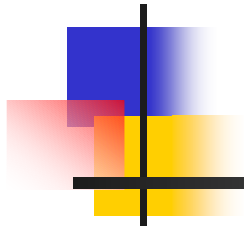



# Current Status of Bio-fuel developing in China



Xiao Mingsong

Chinese Association of Rural  
Energy Industry(CAREI)

2004.08.28



# Current Status Bio-fuel developing in China

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1. Background

2. bio-ethanol

3. bio-diesel



# 1. Background

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- Bio-fuel is a conventional energy, In terms of energy capacity, bio-fuel energy ranks just behind coal, oil, and natural gas. Worldwide, bio-fuel is the most basic consumed energy resource. It will be plays an important role in the whole energy system.



## 2. bio-ethanol

Three big problem stunted the developing

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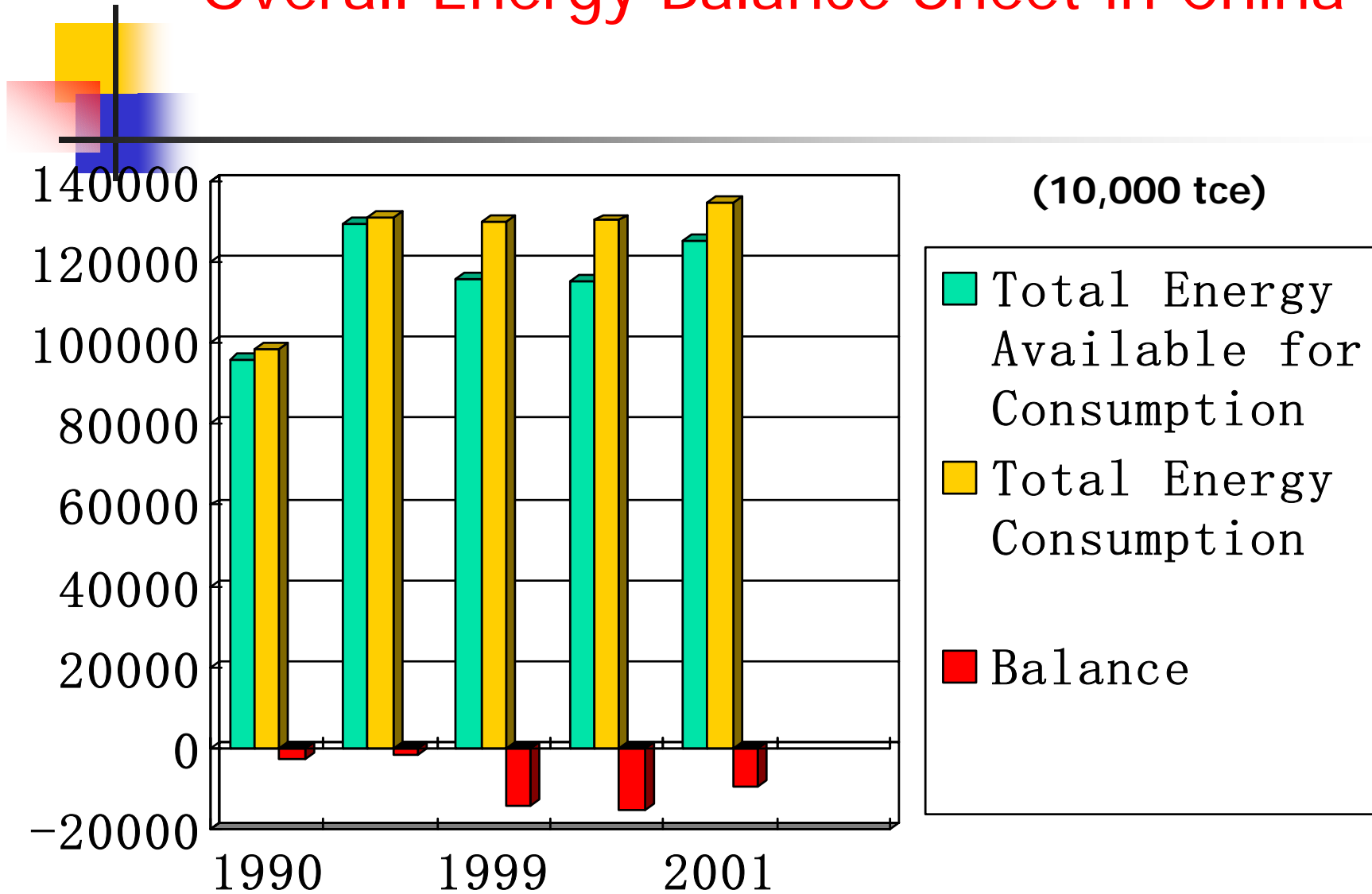
- impact of the oil price rise
- Regulate Agriculture  
framework, rising income of the  
farmers
- Reduce and prevent the pollution  
of the environment



# Issue of the energy

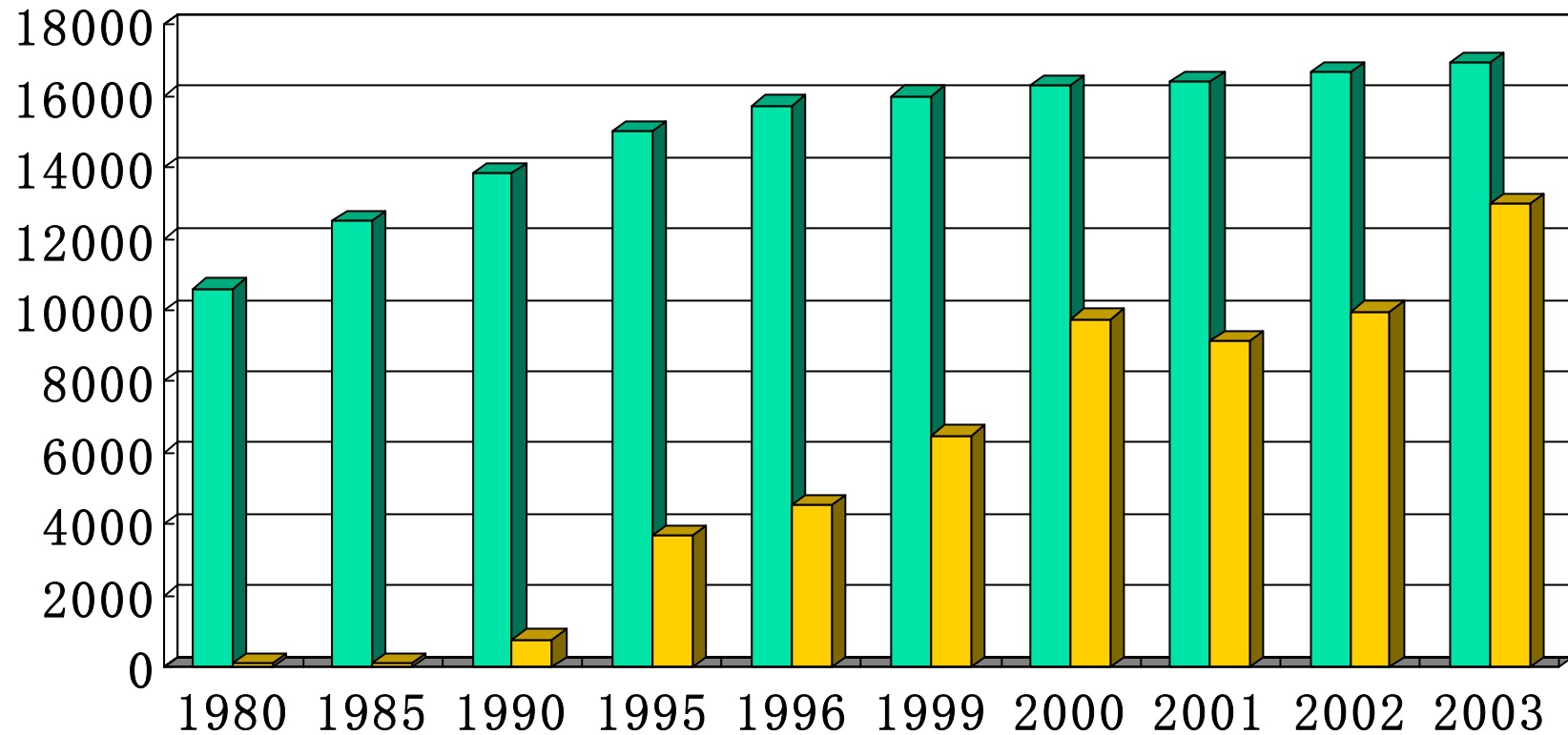
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# Overall Energy Balance Sheet in China



# Unbalance of the Oil Available and oil Consumption

× 10000ton



Oil production Oil input



# Issue of the farmers income

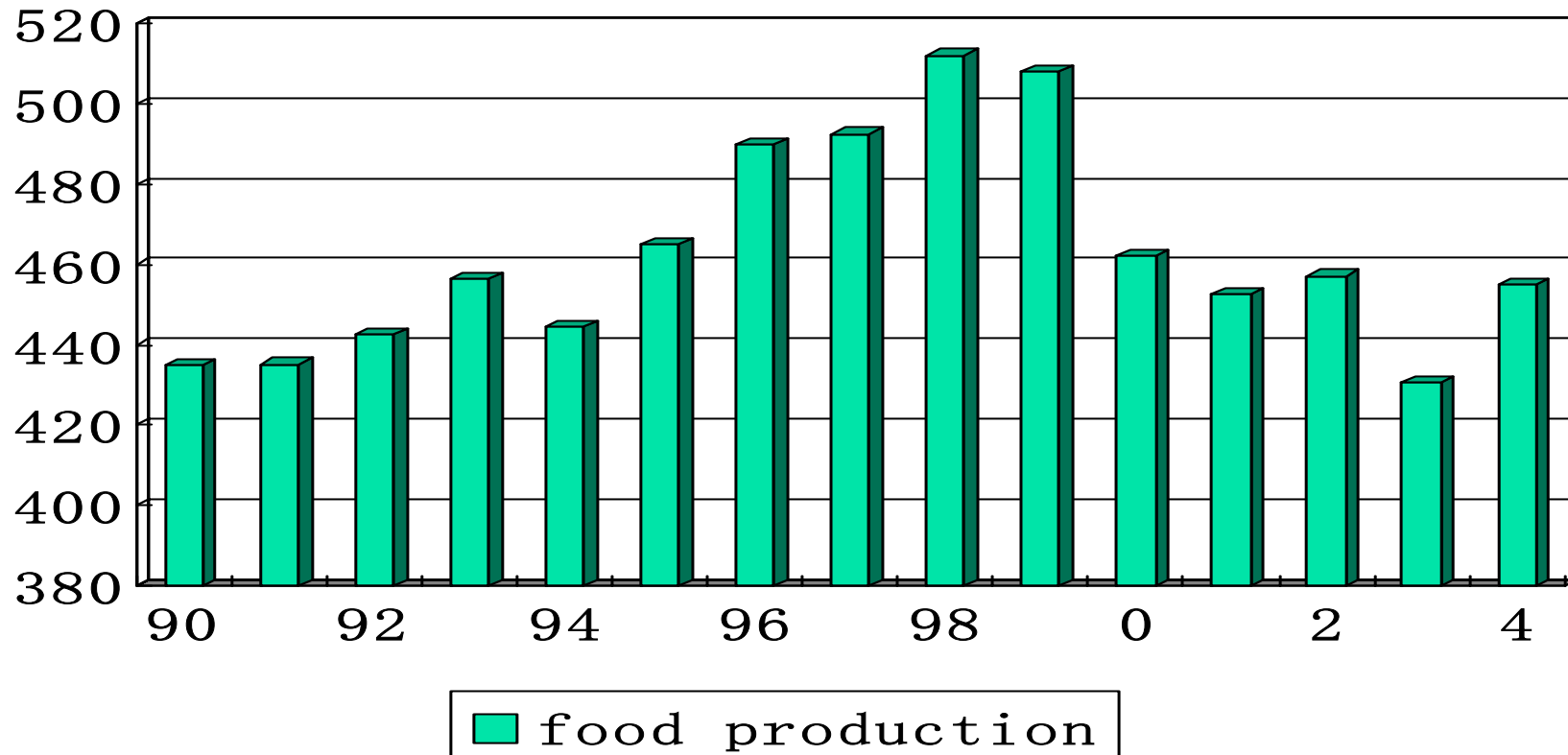
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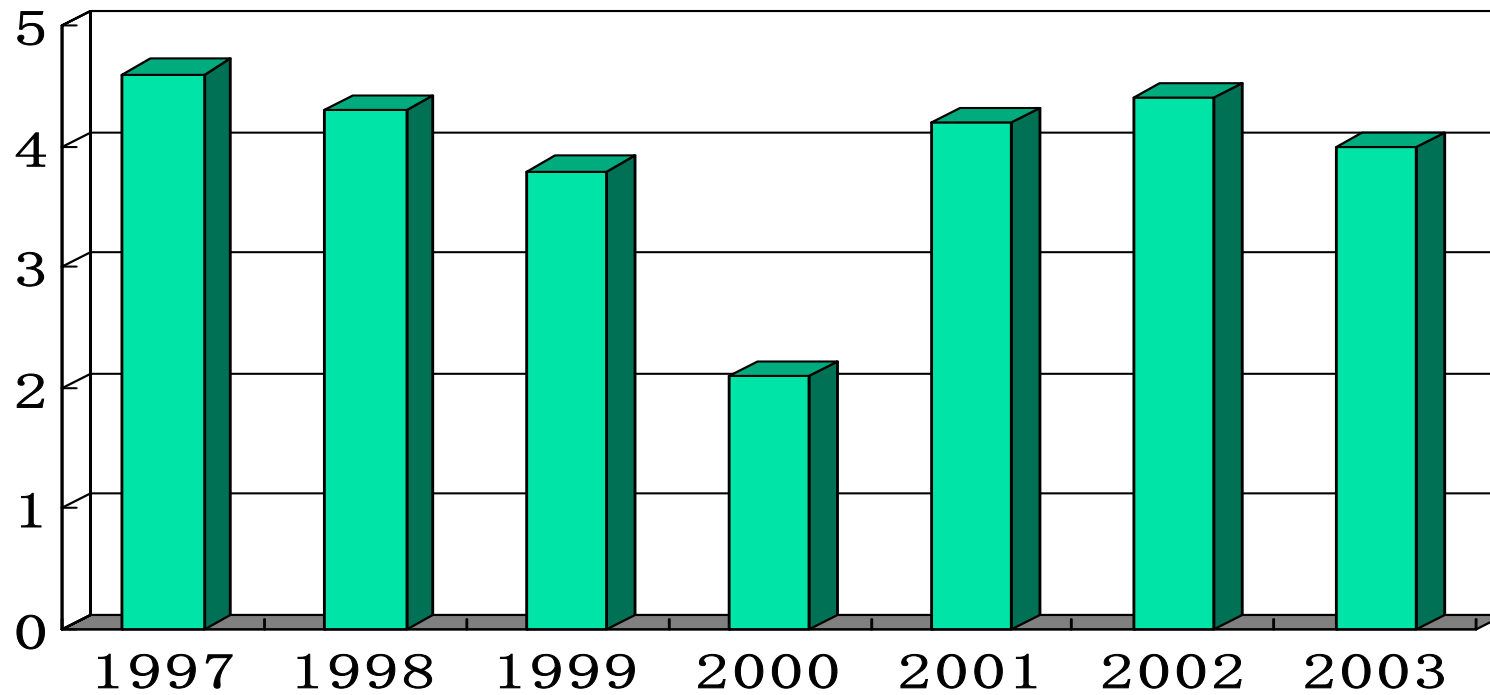
# Food Production

Million ton



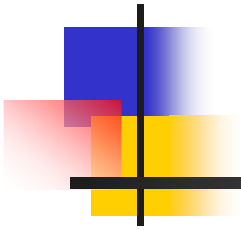
# Food increase but farmer income is not along with

income(%)



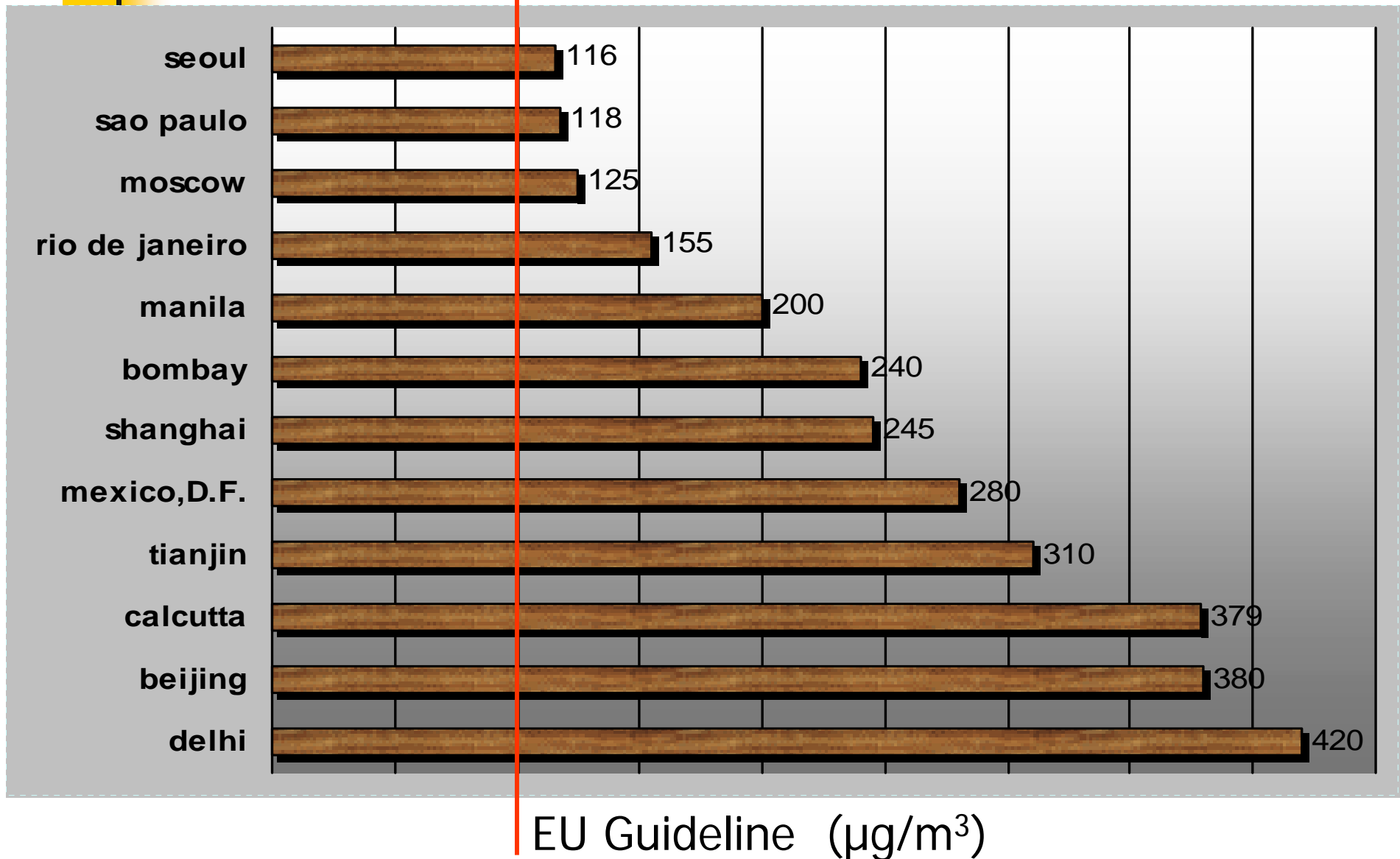
Farmer income rate

# Issue of the environment pollution

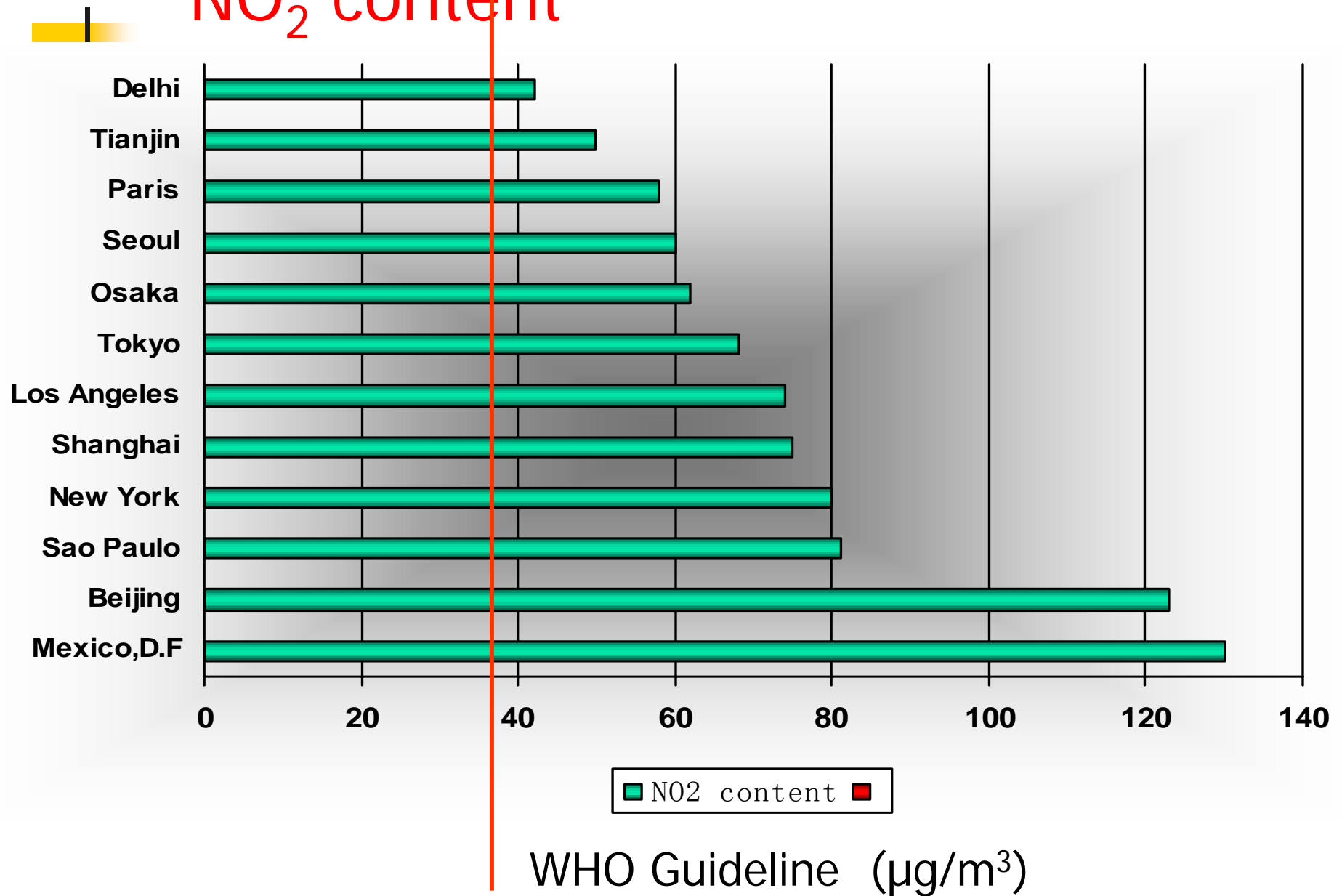


# status quo of pollution

## TSP content

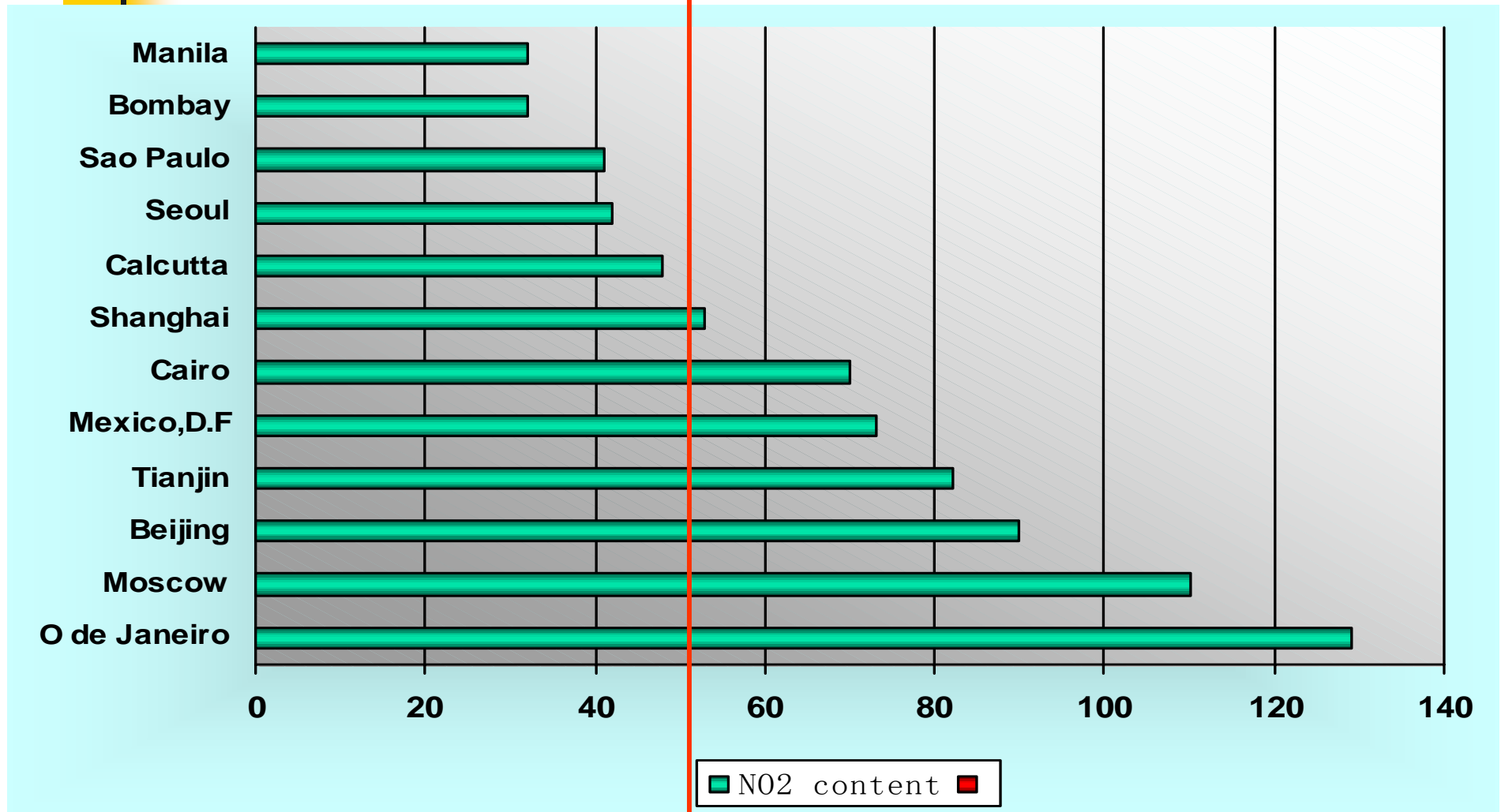


# status quo of pollution NO<sub>2</sub> content



# status quo of pollution

## SO<sub>2</sub> content



WHO Guideline ( $\mu\text{g}/\text{m}^3$ )



## Benefited from Bio-fuel application

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- It can relieve the conflict caused by the oil shortage.
- It can solve the problem of grain transformation efficiently and motivates the good recycle of the agricultural production,
- It does good to the enhancement of the environment.



## recently Plan

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The requirement of the State Planning Committee toward developing denatured fuel ethanol pays attention to the economy of the item. Make sure the producing enterprise can afford the raw grain cost, stable the income of the farmers, survive the disturb of the up and down of the international oil price and maintain the normal production. By way of employing advanced technology to improve the competitive utilized level and optimize the asset construction. under a certain policy sustained, Make sure it is the good recycle for the ethanol-gasoline used by the car,.



# Current Bio-Ethanol Plant in China

	Plants	Yield 1000t/y	Investment Million yuan	raw material
1	CR Alcohol Plant	100	200	corn
2	Jilin Fuel Ethanol C. L	600	3200	corn
3	Tianguan Group	300	1300	Corn and wheat
4	Anhui BBKA GROUP	320	800	Corn
5	GD Hualing Group	200	668	Cassava & sugar cane
6	GX Sorth Sugar Plant	500	1000	Wastes of sugarcane
7	GX GuiGang Co.Ltd	200	500	Cassava
8	demonstration projects	20	40	Sweet Sorghum
	Total	2,240	7,708	



# CR Alcohol Co.Ltd

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- Since October 2004, 18 allocate centers of the ethanol-gasoline have been established.
- From October 1, 2004, Heilongjiang province will sell and employ the ethanol-gasoline used by the car in full aspects. It is a kind of green resource, clear and environmental protection. The expanding of it will not only relieve the energy shortage, promote the proportion of the exhaust emission by the car. It has been tested in Zhao Dong for one year.
- According to the introduction of the experts, the ethanol gasoline to be on sale has the same quality and price with ordinary gas. Using this kind of gas, the engine of the car will not be affected and it will enhance the driving balance of the car and prolong the life the main parts of the car.

# CR Alcohol Plant





# Jilin Fuel Ethanol Co. Ltd

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- A grand opening ceremony was held in the city of Jilin in November 2003 to celebrate the production start-up of the first of two lines of a fuel ethanol project implemented by Jilin Fuel Ethanol Co. Ltd. With a final capacity of 600,000 tons per year, that is 2.3 million litres per day, the plant will be the world's largest bioethanol production facility.
- Jilin Fuel Ethanol Co. Ltd is one of the largest corn processing developer and newly risen energy supplier. It is also the first large-sized fuel ethanol production unit, which is approved by the Chinese Government.



# Investment and capacity for Jilin Fuel Ethanol Co. Ltd

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- With the total investment of 3.2 billion yuan, the key model project during this national five-year plan is to use corn as the raw material to make the fuel ethanol. Till now 300,000 tons has been made. When all this project is finished, the corn will be consumed 1.92 million tons one year and the fuel ethanol will reach 600,000 tons each year.



# Jilin Fuel Ethanol Plant





# Jilin Fuel Ethanol Co. Ltd





## Tianguan Group First started to spread Bio-fuel in China

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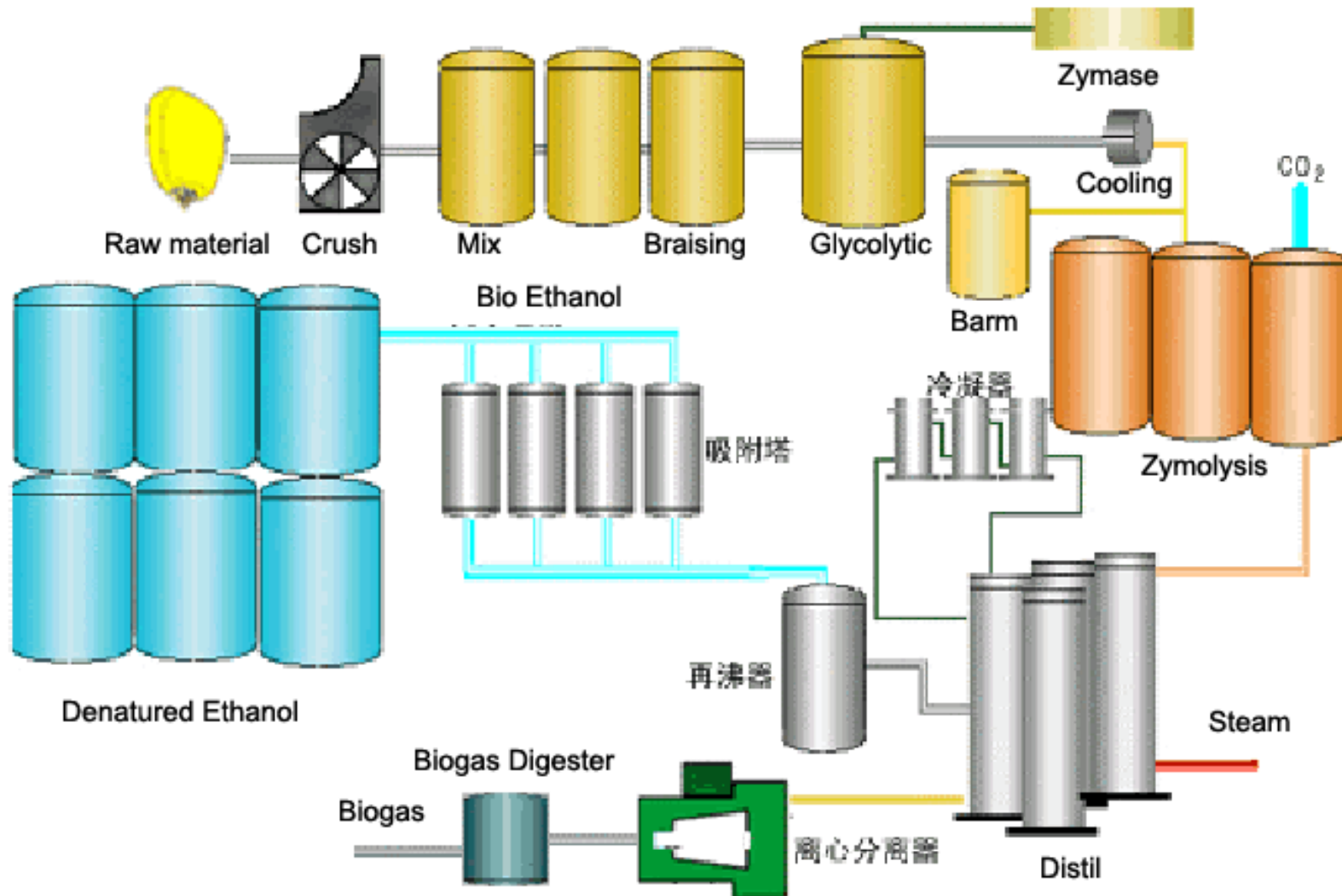
- From July 1, 2001, 5,000 buses of Henan province are the first to try to use ethanol-gasoline.
- Tianguan Group is one of the experiment provinces determined by the state to produce ethanol-gasoline for transportation.
- The fuel ethanol equipment which can produce 300,000 tons of denatured fuel ethanol annually has been built and put to use. On the basis of the three experiment cities like Zhengzhou, Luoyang and Nanyang, the reform and newly built gasoline stations have been completed and are spreading within the province.



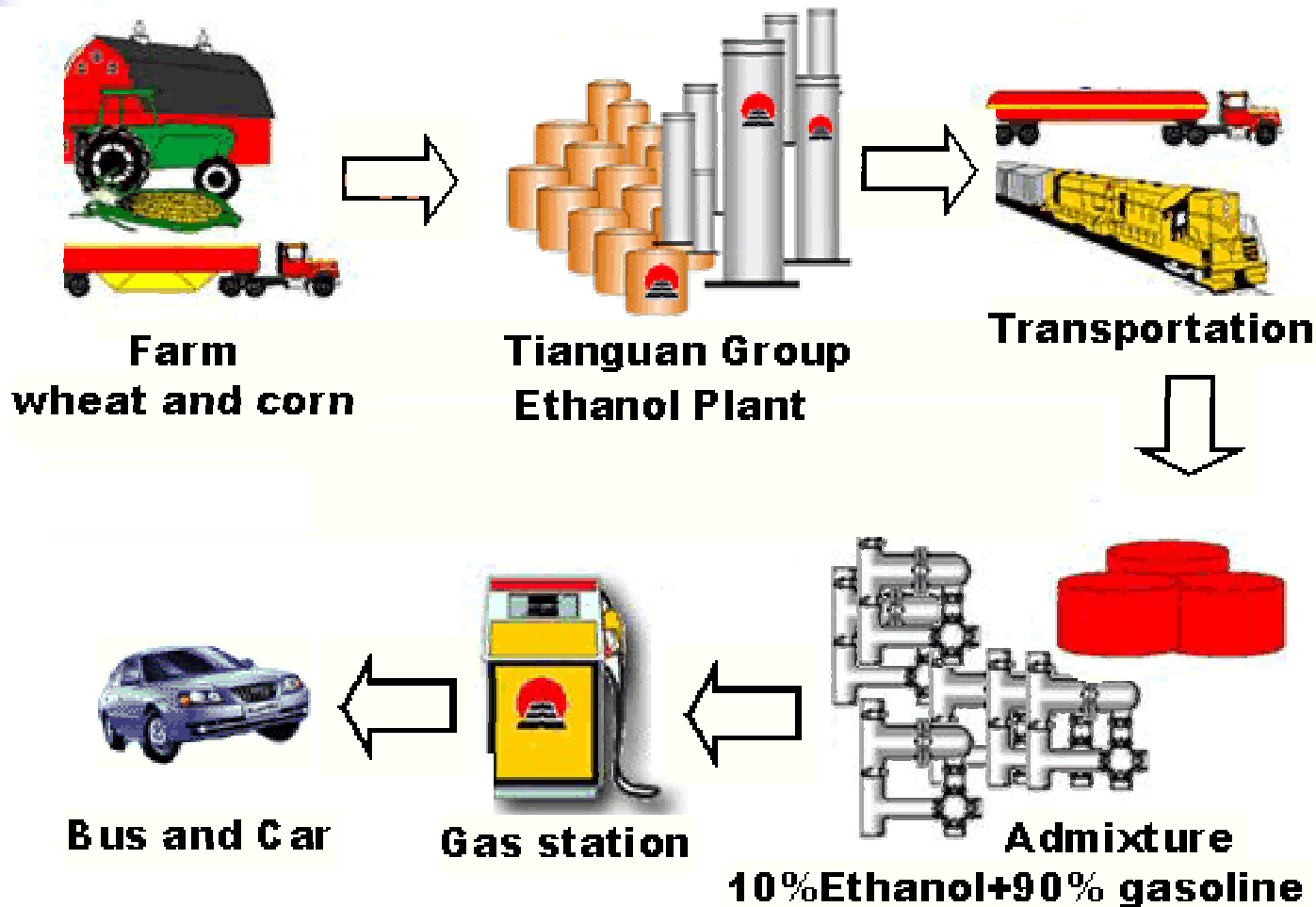
# Tianguan Group 天冠集团



# Tianguan Group flow chart for bio-ethanol Production



# Tianguan Group flow chart for bio-ethanol Application



# 3. Bio-diesel

## Developing in China

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- Bio-diesel is a kind of clean renewable resource. It uses bean oil seed, oil palm, pistachio algal, oil water-plant, animal oil, waste edible oil, etc.
- Regarding the energy plants, we generally refer to the varieties of the plants that can produce the so-called green petroleum. They have many varieties and are rich in resources.
- So far, research on energy plants, and development and producing the green petroleum and its by-products has just begun in China.



# The bio-diesel plant in China

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- Hainan Zhenghe bio-energy company persist in the research the first bio-diesel produce equipment of our country in Wuan city, Hebei province, which uses waste edible oil, waste of pressed oil and forest oil fruit as raw material with production of 10,000 tons per year.
- Fujian Zhuoyue new-energy development corporation has produced bio-diesel 5,000 tons so far.
- Sichuan Gushan Oil Chemical Company has established a mill with the producing capacity of over 10,000 tons a year. It expects to be 20,000 tons next year.

Many Thanks!

