Biotechnology unscathed in Korean finance crisis?

The Biotech 2000 initiative remains the focus of government and industry support.

Asako Saegusa

Despite recent economic and financial crises that have forced the South Korean government to cut at least 10 trillion won (US$7 billion) from the 1998 budget, its support for public funding of scientific research still seems to be strong. The government has recently approved a five-year science and technology innovation plan designed to promote government-funded research and development, in an endeavor to improve their economic growth. Under the plan, which won the approval of a senior government committee in December, the new government of the president-elect Kim Dae Jung will increase its budget for research and development from 3.9% to 5% by 2002. President-elect Kim does not formally take office until February 25, 1998.

Government and industry also promised to double their support for biotechnology last year as part of Biotech 2000 program, under which US$20 billion will be invested into biotechnology projects over a 14-year period between 1994 and 2007. The government pledged to increase its budget to US$312 million this year—an 80% increase from last year's contribution—while industry plans to increase its investment by 30% to US$470 million.

Although Korea has reached the technological level of industrialized countries in such areas as fermentation technology—almost 20% of the world market for amino acids is provided by Korean companies—a report on Korean biotechnology research and development compiled by Korea Research Institute of Bioscience and Biotechnology (Taejon) indicates that other areas of technology, such as separations technology and biomaterials, are still at an early stage of development.

Biotech 2000, which involves seven government ministries, aims to bring Korean biotechnology to the same level as the world's leading industrialized countries by the year 2007. Research under the program focuses on such areas as biomaterials, biomedical engineering, genome analysis, cell culture, food and environmental biotechnology, and basic life sciences.

Unfortunately, Korea's economy, which was the eleventh largest in the world in 1997, still lies on the brink of collapse despite allocation of US$57 billion emergency rescue funding from the World Bank (Washington, DC) and the International Monetary Fund (IMF; Washington, DC). Financial authorities are expected to tighten fiscal policy according to the strict terms laid down by the IMF, which has asked for a 10% cut in total government expenditure. Fully implementing the IMF program means that South Korea will have to reduce its growth rate, inflation, and its current account deficit to less than half of current levels.

Despite the government's claim that research and development spending will not be cut, many anticipate this as quite unlikely. "Based on my experience, research spending has always been affected whenever budget cuts have been made. We expect many projects, especially those starting from this year, to be affected," says Sunyoung Kim of Seoul National University.

Biotechnology has grown rapidly in Korea in recent years, with approximately 80 companies—including large conglomerates such as Samsung (Seoul)—becoming involved in biotechnology research and development. Samsung has opened a biomedical research institute at its newly built hospital in Seoul, and has plans to expand its research facilities in collaboration with a local university. However, even such large conglomerates as Samsung have not escaped the effects of the economic crisis totally unscathed. Economic restructuring and deregulation means that a major change has to prevail upon a country whose economy was structured by the close relationships between politicians and the business conglomerates, or chaebols.

Hyun Shin, the director of the Biomedical Research Institute (BRI) at Samsung, says that Korea is currently undergoing two unnerving transition periods, both politically and financially. "It will be difficult to expect any significant increase in future funding. We will probably have to drop some of our planned projects [at BRI]," says Shin.

As well as concerns over future uncertainties, university academics and researchers in the industry are worried about the immediate effects of the depreciation of won, the value of which fell by 50% in 1997. Prices of various research materials, which are mainly imported from abroad, have rocketed since the currency crisis. Chi-Bom Chae, the vice president of Pohang University of Science and Technology (Kyungbuk), says that by the time the equipment arrives in Korea from the exporting country, the price is almost double. "We are concerned that we would soon be unable to afford necessary scientific equipment, let alone continue subscribing to foreign scientific journals," adds Chae. ///

Korean investment expectations for biotechnology (in US$ millions).

		Stage one 1994–1997	Stage two 1998–2002	Stage three 2003–2007
Biomaterials	Goverment	138	324	973
	Industry	456	1240	2410
Healthcare	Goverment	101	250	825
	Industry	344	430	1900
Agriculture and foods	Goverment	107	374	825
	Industry	241	870	1800
Environment, safety and conservation of bioresources	Goverment	66	212	687
	Industry	162	590	240
Alternative energy	Goverment	40	110	325
	Industry	84	490	650
Basic life science	Goverment	124	350	970
	Industry	9	170	400
Supportive function and infrastructure	Goverment	49	110	325
	Industry	4	60	300
Total	**Goverment**	**560**	**1630**	**4930**
	Industry	**1300**	**3850**	**7700**
Total		**1925**	**5480**	**12630**

Source: *Biotechnology R&D policy, Republic of Korea.* Issued by the Korea Research Institute of Bioscience and Biotechnology, November 1997.