



Thailand's Poultry Industry



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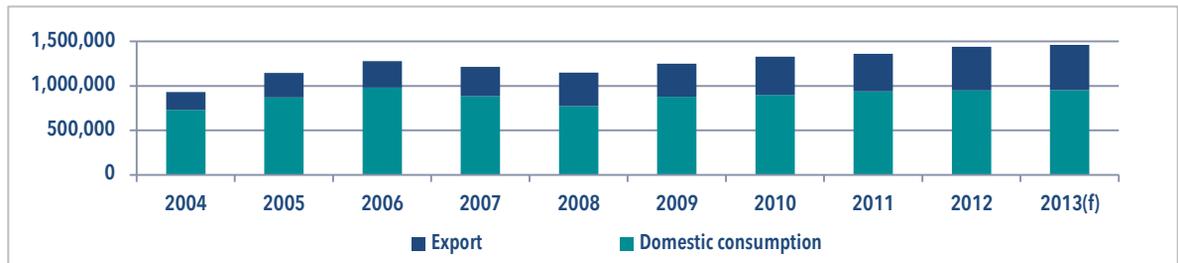
Thailand's poultry industry

Agricultural and food industries are crucial to Thailand's aim to be the "kitchen of the world", a key government policy. Thailand was the world's 12th largest food exporter last year, with total shipments of 90bn baht (US\$2.9bn) according to the National Food Institute. The Office of Agricultural Economics (OAE) expects the value of food exports to exceed 1 trillion baht this year.

The poultry industry was one of Thailand's most promising agri-food segments until it was devastated by the 2004 outbreak of Highly Pathogenic Avian Influenza outbreak (HPAI), or avian flu. However, it has proven resilient in the face of adversity and is now ramping up efforts to reclaim its share of the world poultry market, posting constant growth of 5 per cent CAGR from 2004 until the end of last year, according to OAE figures. Chicken meat production reached 1.4m tonnes last year, ranking it the country's no.1 meat product, followed by pork (0.9m tonnes) and beef (0.2m tonnes), according to OAE. Industry supply – estimated at 0.9m tonnes, up almost 40 per cent from the previous decade – was the main driver of domestic consumption. Essentially, Thai people are consuming more chicken now than they were ten years ago because of better prices and availability. Chicken meat is the least expensive source of protein in the meat market (Figure 2).

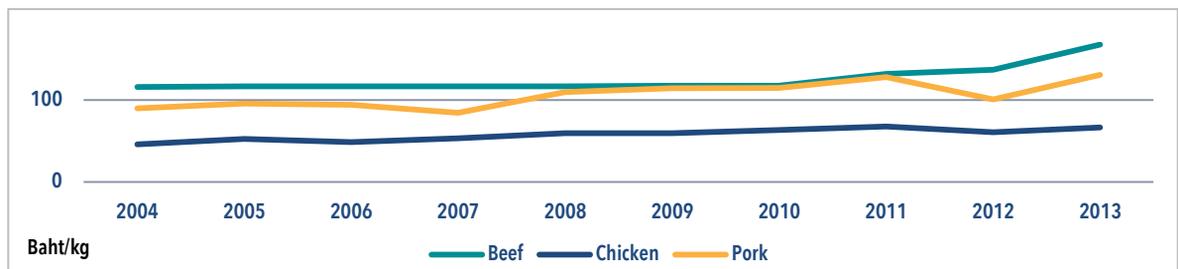
There is also now a wider range of commonly available chicken products such as boneless chicken meat, ready-to-cook chicken meals and chicken nuggets which can be purchased in hypermarkets and convenience stores. In addition, the rising popularity of fast food restaurants has played an important role in stimulating domestic consumption as leading chains such as KFC, Chester's Grill and Sizzler are offering more chicken menus as they aggressively expand their networks. Enjoying current CAGR of 8 per cent, the fast food industry is expected to maintain healthy growth for the foreseeable future.

Figure 1: Chicken meat production, Tons



Source: Office of Agricultural Economic, 2013

Figure 2: Retail price of pork, beef, and chicken in Bangkok 2004 to 2013



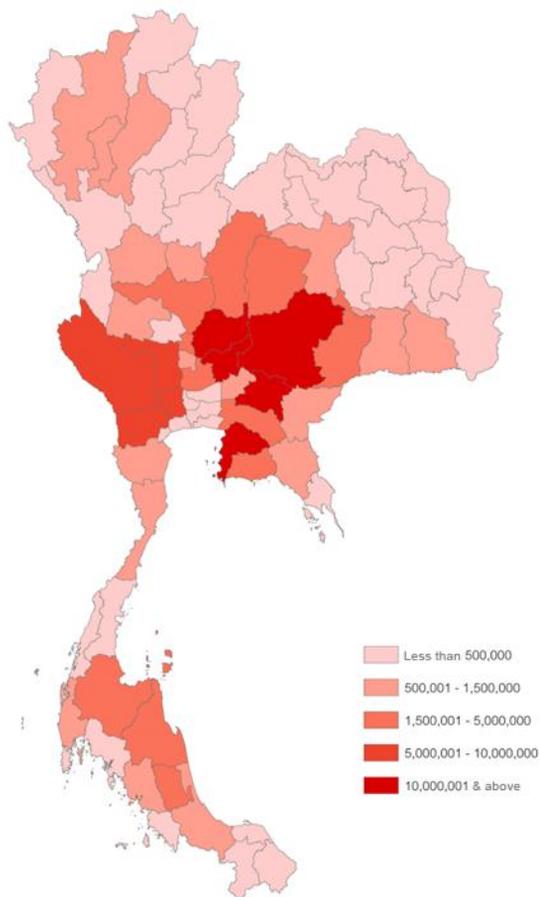
Source: Department of Internal Trade, 2013

Table 1: Broiler production in Thailand by region in 2012

Regions	Number of chicken broiler (head count)	Number of chicken broiler and layer households
North	84,870,740	727,051
Northeast	152,749,228	1,431,221
Central	748,207,109	341,792
South	70,107,629	381,548
Total	1,055,934,706	2,881,612

Source: Department of Livestock Development

Figure 3: Chicken population density in Thailand



Source: Department of Livestock Development

There are two main species of poultry produced in Thailand, chicken and duck (Wasan, 2011). Poultry population and production are highly concentrated in central Thailand as broiler producers need to be located near to certified slaughterhouses, feed mills and food processing plants. These facilities are also concentrated in central Thailand. Large-size farms, with an average 70,000 chickens per farm and complying with the FAO's farm practice standards sections 1 and 2 (see table 2), account for 90 per cent of chicken broilers in the central region (Rushton et al, 2007).

The integrated commercial farm standards in section 1 and 2 set very high biosecurity and standards and are currently cover 80-90% of national production. Traditional poultry farms (FAO sectors 3 and 4) are spread across the country and account for 10 per cent of national production with most of their produce being consumed locally (Helf-Neal et al, 2008).

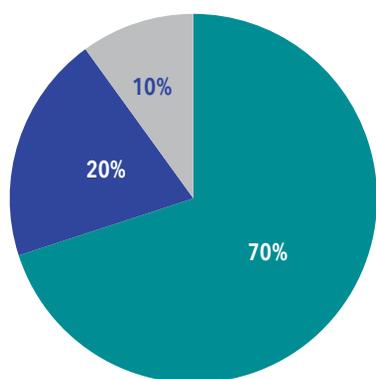
The United Nations Food and Agricultural Organization (Table 2) established four sectors of poultry production systems based on their relative levels of biosecurity and the marketing and distribution of the birds and chicken products.

Table 2: Poultry production classification, FAO

Categories	Definition	Production contribution
Section 1 (Industrial integrated system)	High level biosecurity and bird/products marketed commercially	70% of national production
Section 2 (Commercial production poultry)	Moderate to high biosecurity and birds/products marketed commercially	20% of national production
Section 3 (Semi-commercial production)	Low to minimal biosecurity and birds/products marketed commercially	10% of national production
Section 4 (Village or Backyard farms)	Minimal biosecurity and birds/products consumed locally	

Source: Ruston et al, 2007 and industry interviews.

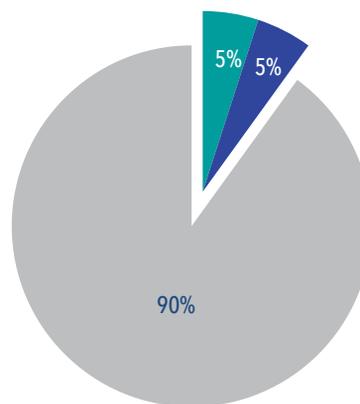
Figure 4: Breakdown of poultry production



- Integrated commercial farms
- Large to medium commercial farms
- Small commercial/backyard farms

Source: Calculated from Department of Livestock Development data and Helf-Neal et al,

Figure 5: Percentage of poultry producers



- Integrated commercial farms
- Large to medium commercial farms
- Small commercial/backyard farms

Source: Calculated from Department of Livestock Development data and Helf-Neal et al,

Structural changes in the industry

The 2004 HPAI outbreak was a catalyst for wide-ranging structural changes across Thailand's poultry industry which have increased the scale of production and spurred a transition toward vertically integrated farms. It was clear something needed to be done after the avian flu resulted in the killing of 63m birds at an estimated cost of 96bn baht (US\$3.1bn) (Na Ranong, 2008).

Increasing scale of production

Increasing scale of production by industrialising farms was a key structural reform that aimed to meet growing demand for poultry while controlling costs. The reform led to consolidation within the industry, which saw the average size of commercial farms increase while the number of producers declined. Table 3 shows how the number of commercial broiler producers declined by 32 per cent between 2008-12. However, the number of chickens raised in commercial broiler farms increased by approximately 55 per cent to an average 37,147 chickens per farm.

Major producers, such as Charoen Pokphand Foods, CPF and Betagro, have not only adopted advanced technology, they have also helped transfer this technology to smaller farms. Such technology has shortened the broiler period from 60 days to 40-49 days, improved the feed conversion ratio and reduced costs.

Table 3: Number of broiler commercial farms, number of chickens, and average farm size, 2008-12

	2008	2012	Growth (2008-12)
Number of commercial broiler farms	8,030	6,082	-32%
Number of chickens	101,841,267	225,930,564	55%
Average farm size (number of chickens per farm)	12,683	37,147	66%

Source: Department of Livestock Development

Table 4: Commercial broiler holding by farm size, 2012

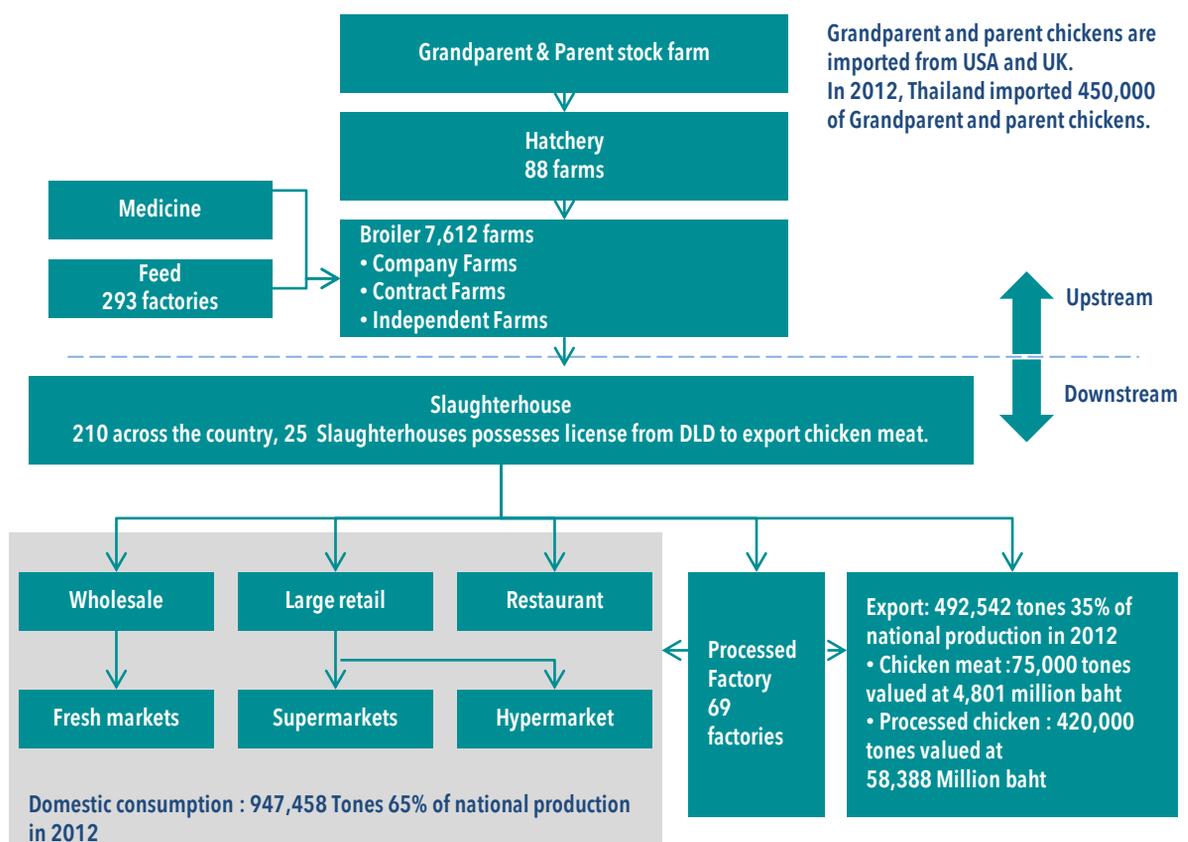
Regions	Number of chickens	Commercial broiler holding				Non-commercial broiler holding
		500 - 1,000	1,001 - 2,000	2,001 - 5,000	> 5,000	
Country	225,930,564	295	344	1,063	4,380	35,947
North	16,454,798	70	28	49	684	5,517
Northeast	29,788,673	37	23	65	655	19,639
Central	168,888,816	71	100	361	2,375	4,812
South	10,798,277	117	193	588	666	5,979

Source: Department of Livestock Development

Vertically integrated farms

Major poultry exporters nowadays rely more on vertically integrated farms than contract farms to meet EU regulations on food safety and animal welfare. For much of the past two decades Thailand's broiler production relied heavily on contract farms where the exporter would provide farmers with day-old chicks and feed, medicines and some other supplies and then buy-back the raised chicken at a guaranteed price. Switching to vertical integration may increase risks, as broilers lack expertise in setting up and operating feed mills, however, this is outweighed by benefits from the transformation which include facilitating complete control of the production process, ensuring reliability of supply and improving production efficiency. The Thai broiler industry is aggressively industrialising and moving towards more vertical integration as a result. It is now commonplace for medium- to large-scale companies to own feed mills. Moreover, large integrated farms will even include (cooked and semi-cooked) food-processing plants as part of their integration (Figure 6).

Figure 6: Value chain map



Source: Calculated from Department of Livestock Development, Office of Agricultural Economics data, and Na Ranong, 2008

The future of Thailand's poultry sector

Average domestic chicken consumption from 2004-12 stands at about 70 per cent of national production, making the local market the key focus of the Thai poultry industry. This year domestic consumption is estimated at 953,000 tonnes, about 65 per cent of forecast national production (OAE, 2013). The expansion of fast food chains and chicken's relatively cheaper price compared to other meats such as pork and beef, are expected to see domestic consumption continue to grow at a moderate but steady pace.

The export market is also on an upward trajectory. Current world chicken consumption is 80m tonnes, with growth of 3 per cent a year. Thailand recently clawed its way back onto the global leader board for chicken exports, ending last year in fourth position with an export value of 63.2bn baht (US\$2bn) (OAE, 2013).

Japan is the major destination for Thai processed chicken products. Last year the country imported 212,673 tonnes of processed chicken, accounting for just over half of Thailand's exports of the product. Many countries including Bahrain, Hong Kong, South Africa, Russia, Philippines and some European Union member states, last year lifted their Avian flu-related import bans of uncooked frozen chicken products from Thailand. This move increased the potential for Thai poultry exports in those markets, which was a boon for the local industry. However, the top five Thai players – CPF, Betagro, Cargill, GFPT and Leamthong – account for approximately 70-75 per cent Thai chicken exports. This year alone CPF is targeting 90,000 tonnes of chicken exports, comprising 80,000 tonnes of processed chicken and 10,000 tonnes of frozen chicken.

Table 5: Key importers of Thai processed chicken products

Country	2010		2011		2012		Percentage contribution
	Volume	Value	Volume	Value	Volume	Value	
Japan	174,011	23,421	189,103	27,901	212,673	32,836	53%
EU	195,620	23,533	195,207	25,248	195,432	24,269	39%
Singapore	11,648	1,401	12,648	1,650	13,023	1,794	3%
South Korea	10,164	1,126	10,997	1,231	12,662	1,465	2%
Hong Kong	4,275	444	3,553	450	4,154	580	1%

Source: Thai Broiler Processing Exporters Association

Challenges for the Thai poultry industry

Since most of the fallout from the avian flu outbreak has passed, the future of the Thai poultry industry will now largely depend upon basic economic factors, such as feed supply and demand. Another significant factor will be the move toward replacing chemical protection (antibiotics, antiseptics and vaccination) with enhanced biosecurity and compartmentalisation.

Feed supply and demand

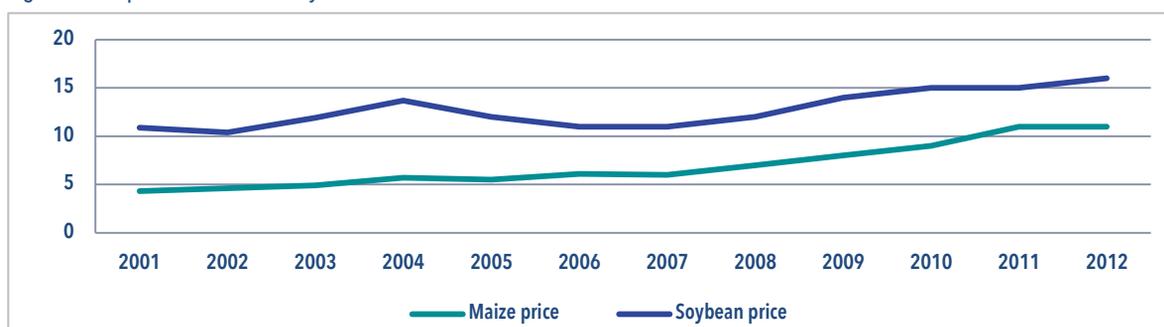
The supply of essential raw materials for poultry production, particularly grain and protein, has become a key issue in determining the growth, competitive strength and future of the industry as feed accounts for about 70-80 per cent of the cost of chicken meat, depending on the fluctuation of feed mill prices (Porn Sri, 2010). Thai Feed Mill Association estimated broiler and layer chickens consumed some 8m tonnes of feed, comprising 4.8 tonnes of maize and 2.2m tonnes of soybeans, last year. Thailand's promotion of biofuel production further complicates the issue as a large proportion of grain (such as maize) and tubers (such as cassava) production, as well as sugarcane, will be diverted toward lucrative gasohol and bio-diesel production, pushing the cost of animal feeds significantly higher.

Table 6: Domestic consumption and production of maize and soybean

	Domestic production (Tons)	Domestic consumption (Tons)
Maize	4.6	4.8
Soybean	0.96	2.2

Source: Department of International trade, 2012

Figure 7: The price of maize and soybean from 2001 to 2012



Source: Thai Feed Mill Association

Biosecurity and compartmentalisation*

Department Livestock Development issued new farm standards in 2000 requiring all broiler farms producing for export to convert into closed systems. These regulations were more strictly enforced after the 2004 avian flu outbreak. Currently, about 7,000 of the 10,000 broiler farms nationwide that meet the department's new standards.

Most integrated broiler farms have now upgraded to these new standards which ensure higher levels of safety and the Thai poultry industry as a whole has adopted more stringent control systems.

Only about 5 per cent of broiler producers raise their poultry with minimal to low biosecurity as outlined in FAO sections 3 and 4. The breeds of chicken most commonly bred in backyard farms are highly susceptible to some common chicken diseases such as Newcastle disease, fowlpox, fowl cholera and pasturellosis. These poultry producers usually rely on chemical solutions, such as vaccinations, antibiotics and antiseptics to prevent or cure these diseases. Thailand's animal health market was valued at 23bn baht last year. With global food demand expected to rise by 3-5 per cent a year, the local animal health market is forecast to grow by 5 per cent a year, according to the Animal Health Product Association.

Table 7: Top 5 animal health products in Thailand

Products	Market values in 2012, (Million Baht)
Feed mills	6,340
Swine	6,352
Fishery	4,509
Broiler industry	1,873
Pet industry,(Cat and Dog)	1,626

Source: Animal Health Product Association

Relying on medical interventions is costly and such use can also result in import barriers to key markets. In light of the avian flu outbreak and the implementation of more stringent safety standards, biosecurity** appears to be the most effective solution for the industry.

Conclusion

Thailand's poultry industry has successfully recovered from 2004 avian flu outbreak and returned to dynamic growth. A positive outcome from the HPAI outbreak was that it forced the Thai poultry industry to adopt new farming practices, and a higher rate of adoption modern farming facilities, and industry restructure. With its new industry structures, Thailand will undoubtedly increase its production capacity and return to its former position as a recognised leader in global poultry exports.

The poultry industry has shown that it has a prosperous future, partly driven by the reopening of EU market and a greater presence in the Japanese and South Korean markets. To sustain and grow the market share in these high value markets it is inevitable that we shall see a greater level of investment in new climate control housing and leading edge biosecurity technique in the Thai poultry industry. Whilst the major corporations can easily absorb the cost of this investment, there is a question over the future of smaller

farmers and whether they can meet the financial strain associated with investment in a poultry farming upgrade. Climate control housing, closed system and leading edge biosecurity technique, all present significant financial demands on the smaller farmers. How will they grow their business in an industry where they cannot always afford access to modern poultry farming techniques. Whilst these farmers only account for approximately 10% of poultry production, they are 90% of the poultry farmer population and therefore require consideration.

The estimated future growth of the Thai poultry farming sector is impressive and the industry is actively seeking to improve the quality of the feed ingredients and nutritional supplements. The industry benefits from government policies aimed at growing the industry and the size of the export market (though these policies are favoured towards the large players). Notwithstanding rising operational costs, there is a great deal of opportunity for players in each stage of the value chain. The only significant question is what will happen to the smaller farmers and whether they can survive in an industry that is increasingly skewed towards the large players.

Footnote

*Compartmentalisation is a system to control and monitor disease on livestock farms.

The OIE has defined the process as "an animal subpopulation contained in one or more establishments under a common biosecurity management system with a distinct health status with respect to a specific disease or specific diseases for which required surveillance, control and biosecurity measures have been applied for the purpose of international trade".

Great Britain has defined 'poultry compartment' or other captive birds compartment as a holding or holdings under a common biosecurity management system containing a poultry or other captive bird sub-population with a distinct health status with respect to avian influenza subjected to appropriate surveillance, control and biosecurity measures.

**Biosecurity can be defined as actions taken to reduce the risk of infection entering a farm and to remove infection from a farm (Food Standard Agency, 2006).

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