



Current Situation And Outlook Of The Phosphate Fertilizer Industry In China

**China Phosphate Fertilizer
Industry Association**

Lin Le



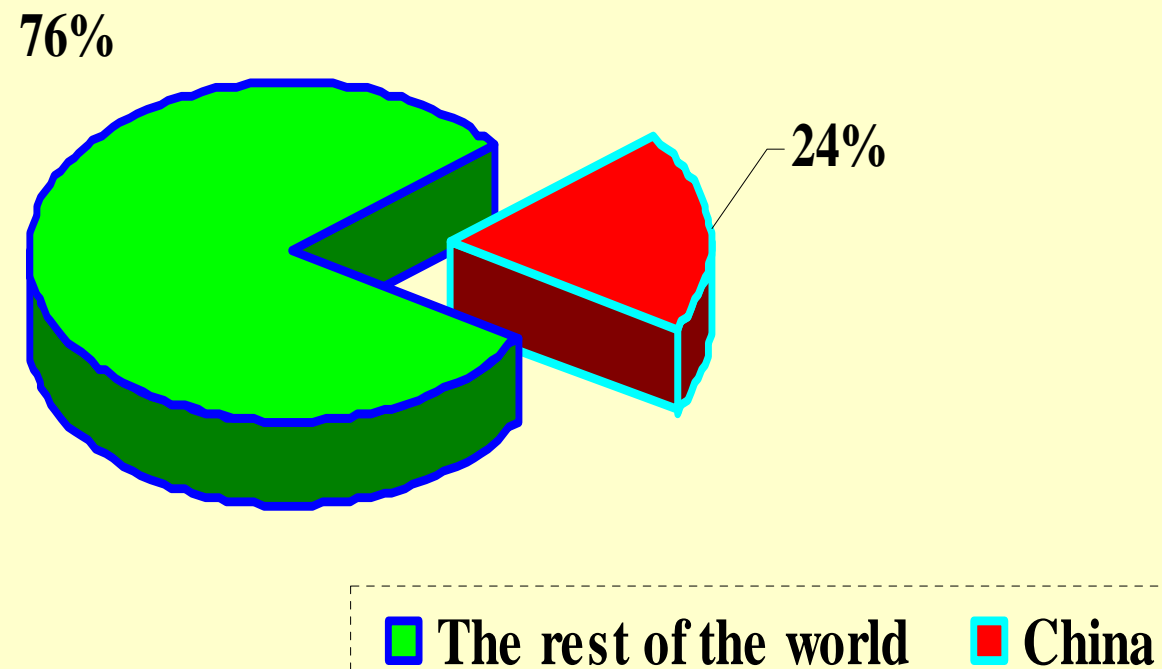
Production of Phosphate Fertilizer in China Compared with the Rest of the World

- Phosphate fertilizer produced outside China accounts for 76% of the world production.
- Phosphate fertilizer produced in China accounts for 24% of the world production.
- China's phosphate fertilizer production can meet 85% of its domestic demand.



World Phosphate Fertilizer Production

Figure 1. World phosphate fertilizer production





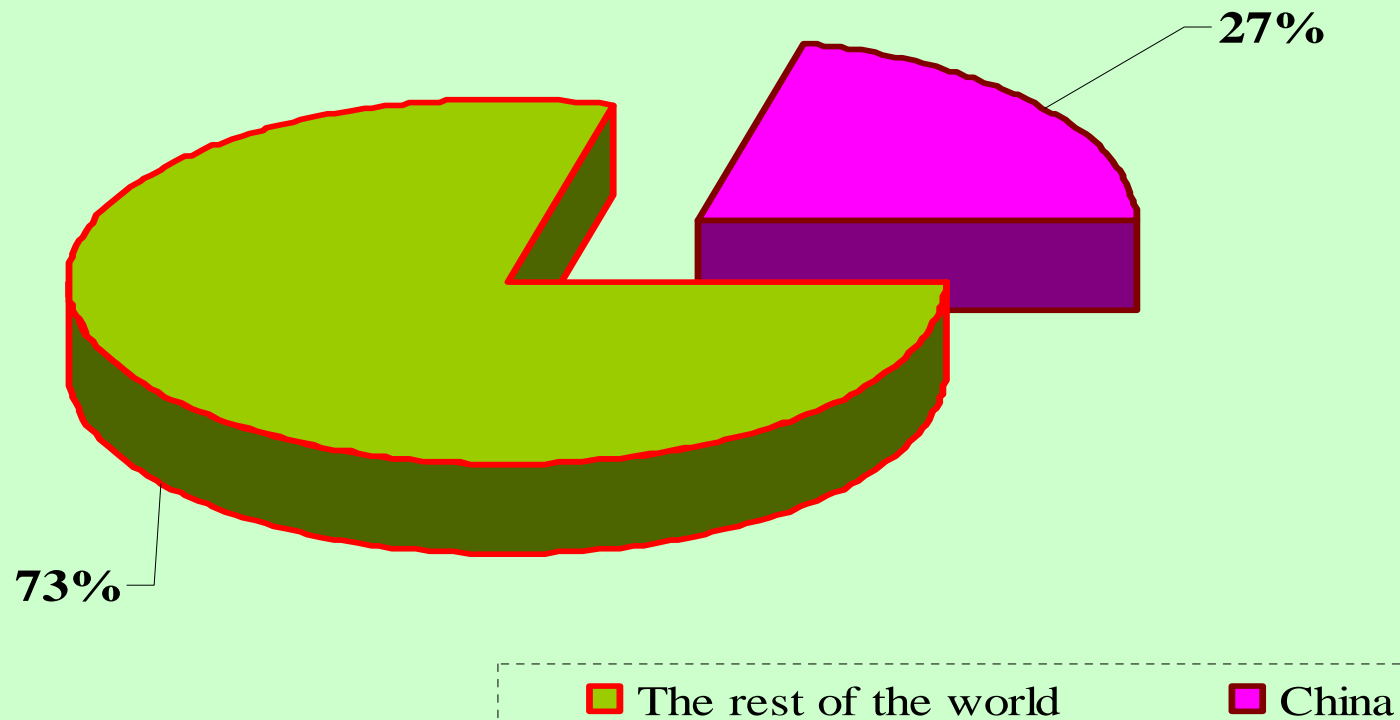
The Importance of China in World Phosphate Fertilizer Consumption

- Phosphate fertilizer consumed outside China accounts for 73% of the global total consumption.
- Phosphate fertilizer consumed in China accounts for 27% of the global total consumption.
- China is the world's largest phosphate fertilizer consumer.



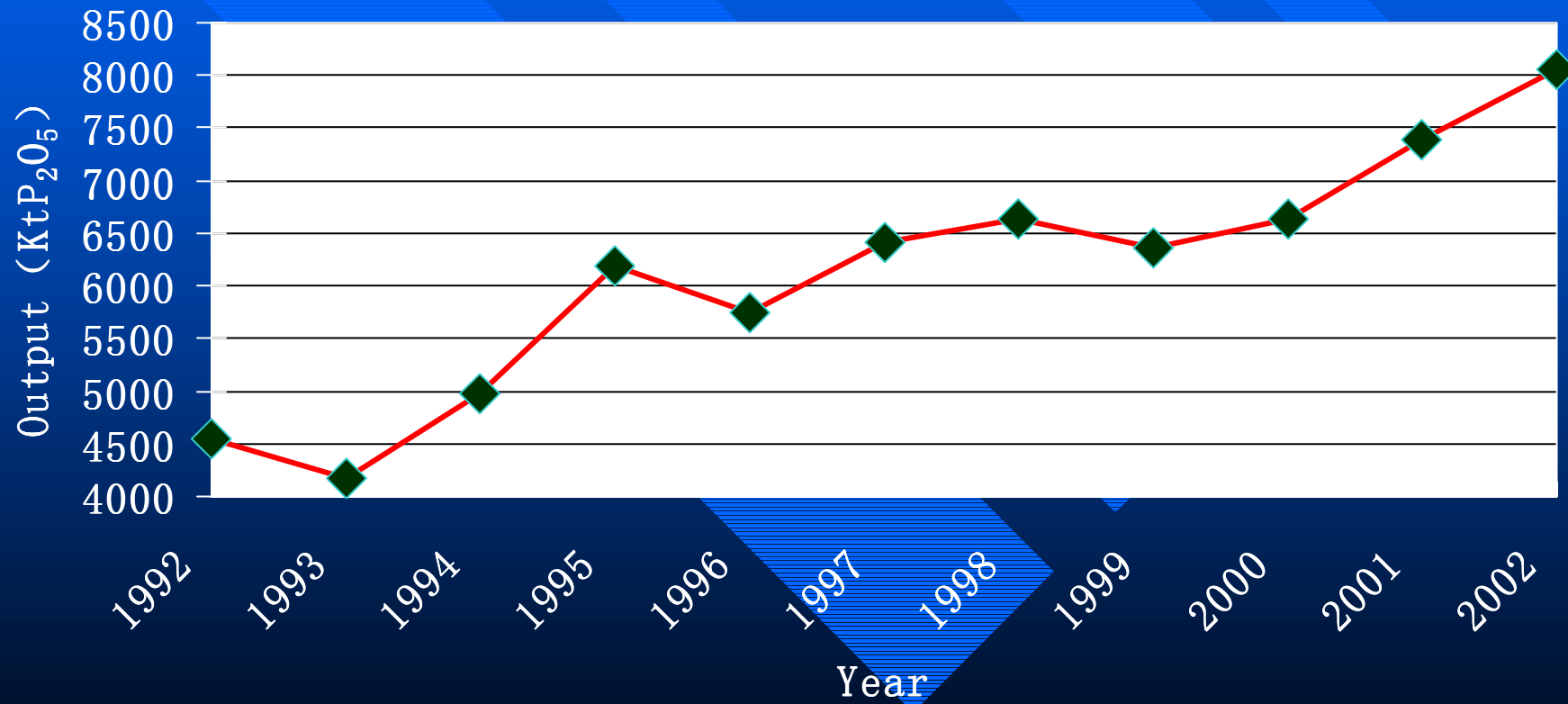
Global Phosphate Fertilizer Consumption

Figure 2. Global phosphate fertilizer consumption





Phosphate Fertilizer Output In China (Thousand tonnes P_2O_5)





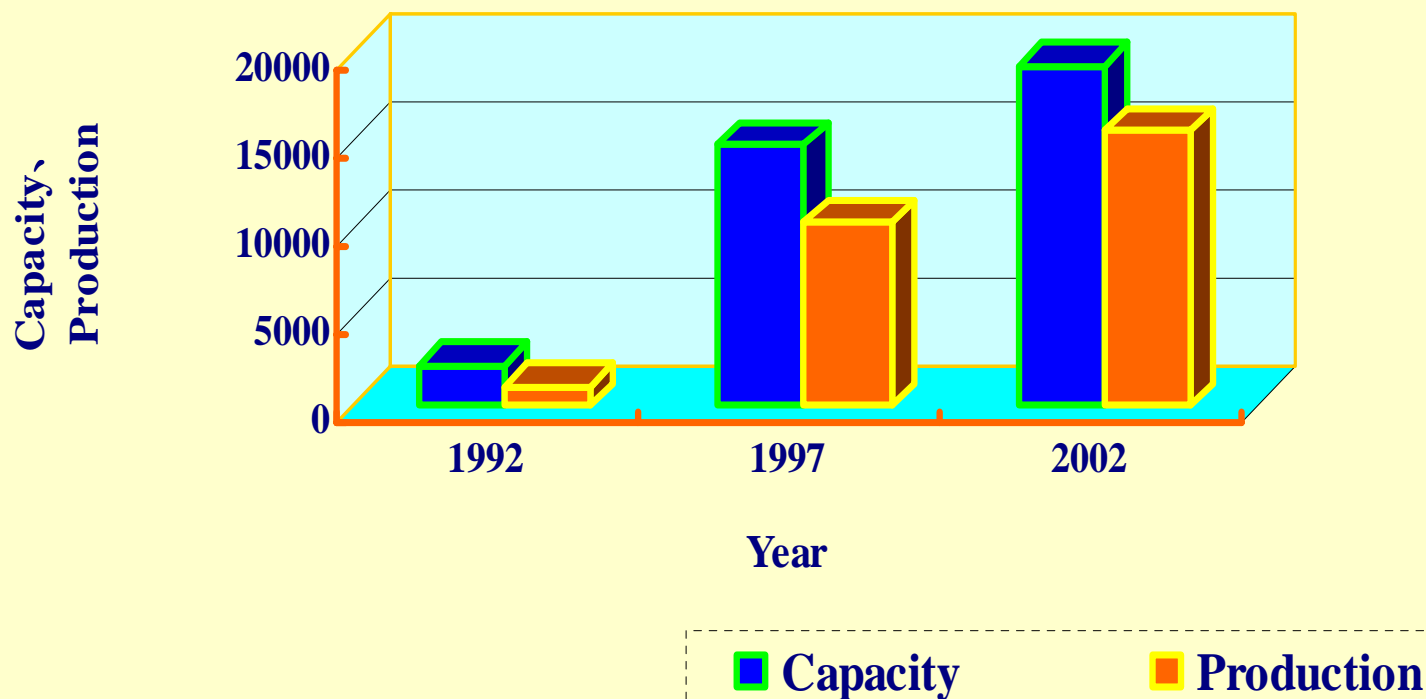
The Current Situation of the China's Phosphate Fertilizer Industry

- ❖ Production of phosphate fertilizers 8.06 million tonnes P_2O_5 .
- ❖ Rapid growth in both capacity and production of the high-analysis phosphate compound fertilizers.
- ❖ Significant changes in phosphate fertilizer product structure.
- ❖ Depending on mostly domestic raw material resources for phosphate fertilizer production.
- ❖ Strong competitive capacity for Chinese high-analysis phosphate compound fertilizers in global market .



Rapid Growth in Both Capacity and Output of High-Analysis Compound Phosphate Fertilizers (MAP, DAP, NPK, NP, TSP)

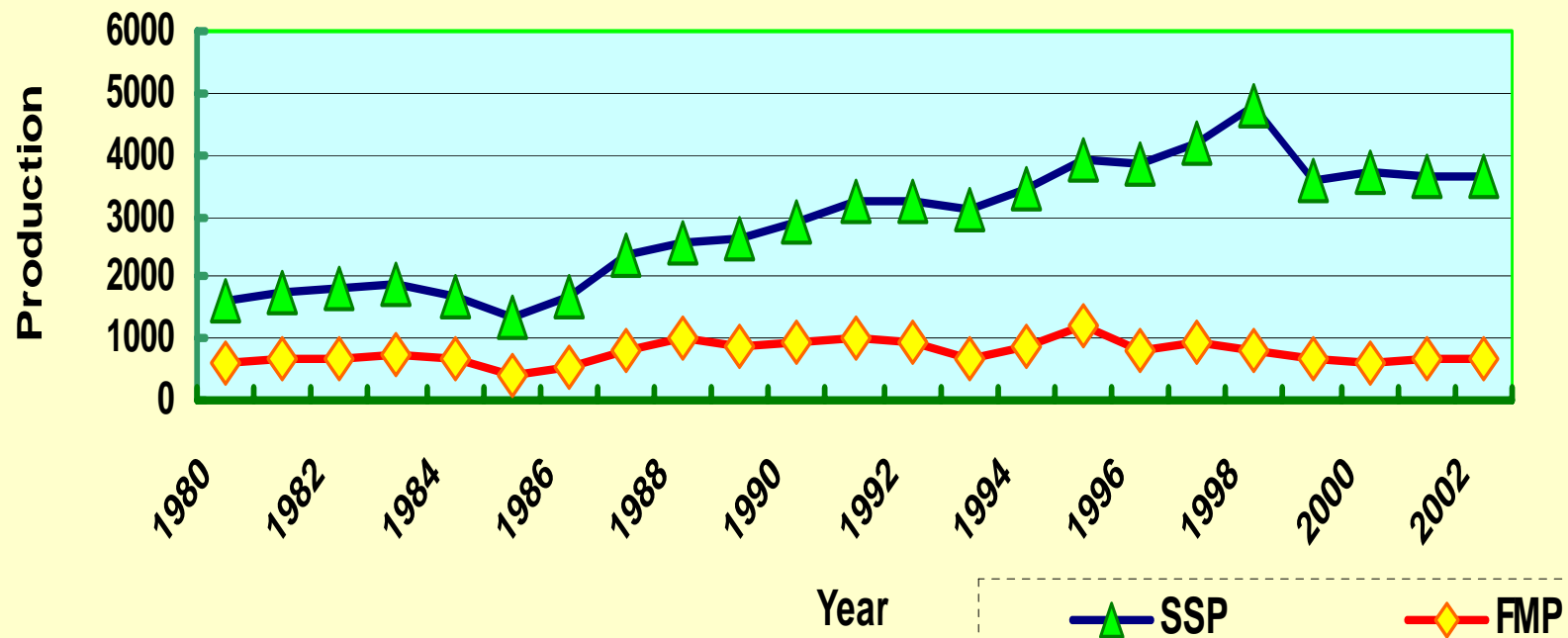
Figure 3. Growth rate of the capacity and production of high analysis compound phosphate fertilizer(kt)





Significant Change in Phosphate Fertilizer Product Structure

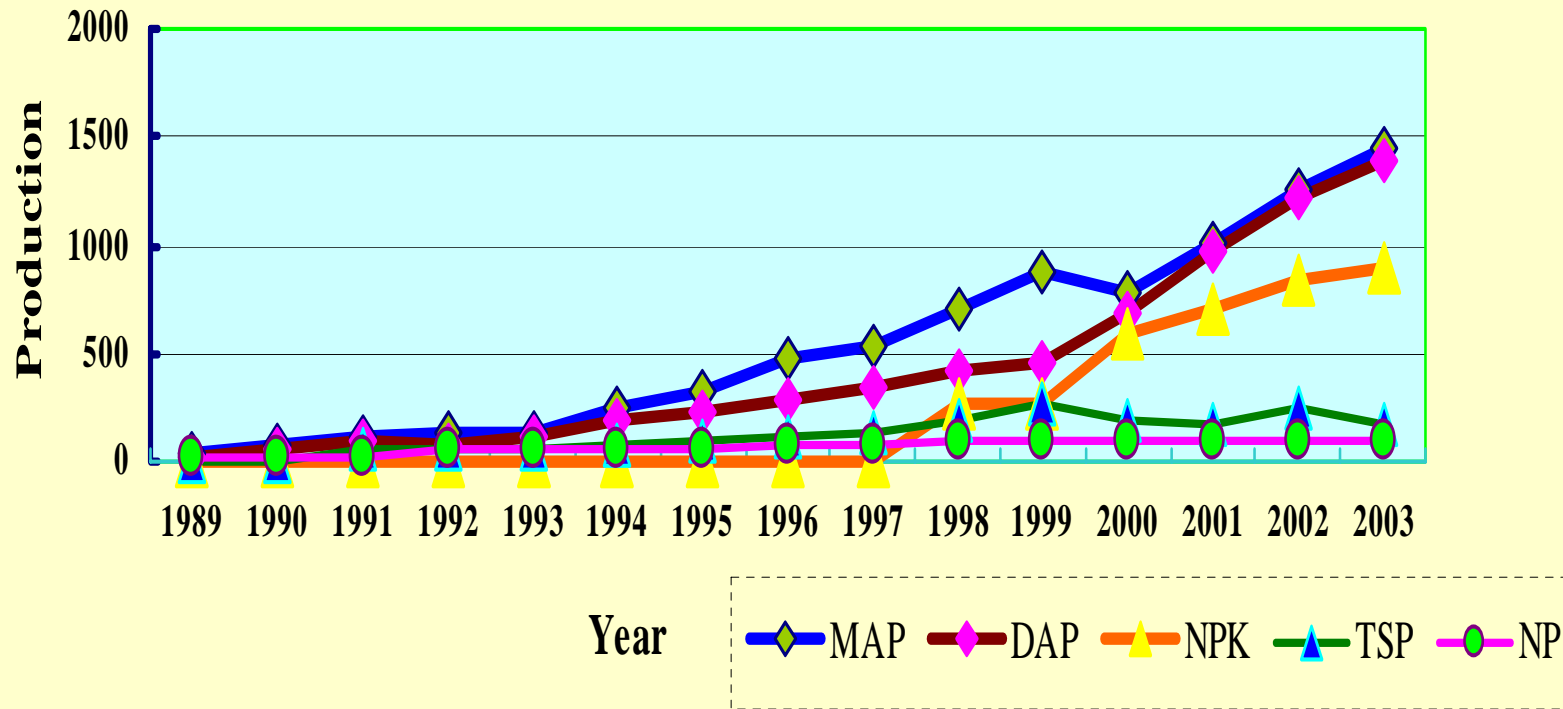
Figure 4-1. China's annual production of SSP and FMP (P_2O_5)(kt)





Production of High-Analysis Compound Phosphate Fertilizers in China

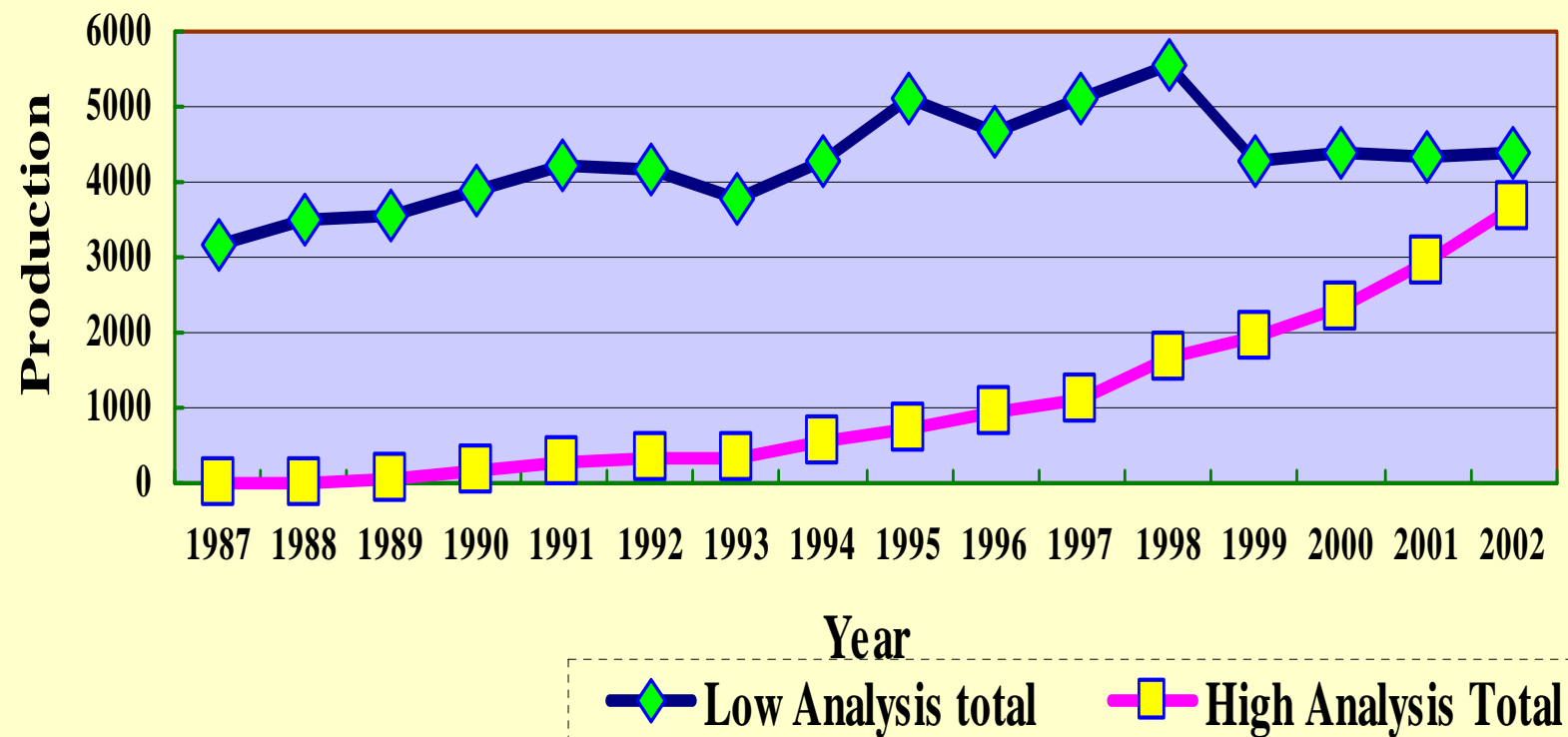
Figure 4-2. Production of high analysis compound phosphate fertilizer in China (P_2O_5)(kt)





Production of High/Low- Analysis Phosphate Fertilizers in China

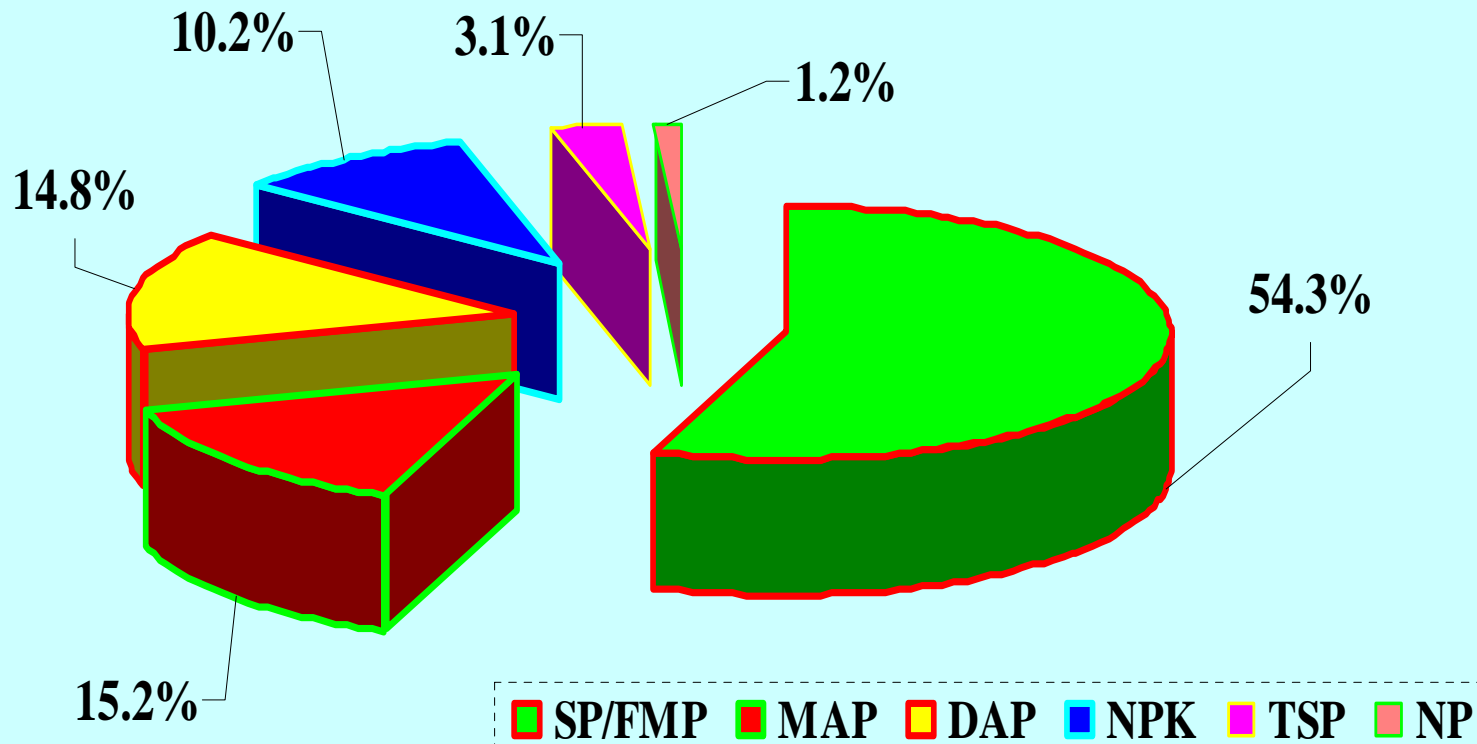
Figure 4-3. Production of high/low analysis phosphate fertilizer in China (P_2O_5) (kt)





Phosphate Fertilizer Production by Categories in 2002

Figure 5. China phosphate fertilizer production by categories in 2002





Depending on Mostly Domestic Raw Material Resources for Phosphate Fertilizer Production

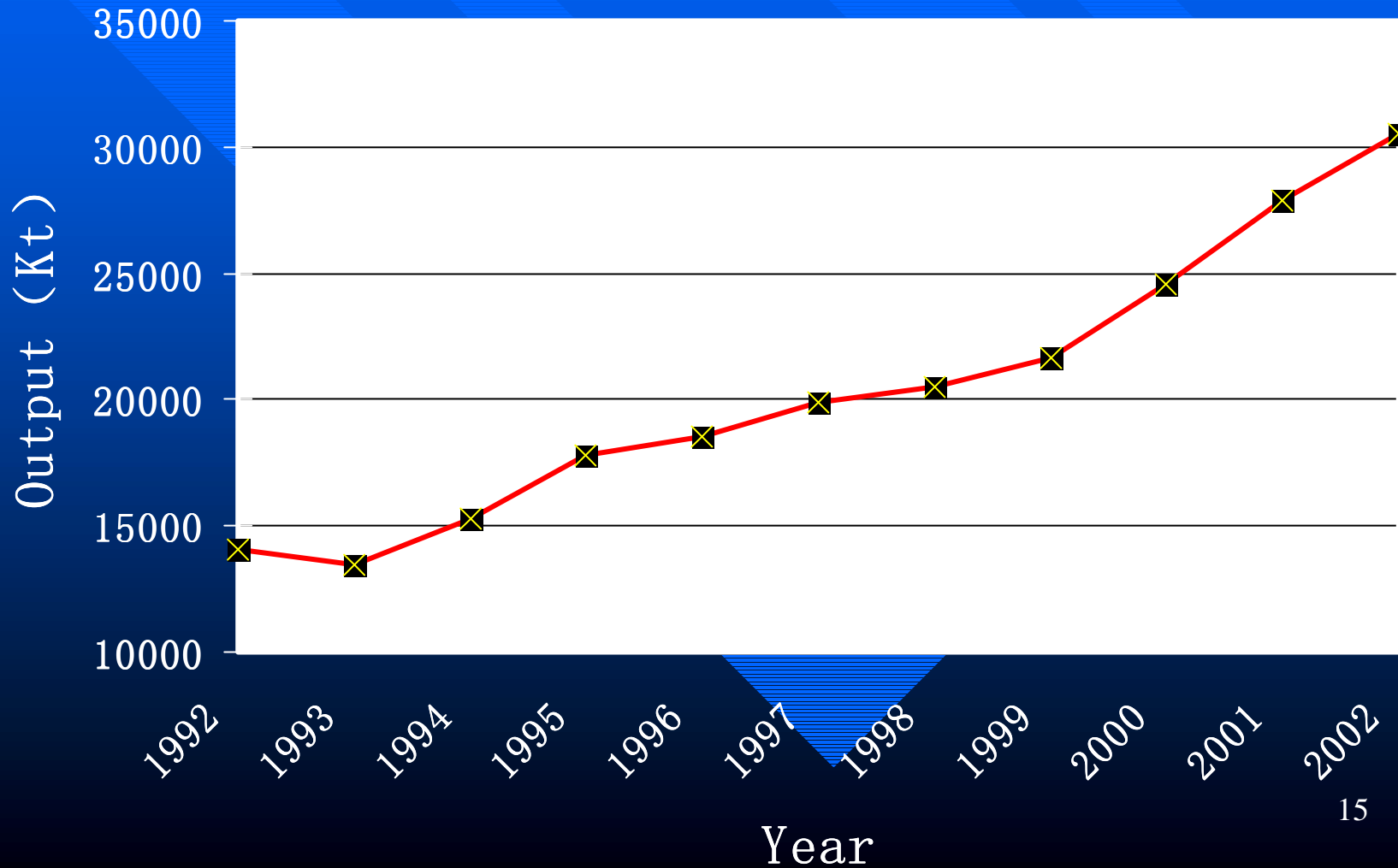
- China is rich in phosphate rock resources, which are sufficient not only to meet domestic demand for phosphate fertilizers and phosphate-based products, but also enable phosphate rock exports of 3.51 million tonnes in 2002.



- In 2002, China produced 30.5 million tonnes of sulfuric acid. The raw materials for sulfuric acid production come primarily from pyrites and smelter gas. The other source of raw material is sulfur, of which China imported 4.1 million tonnes in 2002. Sulfur derived sulfuric acid accounts for 1/3 of the total production. In addition to domestic production, 1.8 million tonnes of sulfuric acid was imported.

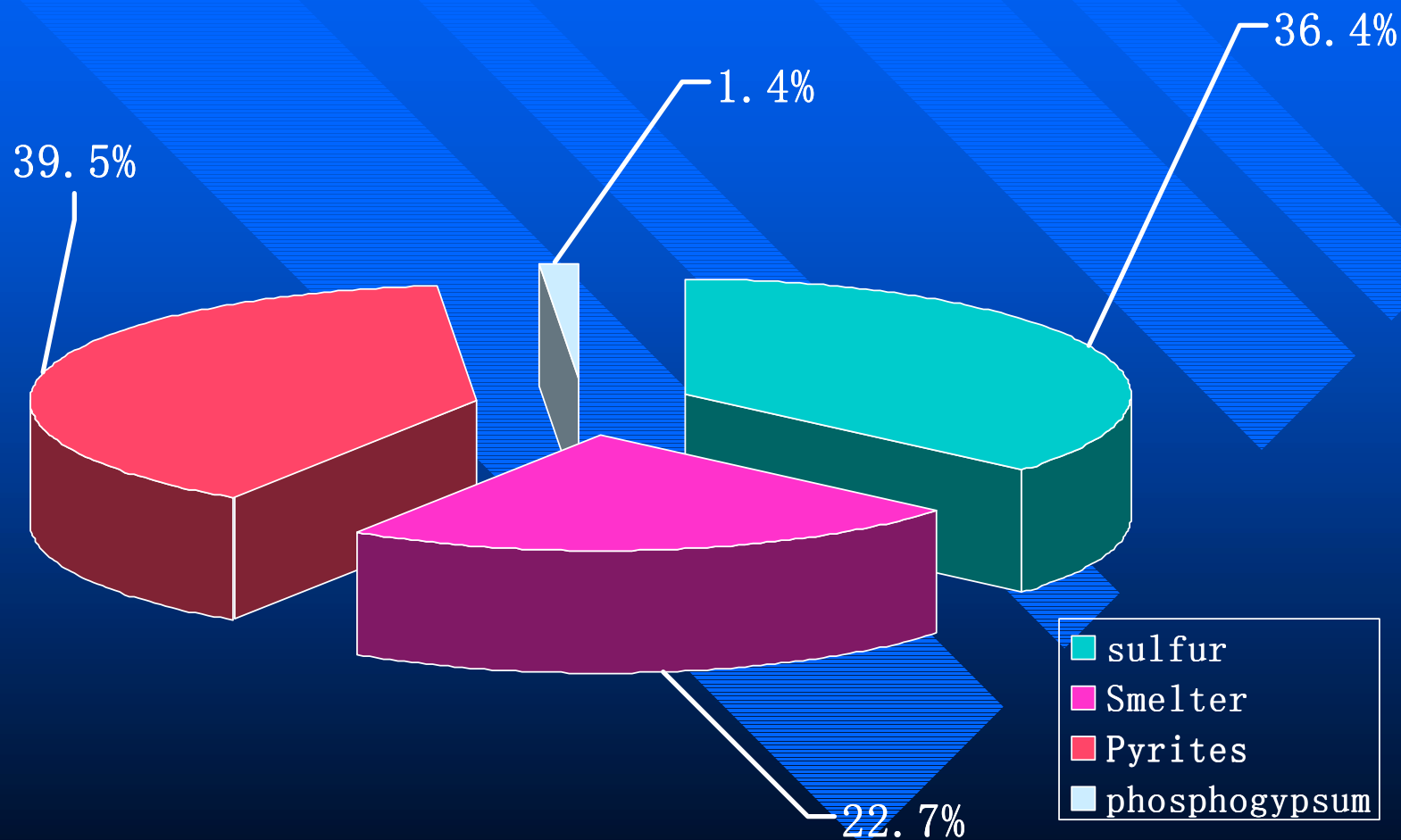


Sulfuric Acid Output in China (Thousand tonnes)





Sulfuric acid production by raw materials in China in 2002 (Percentage)





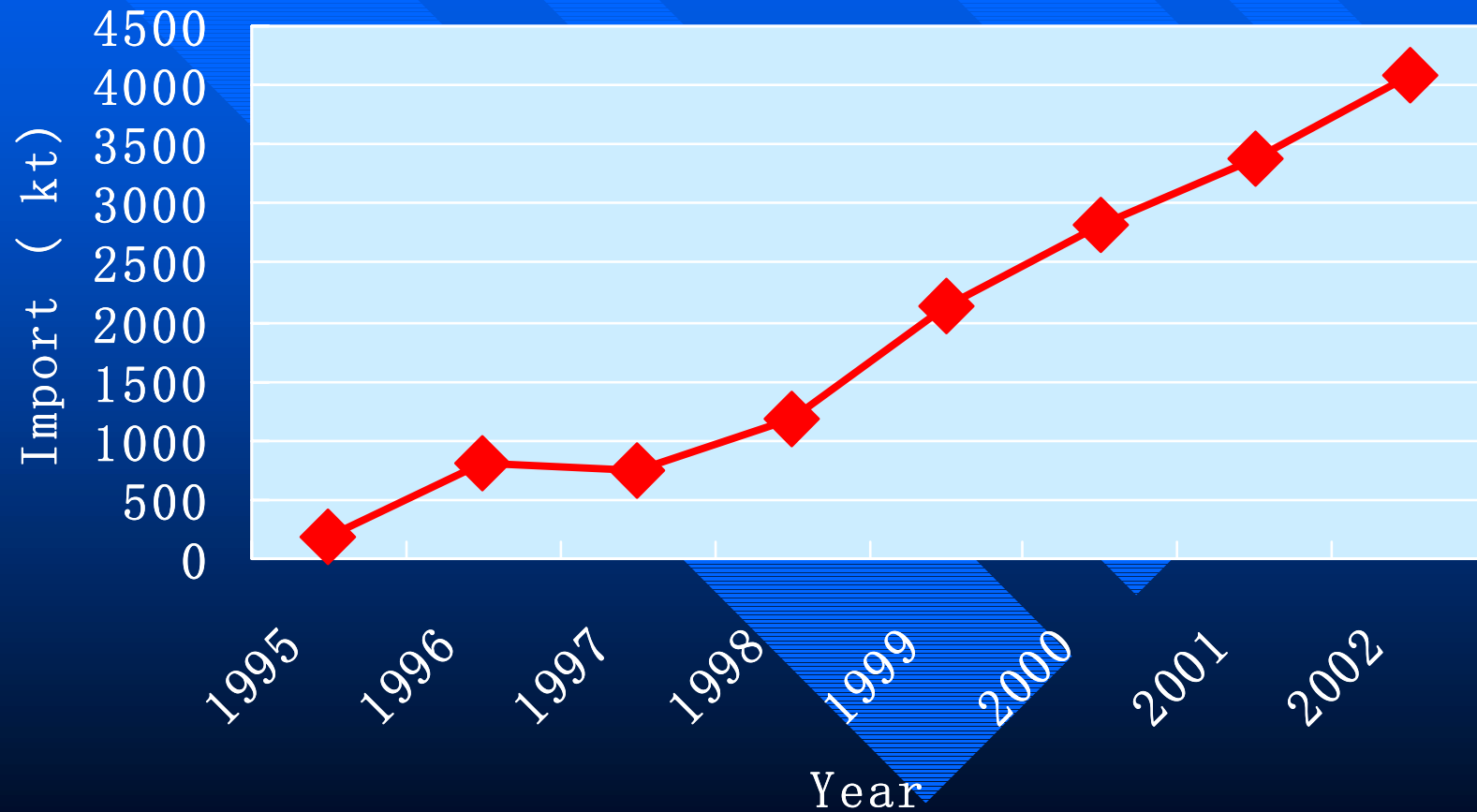
China sulphur production

The total annual capacity of sulphur recovery in oil refinery and gas processing is 900,000 tonnes. The output of recovered sulphur reached 450,000 tonnes in 2001.

It is estimated that the recovered sulphur output will increase to 800,000 tonnes in 2005, and 1.2 million tonnes in 2010.



China sulfur import from 1995 to 2002 (thousand tonnes)





- In 2002, China produced 36.5 million tonnes of NH_3 . Ammonia used for production of phosphate compound fertilizer came primarily from domestic source. Starting in 2003, China will import small amount of ammonia as complement.



- China lacks potassium resources. In 2002, China produced potassium chloride 0.85 million tonnes and potassium sulfate 0.6 million tonnes. In the meantime, 6.6 million tonnes of potassium chloride and 0.3 million tonnes of potassium sulfate was imported. In the future, China will resort to import as its main source of potassium fertilizers.



Strong Competitive Capacity for Chinese High-Analysis Phosphate Compound Fertilizers in Global Market

- After years of efforts, the production costs of most of DAP and NPK manufacturers are lower than the CIF price of imported fertilizers.
- Significant effort has been made to improve service to farmers. Customized fertilizers are made to meet client's specific needs. Farmers are shown how to use fertilizers correctly and economically. As a result, domestic fertilizers is widely welcomed by farmers.



- In 2002, domestic production of DAP and NPK reached 2.7 million tonnes and 6.4 million tonnes, respectively; an increase of 28% and 12% from 2001, respectively. In addition, there was import of 4.9 million tonnes of DAP and 2.8 million tonnes of NPK; an increase of 50% and 25% from 2001, respectively. Therefore, the Chinese domestic production and sales of phosphate fertilizers remained strong, even at a time when there was no remarkable domestic market growth, excess supply over demand and big increase of import fertilizer inventory.

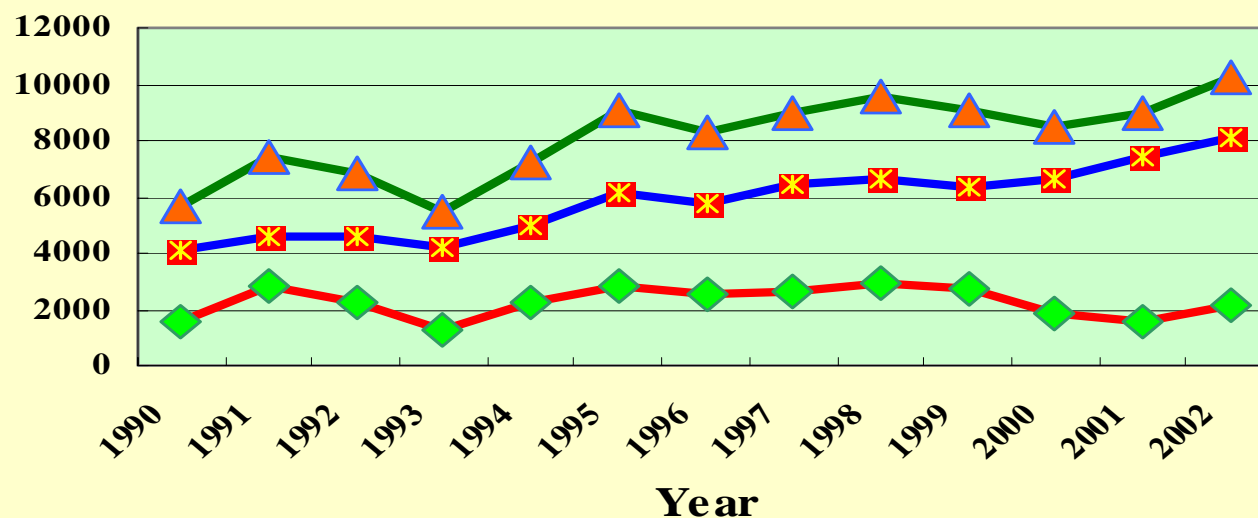


- The import tariff quota on fertilizer promised by China during its entry into the WTO is not equivalent to the mandatory import volume. Actual import volume will be determined by market.



Domestic Production, Imports and Apparent Consumption of Phosphate Fertilizers

Figure 7. Domestic production imports and apparent consumption of phosphate fertilizer (P_2O_5) (kt)



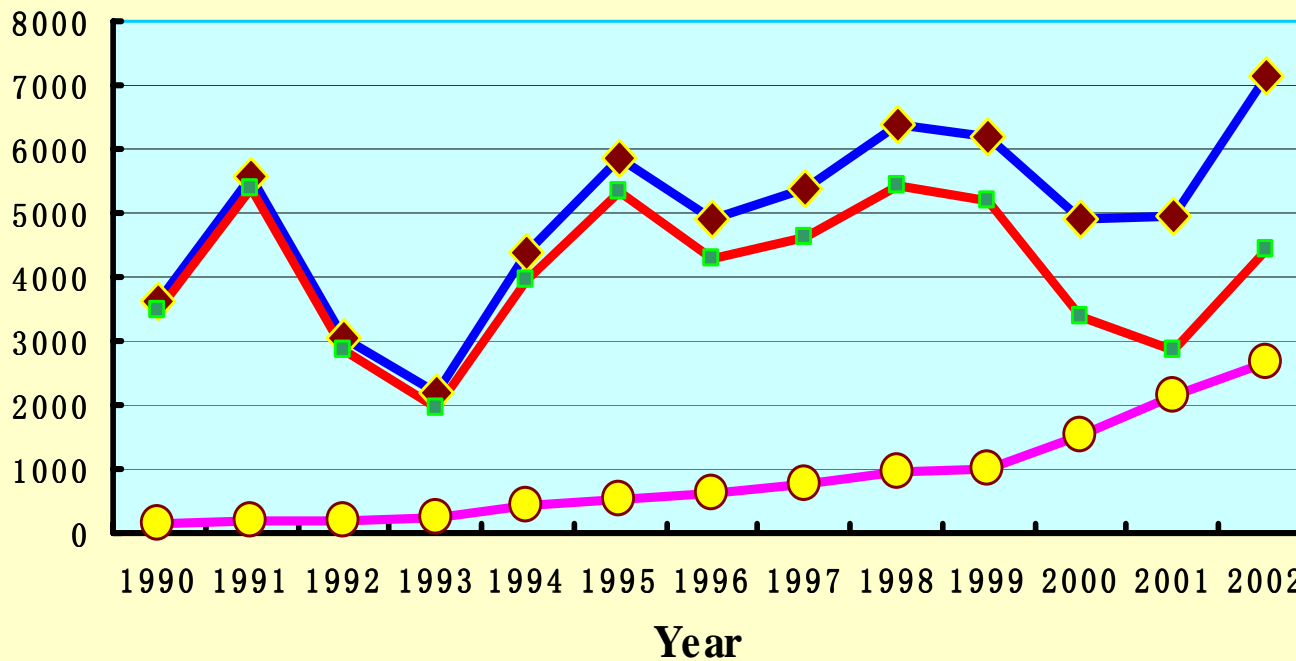
—x— Domestic Production —◇— Imports —△— Apparent Consumption

Notes: Inventory value in 2002 is higher than past years, and the apparent consumption may be over stated in 2002.



Domestic Production, Imports and Apparent Consumption of DAP

Figure 8. Domestic production, imports and apparent consumption of DAP (finish goods)(kt)

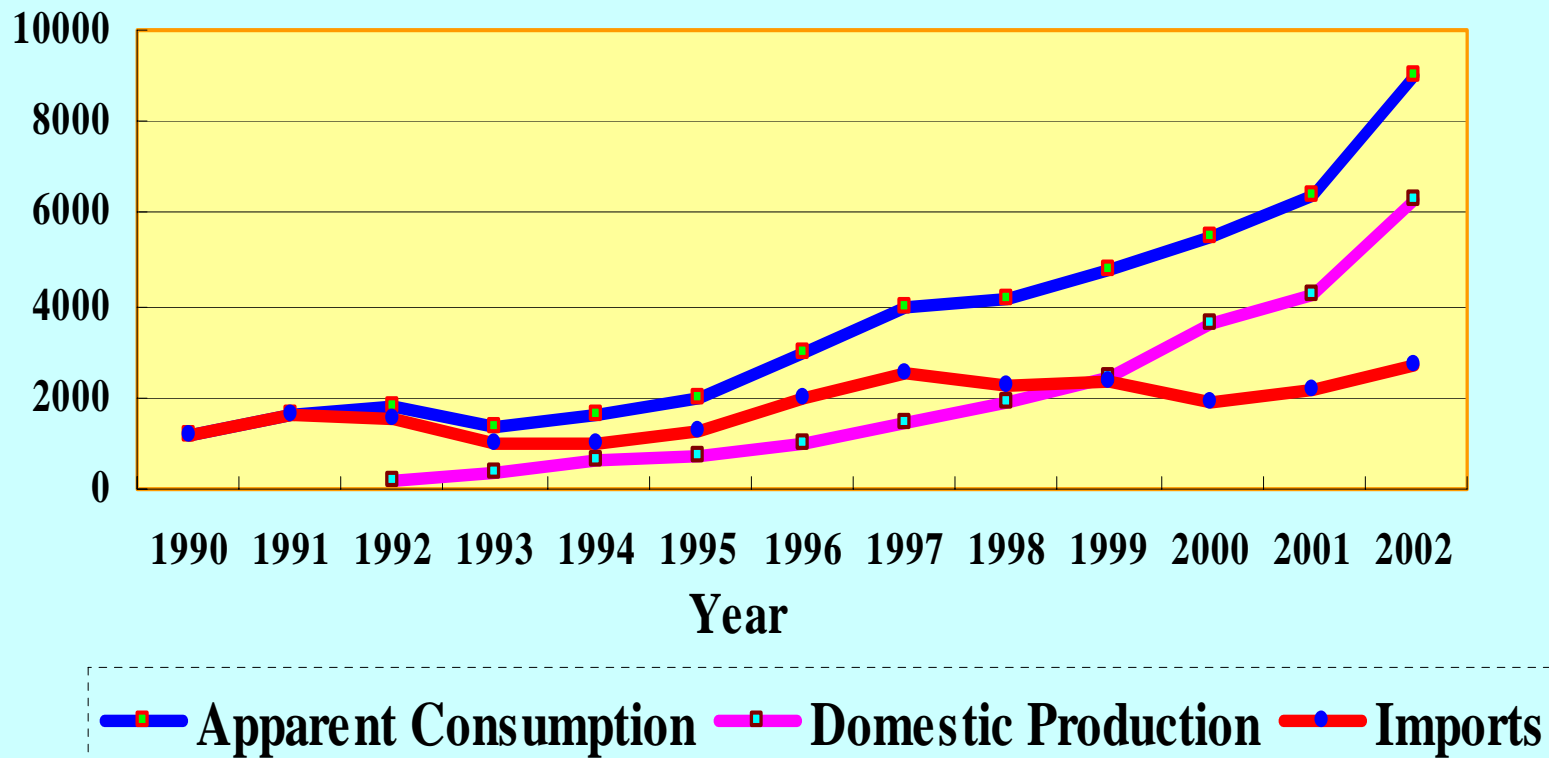


—◆— Apparent Consumption —●— Domestic Production —■— Imports



Domestic Production, Imports and Apparent Consumption of NPK

Figure 9. Domestic production, imports, and apparent consumption of NPK (finish goods)(kt)





The Outlook For The Development Of China's Phosphate Fertilizer Industry

- Based on estimates from the tenth Five-Year-Plan, demands of phosphate fertilizer in China will reach 10.5 to 11.0 million tonnes of P_2O_5 by 2005, and 11.5 to 12.0 million tonnes P_2O_5 by 2015
- The estimated domestic production of phosphate fertilizer will exceed 9.0 million tonnes P_2O_5 by 2005, and 11.0 million tonnes P_2O_5 by 2015. The gap between demand and domestic production will be filled by imports.



- China's phosphate consumption has been maintained at the level of more than 9.0 million tonnes of P_2O_5 . No significant increase is expected in the near future.
- The estimated output of sulfuric acid in 2005 would be 35 million tonnes. In 2010, it would be 40 million tonnes. In which around 40% will possibly base on sulphur as raw material, if imported sulphur keeps a reasonable price.



- During the tenth Five-Year-Plan period, China will increase its P_2O_5 capacity by 1.5-2.5 million tonnes. The growth lies primarily in high-analysis compound fertilizers, including MAP, DAP and NPK. It is estimated that the share of high-analysis phosphate fertilizers will increase to 55% by 2005.



In 2005, China's Phosphate Fertilizer Industry will also Maintain about 45% of Low-Analysis Phosphate Fertilizer Products (SSP and FMP).

- Containing many essential nutrients, low-priced and suitable for various soils and crops
- Production of SSP can use low to middle quality phosphate rock resources, consume less sulfuric acid, fits the strategy of sustained developing China's fertilizer industry.



- Complement the shortage of secondary nutrient elements like calcium, magnesium, and sulfur in high-analysis phosphate fertilizers.
- Meet the needs of different consumers.



- Are good and cost-efficient fertilizers for farmers near the production location.
- It is projected that SSP and FMP will coexist in the Chinese market for a long period of time, but their total consumption will decrease slightly.



Development Strategy of China's Phosphate Industry

- Continue to focus on improving economic efficiency.
- Take full advantage of available assets, rely on technological upgrading and reform to reduce production cost.
- Restructure industry, increase industry consolidation.



- The major phosphate fertilizer industry developments will be in the regions that are rich in phosphate rock resources, such as Yunnan and Guizhou Provinces.
- Reduce capital investment in new projects by using domestic technology, design and equipment.



Thank you!