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INTRODUCTION

Cassava has its origin in Latin America where it has been grown by the indigenous Indian population for at least 4,000 years. After the discovery of the Americas, European traders took the crop to Africa as a potentially useful food crop. Later, it was also taken to Asia to be grown as a food security crop and for the extraction of starch. After the World War II, it has become an important industrial crop in Thailand, mainly to produce starch for local consumption and dried crops and later pellets for the rapidly growing European animal feed market. In Indonesia, the crop remains a food crop and is used in a great variety of dishes, except in southern Sumatra where it is now mainly grown for starch extraction.

Cassava is known to be a very drought-tolerant and water-efficient crop, while the crop is also exceptionally tolerant of high soil acidity and low levels of available phosphorus. Plantation regions are between the latitudes 30 degrees north and south, with altitude below 1,500 metres, annual average temperature of over 18°C, annual non-frost period of over 8 months, and annual rainfall of over 400 millimetres. Thus, cassava can compete with other crops such as corn, soybean and vegetables mainly in the areas of acid and low-fertility soils, and those with low or unpredictable rainfall, such as the northeast of Thailand, the central coast of Vietnam and in east Java, Indonesia, in Asia.

The Production of Cassava

Based on the statistics from FAO, the production of cassava in the world had shown an overall uptrend for the period between 1970 and 2007. Production increased from approximately 99 million tonnes in 1970 to approximately 228 million tonnes in 2007, up approximately 131% over the period. The compound annual growth rate ("CAGR") of the world production from 1970 to 2007 was approximately 2.3%. The growth of cassava production had accelerated after 1996. Between 1996 and 2007, the CAGR of the world production was approximately 3.4%.

In Asia, the cassava production had shown an overall uptrend. The production increased from approximately 23 million tonnes in 1970 to 72 million tonnes in 2007, up approximately 210% over the period. The CAGR of the production in Asia during the period was approximately 3.1%. However, the growth of production between late 1970s and late 1990s had been low. The production growth in Asia had accelerated after 1998. Between 1998 and 2007, the CAGR of the production in Asia was approximately 5.3%. The contribution of the production in Asia to the world's total production fluctuated during the period between 1970 and 2007, and such contribution amounted to approximately 23% in 1970 and approximately 31% in 2007.

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The Production of Cassava in the World and Asia (2000-2007)

In 2007, the top three cassava producing countries were Nigeria, Brazil and Thailand, with production of approximately 46 million tonnes, 27 million tonnes and 26 million tonnes respectively, representing approximately 20.1%, 12.0% and 11.6% of the total production in the world.

Cassava Production Breakdown by Countries in 2007



Source: Based on the statistics from the FAO of the UN.

Source: Based on the statistics from the FAO of the UN.

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Being the third largest cassava producing country in 2007, Thailand's cassava production has shown an overall uptrend in the past decade. For the period between 1990 and 1998, the production experienced a downtrend, while an uptrend had revived from 1998 to 2007. In a TTTA's newsletter (30 September 2008 issue), TTTA estimated that the cassava supply for the 2008–09 crop season will be approximately 29 million tonnes.



Cassava Production of Thailand (1970-2007)

Source: Based on the statistics from the FAO.

Cassava production in China had shown a general growth trend between 1990 and 2007. The production had increased from approximately 3.2 million tonnes in 1990 to approximately 4.4 million tonnes in 2007, representing a CAGR of approximately 1.8%. For the period between 1997 and 2007, the annual production growth in China was generally slower than the world's production growth. Thus, the contribution of China's cassava production to world's total production had reduced from approximately 2.3% in 1998 to approximately 1.9% in 2007.

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Cassava Production of China (1970-2007)

The Import/Export Markets of Dried Cassava

The total import and export of dried cassava of the world shrank rapidly from approximately 11.4 million tonnes and approximately 9.5 million tonnes respectively in 1990 to approximately 3.4 million tonnes and approximately 4.2 million tonnes respectively in 1995, representing declines of approximately 70.1% and approximately 56.3% respectively.

For the period between 1995 and 2006, the import/export markets had been fluctuating. In 2006, the total import and export of dried cassava of the world were approximately 5.6 million tonnes and approximately 5.5 million tonnes respectively.

Source: Based on the statistics from the FAO of the UN.

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World Import/Export Markets of Dried Cassava (1970-2006)

Source: Based on the statistics from the FAO of the UN.

Thailand was the largest dried cassava exporting country in 2006, with an export of approximately 4.2 million tonnes, representing a dominant market share of approximately 76.4%. Vietnam and Indonesia were the second and third largest exporting countries in 2006, with exports of approximately 1.0 million tonnes and approximately 0.1 million tonnes, representing market shares of approximately 18.9% and approximately 2.4% respectively. The total exports of the top three players in the export market contributed to approximately 97.8% of the total export of dried cassava in the world.

Netherlands Indonesia 2.4% Vietnam 18.9% Vietnam 18.9% Thailand 76.4%

Breakdown of World Dried Cassava Export Market by Countries in 2006

Source: Based on the statistics from the FAO of the UN.

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China was the largest dried cassava importing country in 2006, with an import of approximately 5.0 million tonnes, representing a dominant market share of approximately 89%. Republic of Korea and Spain were the second and third largest players in the import market in 2006, with imports of approximately 0.3 million tonnes and 0.2 million tonnes respectively, representing a market share of approximately 4.8% and 2.7% respectively. The total imports of the top three players in the import market contributed to approximately 96% of the total import of dried cassava in the world in 2006.



Breakdown of the World Dried Cassava Import Market by Countries in 2006

Source: Based on the statistics from the FAO of the UN.

The Bilateral Dried Cassava Trade from Thailand to China

In 2005, Thailand's export of dried cassava to China accounted for a dominating 70.6% of the total export in the world. Thailand's export to China from 2001 to 2005 accounted for approximately 32%, 41%, 39%, 43%, 70% respectively of the total export in the world during the period. Between 2002 and 2005, the bilateral trade had been the largest bilateral dried cassava trade in the world, according to the statistics from FAO of the UN.

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The Contribution of Thailand's Export of dried Cassava to China in the World's Total Export

The Dried Cassava Export Market of Thailand

Thailand had been the largest exporting country of dried cassava between 1970 and 2006, with a contribution to the total world exports of over 60% every year in the period. Thailand maintained a dominant market share in the world's dried cassava export market.

The export of dried cassava in Thailand decreased rapidly from approximately 9.3 million tonnes in 1989 to 3.2 million tonnes in 1995, representing a CAGR of approximately minus 16%. Based on the statistics from the TTTA annual reports, the export of dried cassava chips and pellets from Thailand had revived between 2005 and 2007. In 2007, the export of dried cassava chips and pellets was approximately 4.8 million tonnes.

Source: Based on the statistics from the FAO of the UN.

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Export of Dried Cassava from Thailand (1970-2006)

Based on the 2007 Annual Report of TTTA, in 2007, China was the largest importing country of dried cassava chips and pellets from Thailand, with an import of approximately 3.2 million tonnes, representing approximately 67% of the Thailand's total exports. The second and third largest players were Netherlands and Spain, which accounted for approximately 17% and approximately 10% of Thailand's total exports respectively.

Breakdown of Export of Dried Cassava Chips and Pellets from Thailand by Importing Countries in 2007



Source: Based on the statistics from TTTA annual report.

Source: Based on the statistics from the FAO.

Note: The TTTA reports are not commissioned by either the Company or the Sponsor and are published annually by the TTTA, an Independent Third Party. TTTA is a trade association established in 1963 in Thailand. According to TTTA, the statistics in the TTTA reports are obtained by TTTA from, among others, the Customs Department of Thailand, exporters, and officials of the Board of Trade of Thailand.

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Based on the annual reports of TTTA, China had been the largest importing country of dried cassava chips and pellets from Thailand between 2002 and 2007. Based on the statistics from the FAO, the contribution of China's imports to Thailand's total exports increased rapidly from approximately 37% in 2001 to approximately 91% in 2005. The export from Thailand to China increased by approximately 35 times from approximately 0.08 million tonnes in 2000 to approximately 2.76 million tonnes in 2005. Between 2002 and 2005, China had displaced the European importing countries and became the largest importer of dried cassava from Thailand. The total contribution in Thailand's exports to Netherlands, Spain and Portugal, which were the largest, third largest and fourth largest importing countries from Thailand respectively in 2001, shrank from approximately 58% in 2001 to approximately 8% in 2005. From 1990 to 2001, European countries had been the major export markets of dried cassava from Thailand.



The Export of Dried Cassava from Thailand by Countries (1990-2005)

Source: Based on the statistics from the FAO.

Based on the information from the TTTA annual reports, Thailand's exports of cassava chips to China in 2006 were approximately 3.96 million tonnes, which increased by approximately 43% from approximately 2.77 million tonnes in 2005. However, the export of cassava chips and pellets to China reduced subsequently to 3.22 million tonnes in 2007, representing a decrease of approximately 19% as compared with that in the previous year. The market share of China decreased from 91% in 2006 to 67% in 2007. The total market share of Netherlands, Spain and Portugal increased from 6% in 2006 to 27% in 2007.

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The Export of Dried Cassava Chips and Pellets from Thailand by Countries in (2006–2007)

In 2007, the six largest major cassava producing countries in Asia included Thailand, Indonesia, Vietnam, India, China and Cambodia. In 2007, the total cassava production of these countries represented approximately 96% of that in Asia. Thailand had been the largest cassava producing country in Asia from 1980 to 2007, except in 2002 and 2005. In Vietnam, the cassava production declined during the 1980s and 1990s as the economy improved and the production of rice increased. Between 2000 and 2003, the cassava production rapidly increased in Vietnam in order to meet the internal demand for starch, and for export of products. Between 2000 and 2007, cassava production in Vietnam increased by approximately 3.5 times.

Source: Based on the statistics from the TTTA annual reports.

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Cassava Production in the Largest Cassava-Producing Countries in Asia in 2007 (1970–2007)

In terms of harvested area, Thailand and Indonesia had been the two largest cassava plantation countries in Asia in mid-1970s. Since 1990s, the harvested area in Thailand had reduced gradually, although the cassava production of the country showed a general uptrend from 1998 to 2007. This was because the yield of the cassava plantation in Thailand showed a general upward trend. In Vietnam, the production growth was supported by the increases in harvested area and the plantation yield.

Source: Based on the statistics from the FAO of the UN.

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The Cassava Harvested Area of the Largest Cassava-Producing Countries in Asia in 2007 (1970–2007)

In 2007, the plantation yield of cassava in Thailand was approximately 22.9 tonnes per hectare of harvested area. Between 1970 and 2007, the annual plantation yield of Thailand had always been higher than those in Indonesia, Vietnam, and the Asian average. Between 1971 and 2007, although the plantation yield of India was generally higher than that in Thailand (save for 1983), the harvested area in India was smaller than that in Thailand (save for 1971 and 1972). Therefore, cassava production in India was lower than that in Thailand between 1975 and 2007.]

In Asia, the cassava production had shown an overall uptrend. The increase in production was supported by the improvement in plantation yield over the period. In 1970, the plantation yield in Asia was approximately 9.4 tonnes per hectare, while that of the rest of the world was approximately 8.2 tonnes per hectare. The advantage in Asia further expanded over the years. In 2007, the yield in Asia was approximately 18.7 tonnes per hectare while that of the rest of the world was approximately 10.5 tonnes per hectare.

Source: FAO of the UN.

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The Cassava Plantation Yield of the Largest Cassava-Producing Countries in Asia in 2007 (1970–2007)

According to the article *Cassava in Asia* published in the Annual Report 2004 of TTTA, production costs for advanced farmers in Thailand are higher than those in Indonesia and the Philippines, but lower than in Vietnam, China and India. When measured in per tonne of fresh roots, production costs in Thailand are slightly higher than those in Indonesia and the Philippines, but lower than those in India and China.

Cassava production in Thailand increased rapidly in 1970s and 1980s partly because of the growing demand for animal feed in Europe. However in the late 1980s, cassava became less competitive in Europe with locally produced barley. The export of dried cassava in Thailand decreased rapidly from approximately 9.3 million tonnes in 1989 to approximately 3.2 million tonnes in 1995, representing a CAGR of approximately minus 16%. The drastic reduction of dried cassava export to Europe was partially offset by the increasing demand of cassava chips in China. Between 2000 and 2006, while the export of dried cassava pellets from Thailand generally declined, the export of cassava chips from Thailand generally increased.

Source: FAO of the UN.

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The Exports of dried Cassava Chips and Pellets in Thailand (2000-2007)

Export market of dried cassava pellets from Thailand were mainly dominated by European countries. Between 2000 and 2007, the total contribution of the European countries (including Turkey) and China to the Thai export of dried cassava pellets was approximately 93.0% and 1.8% respectively.

In contrast, China had played a dominating role in the export market of dried cassava chips from Thailand from 2000 to 2007. In 2000, when Thailand's export of dried cassava chips amounted to approximately 95,170 tonnes, export to China amounted to approximately 73,900 tonnes, accounting for approximately 77.7% of the total export of dried cassava chips from Thailand. Since 2001, however, the export of dried cassava chips from Thailand to China generally surged. Between 2001 and 2007, the average annual export of dried cassava chips from Thailand was approximately 2.5 million tonnes. The total contribution of export to China over the period was approximately 99.9%. Essentially, nearly all the dried cassava chips exported from Thailand went to China, according to the statistics from the annual reports of TTTA.

Source: Based on the statistics from the TTTA annual reports.

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The Country Breakdown of Dried Cassava Pellet Export in Thailand (2000-2007)

Source: Based on the statistics from the TTTA annual reports.

The Dried Cassava Import Market of China

China was the largest importing country of dried cassava in the world between 2001 and 2005. The contribution of the China import to the total world imports increased from approximately 5% in 2000 to approximately 81% in 2005. Between 2000 and 2005, China's dried cassava import increased approximately 12 times from approximately 0.26 million tonnes to approximately 3.3 million tonnes, representing a CAGR of approximately 67%.





Source: Based on the statistics from the FAO.

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Based on the Cassava Market Report, with cited statistics from China Customs, China's dried cassava import increased by approximately 43% from approximately 3.3 million tonnes in 2005 to approximately 4.9 million tonnes in 2006. In 2007, although the import dropped approximately 7% to approximately 4.6 million tonnes, it is still 38% higher than that in 2005.



Import of Dried Cassava in China (2006–2007)

In 2007, Thailand was the largest exporting country of dried cassava to China, with an export of approximately 3.2 million tonnes, representing approximately 69% of the total China import. In 2007, other imports were mainly from Vietnam and Indonesia, which contributed approximately 28% and 3% of China's total import respectively.



Breakdown of the China Dried Cassava Import by Exporting Countries in 2007

Source: Cassava Market Report (defined below).

Source: Cassava Market Report (as defined below).

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Production and Application of Cassava in China

According to the Cassava Market Report^{Note}, major cassava production regions in the PRC are located in five provinces, namely Guangxi, Guangdong, Hainan, Yunnan and Fujian, of which Guangxi contributed over 60% of the total harvesting area and production in the PRC. In the PRC, cassava is processed to produce mainly cassava starch and alcohol and a small amount for modified starch and other derived products. Production of one tonne of alcohol requires consumption of approximately 6.8 tonnes of fresh cassava or approximately 3.1 tonnes of cassava chips.

In 2007, approximately 8.6 million tonnes of dried cassava were consumed in the PRC, of which approximately 4.0 million tonnes were contributed by domestic production and 4.6 million tonnes were imported, representing approximately 46% and 54% of the total consumption in the PRC respectively. Alcohol production was a major application of the imported dried cassava in the PRC, accounting for approximately 95.0% of the total consumption of imported dried cassava.

According to the Cassava Market Report, the production of alcohol in the PRC increased by approximately 140% from approximately 2.3 million tones in 2000 to approximately 5.5 million tones in 2007, representing a CAGR of approximately 13%. The production of alcohol experienced high growth in the past few years. A key reason of the growth is the increased demand in the international market. Further, the tax rebate policy improved the profit for the export of alcohol. The plentiful harvest of grains in the late 1990s' provided the incentive for alcohol production especially in the regions with raw material advantages such as Jilin, Heilongjiang and Inner Mongolia. The government policies which encouraged production of ethanol fuel as renewable energy also drove the production of alcohol. According to 《可再生能源中長期發展規劃》 (The Mid- and Long-term Development Plan for Renewable Energy) ("Renewable Energy Plan"), the PRC government recognizes that liquid bio-fuel is as an important substitute of petroleum and comprises mainly ethanol fuel and bio-diesel. The Renewable Energy Plan also provides for the establishment of raw material supply bases in scale and large liquid bio-fuel processing enterprises.

Note: On behalf of the Company, the Sponsor commissioned Beijing Wefore Investment Consulting Co., Ltd. (北京世經未來投資諮詢有限公司) ("Beijing Wefore"), an Independent Third Party, to issue the Cassava Market Report. According to the information provided by Beijing Wefore, Beijing Wefore is a consultancy subordinated to 中國經濟導報社 ("China Economic Herald") under the NDRC. Its research department comprises over 50 analysts and consultants and over 100 professionals engaged by Beijing Wefore. Beijing Wefore provides research and consulting services in, among others, energy and commodity industries. According to Beijing Wefore, their figures and information are sourced from among others, the PRC Customs, the Ministry of Agriculture and the National Bureau of Statistics of the PRC or its independent research. The fees paid to Beijing Wefore are on normal commercial terms. The report was prepared based on existing statistics, the supply and demand situations in the industry, the comprehension of the country's industrial policies, the analysis of the overall economic environments in China and aboard, and the stable growth of energy demand driven by the economic development in China.

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Alcohol Production in China (2000–2007)

According to the report *China, Peoples Republic of, Bio-fuels Annual 2008,* published by USDA (United States Department of Agriculture) Foreign Agricultural Service in June 2008, total ethanol production in the PRC in 2007 is estimated at 6 million tonnes. Among them, 1.4 million tonnes is denatured for ethanol fuel use, about 2.5 million tonnes for food use. The reminder is used for industrial and surgical applications. About 50% of total ethanol production is based on grains (mostly corn, but including sorghum, wheat, and rice) with the remainder based on tubers, including cassava and sweet potatoes.

Being a fast growing developing country, China has a rising demand for fuel. In 2007, the average daily consumption of gasoline in China was approximately 151 thousand tonnes, representing an annual consumption of approximately 55 million tonnes. Between 1990 and 2007, the average daily consumption of gasoline increased by approximately 190% from approximately 52 thousand tonnes to approximately 151 thousand tonnes, representing a CAGR of approximately 6.9%.

Source: The Cassava Market Report, May 2008.

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Daily consumption of Gasoline in China (1990-2007)

Source: China Statistical Yearbook 2008.

The Policy for the Development of Renewable Energy in China

According to《中國的能源狀況與政策》(The Situation and Policy of Energy in China) announced by The State Council Information Office of the PRC (中華人民共和國國務院新聞 辦公室) in December 2007, China is the second largest energy producer and consumer in the world. However, the energy reserve per capita is relatively low. The high quality energy resources are relatively insufficient. The energy efficiency is low. The energy consumption mainly relies on coal. The pressure for environmental protection is increasing. In order to enhance the energy supplies capability, one of the energy policies is to enhance the development of renewable energy.

According to the Renewable Energy Plan, energy is an important material foundation of economic and social development. China has become a major player in energy production and consumption in the world, although the energy consumption per capita is still low. Due to the continuous economic and social development, the demand for energy in China will continue to rise.

Renewable energy includes hydropower, bio-energy, wind power, solar energy and others. They have the advantages of high reserves, low pollution and sustainable consumption. However, renewable energy consumption in China has been very low compared to total PRC energy consumption, while technological improvement is slow and the industrial foundation is weak. In the Eleventh Five-Year Plan, the production and consumption of renewable energy was encouraged by the implementation of favourable taxation, preferential investment policies, and mandatory market share policies.

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According to the Renewable Energy Plan, the direction of developing modern bio-energy involves the transformation of biological substances into high quality energy, including electricity, gas fuel, and liquid fuel, which will become the most widely used renewable energy technology. China has started to use ethanol fuel in transportation fuel. The production capacity of ethanol fuel from grain feedstock was 1.02 million tonnes. The production of ethanol fuel from non-grain feedstock has initially met the conditions for commercial development.

According to the recent policies《國家發展改革委關於加強玉米加工項目建設管理的緊 急通知》(Urgent Circular on Strengthening Management of Corn Processing Projects by the National Development and Reform Commission), the Renewable Energy Plan,《關於促 進玉米深加工業健康發展的指導意見》(Guided Opinion on Facilitation of the Healthy Development of Corn Refined Processing Industry) and《可再生能源發展"十一五"規劃》 (Development Plan for Renewable Energy in the 11th Five-Year Plan), announced by the NDRC in December 2006, August 2007, September 2007 and March 2008, respectively, the PRC government will encourage the production and consumption of ethanol fuel to substitute petrol. However, the PRC government has set out the non-competition for grain with people and non-competition for harvest land with grain ("不與民爭糧,不與糧爭地") as the principles for the development of bio-fuels and corn will be used with priority for, among others, animal feeds and food. The current emphasis of the PRC government is to develop ethanol fuel technologies that apply non-grain feedstock, such as cassava, as raw materials for production of ethanol fuel. As a matter of national direction, the production capacity of ethanol fuel projects with grain feedstock, such as maize, as raw material will not be increased in the PRC. Cassava is a type of tuberous plant and is used in the production of ethanol fuel. According to the Renewable Energy Plan, the targets are to increase the production of ethanol fuel by non-grain feedstock to 2 million tonnes by 2010 and to 10 million tonnes by 2020. These will be equivalent to a substitute of 10 million tonnes of petroleum by 2020.

The Bio-fuel Sector in the PRC

According to the report *China, Peoples Republic of, Bio-fuels Annual 2008,* food security has been a top issue on the PRC government agenda. Escalating food prices since 2007 have triggered a series of policy shifts in the industrial use of grain. The PRC policy prescribed that ethanol fuel development should not compete for arable land designated for crops for human consumption. The future development of feedstock for bio-fuel will necessarily have to come from the marginal, less arable land, and therefore the increase of tuber crops and sweet sorghum is a realistic expectation. Some provincial governments and private companies are experimenting with sweet potato and sweet sorghum as feedstock for bio-fuel production. However, current production of such crops is far from sufficient for scaled industrial ethanol production. The supply of such feedstock has been seasonal, low yielding and simply not suitable for industrial production.

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According to the report *China*, *Peoples Republic of*, *Bio-fuels Annual 2008*, as at June 2008, ten provinces participated in the ethanol fuel program. These ten provinces will remain the priority for use of an E10 gasoline (with a fuel/ethanol mix rate of 10 percent). Six of these provinces use E10 within their entire provinces while four provinces have only partly adopted the product. Close to full adoption by these four provinces remains a priority for the government's fuel ethanol program.

Participation of the Ethanol Fuel Program in the PRC

Province	E10 Mandates
Heilongjiang	Entire province
Jilin	Entire province
Liaoning	Entire province
Henan	Entire province
Anhui	Entire province
Guangxi	Entire province
Hebei	Major cities only
Shangdong	Major cities only
Jiangsu	Major cities only
Hubei	Major cities only

Source: China, Peoples Republic of, Bio-fuels Annual 2008, published by USDA Foreign Agricultural Service, June 2008.

Other Non-grain Feedstock for Ethanol Production in the PRC

According to the report *China, Peoples Republic of, Bio-fuels Annual 2007,* published by USDA Foreign Agricultural Service in June 2007, on a per weight basis sweet sorghum has relatively low yields as much of the plant is composed of cellulose which cannot be economically processed with current technologies. It takes 15 tonnes of sweet sorghum to produce 1 tonne of ethanol. On a per weight basis, dry tubers (cassava and sweet potatoes) have the lowest conversion ratio to ethanol because of a low water weight and high starch composition.

Feedstock	Yield (Feedstock to Ethanol)/Tonne
Corn	3.2 to 1
Dry Tubers (cassava and sweet potatoes)	2.9 to 1
Fresh Tubers (cassava and sweet potatoes)	7.8 to 1
Fresh Sweet Sorghum (whole plants*)	15 to 1

*Note: the whole sweet sorghum plant has a sugar content level ranging between 15–20%.

Source: China, Peoples Republic of, Bio-fuels Annual 2007, published by USDA Foreign Agricultural Service, June 2007.

Note: Both of the reports China, Peoples Republic of, Bio-Fuels Annual 2007 and China, Peoples Republic of, Bio-Fuels 2008 are published by the United States Department of Agriculture, which is a government department of the United States of America. These reports are public information available in the Internet.

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According to the report *China*, *Peoples Republic of*, *Bio-fuels Annual 2008*, compared with grains (such as corn, wheat, and rice), non-grain feed stocks such as tubers (including cassava) and sweet sorghum have a higher ethanol yield. The average corn yield in the PRC is about 40% lower than the United States biotech corn. It is highly unlikely that in the short term, the PRC will approve any biotech grain crops for commercial production. Therefore, the yield improvement for domestic grain crops in the PRC will be limited. This low crop yield partially impacts the productivity and future grain-based ethanol production in the PRC.

Current Ethanol Fuel Yield Data

	Crop yield	Ethanol yield
Feedstock	(tonne/hectare)	(tonne/hectare)
Corn	5	1.6
Tuber (Cassava)	22.5	3
Fresh sorghum	60–90	5

Source: China, Peoples Republic of, Bio-fuels Annual 2008, published by USDA Foreign Agricultural Service, June 2008.

According to the report *China, Peoples Republic of, Bio-fuels Annual 2008,* sweet sorghum can potentially render the highest ethanol yield among all alternative non-grain feed stocks in the PRC. However, its availability is constrained by limited arable land and the seasonal supply, hence hindering large scale production in the PRC. To extend the processing season, the PRC researchers and the industry are working on a prolonged storage methodology for fresh sweet sorghum. So far, there are no commercial ethanol plants based on sweet sorghum. Similar to other countries, cellulosic ethanol is not commercially viable in the PRC. Currently, there are two major testing plants in the PRC, located in Henan and Heilongjiang respectively. The plant in Henan is in a trial stage of 300 tonnes annually, taking wheat straw as feedstock, while the plant in Heilongjiang, with a trial stage of 500 tonnes annually, uses corn stover as feedstock. Both plants were jointly funded by the government and state companies. State media reports that these plants are planning to expand their trial capacity in 2008, however, industry experts are not confident that the technology will materialize commercial production of cellulosic ethanol in the PRC in the short term.

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The Price Trend of Dried Cassava Chips and Pellets

The export price of the cassava chips in Thailand had been relatively stable between 2005 and 2006, where the price range was between USD98 (equivalent to approximately HK\$760) and USD116 (equivalent to approximately HK\$900) per tonne FOB Bangkok. However, the export price of cassava chips increased substantially by approximately 49% from USD111 (equivalent to approximately HK\$870) per tonne in December 2006 to USD165 (equivalent to approximately HK\$1,300) per tonne in December 2007.

In 2007, the export price of dried cassava pellets also rose. The average export price of dried cassava pellets used to be lower than that of cassava chips in 2005 and 2006. However, the export price of the dried cassava pellets overtook that of cassava chips in 2007. In 2007, the growth in export volume of dried cassava pellets from Thailand also overtook that of dried cassava chips.





Note: * All the export prices of dried cassava pellets quoted by TTTA between 2005 and 2007 have been included in this chart, although they are not quoted every month.

Source: Based on the information from the TTTA annual reports.

According to the TTTA Newsletters between January and 31 December 2008, the range of the export price of dried cassava chips gradually rose from between USD167 (equivalent to approximately HK\$1,300) and USD172 (equivalent to approximately HK\$1,300) per tonne in January to between USD188 (equivalent to approximately HK\$1,500) and USD192 (equivalent to approximately HK\$1,500) per tonne in May 2008, and maintained at a level between USD180 (equivalent to approximately HK\$1,400) and USD190 (equivalent to approximately HK\$1,500) per tonnes during June to August 2008, subsequently decreased to USD120 (equivalent to approximately HK\$940) to USD130 (equivalent to approximately HK\$1,000) per tonne in December 2008. From January to December 2008, the price range of dried cassava pellets was not quoted in the TTTA Newsletters.

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REGULATIONS IN RELATION TO THE GROUP'S BUSINESS

As advised by the Company's PRC legal advisers, the Group has obtained the relevant 《中華人民共和國海關進出口貨物收發貨人報關註冊登記證書》(Registrar Document for Customs Declaration of Consignees and Consigners of Import and Export Goods of the Customs of the PRC) to carry on its import business in the PRC. According to《中華人民共 和國進境動植物檢疫審批管理辦法》(Administrative Regulations of the People's Republic of China on the Approval of Import of Animal and Plant Quarantine), a《進境動植物檢疫許 可證》(Imported Animal and Plant Quarantine Permit) must be obtained prior to the entering into of the relevant trade agreement. According to《中泰蔬菜水果協議》 (Sino-Siam Fruits and Vegetables Agreement) dated 18 June 2003, cassava chips imported from Thailand are exempted from customs duties.

The Directors are not aware of any quota systems on the export of dried cassava chips from Thailand, Vietnam, Indonesia, Laos and/or Cambodia to China. The Directors are also not aware that cassava chips imported into the PRC from Vietnam and Indonesia are subject to customs duties.

As advised by the Company's Thai legal advisers, export of products from Thailand currently does not receive any value added tax privilege but export of cassava and cassava chips to any country, including China, is exempted from customs duty under the Decree No. 30 issued pursuant to the Customs Act of Thailand. With reference to the rules, regulations and laws in Thailand, including the Foreign Business Act A.D. 1999, a company established in Thailand with 50% or more of its issued shares being held by foreign national is entitled to engage in the business of purchasing, processing and distributing agricultural products, including cassava chips. Under the laws on exporting of standard commodity, an exporter of cassava product must obtain a certificate showing the registration as exporter of standard commodity from the Office of the Commodity Standard of Thailand, which is subject to renewal every year, and an export license from the Foreign Trade Department of the Ministry of Commerce of Thailand for each export transaction. One pre-requisite qualification of the exporter to obtain the certificate from the Office of the Commodity Standard of Thailand is that the exporter must be a member of any association relating to cassava products.

As advised by the Company's PRC legal advisers, the Company's listing does not require the approval from the China Securities Regulatory Commission (CSRC) according to the 《國務院關於進一步加強在境外發行股票和上市管理的通知》(Circular of State Council, Further Strengthening Administration of the Issue and Listing of Shares Outside China). The PRC legal advisers also opined that the Group is not subject to 《國家外匯管理局關於境內居民通過境外特殊目的公司融資及返程投資外匯管理有關問題的通知》(Circular on Issues Relevant to Foreign Exchange Control with Respect to the Round-trip Investment of Funds raised by Domestic Residents through Offshore Special Purpose Companies) as the controlling shareholder of Rizhao Yushun, namely Mr. Chu, is not a domestic resident as defined in the said notice. In addition, the Company's PRC legal adviser advised that the Group is not subject to the restriction and supervision under the 《關於外國投資者併購境內 企業的規定》(Provisions on Mergers and Acquisitions of Domestic Enterprises by Foreign Investors in the Mainland) since Rizhao Yushun has been a wholly foreign-owned enterprise since its establishment on 19 July 2001.