An Overview of China's Poultry industry

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Foreword

This report on the Chinese poultry industry has been written as part of my traineeship for the Agriculture, Nature & Food Quality department of the Embassy of the Kingdom of the Netherlands in Beijing. For my research, I have been given the opportunity to visit local companies and attend various industry-related seminars & exhibitions, so to get a better understanding of the industry. In my opinion, the fieldtrips and interviews showed much added value for they provided me with insights that cannot be acquired from merely desk research. Hereby, I would like to thank my supervisors Ir. Van Duijn and Ir. Nuytens for their constructive feedback and support. In conclusion, this traineeship has been a good overall learning process and I enjoyed being part of the LNV team in China.

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Official Statistics

A short word of notice on the official statistics with regard to the meat production and consumption used within this report. Most of the data used has been derived, directly and indirectly, from China's National Bureau of Statistics, Euromonitor International, and the United States Department of Foreign Agricultural Service. Upon researching the data, it became clear that there are some disparities between the statistics produced by the various sources. These discrepancies can be explained from the fact that different methods of data gathering are employed, which therefore lead to other results. Nevertheless, despite these disparities, the statistics do provide for a general 'picture' of the current situation, and the way certain trends are evolving in the Chinese meat industry. It must be noted that the provided numbers and percentages found in this report are estimates and should not be used as a sole source of information for decision making.

Chapter 1 Brief Introduction to China

The People's Republic of China was founded on October 1, 1949. With a population that exceeds 1.3 billion, it is the most populous country in the world. China is situated in eastern Asia on the western shore of the Pacific Ocean, with an area of 9.6 million square kilometers. Despite its huge size, merely 13.2% is suited for farmland. Its continental coastline extends for about 18.000 kilometers, and along its sea surface there are over 5.000 islands. The country is divided into 23 provinces, five autonomous regions, 4 municipalities (city provinces), and two special administrative regions.

General Overview

In 1978, the Chinese economy gradually transformed from a centrally planned economy to a more market-oriented economy. Reforms began with the slowly phasing out of collectivized agriculture, and slowly expanded to a liberalization of prizes, fiscal decentralization, increased autonomy for state enterprises, the foundation of a diversified banking system, the development of stock markets, the rapid growth of the non-state sector, and the opening to foreign trade and investment. The restructuring of the economy and resulting efficiency gains have contributed to a more than tenfold increase in GDP since 1978. Economic development has been more concentrated around coastal provinces which explains the large disparities in per capita between rural and urban regions. Millions of surplus rural workers move between villages and cities, taking on part-time, low-paying jobs for a living. The country's "one-child" policy has lead to one of the most rapidly aging countries in the world. At the moment, the central government focuses on the development of the animal husbandry sector for it is seen an important part of the country's agriculture modernization and new countryside construction. However, this transition is restrained by a number of factors which include (a) backward production; (b) high risks in animal and poultry quality, safety and hygiene; (c) environmental damage due to the country's rapid transformation; (d) inadequate utilization of feed resources and the shortage of protein feed; and (e) the situation concerning animal disease control (MOA, 2006).

Political Developments

While the Chinese government has been focusing on market-oriented developments, its national economy is still officially directed according to Five-Year Plans which lay out growth goals in various industries for the next half decade. These Guidelines are put together by a group of experts from various fields to ensure it covers every aspect in relation to China's economic and social development.

In October 2005, the Central Committee of the Chinese Communist Party approved the draft version of the 11th Five-Year Plan. This year sees the implementation of these Guidelines for the period 2006 to 2010, in which the central government intends to lay a solid foundation for building a new socialist countryside. Its aim is to boost modern agriculture; develop new relationships between industry and agriculture, cities and the countryside; and increase rural affluence (Naughton, 2006). The Ministry of Agriculture (MOA) has set a number of quantitative targets for animal husbandry. By 2010, meat, egg and milk production are forecasted to reach 86 million ton, 30 million ton and 42 million ton respectively. The output value of animal husbandry should reach 38% of the country's total agricultural value. In addition, the percentage of standardized livestock and moderate scale size poultry production are expected to increase by 10%. Also, the overgrazing on natural pastoral land will be reduced to 25%, and more than 150 million ha desertified, eroded and polluted pastoral land will be rehabilitated (MOA, 2006; USDA FAS, 2006).

Main tasks of the 11th Five-Year Plan include:

- *Speeding up the development of animal husbandry and ensuring the supply of animal products;*
- *Increased monitoring and supervision on product quality and continuing product safety improvement;*
- *Improving the industry's profit in order to raise farmers' income;*
- *Heighten awareness on environment protection and eco-construction.*

Source: MOA (2006)

Creating a New Socialist Countryside

The construction of a new socialist countryside is a major objective in the 11th Five-Year Plan. It is believed that the country can only ensure sustainable development of its

Table 1: Comparison China and Netherlands

Year 2005	People's Republic of China	The Netherlands
Area	9.596.960 km²	41.000 km²
Population	1.307 million	16 million
Number of households	539.1 million	7 million
Gross Domestic Product (USD)	2.224.9 billion	635 billion
GDP per capita	1.400	30.862
Import (bilateral)	2556.5 (€) million	19056.4 (€) million
Export (bilateral)	19056.4 (€) million	2556.5 (€) million
Currency	Renminbi	Euro

Source: EVD, CBS and China Statistical Yearbook (2006) national economy and continuous expansion of domestic demand, by developing its rural economy and helping farmers to become more affluent. Raising rural household incomes is of great importance as the urban-rural gap has widened greatly since 1985, which has become a large source of societal inequality.

The Chinese government aims to modernize its agriculture by establishing major farming and processing plants, and adjusting geographical distribution. Measures to reach this objective include: increased rural investment, agricultural subsidies and improved social services. This new policy is a significant change from the previous focus on economic development since more attention will be given to the redistribution of resources and a rebalance of income.

The central government has further pledged sustained increases in farmers' incomes, more industrial support for agriculture and faster development of public services. This year sees the end of agricultural tax, and raised farm subsidies. The government will also increase rural health subsidies to revitalize the cooperative health system. These measures promise greater protection and more stability in rural areas. More efforts will be invested in the development of public rural services and agricultural infrastructure (www.anhuinews.com 2006; Naughton, 2006).

Animal Husbandry Law

The Chinese government has enacted several laws to promote its country's agriculture, which means more investment in rural infrastructure and agricultural technology. In this line, the Animal Husbandry Law was put into force on July 1, 2006. This eight-chapter Law includes regulations on livestock breeding, raising and production, transportation and product quality protection. To ensure the quality and security of livestock products, animal feed, additives and medicines should meet legal and technical standards set out by the Animal Husbandry Law. The newly implemented law aims to facilitate the modernization of China's animal husbandry industry by encouraging the development of large-scale and highly productive livestock farms. At this moment, China sees a lot of small-size household farmers whom raise their livestock in their backyards.

The Animal Husbandry Law aims to improve meat safety whilst protecting farmers' livelihoods. Government authorities should offer financial and technical support to farmers to expand and improve production, whilst farmers should register their farms and establish breeding records, which will also log the use of veterinary feed and medicine. Farmers would be required to report outbreaks to local animal epidemic prevention agencies and take measures to curb infections, and if diseased stocks are removed because of sickness, they would be entitled to claim compensation (China Daily, 2005).

- Great Hall of the People -

Chapter 2 China's poultry industry

Liberalization of the livestock market in 1985 has led to an enormous growth of China's poultry industry. In 2004, China's poultry in stock was 5.1 billion heads, poultry offtake consisted of 9070.2 million heads, and poultry meat output was 13.5 million tons (China Agricultural Yearbook, 2005). China is the second-largest producer of poultry meat in the world, after the United States. At present, chickens constitute around 70% of the Chinese poultry industry, followed by ducks and geese; the remaining comes from pigeons, quails, partridges, pheasants, wild ducks, etc. Both the duck and geese raising sector have grown in importance in the Chinese poultry meat industry. Duck production has been estimated at 2,350 million tons and slaughtered ducks at 1.8 billion in 2005, which is respectively 66% and 75% of world total (World Poultry, 2006).

Poultry Production

In 2004, average prices for egg, live chicken and broiler meat were respectively 6,53 RMB, 10,35 RMB and 10,38 RMB per kilogram. Average price for a baby hen was 2 RMB, and a broiler price stood at 1,94 RMB. In terms of prices, annual egg-feed ratio was 4.82:1, which meant a profit of circa 10 RMB for raising a hen (China's Agricultural Development Report, 2005). Poultry production can be divided into three different categories, namely: backyard farms, specialized households, and commercial farms. At present, about 80% of China's poultry output comes from small individual backyard farms, circa 15% comes from specialized households and only 5% from large commercial farms (USDA FAS Gain report, 2006; Zhou, 2006).

Small backyard farms

In China, around 60% of the country's chickens are raised on small farms in close proximity to humans and domestic animals (WHO, 2004). Many backyard farmers in rural areas raise their poultry in small courtyard farms. Labor costs are zero to none due to family support, and the high under-employment rate. Proper vaccination and a hygienic slaughtering process cannot be guaranteed at these small-scale farming operations. Raising livestock and poultry has been encouraged in many areas in China as a way to help farmers increase their incomes.

- Backyard farming -

Figure A: China's poultry supply chain

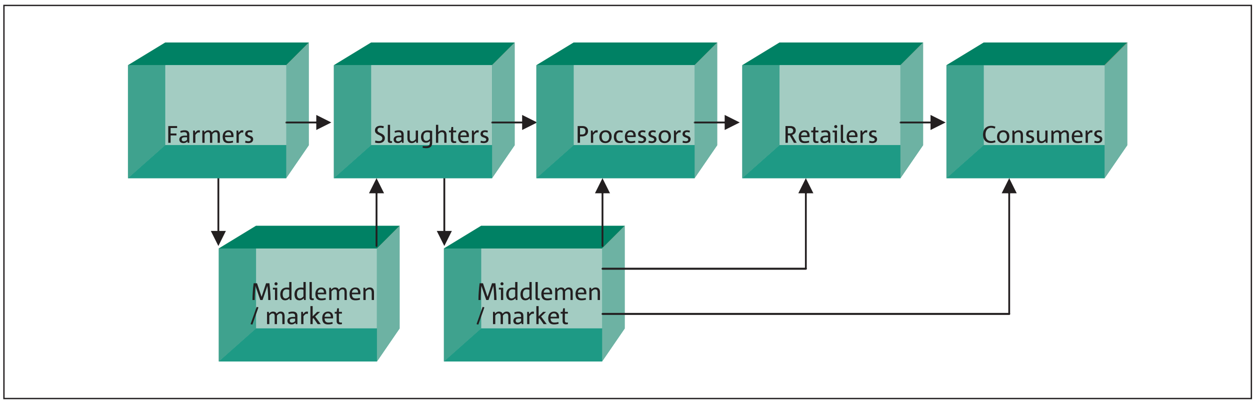
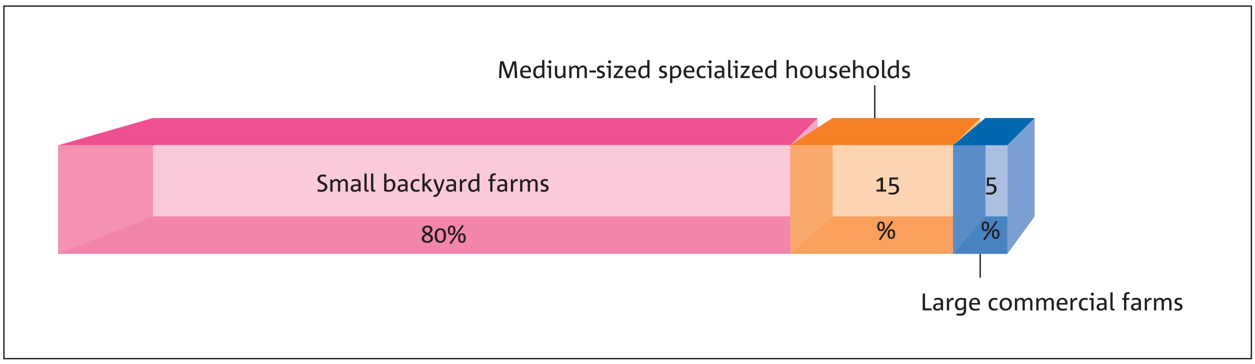


Figure B: Households Raising Poultry



Source: Zhou (2006)

Table 2: Size of commercial broiler farms in 2004

Annual slaughter capacity(#bird)	# of farms	Total Slaughtered (x1,000 bird)
2.000 - 9.999	338.597	1.640.7155
10.000 - 49.999	85.340	1.510.601
50.000 - 99.999	5.752	363.775
100.000 - 499.999	1.514	297.367
500.000 - 999.999	116	89.973
1.000.000 and above	85	224.364
Total	**431.404**	**4.126.835**

Source: China Livestock Association

Table 3: Production Broiler 1.000 Metric Tons (Ready to Cook Equivalent)

Production	2001	2002	2003	2004	2005(p)	2006(f)
United States	14.033	14.467	14.696	15.286	15.870	16.233
China, People's Republic of	**9.278**	**9.558**	**9.898**	**9.998**	**10.200**	**10.350**
Brazil	6.567	7.449	7.645	8.408	9.360	10.035
European Union 2)	7.883	7.788	7.512	7.627	7.625	7.540
Mexico	2.067	2.157	2.290	2.389	2.510	2.635
India	1.250	1.400	1.500	1.650	1.900	2.200
Argentina	870	640	750	910	1.080	1.180
Japan	1.074	1.107	1.127	1.124	1.165	1.150
Thailand	1.230	1.275	1.340	900	950	1.100
Canada	927	932	929	946	1.000	1.020
Malaysia	813	784	835	862	896	920
Others 1)	6.311	6.598	5.760	5.852	6.165	6.538
Total	**52.303**	**54.155**	**54.282**	**55.952**	**58.721**	**60.901**

Source: USDA FAS Livestock and Poultry: World Markets and Trade (2006)
Notes: 1) From 2003 to 2005, Columbia and Egypt are dropped from the database. 2) EU data includes 25 member states for all years. (p) preliminary; (f) forecast.

Medium-sized specialized households & large commercial farms

The Chinese government is supporting large scale enterprises and encouraging small scale farmers to operate as single large scale entities. The proportion of large-scale poultry farming in China has increased sharply over the years. The country's poultry production is shifting from traditional, scattered farming practices to large-scale integrated systems. Around 80% of medium- and large-sized poultry and livestock farms can be found in densely populated areas along China's east coast, and around major cities like Beijing and Shanghai. Breeding farms with an annual capacity exceeding 2000 broilers, accounted for circa 74% of China's broiler meat production (Feng, 2006; Wang, 2006). In addition, about 59.5% of total domestic egg production was supplied by farms with over 500 layers, an increase of 8.2% over 2000 (Wang, 2006). The outbreak of Avian Influenza (AI) on small backyard farms, is leading to a rapid transformation of China's production structure with the establishment of larger-sized commercial farms and integrated farm/processing plants with more effective bio-safety control measure.

Key producing provinces

China continues to be the overall dominant egg and poultry producer in the world. Ranked number one in egg & poultry production stands Shandong province with its output of 4.3 million tons and 2.2 million tons respectively (China Agricultural Development Report, 2005). The country's leading poultry province has over 12.000 small-scale poultry farms that represent 70% of all farms. Yet, large meat processing companies that have integrated the whole feed production-to-meat sales process dominate the industry (Shi, 2006).

Table 4: Top 10 poultry & egg producing provinces in 2004 (10.000 tons)

Region	Output of poultry
Shandong	223.5
Guangdong	109.6
Jiangsu	98.8
Liaoning	95.6
Hebei	92.5
Jilin	87.9
Henan	79.6
Anhui	72.4
Sichuan	64.4
Hunan	58.9

Region	Output of eggs
Shandong	432.9
Hebei	432.9
Henan	347.4
Liaoning	192.4
Jiangsu	175.4
Sichuan	145.2
Anhui	120.0
Hubei	118.1
Heilongjiang	98.3
Jilin	95.0

Source: China Agricultural Development Report (2005)

The 6 largest egg producing provinces -Hebei, Shandong, Henan, Liaoning, Jiangsu and Sichuan- account for nearly 65% of China's total egg production. An estimated 80% of total poultry egg production consists of chicken eggs (Bean and Zhang, 2005).

It has been reported that many commercial chicken egg firms are shifting their production base towards key grain feed production areas like the Northeast and North China. Layer cultivation in South and East China has been shrinking due to the higher cost of feed grain and soy meals. In addition, an estimated 90% of large commercial layer companies in Beijing and Shanghai have abandoned production due to rising labor costs and strict environment protection regulations. Other non-feed grain areas like Central-West China have limited production. As a result, it is expected that increased shipments of fresh eggs from the North to the South will take place (Bean and Zhang, 2005).

- Map of China -

Chapter 3 Poultry Slaughtering/Processing

Liberalization of the livestock market has led to higher levels of poultry production, but a negative side-effect for the Chinese government has been the rise of individual butchers whom dominate the slaughtering sector with a share of more than 80%. Individuals are permitted to operate a slaughtering household if they accept epidemic prevention and health standards issued by the government, but many households attempt to evade quarantine and inspection fees. Therefore, the large number of slaughtering households combined with a lax implementation of regulations has led to a significant amount of contaminated meat which finds it way to the market through illegal slaughtering (Lin and Jarratt, 1998; Pan and Kinsey, 2002; Brown and Waldron, 2003). This fragmented, decentralized, small-scale setting is seen as the main constraint for the development of China's poultry industry.

During the World Meat Congress 2006, Dr Zhou Guangzhong, professor and vice president of Nanjing Agricultural University and chairman of the Chinese Society of Animal Products Processing, told his audience that he expects large and medium meat processors will have a 70% of the market by 2020 supplying mainly large supermarkets (www.meatprocess.com, 2006).

Distribution, logistics and transportation

China's rapid economic growth has placed increased pressure on the country's logistics and distribution structures. While the Chinese government has made efforts to upgrade its existing transportation infrastructure over the past decade, its logistics and distributions sector remains fragmented. According to Wu (2003), the country's logistics system is underdeveloped due to three main reasons. First of all, the Chinese landscape is characterized by large mountain areas, altitude differences, desert sand, and some regions suffer from seasonal flooding. Next, China's transportation networks are heavily fragmented due to regulatory barriers that hinder consolidation. Local governments are known to protect its local transportation companies by raising barriers which includes license requirements, fees, and inspections. Few licenses have been granted for nationwide operations, while companies that have been given this privilege still run into protectionist measures set up by local government authorities. Lastly, the country's logistics capabilities are greatly restricted due to inferior equipment which is geared towards the movement of bulk commodities, and workers whom are often not well trained in handling goods.

Whereas shipment by rail would be a good option for moving non-perishable goods, transport of meat products and frozen foods by train is less suitable as it is too slow and unpredictable. For chilled processed meat, there are strict cold chain conditions in place which these products must adhere to; also there is a 300k maximum travel distance from production plant (Euromonitor International, 2006). Smaller manufacturers tend to focus on a regional market due to the inefficiency of transportation. Companies without their own distribution network, find their choice of distributors is limited, as the wholesale and import-export sector is still heavily controlled by the Chinese government, which makes price negotiations difficult. There is a large contrast with large companies, as farmers breeding merely a handful of chickens are still seen transporting their chicken by bicycle.

- Chicken transport per bicycle -

Table 5: Top companies in China's poultry industry in 2004

Top Poultry processing companies	Turnover (million RMB)
Zhucheng Foreign Trade Co., Ltd	613.284
Jilin Deda Co., Ltd	337.817
Henan Huaying Poultry Group	257.504
Shandong Fengxiang Co., Ltd (Fambros)	248.479
Inner Mongolia Saifeiya Group	205.000
Shandong Gaotang Lanshan Group	181.832
Henan Zhongpin Food Co., Ltd	178.347
Qingdao Jiulian Group	175.000
Shandong Liuhe Group Co., Ltd	172.632
Henan Dayong Industrial Co., Ltd	153.717

Source: China Meat Association (2005)

"Dragon head"-concept

Pan and Kinsey (2002) already pointed out that both vertical integration and contracting were expected to be seen more in the years ahead, in particular contracting since backyard production will continue to exist. A system of contractual relationships ensures a supply of poultry to processing plants, decreases the volatility in raw material cost, and rewards the risks shared by processors and producers over the long term. Through contracts, processors are able to obtain larger outputs while economizing on capital and labor, and producers can reduce risks and obtain financial support. Sanitary standards can also be improved, since the delivery of quality products is important for processors to establish and sustain market image.

A system of contracting already exists since the mid 1990s, when Chinese agriculture officials started to promote the idea of "dragon head" companies. This "dragon head" concept emphasizes links between farmers and processing- and marketing companies to strengthen farmers' relationships with the market and to raise farm incomes. Leading companies are selected or established by local government authorities to contract with hundreds of individual farmers in their region, and procure, process, and market agricultural products from farmers. Under the contract, farmers provide labor and land, while the dragon head company provides seed, operating loans, fertilizer, and technical expertise. Within this system, farmers have less control over the marketing process, but they are also less vulnerable to market risk as compared to conducting business through traditional open markets.

Though the "dragon head"-concept resembles contract production as seen in U.S. agriculture, it must be said that government authorities play an active role within the Chinese system. The ownership structure of these dragon head companies is unclear, but most of them seem to be spin-offs of local grain bureaus and other government marketing entities. Whereas some are privately owned, others are joint ventures with foreign companies. The government's role may include ownership, direction, or provision of land, facilities, credit, or subsidies. Management decisions seem to reflect government plans to develop particular sectors, sometimes resulting in overcapacity. Thus, while China's food sector appears to be privatized, the government still has much influence (http://www.ers.usda.gov/, 2006).

Contact details of leading companies

(Alphabetically listed)

Company : Dayong Industrial Co., Ltd (Henan)
Address : 107 Guodao East, Qixianside Bridge, Hebi City, Henan 456761
Telephone : +86-392-7666777
Fax : +86-392-7667635
Website : www.dayong.com.cn

Main business: Poultry raising, live pig slaughtering, meat product processing.

Company : Deda (Jilin)
Address : 1149 Jinghagong Rd, Gongli Centre, Dehui city, Jilin province
Telephone : +86-431-87201001
Fax : +86-431-7222983
Website : www.deda.com.cn

Main business: Meat chicken raising, slaughtering & processing, meat products.

山东凤祥集团 Fambros Group

Company : Fengxiang Co., Ltd (Fambros)
Address : Shandong Yanggu Fengxiang Jituan Pinpai Guanli Centre
Telephone : +86-635-6778890
Fax : +86-635-6779261
Website : www.fengxiang.com

Main business: Meat chicken raising & processing, poultry products.

Company : Gaotang Lanshan Group (Shandong)
Address : Lanshan Foodstuff Industrial Park (No 2, Binhu Rd) Gaotang Country 252800, Shandong
Telephone : +86-635-3962188
Fax : +86-635-3962111
Website : www.lanshan.com.cn

Main business: Poultry slaughtering and meat processing.

Company : Huaying Poultry Group (Henan)
Address : Xinyang, Henan province
Telephone : +86-376-3119977
Fax : +86-376-3931030
Website : www.hua-ying.com

Main business: Duck raising, slaughtering & processing, poultry products.

青岛九联集团股份有限公司 QINGDAO NINE-ALLIANCE GROUP CO., LTD

Company : Jiulian Alliance Group (Qingdao)
Address : Niuxibu town, Laixi, Qingdao, Shandong
Telephone : +86-532-8438662
Fax : +86-532-8461114
Website : www.qdjiulian.com

Main business: Meat chicken raising & processing, cooked food products.

Company : Liuhe Group Co., Ltd (Shandong)
Address : 3/F Nonghaiyuan Business Building, 362 Eastern Hongkong Rd, Qingdao 266061
Telephone : +86-532-88895566
Fax : +86-532-80993600
Website : www.liuhe.com

Main business: Processing of frozen chicken and duck.

Company : **Saifeiya Group (Inner Mongolia)**
Address : Xizi Town, Ningcheng County, Chifeng city, Inner Mongolia
Telephone : +86-476-4909789
Fax : +86-476-4900168
Website : www.saifeiya.com

Main business: Meat duck raising, slaughtering & processing, poultry products.

Company : **Zhongpin (Henan)**
Address : 21 Changshe Rd, Changge district, Henan Province
Telephone : +86-374-622316
Fax : +86-374-6227818
Website : www.zhongpin.com

Main business: Poultry processing, canned meat, quick frozen food.

Company : **Zhucheng Foreign Trade Co., Ltd**
Address : East Mizhou Rd, Zhucheng City, Shandong
Telephone : +86-536-6326566
Fax : +86-536-6058188
Website : --------------------

Main business: Meat chicken raising, slaughtering & processing, meat products.

Chapter 4 Retail Channels

The transformation of China's food retail sector is continuing at a rapid pace. The pace of change varies widely, with Shanghai, Beijing and Guangzhou leading the way. There are several retail channels in the supply chain through which meat products are delivered to consumers. Dr Zhou (2006) has categorized three types of retail outlets: wet markets, traditional markets, and supermarkets / hypermarkets.

Wet Markets

A wet market can be defined as a place where local farmers supply live poultry or freshly slaughtered meat products direct from the field to the end consumer. These outlets remain the most preferred avenue outlets to purchase fresh meat. Though wet markets are on the decline in China's retail market, these retail channels continue to dominate smaller cities, and remain a presence even in the largest cities. Nevertheless, wet markets are unlikely to disappear entirely, as these small outlets remain the preferred venue for low-cost fresh vegetables and meat. Freshness and price are the chief concerns for Chinese consumers, to the extent that they often prefer to buy poultry and fish live, to be butchered on the spot (Bean, 2003).

A government document reveals that the Chinese government is considering the phased out removal of live poultry markets in mostly urban areas, so to prevent further spread of Avian Influenza. This document, which has been released by the State Council, recommends a ban on new live poultry markets and suggests that present markets should be expelled from large and medium-sized cities in urban areas. While live poultry markets are frequently visited by local consumers due to their preference for fresh meat, these places are now regarded as high-risk areas for spreading diseases like bird flu (www.worldpoultry.net, 2006).

Traditional markets

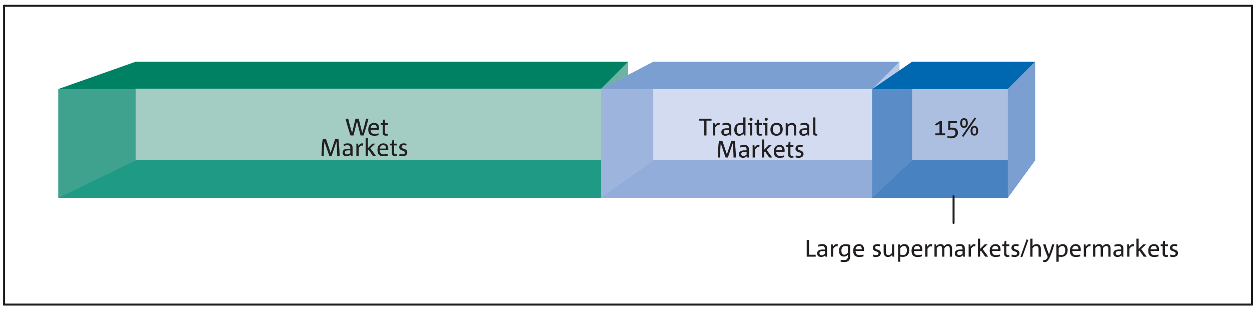
Traditional markets can be found in rural areas and small townships, out of reach of supermarkets and chain stores. Whereas afore mentioned wet markets offer fresh meat and half processed meat products, vendors from traditional markets only sell fresh meat products.

Large Supermarkets/Hypermarkets

Studies have shown that supermarkets, hypermarkets, and convenience stores are spreading rapidly beyond the top 60 cities of China. Besides the major coastal cities, supermarkets are now gaining increasing foothold in the top, second tier, and third tier cities all around China (Reardon et al, 2003; Bean, 2003).

More and more consumers tend to favor a visit to the supermarket since these retail outlets offer a cleaner, more comfortable and convenient shopping environment. Quality is generally better and more standardized. In the case of packaged foods, shoppers do not have to haggle over prices, and they can trust product measures and units. In addition, supermarkets have a wider array of products. While

Figure C: Retail outlets



Source: Zhou (2006)

Table 6: Consumption Broiler 1.000 Metric Tons **(Ready to Cook Equivalent)**

Consumption	2001	2002	2003	2004	2005(p)	2006(f)
United States	11,558	12,270	12,540	13,080	13,455	13,878
China, People's Republic of	**9,237**	**9,556**	**9,963**	**9,931**	**10,150**	**10,325**
European Union 2)	7,359	7,417	7,312	7,280	7,370	7,270
Brazil	5,341	5,873	5,742	5,992	6,622	7,135
Mexico	2,311	2,424	2,627	2,713	2,883	3,029
India	1,250	1,400	1,496	1,648	1,900	2,199
Russian Federation	1,588	1,697	1,680	1,675	1,949	2,095
Japan	1,797	1,830	1,841	1,713	1,877	1,905
Argentina	881	618	719	845	793	1,034
South Africa	786	830	928	959	997	1,026
Canada	924	925	933	972	984	995
Others 1)	7,822	7,995	7,099	7,367	7,746	8.021
Total	50,854	52,835	52,880	54,175	56,906	58,912

Source: USDA FAS Livestock and Poultry: World Markets and Trade (2006)
Notes: 1) From 2003 to 2005, Columbia and Egypt are dropped from the database. 2) EU data includes 25 member states for all years.
(p) preliminary; (f) forecast

supermarkets demonstrate a clear price advantage for a broad line of products, the prices of fresh products tend to be higher. Furthermore, many Chinese supermarkets have been handicapped by a poorly managed fresh products sections. Though packaged food might be successful, fresh meat has not been an important proportion of sales for many supermarkets (Pan and Kinsey, 2002).

Research shows that many supermarkets have two to three suppliers of meat products, which are mostly integrated commercial-type producers that can assure both product quality and consistency in supply (Fabiosa et al, 2005).

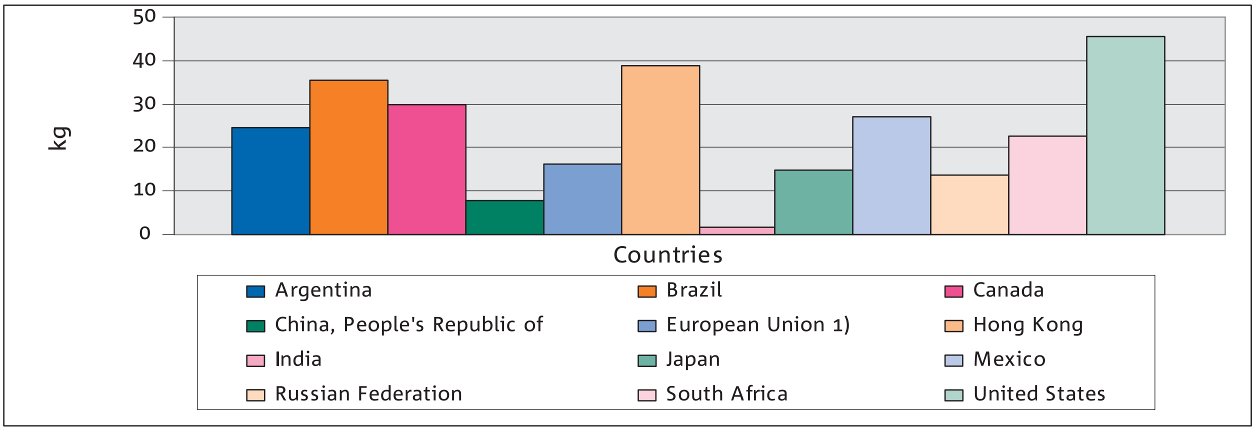
Foreign-invested hypermarkets include Carrefour, Makro, Metro and Wal-Mart, whereas Chinese counterparts include Hualian, Nonggongshang and Wu Mei. As mentioned above, local government authorities have been aggressive in relocating, merging and shutting down wet markets, which has helped to drive customers toward the fast-growing supermarket and hypermarket sector (Bean, 2003). Dr Zhou (2006) expects large supermarkets to increase their market share from 15% to 40%.

Level of Broiler Consumption

Nowadays, Chinese consumers can choose from a variety of meat, but the dominant meat remains pork. While market data from USDA FAS shows that the country's overall pork consumption has been growing each year, its proportion of pork in the meat consumption basket is slowly declining in favor other kinds of meat. Table 6 shows that China is a major consumer of broiler meat; the country ranks second when it comes to total world broiler consumption. Nevertheless per capita consumption by Chinese consumers remains relatively low, with merely 7.8kg on average consumed in 2005 (USDA FAS, 2006). It should be noted that this data does not show the different consumption patterns between urban and rural consumers. Per capita consumption of meat is higher in urban areas where income levels are higher than rural areas. To illustrate this example, per capita consumption of poultry in rural areas was estimated at 3.1kg in 2004, whereas urban areas showed a per capita consumption level of 8.4kg (China Agricultural Development Report, 2005).

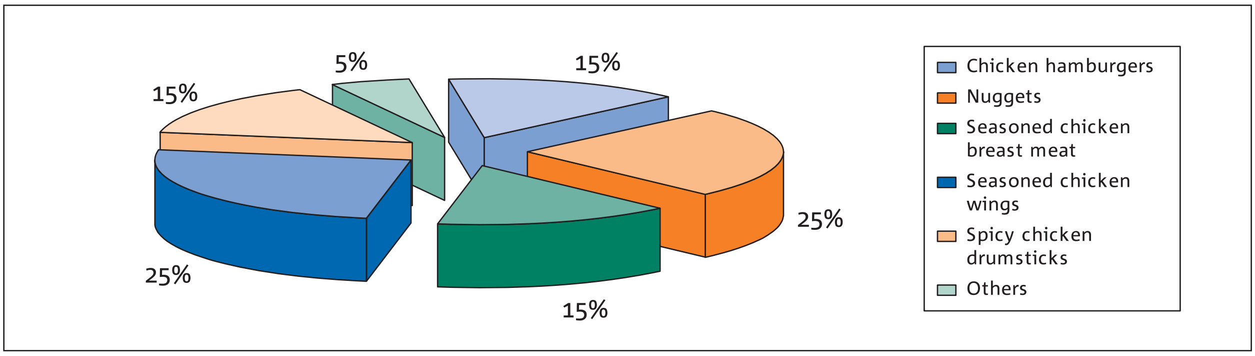
China's overall broiler consumption has been growing each year, except for 2004 when AI broke out. However, despite the fact that some consumers have shifted from poultry products to red meat due to AI, sales of well-known broiler brands at supermarkets remained stable and continued (Bean and Zhang, 2006). Nowadays, local consumers are purchasing more branded food products for these products are believed to be safe, or at least less likely to be contaminated with diseases.

Figure D: Comparison per capita consumption of broiler meat in 2005



Source: USDA FAS Livestock and Poultry: World Markets and Trade (2006)

Figure E: Frozen processed poultry products



Source: Euromonitor International (2006)

Processed poultry products

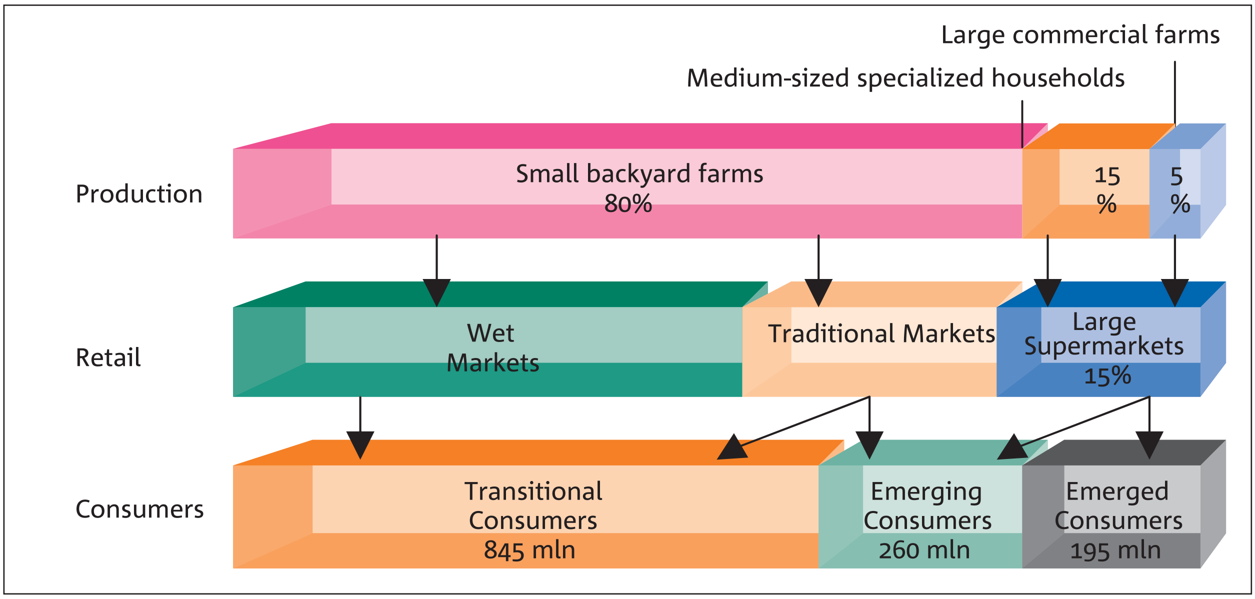
Changing lifestyles have led consumers demand for more convenience in their food products. To meet these consumer needs, domestic poultry processing firms have begun to offer a variety of pre-cooked chicken food products which take less time to prepare. While processed poultry meat is a growing trend within China's poultry industry, the country's share of processed poultry meat is far below that of developed countries with only an estimated 5% of total; and further processed poultry meat accounting for less than 1% (Van der Sluis, 2005; Wang 2006). This relatively low proportion of processed poultry products could mean opportunities for those companies that cater to the needs of this growing market. Figure E shows which products were most popular in the frozen processed poultry sector in 2005.

Research shows that Chinese consumers show a strong preference for chicken wings, drumsticks, nuggets, leg quarters, but also paws, gizzards and broiler necks are very popular. Large volumes of drumsticks and middle-part wings are sold through the expanding fast food sector, whereas wingtips are mostly smoked or stewed and sold at restaurants as cold dishes. Spent layer hens bought directly from wet markets and cooked at home for family consumption accounts for an estimated 20%. The remaining 80% is cooked and distributed through meat stores, supermarkets and restaurants for low-end consumers. Spent breeder hens are mostly purchased by families alive and then slaughtered on the spot at wet markets (Bean, 2005).

Type of Consumers

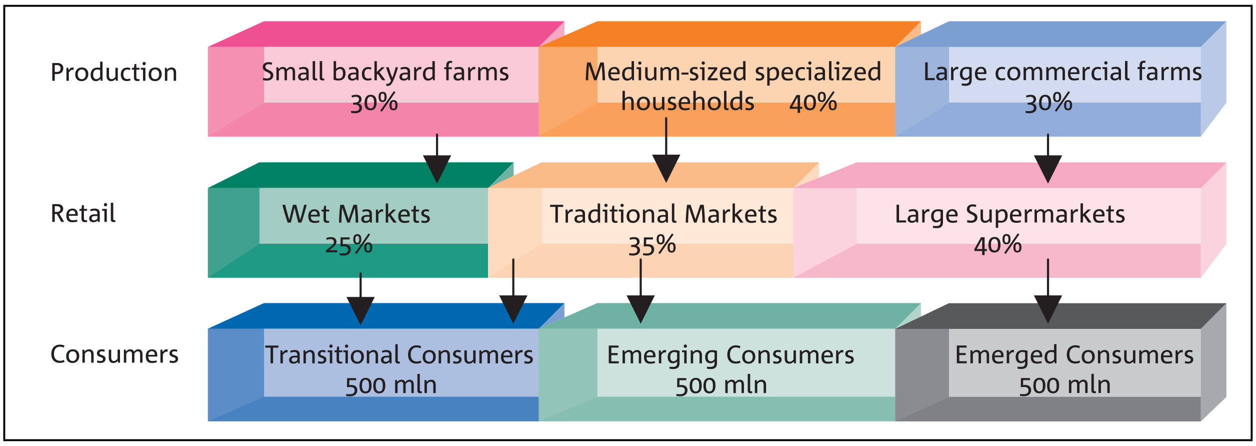
Dr Zhou (2006) identified three basic groups of consumers in China. Firstly, there are "transitional consumers" whom number over 800 million. These consumers live in rural areas, and while they constitute around 70% of China's population, they account for just 30% of total meat consumption. This can be explained by the fact that the income level of people living in rural areas is about a third of those in urban areas, and consumption of meat by rural people is half of that by people in urban areas. Transitional consumers get their meat mainly from wet markets. The second group consists of roughly 200 million "emerging consumers", whom buy their meat products in traditional markets but are gradually moving towards the supermarkets. The last group is made up of 195 million "emerged consumers". These upper class and white collar consumers look for brand and premium meat products, and get their meat from supermarket outlets (Pan and Kinsey, 2002). They are less-price sensitive and more health conscious. Dr Zhou expects the last group to have grown considerably by 2020.

Figure F: Industry Structure - today



Source: Zhou (2006)

Figure G: Forecast industry structure by 2020



Source: Zhou (2006)

Importance of Branding

As local consumers become more affluent, leading players in the Chinese meat industry have become more brand-oriented. A brand can be seen as *"a seller's promise to deliver a specific set of features, benefits, and services consistently to the buyers"* (Kotler, 2000). Today, major poultry producers have started aim to develop a set of positive associations for their brand(s) which should result in higher brand loyalty. They invest in consumer promotions like TV commercials, sample trials in stores and price discounts to stimulate demand (Euromonitor International, 2006). Nowadays, local consumers are seen purchasing more branded food products since these products are believed to be safe, or at least less likely to be contaminated with diseases.

The figure above shows how the poultry industry could look like by 2020, with backyard production decreased considerably in favor of medium-sized specialized households and large commercial farms. On retail level, the number of wet markets is expected to drop a lot, replaced by supermarkets and hypermarkets. The rise of emerging consumers brings a whole set of new opportunities for the pre-packaged food industry.

Poultry by-products

By-products are often considered to be just waste and an added expense when they have to be disposed, but trade in poultry offal and by-products can be a profitable business in China. Demand for variety meats brings market opportunities for foreign suppliers as by-products are popular among local consumers. Table 7 gives an indication of prices with regard to frozen duck products.

Table 7: Prizes of frozen duck products

Product	Price (in RMB)
Duck oil	1,75/kg
Duck bones	1,80/kg
Duck liver	2,80/kg
Duck heart	3,00/kg
Duck intestines	5,40/kg
Duck tongue	7,50/kg
Duck middle & end wing	9,00/kg
Duck head	10,50/kg
Duck leg	11,00/kg
Duck claw	13,20/kg
Duck gizzard	18,00/kg

Source: www.saifeiya.com (2006)

Chapter 5 Trade Relations

At the end of 2001, the Chinese government pledged to lower its import tariffs on poultry meat from 20% to 12%, thereby allowing foreign products greater access to its domestic market. However, AI outbreaks in 2004 had a large impact on the country's imports and exports of broiler and eggs. China's broiler imports and exports dropped by 51.4% and 35.6% respectively (www.fapri.com, 2005). At present, trade is slowly recovering and increased imports of breeding chickens during late 2005, reflects the Chinese broiler industry's efforts to boost first quarter production in 2006 (Bean and Zhang, 2006). Table 7 shows the level of broiler imports by different countries over several years.

The trade data above does not include chicken paws. China imports a significant quantity of chicken paws because the country's slow production of paws is unable to meet large domestic consumer demand. For this reason, the country imports enormous amounts of chicken paws that account for nearly half of China's total poultry imports. It should also be mentioned that a considerable quantity of chicken paw comes from Hong Kong's re-exports to China. In 2005, a total amount of 61,484 metric tons of chicken paws was brought from Hong Kong to China. Most of these paws are originally from the United States and Brazil. It is expected that this pattern will continue in the near future as long as demand surpasses supply. Imports of fresh egg in 2006 are insignificant since China is self reliant on poultry eggs (Bean and Zhang, 2006).

Table 8: China's chicken paw imports in metric tons

China's chicken paw imports	Year 2005
United States	89,998
Brazil	55,331
Argentina	20,883
Chile	1,318
Canada	47
Thailand	23
Total	167,600

Source: USDA FAS Poultry and Products, Semi-Annual Report (2006)

China's broiler and egg export

While nowadays, the export of Chinese farm products is less hampered by tariffs, the country's failure to meet sanitary and phytosanitary standards (SPS) is clearly obstructing growth of its agricultural trade. Chinese officials report that countries increasingly turn to non-tariff barriers and technical barriers to trade, in order to restrict China's agricultural imports, which thus leads to trade fractions and disputes.

The country's large number of small backyard farmers has considerable influence on its trade in broiler and egg export as Avian Influenza has been reported to have started in these small farms. For fear of AI and other diseases, many countries have restricted the imports of livestock products from China. In addition, these small backyard farmers often use chemical substances in their breeding methods, with amounts generally exceeding the criteria set by importing countries. China's frozen meat products are often found to fall below the standards of import market regulations. Since drug levels are more difficult to detect in cooked meat products, exports for theses products have generally performed better (Feng and Van der Sluis, 2002; Shi, 2006).

Table 9: Broiler imports in 1.000 metric tons (Ready to Cook Equivalent)

Imports 1)	2001	2002	2003	2004	2005(p)	2006(f)
Russian Federation	1,281	1,208	1,081	1,016	1,190	1,240
Japan	710	744	695	582	748	735
Saudi Arabia	399	391	452	429	480	490
European Union 3)	202	500	588	466	485	450
Mexico	245	267	338	326	374	395
China, People's Republic of	448	436	453	174	281	350
Hong Kong	183	164	154	244	222	226
South Africa	64	80	125	154	175	190
United Arab Emirates	125	133	154	158	160	160
Kuwait	63	57	81	119	130	138
United States	6	6	6	12	15	16
Others 2)	423	445	474	687	634	570
Total	4,149	4,431	4,601	4,367	4,894	4,960

Source: USDA FAS Livestock and Poultry: World Markets and Trade (2006)
Notes: 1) Chicken feet (paws) are not included in trade data. 2) From 2003 to 2005, Columbia and Egypt are dropped from the database. 3) EU data includes 25 member states for all years
(p) preliminary; (f) forecast

Table 10: Broiler exports in 1.000 metric tons **(Ready to Cook Equivalent)**

Exports 1)	2001	2002	2003	2004	2005(p)	2006(f)
Brazil	1,226	1,577	1,903	2,416	2,739	2,900
United States	2,520	2,180	2,232	2,170	2,335	2,404
European Union 3)	726	871	788	813	740	720
China, People's Republic of	**489**	**438**	**388**	**241**	**331**	**375**
Thailand	392	427	485	200	240	300
Argentina	13	23	39	66	110	150
Canada	69	84	76	74	100	105
Kuwait	0	1	3	4	20	26
United Arab Emirates	20	37	40	15	20	20
Australia	19	15	15	13	14	14
Saudi Arabia	20	20	20	10	10	10
Others 2)	33	28	33	21	21	22
Total	**5,527**	**5,701**	**6,022**	**6,043**	**6,680**	**7,046**

Source: USDA FAS Livestock and Poultry: World Markets and Trade (2006)
Notes: 1) Chicken feet (paws) are not included in trade data. 2) From 2003 to 2005, Columbia and Egypt are dropped from the database. 3) EU data includes 25 member states for all years. (p) preliminary; (f) forecast.

In comparison, the Netherlands exported a total of 8.2 billion consumption egg and egg products (expressed in number of eggs in their shells) in 2005. Broiler export was 12,800 tons live weight and 9,500 tons slaughter weight, whereas export of broiler meat was 601,900 tons of which 50,700 tons consisted of meat products (PVE, 2006). Research institute LEI (2006) reported that last year's Dutch agricultural exports exceeded 50 billion euros.

China most important broiler export destinations are Japan and Hong Kong. In 2005, export to these two markets accounted for 81% of total export volume and was valued at $755 million. The main focus of China's export lies in cooked poultry as most overseas markets have banned China's raw products. China's fresh egg exports account for about 90% of total exports. Hong Kong and Macao are the key markets; with Hong Kong alone accounting for around 81% of China's total exports (Bean and Zhang, 2006).

Trade Barriers with the Netherlands

The Chinese government has currently issued certain restrictions on the import of Dutch agricultural products of animal origin. For fear of all sorts of diseases, the country has banned animal-related products from the Netherlands. The Chinese government stated that these measures were a necessary means to protect public's health. At present, Dutch officials are still negotiating with Chinese authorities on the resumption of the importation of animal related products. All necessary formalities will take time, as Chinese officials insist on implementing their own risk assessments.

A report from LEI (2006) shows that poultry exports from the Netherlands to China was valued at 42.000 euro in 2004 and 414.000 euro in 2005.

For more information about the present situation, please contact the LNV-office at the Embassy of the Kingdom of the Netherlands in P.R. China (www.nlpekagr.com), or the VIP of Product Boards for Livestock, Meat and Eggs (PVE) (bedrijfsnet.pve.agro.nl/).

Chapter 6 Food Safety

Higher living standards in all spheres of life combined with knowledge of nutrition, have led consumers to demand for more reliability, consistency, and accountability of food products. It is believed that future competition in the Chinese poultry industry will depend more on meeting quality and safety standards than on quantity and price.

While the Chinese government is attaching greater importance to food safety, food poison incidents still occur regularly in China. A quality inspection control showed that 10% of Chinese meat fails quality inspection. Most of this inferior meat in China contains too much water or fails freshness standards (www.english.people.com.cn, 2005). It appears that many Chinese enterprises, especially small private ones, are too eager to make quick and big profits at the expense of quality. This leads to situations where additives exceed national standard and unlicensed slaughtering takes place. Nevertheless, there is a growing awareness among Chinese people that food safety starts at animal production farms. Food safety can only be guaranteed if every step in the production chain is carefully monitored and controlled. The Chinese government has implemented several laws to improve present situation. Recently, there is a push from the industry that supports more pro-active government action. Leading meat producers and major retailers find it important that government authorities take food safety measures which affect the whole food supply chain. A "pollution-free food" action plan has been implemented during the 10th Five-Year Plan period which steadily improved the quality of animal products and feed (www.worldpoultry.net, 2006). Newly established food safety regulations require farmers to alter their way of thinking and established business practices. Farmers need to realize that food safety begins on their farms, or risk loosing their business.

Monitoring Difficulties

A major problem lies in the fact that China sees a large number of small farmers whom constitute around 80% of the country's total farmers. The country has a system of socialist public land ownership which means that "no units or individual may encroach on or transfer land, through buying, selling or other illegal means" (www.chinadaily.com.cn, 2006). In other words, collective land ownership makes it difficult for farmers to increase farm size and invest in mechanized equipment. The large number of small farmers presents a major obstacle in organizing, monitoring, and standardizing the quality of all products. Their obsolete production methods, lack of incentive to comply with standards, and limited access to SPS information, equipment, and expertise, explains the frequent misuse of chemical fertilizers, pesticides, and antibiotics.

Therefore, despite all new regulations, it remains a problem to monitor the use of chemical and seed that adhere to set standards, ensure sanitation in slaughter of livestock, and certify non-genetically modified food products. Besides the illegal feeding of chemicals, meat could get contaminated during various links of the chain, for example, during the (illegal) slaughtering, or during transportation to retail outlets, sometimes meat is even stored outside without proper cold storage. This shows that government authorities cannot possibly control and monitor every link in the food supply chain.

The impact of Avian Influenza

The outbreak of AI had a large impact on the country's poultry industry, with domestic wholesale prices for live chickens and broiler meat falling about 15% and 10% respectively in the last quarter of 2005 (Bean and Zhang, 2006). The World Health Organization (2006) reported that since the end of 2003, 21 people have contracted AI, of which 14 resulted in deaths. The Chinese government is aware that most outbreaks occurred at small farms with humans living in close proximity with their birds. The fragmented industry structure has caused for many difficulties, therefore policies have been developed to push for more intensification in the poultry industry. The establishment of more large-sized commercial enterprises and integrated farm/processing plants should smoothen the implementation of a unified approach for vaccination, disease prevention and management. Also, large commercial companies have more resources to deal with all sorts of waste material without damaging the environment.

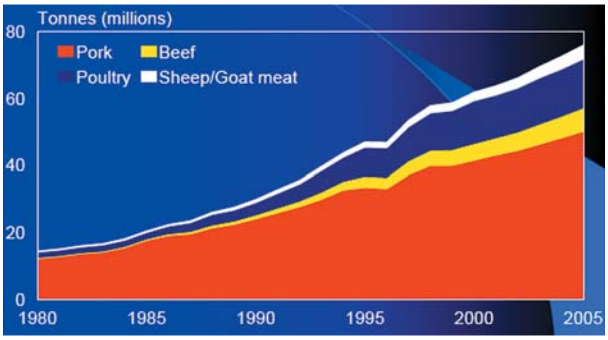
The country's transition from traditional to modern agriculture includes programs to educate farmers and the establishment of special farms that that demonstrate correct and safe production practices. The raising of broilers at commercial production units has been standardized with strict regulations to ensure the health and safety of birds. Upon entering a farm, every person (and object) has to be disinfected and admittance to production facilities is only allowed after a thorough disinfecting shower and a change of clothes (Van der Sluis, 2005). The Chinese government has implemented several measures to revive its poultry industry since the outbreak of AI. For instance, farmers now receive compensation for culled birds, and processing plants are temporarily exempted from tax payment on imported poultry products. Last year, the industry benefited from increased domestic grain and feed production, which in combination with a decline in feed exports, led to lower feed prices, and thus resulted in higher profit margins for producers.

Chapter 7 Opportunities & Trends

Poultry production in China has witnessed a large increase over the past decade, and the share of poultry products in total meat production is expanding at a faster rate than other meat products. As the China's central government pushes forward the trend towards intensification, the number of large-scale poultry farms will increase in the forthcoming years and backyard farming will likely decrease. The rise of medium-scale and large chicken factory farms presents opportunities to international companies that concentrate on improving the existing production conditions, ranging from better feed, breeder housing, to advanced hatching equipment. Dutch expertise on broiler breeding techniques and training on management skills could have substantial added value for domestic poultry breeders.

The poultry industry is believed to see further consolidation in its domestic slaughtering and processing sector, with the number of large-scale commercial slaughterhouses growing and outdated slaughterhouses & processing plants being modernized. It is expected that demand for advanced slaughter equipment and quality assurance systems will therefore increase as well.

Figure H: Meat production in China



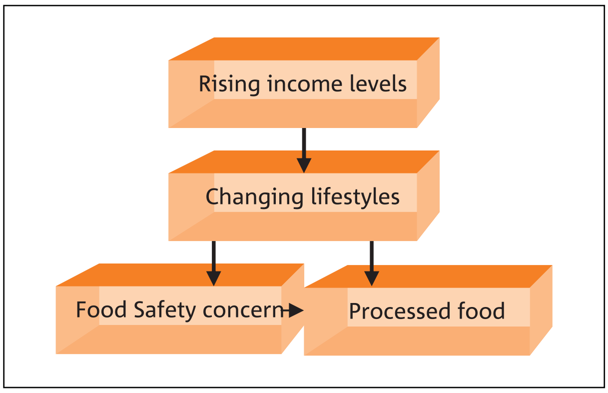
Source: Zhou (2006)

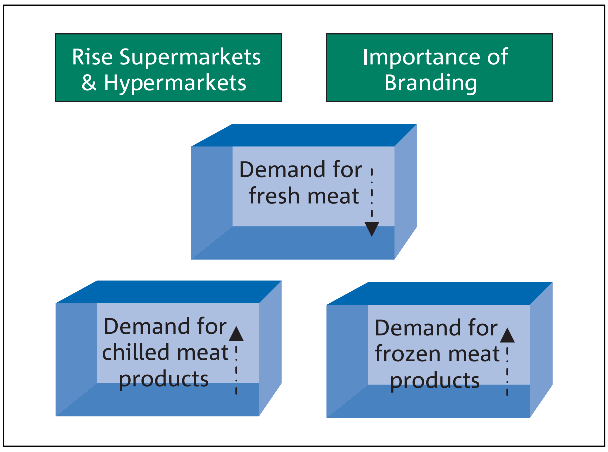
The figure above reflects China's meat production pattern, which follows the same line as the country's changing consumption pattern. While the production and consumption of pork still dominates, the proportion of poultry in particular shows more relative growth.

A factor that could limit future poultry production lies in the availability of feed as demand will likely surpass domestic supply due to the country's land scarcity. However, expectations are that poultry production and consumption will both keep on growing. Research shows that demand for poultry by-products like chicken paws has been exceeding domestic supply for a number of years, and expectations are that this will continue in the future. Considering the popularity of variety meat among local consumers and the large price differential in chicken paws and other by-products, Dutch export to China could prove to be profitable business. Furthermore, rising income levels in combination with changing life-styles and more concern for food safety, has also led to increased demand for processed food products in mostly urban areas. The processed chicken foods market, while still relatively under-developed, is expanding rapidly, and international firms could benefit from the growing demand for healthier and more convenient food products. The outbreak of Avian Influenza, combined with wide-spread fear of food poison incidents has fueled this trend. As supermarkets/hypermarkets penetrate into rural areas, and rising income levels will lead to increased sales of refrigerators, freezers, and microwaves, it is believed that demand for chilled and frozen meat products will increase in forthcoming years. Still, for now, inadequate distribution infrastructures restrict the penetration of frozen processed food in lesser-developed regions.

As the domestic poultry industry matures, environmental aspects and animal welfare will become more important. At present, many domestic farms lack facilities with regard to pollution prevention, which results in water pollution and stench from inadequate treated animal waste. It is expected that environmental protection authorities will increase their efforts to prevent and control animal waste, and regulation will likely become stricter in future years.

Figure I: Demand for processed food





The country's accession to the WTO has led the government to lower its tariffs on farm imports, but agricultural imports of animal origin are still periodically confronted with non-tariff barriers such as sanitary and veterinary measures and technical barriers to trade, which makes it difficult for foreign companies to expand their export business in China. These international trade barriers are often politically influenced and lifting bans requires considerable time and effort. For this reason, some international companies have suggested the idea that production in China through partnerships or acquisitions might be a more viable option to avoid these issues.

Doing business in China

Once the decision has been taken to conduct business on the Chinese market, a company needs to determine the right mode of entry. Several options are available through which a firm can enter the Chinese market, ranging from sales representatives to joint-ventures to a wholly owned foreign enterprise. For this reason, a company has to consider its level of commitment, risk control, and the profit potential attached to each alternative carefully. Firms need to take into account issues like unknown legislation, an unfamiliar tax system, lack of market transparency, and possible imitation of brands, goods and/or technology.

For this reason, foreign companies interested in doing business in China, could request their embassy or a consultancy firm for a local market scan that looks into the feasibility of their product(s). The results of this research may point out that the product needs some modifications to make it more appealing to local consumers. A positive outcome might then be followed by participation in a trade-mission. In this sense, cooperation with a Chinese firm might be a good alternative, as local companies possess more knowledge on conducting business in China, and often have established connections ('guanxi') that could prove very useful. An industry expert noted that foreign firms aiming to sell machinery equipment in China have a hard time competing on prices. These companies need to compete on quality, and it is essential to have local offices to provide after-sales support. International firms would be mistaken to believe they can earn money the easy way, for doing business in China definitely requires long-term vision. Large international companies aiming to penetrate the Chinese market are known to make no profit during their first years in China.

For more information on conducting business in China, please visit the website of the Kingdom of the Netherlands in the People's Republic of China (www.hollandinchina.org).

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