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*Chapter 4:*

**China's Agriculture within the World Trading System**

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## ***Chapter 4:***

# **China's Agriculture within the World Trading System**

### ***Introduction***

China is a large and developing country with a population of 1.3 billion, where agriculture has been always considered a strategic industry that could stabilize the nation and pacify the people. China's market-oriented rural reform, launched in 1978, has become a historical turning point of its agricultural development. The reform broke the limitations of the traditional system, accelerated rural economic development and accomplished the achievement of feeding nearly 21% of the world's population with less than 9% of the world's arable land. Moreover, rural reform promoted overall reform of China's economic system and boosted fast growth of the Chinese economy. Since its accession to the WTO, China has increased the openness of its agricultural sector. There have been significant changes in the relationship between China's agriculture and the world market. Within the world trading system, as a large producer and a large consumer of agricultural products, China may be adversely affected by the international market, but it may also exert a tremendous impact on the international market.

### ***China's Agriculture: Growth and Structural Changes***

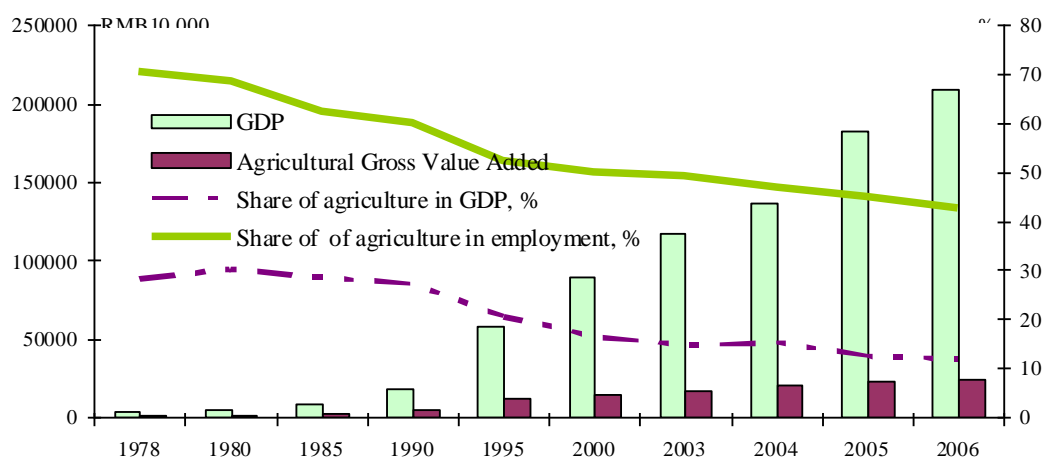
**Agriculture and China's Economic Growth:** As a fundamental sector of its national economy, China's agriculture has made a tremendous contribution to China's economic growth. In 1978, China's agriculture accounted for 28.1% of GDP and provided 70.5% of the employment opportunities (Figure 1). The reform initiated in that year greatly promoted China's economic growth. China's GDP grew by an average annual rate of 9.7% in real terms from 1978 to 2006. The growth of the agricultural sector (4.5%) was not as high as that of industry (11.6%) and the service sector (10.3%) (NBSC), but as the foundation of the national economy, its stable growth has sustained China's rapid economic growth and smooth development during the reform and opening-up.

With rapid development of industrialization and urbanization, the Chinese economy has experienced tremendous structural changes. The contribution of agriculture to the national economy has been decreasing for many years (Table 1 and Figure 1). Up to 2006, the share of agriculture in Chinese GDP dropped to 11.8% and the percentage of the workforce engaged in

### ***China's Agricultural Trade: Issues and Prospects***

agriculture declined to 42.6%. Agriculture's share of total exports dropped from 26.7% in 1980 to 3.2% in 2006, while its share of total imports dropped from 33.8% to 4% in the same period.

**Figure 1: Contribution of Agriculture to China's Economy**



Source: NBSC, China Statistical Yearbook (All issues)

**Table 1: Changes in the Structure of China's economy (%)**

	1978	1980	1985	1990	1995	2000	2005	2006
Share in GDP								
Agriculture	28.1	30.1	28.4	27.1	20.5	16.4	12.5	11.8
Industrial	48.2	48.5	43.1	41.6	48.8	50.2	47.5	48.7
Service	23.7	21.4	28.5	31.3	30.7	33.4	40	39.5
Share in employment								
Agriculture	70.5	68.7	62.4	60.1	52.2	50	44.8	42.6
Industrial	17.3	18.2	20.8	21.4	23	22.5	23.8	25.2
Service	12.2	13.1	16.8	18.5	24.8	27.5	31.4	32.2
Share in total exports								
Agricultural products		26.7	24.5	17.2	9.4	6.3	3.6	3.2
Share in total imports								
Agricultural products		33.8	12.1	16.1	9.3	5	4.3	4.0
Share of rural population	82.1	80.6	76.3	73.6	71.0	63.8	57	56.1

Source: NBSC, China Statistical Yearbook (All issues)

**Performance of Agricultural Growth:** Since the foundation of the People's Republic of China, agriculture has gone through the stages of land reform, agricultural cooperatives, rural communes, market-oriented reform and opening up to the outside world. The rural communes and state monopoly for purchasing and marketing that were in place before 1978 seriously dampened farmers' incentives, and led to slow development. The structure of agriculture was not diversified at that time, and rural areas suffered from poverty and underdevelopment.

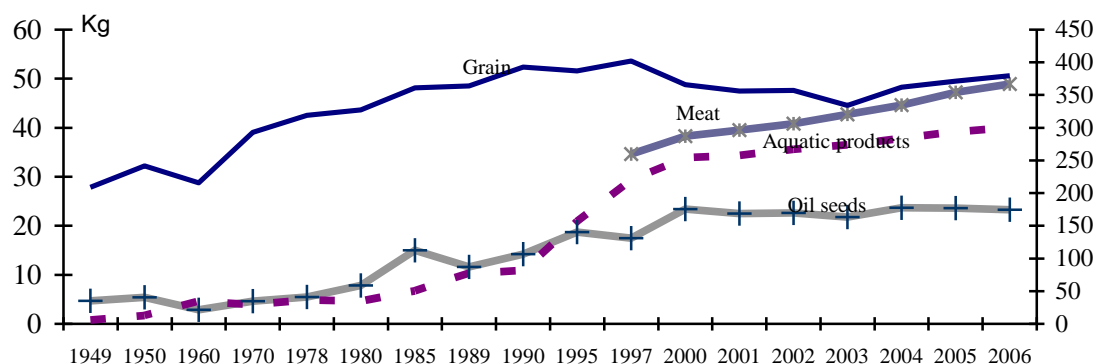
Launched in rural areas in 1978, China's rural reform spread rapidly across the country and throughout all sectors of the economy. As a result of this reform, agriculture grew rapidly in China. At the early stage of the reform, farmers' incentives were strengthened thanks to the household contract responsibility system with remuneration linked to output, which replaced rural communes. During the period 1978-1984, China's grain production grew by an average of 5% annually in real terms, vegetables by 7.5%, fruit by 7.2%, and cotton by 19.3%, much higher than the growth rates in the 1960s and 1970s (Table 2). Since the mid-1990s the supply of and demand for China's agricultural products have undergone a fundamental change, from long-term shortage to approximate equilibrium or even excess supply in bumper harvest years. Food consumption per capita has increased greatly (Figure 2).

**Table 2: Annual Growth Rates of China's Agricultural Products (%)**

	1950-1969	1970-1977	1978-1984	1985-1998	1999-2003	2004-2006
Grain	2.5	2.4	5.0	2.3	-4.1	2.96
Paddy	2.9	2.3	4.5	1.3	-5.1	0.97
Wheat	3.4	5.0	8.5	1.9	-6.6	6.59
Corn	3.1	5.9	4.6	5.8	-2.5	5.67
Soybean	0.1	-2.6	4.2	2.9	1.9	-4.1
Cotton	6.0	-1.5	19.3	0.6	6.1	3.44
Vegetable	-1.8	3.1	7.5	7.8	10.0	2.92
Fruit	5.4	6.1	7.0	12.6	23.5	6.07
Meat	14.7	4.2	9.0	8.3	4.2	5.42
Aquatic products	6.3	5.7	4.9	14.1	3.4	3.49

Source: NBSC, China Statistical Yearbook (All issues)

**Figure 2: Per Capita Availability of Major Agricultural Products in China**

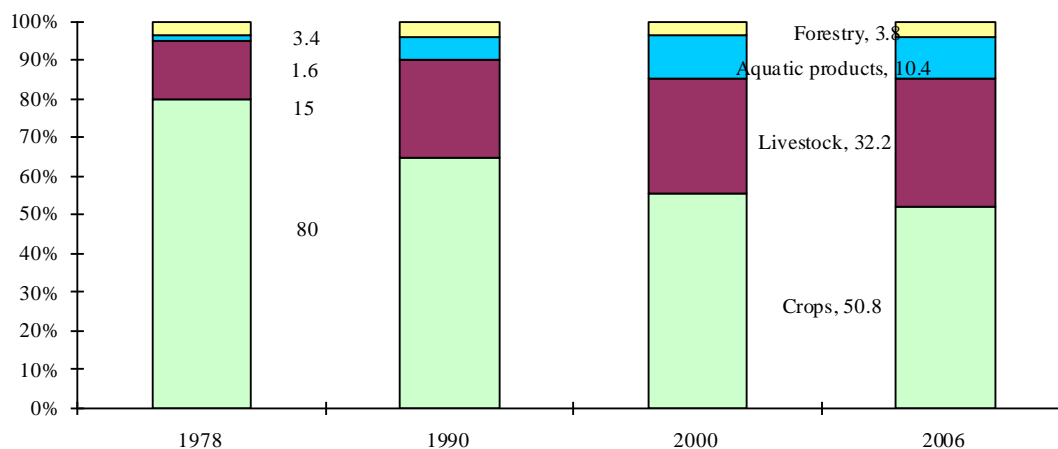


Source: NBSC, China Statistical Yearbook (All issues)

Since 1999, due to structural changes in the supply of and demand for agricultural products, there has been a trend of low production of grain. The annual rate of reduction of grain production reached 4.1% (Table 2). However, since 2004, the Chinese central government has issued four key documents about supporting agriculture and rural development. These documents have led to tremendous changes in agricultural production. For example, over the period 2004 to 2006, grain production increased at the rate of 2.96% annually. Output of wheat and corn also increased dramatically. Only soybean production decreased and rice production remained unchanged.

So what are the causes of the growth of China's agriculture? Many studies have shown that changes in agriculture since 1978 can be attributed to institutional innovations including the household contract responsibility system with remuneration linked to output at the early stage of the reform (Fan, 1991; Lin, 1992), as well as technological progress (Huang and Rozelle, 1996; Fan and Pardey, 1997). Moreover, other factors also contributed to these changes such as increased investment in agriculture, improved infrastructure for farmland, water conservancy and irrigation facilities, market-oriented reform of agricultural product pricing and distribution mechanisms and greater openness of the agricultural sector to the outside world.

**Figure 3: Changes in the Structure (%) of China's Agriculture**



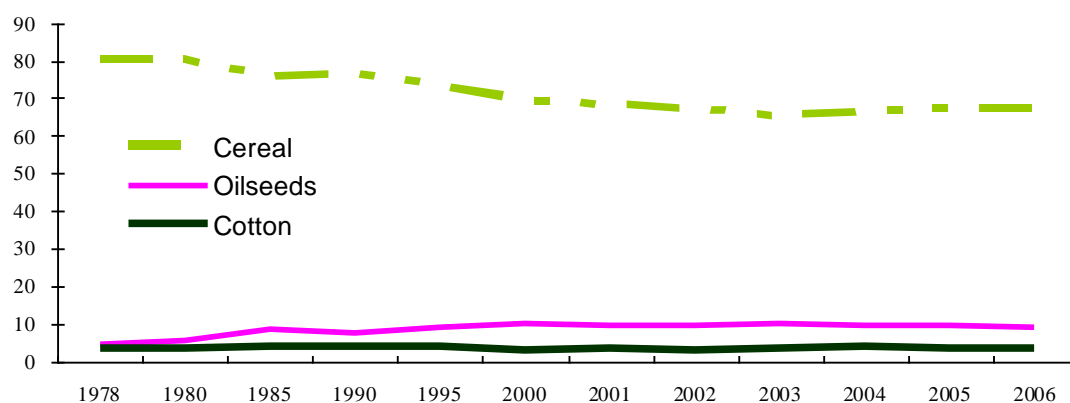
Source: NBSC, China Statistical Yearbook (All issues)

**Structural Changes in the Agricultural Sector:** Accompanying rapid development of the agricultural sector, rapid growth of the national economy, urbanization and growth in disposable income, there has been an increasing demand for meat products, aquatic products, fruits and vegetables. The structure of agriculture has also undergone great changes. In terms of

the total value of agricultural output, the share of livestock increased from 15% in 1978 to 32.2% in 2006, aquatic products from 1.6% to 10.4%, while crop products declined from 80% to 50.8% in the same period (Figure 3).

(i) Structure of crop production: Among growing areas of all crops, the areas used for grain have been shrinking year by year, from 80.3% in 1978 to 67.2% in 2006. Meanwhile the areas for high value-added cash crops that could help increase farmers' incomes have been expanding continuously, from 19.7% to 32.8% (Figure 4).

**Figure 4: Changes in the Structure of Crop-Growing Areas (%)**



Source: NBSC, China Statistical Yearbook (All issues)

Among the grain crops, the areas for growing rice and wheat have been reduced gradually, while those of corn expanded slightly due to the growing demand for feedstuff from the livestock sector and the derived demand from biofuel production and further processing. Among cash crops, the areas for vegetables and fruits increased sharply. The areas for rapeseeds expanded gradually and the cotton areas have remained unchanged.

(ii) Structure of livestock production: The structure of livestock production, based in the past on pig farming, has gradually been replaced by a structure featuring diversification. The share of pig farming in livestock output value declined from 83.6% in 1982 to 64.6% in 2006, while that of poultry increased from 9.5% to 20%, and cattle increased from 2.1% to 9.3% (NBSC, 2006).

(iii) Structure of food consumption: China has solved the problem of feeding its huge population. Its food consumption pattern has also changed significantly with the growth in income and higher level of urbanization. First, grain and vegetables consumption per capita have declined significantly in both rural and urban areas, while that of meat and aquatic

products increased, e.g., compared with 1983, per capita grain consumption in 2006 declined by 47.5% and 21% in urban and rural areas respectively. Meat consumption per capita grew by 20% and 70% in the urban and rural areas, respectively (Table 3).

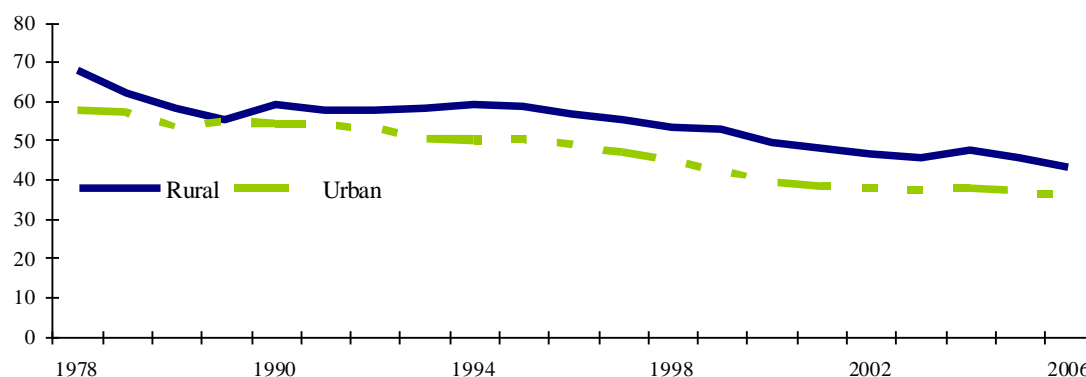
**Table 3: Per Capita Consumption of Major Foods of Urban and Rural Residents (Kg/per capita/year)**

	Grain		Vegetables		Vegetable oil		Meats		Poultry			Aquatic products	
	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Urban	Rural	Urban	Rural	Urban
1983	260.0	144.5	131.0	165.0	3.5	6.5	10.0	19.9	0.8	2.6	1.6	1.6	8.1
1985	257.0	134.8	131.1	144.4	4.0	5.8	11.0	18.7	1.0	3.2	1.6	1.6	7.1
1990	262.0	130.7	134.0	138.7	5.2	6.4	11.3	21.7	1.3	3.4	2.1	2.1	7.7
1995	258.9	97.0	104.6	118.6	5.8	7.6	11.3	19.7	1.8	4.0	3.4	3.4	9.2
2000	249.5	82.3	112.0	114.7	7.1	8.2	14.6	20.1	2.9	7.4	3.9	3.9	11.7
2006	205.6	75.9	100.5	117.6	5.8	9.4	17	23.8	3.5	8.3	5	5	13

Source: NBSC, China Statistical Yearbook (All issues)

Second, there is still a large gap between urban and rural residents in terms of structure of food consumption. In 2006, per capita red meat consumption for urban residents was 1.4 times of that for the rural residents, while per capita chicken consumption for urban residents was just 2.4 times of that for the rural residents (Table 3).

**Figure 5: Engel Coefficient of China's Urban and Rural Residents: 1978-2006 (%)**



Source: NBSC, China Statistical Yearbook (All issues)

Third, the gap in consumption levels between urban and rural residents has widened. In 2006, the living expenditure per capita of urban residents was 3.6 times as much as that of rural residents, compared with 2.1 times in 1985. The share of food expenditure in total living expenditure (Engel Coefficient) of rural residents dropped from 57.8% in 1985 to 43% in 2006,



and that of urban residents dropped from 53.3% to 35.8% (Figure 5). In 2006, food expenditure per capita of urban residents was 3.7 times as much as that of rural residents, compared with 2 times in 1985 (NBSC, 2007).

### *China's Agriculture and the World Trade System*

**Benefits from Global Economic Integration:** China is now in the process of transition from a planned economy toward a market-oriented economy, from a closed economy toward being integrated with the global economy. China's agriculture has not only undergone rapid development and significant restructuring, but also has gradually opened up to the outside world and further integrated into the world trade system.

**Table 4: China's Agricultural Trade\* - 1992-2006**

	Unit	1992	1995	2000	2001	2005	2006
Agricultural Gross Value Added (current value)	RMB billion	580	1199.3	1462.8	1541.2	2307	2470
Agricultural Gross Value Added (current value)**	USD billion	105.3	143.6	176.7	186.1	281.6	309.8
Agricultural exports	USD billion	11.3	14.4	15.6	16.1	27.6	31.03
Agricultural imports	USD billion	5.3	12.2	11.2	11.8	28.7	31.99
Ag Net Exports	USD billion	6.0	2.2	4.4	4.3	-1.10	-0.96
Share in total trade							
Share in total exports	%	13.3	9.7	6.3	6.1	3.6	3.2
Share in total imports	%	6.6	9.2	5.0	4.9	4.3	4.0
Ratio to AGVA							
Exports	%	10.8	10.0	8.8	8.7	9.8	10.0
Imports	%	5.0	8.5	6.3	6.4	10.2	10.3
Imports and exports	%	15.8	18.5	15.2	15.0	20.0	20.3

Source: China Customs Statistics from the General Administration of Customs; NBSC: China Statistical Yearbook (All issues)

\* Agricultural products in the table are defined by "WTO definition + fishery", i.e., food + agricultural raw materials

\*\* Calculated according to the official exchange rate of RMB against US dollar

With the fast development of China's foreign trade, China's trade in agricultural products has also grown rapidly. Exports of agricultural products increased from less than US\$11.3 billion in 1992 to US\$31.03 billion in 2006, with an average annual growth rate of 7.5%. Imports rose from US\$5.3 billion to US\$31.99 billion, with an average annual growth rate of 13.7% (Table 4). China has become the fifth largest agricultural exporter, after the US, EU, Canada and Brazil,

and the fourth largest agricultural importer, following the EU, US, and Japan. China now plays a significant role in the world agricultural products market.

Despite rapid growth of China's trade in agricultural products, the share of agricultural exports in total exports has shown a downward trend. The share of agricultural exports in total exports declined from 13.3% in 1992 to 3.2% in 2006, while that of imports fell from 6.6% to 4%. In some other countries, however, agricultural exports account for a significant portion in their total trade volume. For example, the exports of agricultural products in New Zealand account for 50% of its total of exports. For other countries, the share of agriculture in total exports is 20% in Chile, 28% in Brazil, 17.2% in Australia, 11% in Thailand, 7.2% in Canada, and 7.5% in the US.

The growth of trade in China's agricultural products indicates that participating in international competition and sharing the benefits of global integration have played an important role in China's economic development. First, agricultural exports still make great contributions to China's foreign exchange reserves. From 1992 to 2003, China's cumulative foreign trade surplus reached US\$242.65 billion, and the cumulative net value of agricultural exports reached US\$51.33 billion, accounting for 21.2% of the total surplus, of which US\$2.62 billion of the net value was achieved in 1992. This figure accounts for over 60% of the trade surplus for the whole country. The net agricultural exports in 2003 reached US\$2.35 billion, 9.2% of the total trade surplus. However, since 2004, China's agriculture began to witness a trade deficit, ending the contribution of agricultural trade to foreign exchange reserves.

Second, agricultural exports play an important role in creating employment opportunities for farmers, increasing their income, restructuring agriculture, and enhancing agricultural competitiveness. Some studies have found that China's export multiplier of agricultural products reached 1.66 in 2002, which means that US\$1 of agricultural products exported could create an additional US\$1.66 worth of economic activities. Every US\$10,000 of such exports can directly and indirectly create nearly 28 jobs (Cheng, 2004a). Table 5 indicates that labor-intensive agricultural products accounted for more than 76% of China's total agricultural exports, and the share is still rising. This is significant in that it enables China to enjoy its comparative advantage in agriculture and increase its agricultural competitiveness.

**Table 5: China's Agricultural Export: Labor-Intensive and Land-Intensive Agricultural Products**

Year	Total agricultural exports	Labor-intensive products *	agricultural	Land-intensive products **	agricultural
	US\$ million	US\$ million	Share (%)	US\$ million	Share (%)
1998	13258.0	9223.4	69.6	2065.3	15.6
1999	12895.0	9409.6	73.0	1969.7	15.3
2000	15035.6	10970.9	73.0	2533.2	16.8
2001	15975.1	12589.6	78.8	1716.3	10.7
2002	18019.0	13755.4	76.3	2495.1	13.8
2003	21243.4	16005.8	75.3	3198.2	15.1
2004	23216.2	20295.0	87.4	2314.9	10.0
2005	27234.5	23249.6	85.4	3264.6	12.0
2006	31167.8	27384.8	87.9	2968.0	9.5

Source: Based on the statistical data of the Customs of China

\* Labor-intensive agricultural products include aquatic, animal and horticultural products, and processed agricultural products

\*\*Land-intensive agricultural products include bulk agricultural products such as grain, oil seeds, and cotton

**Table 6: Import Structure of China's Agricultural Products - 2006**

	Import volume (10 thousand tons)	Import value (100 million USD)	Share (%) of total imports of agri products
Soybean	2827	75	23.4
Cotton	364.3	49	15.3
Frozen fish	172.8	24.1	7.5
Palm oil	420	19	5.9
Wool	27.8	12.6	3.9
Fish meal for feed	97.9	9.4	2.9
Soybean oil	15.4	8	2.5
Sugar	136.5	5.5	1.7
Other		117.3	36.7
Total agri imports		319.9	100

Source: Based on the statistical data of the Customs of China

Third, agricultural imports could ease the pressure of scarcity of agricultural resources, help make better use of the comparative advantage of agriculture, and also optimize the allocation of agricultural resources. Table 6 shows that land-intensive farm produce and resource products accounted for 63.3% in the US\$31.99 billion of total imported agricultural products in 2006. China imported 28.27 million tons of soybeans in 2006. The import value of

US\$7.5 billion accounted for 23.4% of the total value of imported agricultural products. The volume of imported soybean oil (15.5 million tons) is 1.8 times more than the domestic output. This means that 80% of the demand for soybean oil has to be met by the imports. Cotton imports reached 3.643 million tons, worth US\$4.9 billion, accounting for 15.3% of total agricultural imports. In addition to soybeans and cotton, China also imports resource products such as frozen fish, palm oil, fish meal and wool.

**Degree of Participation in the World Trade System:** China's economy has integrated into the world economy to a large extent. China not only benefits from globalization, but has also become a driving force in world economic growth, from which other countries benefit. China has become the largest destination of foreign direct investment. The degree of reliance of China's economy on foreign trade has now reached 67%.<sup>1</sup>

The correlation of China's agriculture with the world market is increasing, the ratio of total agricultural imports and exports to agricultural gross value added (AGVA) increasing from 15.8% in 1992 to 20.3% in 2006, which indicates deeper integration into the world trading system. However, compared with China's economy as a whole, the degree of reliance of agriculture on trade was not that high. The ratio of China's agricultural exports to its AGVA is only 10%, whereas that of the U.S. is 41.1%, the EU 34% and Russia 36%.<sup>2,3</sup> For some leading exporters of agricultural products, such as Canada, Australia, Brazil and Thailand, the degree of reliance on agricultural trade stood as high as 99%-175%, which means the agricultural sector of these countries rely very heavily on the international market. Trade liberalization in international agricultural products is of great importance to their agricultural development. It is obvious that China's agricultural growth depends much more on domestic demand and agricultural resources are mainly used in producing major agricultural products, such as grain, for domestic consumption. In contrast, the degree of reliance on imports of agricultural products relative to AGVA has increased gradually from 5% in 1992 to 10.03% in 2006. China was the eighth largest importer of agricultural products in the early 1990s. Now it has become the fourth largest importer of agricultural products following the EU, the US and Japan. China is now the largest importer of soybeans, cotton, palm oil, wool, barley and sugar in the world.

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<sup>1</sup> Share of total trade value in GDP.

<sup>2</sup> Due to the inclusion of forest gross value-added in the domestic AGVA, the degree of reliance of agriculture on trade is underestimated. The true degree is estimated to range from 10 to 20%.

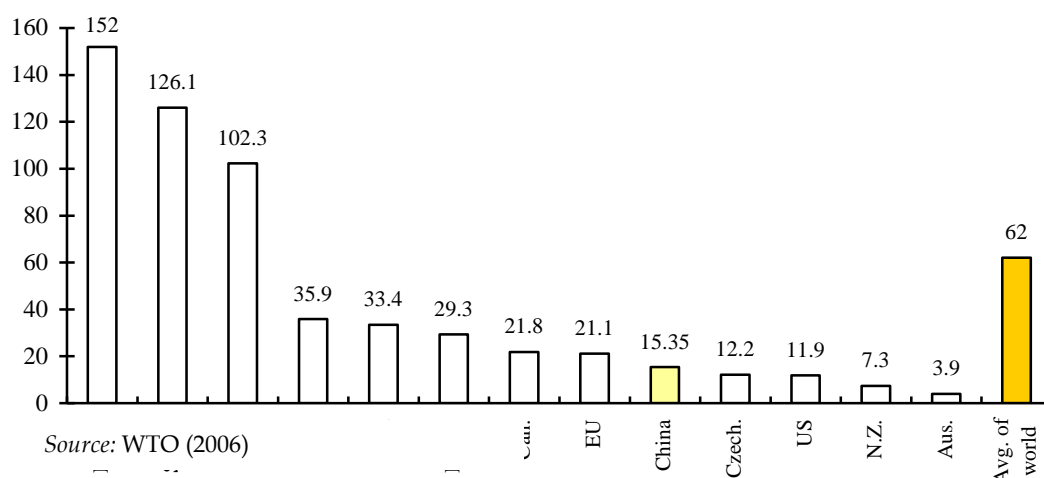
<sup>3</sup> Estimation based on "World Development Index" of the World Bank (2006).

### Further Opening-Up in Agriculture: Post-WTO Accession:

(i) The post-transition period of WTO accession: Although China's agriculture is not deeply integrated into the world agricultural trade system, since China joined the WTO in 2001, the barriers to further opening up to the international market, have been lowered. Particularly, since 2005, with the end of the transition period, and entering the post-transition period, China has become one of most liberalized countries for agricultural products. First, the tariff level for agricultural products had been reduced to the lower bound rate, from 23.2% in 2001 before WTO accession to 15.3% in 2006, a level much lower than the world average of 62%, making China one of the countries with the lowest tariff level for agricultural products (Figure 6).

Second, tariff rate quotas (TRQs) on key agricultural products, such as grain reached their peak in 2004, and are expected to remain at this level. For example, the TRQ for wheat is 9.636 million tons, corn 7.2 million tons, sugar 1.945 million tons, and cotton 894,000 tons (Table 7). More than 90% of wheat trade is operated by state trading enterprises (STEs), The share of imports under STEs in other agricultural products will be scaled down gradually. China abolished the system of designated trading on wool and wool tops in 2005. The TRQ system on soybean oil, palm oil, and rapeseed oil was replaced by a tariff-only-administration of 9% in 2006.

**Figure 6: Bound Tariff Rates on Agricultural Products of Major Countries (%)**



Third, China has committed itself to the elimination of export subsidies for agricultural products, and limiting Amber Box subsidies under 8.5%, which is lower than that of other developing countries.

**Table 7: China's Tariff Rate Quotas on Agricultural Products - 2006**

	Quota (10,000 tons)	In-quota tariff rate (%)	STE (%)	share	Non-STE share (%)	Out-of-quota tariff rate (%)
Wheat	963.6	1%	90%		10%	65
Corn	720	1-10%	60		40	65
Rice	532	1-9%	50		50	65
Sugar	194.5	15%	70		30	50
Cotton	89.4	1%	33		67	40
Wool	28.7	1%				38

Source: MOFCOM

(ii) Why limited impacts during the transition period of WTO accession? What puzzles many observers is that bulk agricultural products, such as grain, where foreign countries have an advantage, did not flood into China's market as expected. And the common concern that China's agriculture would be seriously affected did not come true. We think there are several reasons for this.

First, the Chinese Government has attached great importance to issues concerning agriculture, rural areas and farmers. It has taken a series of more direct and effective policies and measures in response to the situation since WTO accession. These favorable agricultural policies and measures have promoted strategic restructuring of the rural economy, enhanced agricultural competitiveness, and helped the sustained and steady growth of agriculture and the rural economy.

Second, the impact of international competition on China's agriculture did not show up initially due to the lagged effect of WTO accession.

Third, price fluctuations in domestic and international markets eased import pressure. For example, the price for grain in the international market went up by 25-30% in 2002 because major grain production countries had suffered serious problems. However, from 1997 to mid-2003, China's domestic grain price had been low for seven consecutive years. Price conditions were not favorable for the entry of grain from other countries. One additional thing needs to be pointed out - in recent years, China's farmers have actually sacrificed their own economic benefits in order to keep domestic grain prices at a low level, preventing the domestic market from being affected by foreign competition.

(iii) Challenges in the post-transition period of WTO accession: Since the end of the transition period, China's agriculture has entered a new phase of liberalization and it will

become integrated into the global economy. Some factors favorable to domestic agriculture will disappear and some adverse factors are gradually emerging. The pressure of international competition on China's agriculture will escalate. Particularly, China's traditional small-scale agriculture, characterized by decentralized plantation, will not be able to compete with modern foreign large-scale agriculture. The situation is unlikely to change for a long time. Also, developed countries have given high subsidies and protection to their agriculture, which distort the international trading environment. This unfavorable environment is also unlikely to change in the near future. China's agriculture will face the effect and challenges of WTO accession for some time, the impact and challenges emerging gradually after the transition period in terms of five aspects.

First, the pressure of agricultural imports is increasing gradually. In recent years, there has been a sharp increase in imports of soybeans and cotton. For example, soybean imports are 1.8 times more than domestic output. Cotton imports are four times more than the import quota. The degree of reliance on cotton imports has reached over 40%. This has affected domestic production and income growth to a large extent, causing much concern.

It is important to notice that the TRQs for grain imports have reached 22.16 million tons per year, accounting for 15% of total grain output. According to Chinese statistics, if converted into raw grain (including conversion of the soybean oil TRQ into equivalent amounts of soybeans), the TRQs will stand at 41.07 million tons, equivalent to 8-9% of total domestic grain consumption. This will have several key effects: grain imports will exceed the self-sufficiency level set by the policy that 95% of grain should be domestically produced; the high level of imports will pose a challenge to the control target of keeping a tightened balance of grain supply and demand, and maintaining a high grain price. Grain imports will dampen domestic prices, directly damaging the interests of grain-growing farmers and consequently influencing the growth of grain output. Finally, it will affect the exercise of China's agriculture-supporting policies, especially the current policy in favor of grain production.

Second, a trade deficit in agricultural products will become common in the future. In 2004, it reached US\$4.64 billion for the first time. China continued to witness a trade deficit in agricultural products in 2005 through 2006. In light of the characteristics of supply and demand for China's agricultural products and its natural endowments, it is preliminarily estimated that China's reliance on agricultural imports will increase in the future. Agricultural trade will be



characterized by a large transactions volume (both imports and exports). A trade deficit will likely become common, which could be a potential factor affecting the balance of payments.

Third, it will be more difficult to avoid and manage risks due to the international market. With all industries open to the outside, China will face more and more risks and challenges from international markets and it will be harder to avoid and reduce these risks, especially in the agricultural products market. For example, at the end of April 2004, soybean prices in the international market fluctuated drastically. The market risk immediately spread to China's market through multinationals' marketing chains. As a result, the domestic soybean crushing business suffered losses as high as RMB 5 billion.

Fourth, the environment for international agricultural product trade will become increasingly complex. China will enter a period of frequent trade frictions. Technical barriers to trade, anti-dumping rules, and specific safeguard mechanisms will become the major barriers to China's agricultural exports.<sup>4</sup> New barriers such as "public opinion barriers" are also emerging.<sup>5</sup> Developed countries continue to provide subsidies to agriculture, which distort international agricultural trade. The Doha Development Agenda that aims to establish new rules of international trade, including trade in agriculture, is facing a dilemma. All these will affect China's comparative advantage and expansion of agricultural exports in the coming years.

In the near future, this will not only affect China's competitive advantage in increasing its agricultural exports, but will also impose more pressure on China's domestic market for agricultural products as a result of the likely steep increase in imports. In the context that the rural population has not yet moved to urban areas in great numbers, this will bring about issues of employment and income for a great number of farmers, which will intensify the nationwide issues of economic reform, development and social stability in China.

### *Challenges and Key Problems in the Future*

Since the late-1990s, China's agriculture has entered a new phase of development. The interaction of supply and demand for agricultural products has undergone significant change,

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<sup>4</sup> According to the Protocol on China's Accession to the WTO, within 12 years of China's WTO entry, January 11, 2001 to December 11, 2013, when the products with China as the place of origin are exported to the territory of any WTO member, if the export volume increases sharply and thus causes "serious damage" or "serious damage threat" to related industries of the WTO members, the WTO members may separately take protection measures against the relevant Chinese products.

<sup>5</sup> In recent years, some countries, including Japan, intentionally "demonized" China's agricultural products through media such as newspapers and TV programs. This had a negative effect on China's agriculture and is therefore called a "public opinion barrier".



achieving an historic transition from chronic shortage to approximate equilibrium or even excess supply in bumper harvest years. With income growth, and significant changes in consumption tastes and preferences, consumers demand agricultural products in greater quantity and of higher quality. Agricultural development was constrained by resources in the past and is now constrained by both resources and markets. Since WTO accession in 2001, China's agriculture has become integrated into the global economy, where it faces competition from home and abroad. Both the environment and conditions of China's agricultural development have undergone profound and significant changes.

In the next few years, China will enter a new stage when its per capita GDP will increase from US\$1,000 to US\$3,000, a stage characterized by accelerated industrialization, urbanization and modernization. International experience indicates that it is not only a stage of strategic opportunities, but also a stage of challenges and conflicts. In such a critical period, it is important to solve the key issues concerning agriculture, rural areas and farmers and continue to give play to the role of agriculture and the rural economy as a pillar for the national economy. These issues not only have a bearing on increases in farmers' incomes, improvement of agriculture efficiency and development of rural areas, but also have a direct impact on China's grasp of strategic opportunities. They are of great significance for China's national economy and social development. However, agriculture is still the weakest link in China's national economy. A number of deep-seated problems restricting the development of agriculture and the rural economy have not been fundamentally solved. In the foreseeable future, China, as a major developing country, will face more and more pressure and challenges in agriculture development. These pressures and challenges are as follows.

First, an increase in population and the resulting growth in demand for grain will place great pressure on China's agriculture. China's population reached 1.314 billion by the end of 2006 and is expected to reach 1.345 billion by 2010. If calculated according to current grain consumption patterns, demand for grain will be no less than 500 million tons by 2010. China's grain production capacity is 470 million tons at present. It is quite difficult in terms of both material conditions and technology to expand capacity to 500 million tons in 5 years. How to ensure food security for a huge population will become an unavoidable strategic issue for China's agriculture.

Second, the problem of rigid constraints on agricultural resources will become increasingly prominent. The national situation in China is characterized by an enormous population with insufficient arable land. Currently China's arable land per capita is less than 1.5 Mu (equivalent to 0.1 hectare), amounting for only 43% of the world's average. The conflict between insufficient arable land and the increasing population will exist for a long time. China's per capita availability of water resources is only one fourth of the world's average. Drought and serious water shortages have become bottlenecks to agricultural development in northwest, north and central China. In the future, the problem of insufficient agricultural resources will become more prominent and will directly threaten China's food security and agricultural products supply.

Third, it will be difficult for China to increase its agricultural competitiveness in the short term. The gap between China and the major agricultural trading countries in terms of technology, product quality and overall competitiveness will remain unchanged in the short term. Also, China's inadequate agricultural investment, insufficient rural funds, continuous outflow of production resources, and flawed marketing and service system for agriculture, as well as an unsatisfactory agriculture-supporting policy will not change much for some time. It is difficult for China to increase its agricultural competitiveness in the short term. Therefore, China has to give full play to its advantages in global competition and choose a proper development strategy.

Fourth, institutional problems limiting agricultural and rural development will begin to emerge. In the context of accelerated urbanization and industrialization, some deep-seated problems will develop in a society where there is a large gap between rural and urban areas. For example, the gap between incomes, public services and social security will widen further and there will be a sharp contrast in the outlook of urban and rural areas. Since the market for input exchange between urban and rural areas has not been established, institutional barriers to the transfer of the rural labor force will remain. It will be difficult to expand the channels for increasing farmer's incomes and to create jobs for farmers. There is still a long way before fundamental changes can be made to the stratified rural-urban structure that restricts development of China's agriculture and rural areas.

#### ***Further Integrating into the World Trade System: Strategic Alternatives***

It can be seen from the above analysis that in the world trade system, China is a large developing country in terms of both population and agriculture; and it is facing far more

complex strategic problems than other countries. China's agriculture will continuously share the enormous benefits of economic globalization and further integrate into the world trade system. Meanwhile, China must also choose the correct development strategies, and take active measures to meet various challenges from international competition.

**Adhere to the Food Security Strategy of Relying Mainly on Domestic Supply:** In order to feed 21% of the world's population, China has always placed a high priority on promoting grain production in terms of policy-making. Over the past few decades, the Chinese government has never changed its food security strategy, characterized by solving the grain issue mainly through domestic production. The strategy has also remained the same at the various stages of agricultural development, either in the period of rural reform started in 1978, or in the new phase of agricultural development since 1998 that has featured significant changes in the supply and demand for agricultural products, and strategic restructuring of agriculture and the rural economy. In the early 1990s, there were great concerns over China's ability to support its population (Brown, 1995). The Chinese government issued a white paper on the grain issue in 1996, and the debates on China's food security strategy have not ended. Generally, questions over China's current food security strategy mainly come from the perspectives of market efficiency or trade efficiency, which suggest that the strategy and related policies are very costly. Various ideas have been proposed for improvement, including liberalizing trade and making better use of the international grain market (World Bank, 1997; 2004), reducing the number of the grain varieties targeted by the food security policy, and a transition from the commitment to "food security" to "rations security" only (CCICED, 2004).

We believe that China must adhere to the established food security strategy, i.e., meeting demand for food based on domestic production and importing appropriate amounts of grain from the international market.

The issue of food security in a country with huge population is complicated. Currently China's grain production as well as consumption account for approximately 25% of the world's total. The world's grain trade volume totals some 200 million tons, which represents only 40% of China's grain consumption. If China's grain output declined by one percentage point, it would have to import nearly 5 million tons to make up the shortage, which is 2.5% of the world's grain trade volume. If China gave up its food security strategy based on domestic production, it is difficult to forecast the implications for world trade in grain and the grain

market. Also, it is questionable whether China has enough purchasing power to guarantee the supply of grain. Will China be able to bear the consequent adjustment and social cost? Will other grain importers, especially those developing countries suffering from grain shortages, be able to tolerate and adjust to the consequent changes in the world's grain supply-and-demand relationship? We argue that food security in a country with a huge population is more than simply an economic and trade issue. This helps one understand why China still gives high policy priority to agriculture when it is doing its utmost to promote the market economy system and further opening-up.<sup>6</sup>

The conditions for relying on grain trade in China have not been met yet. "Based on domestic production" does not indicate isolation from the global market. Since the 1980s, China has been exploring ways to make better use of the international grain market. In the mid-1980s and in the early and mid-1990s, the country imported grain in large quantities. In 2004, China imported as much as 9.753 million tons of grain. However, putting aside the worries about instability in the international grain market and other non-economic risks, technically speaking, the country is basically not prepared to rely on the international market for grain. For example, there are problems such as slow development of the domestic market, unsound grain markets, underdeveloped trade associations, separate national markets and lack of risk management mechanisms and tools.<sup>7</sup> China has neither grain monopoly companies like those in the US, France and Germany, nor trade organizations such as the Canadian and Australian Wheat Boards, nor import administrative mechanisms such as those in Japan and South Korea. Potential major players in the international market are still at the formative stages in China. Besides, the country's current trading infrastructure is not capable of importing large quantities of grain.

Should the rate of self-sufficiency of grain in China be adjusted? In the framework of the WTO, the grain policy measures China could use are mainly concentrated on domestic supports, consisting of non-trade distorting Green Box measures, such as promotion of research and extension, development of agricultural infra-structure and non-production related direct

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<sup>6</sup> In the No.1 Document issued by the CPC Central Committee in 2004, the policy highlighted the importance of securing grain production while increasing farmers' income. The No.1 Document issued by the CPC Central Committee in 2005 expressly called for strengthening the overall agricultural (grain) production capacity.

<sup>7</sup> For example: China lifted the embargo on imported soybeans as early as 1996. Due to lack of risk control experience and tools, fluctuating international market prices, and other factors, Chinese soybean businesses suffered combined losses of at least RMB 5 billion in 2004 (Cheng, 2004b).

subsidies as well as Amber Box measures, such as limited price support and input subsidies.<sup>8</sup> In terms of import controls, China has no other choice except TRQ administration. Therefore, the so-called “appropriate grain imports” essentially treats the committed grain TRQ as the bottom line. As mentioned earlier, however, the grain TRQ is likely to surpass the target of a 95% self-sufficiency rate.

Technically speaking, the coverage of food security policies should be analyzed in specific contexts. That is to say that self-sufficiency rate targets differ from one category of grain to another. For instance, China treats soybeans as one variety of grain, which differs from the grain classification defined by international organizations such as the Food and Agriculture Organization (FAO). Specifically, China liberalized soybean imports as early as in 1996 and annual average imports over the past 7 years have reached 20 million tons, which means that the self-sufficiency rate for soybeans was only 40%.<sup>9</sup> If soybeans are included as one of the grain-varieties, it is not helpful to overall judgment of the food security situation in China.

In this context, there are some possible policy suggestions. First, soybeans should be excluded from the category of grains and should no longer be one of the grain varieties targeted by the country's food security policy. Second, self-sufficiency rates should be based on specific categories of grain. In principle, China has a comparative advantage and export potential in rice, but due to high domestic demand and limited world supply, the country's rice production should be targeted at maintaining the balance between domestic supply and demand. On the other hand, China has less comparative advantage in wheat and corn production. If the wheat and corn TRQs, 9.63 and 7.2 million tons respectively, are filled, the import volume will be equivalent to 11% and 6% of domestic output respectively.<sup>10</sup> Should self-sufficiency rate targets for wheat and corn be adjusted accordingly? Third, further research should be conducted on whether the scope of food security needs to be adjusted. For example, if “rations security” is the major concern, it is justifiable to liberalize corn imported as feedstuff, especially as it is a raw material for biofuels production. However, “rations security” does not reflect the existing definition of “food security”. In major corn producing regions such as Jilin Province, corn is directly related to increases in farmers' incomes, so without steady sources of income, the food

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<sup>8</sup> According to China's WTO entry commitments, the country may grant Amber Box subsidies that are equivalent to 8.5% of total agricultural output or of the output of a specific category of agricultural products.

<sup>9</sup> Starting in 1996, soybean imports were subject to a single tariff rate of 3%.

<sup>10</sup> According to the definitions of the WTO, a TRQ is an import opportunity that may not be used based on market conditions.

security of these farmers cannot be guaranteed. Under the circumstances that developed countries grant high subsidies to corn producers and cross-border grain traders monopolize global trading, what concerns many observers is that large quantities of corn imports could change the current North-to-South Grain flow pattern. A likely pattern is that North China will not be able to export corn and South China will import corn in large quantities. The clear losers will be farmers who live on corn production.

**Develop an Agricultural Trade Strategy Promoting Further Integration of China's Agriculture into the World Trade System:** It should be noted that promoting China's further integration into the world trading system will place Chinese agriculture under more pressure from international competition. At the same time, it will also help the country's agriculture better enjoy the tremendous benefits brought by globalization. The key question is: what strategy should China adopt for its agriculture to further integrate into the world trading system? For quite a long time into the future, China's labor-intensive farm products such as aquatic products, livestock, horticulture and processed products will have a substantial comparative advantage in the world market. However, for land-intensive agricultural products such as grain, cotton and oilseeds, it is the other way round. Obviously, under the pre-condition of adhering to its food security strategy based mostly on domestic production, China should adopt an agricultural trade strategy based on its comparative advantage. The essence of this strategy includes the following.

First, improve the efficiency of resource allocation by promoting strategic restructuring of agriculture. China has a huge population, and the per capita resource availability is relatively low. Furthermore, with an increasing population, the problem of a relative shortage of resources tends to become intensified. Implementing a strategy based on comparative advantage could make best use of China's labor, expand the export of labor-intensive agricultural products, facilitate the concentration of agricultural resources toward high-value farm products, promote the strategic restructuring of agriculture, optimize the allocation of resources and increase the overall productivity of China's agriculture. While adhering to the national food security policy based on domestic production, an overall plan should be developed in terms of the utilization of agricultural resources at home and abroad. An appropriate amount of farm products should be imported, and a long-term strategic mechanism



that makes use of international resources as a supplement to China's serious shortage of land and water resources should be established.

Second, releasing rural employment pressures should be a strategic starting point. China's rural surplus labor stands at 120-200 million at present, and will be growing in the future.<sup>11</sup> Employment of farmers is the core difficulty in terms of the issues concerning agriculture, rural areas and farmers. This requires a shift in China's export strategy of farm products, from "contribution to foreign exchange" to "contribution to employment". As far as China is concerned, solving the issues of employment and incomes of the rural population will be more significant in political terms than in economic terms for quite some time in the future – given that China is at that stage of economic transition, where political interest in social stability is more important than that of foreign exchange earnings. This will also reflect the idea of making use of China's comparative advantage in labor-intensive farm products.

Third, increase China's agricultural competitiveness in the international market. One way to enhance the international competitiveness of China's agriculture is to develop self-patented know-how or introduce foreign technologies so as to improve the quality of products and their technical intensification. While taking advantage of its comparative advantage characterized by low labor costs, China must accelerate technical innovation and structural upgrading, deepen the processing of agricultural products and optimize the trading structure of farm products through introduction and development of new products. The combination of comparative advantage based on labor-intensive production and core competence characterized by technological innovation and structural upgrading would ensure the sustainable export growth of China's agricultural products and dynamic comparative advantage.

**Key Measures in the Near Future:** Expand China's agricultural exports that have a comparative advantage through several measures. First, a systematic plan to promote agricultural exports should be made and greater support to agricultural exports should be granted, so as to increase the competitive edge of China's agriculture in coping with the increasingly complicated international trading environment and to offset the adverse effects of unfair trade practices. Second, set up a multi-dimensional, orderly and effective system of support and services for agricultural exports by combining product quality improvement with penetration of technical barriers; encourage corporate entities to carry out technical upgrading

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<sup>11</sup> Research team under the Ministry of Agriculture of China: Research on the Issue of China's Rural Employment and Utilization of Surplus Labour in the Early 21st Century, Rural Economy in China, May 2000.

with branding strategies; combine comparative and late-comer advantages with the establishment of core competence; combine a market diversification strategy with exploration of key markets; combine export environment improvement with better export support and services. Thirdly, take specific and effective strategic measures to tailor agricultural exports to the international market

Take effective measures to prevent and offset the impact of sharp increases in agricultural imports on the domestic market. These measures include, building a system to monitor agricultural imports and give warning of industry damage and a subsequent response mechanism, making full use of trade remedies such as anti-dumping measures, countervailing and safeguard measures and developing an emergency mechanism to cope with high agricultural subsidies in other countries.

Participate actively in the WTO Doha Round negotiations in an attempt to establish fair and justifiable international trade rules. China should actively participate in the Doha Agricultural Negotiations and play the role of a large developing country in order to make the result of the negotiations more favorable to China. There are two things to be noted in particular. First, China should demand that the developed countries reduce or even eliminate their domestic agricultural subsidies and export subsidies. And most importantly, developed country members should be prevented from utilizing the Doha Agricultural Negotiations to legalize their agricultural protection policies in the framework of the WTO. Second, key agricultural products such as grain, which are related to China's food security, rural employment and farmers' incomes, should be included in the scope of special products for developing countries that are exempt from reduction commitments, with a view to establishing a fair and justifiable international economic environment for solving the issues concerning agriculture, rural areas and farmers in China.

## References

- Brown, L. R. *Who Will Feed China?* New York: W.W. Norton (1995).  
CCICED "A New Framework for the Nation's Food Security Policy," Policy Briefing (October 2004).  
Cheng, G. "Chinese Agricultural Export: Growth, Structure and Contribution," *Management World* 10 (2004a).  
Cheng, G. "Issues of the Development of China's Soybean Industry," DRC Discussion Paper (2004b).



- Fan S. "Effects of Technological Change and Institutional Reform on Production Growth in China's Agriculture," *American Journal of Agricultural Economics* 73 (1991): 266-275.
- Fan, S. and P. Pardey, 1997. "Research Productivity and Output Growth in China's Agriculture," *Journal of Development Economics* 53 (1997): 115-137.
- General Administration of Customs, *China Customs Statistics*, issues from 1992 to 2006.
- Huang, J. and S. Rozelle. "Technological Change: The Re- Discovery of the Engine of Productivity Growth in China's Rice Economy," *Journal of Development Economics* 49(1996): 337-369.
- Lin, J.Y., 1992. "Rural Reforms and Agricultural Growth in China," *American Economic Review* 82 (1992): 34-51.
- Ministry of Foreign Trade and Economic Cooperation. "Compilation of the Legal Instruments on China's Accession to the World Trade Organization." Beijing (2001).
- National Bureau of Statistics of China. *China Statistics Yearbook*. Beijing: China Statistics Press, issues from 1985 to 2006.
- World Bank. *China in 2020*. Washington DC: World Bank (1997).
- World Bank. "China's Food Security," Discussion Paper (2004).
- World Bank. *World Development Indicators CD Rom*. Washington DC: World Bank (2006).
- WTO. *International Trade Statistics*. Geneva: WTO (2006).