

Food security and policies in China

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Outline

- 1. Grain production in China**
- 2. Grain consumption and trade**
- 3. Challenges against grain security**
- 4. Policies ensuring grain security**

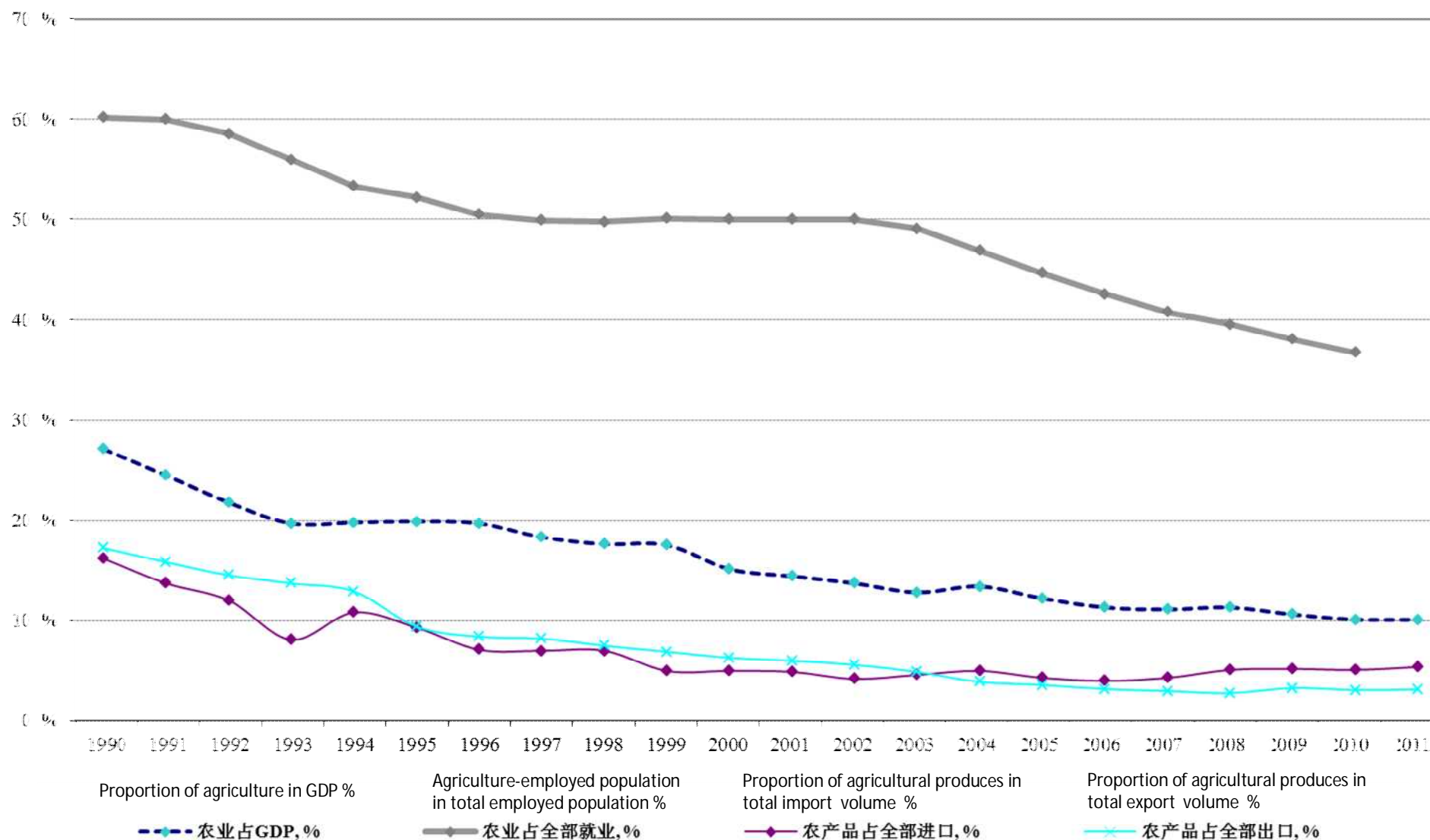
1. Grain production in China

- Status of agriculture
- Grain production
- Comparison – China and the world

...Status of agriculture in the national economy

- Facts:
- Farming households have small operating scale in average (0.6 hectare)
- High proportion of rural population (657 million in 2011 standing at 48.7% of the total Chinese population)
- **Proportion of agriculture in GDP and employed population**
- In 2010, agriculture contributed to 10.1% of GDP in China (same as 2011). But agriculture employed 36.7% of the total employed population. It represents that agricultural productivity is lower than that in other sectors.
- **Import & export of agricultural produces only account for 3-5% of foreign trade volume.**

...Status of agriculture in the national economy



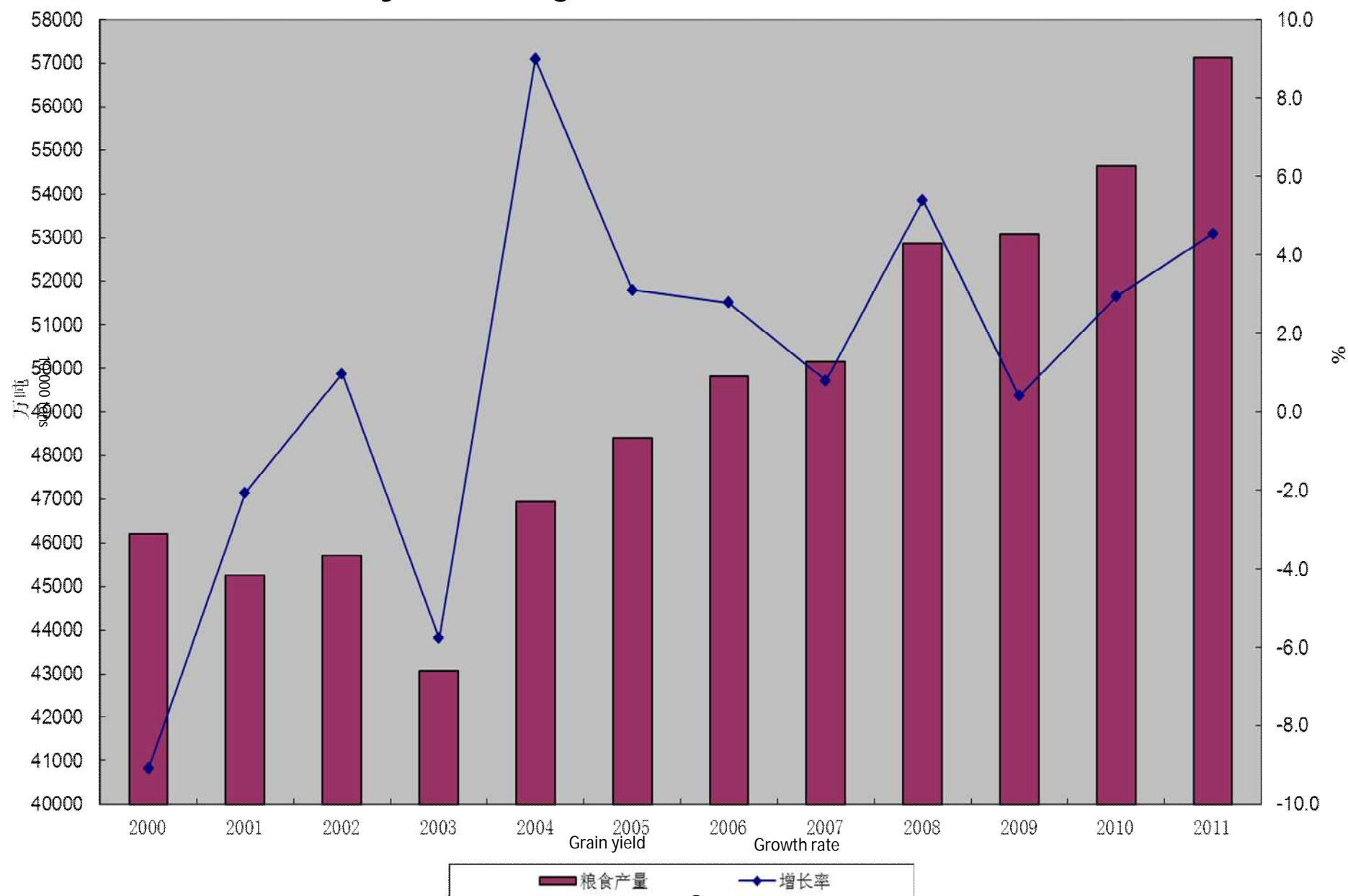
Sown-area proportion of different crops in different years (%)

| | Grain | Oil plants | Cotton | Sugar crops | Vegetable | Orchard | Others |
|------|-------|------------|--------|-------------|-----------|---------|--------|
| | 粮食 | 油料 | 棉花 | 糖料 | 蔬菜 | 果园 | 其他 |
| 1978 | 80.3 | 4.1 | 3.2 | 0.6 | 2.2 | 1.1 | 8.4 |
| 1980 | 80.1 | 5.4 | 3.4 | 0.6 | 2.2 | 1.2 | 7.1 |
| 1985 | 75.8 | 8.2 | 3.6 | 1.1 | 3.3 | 1.9 | 6.1 |
| 1990 | 76.5 | 7.3 | 3.8 | 1.1 | 4.3 | 3.5 | 3.5 |
| 1995 | 73.4 | 8.7 | 3.6 | 1.2 | 6.3 | 5.4 | 1.2 |
| 2000 | 69.4 | 9.9 | 2.6 | 1.0 | 9.7 | 5.7 | 1.7 |
| 2005 | 67.1 | 9.2 | 3.3 | 1.0 | 11.4 | 6.5 | 1.6 |
| 2010 | 68.4 | 8.6 | 3.0 | 1.2 | 11.8 | 7.2 | -0.2 |

grain production in China

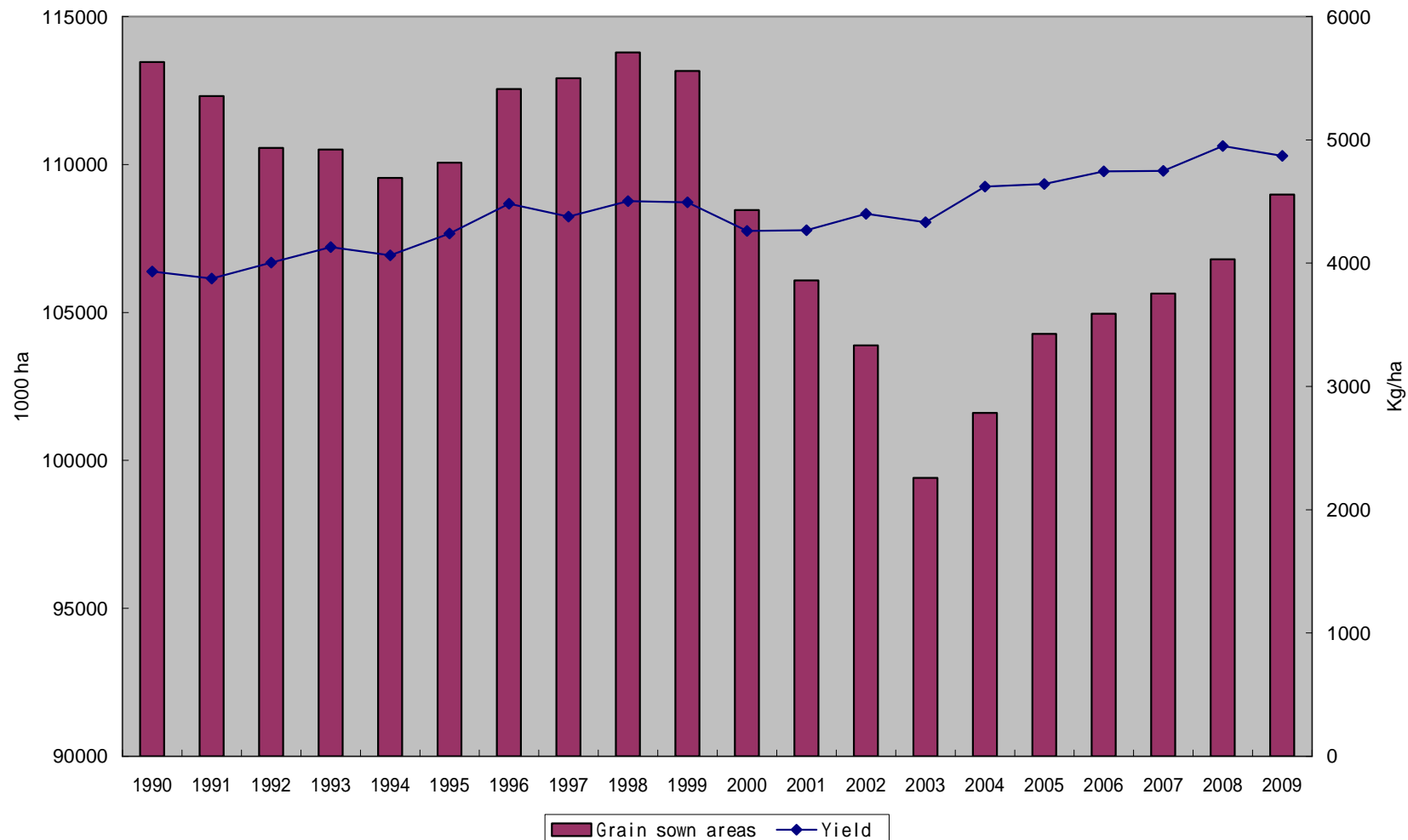
- **grain security:** priority targets of the government's agricultural policies
- Latter part of 1990s: bumper harvest
- 2000-2003: yield decreased considerably
- 2004-2011: yield increased for 8 years in a row. In 2011, grain yield reached 571.2 million tons, up by 4.5%.
- However, China still faces serious grain-supply situation. In 2008, China drafted and approved *National Grain Security Program for Medium and Long-Term (2008-2020)*, which specified major targets and regulated a number of policies and measures.

Grain yield and growth rate between 2000-2011



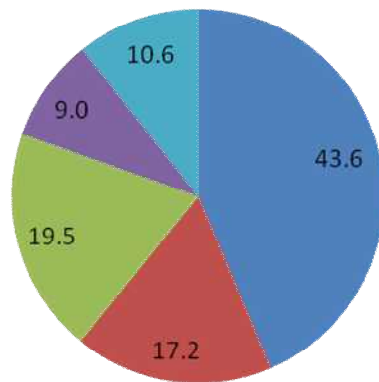
Grain in sown areas and yield

2010, cereal 5,500kg/ha, rice 6,600kg/ha, wheat 4,700kg/ha, maize 5,500kg/ha



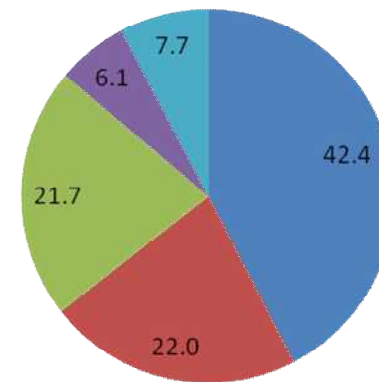
Yield composition of different crops (%)

1980



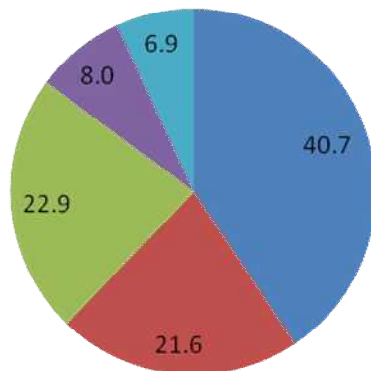
1990

Rice
Wheat
maize
Tuber
Others



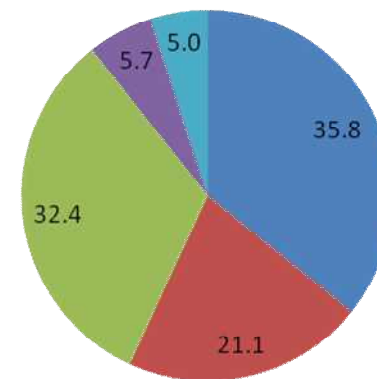
Rice
Wheat
maize
Tuber
Others

2000



2010

Rice
Wheat
maize
Tuber
Others



Rice
Wheat
maize
Tuber
Others

Distribution of crops in different regions

- South/north China: proportion of grain yield in south China keeps decreasing and that in north China keeps growing (accounting for 53.4% of China's total in 2009, up by 12.3 percentage points over that in 1978)
- East/central/west China: proportion of grain yield in east China decreases, that in west China remains stable and that in central China increases. In 2009, grain yield in 12 eastern provinces accounted for 31.8% of China's total, down from 41.3% in 1978. That in central China went up from 37.6% to 47.95%. And that in west China fell down from 21.1% to 20.3%.
- Major grain-producing regions are producing grains more intensively and selling more grain yields to the market. In 2009, 13% major grain-producing provinces produced 75% of yields in China's total. Also in that year, 74% of grain yields were sold in the market, compared with 53% in 2004.

Comparison – China and the world (2008)

- Ranking No. 1 in the world: cereal (19%), wheat (16.3%) and rice (28.2%)
- Ranking No. 2 in the world: maize (20.2%)
- Ranking No. 4 in the world: soybean (6.7%)

International comparison - grain yield (2007-2009 average)

- Wheat: world 2973 kg/ha, China 4706 kg/ha, France 6934 kg/ha, Sudan 2125 kg/ha, Somalia 373 kg/ha
- Rice: world 4241 kg/ha, China 6523 kg/ha, USA 7902 kg/ha, Zambia 1444 kg/ha, Angola 538 kg/ha.
- Maize: world 5071 kg/ha, China 5358 kg/ha, USA 9819 kg/ha, Kenya 1500 kg/ha.
- Soybean: World 2361 kg/ha, China 1601 kg/ha, USA 2812 kg/ha, Malawi 756 kg/ha, Benin 547 kg/ha.

2. Grain consumption and trade

- Grain consumption
- Grain price
- Grain trade

Grain consumption

- Ration consumed by urban and rural residents keeps falling. The average ration consumed by rural residents reduced from 262 kg (unprocessed grain) in 1990 to 181 kg in 2010; and that consumed by urban residents also went down from 131 kg to 82 kg.
- Total grain consumption in China (export excluded) keeps rising: from 456.64 million tons in 1994 to 514 million tons in 2008 with each year increasing by 4.1 million tons. It is estimated that between 2011 and 2020, the total grain consumption will increase by 0.59% on an annual basis from 563.35 million tons to 594.09 million tons.

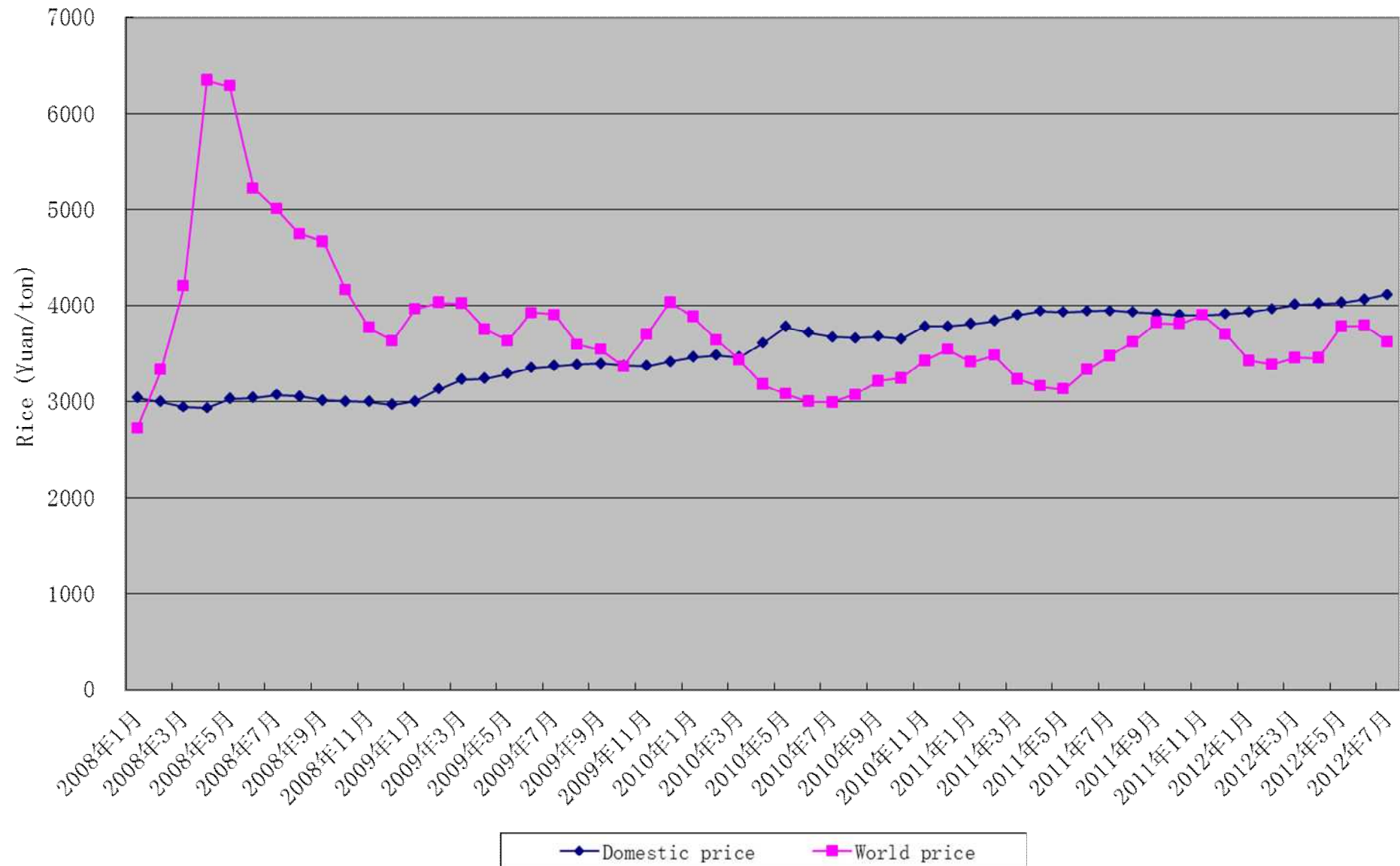
Grain consumption

- Total ration consumption decreases with its proportion in total grain consumption falling
- Industry-use grain has smaller proportion but is increasing rapidly
- Consumption of feed grain is rising rapidly and its proportion in total grain consumption is rising

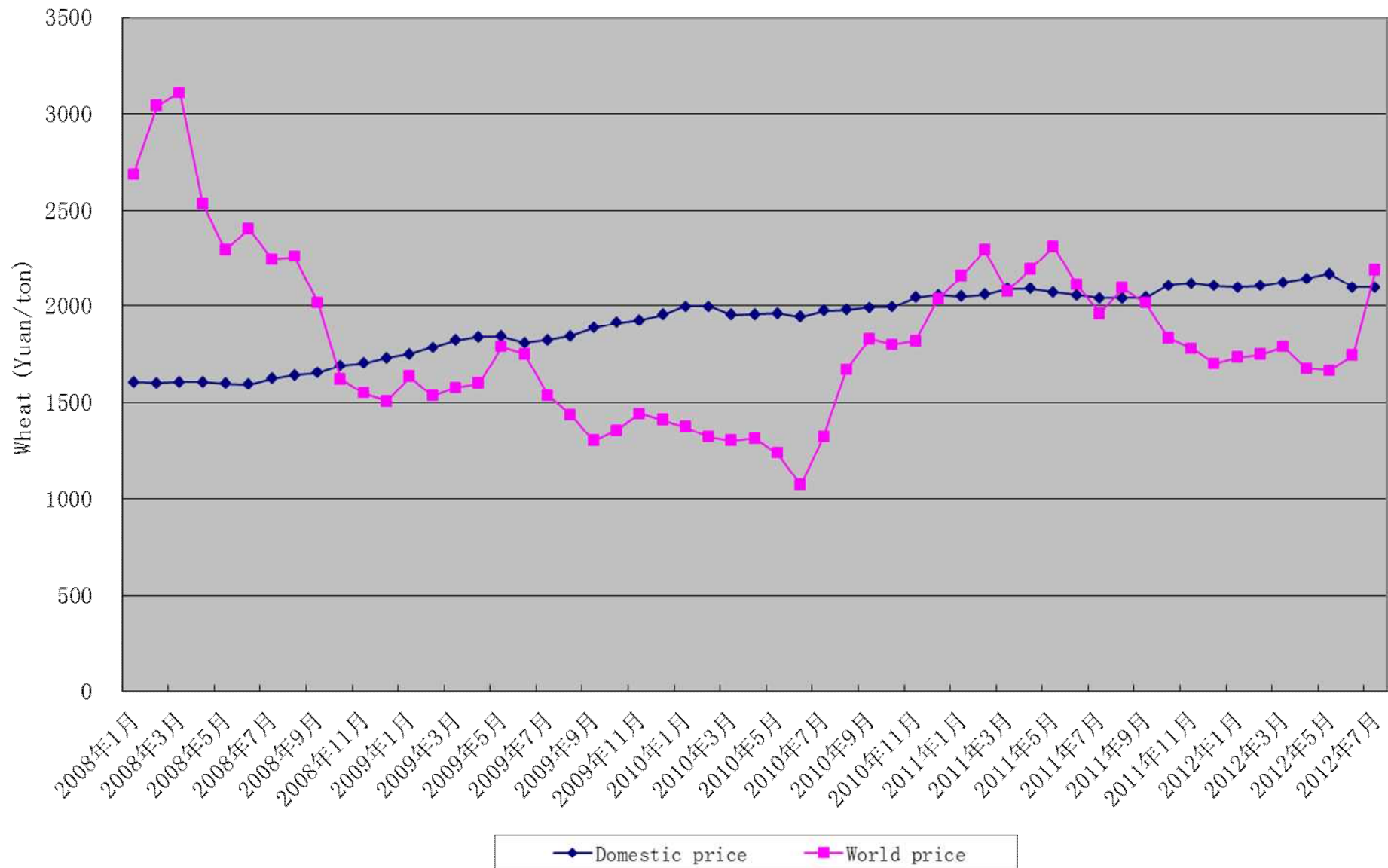
Grain price

- The price of rice and wheat in China is rising stably. But their price in the international market is fluctuating considerably.
- Soybeans: both the domestic price and world price are fluctuating considerably towards the same trend.
- Recently, the domestic price of grains is higher than the world price.

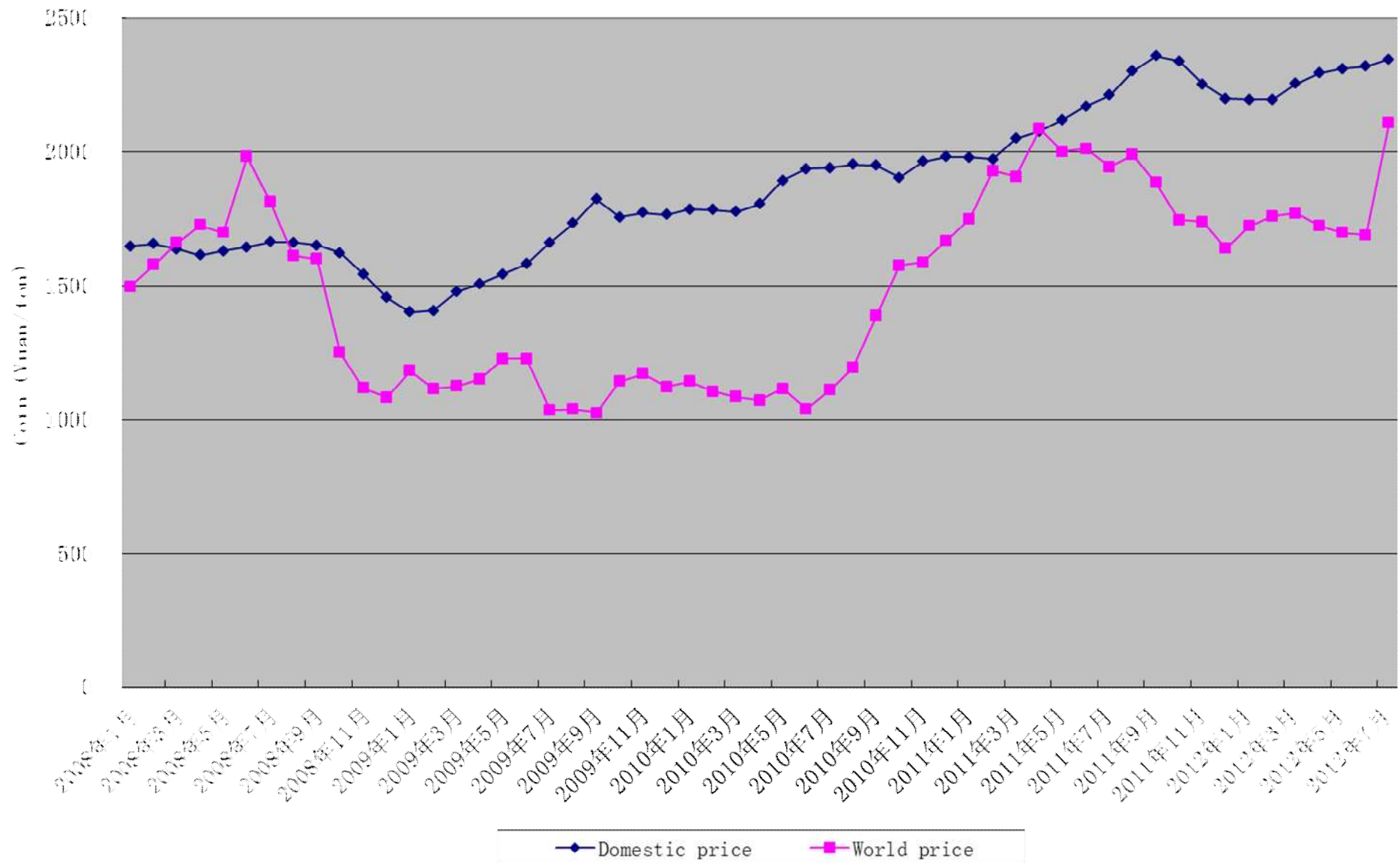
International price and domestic price: Rice



International price and domestic price: Wheat



International price and domestic price: Maize



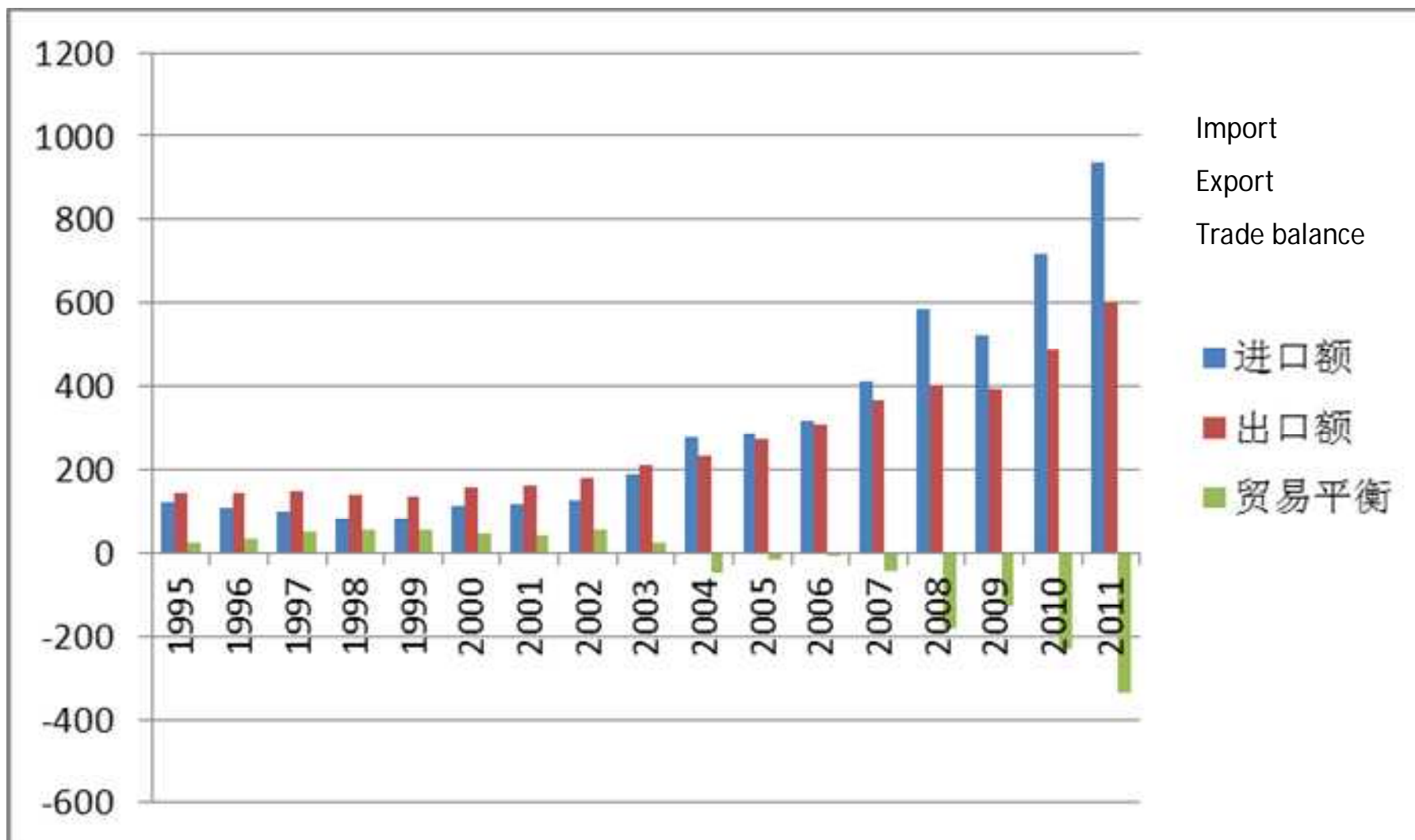
Trade in agricultural produces

Since China's entry into WTO, the trade in agricultural produces has grown rapidly. The growth rate of import is much higher than that of export.

General picture of Chinese trade in agricultural produces in 2011

The trade volume of agricultural produces stood at USD 154 billion, up by 27% over the previous year. The import was USD 93.9 billion (+31%), export was USD 60.1 billion (+23%), and the trade deficit was USD 33.8 billion, up by USD 10.8 billion over the previous year.

Chinese trade in agricultural produces, 1995-2011 (USD100 million)



Major imported/exported agricultural produces - 2011

Import: soybeans 52.64 million tons (USD 29.83 billion or 32% of total import of agricultural produces); cereal and farina 5.45 million tons worth USD 2 billion (1.78 million tons of barley; 800,000 tons of wheat; and 1.75 million tons of maize); edible vegetable oil 6.57 million tons (USD 7.7 billion); cotton 3.36 million tons (USD 9.5 billion); wool USD 2.6 billion; sugarcane/raw sugar 2.56 million tons; livestock/poultry products USD 12.8 billion.

Export: livestock/poultry products USD 5.65 billion; fish fillet USD 4.37 billion; fresh apple s and apple juice USD 1.98 billion; garlic USD 1.93 billion; tea USD 970 million; sausage casing USD 1.06 billion; canned tomato sauce USD 550 million, etc.

Import land extensive products and export labor intensive products

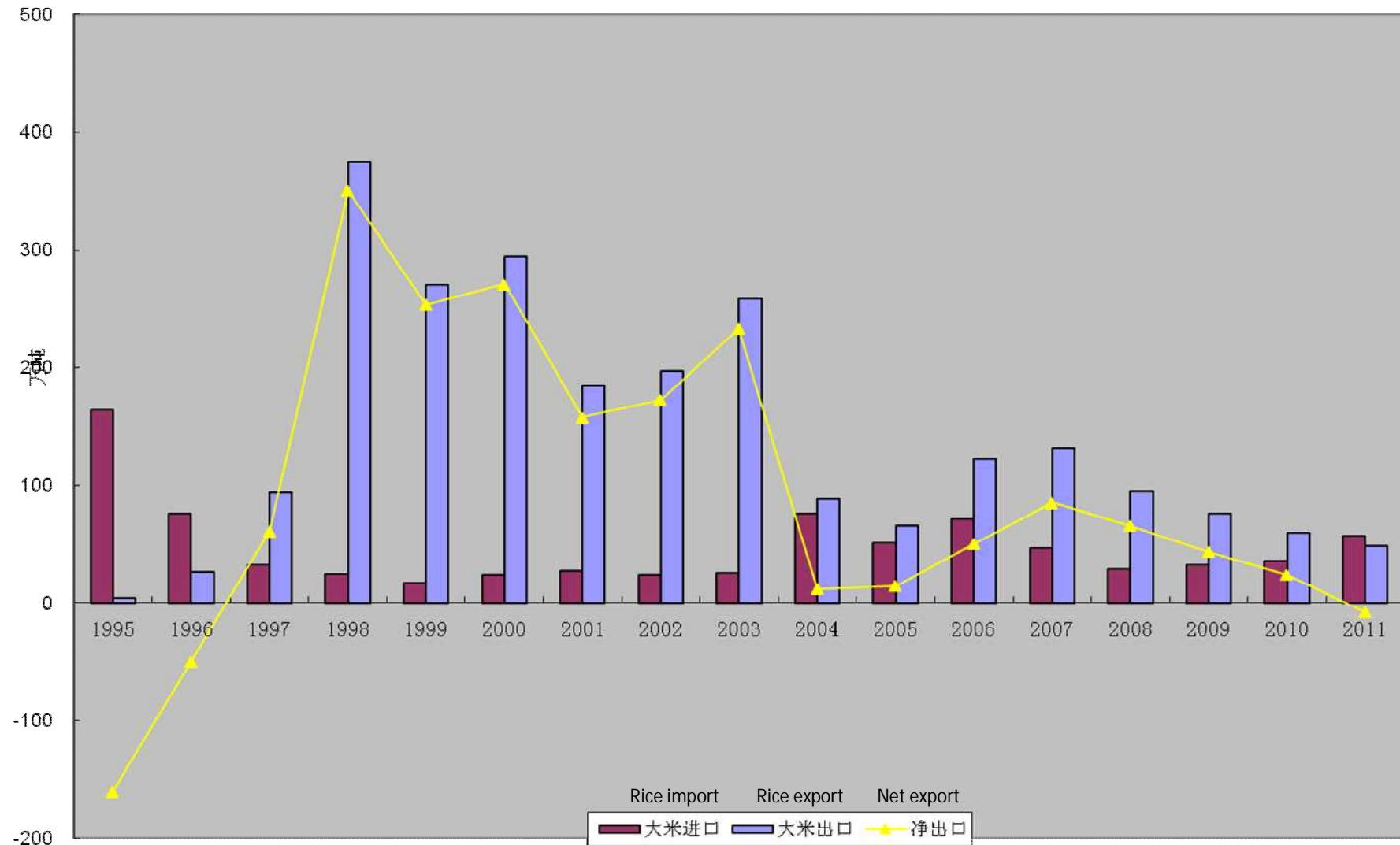
Trade in agricultural produces - 2011

- Destinations of export:
- Asia 60.4%, Europe 17.5%, North America 12.7%, Africa 4.0%, South America 3.5%, and Oceania 1.9%.
- Sources of import:
- North America, South America and Asia 28.2%, 26.8% and 22.5% respectively, Europe 10.0%, Oceania 10.1% and Africa 2.4%.

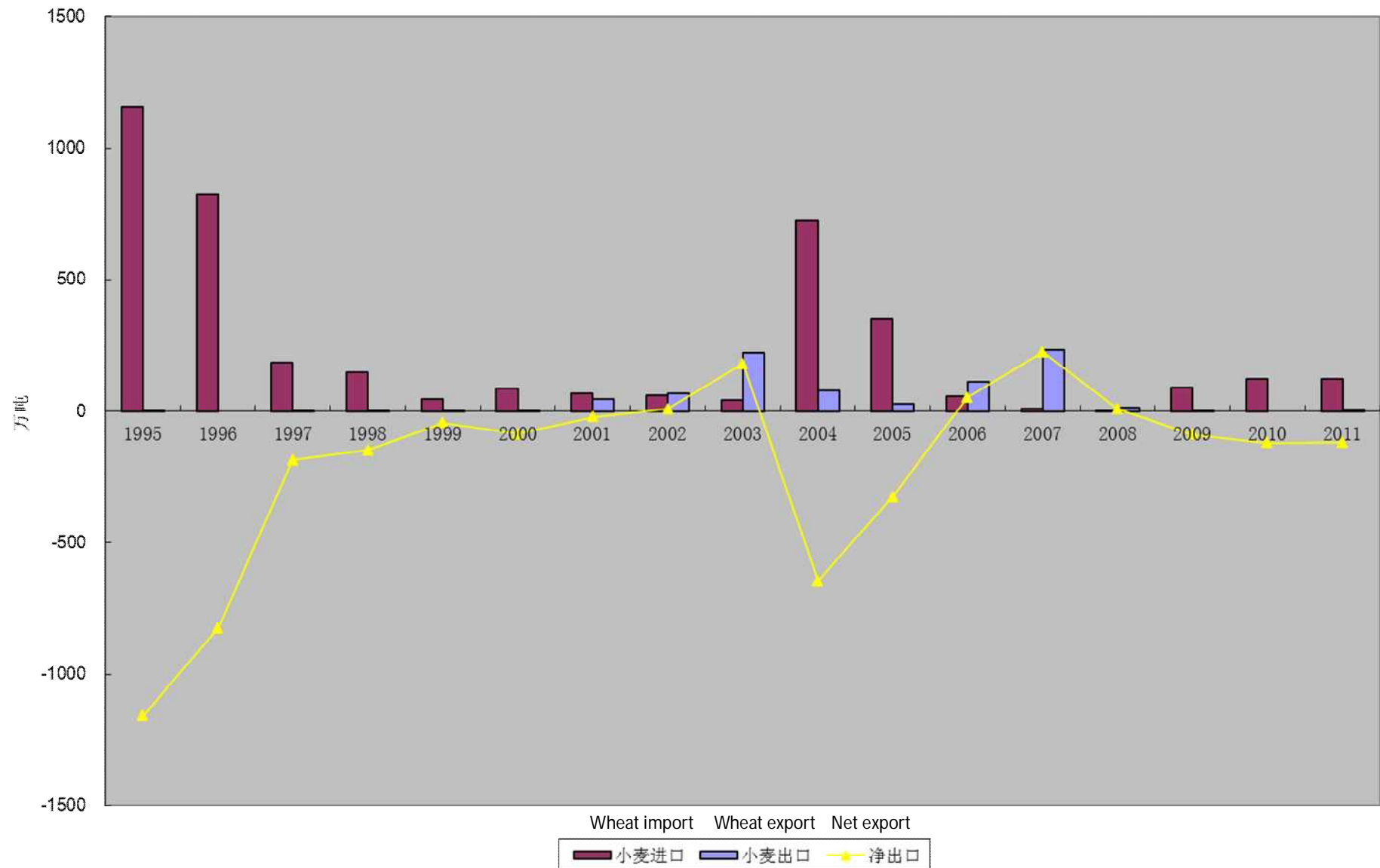
Grain trade

- Import & export change considerably in different years.
- In 2009, China exported 1.37 million tons and imported 3.05 million tons of cereals, with the net import standing at **1.78 million tons**.
- In 2010, China exported 1.24 million tons and imported 5.71 million tons of cereals, with the net import standing at **3.47 million tons**.
- In 2011, China exported 1.22 million tons and imported 5.45 million tons of cereals, with the net import standing at **3.23 million tons**.
- China imports mammoth quantity of soybeans. In 2010, the country imported 54.79 million tons and exported only 170,000 tons of soybeans. In 2011, China imported 52.64 million tons and exported only 210,000 tons with the net import standing at 52.43 million tons.

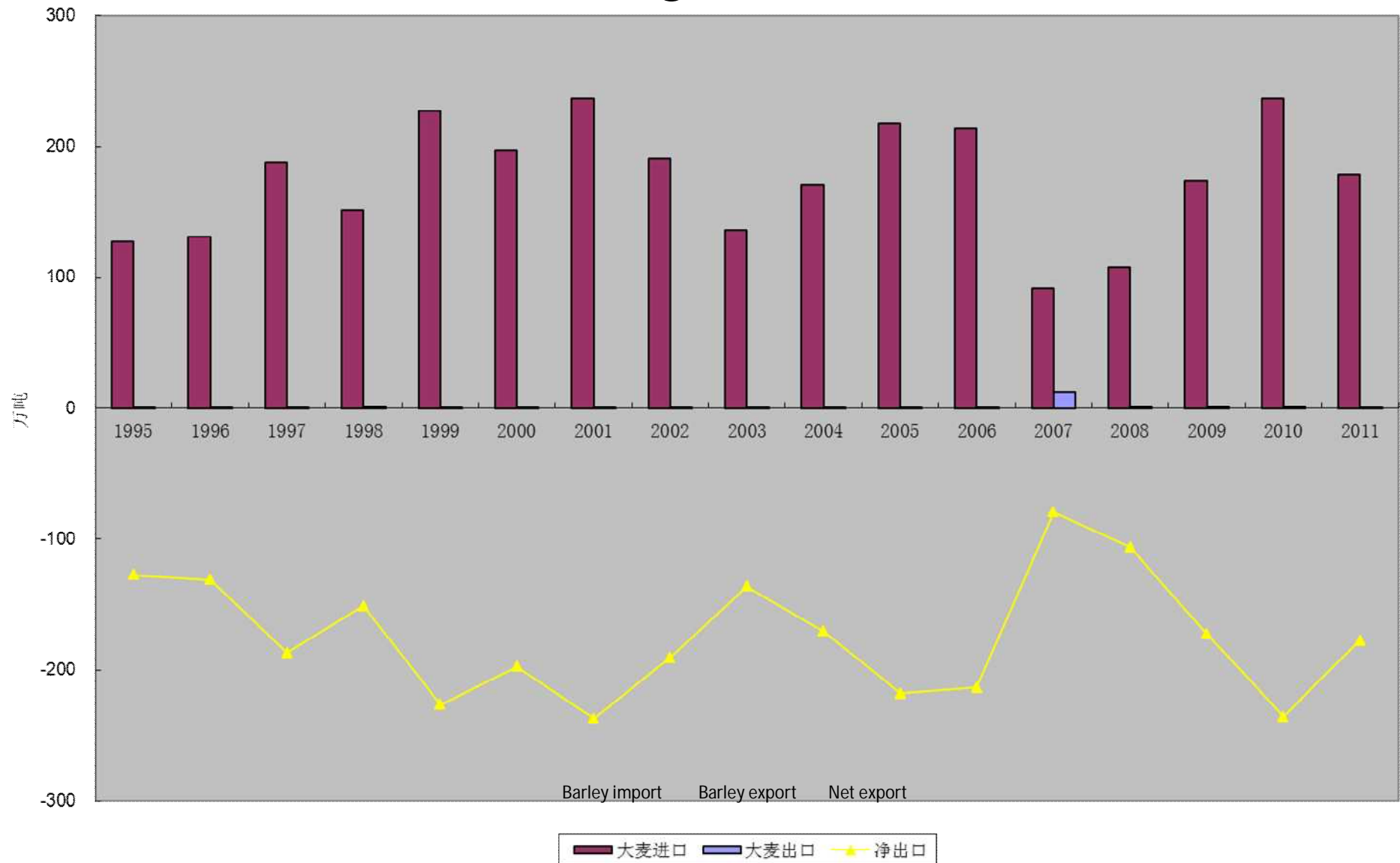
Rice trade



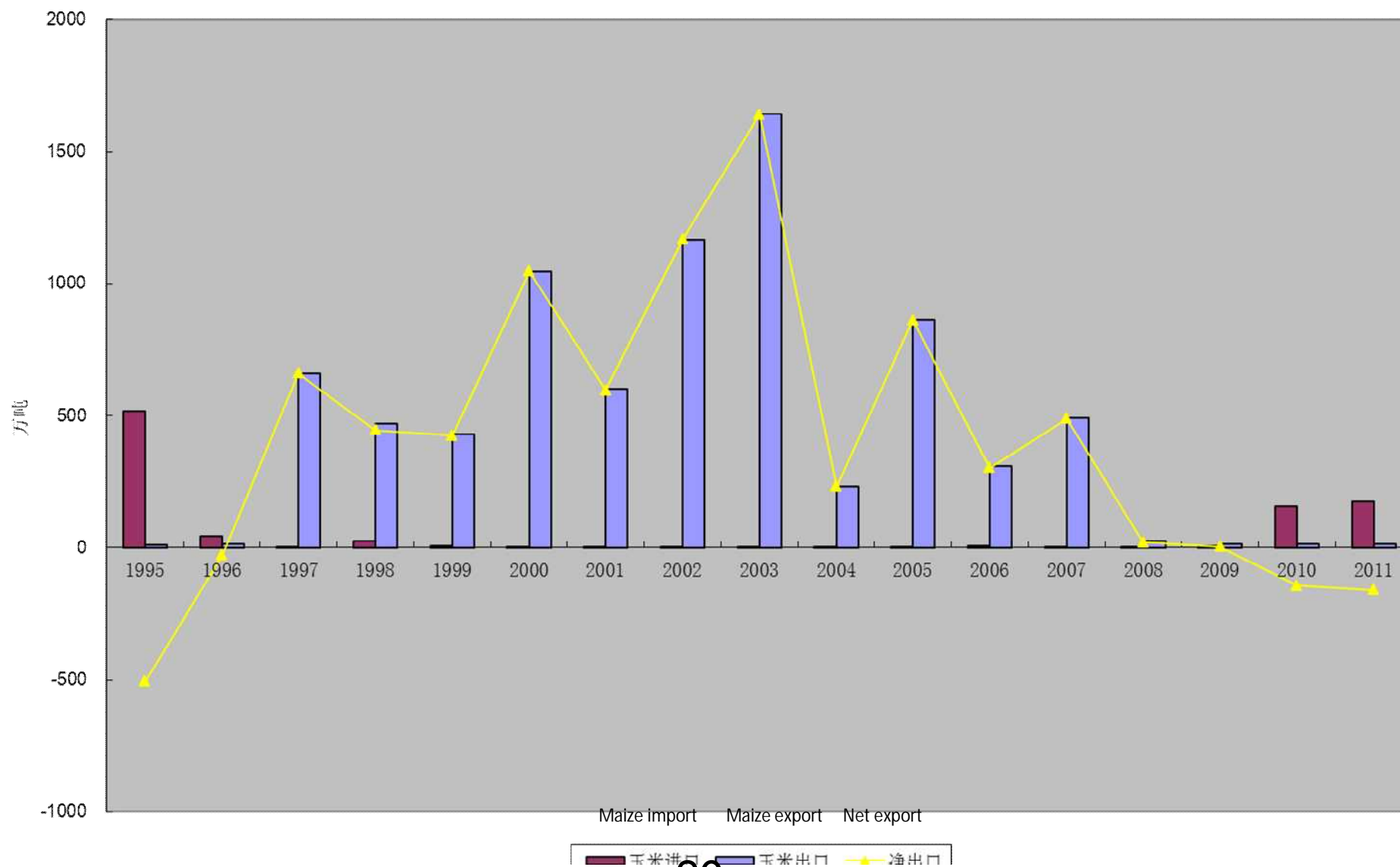
Wheat trade



Barley trade



Maize trade



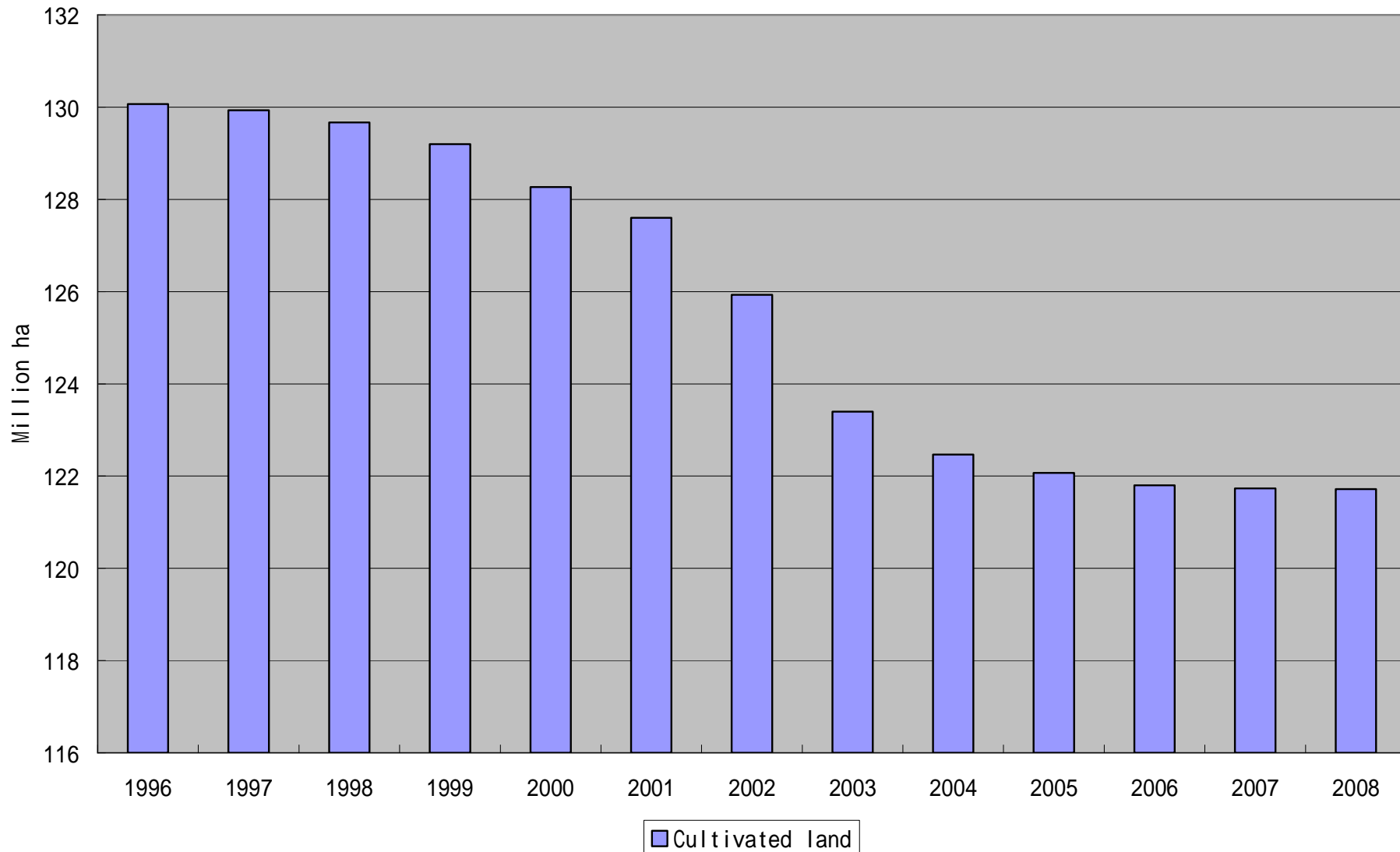
3. Challenges against grain security

- Shortage in water resources
- Per capita water resources in China only account for a quarter of the world average
- Proportion of agriculture-consumed water in total water use keeps falling from 70.2% to 62% in 2008.
- Agriculture-use water is in short supply for about 30 billion cubic meters, or about 10% of the total water consumption in agriculture in a year.
- Water resources in China are distributed unevenly. North China producing 55% of grain yields only has 20% of water resources.

3. Challenges against grain security

- Per capita farmland keeps downsizing and land quality also falls down. In 2008, per capita farmland fell to less than 0.1 ha (only one third of the world average). Total farmland area was only 121.72 million ha.
- Industrialization and urbanization will still use large quantity of farmland.
- The farmland balancing approaching, featured by remunerating good-quality farmland with poor-quality farmland, leads to decrease in farmland quality.

...Shrinking farmland



3. Challenges against grain security

- The high-investment mode of production has negative impact on environment and is not sustainable. But lower investment might also cause impact on high yields.
- For instance, the fertilizer use in unit area in the country is 4 times of the world average.

3. Challenges against grain security

- Gains by comparison from crops are relatively low and keep falling
- Grains VS cash crops
- Net profit of cereals decreased from 2,948 Yuan/ha in 2004 to 2,796 Yuan/ha in 2008.
- Grain production cost keeps rising, such as fertilizers and labor cost.

Stringent grain supply

In the long run, grain supply in China is not optimistic

- Domestically (farmland, water and other resources are limited; industrialization and income increase lead to more demand for grain supply).
- Internationally: price keeps rising; market fluctuates; market volume; availability, etc.
- **The international community focuses attention on grain security**
- After 2007, the world's hungry population increased by nearly 200 million and reached over 1 billion. Though the figure has fallen down today, the hungry population still stands at more than 900 million.
- The international community has proposed a number of initiatives, **and called upon sharp investment rise in agriculture and grain sectors (infrastructures, R&D, etc); and taking greater efforts to ensure supply and stabilize the market.**

Negative impact by huge import of agricultural produces

- Take soybeans as an example:
- In 2010, China imported USD 25.1 billion worth of soybeans, accounting for 35% of total agricultural import; 54.80 million tons of soybeans were imported, or more than 3 times of domestic soybean yield.
- The import was monopolized by a few large transnational corporations.
- Domestic market relies heavily on the international market, causing sharp price rise/fall.
- Large quantity of import causes great pressure on the price of domestic soybeans, which impacts on the income of soybean farmers, in particular those in northeast China.

...Lower support for agriculture from finance and credit

Comparison of support for agriculture – China and major developed nations (2005)

| | China | EU | USA | Japan |
|------------------------------------|-------|-------|-----|-------|
| Total support (in USD 100 million) | 52.4 | 153.1 | 105 | 54.8 |
| Unit-area support (USD/ha) | 366 | 1560 | 604 | 12569 |
| PSE% | 8 | 33 | 16 | 55 |

Though agriculture and township enterprises contribute to 40% of China's GDP, they only receive 10% of credit loans.

4. Policies ensuring grain security in China

- **Curtail and abolish agricultural tax**
- **Provide subsidies to crop-planting farmers**
- **Provide policy agricultural insurance**
- **Increase investment in agriculture, rural areas and farmers**
- **Increase the minimum grain purchase price**
- **Adopt the strictest farmland-protecting regulations**
- **Trade policies**

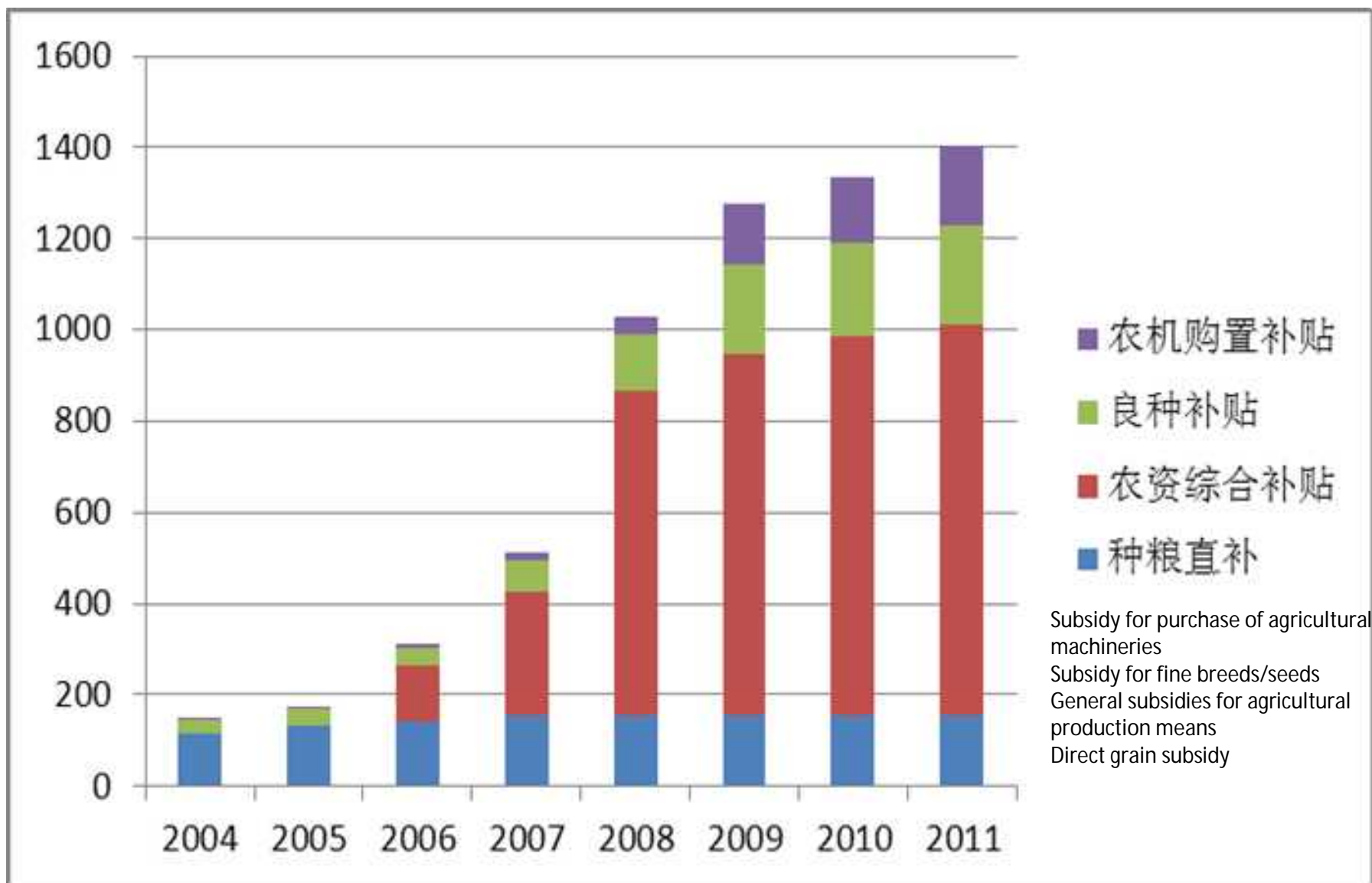
Curtail and abolish agricultural tax

- In 2000, pilot test of agricultural tax/fee reform was kicked off in Anhui Province.
- In 2003, agricultural tax rate was redefined at 8.4%.
- In 2004 and 2005, agricultural tax rate was reduced.
- In 2006, agricultural tax was abolished on a nationwide basis.
- Each year the Chinese farmers will receive benefits of 125 billion Yuan from the abolishment.
- The abolishment represents the fundamental change of Chinese agricultural policies from levying tax to providing subsidies.

Subsidies for farmers

- More subsidies are going to more agricultural produces.
- Four subsidies: direct grain subsidy, subsidy for fine breeds/seeds, subsidy for purchase of agricultural machineries and implements, and general subsidies for agricultural production means
- In 2004, Central Government allocated 14.5 billion Yuan for the four subsidies. The figure rose almost 10 times in 2011 to 140.6 billion Yuan. In 2012, the Central Government plans to allocate 162.8 billion Yuan for the subsidies, up by 22.2 billion Yuan over the previous year.
- Besides, subsidies for swine and dairy cow will also rise.

Central Government's subsidies for agriculture (in 100 million Yuan)



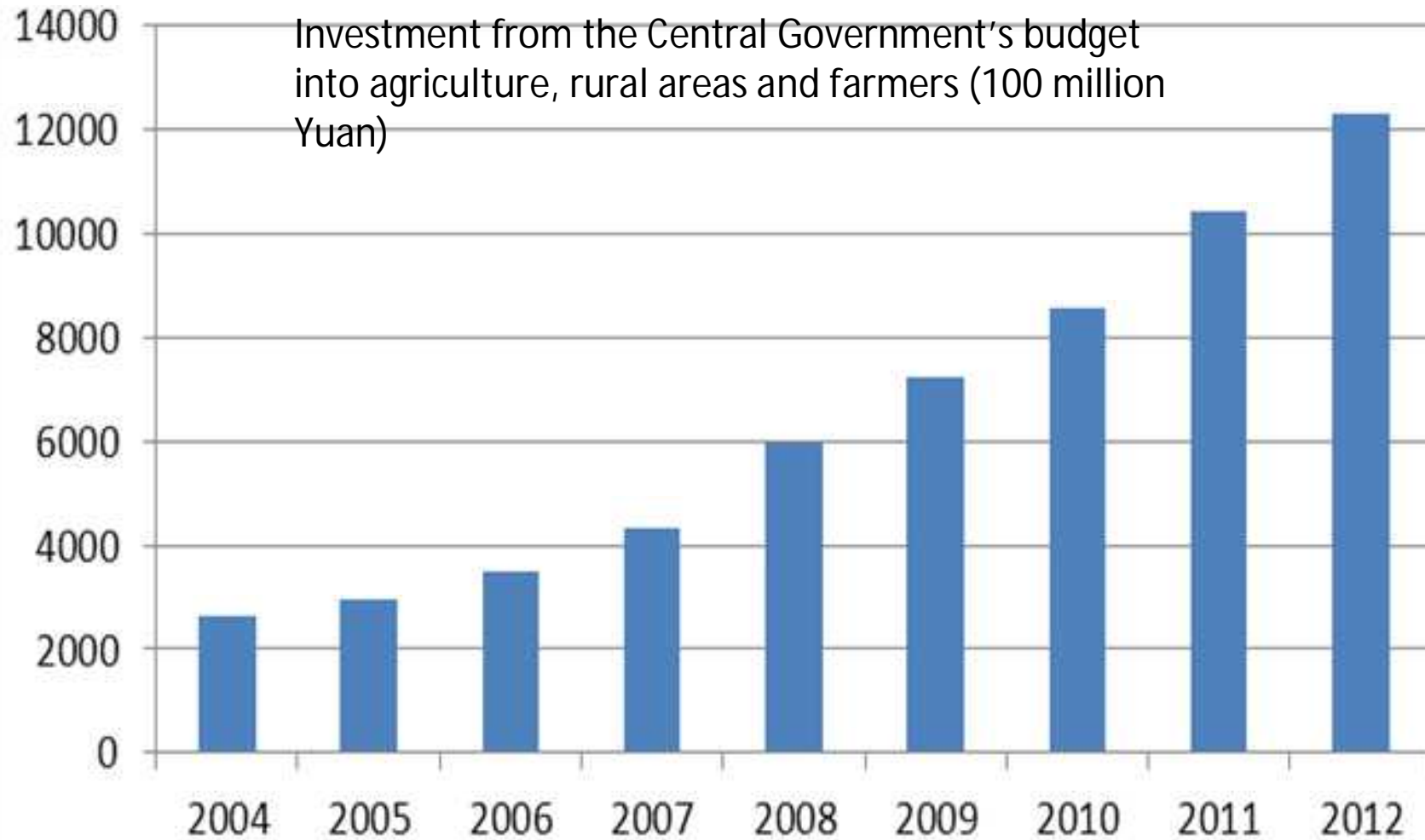
Policy agriculture insurance subsidy

- Agriculture insurance is a quasi-public service.
- In 2007, Central Government invested 1 billion Yuan to conduct pilot test of agricultural produce insurance subsidy in 6 Chinese provinces and autonomous regions. The budget of Central Government covered 25% of the insurance premium and provincial budget covered another 25% in the pilot test provinces and autonomous regions. Besides, the Central Government also spent 1.15 billion Yuan of budget capital to subsidize insurance for livestock industry, to be specific, for the reproductive sows.
- In 2008, more agricultural produces were insured and pilot test was made in more provinces and regions. Besides, the subsidy ratio was increased from 25% to 35%. In 2008, Central Government allocated 4.92 billion Yuan to subsidize agriculture insurance.
- In 2010, the Central Government provided agriculture insurance subsidy for more agricultural produces in more regions. It allocated 10.3 billion Yuan as the policy agriculture insurance subsidy. And major products in farming, livestock and forestry received insurance subsidy.

The government increases investment in agriculture

- The investment in 2005 stood at 297.5 billion Yuan, up by 13.3% over the previous year, by 18.2% in 2006; by 22.8% in 2007, by 37.9 in 2008, by 22% in 2009 and by 12.8% in 2010.
- The investment in 2011 was 1 trillion and 41.9 billion Yuan and is expected to be 1 trillion and 228.7 billion Yuan in 2012, up by 186.8 billion Yuan, or 18% over the previous year.

中央财政三农投入(亿元)



Increase minimum grain purchase price

- In 2008, China increased minimum purchase price for several times. The price for wheat was increased by 4-7% while that for rice by 10%.
- In 2009, the minimum purchase price was raised again and this time the increase was as high as 13-15.3% for wheat and 16-17% for rice.
- In 2010, price for rice was raised by 3.3-10.5% and price for wheat by 3.5%.
- In 2011, price for rice was increased by 9.7-21.9% while the price for wheat by 5.6-8.1%.
- In 2012, the minimum purchase price for wheat and rice per 50 kg will be raised by 7.4 Yuan and 16 Yuan respectively (Government Work Report 2012).

The strictest farmland protection rules

- China is now strictly regulating rural land management to **ensure the 1.8 billion mu (120 million ha) of farmland**. By adopting the strictest farmland preservation and protection regulations, China strictly controls the full size of construction land in both rural and urban areas. The farmland area in China has shrunk from 1.924 billion mu in 2000 to 1.826 billion mu today. In the future, certain quantity of farmland will also be used in the process of industrialization and urbanization. The country is now designating specific agencies and individuals to be responsible for protection of farmland. If one uses farmland for other purpose, the same area of farmland will have to be remunerated. Besides, certain plots of farmland will be specified as permanent farmland to ensure the strictest protection.
- Reform the land requisition regulations, improve remuneration for land requisition, strictly define public-interest and operational construction land use, rationally set the standard of remunerating land requisition, and find solutions to employment, housing and social security for farmers whose farmland has been requisitioned
- .

Policies of grain trade

- China has greatly cut down tariffs on agricultural produces from 45% in 1992 to 15% in 2010.
- However, China now employs TRQ protection on rice, wheat and maize.

*Thank you
for your attention*