On 2 August 1996, the State Science and Technology Commission, the Ministry of Public Health, the National Pharmaceutical Administration and the Shanghai Municipal Government jointly signed an agreement to establish the Shanghai Biopharmaceutical Industrial Base within Zhangjiang High Technology Park (張江高科技園區).

Currently, Zhangjiang High Technology Park houses approximately ten international biopharmaceutical companies including Roche of Switzerland and Shanghai Pioneer Pharmaceutical (上海先鋒製藥業). Research institutes such as the Training Center of the State Science and Technology Commission and Shanghai Second Medical University have set up branches within the park to oversee training in the areas of human resource, scientific research, technological development, pilot testing, large-scale production, and information exchange.

During 1997, the park will focus its efforts on developing the Biopharmaceutical Industrial Base. The base will be divided into four zones. In the east zone Shanghai New Pioneer is the anchor tenant. It aims to attract other local and foreign enterprises with its high-tech facilities and skilled labor. The west zone, in which the New Drug Research Center is sited, aims to attract product development companies, pilot plants and major corporations. The south zone will be a center of education complete with medical schools, research and training institutes. Finally, an "Incubator" zone will be reserved for small to medium enterprises set up by overseas graduates and local technicians. Zhangjiang Technology Park will also encourage multinational biopharmaceutical companies to establish regional headquarters within the park. By the year 2000, the park aims to account for one third of the total biopharmaceutical production in Shanghai.

By the year 2000, Zhangjiang High Technology Park aims to account for one third of the total biopharmaceutical production in Shanghai.
Biotechnology is currently making a significant contribution to the Korean economy. Sales from new biotechnological products in Korea reached almost US$125 million in 1993 and are expected to increase to over US$5 billion in the next ten years. In view of this, the Korean government has planned a 14-year National Biotechnology Development Program, also called the “Biotech 2000” program.

The program is aimed to enhance science and technology in Korea to match that of the world’s leading countries. It also aims to accelerate technology transfer from biotechnology research to commercial applications. The biotechnology research will receive support from the following ministries: Ministry of Sciences and Technology, Ministry of Finance and Economy, Ministry of Trade and Industry, Ministry of Health and Social Welfare, Ministry of Agriculture, Forestry and Fisheries, Ministry of Environment and Ministry of Education.

Ten major research projects in six categories will receive support under this plan, as shown below.

I. Biomaterials
1. Development of new functional biomaterials
2. Industrial application of biological functions

II. Healthcare
3. Biomedical engineering technology
4. Molecular biological study of human functions (human biotechnology)
5. Genome analysis

III. Agriculture and Food
6. Molecular breeding of biological resources and cell culture technology
7. Food biotechnology

IV. Environment, Biosafety, and Biodiversity
8. Environmental biotechnology and biodiversity
9. Assessment study of environment and biosafety

V. Alternative Energy
10. Technology for bioenergy production

VI. Basic Life Sciences

Of the total government budget for R & D, the biotechnology quota is expected to increase from 2.7% in 1992 to 5% in 1997. This corresponds to US$0.625 billion for the period 1994-1997. The private sector is expected to invest US$1.3 billion during this period. The total sum of investment for the 14-year plan is expected to be US$20 billion.

(summarized from Korea’s National Policy in Biotechnology (Biotech 2000))
Malaysian Palm Oil Companies Venture Abroad

Labor shortage and increasing land prices in recent years have affected the palm oil industry in Malaysia. This has caused companies listed in the Kuala Lumpur Stock Exchange such as Sime Darby, KL Kepong and Golden Hope among others to invest in palm plantation, palm oil extraction and the refinery business in Indonesia. Malaysia's investment in Indonesia's palm plantations is said to be as high as US$1 billion, making it the largest investor in the palm oil industry in Indonesia.

The Indonesian government decided in March 1997 to freeze the number of foreign investors in palm plantations. Indonesia views this move as necessary to protect local investment. Five and a half million hectares of land was approved by the Indonesian government for palm plantations. Out of this, 2 million hectares, almost 50%, are owned by foreign investors. Malaysian companies in particular occupy about 1.6 million hectares of the total farmland.

The Indonesian government’s decision to freeze the number of foreign investors in palm plantation is of concern to Malaysia as it will restrict the growth of its palm oil industry. The Malaysian government is therefore encouraging its planters to be more global in their outlook. In line with this, the Malaysian plantation sector and some Japanese companies are looking into the possibility of forming a consortium to invest in plantation, refining and distribution of palm oil in South-East Asia, the South Pacific Islands, Latin America and Africa.

World's Largest Botanical Gardens Established at Yichang, Hubei Province

The Haiyun Botanical Gardens (海雲植物園) project was initiated in January 1997 at Yichang, Hubei Province (湖北省宜昌), by the Beijing Botanical Gardens, a division of the Botanical Institute of the Chinese Academy of Sciences. This division is responsible for the overall planning and construction of the garden.

Occupying an area of 6967 hectares, the garden is 3.5 times larger than the Royal Botanical Gardens, Kew in the UK. 250 km of the land surrounding the garden is dedicated to agricultural development to attract tourism. Plants from the "Three Gorges" project will soon be moved to the garden. Rare plants from the Wuyi Mountains (武夷山) and Shennongjia (神农架) have been transplanted to the garden for purposes of biological research.

At the same time, Yichang Tourist Agricultural Development Ltd. has implemented the Botanical Project to introduce rare and exotic plants into the gardens to increase its biodiversity. Its main objectives are to develop a highly efficient agricultural and forestry industry; to establish a farm for farmers from the "Three Gorges" project to protect the environment and endangered plants; and to establish scenic spots and a multi-functional "Green" project. It is also hoped that this project will have social and economic benefits.
Pollution of Pearl River Causes Concern

The increasing pollution of the Pearl River (珠江) in the Guangdong province is a cause of concern. A recent study has shown that about 1000 square kilometers of water around Lingding Ocean (伶仃洋) is highly contaminated. It was reported that a fisherman using an 80 by 100 meters net to drag across four square kilometers of water did not catch even a single fish.

The inlet area of the Pearl River used to be the main fishing area of the Guangdong province, Hong Kong and Macau. Water on the east shore of Shenzhen (深圳) and to the north of Xiaosha and Dasha Islands (小鰂魚和大鰂魚), used to be prawn spawning ponds. About 15 years ago, the annual production of prawns was as high as 240 to 250 thousand tonnes. However, in recent years it has dropped to only 100 thousand tonnes. What used to be the famous “prawn spring” referring to the prawn harvest during spring and summer, does not take place any more. According to a biologist with the South Ocean Oceanographic Research Institute of the China Institute of Sciences, this is partly caused by the change in water flow due to waterway construction, which has deposited heaps of debris and sand in the inlet area of the Pearl River. This has reduced the water depth and changed the sandy riverside into argillaceous. All these factors have reduced the size of the river's aquatic population. Even animals that escape death seem to grow to abnormal shapes and sizes.

Water analysis has shown an increase in the oil content of the Pearl River. Constant inflow of sanitary sewage into the river has worsened the water condition even further, making it all the more difficult for creatures to survive.

The Guangzhou government has to invest more than 100 million yuan (US$12 million) annually to prevent the river from being polluted further. Last year more than 20 000 tonnes of garbage was removed from the river, five times more than in 1995. Guangzhou's municipality increased the budget to 4.6 million yuan (US$550 000) in 1996, compared to 1.2 million yuan (US$140 000) in 1995, to buy more boats and hire more workers to clean the river. In fact, this year cleaning up the Pearl River will be one of the main tasks for the Guangdong province. The government has realized that in order to improve the condition of the river, educating its citizens and implementing regulations to protect the river are also important. It has been estimated that at least 1 billion yuan (US$12 million) are needed to restore the river to its original state.