.4 Cost of Production

By far the largest component of the cost of broiler production in Russia was feed at 62% of total costs in 2017. Three components together, day-old chicks (20%), other variables cost (heating, electricity, litter, and animal health, 10%) and housing (7%), accounted for 37% of total costs (see Figure 233).

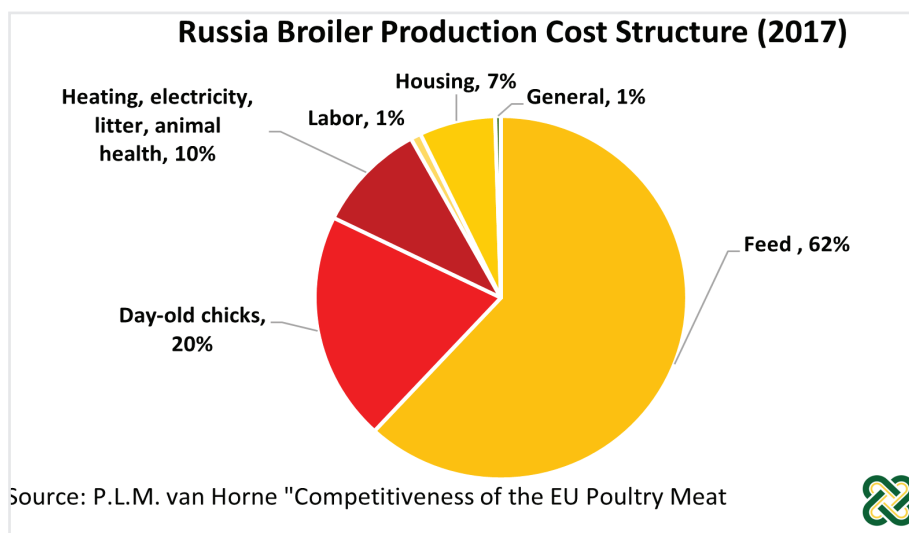


Figure 233. Russia broiler production cost structure

4.6.7.5 Trade

China was the main market for Russian poultry exports. In 2020 that market was valued at \$262.9 million and represented almost 58% of total value of poultry exports. The second largest destination for poultry meat exports was Kazakhstan, receiving \$56.7 million in poultry meat and accounting for 13% of Russia's poultry meat export value (Figure 234 and Figure 235).

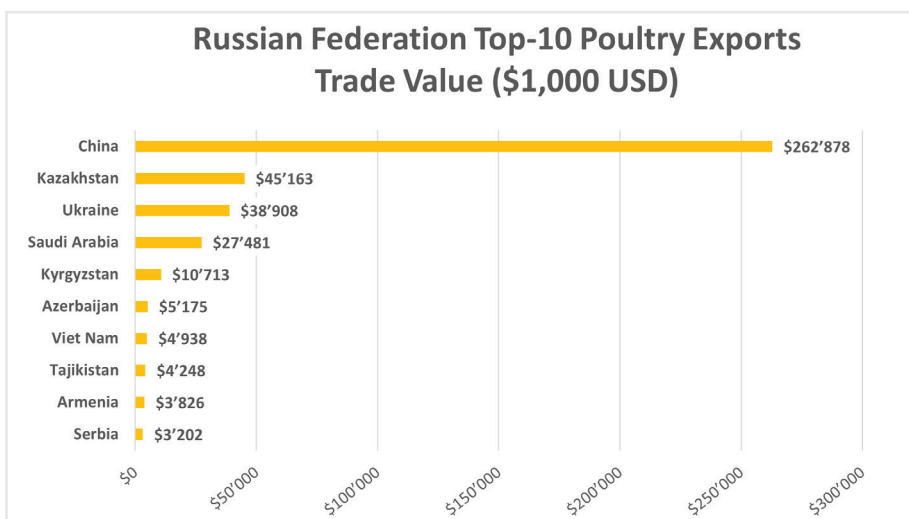


Figure 234. Russia top 10 poultry exports, trade value

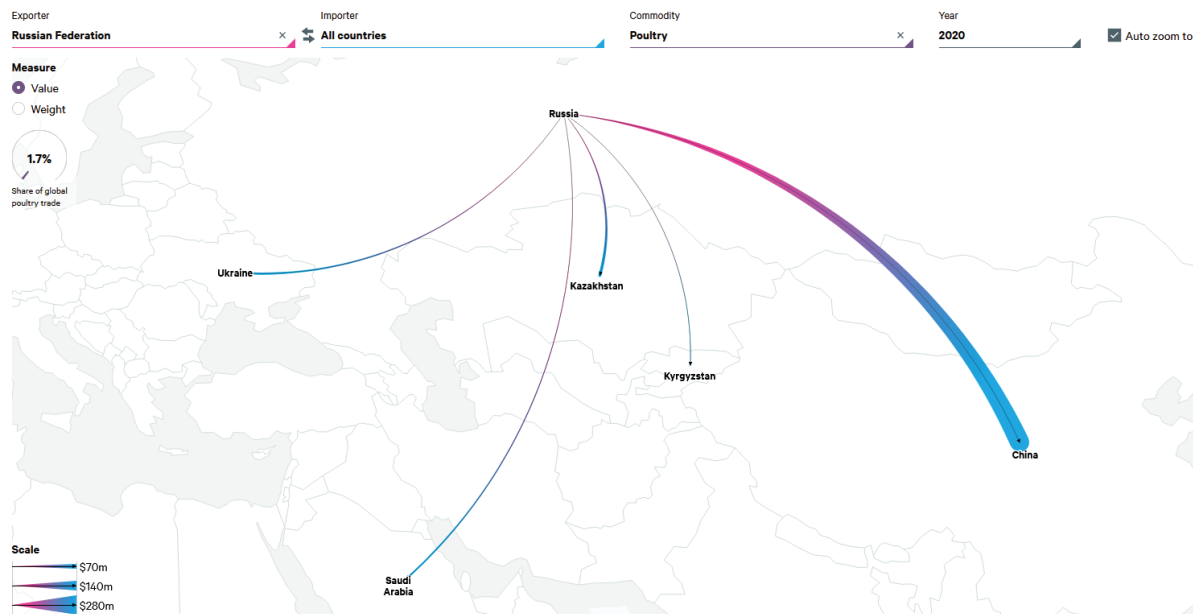


Figure 235. Russia poultry export flows

Russian Federation Top-10 Poultry Imports Trade Value (\$1,000 USD)

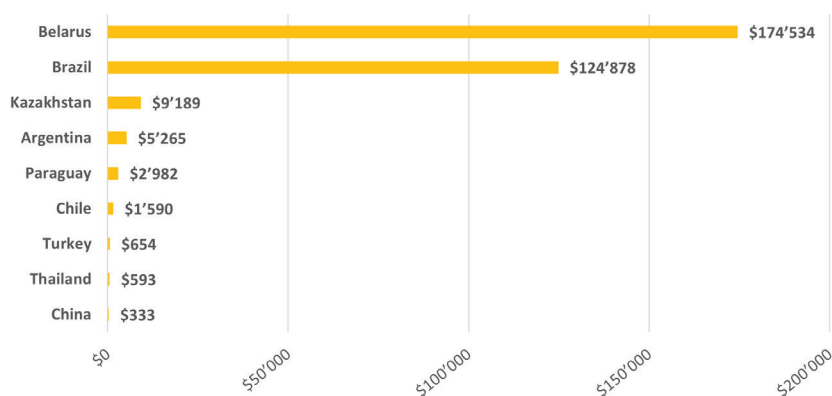


Figure 236. Russia top 10 poultry imports, trade value

Most of the value of imported poultry meat by Russia was from Belarus (\$185.7 million) followed by Brazil (\$124.9 million). In 2020, Belarus and Brazil's poultry meat imported accounted for 93% of the total value of poultry meat imported to Russia (Figure 236 and Figure 237).

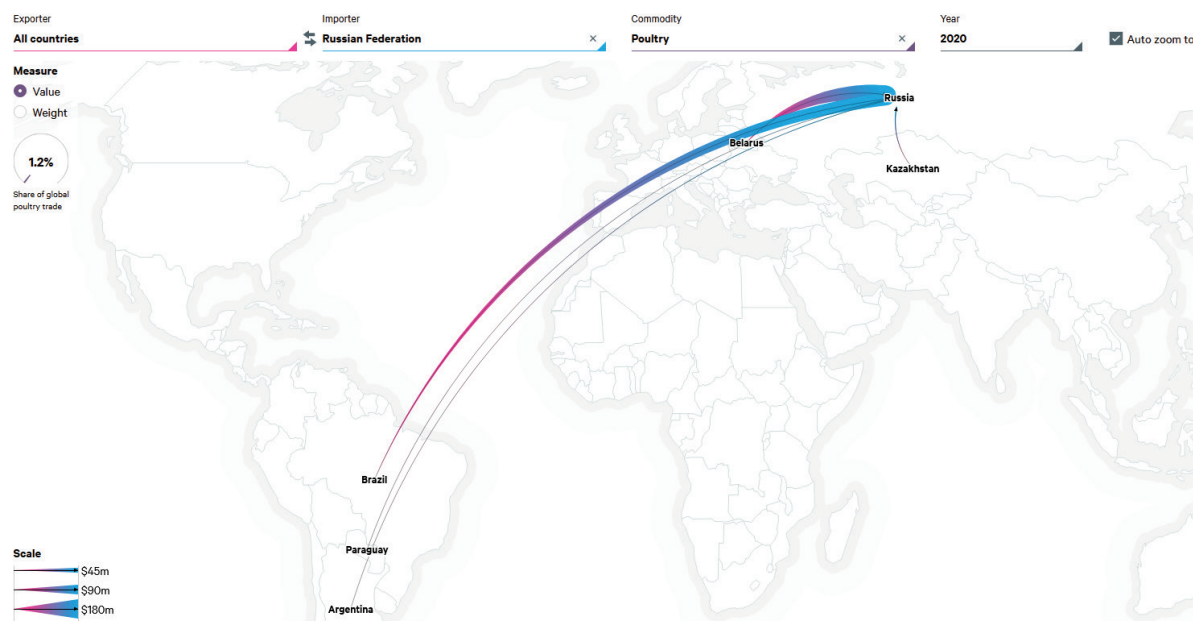


Figure 237. Russia top 10 poultry exports, trade value

4.6.8 Thailand

4.6.8.1 Demographics

The total number of poultry farms in Thailand was estimated at 184,089. The largest share of poultry farms were duck farms, accounting for 77% or 142,060 farms. The average size for a duck farm was 99 head. Household or micro-producer chicken farms were the second largest share of poultry farms in Thailand, representing about 20% or 35,947 poultry farms. The average size of a micro-producer chicken farm was 795 head. The remaining 3%, or 6,082 poultry farms were commercial chicken farms. These operations had 42,287 head on average.

Thailand poultry production experienced an uneven growth from 2010 to 2021, reaching its highest volume in 2013 (1.8 million metric tons). But overall, in 2021 poultry production in Thailand (1.7 million metric tons) was up 35% from 2010.

Thailand's poultry consumption on the other hand, declined 11% from 630,530 metric tons in 2010 to 561,430 metric tons in 2021. Thailand's poultry production was 3 times higher than poultry consumption in 2021, leaving a relatively large margin for exports (see Figure 239).

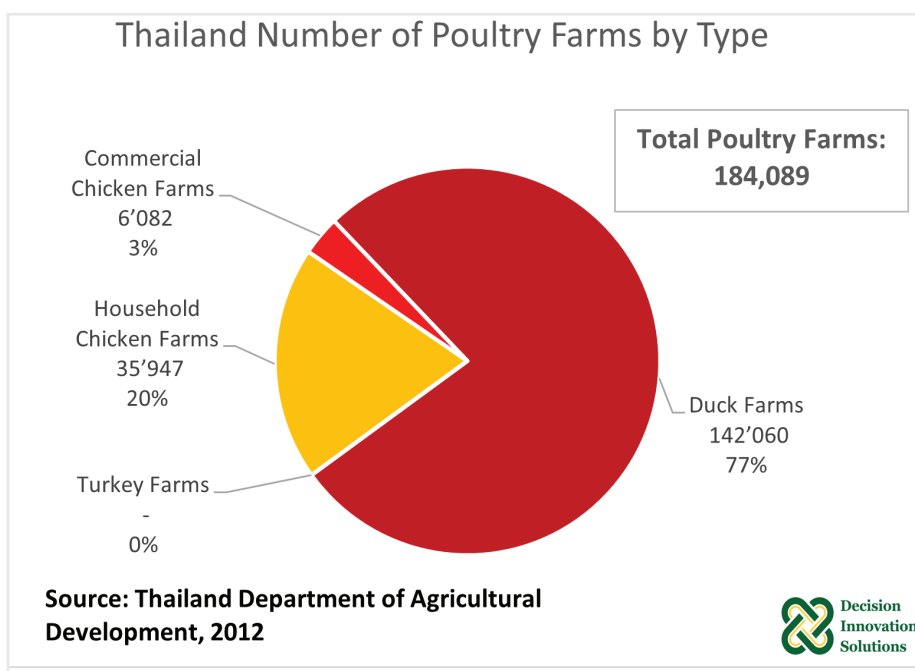


Figure 238. Thailand number of poultry farms by type

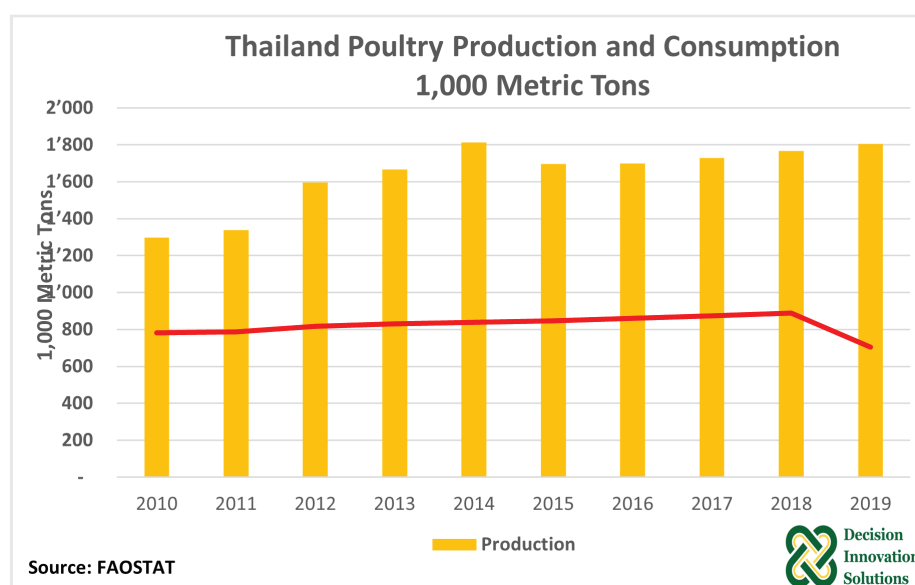


Figure 239. Thailand poultry production & consumption

Of the 299.8 million head in Thailand's poultry stocks, 285.8 million (95%) were chickens, and 14.1 million (5%) were ducks (Table 72). Compared to 2010, chicken stocks increased 23% and duck stocks declined 14% by 2020.

| THAILAND POULTRY STOCKS, SLAUGHTER, AND PRODUCTION | | | | |
|--|-----------|--------|---------|-----------|
| 1,000 head | Chickens | Ducks | Turkeys | Total |
| Stocks | 285'764 | 14'085 | | 299'849 |
| Producing Animals/Slaughtered | 1'272'360 | 27'860 | | 1'300'220 |
| Production (1,000 MT) | 1'782 | 61 | | 1'843 |

Sources: FAO, 2020

Table 72. Thailand poultry stocks, slaughter & production

Total poultry slaughter in 2020 was 1.3 billion head. Chickens represented an estimated 98% (1.3 billion head) of poultry slaughter. Ducks represented the remaining 2% (27.9 million head) of poultry slaughter. Compared to 2010, chicken slaughter in Thailand increased 31% in 2020, and duck slaughter declined 46% compared to 2010.

Thailand's poultry production included 1.8 million metric tons of chicken and 61,000 metric tons of duck. Compared to 2010, chicken production increased 46% and duck production declined 21%.

4.6.8.2 GDP and Value of Production

The total value of GDP in Thailand was an estimated \$501.8 billion in 2020. Approximately 94% of the total GDP is derived from non-agricultural production sectors. The crop production sector represented 4% or \$21.3 billion of the total GDP. Red meat production was the second largest agricultural production sector representing about 1% or \$4.5 billion. Chicken production also represented about 1% or \$3.1 billion of the total GDP. Less than 1%, or nearly \$242.2 million was represented by the duck production sector. Turkey production was the smallest of Thailand's agricultural production sectors with an estimated \$4.0 million.

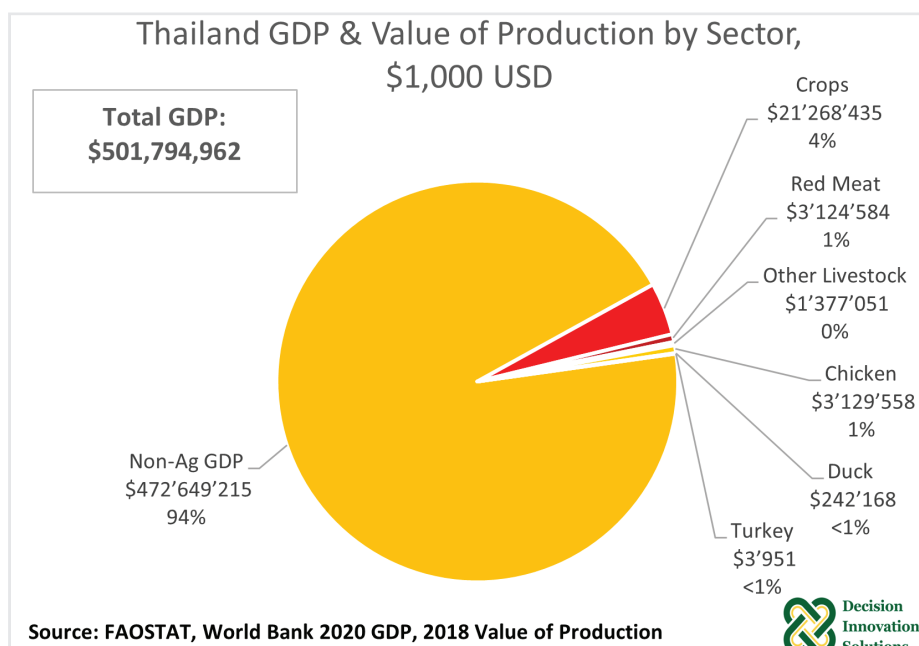


Figure 240. Thailand GDP & value of production by sector

The combined (direct and indirect) effects of agricultural production in Thailand are estimated to be \$58.4 billion. Of this amount, \$8.3 billion comes from the poultry industry, with \$7.7 billion from chicken meat production, \$596 million from duck production, and \$9.7 million from turkey production. Agriculture pays a net value of \$465 million in taxes, \$64 million of which is estimated to be from the poultry industry (Table 73).

| ECONOMIC EFFECTS - THAILAND (\$1,000 USD) | | | | |
|---|--------------|--------------|--------------|-------------|
| | Direct | Indirect | Total | Taxes paid* |
| All agriculture | \$29'145'747 | \$29'278'654 | \$58'424'401 | \$465'772 |
| Livestock | \$7'877'312 | \$7'913'233 | \$15'790'545 | \$125'886 |
| Poultry | \$3'375'677 | \$4'935'240 | \$8'310'917 | \$64'007 |
| Chicken | \$3'129'558 | \$4'575'414 | \$7'704'972 | \$59'340 |
| Duck | \$242'168 | \$354'049 | \$596'217 | \$4'592 |
| Turkey | \$3'951 | \$5'777 | \$9'728 | \$75 |

Source: FAOSTAT, OECD Input-Output Tables. *Taxes is equal to total taxes net of subsidies

Table 73. Economic effects - Thailand

4.6.8.3 Labor

An estimated 39.0 million people worked in Thailand's labor force in 2020 (Table 74). Approximately 27.1 million were employed in non-agricultural sectors. Nearly 12 million people worked in the agricultural sector. Of that total, 113,703 people worked in poultry production.

In 2020, an estimated 109,220 people were employed in the meat processing sector in Thailand. The total wages earned from meat processing was \$408.0 million. Poultry meat processing was the largest share of meat processing with 56,719 jobs and \$211.9 million in wages earned. Livestock meat processing accounted for 52,501 jobs and \$196.1 million in wages earned.

| AGRICULTURAL LABOR FORCE CHARACTERISTICS - THAILAND | | | |
|---|------------|------------|------------|
| | Total | Female | Male |
| Total Country Labor | 39'036'695 | 17'894'477 | 21'142'218 |
| Non-Agricultural Labor | 27'076'184 | 12'983'363 | 14'092'821 |
| Agricultural Labor | 11'960'511 | 4'911'114 | 7'049'397 |
| Total Non-Poultry Agricultural Labor | 11'846'808 | | |
| Total Poultry Labor | 113'703 | | |
| Chicken Labor | 56'852 | | |
| Turkey Labor | - | | |
| Other Poultry Labor | 56'852 | | |
| Wages (\$1,000 USD) | | | |
| Total Meat Processing Labor | 109'220 | \$408'038 | |
| Livestock Processing Labor | 52'501 | \$196'138 | |
| Poultry Processing Labor | 56'719 | \$211'900 | |

Source: ILO 2020, World Bank 2020, UNIDO Database, INDSTAT 4 2021, ISIC Revision 3

Table 74. Agricultural labor force characteristics - Thailand

4.6.8.4 Cost of Production

Thailand's cost of feed (67%) represented the largest share of broiler production total costs in 2017. Day-old chicks ranked as second largest share of total cost at 17%, followed by other variable costs (heating, electricity, litter, and animal health, 7%) and housing (6%). Labor cost accounted for 2% of total costs. The costs at farm level for insurance, bookkeeping, consultancy, telephone, and transport represented 1% of total costs (see Figure 241).

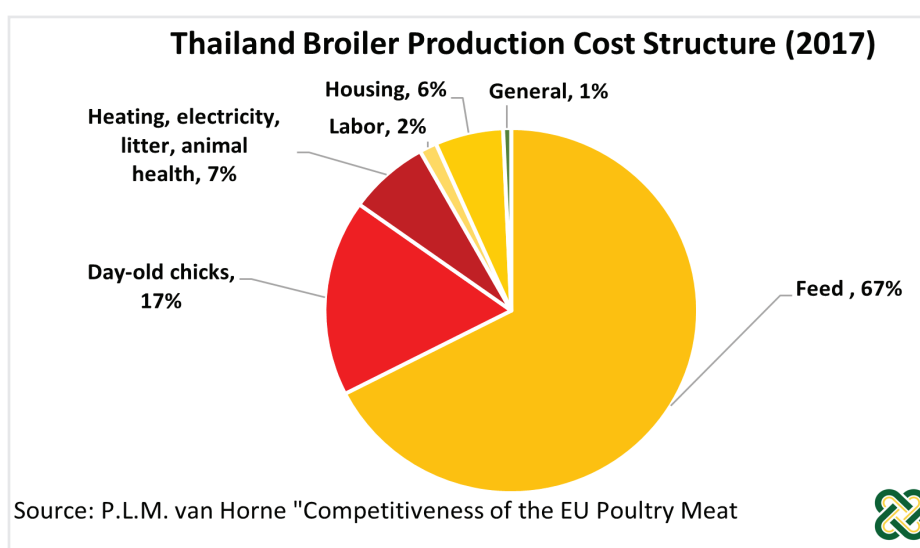


Figure 241.

Thailand broiler production cost structure

4.6.8.5 Trade

Thailand total value of poultry products exports was estimated at \$3.4 billion in 2020. Most of Thailand poultry exports were cooked/prepared poultry products (\$2.4 billion or 73% of the total value market). In 2020, Thailand poultry export value to Japan alone totaled more than \$1.8 billion, of which, \$1.4 billion consisted of cooked/prepared poultry products.

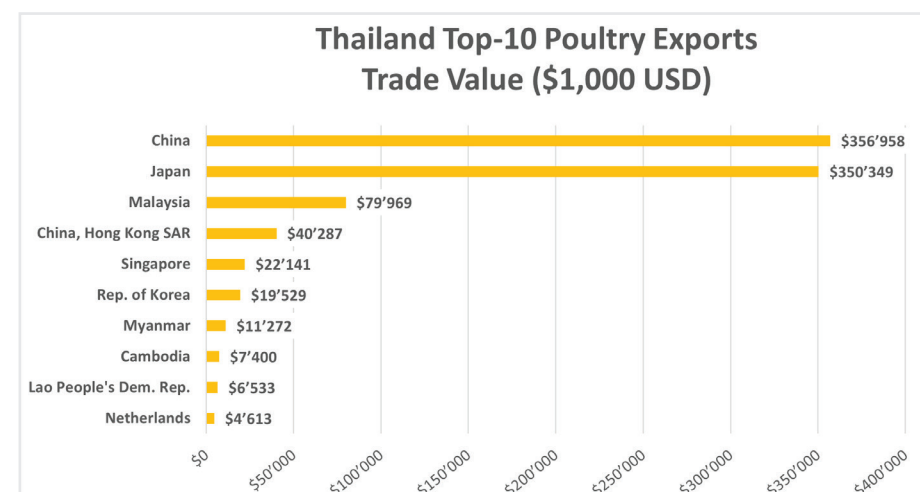


Figure 242.

Thailand top 10 poultry exports, trade value

Thailand's poultry exports to the United Kingdom (\$543 million), and China (\$357.0 million) together made up 27% of the total value of poultry exports in 2020. (Figure 242 and Figure 243). Thailand's exports to the United Kingdom consisted mainly of cooked/prepared poultry products.



Figure 243. Thailand poultry export flows

Thailand Top-10 Poultry Imports Trade Value (\$1,000 USD)

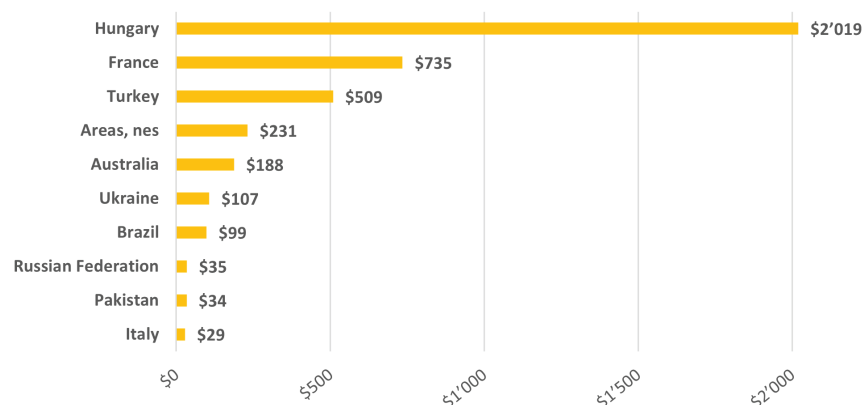


Figure 244. Thailand top 10 poultry imports, trade value

Hungary was the largest supplier of Thailand's poultry meat imports in 2020. In a distant second and third place were France and the USA. The value of poultry imported from Hungary was estimated at \$2.2 million, which represented about 28% of total value of Thailand's poultry imports (\$7.1 million) (Figure 244 and Figure 245). Challenges to exporting poultry meat to Thailand may include its use of non-transport import permit controls and high WTO bound rates of import tariffs which range from 30-40%²⁰.

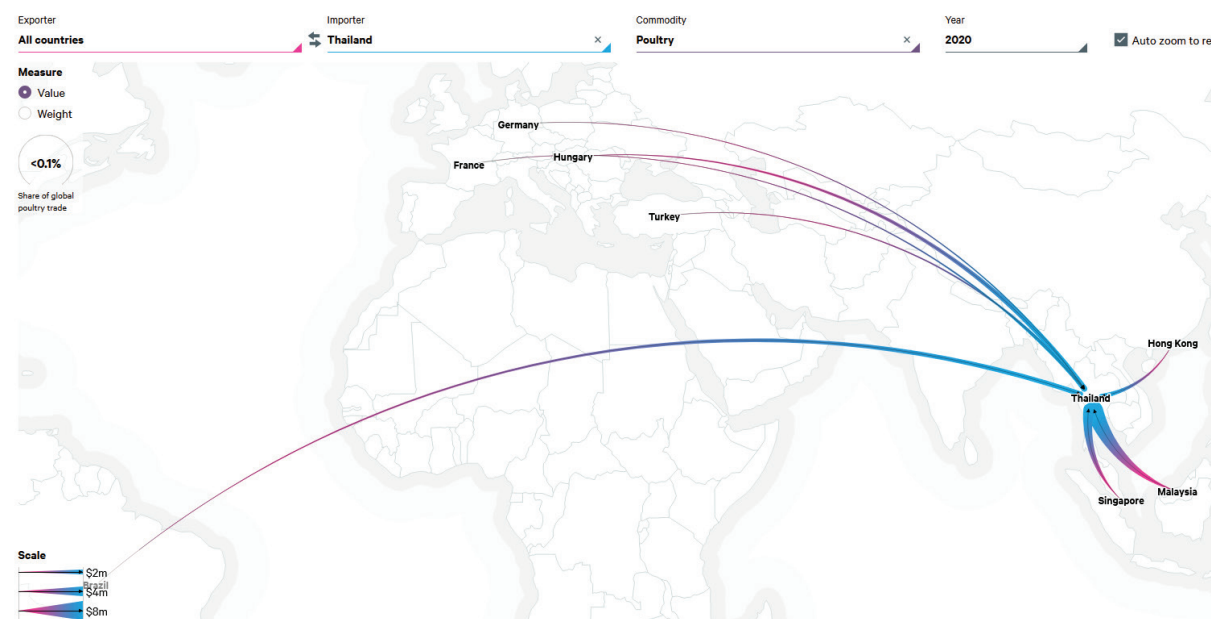


Figure 245. Thailand poultry import flows

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4.6.9 Turkey

4.6.10 Demographics

The total number of poultry farms in Turkey was 13,931. Commercial chicken farms represent 100% of poultry farms in Turkey (Figure 246). The average size of a commercial chicken farm was 27,233 head.

Poultry production and consumption both increased in Turkey from 2010 to 2021. Poultry production in 2021 reached 2.4 million metric tons (Figure 247). Poultry consumption in 2021 was estimated at 1.8 million metric tons. Poultry production increased 63% from 2010 to 2021. Turkey's poultry consumption expanded 31%.

The total number of poultry stocks was 384.7 million head. An estimated 379.3 million head were chickens, which accounted for 98% of poultry stocks in 2020. The total number of turkeys was 4.8 million and represented 1% of the total poultry stocks in 2020. Ducks accounted for 560,000 head (less than 1%) of poultry stocks (Table 75).

In Turkey, poultry slaughter included 916.1 million chickens, 6.1 million turkeys, and 508,000 ducks. compared to 2010, chicken slaughter increased 9%, duck slaughter increased 54%, and turkey slaughter increased 66%.

In Turkey, poultry production included 2.1 million metric tons of chicken, 58,000 metric tons of turkey, and 1,000 metric tons of duck. Compared to 2010, chicken production increased 48%, duck production increased 54%, and turkey production increased 82%.

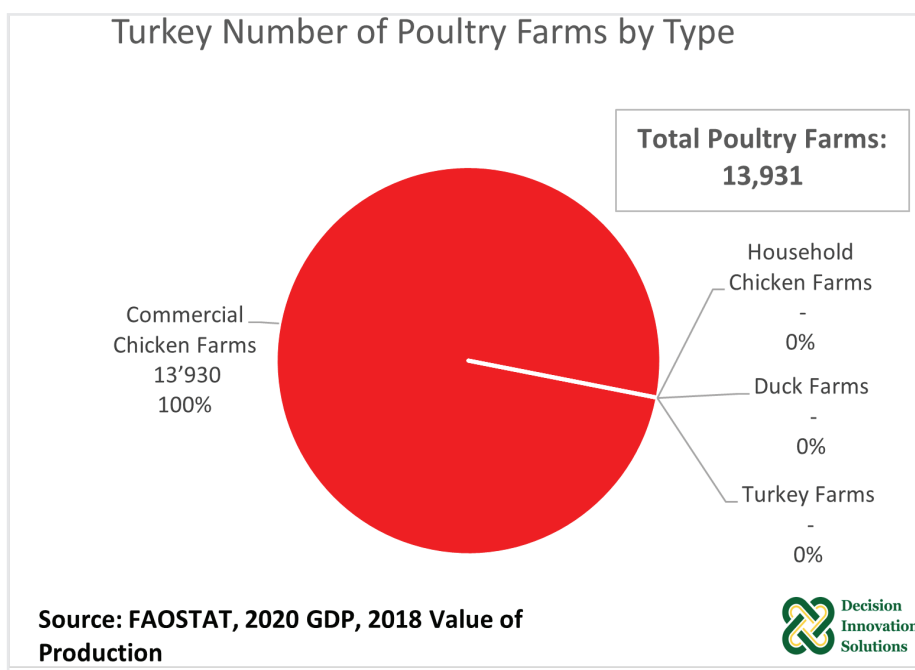


Figure 246. Turkey number of poultry farms by type

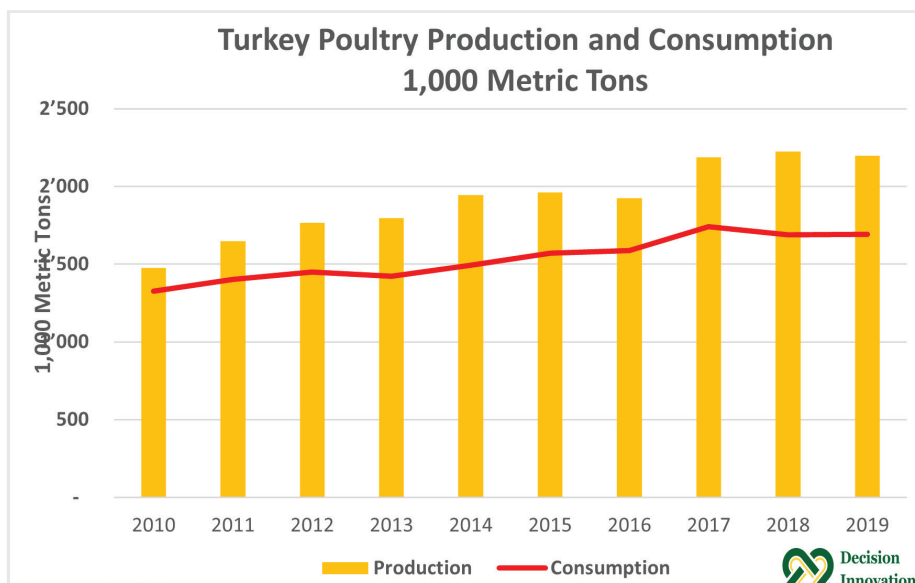


Figure 247. Turkey poultry production & consumption

| TURKEY POULTRY STOCKS, SLAUGHTER, AND PRODUCTION | | | | | |
|--|----------|-------|---------|---------|--|
| 1,000 head | Chickens | Ducks | Turkeys | Total | |
| Stocks | 379'349 | 560 | 4'798 | 384'707 | |
| Producing Animals/Slaughtered | 916'126 | 508 | 6'064 | 922'698 | |
| Production (1,000 MT) | 2'138 | 1 | 58 | 2'197 | |

Sources: FAO, 2020

Table 75. Turkey poultry stocks, slaughter & production

4.6.10.1 GDP and Value of Production

The total GDP in Turkey was valued at \$720.1 billion in 2020. Non-agricultural production sectors accounted for an estimated \$666.1 billion, or 92% of the total GDP. Crop production was the largest agricultural production sector, representing about \$34.2 billion, or 5% of the total GDP. Red meat production was valued at \$15.9 billion or 2% of the total GDP. Chicken production was estimated to contribute 1% or \$3.8 million towards the total GDP. Although less than 1% of the total GDP, turkey production was estimated to represent \$207.7 million (Figure 248).

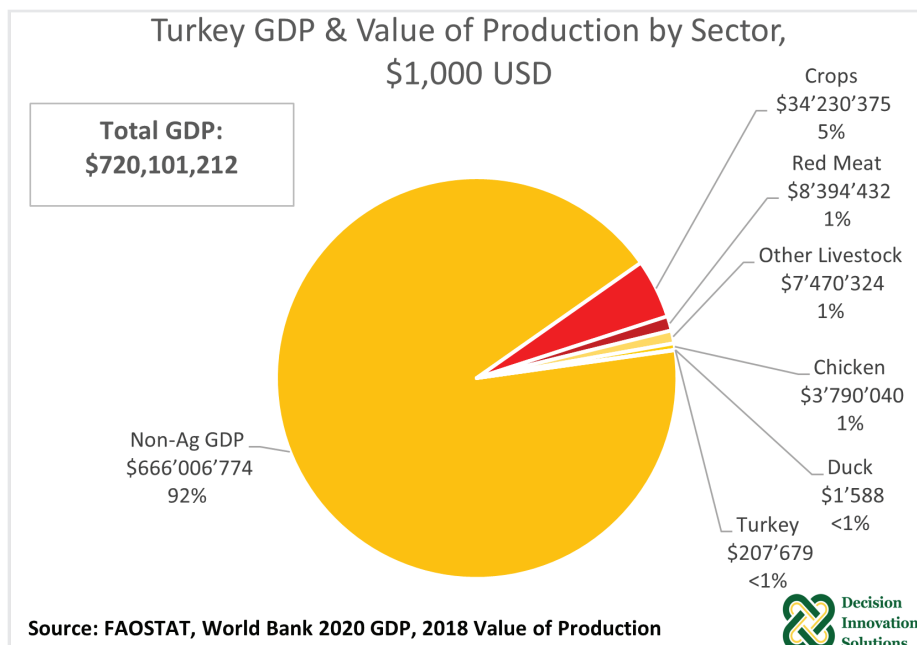


Figure 248. Turkey GDP & value of production by sector

The combined (direct and indirect) effects of agricultural production in Turkey are estimated to be \$107.5 billion. Of this amount, \$10.0 comes from the poultry industry, with \$9.5 billion from chicken meat production, \$4 million from duck production, and \$500 million from turkey production. Agriculture pays a net value of \$1.5 billion in taxes, \$129 million of which is estimated to be from the poultry industry (Table 76).

| ECONOMIC EFFECTS - TURKEY (\$1,000 USD) | | | | |
|---|--------------|--------------|---------------|-------------|
| | Direct | Indirect | Total | Taxes paid* |
| All agriculture | \$54'094'438 | \$53'358'035 | \$107'452'473 | \$1'481'674 |
| Livestock | \$19'864'063 | \$19'593'648 | \$39'457'711 | \$544'087 |
| Poultry | \$3'999'307 | \$5'990'962 | \$9'990'269 | \$128'564 |
| Chicken | \$3'790'040 | \$5'677'480 | \$9'467'520 | \$121'837 |
| Duck | \$1'588 | \$2'379 | \$3'967 | \$51 |
| Turkey | \$207'679 | \$311'103 | \$517'782 | \$6'676 |

Source: FAOSTAT, OECD Input-Output Tables. *Taxes is equal to total taxes net of subsidies

Table 76. Economic effects - Turkey

4.6.10.2 Labor

An estimated 31.6 million people worked in Turkey's labor force in 2020 (see Table 77). Approximately, 68% or 21.4 million were males, and 32% or 10.2 million were female. The non-agricultural sector employed 26.6 million people. The remaining 5.0 million worked in the agricultural labor sector. Of that total, approximately, 362,242 people were employed in poultry production.

| AGRICULTURAL LABOR FORCE CHARACTERISTICS - TURKEY | | | |
|---|------------|------------|------------|
| | Total | Female | Male |
| Total Country Labor | 31'624'253 | 10'175'295 | 21'448'958 |
| Non-Agricultural Labor | 26'585'749 | 8'012'228 | 18'573'521 |
| Agricultural Labor | 5'038'504 | 2'163'067 | 2'875'437 |
| Total Non-Poultry Agricultural Labor | 4'676'262 | | |
| Total Poultry Labor | 362'242 | | |
| Chicken Labor | 343'287 | | |
| Turkey Labor | 18'811 | | |
| Other Poultry Labor | 144 | | |
| Wages (\$1,000 USD) | | | |
| Total Meat Processing Labor | 47'818 | | \$428'591 |
| Livestock Processing Labor | 32'388 | | \$290'290 |
| Poultry Processing Labor | 15'430 | | \$138'301 |

Source: ILO 2020, World Bank 2020, UNIDO Database, INDSTAT 4 2021, ISIC Revision 3

Table 77. Agricultural labor force characteristics - Turkey

The total number of meat processing jobs in Turkey was 47,818 during 2020. Wages earned in meat processing totaled \$428.6 million. Livestock meat processing accounted for 32,388 jobs and \$290.3 million in wages earned. Poultry meat processing accounted for 15,430 jobs and \$138.3 million in wages earned.

4.6.10.3 Trade

The value of Turkey’s poultry exports was estimated at \$545.80 million with exports to Iraq representing 56% of total value in 2020. The second and third largest market for Turkey’s poultry exports were China, Hong Kong (\$42.5 million), and Libya (\$32.3 million) (see Figure 249 and Figure 250).

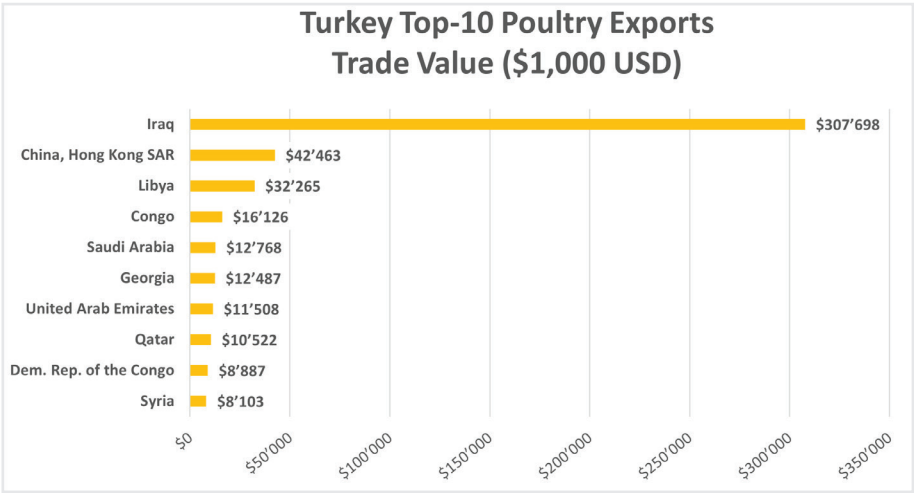


Figure 249. Turkey top 10 poultry exports, trade value

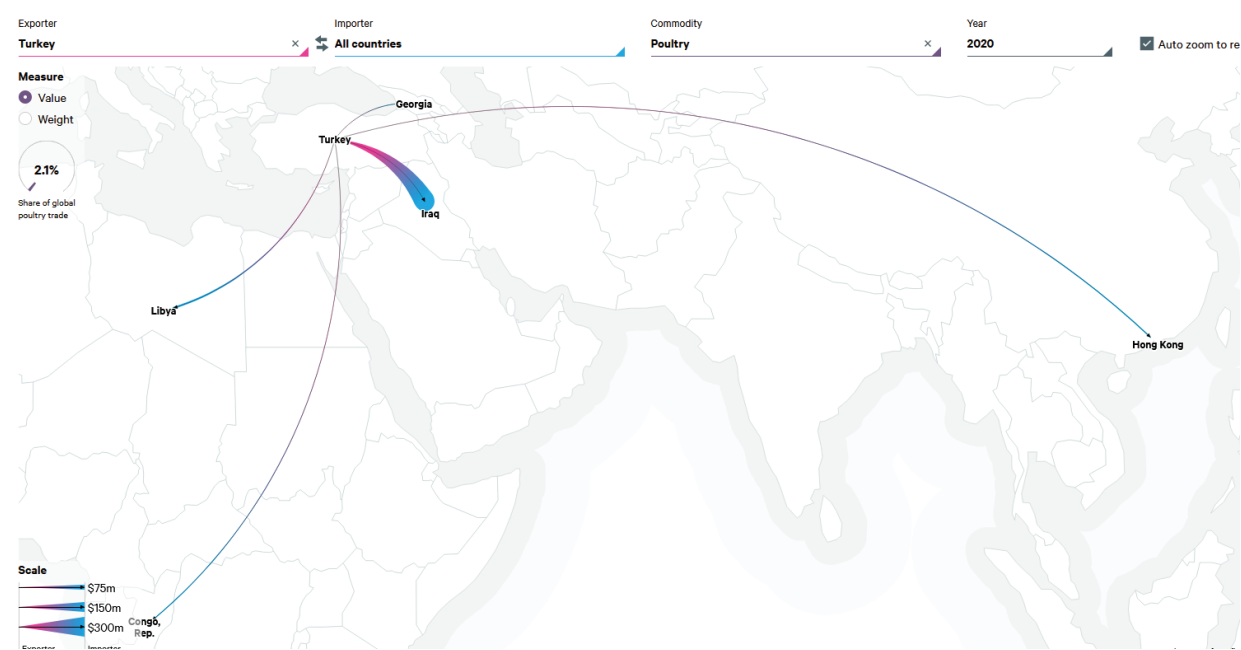


Figure 250. Turkey poultry export flows

In 2020, Turkey imported \$17.8 million in poultry meat from the USA, which was the main supplier of poultry meat to Turkey that year. Brazil was the second largest source of poultry meat imports for Turkey at \$12.4 million (see Figure 251 and Figure 252). According to the USDA FAS, Turkey produces enough poultry to meet domestic demand for poultry. Additionally, high custom tariff rates of 100% on poultry meat deters exports to Turkey. Transshipment of poultry meat through Turkey is allowed. Thus, Turkey serves as a hub to ship poultry meat to countries in the Middle East²¹.

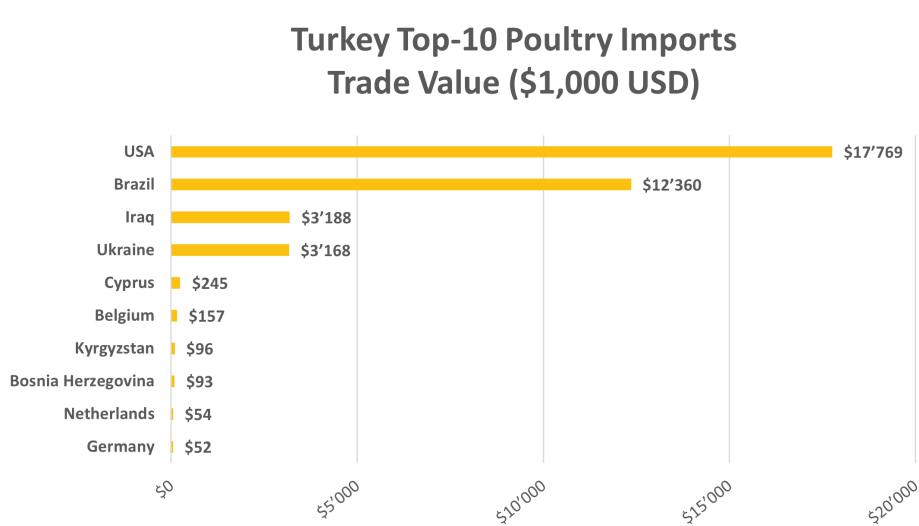


Figure 251. Turkey top 10 poultry imports, trade value

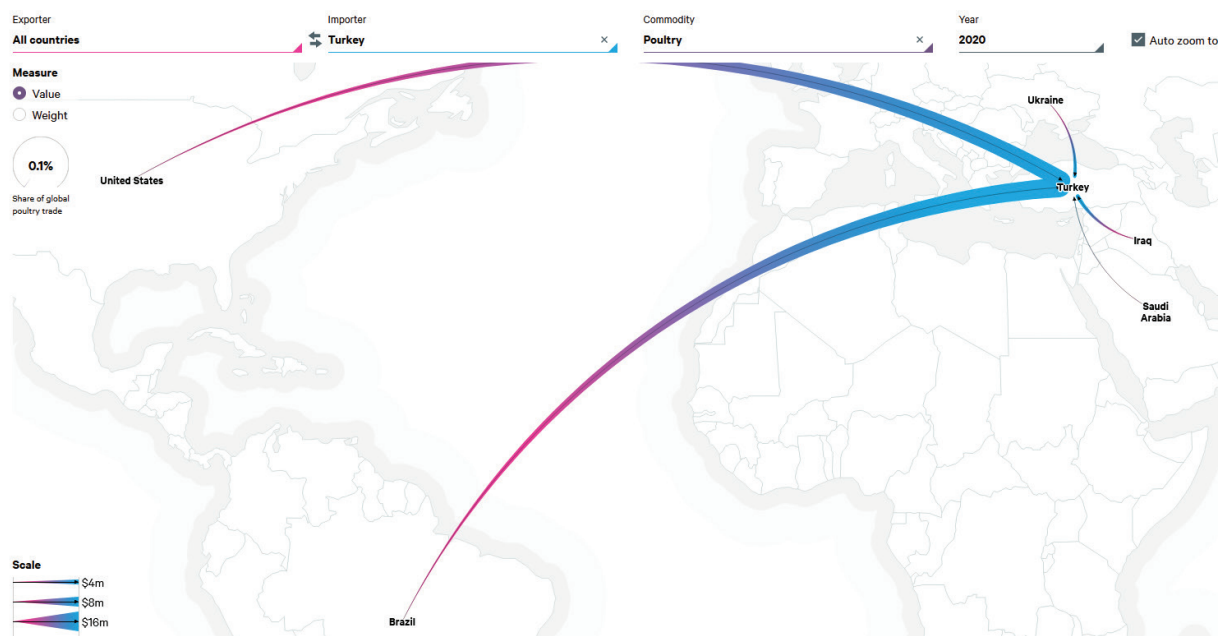


Figure 252. Turkey poultry import flows

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