

# China Oils and Fats

## – Issues & Opportunities for Palm Oil

MPOC Shanghai, China  
2010



# China Overview

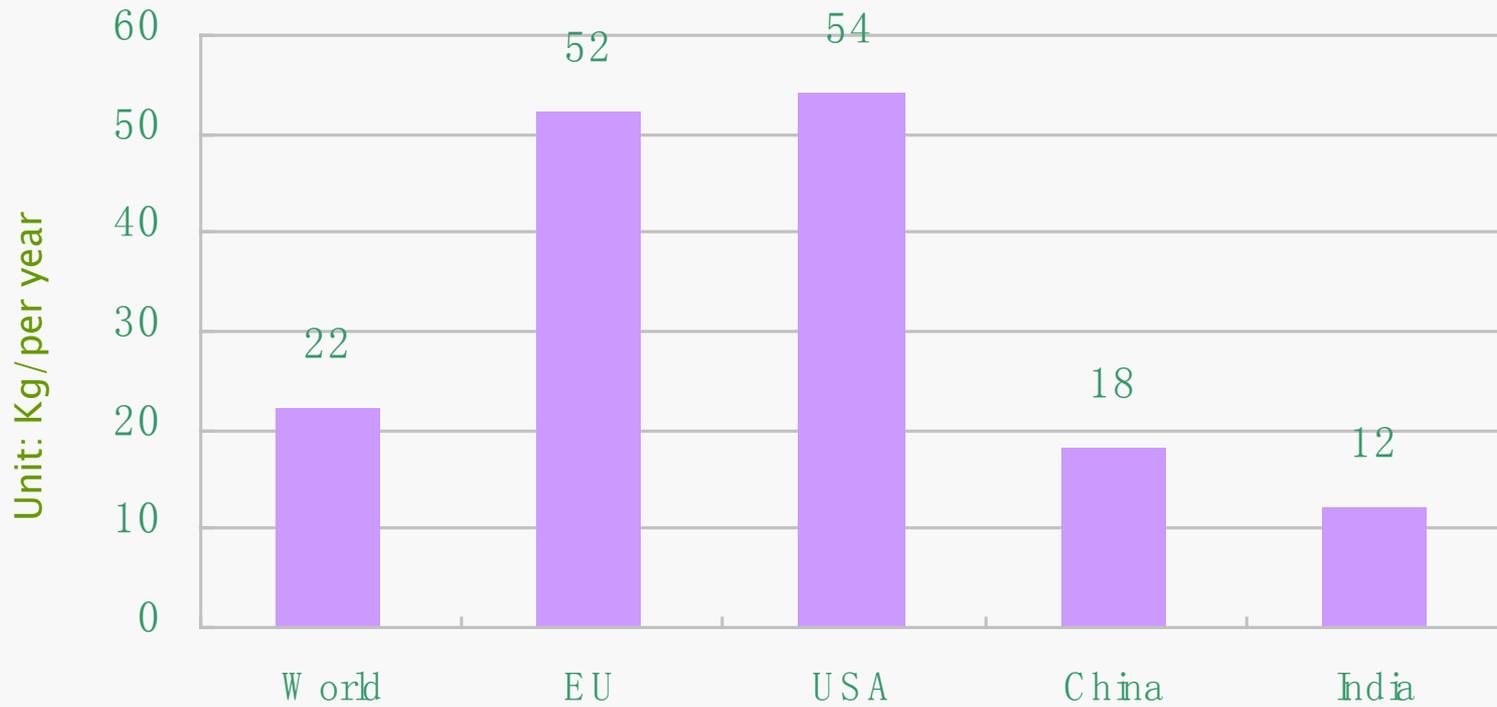


# China Overview

<b>POPULATION</b>	<b>World's most populous country, with 1.34 billion in 2009 (↑ 136% over the past three decades)</b>
<b>RESIDENTS</b>	<b>Urban: 45.68% in 2009 (19.39% in 1980) Rural: 54.32% in 2009 (80.61% in 1980)</b>
<b>LIFE EXPECTANCY</b>	<b>71 years (men); 75 years (women)</b>
<b>GEOGRAPHY</b>	<b>World's fourth largest country after Russia, Canada and the United States, with a land area of nearly 9.6 million sq-km (3.7 million sq-miles)</b>
<b>GDP GROWTH RATE</b>	<b>9.73% in the past 10 years 8.7% in 2009, with 33.54 trillion yuan</b>
<b>PER CAPITA GDP</b>	<b>↑ 6,072% from 463 yuan in 1980 to 28,577 yuan in 2009</b>

# China Overview

Table 1: Per Capita Consumption of Edible Oils

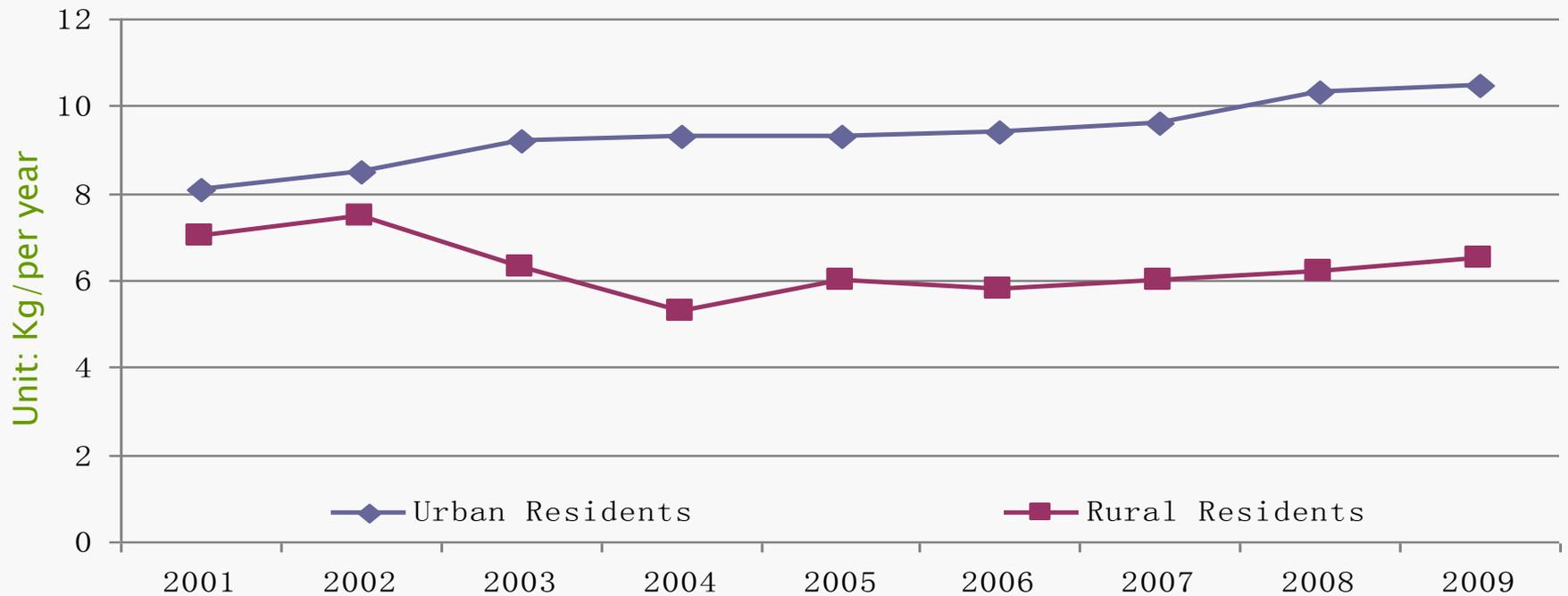


# China Overview

Accelerating urbanisation in China has driven up edible oil consumption positively



Table 2: Per Capita Edible Oil Consumption in China



# Oils & Fats Scenario



 **Oils & Fats Overview**

 **Soybean Oil Scenario**

 **Rapeseed Oil Scenario**

 **Palm Oil Scenario**

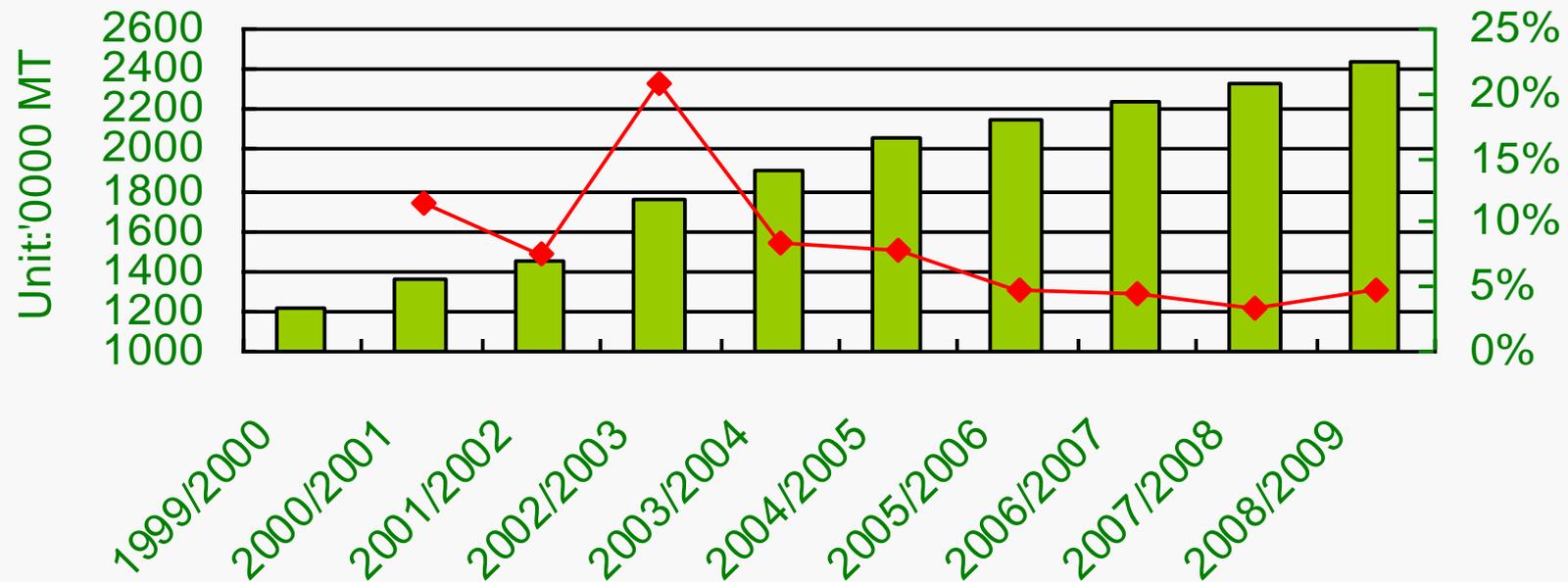


# Oils & Fats Scenario

1

## Oils & Fats Overview

Table 4: Vegetable Oil Consumption and its Growth Rate in China



Source: epansun.com

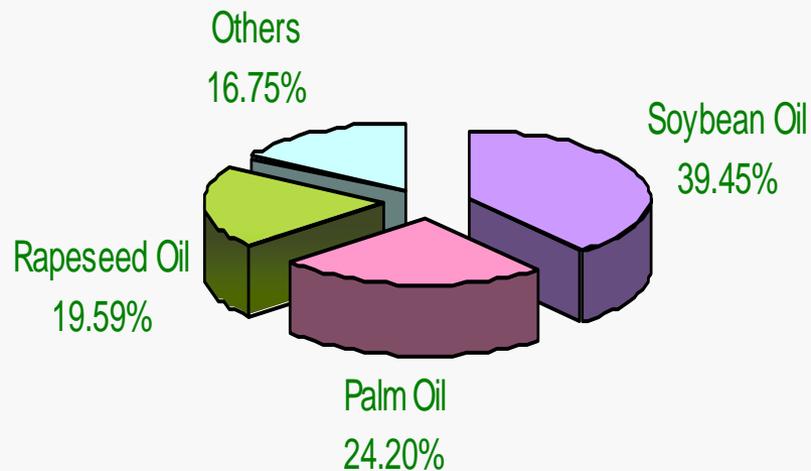
# Oils & Fats Scenario

2

## Soybean Oil Scenario

- More than 85% of the soybean oil is used by China's food industry

Table 5: Domestic Oils and Fats Consumption in 2009–10



Source: [epansun.com](http://epansun.com)

# Oils & Fats Scenario

2

## Soybean Oil Scenario

- Soybean oil consumption by the food industry increased 251% from 2.45 million MT in 1996/97 to 8.6 million MT in 2008/09.
- Soybean oil consumption in other sectors, such as industrial and pharmaceutical sectors, accounts for 10–15% of the total.

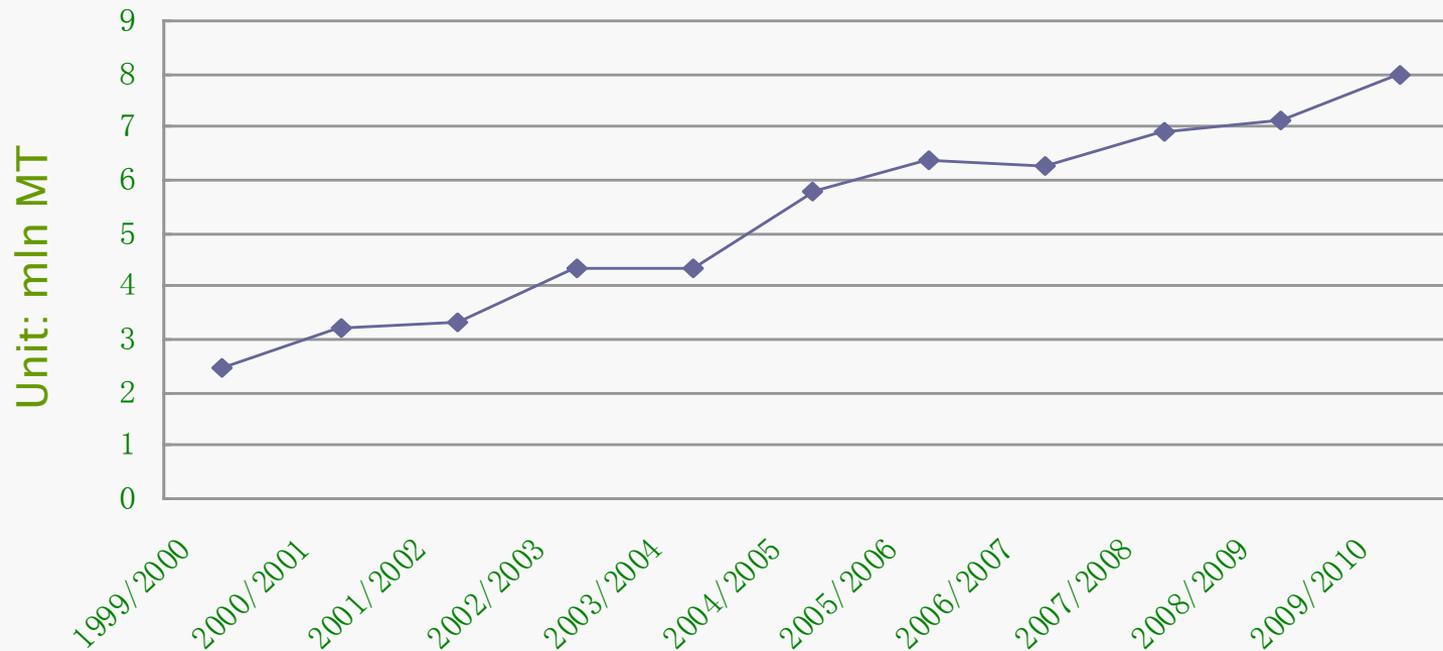


# Oils & Fats Scenario

## 2 Soybean Oil Scenario

-Annual growth rate of soybean production is 0.55% in the last 10 years.

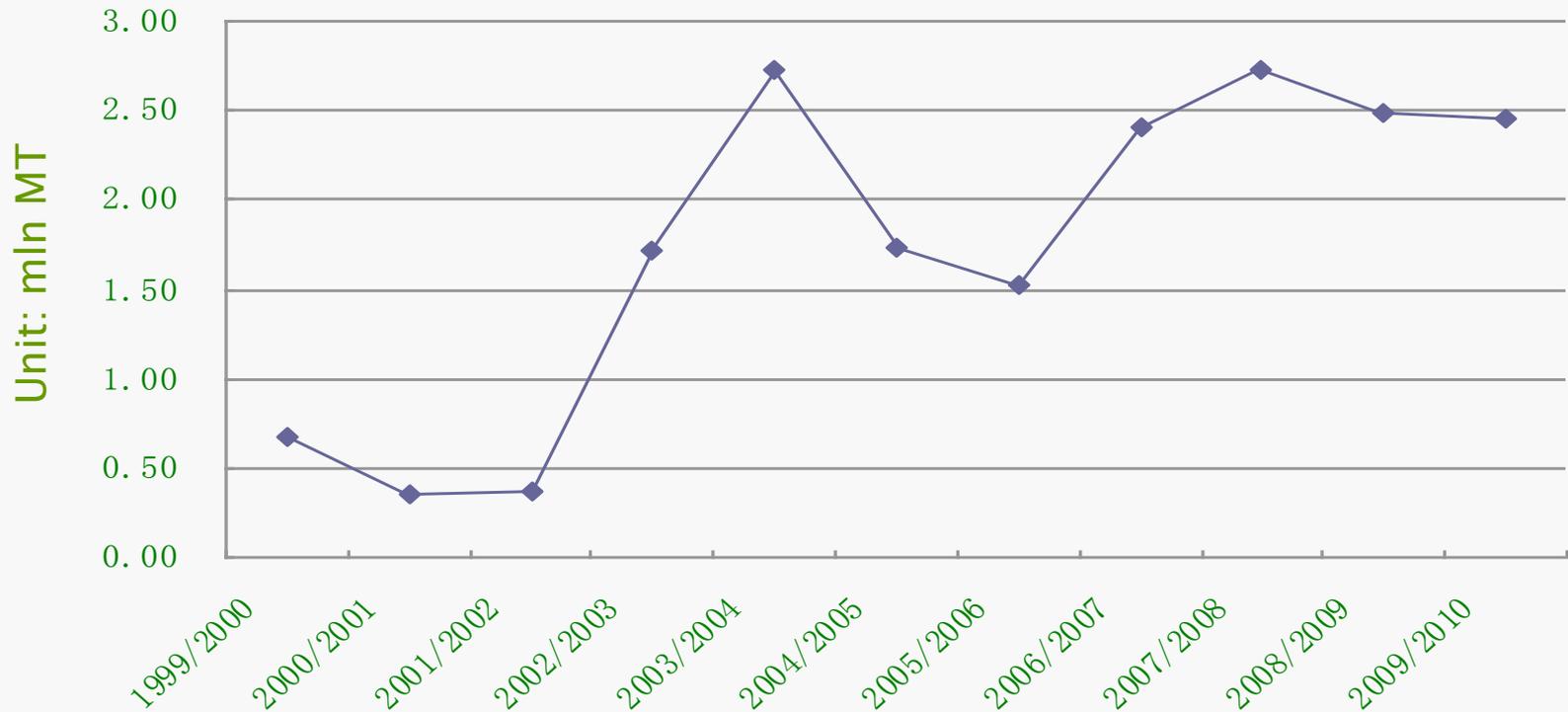
Table 6: Soybean Oil Production



# Oils & Fats Scenario

## 2 Soybean Oil Scenario

Table 7: Soybean Oil Imports



# Oils & Fats Scenario

3

## Rapeseed Oil Scenario

– Mainly for household, food and catering consumption

Table 8: Consumption Pattern of Rapeseed Oil in China

Year	Annual Consumption ('0000 MT)	Household		Others	
		('0000 MT)	(%)	('0000 MT)	(%)
1960s	22.08	22.06	99.91%	0.02	0.08%
1970s	42.32	42.27	99.87%	0.06	0.13%
1980s	150.17	149.81	99.76%	0.61	0.24%
1990s	291.43	218.94	75.13%	72.48	24.87%
2000s	394.40	225.15	57.09%	169.25	42.91%

# Oils & Fats Scenario

## 3 Rapeseed Oil Scenario

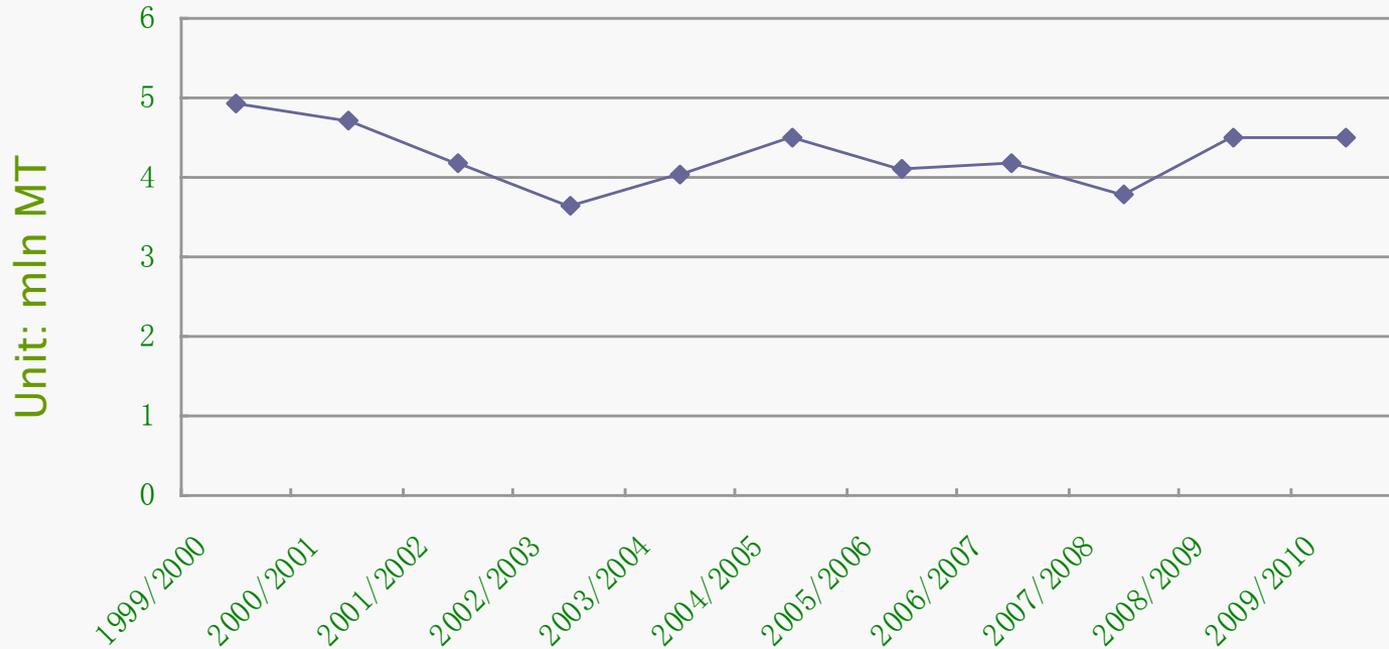
- Household demand accounted for 99% of rapeseed oil consumption from the 1960s to 1980s.
- Increasing demand by the catering and food processing sector led to 36,100 MT of the oil consumed in 1980s, growing to 724,800 MT in the 1990s, taking up 24.87% of the total rapeseed oil consumption.
- 21<sup>st</sup> Century sees the proportion of household demand reducing to around 60%, while usage by the catering and food sector increases to about 40%.

# Oils & Fats Scenario

3

## Rapeseed Oil Scenario

Table 9: Rapeseed Oil Production

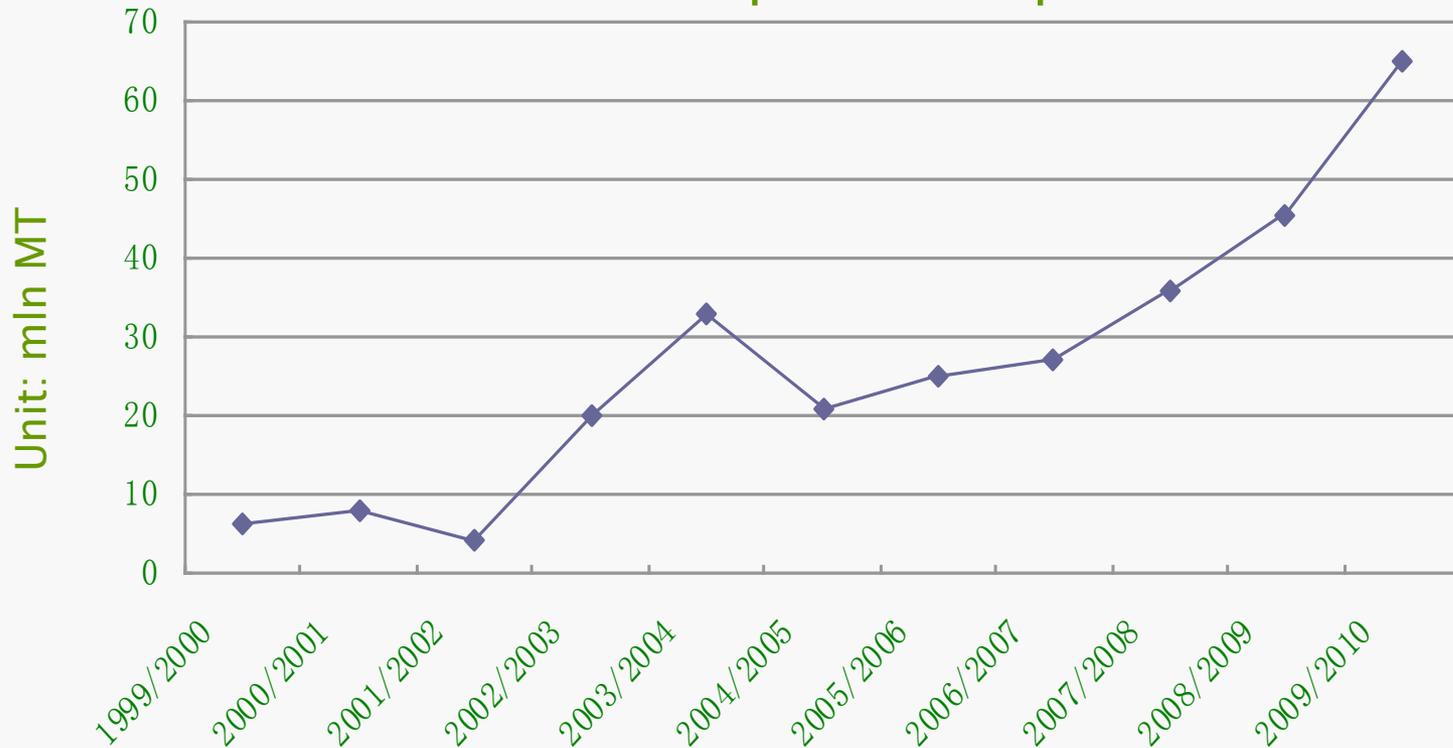


# Oils & Fats Scenario

3

## Rapeseed Oil Scenario

Table 10: Rapeseed Oil Imports



# Oils & Fats Scenario

## 4

### Palm Oil Scenario

- SWOT Analysis
- Background Information
- Traditional Sectors – Key Food Industries
- Issues in Palm Oil Industry in China
  - Product Classification (HS Code)
  - MCT Case
  - Palm Stearin Acid Case
  - Image of MPO In China
- Opportunities for MPO In China
  - Blending Oil Sector
  - Printing Ink Sector
  - Bio-lubricant Sector
  - PKE Sector



# Oils & Fats Scenario



4

## Palm Oil Scenario – SWOT Analysis

### Strengths

- Wide applications
- Excellent stability in most applications
- Price competitiveness
- Health attributes and trans fat-free

### Opportunities

- Increasing population
- Improving Urbanisation
- Growing awareness
- Low per capita consumption

# Oils & Fats Scenario



4

## Palm Oil Scenario – SWOT Analysis

### Weaknesses

- Low awareness in some fields
- Incorrect usage in some sectors

### Threats

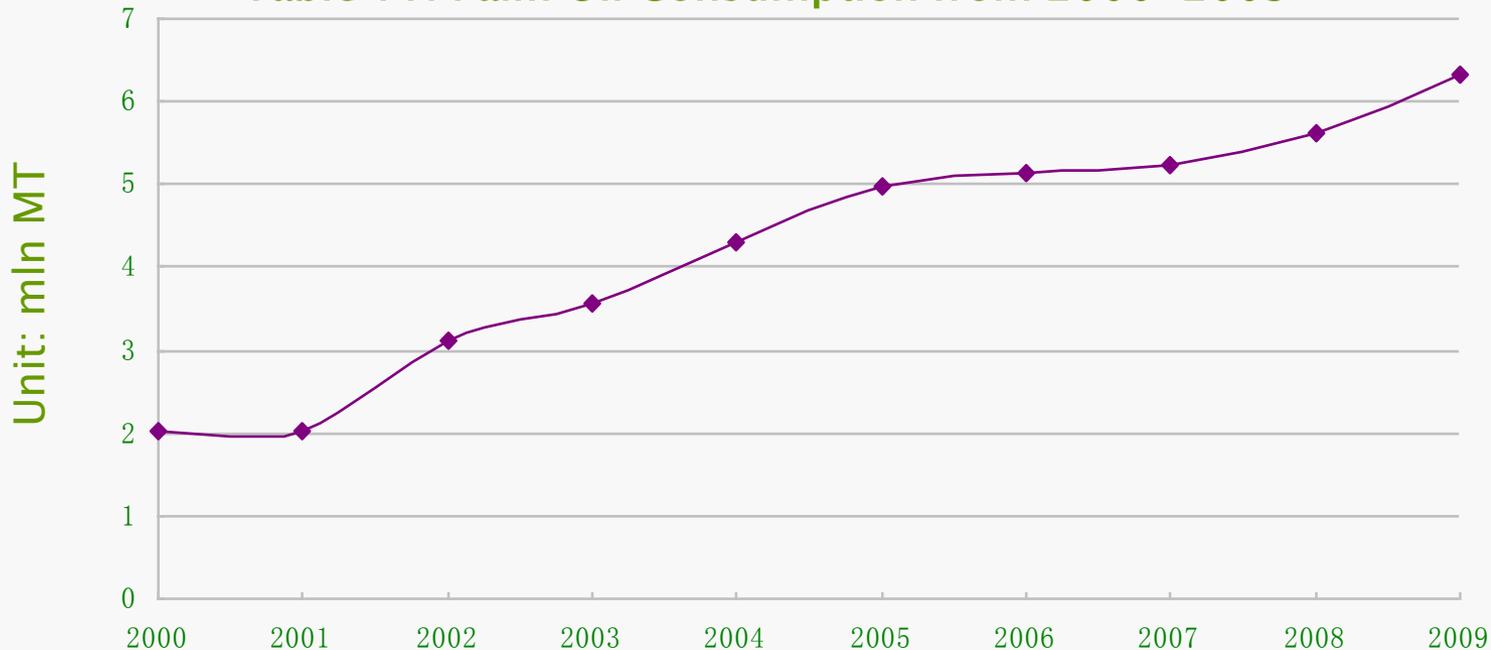
- Lacking in National Standard for Blending Oils
- Bias and poor perception

# Oils & Fats Scenario

## 4 Palm Oil Scenario – Background Information

As the world's largest vegetable oil consumer, China's palm oil consumption accounts for more than 15% of the world's total.

Table 11: Palm Oil Consumption from 2000–2009

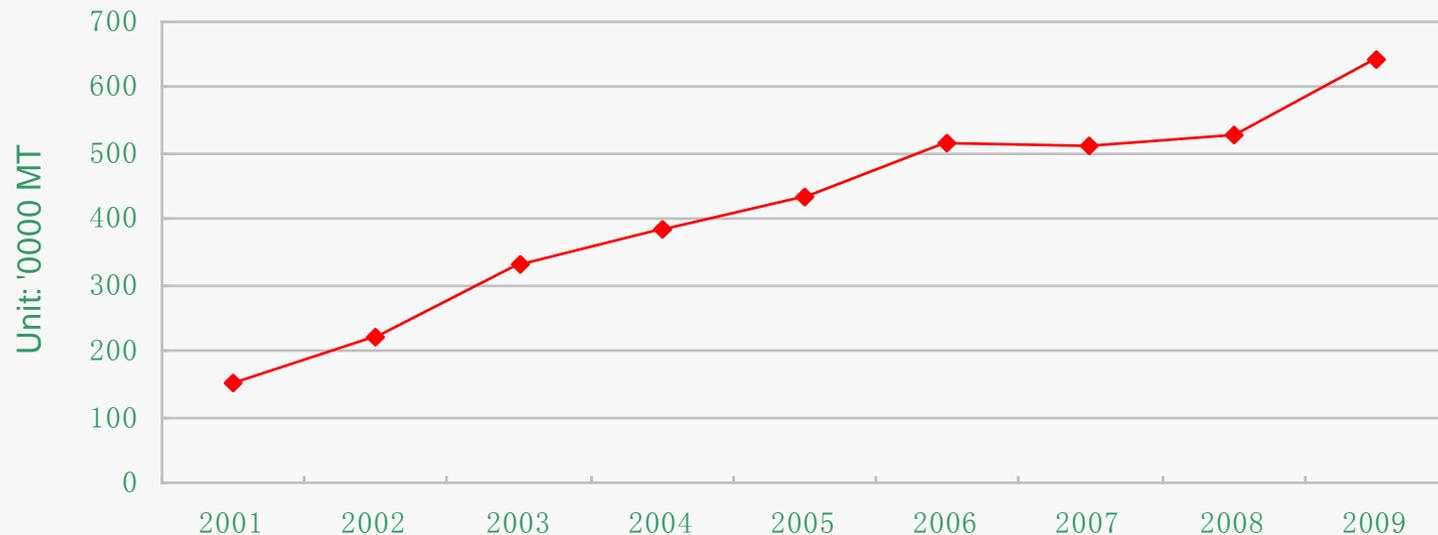


# Oils & Fats Scenario

## 4 Palm Oil Scenario – Background Information

China in 2009 imported 6.441 million MT of palm oil, up 22% over 2008, hitting the record high for the past one decade.

Table 12: Palm Oil Imports from 2001–2009

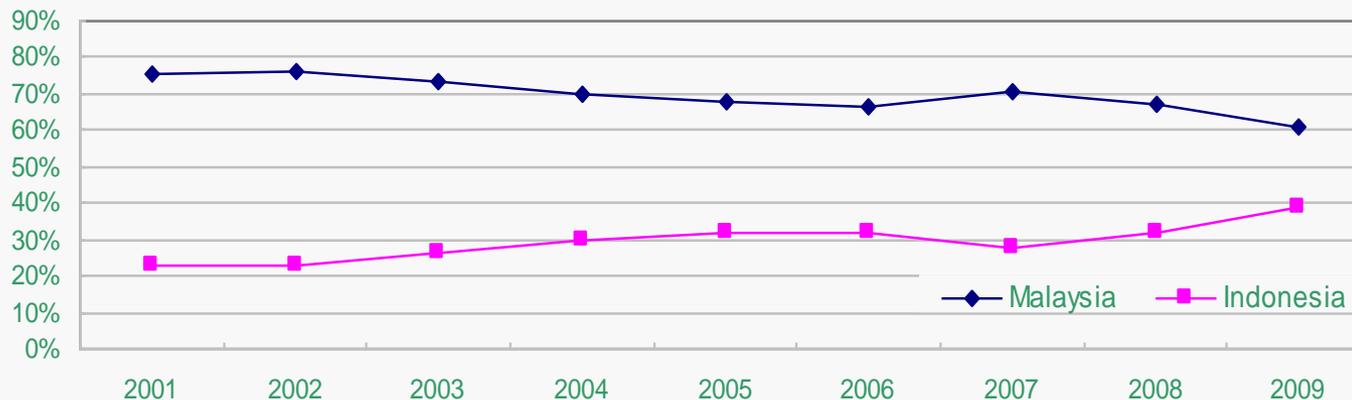


# Oils & Fats Scenario

## 4 Palm Oil Scenario -- Background Information

- Malaysia and Indonesia, two traditional palm oil exporters to the Chinese market, account for 97% of China's total imports.
- Malaysia takes up 60.91% of the market share while Indonesia has 38.9%.

Table 13: Market Share of Malaysia and Indonesia



# Oils & Fats Scenario

4

## Palm Oil Scenario – Background Information



- Widely applied in food & non-food sectors

→ Instant noodles: 20%;

Food processing & catering: 33%;

Household cooking oil: 22%;

Soap: 16%;

Oleochemicals: 6%

Table 14: Palm oil Consumption by the Food Sector (million MT)

Year	Palm Oil Consumption	Palm Oil in Food Sector
2000	2.028	1.42
2001	2.02	1.49
2002	3.10	2.29
2003	3.57	2.64
2004	4.31	3.20
2005	4.97	3.68
2006	5.14	3.80
2007	5.22	4.18
2008	5.62	4.50
2009	6.33	5.06

# Oils & Fats Scenario

4

## Palm Oil Scenario – Traditional Sectors

### Key Food Industries

- Palm oil has benefited from the Chinese people's growing demand for vegetable oil.
- It was the fourth largest vegetable oil being used in 2001, and since 2009, has been the second most widely used after soybean oil.
- Widely used in the food industry
  - as cooking oil
  - for instant noodles production
  - in bakeries
  - in the confectionery, chocolate and ice cream sectors
- Palm oil consumption stood at 16,000 MT in 1980 and skyrocketed to 6.33 million MT in 2009.

# Oils & Fats Scenario

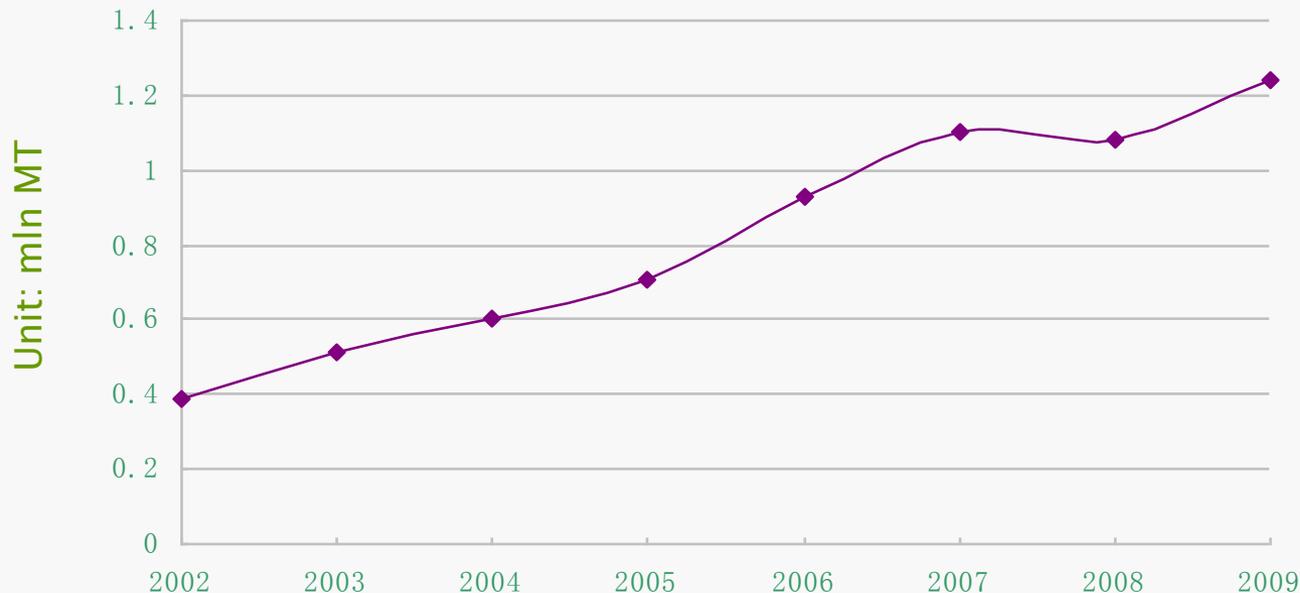
4

## Palm Oil Scenario – Traditional Sectors

### Key Food Industries

- Approximately 5.064 million MT of palm oil is used in food sector, accounting for 80% of total palm oil consumption in 2009. Of this, more than 2 million MT of palm oil is consumed by the cooking oil sector alone every year.

Table 15: Palm Oil Consumption in Instant Noodles Sector



# Oils & Fats Scenario

4

## Palm Oil Scenario – Traditional Sectors

### Usage in Key Food Industries

- Palm products are important raw materials in shortening, margarine, cocoa butter substitute, ice cream fat, confectionery and for frying snack foods.
- To prolong the shelf life and appearance of packaged foods and to make cooked food crisp and flavourful.
- By more than 10,000 enterprises involved in biscuits, bread, cake, snack food and moon cake sectors, with output value of 200 billion yuan and therefore a main force in the food industry.
- Over 384,000 MT of palm oil is used in the biscuits sector every year in China.
- Palm oil and palm kernel oil are important and suitable ingredients in the confectionery and chocolate sector, whose average growth rate is over 20%.
- Ice cream, candy and other products in the sector consume more than 302,000 MT of palm oil in China every year.

# Oils & Fats Scenario



4

## Palm Oil Scenario – Issues in Palm Oil Industry in China

### Product Classification (HS Code)

There are discrepancies in the Customs HS Code allocation for oleochemicals. For example, in the tariff issue of MCT in October 2009 and palm stearic acid in 2008 at the Shanghai Customs.

- MCT Case
- Palm stearic acid

# Oils & Fats Scenario

4

## Palm Oil Scenario – Issues in Palm Oil Industry in China

### MCT Case

MCT (Medium Chain Triglyceride or Caprylic/Capric Triglyceride), derived from the reaction of caprylic acid (C8)/capric acid (C10) in palm kernel oil with glycerine, has a wide range of applications in various sectors, including the confectionery, baking, lubricant, fragrance and flavour and health drink industries.

- HS Code of MCT should be categorised as 2915, but the Shanghai Customs categorises it as 1516 or 3824.
- HS code in other countries, including the European nations, US, India and Korea is categorised as 2915.
- This controversy has resulted in trade difficulties for the MCT product.

# Oils & Fats Scenario

4

## Palm Oil Scenario – Issues in Palm Oil Industry in China

### Palm Stearic Acid Case

Palm stearic acid has been imported under the China–ASEAN FTA (CAFTA) Early Harvest Programme. It is traditionally imported as industrial stearic acid under HS code 3823.1100, which is allowed to be imported duty-free (0% duty).

- Content with more than 90% C18 stearic acid is classified as stearic acid with HS code 2915.7010, which was subjected to 5% tariff in 2008.
- Pure palmitic acid has fatty acid with more than 90% of C16 (palmitic) and is classified as pure palmitic acid under HS code 2915.7090, which since 2008 has been subjected to 5% import tariff.
- Palm stearic acid or stearic acid derived from animal fats is a mixture normally of stearic acid and palmitic acid, which is classified as industrial stearic acid under HS 3823.1100, which since 2008 has been subjected to 0% duty.

# Oils & Fats Scenario

4

## Palm Oil Scenario – Issues in Palm Oil Industry in China

### Image of MPO In China

In general, palm oil has been perceived in China as a cheap and inferior oil. This poor perception of palm oil as cheap, unhealthy and containing saturated fat is a major cause for it to be used to adulterate the other more expensive oils in China.

- A Hainan case highlighted the bad image of palm oil in the catering sector.
- Rancid edible palm oil products without legitimate labels were widely used in canteens, school cafeterias and free markets in Haikou's catering market.
- This case gave rise to the negative perception and poor image of palm oil in China.
- The case has sounded the alarm to other parts of China as the problem also exists in the other regions of the country.

# Oils & Fats Scenario

4

## Palm Oil Scenario – Opportunities of MPO In China

In spite of the challenges, the expansion of palm oil in the blending sector has been embraced by some favourable factors.

–The improving fractionation capacity makes palm oil available during different seasons of a year at different melting points and enables a wider range of applications in various industries.

Table 16: Palm Oil Fractionation Capacity in China

Region	Fractionation Capacity (MT/per day)	% of Total
North China	4,700	17.4%
East China	7,350	27.2%
Central China	600	2.2%
South China	13,040	48.2%
Shandong Province	1,350	5%

# Oils & Fats Scenario

4

## Palm Oil Scenario – Opportunities of MPO In China

### Blending Oil Sector

- Palm oil is widely used as the base oil in the blending of oils and it can achieve a well-balanced cooking oil.
- Blended palm oil is able to achieve a perfect nutrition balance for the people, in an ideal proportion in line with the suggestion made by WHO.

Table 17: Nutrition Balance of Palm Blends

EDIBLE OILS	SFA : MUFA : PUFA
Soybean Oil	1: 1.6: 4.1
Rapeseed Oil	1: 9.9: 4.3
Palm Olein	4.4: 4.2: 1
Soybean Oil: Palm Olein (50: 50)	1: 1.1: 1.2
Soybean Oil: Palm Olein (30: 70)	1.4: 1.5: 1
Rapeseed Oil: Palm Olein (50: 50)	1.4: 2.8: 1

# Oils & Fats Scenario

## 4 Palm Oil Scenario – Opportunities of MPO In China

### Opportunities in Other Sectors

MPOC's biennial oleochemical seminars in China have increased the presence of Malaysian palm oil in many potential oleochemical industries and established close rapport with related sectors, such as printing ink and bio-lubricant sectors.

# Oils & Fats Scenario

## 4 Palm Oil Scenario – Opportunities of MPO In China

### Printing Ink Sector

This sector is growing faster than even China's GDP! Following the last oleochemical seminar, MPOC was invited to introduce palm oil in the printing ink industry, arousing great interest of the industry in the use of palm olein for printing ink production.

- It is common to use vegetable oils instead of industrial oils as the raw material for printing ink production as a result of the soaring crude oil price and growing calls for environmental protection and use of renewable resources.
- Printing ink production in China amounted to 390,000 MT in 2007, of which offset printing ink accounted for 53%, at 200,000 MT.
- China's printing ink manufacturers hardly have general knowledge about the production, trade and availability of palm oil products.
- Some of the industry members are keen to use palm oil or its blends in the printing ink industry.
- This is at least to replace soybean oil and rapeseed oil.

# Oils & Fats Scenario

## 4 Palm Oil Scenario – Opportunities of MPO In China

### Bio-lubricant Sector

The vegetable oil-based bio-lubricant industry is booming around the world in response to demands for environmental protection and sustainable development. According to *China Chemical Newspaper*, global lubricant consumption has reached 35–40 million MT. Rapeseed oil and soybean oil are the base oils or raw materials for bio-lubricants in Europe and the US.

- Though the rapid economic growth is stimulating the lubricant industry in China, yet it is still in its preliminary stage.
- The lubricant production in China accounts for 15% of the world's total, with an output of more than 6 million MT every year.

# Oils & Fats Scenario

## 4 Palm Oil Scenario – Opportunities of MPO In China

### Advantages of Bio-lubricants

---

- Good lubricating properties
- High wear performance
- High viscosity index
- Biodegradability
- Respect for the environment
- Increasing equipment service life

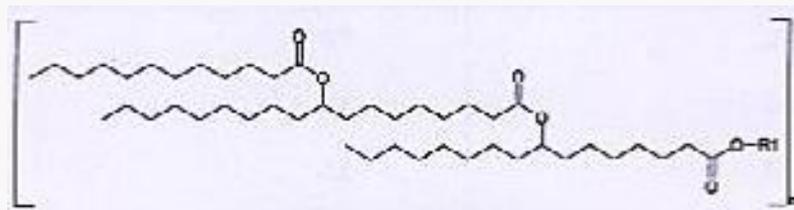
# Oils & Fats Scenario

## 4 Palm Oil Scenario – Opportunities of MPO In China

### Estolides

Estolides are dimers formed by a normal fatty acid esterifying a hydroxy fatty acid.

### Optimisation of Molecular Structure of Estolides



Note

N=0-12, molecular number of oleic acid

R1—2-ethylhexyl

# Oils & Fats Scenario

4

## Palm Oil Scenario – Opportunities of MPO In China

- Increasing calls for environmental protection and sustainable development
- Rapidly biodegradable
- Non-toxic to human & aquatic environments
- Low losses from oil evaporation
- Good lubricating properties
- High viscosity index
- High wear performance
- Increasing equipment service life

Wuxi GORUNJIE Chemicals Corp is a case in point.

- Exploring the bio-lubricants market
- Studying technical innovations for bio-lubricant production
- Carrying out the testing

# Oils & Fats Scenario

## 4 Palm Oil Scenario – Opportunities of MPO In China

### Palm Kernel Expeller Sector

China's increasing population and rising living conditions have brought about a parallel increase in the demand for livestock products such as meat, dairy products and grain meal. The growing demand for raw materials for the feed industry offers an excellent opportunity for palm kernel cake, which is regarded as an ideal raw material for feed formulations for dairy cows, cattle, sheep, poultry and grass carp.

- A series of field trials have been carried out locally on the effect of including different levels of palm kernel cake to the daily feed of ruminants, poultry and aquaculture.
- Feed millers/users are taught the proper feeding formulation as they can help reduce the production cost and improve the performance of the animals.

# Oils & Fats Scenario

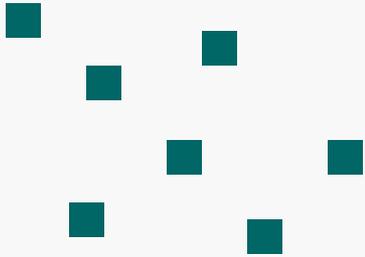
## 4 Palm Oil Scenario – Opportunities of MPO In China

### Palm Kernel Expeller Sector

- Practical knowledge in the correct use of PKC in feed materials has been introduced to users, resulting in over 80,000 MT of imports in northeast China, including Inner Mongolia.
- Further efforts will be made to meet new suppliers in South China.

Table 18: China Palm Kernel Cake Imports ('000 MT)

2005	2006	2007	2008	2009
1.2	1.3	0.1	11.7	289



# Thank you

