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Staff Paper

Background Information on the Chinese Fruit Sector

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Background Information on the Chinese Fruit Sector

by

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This paper is one part of a larger project to assess the supply chain for tart cherry products in China. Research is support by Cooperative Agreement E06MXSECDT from the USDA Foreign Agricultural Service Emerging Markets Program.

Background Information on the Chinese Fruit Sector

The People's Republic of China was established in 1949, ushering in an era of socialism and government centralization. Beginning in 1978, China's economy gradually transitioned from centralization to the transitional and somewhat more privatized society of today. Prior to 1978, government policies aimed at controlling food supplies and prices were common. Food rationing in 1953 was aimed at guaranteeing food for urban dwellers and included price administration by the government (Dong and Fuller, 2006). Agricultural productivity and the availability of food increased dramatically when laws that decentralized agricultural production were enacted in 1981. Food rationing and market centralization were abolished later in urban areas for non-staple food items, like meat, vegetables, and fruits, among others. All market centralization for food items in China was abolished in 1993. Privatization and market reforms throughout the late 1980s and into the 2000s made China the leading developing nation for Foreign Direct Investment (FDI) and positioned the country as an important global source of low cost labor in industries as diverse as food processing and electronics manufacturing (Yan, 2005). In 2004, approximately 28 percent of China's population was employed in the agricultural sector (Gao, 2007).

Geography of China

China is divided into 23 provinces (including Taiwan), five autonomous regions, four municipalities, and two Special Administrative Region (SAR) governments (which

are Hong Long and Macao (Figure 1). It is the fourth largest country in the world behind Russia, Canada, and the U.S., respectively, and the most populous nation in the world. China's population is concentrated in its coastal regions, which range in climate from tropical in the far south, to sub-arctic in the North (CIA Factbook, 2007). Deciduous fruit production in China is centered in the middle region of the country.

Figure 1. Provinces of China

Fruit and vegetable production

According to FAO statistics, China's share of world fruit and vegetable production increased from just over ten percent between 1979-1981 to almost 37 percent in 2004; by far, the biggest production share in the world (Figure 2). Comparing the same periods, U.S. share of world fruit and vegetable production dropped from over eight to five percent. Despite such a large disparity in share, the U.S. holds the third-highest share

of all country data reported by FAO. Other countries with a production share greater than 1.5 percent include: India (9.22), Brazil (3.16), Turkey (2.61), Italy (2.48), South Africa (2.12), Iran (1.93), Mexico (1.79), and Indonesia (1.62).

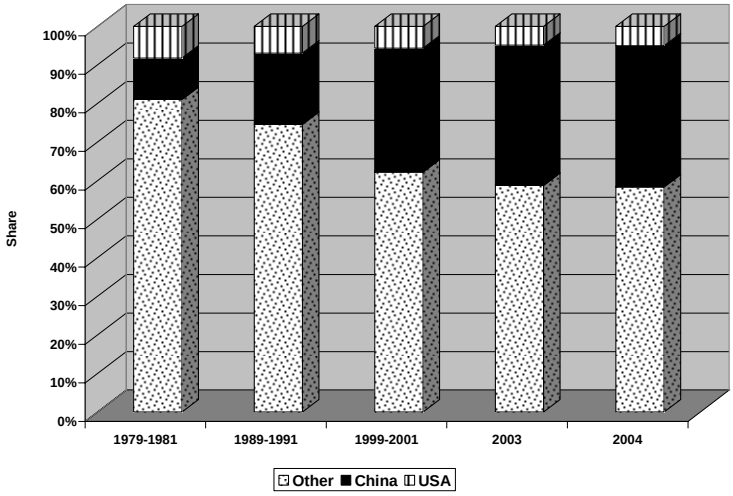

Figure 2. Share of world fruit and vegetable production
Source: FAO Stat http://faostat.fao.org.

Annual fruit production alone has increased rapidly since 1978, growing from 4.4 million tonnes in 1972 to 8.8 million tonnes in 2004, an increase of 18 times in only three decades (MOA, 2005). Apples are the leading fruit produced in terms of volume (Figure 3) with production growing rapidly, far ahead of that for other fruits. Other commonly produced deciduous fruits include pears, peaches, and grapes. In 2004, China, the world's largest apple producing country, had a production of 4.7 million tonnes, which accounted for 37 percent of world's total followed by the U.S., Poland, Islamic Republic of Iran, France, Italy and Turkey. Between 1990 and 2004, China’s share of world apple production grew from approximately 13 percent to almost 40 percent.

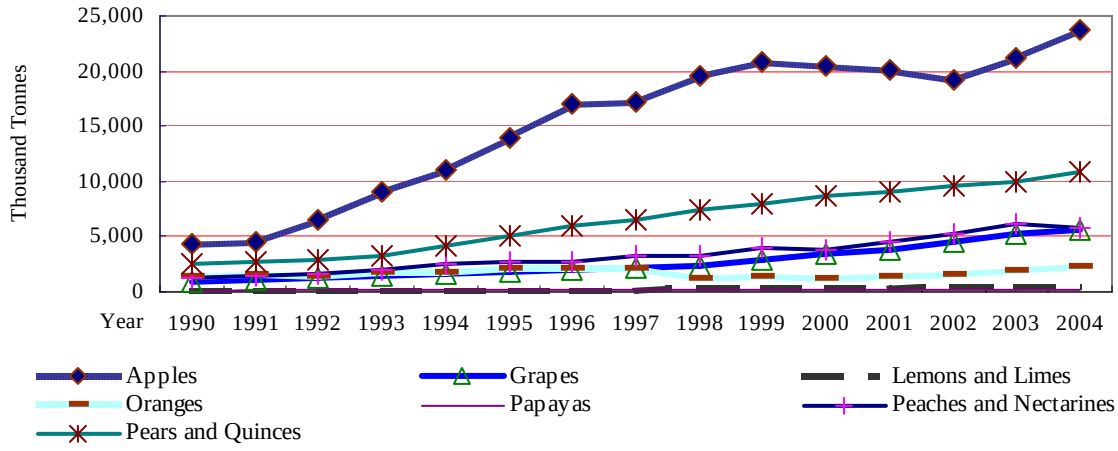

Figure 3 Main fruit production in China (1990-2004)
Source: Gao (2007)

The leading provinces for apple production in China are Shandong, Shaanxi, Henan, Hebei, and Shanxi, respectively. China, especially the loess plateau areas, is suitable for apple growing with over 700 varieties produced in that region. In terms of varieties, Fuji is the primary apple variety in China, with production area accounting for almost half of the total for China. Other common improved apple varieties include Delicious (Yuanshuai), Golden Deli (Jinguan), Jiaona jin, Gala. Currently, there are 25 (of 34) provinces growing apples in China. Most of them can be classified in the following four main production areas: Bo Hai Wan Production area (Liaoning, Shandong, Hebei province, Beijing and Tianjin, etc.); Northwest and Southwest highland area (Shanxi, Gansu, Shaanxi, Ningxia and Qinghai province, etc.); Yellow River and Qing mountain range area (Eastern Henan, southwestern Shandong, northern Jiangsu and northern Anhui Provinces); and Southwest cold highland area. Bo Hai Wan area is one of the biggest traditional apple production areas. This is relevant to the current project since regions suitable for apple production may also be capable of competitive cherry production.

At this time, cherries are produced only on a limited scale in China. European, or sweet, cherries were introduced to China in the late 19th century and common cultivars include; “Napolean”, “Black Tartarian”, and “Bing”. These cultivars are grown in Shandong and Liaoning province (Li, 2007). A native species with the common name “Chinese Cherry” or “Cambridge Cherry” (*Prunus pseudocerasus*) has been grown in China for more than 2000 years. This cultivar is fairly widespread throughout China and is grown in Anhui, Zhejiang, Zhengzhou, Shandong, and Shaanxi province (Li, 2007). While the FAO data does not distinguish between tart and sweet cherries, it does indicate an overall growth in aggregated cherry production (Figure 4). In 2005, the values reported for China were less than one-tenth the cherry area harvested in the U.S. and less than one-twentieth of the U.S. production volume.

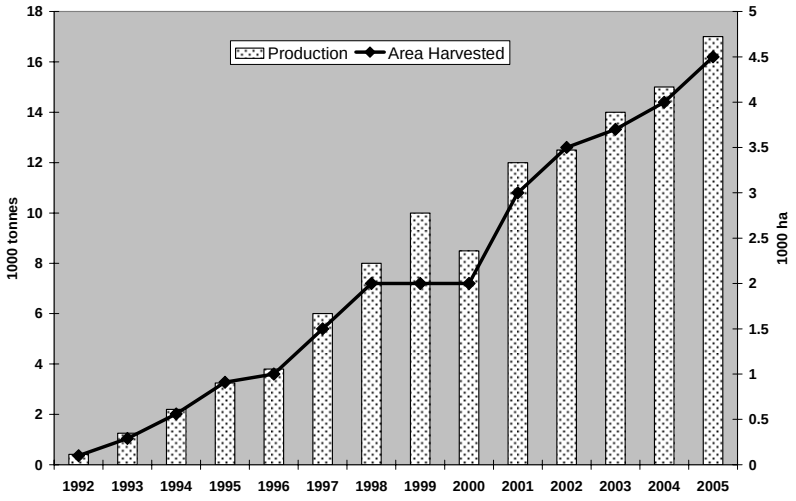

Figure 4. Cherry production and area harvested in China, 1992-2005
Source: FAO Stat http://faostat.fao.org.

Fruit and vegetable demand

Changing consumer demand for fruit and vegetable products in China has increased in recent years as a result of increasing consumer affluence, decreasing barriers to trade, and more market coordination rather than government controls (Gould and Villarreal, 2006). Economic reforms have contributed to tremendous growth in the economy, increasing populations in urban regions, and more disposable income especially concentrated among urban inhabitants of the growing Chinese middle class.

Since 1978, China's GDP has increased tenfold (CIA, 2007). Over the same period, China's consumption of luxury food items, like meat and eggs, as compared to staple items, has increased (Dong and Fuller, 2006). Demand for convenience items is also expanding in China, as is demand for food away from home as evidenced by the expansion of restaurants like McDonalds, Pizza Hut and Starbucks.

Since the early 1980s consumption of more expensive food items has expanded in China (Table 1). Another source reports consumption of poultry products has tripled since 1980, consumption of beef products has doubled, and consumption of fruit items and melons has increased by about 40 percent (Gould and Villaeal, 2006). In 1998, fruit purchases accounted for more than ten percent of total expenditures on food items and exceeded expenditures on oils and fats, eggs, and dairy (Table 2).

Table 1. Consumption of selected food items in China

Food item	1981 Consumption	2004 Consumption	Change
	----------kg	----------	--- % ---
Grains	145.40	78.18	-11
Meat	20.52	29.22	+42
Eggs	5.22	10.35	+98
Seafood	7.26	12.48	+72

Source: Dong and Fuller, 2006

Table 2. Budget share of major food items in China, 1998

Food Item	Budget Share
	--------%--------
Grains	16.3
Oil and fat	5.9
Eggs	5.1
Aquatic products	10.9
Vegetables	15.4
Fruits	10.7
Meats	31.1
Dairy	4.6
All Food	100.0

Source: Zhang and Wang, 2003

Fruit markets in China[1]

At present, Chinese fruit markets can be divided into at least two categories: traditional fruit markets and new emerging modern markets (World Bank, 2006). Traditional local fruit markets have been the most popular market format historically and even now still retain the largest market share. This market consists of millions of small-scale farmers, who normally have less than 0.5 hectares per person on average. A small portion of the fruit is consumed for home use but most is sold by fruit dealers or the farmers themselves. Sales are to local urban and rural markets, including restaurants,

[1] This section draws heavily from Gao, 2007.

street markets, or grocery stores. Farmers selling in this market have less consistency in pesticide use, lack market supply and demand information, and have relatively less technical and policy support from the government. Most of the fruit is sold through outlets that combine retail and wholesale functions. Traditional fruit markets are characterized by little food safety control, heterogeneous quality, absence of standardization, low prices for growers and consumers, very low value-added, and a lack of long-term relationships between buyers and sellers.

China's food retail markets have experienced remarkable transformation after the 1980s economic liberalization. One of the most evident examples of rapid development is the spread of supermarkets. Over the last decades, especially in the last five years, supermarkets have replaced most of the traditional wet and flea markets in urban centers. Supermarket sales are growing at a growing rate 30-40 percent per year. The supermarket revolution in China is spreading faster than anywhere else in the world (Reardon, et al, 2003). When compared with traditional fruit markets, modern domestic supermarkets are characterized by better food safely control, convenient shopping environment, emerging awareness of tighter supply-chain organization, sharing market information and trust between buyers and sellers, increased value-added, and existence of market leaders. Several reasons can explain rapid growth of the supermarket; first, rapid urbanization and the increase of women in the workforce. Like other market forms, supermarkets require a certain number of consumers to be profitable and the increasing urban (as well as the nearby rural) population crosses a threshold clientele level for the development of supermarket (Reardon, et al, 2003). In addition, employed women are seeking more

convenient shopping options with lower transaction costs to decrease opportunity cost of food preparation. A second contributing factor is the increase in household income. In the last two decades, the rural per capital income increased by six-fold and urban per capital income increased by 12-times (MOA, 2005). Generally speaking, urban residents have stronger purchasing power than people in rural areas; in 2004, the urban per capita income was three-times the rural per capita income (MOA, 2005). Third, increase in Foreign Direct Investment. Foreign-owned supermarket chains, i.e., Wal-Mart (USA), Carrefour (France), Metro (Germany), 7-Eleven (Japan) and some new emerging domestic supermarkets, like Hualian, Lianhua, Nong Gong Shang, Suguo, Huarun have dramatically changed the retail food sector in China. Government support is a further contributing factor, as policies have been actively targeted towards helping convert informal wet markets to supermarkets. For example, a program called "Nonggaizhao", which means changing farmers market into supermarket, was applied in 2003 in some big cities in China (Reardon, et al, 2003). In rural areas, like Sichuan and Zhejiang province, the government supports the development of small-scale "rural supermarket" by providing financial subsidies and management training. Finally, there are a number of other reasons like liberalization of retail and wholesale sectors, westernization of life styles, and an increasing proportion of young people in the population. These factors combine to shift food purchase from traditional fruit markets to new emerging supermarkets. Compared with the small local traditional fruit market, supermarkets attract consumers with a greater variety of food, higher food quality, convenience of one-stop shopping, and a better shopping environment.

However, the development of supermarket sales in the fruit sector, especially for fresh fruit, has not been as fast as other sectors in general. Not all the supermarkets in China sell fresh fruit. The fruit sector in supermarkets still has limited market share in terms of sales due to the difficulties of quality and safety control of fresh fruits and higher prices. Supermarkets are better able to handle processed foods and fresh products with a longer shelf-life, but they have major difficulties in handling fresh vegetables and fruits (World Bank, 2006). In addition, from the consumers' perspective, many shoppers still prefer to go to traditional wet markets for fruit due to cheaper prices and go to supermarkets for other goods

Table 3. Characteristics of two market forms in China: traditional local markets and new emerging supermarkets

Characteristics	Traditional Fruit Market	New Emerging Supermarket
Supply Chain Leader	No	Large fruit company
Market Share	Has the largest market share in China	Small but increasing market share
Participation of Small-Scale Farmers	Consist of million of small scale farmers; No constraints to enter the market	Small scale farmers are gradually excluded from the market due to the high requirements for quality, food safety control
Standardization and Grading	Almost no standards for supply	Emerging higher standards for quality
Food Safety Control Capacity	Low	Moderate
Price Level	Relatively low; low market value added	Higher
Value added	Low	Moderate
Trust between the partners	Not important	Emerging importance
Government Support	Relatively Low	Moderate
Global Competitiveness	Very low	Moderate, but developing very fast

Source: Gao (2007)

Fruit and vegetable trade

Imports and exports of horticultural products in China have expanded over the last decade. The value of China's trade in horticultural products increased from $2.22 billion in 1995 to $4.20 billion in 2005 for exports, and from $0.30 billion in 1995 to $1.49 billion in 2005 for imports (Table 3). The role of horticultural products in China's total agricultural trade is somewhat mixed. Horticultural products exported as a percentage of all agriculture exports from China has remained fairly steady, moving only from 11.9 percent in 1995 to 11.3 percent in 2005. But, the share of horticultural product imported to China as a percent of all agricultural imports has increased from 1.8 percent in 1995 to 4.1 percent in 2005 (Table 4). Several factors account for the relative stability of China's horticultural exports, including; growth in domestic demand and domestic policies which continue to favor grain production. (Rae et al, 2006).

Table 4: China's trade in horticultural products[1]

Year	Value of China's horticultural trade (US $billion)		Horticulture's share (%) of China's Agricultural trade	
	Exports	*Imports*	*Exports*	*Imports*
1995	2.22	0.30	11.9	1.8
1996	2.03	0.50	11.3	3.1
1997	2.01	0.59	10.6	3.9
1998	1.95	0.59	11.2	4.5
1999	1.97	0.59	11.3	4.5
2000	1.99	0.75	9.8	4.4
2001	2.22	0.89	10.5	5.0
2002	2.48	0.94	10.2	4.9
2003	2.98	1.00	10.2	3.9
2004	3.52	1.30	10.9	3.7
2005	4.20	1.49	11.3	4.1

Source: Rae et al, 2006

[1] In this table "Horticultural products" include live trees, plant, and cut flowers (HS06), Edible vegetables (HS07), and Edible fruits and nuts (HS08).

Of all imported horticultural products, fruit accounts for nearly 60 percent of the total while vegetables account for more than 70 percent of exports in recent years. In the edible fruits and nuts category (HS08), bananas, nuts, and grapes are the top items for import, however, the share of bananas in the total declined significantly between 1995 and 2005 (Table 5).

Table 5. Edible fruits and nuts (HS08) share of total horticultural imports to China

Year	HS08 share of total horticultural imports	Bananas	Nuts	Grapes
		---------- % of share ----------		
1995	50.0	50.1	19.2	3.4
1996	70.6	71.5	8.9	2.3
1997	74.0	62.0	14.3	1.1
1998	74.6	67.5	17.1	1.5
1999	72.1	54.5	8.3	9.3
2000	78.2	45.9	6.3	9.6
2001	61.3	26.8	14.2	9.6
2002	62.5	19.9	16.2	9.9
2003	63.3	18.8	17.2	10.3
2004	57.6	15.1	18.3	13.3
2005	59.5	15.1	15.2	14.9

Source: Rae et al, 2006

Only very small volumes have been reported for trade in tart cherry products between the U.S. and China to-date (Table 6). At the same time, China may represent a large potential market for U.S. exports. Currently, U.S. tart cherry growers are uniquely situated in the world market since they grow a variety with unique characteristics (i.e.: Montmorency cherries) that is not easily substituted. China has one of the largest and fastest growing middle class populations in the world. These newly wealthy consumers are more willing and able to purchase imported goods, such as exotic (new to them) fruits and convenience products, such as prepared bakery products.

Table 6. U.S.-China trade in tart cherry products, 2000-2006

	Item		
	Frozen	**Prepared/Preserved**	**Dried***
		----------pounds----------	
U.S. Exports to China			
2000	31,109		
2001			
2002	211,075		
2003			
2004			
2005		40,000	
2006			
U.S. Imports from China			
2000			6,614
2001			
2002			69,840
2003			
2004			43,885
2005		42,328	72,664
2006			86,118

Source: US Bureau of Census, http://www.stat-usa.gov/
* Data reported for dried cherries includes both tart and sweet varieties.

Regulatory oversight of standards for food imports to China[2]

As one of the largest countries in terms of food production and consumption, China has paid increasing attention to food safety issues in recent years. Currently there are a number of agencies in China which have responsibility for food standards, often with a great deal of overlap among duties. At least 16 institutions, including ministries, banks, and commissions are involved in governing agriculture and its upstream and downstream sub-sectors (O'Brien, 2006). It should be mentioned that the overall

[2] This section is drawn directly from Gao, 2007.

government system in China is relatively complicated. The National People's Congress (NPC) ranks the highest in the administrative system pyramid. All other ministries, departments and institutes are either directly or indirectly under the NPC. These ministries, departments and institutes normally all have multiple geographic divisions (i.e. state level, provincial level, city level, county level and even village level). In addition, responsibilities among some relevant departments are not always distinct and sometimes overlapping. Table 7 provides a quick summary of the responsibilities of the major departments and institutions with responsibilities in this area. Currently, there is reorganization underway within China to streamline and clarify the process. Results will have significant impacts on all firms looking to export food products to China.

Table 7. Institutions in China with responsibilities related to plant-based food trade

Institution	Main Responsibilities
Agricultural Development Bank of China	Specialized in extending loans for agriculture and rural enterprises
Certification and Accreditation Administration of the People's Republic of China	Draft and implement laws and regulations with respect to certification, accreditation and inspection; supervise certification activities; coordinate international cooperation activities and sign related agreements and protocols; the notification and construction related to certification and accreditation issues with the range of WTO/TBT and SPS
General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China	Draft laws, regulations and policies related to food safety and quality supervision, inspection and quarantine; construct and coordinating unified supervision and management of national food metrological work; review and issue the food quality and safety certifications and standardization
Ministry of Agriculture	Draft and issue policies related to agriculture structure and development, including price change, financial credit, subsidies; coordinate with other countries and organizations
Ministry of Water Resources	Formulating policies, regulations, and developments strategies and plans of water conservation
Ministry of Education	Extension activities
Ministry of Finance	Draft policies to support agriculture; formulate the agricultural development plan; allocate and manage financial funds for agriculture; and allocate the poverty reduction funds
Ministry of Health	Draft key health laws, regulations and policies; propose and guide the implementation of health development programs and strategic goals
Ministry of Land and Resources	Plan, manage and protect the rational utilization of natural resources, including land, mineral, and marine resources
National Development and Reform Commission	Guide overall economic reforms; propose developments strategies; Recommend agricultural reforms; coordinate agency overseeing the implementation of agricultural and rural policies;
People's Bank of China	Supervise the rural financial institution system
State Administration on Industry and Commerce	Facilitate fair trade, protect consumer benefits, register business enterprises, including foreign-invested enterprises, supervise trade marks, and market regulations, etc
State Food and Drug Administration	Comprehensive supervision of the food safety management of food, health food and cosmetic

Source: Gao (2007)

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